



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

August 2015



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 - Aug	134	156	120	13	19	9	198	231	162
2 - Aug	140	147	129	11	15	7	158	172	153
3 - Aug	149	234	112	12	16	9	163	173	155
4 - Aug	159	194	126	14	20	11	171	184	145
5 - Aug	170	205	125	13	21	10	176	185	170
6 - Aug	155	184	126	13	23	9	169	179	163
7 - Aug	147	177	112	13	21	10	182	199	166
8 - Aug	148	188	122	14	20	11	171	210	153
9 - Aug	149	191	126	14	19	10	203	235	185
10 - Aug	153	197	127	12	20	7	212	245	183
11 - Aug	159	207	131	12	21	9	194	238	181
12 - Aug	171	217	145	13	26	8	190	203	171
13 - Aug	156	189	125	12	21	8	188	200	170
14 - Aug	155	189	123	13	21	8	179	189	169
15 - Aug	171	227	140	14	20	9	169	188	154
16 - Aug	168	177	156	14	27	7	174	214	153
17 - Aug	167	193	134	13	16	9	200	219	181
18 - Aug	152	177	130	13	18	10	207	222	193
19 - Aug	153	188	107	14	23	10	207	223	186
20 - Aug	150	172	122	13	25	8	197	226	182
21 - Aug	138	163	109	12	28	7	211	222	186
22 - Aug	127	163	109	10	17	7	176	185	166
23 - Aug	124	161	110	13	18	9	198	235	174
24 - Aug	154	198	123	14	17	10	207	225	188
25 - Aug	150	190	130	11	17	7	181	192	172
26 - Aug	155	184	127	12	17	8	171	185	165
27 - Aug	157	184	140	12	17	9	169	175	163
28 - Aug	156	187	139	13	19	9	169	176	161
29 - Aug	138	176	113	13	17	10	164	169	159
30 - Aug	155	177	141	14	19	11	163	165	158
31 - Aug	153	188	131	13	18	10	165	174	156

Unit 2 Boiler Continuous Emission Monitoring Summary

EPA Identification no. 12 - Air emissions monitoring, Boiler 2 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 - Aug	128	143	108	13	18	9	194	209	179
2 - Aug	119	133	101	11	15	9	159	179	148
3 - Aug	128	186	101	12	14	9	155	169	145
4 - Aug	149	183	122	12	17	10	154	164	140
5 - Aug	160	176	137	12	16	9	155	165	143
6 - Aug	146	166	127	12	16	9	167	187	140
7 - Aug	148	183	120	12	16	10	168	188	147
8 - Aug	144	190	122	13	17	10	164	185	142
9 - Aug	132	166	109	14	18	10	173	222	145
10 - Aug	142	159	120	12	18	10	191	223	170
11 - Aug	129	149	104	12	16	8	159	191	148
12 - Aug	124	138	106	12	18	9	178	193	158
13 - Aug	133	149	125	12	15	9	173	188	158
14 - Aug	131	148	108	12	17	10	170	185	160
15 - Aug	142	174	111	15	20	11	170	195	157
16 - Aug	115	125	105	15	19	11	152	169	145
17 - Aug	119	149	106	13	21	10	180	222	159
18 - Aug	133	168	103	12	16	10	187	231	161
19 - Aug	120	153	100	13	18	10	183	210	171
20 - Aug	111	127	100	13	19	11	179	207	159
21 - Aug	114	128	101	14	22	10	183	199	163
22 - Aug	117	145	100	13	17	9	166	178	156
23 - Aug	114	146	101	16	19	11	193	234	156
24 - Aug	114	129	102	17	20	13	223	243	187
25 - Aug	118	151	103	14	19	11	172	189	161
26 - Aug	117	137	102	15	18	11	167	178	158
27 - Aug	121	134	101	17	21	13	163	175	155
28 - Aug	128	141	107	18	23	14	158	166	151
29 - Aug	129	140	115	15	24	9	158	165	150
30 - Aug	121	135	106	13	17	10	155	163	149
31 - Aug	126	145	113	12	15	10	158	171	147

Unit 3 Boiler Continuous Emission Monitoring Summary

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

- 1st - 11th August - Sox instrument out of order.

