



Eraring Power Station - EPA Licence 1429

Rocky Point Rd, Morristown NSW 2264

Coal Unloader - EPA Licence 4297

Eraring Coal Delivery Facility, Construction Rd, Dora Creek NSW 2264

Environmental Monitoring Data

February 2016



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 - Feb	158	177	138	11	15	7	176	194	166
2 - Feb	126	141	117	12	17	8	169	187	153
3 - Feb	127	152	105	11	15	7	153	172	142
4 - Feb	128	155	110	13	17	10	166	184	137
5 - Feb	141	149	132	13	16	12	193	206	173
6 - Feb	154	168	129	13	16	11	164	201	137
7 - Feb	149	169	131	12	16	8	153	162	137
8 - Feb	161	209	118	12	17	8	149	162	126
9 - Feb	142	174	109	11	16	8	151	166	129
10 - Feb	141	166	104	10	14	7	152	161	146
11 - Feb	158	199	108	11	15	8	156	164	137
12 - Feb	126	166	101	11	14	8	156	165	144
13 - Feb	179	196	153	12	15	8	148	158	143
14 - Feb	165	193	142	12	16	8	144	155	123
15 - Feb	165	190	128	12	16	10	149	162	129
16 - Feb	159	192	129	11	14	10	148	169	103
17 - Feb	159	196	117	11	13	7	165	188	146
18 - Feb	165	187	121	10	14	8	155	171	127
19 - Feb	164	198	109	10	14	7	154	167	128
20 - Feb	148	168	114	13	19	8	151	169	128
21 - Feb	157	181	118	15	22	7	138	149	104
22 - Feb	137	153	123	14	18	10	156	169	144
23 - Feb	136	150	117	14	26	7	168	182	135
24 - Feb	134	145	116	19	28	6	190	206	167
25 - Feb	136	146	101	9	18	5	190	214	156
26 - Feb	149	174	114	11	15	8	186	211	151
27 - Feb	134	153	103	10	15	8	167	204	144
28 - Feb	150	170	116	11	14	8	197	222	160
29 - Feb	138	163	123	11	21	7	189	210	159

Unit 2 Boiler Continuous Emission Monitoring Summary

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

- 15th - 16th 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 - Feb	134	170	104	14	17	10	189	211	167
2 - Feb	126	136	110	15	18	13	175	194	164
3 - Feb	125	142	101	14	18	11	172	203	158
4 - Feb	153	193	103	16	20	14	175	206	143
5 - Feb	176	209	156	16	19	16	199	220	172
6 - Feb	190	207	165	17	20	15	177	211	157
7 - Feb	187	212	172	16	21	14	168	192	156
8 - Feb	162	188	139	15	18	12	161	177	144
9 - Feb	165	195	137	15	19	10	162	182	152
10 - Feb	165	200	107	13	16	9	170	200	161
11 - Feb	137	183	101	14	17	9	168	185	159
12 - Feb	129	164	103	14	18	9	166	178	156
13 - Feb	175	196	155	18	22	15	157	168	151
14 - Feb	153	171	128	16	21	13	161	170	145
15 - Feb	0	0	0	0	0	0	0	0	0
16 - Feb	0	0	0	0	0	0	0	0	0
17 - Feb	127	148	110	15	22	11	160	172	138
18 - Feb	139	160	114	18	32	15	166	176	151
19 - Feb	147	161	115	24	32	21	168	179	155
20 - Feb	116	128	104	25	34	22	168	186	153
21 - Feb	127	144	111	21	28	11	152	154	136
22 - Feb	131	152	102	14	16	12	168	180	145
23 - Feb	139	155	123	14	19	11	179	192	161
24 - Feb	125	134	108	13	16	8	210	232	187
25 - Feb	124	135	111	13	17	8	213	233	186
26 - Feb	120	129	112	14	17	13	193	209	176
27 - Feb	129	160	114	13	16	12	194	225	180
28 - Feb	143	170	117	14	17	12	209	233	190
29 - Feb	143	178	115	14	17	12	203	233	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% 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 - Feb	170	198	134	18	22	14	172	187	161
2 - Feb	144	160	128	18	22	15	171	182	162
3 - Feb	155	178	127	18	21	15	161	181	142
4 - Feb	162	185	132	18	21	16	158	175	140
5 - Feb	156	177	139	18	20	17	192	207	161
6 - Feb	138	147	126	18	21	16	160	175	144
7 - Feb	148	159	140	18	21	15	155	170	146
8 - Feb	162	200	139	18	23	14	151	168	137
9 - Feb	176	216	135	17	21	14	158	167	143
10 - Feb	163	194	130	17	22	15	159	168	148
11 - Feb	171	214	131	18	21	15	157	168	150
12 - Feb	140	169	124	17	21	14	158	168	145
13 - Feb	147	161	132	18	21	15	143	147	137
14 - Feb	139	165	127	17	20	14	143	152	136
15 - Feb	173	211	133	15	19	12	155	160	151
16 - Feb	171	213	111	16	19	14	154	182	100
17 - Feb	189	200	168	18	21	15	169	178	161
18 - Feb	196	221	143	17	22	14	157	170	149
19 - Feb	167	183	134	17	19	13	164	176	155
20 - Feb	150	161	143	17	20	15	165	193	143
21 - Feb	161	176	142	17	20	15	146	159	139
22 - Feb	163	182	136	17	22	15	155	167	142
23 - Feb	141	179	124	18	21	15	171	192	121
24 - Feb	154	172	127	17	22	13	189	200	181
25 - Feb	146	171	117	16	21	12	187	196	170
26 - Feb	132	152	122	17	19	16	190	210	174
27 - Feb	144	160	127	17	20	15	178	190	132
28 - Feb	146	166	132	19	22	16	192	206	114
29 - Feb	147	162	122	17	22	15	192	213	172

