



Eraring Power Station - EPA Licence 1429

Rocky Point Rd, Dora Creek NSW 2264

Environmental Monitoring Data November 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 November 2017

	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 November									
2 November									
3 November									
4 November									
5 November									
6 November	126	154	112	17.0	21.7	14.1	179	193	154
7 November	127	159	115	20.6	23.4	15.7	179	193	171
8 November	139	171	110	19.7	27.2	13.6	184	207	160
9 November	148	167	124	16.5	24.1	8.8	169	197	155
10 November	139	155	117	19.4	24.3	16.5	170	174	156
11 November	139	153	121	19.9	26.4	17.4	159	173	143
12 November	146	181	123	21.4	24.7	18.0	155	172	144
13 November	171	197	129	19.5	24.2	17.0	162	172	148
14 November	188	220	144	18.3	24.4	14.7	153	182	134
15 November	160	197	130	16.8	23.2	13.2	178	188	168
16 November	157	191	125	17.8	25.7	13.3	167	187	140
17 November	146	172	125	16.9	24.3	13.5	177	193	158
18 November	143	162	124	16.8	21.7	14.4	160	191	141
19 November	134	164	108	19.6	23.8	14.6	158	170	141
20 November	151	194	125	17.2	24.4	12.9	166	178	150
21 November	169	196	126	16.1	22.8	13.5	186	217	160
22 November	161	175	133	16.1	23.4	13.7	184	216	164
23 November	168	191	136	15.8	24.2	12.5	176	203	159
24 November	147	161	128	14.8	22.8	11.6	176	187	162
25 November	156	189	117	14.3	18.4	11.6	184	219	146
26 November	165	192	121	15.0	24.0	12.3	208	240	157
27 November	157	173	132	14.7	23.0	12.1	217	245	184
28 November	149	161	124	16.0	23.4	11.8	225	246	208
29 November	149	170	119	16.1	25.2	13.2	208	252	171
30 November	151	165	121	14.9	22.6	12.2	217	243	174

Unit 2 Boiler Continuous Emission Monitoring Summary

EPA Identification no. 12 - Air emissions monitoring, Boiler 2 stack discharge to air
Unit out of service 9th -14th November 2017

	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 November	155	185	129	21.2	23.2	19.1	211	233	188
2 November	140	173	118	21.6	30.1	17.8	192	215	172
3 November	141	172	119	19.8	23.6	15.9	194	208	171
4 November	133	170	119	23.7	32.5	20.0	189	204	171
5 November	137	160	123	21.3	30.4	16.7	185	202	162
6 November	146	182	115	17.4	23.4	12.0	178	204	138
7 November	144	167	131	19.9	25.7	16.6	177	185	157
8 November	148	179	123	20.5	25.2	15.1	189	199	176
9 November									
10 November									
11 November									
12 November									
13 November									
14 November									
15 November	137	154	116	21.8	28.5	18.1	188	194	178
16 November	139	153	111	20.1	25.2	16.2	174	190	161
17 November	123	145	110	19.4	25.3	16.4	187	201	157
18 November	133	148	110	19.1	21.0	18.0	161	187	147
19 November	116	140	101	17.8	22.2	14.9	177	192	160
20 November	129	171	105	17.0	22.2	11.8	182	204	163
21 November	150	177	114	15.5	22.1	12.4	213	248	182
22 November	139	161	102	15.3	20.7	12.4	202	215	185
23 November	147	170	104	14.5	21.3	11.8	215	241	184
24 November	146	162	114	14.1	20.3	10.9	193	207	176
25 November	153	169	118	13.0	17.1	11.4	194	218	163
26 November	148	161	119	14.2	21.0	12.1	236	274	174
27 November	131	166	112	14.5	20.9	12.6	239	267	187
28 November	135	170	103	16.1	23.0	11.5	247	259	226
29 November	106	111	101	19.9	22.9	18.3	226	252	196
30 November	122	168	102	18.7	22.3	14.6	227	252	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 November	128	133	124	20.6	21.8	19.7	214	236	185
2 November	123	134	116	20.9	23.3	19.7	209	223	186
3 November	134	163	115	21.1	29.5	17.2	222	237	201
4 November	126	169	104	25.6	34.7	19.9	211	228	201
5 November	133	177	109	26.5	31.2	13.4	213	241	191
6 November	155	191	123	13.9	19.8	9.8	214	233	177
7 November	126	147	117	15.9	18.4	13.7	182	191	166
8 November	141	189	117	18.2	24.0	14.6	202	219	182
9 November	153	177	110	16.7	23.3	13.5	202	225	171
10 November	154	177	123	16.5	22.3	13.5	209	222	189
11 November	163	197	130	16.2	21.5	13.3	195	239	163
12 November	163	233	137	16.7	20.0	14.2	177	194	167
13 November	192	220	141	16.2	20.3	14.1	193	202	180
14 November	184	218	125	15.8	20.5	13.3	190	229	175
15 November	157	237	112	16.0	21.6	13.3	218	229	210
16 November	152	175	110	16.8	22.5	13.3	202	212	188
17 November	143	200	102	16.5	23.6	13.7	214	229	200
18 November	145	180	113	15.5	19.4	13.2	239	271	205
19 November	130	162	105	16.2	19.3	13.2	243	274	213
20 November	126	140	116	16.4	22.7	12.4	225	252	183
21 November	118	127	111	16.6	18.3	15.3	231	253	204
22 November	114	122	105	17.2	21.4	15.2	205	217	188
23 November	112	122	106	16.9	21.3	15.1	227	249	208
24 November	112	122	107	16.2	20.2	14.0	220	242	198
25 November	121	147	110	16.6	21.7	14.9	219	242	208
26 November	121	150	114	17.2	24.7	14.3	243	277	192
27 November	122	143	112	17.5	22.6	16.0	227	249	204
28 November	113	130	105	18.8	28.6	14.3	237	251	214
29 November	119	128	114	19.0	32.9	15.7	246	288	214
30 November	126	169	103	17.9	26.7	13.6	254	280	215