	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 - Aug	201	228	162	10	12	8	0	0	0
2 - Aug	230	249	180	9	11	8	0	0	0
3 - Aug	207	228	183	10	17	8	0	0	0
4 - Aug	206	235	182	11	15	8	0	0	0
5 - Aug	214	258	188	11	15	8	0	0	0
6 - Aug	198	218	173	10	14	7	0	0	0
7 - Aug	196	226	163	11	14	8	0	0	0
8 - Aug	197	262	159	11	15	8	0	0	0
9 - Aug	187	232	144	10	13	8	0	0	0
10 - Aug	184	222	149	10	14	8	0	0	0
11 - Aug	166	201	141	10	13	8	0	0	0
12 - Aug	165	205	128	10	13	8	187	193	158
13 - Aug	158	204	128	10	13	8	179	192	151
14 - Aug	159	181	129	11	14	9	183	193	153
15 - Aug	182	239	150	11	13	9	173	192	146
16 - Aug	186	215	169	10	12	9	172	212	155
17 - Aug	183	222	160	10	12	8	195	225	177
18 - Aug	178	220	146	10	13	8	211	224	191
19 - Aug	184	216	151	11	13	8	210	224	198
20 - Aug	180	225	139	11	15	7	197	206	187
21 - Aug	153	172	138	11	14	8	205	221	182
22 - Aug	144	158	129	10	12	8	191	215	168
23 - Aug	153	177	131	10	13	9	213	259	163
24 - Aug	173	206	158	10	12	9	217	248	194
25 - Aug	184	227	163	10	12	8	194	222	177
26 - Aug	177	222	153	10	12	8	185	197	170
27 - Aug	189	229	139	11	16	9	180	187	167
28 - Aug	189	229	150	11	15	8	178	185	163
29 - Aug	177	219	149	12	14	9	175	182	165
30 - Aug	179	221	158	11	14	9	173	185	156
31 - Aug	191	243	137	11	14	9	172	194	156

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 - Aug	209	248	156	4	7	3	164	202	133
2 - Aug	215	243	159	4	8	3	134	145	119
3 - Aug	166	198	136	4	9	3	146	169	120
4 - Aug	173	221	135	5	10	3	157	171	135
5 - Aug	189	234	162	5	8	3	161	171	144
6 - Aug	184	204	170	5	9	3	157	174	129
7 - Aug	176	209	160	5	10	3	172	188	151
8 - Aug	189	207	174	5	9	3	152	187	122
9 - Aug	168	191	152	4	8	3	160	196	138
10 - Aug	187	244	157	4	9	3	185	215	162
11 - Aug	169	226	145	5	9	3	167	190	142
12 - Aug	187	230	141	5	9	2	167	193	147
13 - Aug	162	209	120	4	8	3	172	201	130
14 - Aug	154	204	120	5	9	3	167	190	136
15 - Aug	182	202	143	6	11	4	147	176	133
16 - Aug	165	184	156	4	8	3	129	154	113
17 - Aug	179	219	150	4	7	3	155	208	125
18 - Aug	165	208	135	4	9	3	189	206	171
19 - Aug	175	237	136	5	10	3	191	217	169
20 - Aug	165	212	134	5	10	4	182	214	154
21 - Aug	156	182	130	5	9	3	182	211	162
22 - Aug	191	213	151	4	7	3	158	168	144
23 - Aug	202	232	147	4	10	3	175	210	150
24 - Aug	189	218	161	4	10	3	190	225	170
25 - Aug	194	233	160	4	8	3	165	184	144
26 - Aug	177	229	144	5	10	3	159	175	147
27 - Aug	175	213	154	7	12	3	163	176	139
28 - Aug	183	220	160	7	12	4	156	166	141
29 - Aug	166	220	146	8	13	5	153	166	142
30 - Aug	167	219	146	9	14	6	155	169	146
31 - Aug	178	224	151	9	13	6	157	168	145

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	0.00010	mg/m3	0.20	24/08/2014
Carbon Dioxide (Wet)	7.6	%	-	24/08/2014
Carbon Monoxide	128	mg/m3	-	24/08/2014
Chlorine	1.9	mg/m3	300	24/08/2014
Copper	0.0010	mg/m3	-	24/08/2014
Dry Gas Density	1.4	kg/m3	-	24/08/2014
Fluoride As HF - Total	7.5	mg/m3	50	24/08/2014
Hazardous Substances (Metals) - Total	0.015	mg/m3	1.00	24/08/2014
Hydrogen Chloride	1.9	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	14.0	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	0.07	mg/m3	-	24/08/2014
Volumetric Flow Rate (Dry At STP)	239	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	0.0005	mg/m3	0.20	03/05/2015
Carbon Dioxide (Wet)	7.8	%	-	03/05/2015
Carbon Monoxide	30	mg/m3	-	03/05/2015
Chlorine	0.036	mg/m3	200	03/05/2015
Copper	0.0012	mg/m3	-	03/05/2015
Dry Gas Density	1.4	kg/m3	-	03/05/2015
Fluoride As HF - Total	5.4	mg/m3	50	03/05/2015
Hazardous Substances (Metals) - Total	0.0020	mg/m3	1.00	03/05/2015
Hydrogen Chloride	3.9	mg/m3	100.0	03/05/2015
Mercury	0.0003	mg/m3	0.200	03/05/2015
Moisture	6.0	%	-	03/05/2015
Particulates - Total	18.0	mg/m3	50	03/05/2015
Stack Gas Molecular Weight	30	kg/k-mole	-	03/05/2015
Temperature	113.8	degC	-	03/05/2015
Velocity	11.0	m/sec	-	03/05/2015
Volatile Organic Compounds (VOC) - Total	0.65	mg/m3	-	03/05/2015
Volumetric Flow Rate (Dry At STP)	254	m3/sec	-	03/05/2015