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% 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 - Feb	120	144	108	9	14	6	175	194	163
2 - Feb	111	123	105	8	13	5	166	185	148
3 - Feb	117	126	106	9	15	6	159	189	146
4 - Feb	125	152	113	11	21	6	157	167	139
5 - Feb	115	125	98	11	24	5	177	185	159
6 - Feb	107	121	101	6	10	5	160	189	143
7 - Feb	112	121	101	6	10	5	156	166	147
8 - Feb	127	158	103	6	7	6	167	177	159
9 - Feb	134	172	104	5	6	5	167	173	160
10 - Feb	137	170	101	7	10	6	168	175	164
11 - Feb	131	163	100	7	12	6	164	172	155
12 - Feb	123	149	103	7	9	6	168	176	156
13 - Feb	162	195	133	7	10	5	155	164	149
14 - Feb	158	213	124	7	10	5	160	172	151
15 - Feb	158	181	124	7	10	6	169	176	160
16 - Feb	149	178	128	7	10	6	174	193	156
17 - Feb	141	160	128	7	10	6	178	191	168
18 - Feb	155	179	132	7	11	6	170	187	159
19 - Feb	155	209	114	7	10	5	167	180	145
20 - Feb	158	204	142	6	10	6	164	182	152
21 - Feb	147	155	131	7	10	6	157	175	145
22 - Feb	150	160	143	7	10	6	152	162	135
23 - Feb	140	160	119	7	10	6	159	199	112
24 - Feb	135	157	120	7	10	6	189	224	154
25 - Feb	132	143	119	6	10	5	198	226	173
26 - Feb	131	144	117	6	9	5	163	178	150
27 - Feb	143	159	130	6	10	5	164	212	135
28 - Feb	143	161	122	7	9	5	190	235	153
29 - Feb	148	162	118	7	9	6	187	218	166

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	0.0019	mg/m3	0.20	07/02/2015
Carbon Dioxide (Wet)	8.0	%	-	07/02/2015
Carbon Monoxide	15.0	mg/m3	-	07/02/2015
Chlorine	1.00	mg/m3	300	07/02/2015
Copper	0.0019	mg/m3	-	07/02/2015
Dry Gas Density	1.4	kg/m3	-	07/02/2015
Fluoride As HF - Total	10.0	mg/m3	50	07/02/2015
Hazardous Substances (Metals) - Total	0.027	mg/m3	1.00	07/02/2015
Hydrogen Chloride	2.0	mg/m3	100.0	07/02/2015
Mercury	0.0013	mg/m3	0.200	07/02/2015
Moisture	6.0	%	-	07/02/2015
Particulates - Total	19.0	mg/m3	50	07/02/2015
Stack Gas Molecular Weight	30	kg/k-mole	-	07/02/2015
Temperature	114.3	degC	-	07/02/2015
Velocity	12.0	m/sec	-	07/02/2015
Volatile Organic Compounds (VOC) - Total	0.07	mg/m3	-	07/02/2015
Volumetric Flow Rate (Dry At STP)	301	m3/sec	-	07/02/2015