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 November	178	204	150	17.1	19.3	15.7	231	254	213
2 November	162	201	142	17.0	18.7	16.2	228	251	204
3 November	168	211	133	17.2	19.7	14.6	215	221	209
4 November	153	191	133	20.8	29.7	16.7	188	216	132
5 November	153	178	122	21.4	27.0	15.1	197	234	124
6 November	157	191	134	17.6	26.5	12.8	225	256	188
7 November	147	173	130	17.2	18.9	15.3	185	241	114
8 November	159	202	126	16.9	23.5	5.8	232	255	180
9 November	170	184	154	14.5	17.8	12.6	219	238	194
10 November	170	191	138	14.6	18.2	12.2	216	227	195
11 November	164	183	148	14.4	18.9	12.2	196	208	182
12 November	173	206	153	15.2	17.2	13.2	191	212	176
13 November	202	232	154	15.2	16.9	14.2	204	217	195
14 November	189	220	145	15.1	17.8	13.3	196	223	176
15 November	163	195	120	15.4	20.3	12.6	228	239	218
16 November	147	170	118	15.5	19.3	12.6	218	235	203
17 November	156	171	145	15.7	21.3	12.2	221	239	206
18 November	157	177	130	14.4	16.8	13.2	207	227	181
19 November	146	169	131	15.9	18.7	13.2	214	238	198
20 November	165	203	123	15.0	18.2	13.2	213	226	201
21 November	187	212	152	14.7	17.2	13.2	240	281	213
22 November	175	192	142	14.8	18.8	12.6	234	272	195
23 November	174	194	148	14.7	18.8	12.7	234	273	195
24 November	159	172	137	14.1	17.8	11.8	219	233	199
25 November	164	181	139	13.8	17.9	12.3	234	272	212
26 November	185	210	152	14.5	21.5	12.0	260	291	206
27 November	187	209	148	14.5	18.1	13.4	266	291	223
28 November	180	207	139	15.6	22.2	12.3	265	286	156
29 November	184	215	129	15.7	22.2	12.7	270	288	227
30 November	170	200	137	14.8	19.8	11.6	225	288	155

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	0.0012	mg/m ³	0.2	15/02/2017
Carbon Dioxide (Wet)	13.5	%	-	15/02/2017
Carbon Monoxide	15	ppm	-	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	15/02/2017
Hydrogen Chloride	1.9	mg/m ³	100	15/02/2017
Mercury	0.0001	mg/m ³	0.2	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	degC	-	15/02/2017
Velocity	17.0	m/sec	-	15/02/2017
Volatile Organic Compounds (VOC) - Total	0.06	ppm	-	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/m ² /month		
	Ash	Combustible	Insolubles
E2	0.6	0.5	1.1
E4	0.3	0.3	0.6
E6	0.3	0.4	0.7
U6	0.5	<0.1	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	20.89					
010cm	22.51	8.16	35.1	89.8	6.16	2.50
050cm	22.54	8.26	35.1	90.8	6.23	
100cm	22.53	8.26	35.1	89.6	6.14	
150cm	22.54	8.25	35.1	89.4	6.11	
200cm	22.53	8.26	35.2	89.6	6.14	
250cm	22.53	8.27	35.2	87.2	5.98	
Bottom	22.52	8.31	35.2	93.9	6.51	

