



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

November 2014



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 - Nov	164	197	144	6	8	4	182	190	166
2 - Nov	198	222	164	10	14	7	180	188	168
3 - Nov	190	212	164	12	20	7	180	192	175
4 - Nov	174	196	154	9	18	6	191	211	171
5 - Nov	164	210	140	10	17	6	189	204	157
6 - Nov	141	161	118	12	18	7	200	210	189
7 - Nov	146	179	120	11	18	6	204	228	187
8 - Nov	164	182	153	7	13	5	197	221	178
9 - Nov	182	212	163	7	10	6	177	187	169
10 - Nov	163	184	149	11	15	6	192	205	178
11 - Nov	194	222	157	12	18	7	198	223	168
12 - Nov	183	223	160	14	20	9	194	216	174
13 - Nov	178	203	154	13	18	10	199	218	166
14 - Nov	173	195	142	11	21	6	213	241	175
15 - Nov	160	174	147	8	14	5	200	220	179
16 - Nov	174	205	148	7	12	3	219	260	192
17 - Nov	166	191	147	10	16	7	191	208	178
18 - Nov	184	210	158	11	20	8	195	229	166
19 - Nov	184	205	150	12	19	8	195	222	172
20 - Nov	169	190	145	9	15	6	186	191	179
21 - Nov	167	194	130	8	12	4	192	213	167
22 - Nov	167	184	147	6	11	4	172	196	164
23 - Nov	174	202	134	8	12	4	178	201	166
24 - Nov	188	215	136	9	13	4	186	205	175
25 - Nov	163	195	69	10	16	5	196	214	178
26 - Nov	170	198	125	10	14	7	169	180	156
27 - Nov	148	174	125	9	13	5	180	191	170
28 - Nov	201	243	170	11	16	9	172	192	163
29 - Nov	208	241	173	10	15	6	172	194	152
30 - Nov	218	243	191	8	12	5	151	155	141

Unit 2 Boiler Continuous Emission Monitoring Summary

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

- - Unit out of service for scheduled maintenance.

	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 - Nov	0	0	0	0	0	0	0	0	0
2 - Nov	0	0	0	0	0	0	0	0	0
3 - Nov	0	0	0	0	0	0	0	0	0
4 - Nov	0	0	0	0	0	0	0	0	0
5 - Nov	0	0	0	0	0	0	0	0	0
6 - Nov	0	0	0	0	0	0	0	0	0
7 - Nov	0	0	0	0	0	0	0	0	0
8 - Nov	0	0	0	0	0	0	0	0	0
9 - Nov	0	0	0	0	0	0	0	0	0
10 - Nov	0	0	0	0	0	0	0	0	0
11 - Nov	0	0	0	0	0	0	0	0	0
12 - Nov	0	0	0	0	0	0	0	0	0
13 - Nov	0	0	0	0	0	0	0	0	0
14 - Nov	0	0	0	0	0	0	0	0	0
15 - Nov	0	0	0	0	0	0	0	0	0
16 - Nov	0	0	0	0	0	0	0	0	0
17 - Nov	0	0	0	0	0	0	0	0	0
18 - Nov	0	0	0	0	0	0	0	0	0
19 - Nov	0	0	0	0	0	0	0	0	0
20 - Nov	0	0	0	0	0	0	0	0	0
21 - Nov	0	0	0	0	0	0	0	0	0
22 - Nov	0	0	0	0	0	0	0	0	0
23 - Nov	0	0	0	0	0	0	0	0	0
24 - Nov	0	0	0	0	0	0	0	0	0
25 - Nov	0	0	0	0	0	0	0	0	0
26 - Nov	0	0	0	0	0	0	0	0	0
27 - Nov	0	0	0	0	0	0	0	0	0
28 - Nov	0	0	0	0	0	0	0	0	0
29 - Nov	0	0	0	0	0	0	0	0	0
30 - Nov	0	0	0	0	0	0	0	0	0