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	0.06	mg/m3	0.20	30/01/2016
Carbon Dioxide (Wet)	12.0	%	-	30/01/2016
Carbon Monoxide	1.00	mg/m3	-	30/01/2016
Chlorine	0.06	mg/m3	300	30/01/2016
Copper	0.0007	mg/m3	-	30/01/2016
Dry Gas Density	1.4	kg/m3	-	30/01/2016
Fluoride As HF - Total	9.2	mg/m3	50	30/01/2016
Hazardous Substances (Metals) - Total	0.07	mg/m3	1.00	30/01/2016
Hydrogen Chloride	0.80	mg/m3	100.0	30/01/2016
Mercury	0.0003	mg/m3	0.200	30/01/2016
Moisture	7.1	%	-	30/01/2016
Particulates - Total	17.0	mg/m3	50	30/01/2016
Stack Gas Molecular Weight	30	kg/k-mole	-	30/01/2016
Temperature	112.5	degC	-	30/01/2016
Velocity	13.5	m/sec	-	30/01/2016
Volatile Organic Compounds (VOC) - Total	1.8	mg/m3	-	30/01/2016
Volumetric Flow Rate (Dry At STP)	305	m3/sec	-	30/01/2016

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	18.0	mg/m3	50	03/05/2015
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	17.0	mg/m3	50	01/11/2014
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 Coal Unloader Dust Gauges

EPA Identification no. 18 - Depositional dust monitoring within 1 km of the coal handling operations

	Deposited Matter		
	g/m2/month		
	Ash	Combustible	Insolubles
U1	0.40	0.20	0.60
U2	0.40	0.10	0.50
U3	4.40	3.70	8.10
U4	0.50	0.30	0.80
U5	0.70	0.30	1.00
U6	0.40	0.20	0.60

Eraring Due Diligence Dust Gauges

EPA Identification no. 18 - Depositional dust monitoring within 1 km of the coal handling operations

	Deposited Matter		
	g/m2/month		
	Ash	Combustible	Insolubles
E1	0.60	0.40	1.00
E2	0.60	0.20	0.80
E3	0.50	0.20	0.70
E4	0.60	0.20	0.80
E5	0.40	0.10	0.50
E6	0.40	0.50	0.90

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	23.30					
010cm	25.11	8.90	31.10	86.70	5.85	2.75
050cm	25.27	8.94	31.10	88.70	5.97	
100cm	25.28	8.96	31.20	85.30	5.74	
150cm	25.24	8.97	31.20	85.40	5.75	
200cm	25.29	8.88	31.50	71.40	4.73	
250cm	25.54	8.78	31.80	59.70	3.93	
Bottom	25.55	8.79	32.00	49.70	3.27	

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	23.16					
010cm	26.28	8.88	31.00	106.10	7.01	3.25
050cm	26.50	8.95	31.00	95.30	6.34	
100cm	26.46	8.96	31.00	96.20	6.35	
150cm	26.40	8.98	31.00	93.80	6.21	
200cm	26.37	9.00	31.10	93.40	6.15	
250cm	26.29	9.00	31.10	92.90	6.14	
300cm	26.23	9.00	31.10	89.70	5.95	
350cm	26.10	9.01	31.10	92.40	6.14	
400cm	26.03	9.01	31.20	93.20	6.24	
450cm	25.98	9.00	31.20	88.60	5.90	
500cm	25.00	8.75	30.50	46.30	3.10	
550cm	24.22	8.70	30.20	38.50	2.59	
600cm	24.04	8.68	30.40	34.50	2.34	
650cm	23.74	8.63	33.40	25.20	1.71	
Bottom	23.75	8.63	34.00	18.80	1.27	