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	20.75					
010cm	23.10	8.04	35.6	83.1	5.63	3.00
050cm	23.14	7.83	35.6	86.5	5.85	
100cm	23.16	7.95	35.6	87.4	5.91	
150cm	23.18	8.03	35.6	86.9	5.89	
200cm	23.18	8.04	35.6	90.8	6.14	
250cm	23.18	8.06	35.6	90.5	6.12	
300cm	23.17	8.09	35.6	90.7	6.13	
350cm	23.17	8.11	35.6	92.3	6.24	
400cm	23.16	8.30	35.6	94.5	6.40	
450cm	23.17	8.17	35.6	96.2	6.51	
500cm	23.18	8.14	35.6	96.4	6.56	
550cm	23.16	8.16	35.6	94.1	6.35	
600cm	23.13	8.16	35.6	92.1	6.25	
650cm	23.02	8.18	35.6	94.5	6.41	
Bottom	22.95	8.19	35.7	89.1	6.09	

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	18.69					
010cm	21.54	7.71	34.5	101.2	7.11	2.75
050cm	21.43	7.69	34.4	103.6	7.27	
100cm	21.47	7.74	34.5	106.7	7.48	
150cm	21.47	7.79	34.5	106.9	7.49	
200cm	21.48	7.83	34.5	106.2	7.50	
250cm	21.51	7.87	34.5	110.3	7.72	
300cm	21.51	7.89	34.5	111.0	7.77	
350cm	21.52	7.93	34.5	108.7	7.60	
400cm	21.54	7.98	34.5	113.2	7.92	
450cm	21.53	8.00	34.5	112.2	7.85	
500cm	21.53	8.02	34.5	111.5	7.81	
550cm	21.52	8.04	34.5	109.5	7.67	
600cm	21.55	8.06	34.5	111.4	7.80	
650cm	21.54	8.08	34.5	109.6	7.67	
700cm	21.54	8.08	34.5	110.0	7.70	
750cm	21.54	8.09	34.5	110.3	7.72	
800cm	21.54	8.11	34.5	110.1	7.71	
850cm	21.54	8.12	34.5	108.6	7.62	
900cm	21.27	8.14	34.7	109.3	7.72	
Bottom	21.07	8.14	34.6	104.8	7.32	

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	19.04					
010cm	24.28	8.21	35.0	99.6	6.64	2.75
050cm	24.38	8.20	34.9	102.6	6.82	
100cm	24.43	8.27	35.0	102.4	6.82	
150cm	24.45	8.25	35.0	107.4	7.14	
200cm	24.46	8.26	35.0	109.4	7.28	
250cm	24.48	8.28	35.0	111.5	7.41	
300cm	24.45	8.29	35.0	109.8	7.30	
350cm	24.48	8.29	35.0	113.3	7.53	
400cm	24.47	8.29	35.0	112.9	7.51	
450cm	24.48	8.42	35.0	114.3	7.60	
500cm	24.46	8.34	35.1	112.1	7.47	
550cm	24.46	8.29	35.1	113.0	7.51	
Bottom	24.44	8.29	35.4	105.9	6.96	

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	-	02/11/2017
Copper	1.7	ug/L	-	02/11/2017
Iron	5	ug/L	-	02/11/2017
Lead	<0.1	ug/L	-	02/11/2017
Manganese	8.9	ug/L	-	02/11/2017
Nitrite and Nitrate as N	3530	ug/L	-	02/11/2017
Phosphorus Reactive as P - Total	630	ug/L	-	02/11/2017
Phosphorus as P - Total	711	ug/L	-	02/11/2017
Selenium	12.7	ug/L	-	02/11/2017
Suspended Solids (SS)	7000	ug/L	-	02/11/2017
Zinc	1	ug/L	-	02/11/2017
pH	8.41		-	02/11/2017

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	-	02/11/2017
Iron	7	ug/L	-	02/11/2017
Selenium	1	ug/L	-	02/11/2017
Temperature – Average	24.4	deg C	-	Nov 2017
Temperature – Minimum	21.2	deg C	-	Nov 2017
Temperature - Maximum	28.6	deg C	-	Nov 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	02/11/2017
Iron	6	ug/L	300	02/11/2017
Selenium	<1.0	ug/L	2	02/11/2017
Temperature – Average	30.9	deg C	35	Nov 2017
Temperature – Minimum	25.5	deg C	35	Nov 2017
Temperature - Maximum	35.0	deg C	35	Nov 2017
Maximum Daily Discharge from Ash Dam	18.11	ML	150	Nov 2017
Monthly Discharge from Ash Dam	123.9	ML	-	Nov 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	321	ug/L	-	02/11/2017
Phosphorus as P – Total	45	ug/L	-	02/11/2017
pH	7.13		-	02/11/2017