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 - Nov	174	200	145	3	5	2	190	200	176
2 - Nov	163	174	148	3	4	3	187	193	178
3 - Nov	183	214	150	4	7	2	191	195	183
4 - Nov	159	184	144	4	7	3	206	236	180
5 - Nov	157	176	134	3	6	2	199	216	181
6 - Nov	148	161	130	3	5	2	215	222	203
7 - Nov	171	197	141	3	6	2	211	239	193
8 - Nov	145	163	136	3	5	2	221	238	205
9 - Nov	163	180	136	3	5	2	217	236	199
10 - Nov	168	185	153	3	5	2	209	228	186
11 - Nov	191	220	142	4	8	3	199	210	187
12 - Nov	177	205	136	4	8	2	198	211	186
13 - Nov	165	195	139	3	6	2	217	250	191
14 - Nov	160	198	135	3	8	2	233	264	210
15 - Nov	152	157	145	5	5	4	213	235	188
16 - Nov	142	156	134	5	7	3	212	249	192
17 - Nov	175	195	149	4	7	2	200	222	179
18 - Nov	174	185	164	4	6	2	192	207	181
19 - Nov	215	261	167	5	9	2	202	222	182
20 - Nov	201	238	140	4	8	3	186	196	166
21 - Nov	194	229	162	4	7	2	194	209	182
22 - Nov	195	238	167	4	6	3	181	199	172
23 - Nov	195	274	119	4	7	2	182	204	165
24 - Nov	164	197	120	4	7	3	185	199	167
25 - Nov	187	226	126	5	8	3	197	208	176
26 - Nov	201	248	138	5	8	3	170	190	157
27 - Nov	191	238	99	4	8	2	180	189	152
28 - Nov	176	218	136	4	10	2	178	192	169
29 - Nov	161	192	137	3	5	2	178	195	163
30 - Nov	203	214	183	5	8	2	166	173	160

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 - Nov	165	194	141	4	7	3	172	186	159
2 - Nov	148	178	120	5	8	4	166	173	155
3 - Nov	180	212	125	6	8	5	165	175	151
4 - Nov	166	188	142	5	8	4	177	201	150
5 - Nov	161	190	147	5	9	4	177	193	157
6 - Nov	145	159	129	5	9	4	184	196	159
7 - Nov	150	174	129	5	8	4	182	197	159
8 - Nov	164	179	154	5	10	4	177	202	150
9 - Nov	171	187	146	5	9	3	158	163	147
10 - Nov	167	196	143	5	8	4	175	192	150
11 - Nov	200	232	157	5	9	5	172	191	146
12 - Nov	177	205	144	6	10	4	175	200	153
13 - Nov	162	181	133	5	10	4	179	208	133
14 - Nov	152	172	110	5	11	3	200	238	166
15 - Nov	122	130	104	4	7	3	168	183	154
16 - Nov	123	131	117	5	9	3	184	208	160
17 - Nov	149	181	122	5	10	4	166	188	151
18 - Nov	194	216	173	5	8	4	169	201	137
19 - Nov	179	224	134	5	8	5	186	220	164
20 - Nov	185	224	146	5	9	4	178	188	167
21 - Nov	178	205	144	4	8	3	190	215	165
22 - Nov	173	220	131	5	8	4	165	176	145
23 - Nov	173	212	143	4	9	3	167	178	156
24 - Nov	164	193	139	4	8	3	168	178	160
25 - Nov	165	203	133	4	9	3	184	200	168
26 - Nov	175	202	141	5	9	4	158	177	150
27 - Nov	171	207	131	4	9	3	151	158	132
28 - Nov	156	186	131	5	7	4	158	173	146
29 - Nov	151	196	132	5	9	3	161	177	139
30 - Nov	170	183	153	4	9	3	143	160	135

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	23/02/2014
Carbon Dioxide (Wet)	10.2	%	-	23/02/2014
Carbon Monoxide	2.9	mg/m3	-	23/02/2014
Chlorine	0.020	mg/m3	300	23/02/2014
Copper	0.0013	mg/m3	-	23/02/2014
Dry Gas Density	0.93	kg/m3	-	23/02/2014
Fluoride As HF - Total	6.4	mg/m3	50	23/02/2014
Hazardous Substances (Metals) - Total	0.07	mg/m3	1.00	23/02/2014
Hydrogen Chloride	3.1	mg/m3	100.0	23/02/2014
Mercury	0.0011	mg/m3	0.200	23/02/2014
Moisture	7.1	%	-	23/02/2014
Particulates - Total	7.3	mg/m3	50	23/02/2014
Stack Gas Molecular Weight	29	kg/k-mole	-	23/02/2014
Temperature	109.0	degC	-	23/02/2014
Velocity	11.8	m/sec	-	23/02/2014
Volatile Organic Compounds (VOC) - Total	4.7	mg/m3	-	23/02/2014
Volumetric Flow Rate (Dry At STP)	283	m3/sec	-	23/02/2014