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	19.09					
010cm	24.61	8.92	32.20	117.80	7.96	3.25
050cm	24.75	8.93	32.10	98.50	6.57	
100cm	24.75	8.94	32.20	98.70	6.66	
150cm	24.82	8.95	32.10	100.90	6.82	
200cm	24.76	8.97	32.10	100.50	6.91	
250cm	24.81	8.96	32.10	100.40	6.75	
300cm	24.80	8.97	32.20	100.00	6.54	
350cm	24.84	8.97	32.20	97.30	6.47	
400cm	24.85	8.99	32.20	95.10	6.37	
450cm	24.75	8.96	32.40	90.40	6.10	
500cm	24.72	8.95	32.60	89.10	6.02	
550cm	24.63	8.93	32.80	85.50	5.72	
600cm	23.98	8.97	33.80	57.50	3.87	
650cm	23.83	8.76	33.90	52.70	3.57	
700cm	23.77	8.76	34.00	52.80	3.60	
750cm	23.77	8.77	34.10	53.20	3.59	
800cm	23.77	8.79	34.10	56.10	3.84	
850cm	23.75	8.84	34.10	61.30	4.21	
900cm	23.67	8.82	34.30	53.10	3.55	
950cm	23.65	8.76	34.40	49.30	3.34	
Bottom	23.64	8.75	34.50	33.50	2.23	

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	22.19					
010cm	27.38	8.82	31.40	99.30	6.34	2.25
050cm	27.63	8.86	31.40	102.70	6.62	
100cm	27.71	8.88	31.30	105.60	6.83	
150cm	27.71	8.90	31.30	105.20	6.85	
200cm	27.70	8.90	31.30	108.60	7.04	
250cm	27.66	8.90	31.30	105.90	6.79	
300cm	27.65	8.90	31.30	104.60	6.78	
350cm	27.61	8.89	31.30	105.30	6.85	
400cm	27.58	8.90	31.40	104.40	6.77	
450cm	27.55	8.90	31.40	103.10	6.67	
500cm	25.61	8.65	32.50	35.10	2.40	
550cm	24.42	8.47	33.00	20.80	1.40	
Bottom	24.39	8.47	32.90	16.80	1.13	

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	0.20	ug/L	-	01/02/2016
Copper	1.00	ug/L	-	01/02/2016
Iron	6.0	ug/L	-	01/02/2016
Lead	0.20	ug/L	-	01/02/2016
Manganese	40	ug/L	-	01/02/2016
Nitrite and Nitrate as N	36	ug/L	-	01/02/2016
Phosphorus Reactive as P - Total	10.0	ug/L	-	01/02/2016
Phosphorus as P - Total	21.0	ug/L	-	01/02/2016
Selenium	18.0	ug/L	-	01/02/2016
Suspended Solids (SS)	18.0	mg/L	-	01/02/2016
Zinc	5.0	ug/L	-	01/02/2016
pH	9.3	-	-	01/02/2016

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	1.00	ug/L	-	01/02/2016
Iron	8.0	ug/L	-	01/02/2016
Selenium	1.00	ug/L	-	01/02/2016
Temperature - Average	26.8	deg C	-	Feb 2016
Temperature - Minimum	24.3	deg C	-	Feb 2016
Temperature - Maximum	29.0	deg C	-	Feb 2016

Eraring Cooling Water Outlet Canal

EPA Identification no. 1 - Cooling water outlet canal to Myuna Bay

- 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 37.5 degC for up to 131 hrs over the reporting period.

<u>Name</u>	<u>Reading</u>	<u>Units</u>	<u>Licence Limit</u>	<u>Date</u>
Copper	1.00	ug/L	5	01/02/2016
Iron	12.0	ug/L	300	01/02/2016
Selenium	1.00	ug/L	2	01/02/2016
Temperature - Average	33.1	deg C	35	Feb 2016
Temperature - Minimum	28.6	deg C	35	Feb 2016
Temperature - Maximum	36.8	deg C	35	Feb 2016
Maximum Daily Discharge from Ash Dam	19.6	ML	150	Feb 2016
Monthly Discharge from Ash Dam	268	ML	-	Feb 2016

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	127	ug/L	-	01/02/2016
Phosphorus as P - Total	60	ug/L	-	01/02/2016
pH	6.8	-	-	01/02/2016