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	0.0009	mg/m3	0.20	24/08/2014
Carbon Dioxide (Wet)	7.7	%	-	24/08/2014
Carbon Monoxide	0.90	mg/m3	-	06/05/2013
Chlorine	1.8	mg/m3	300	24/08/2014
Copper	0.0009	mg/m3	-	24/08/2014
Dry Gas Density	1.4	kg/m3	-	24/08/2014
Fluoride As HF - Total	7.0	mg/m3	50	24/08/2014
Hazardous Substances (Metals) - Total	0.014	mg/m3	1.00	24/08/2014
Hydrogen Chloride	1.8	mg/m3	100.0	24/08/2014
Mercury	0.00000	mg/m3	0.200	24/08/2014
Moisture	4.9	%	-	24/08/2014
Particulates - Total	13.0	mg/m3	50	24/08/2014
Stack Gas Molecular Weight	30	kg/k-mole	-	24/08/2014
Temperature	113.0	degC	-	24/08/2014
Velocity	10.5	m/sec	-	24/08/2014
Volatile Organic Compounds (VOC) - Total	0.08	mg/m3	-	24/08/2014
Volumetric Flow Rate (Dry At STP)	255	m3/sec	-	24/08/2014

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	0.0011	mg/m3	0.20	05/08/2013
Carbon Dioxide (Wet)	10.3	%	-	05/08/2013
Carbon Monoxide	9.9	mg/m3	-	05/08/2013
Chlorine	0.30	mg/m3	200	05/08/2013
Copper	0.0011	mg/m3	-	05/08/2013
Dry Gas Density	0.94	kg/m3	-	05/08/2013
Fluoride As HF - Total	9.6	mg/m3	50	05/08/2013
Hazardous Substances (Metals) - Total	0.06	mg/m3	1.00	05/08/2013
Hydrogen Chloride	4.1	mg/m3	100.0	05/08/2013
Mercury	0.0007	mg/m3	0.200	05/08/2013
Moisture	6.7	%	-	05/08/2013
Particulates - Total	15.0	mg/m3	50	05/08/2013
Stack Gas Molecular Weight	29	kg/k-mole	-	05/08/2013
Temperature	103.0	degC	-	05/08/2013
Velocity	11.1	m/sec	-	05/08/2013
Volatile Organic Compounds (VOC) - Total	5.7	mg/m3	-	05/08/2013
Volumetric Flow Rate (Dry At STP)	270	m3/sec	-	05/08/2013

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	0.0010	mg/m3	0.20	13/10/2013
Carbon Dioxide (Wet)	9.4	%	-	13/10/2013
Carbon Monoxide	9.3	mg/m3	-	13/10/2013
Chlorine	0.040	mg/m3	200	13/10/2013
Copper	0.0010	mg/m3	-	13/10/2013
Dry Gas Density	0.94	kg/m3	-	13/10/2013
Fluoride As HF - Total	7.5	mg/m3	50	13/10/2013
Hazardous Substances (Metals) - Total	0.027	mg/m3	1.00	13/10/2013
Hydrogen Chloride	2.8	mg/m3	100.0	13/10/2013
Mercury	0.0022	mg/m3	0.200	13/10/2013
Moisture	6.5	%	-	13/10/2013
Particulates - Total	7.9	mg/m3	50	13/10/2013
Stack Gas Molecular Weight	29	kg/k-mole	-	13/10/2013
Temperature	104.0	degC	-	13/10/2013
Velocity	15.4	m/sec	-	13/10/2013
Volatile Organic Compounds (VOC) - Total	4.7	mg/m3	-	13/10/2013
Volumetric Flow Rate (Dry At STP)	375	m3/sec	-	13/10/2013

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	0.50	0.30	0.80
U2	0.50	0.30	0.80
U3	1.30	4.00	5.30
U4	0.80	0.70	1.50
U5	0.30	0.30	0.60
U6	0.70	0.40	1.10

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	0.30	0.90
E2	0.50	0.30	0.80
E3	0.70	0.20	0.90
E4	1.20	1.20	2.40
E5	0.50	0.20	0.70
E6	0.30	0.50	0.80

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	20.04					
010cm	23.56	8.37	34.70	69.70	4.60	0.50
050cm	23.54	8.38	34.70	64.90	4.40	
100cm	23.49	8.38	34.80	64.60	4.38	
150cm	23.36	8.38	34.80	64.50	4.37	
200cm	23.22	8.37	34.80	63.50	4.32	
Bottom	23.16	8.36	34.80	62.20	4.23	

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	20.00					
010cm	23.06	8.30	33.40	68.10	4.62	1.25
050cm	23.09	8.38	33.50	66.20	4.54	
100cm	23.12	8.41	33.50	64.70	4.45	
150cm	23.11	8.39	33.60	65.50	4.49	
200cm	23.11	8.38	33.60	64.60	4.40	
250cm	23.12	8.39	33.70	64.80	4.44	
300cm	23.12	8.40	33.70	64.20	4.40	
350cm	23.09	8.40	33.80	64.70	4.43	
400cm	23.08	8.41	33.80	63.20	4.33	
450cm	23.09	8.42	33.90	64.10	4.39	
500cm	23.06	8.42	33.90	63.30	4.34	
550cm	23.04	8.40	34.00	61.40	4.20	
600cm	23.00	8.41	34.00	61.80	4.24	
650cm	22.98	8.40	34.00	59.10	4.06	
Bottom	23.04	8.41	34.00	59.00	4.03	

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	20.06					
010cm	21.50	8.19	35.90	100.00	6.86	1.63
050cm	21.54	8.21	35.80	95.50	6.60	
100cm	21.55	8.25	35.80	94.10	6.52	
150cm	21.57	8.21	35.80	94.80	6.57	
200cm	21.57	8.21	35.70	94.60	6.59	
250cm	21.57	8.21	35.70	88.20	6.06	
300cm	21.56	8.20	35.70	90.00	6.21	
350cm	21.58	8.20	35.70	90.40	6.30	
400cm	21.57	8.20	35.70	88.00	6.06	
450cm	21.56	8.19	35.70	90.10	6.25	
500cm	21.50	8.19	35.70	89.80	6.24	
550cm	21.57	8.15	35.80	88.40	6.15	
600cm	21.55	8.22	35.80	85.90	5.97	
650cm	21.54	8.21	35.80	86.40	6.00	
700cm	21.53	7.63	35.80	85.80	5.97	
750cm	21.43	8.25	35.10	94.20	6.58	
800cm	21.40	8.25	35.10	94.70	6.63	
850cm	20.94	8.27	35.20	93.90	6.63	
900cm	20.13	8.26	35.60	91.90	6.59	
Bottom	19.48	8.24	35.80	83.70	6.03	

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	20.27					
010cm	23.10	8.21	34.00	130.00	8.66	2.16
050cm	23.36	8.21	34.50	120.40	8.17	
100cm	23.41	8.23	34.50	117.70	7.99	
150cm	23.40	8.25	34.60	125.90	8.57	
200cm	23.12	8.24	34.60	132.10	9.00	
250cm	23.07	8.24	34.60	134.60	9.19	
300cm	22.94	8.24	34.60	137.80	9.41	
350cm	22.92	8.24	34.70	138.30	9.46	
400cm	22.90	8.24	34.70	136.00	9.29	
450cm	22.90	8.23	34.80	136.50	9.32	
500cm	22.90	8.23	34.80	120.50	8.22	
550cm	22.90	8.22	34.90	116.40	7.92	
600cm	22.92	8.21	34.90	81.90	5.62	
Bottom	22.92	8.19	35.00	79.10	5.40	

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	-	06/11/2014
Copper	0.80	ug/L	-	06/11/2014
Iron	5.0	ug/L	-	06/11/2014
Lead	0.20	ug/L	-	06/11/2014
Manganese	13.0	ug/L	-	06/11/2014
Nitrite and Nitrate as N	236	ug/L	-	06/11/2014
Phosphorus Reactive as P - Total	56	ug/L	-	06/11/2014
Phosphorus as P - Total	98	ug/L	-	06/11/2014
Selenium	34	ug/L	-	06/11/2014
Suspended Solids (SS)	5.0	mg/L	-	06/11/2014
Zinc	5.0	ug/L	-	06/11/2014
pH	9.0	-	-	06/11/2014

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	-	06/11/2014
Iron	6.0	ug/L	-	06/11/2014
Selenium	1.00	ug/L	-	06/11/2014
Temperature - Average	24.7	deg C	-	Nov 2014
Temperature - Minimum	22.2	deg C	-	Nov 2014
Temperature - Maximum	27.9	deg C	-	Nov 2014

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	2.00	ug/L	5	06/11/2014
Iron	7.0	ug/L	300	06/11/2014
Selenium	1.00	ug/L	2	06/11/2014
Temperature - Average	31.1	deg C	35	Nov 2014
Temperature - Minimum	26.3	deg C	35	Nov 2014
Temperature - Maximum	36.3	deg C	35	Nov 2014
Maximum Daily Discharge from Ash Dam	16.6	ML	150000	Nov 2014
Monthly Discharge from Ash Dam	163	ML	-	Nov 2014

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	30	ug/L	-	06/11/2014
Phosphorus as P - Total	197	ug/L	-	06/11/2014
pH	6.9	-	-	06/11/2014