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	0.0015	mg/m3	0.20	01/11/2014
Carbon Dioxide (Wet)	12.3	%	-	01/11/2014
Carbon Monoxide	17.0	mg/m3	-	01/11/2014
Chlorine	1.00	mg/m3	200	01/11/2014
Copper	0.0001	mg/m3	-	01/11/2014
Dry Gas Density	1.4	kg/m3	-	01/11/2014
Fluoride As HF - Total	9.0	mg/m3	50	01/11/2014
Hazardous Substances (Metals) - Total	0.0040	mg/m3	1.00	01/11/2014
Hydrogen Chloride	1.3	mg/m3	100.0	01/11/2014
Mercury	0.0003	mg/m3	0.200	01/11/2014
Moisture	2.9	%	-	01/11/2014
Particulates - Total	17.0	mg/m3	50	01/11/2014
Stack Gas Molecular Weight	30	kg/k-mole	-	01/11/2014
Temperature	111.4	degC	-	01/11/2014
Velocity	14.0	m/sec	-	01/11/2014
Volatile Organic Compounds (VOC) - Total	0.24	mg/m3	-	01/11/2014
Volumetric Flow Rate (Dry At STP)	318	m3/sec	-	01/11/2014

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	0.70	0.30	1.00
U2	0.40	0.10	0.50
U3	1.20	1.70	2.90
U4	0.50	0.40	0.90
U5	0.70	0.20	0.90
U6	0.70	0.80	1.50

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	1.10	0.60	1.70
E2	0.50	0.20	0.70
E3	0.20	0.20	0.40
E4	0.40	0.20	0.60
E5	11.30	1.40	12.70
E6	1.20	0.80	2.00

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	13.55					
010cm	14.58	8.43	35.20	102.90	8.16	3.00
050cm	14.72	8.50	35.20	111.30	8.81	
100cm	14.74	8.50	35.10	115.30	9.13	
150cm	14.74	8.52	35.20	121.60	9.62	
200cm	14.74	8.53	35.20	127.10	10.04	
250cm	14.75	8.55	35.20	131.70	10.42	
Bottom	14.77	8.57	35.20	97.20	7.64	

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	14.01					
010cm	14.77	8.50	35.10	105.80	8.37	2.25
050cm	14.82	8.51	34.90	106.50	8.42	
100cm	14.83	8.53	35.00	101.60	8.02	
150cm	14.84	8.58	35.00	101.10	7.99	
200cm	14.83	8.57	35.00	101.20	8.00	
250cm	14.83	8.58	35.00	100.60	7.96	
300cm	14.82	8.58	35.00	98.90	7.82	
350cm	14.78	8.60	35.00	100.20	7.92	
400cm	14.75	8.61	35.00	98.20	7.77	
450cm	14.74	8.61	35.10	98.90	7.82	
500cm	14.81	8.61	35.20	97.70	7.70	
550cm	14.88	8.62	35.40	97.40	7.66	
600cm	14.85	8.62	35.70	96.30	7.56	
650cm	14.80	8.62	35.70	95.30	7.51	
700cm	14.78	8.62	35.70	94.80	7.45	
750cm	14.78	8.62	35.70	92.50	7.28	
Bottom	14.78	8.61	35.60	84.70	6.67	

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	13.36					
010cm	14.19	8.48	35.90	111.80	8.88	2.75
050cm	14.23	8.51	35.80	116.70	9.28	
100cm	14.26	8.53	35.80	121.70	9.68	
150cm	14.25	8.54	35.70	128.30	10.20	
200cm	14.21	8.56	35.70	132.80	10.57	
250cm	14.21	8.58	35.70	138.20	11.00	
300cm	14.23	8.59	35.70	143.40	11.41	
350cm	14.23	8.59	35.80	147.80	11.74	
400cm	14.31	8.60	35.80	152.70	12.11	
450cm	14.31	8.60	35.80	155.10	12.31	
500cm	14.33	8.62	35.80	158.70	12.58	
550cm	14.33	8.62	35.90	160.80	12.77	
600cm	14.34	8.64	35.80	163.90	13.00	
650cm	14.35	8.64	35.90	165.90	13.15	
700cm	14.35	8.63	35.90	166.90	13.23	
750cm	14.42	8.63	35.90	167.40	13.24	
800cm	14.53	8.65	36.00	167.80	13.24	
850cm	14.67	8.65	36.10	167.30	13.16	
900cm	15.06	8.65	36.30	165.10	12.88	
950cm	15.12	8.65	36.40	101.40	7.86	
Bottom	15.25	8.64	36.50	96.00	7.41	

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	12.84					
010cm	16.23	8.43	35.00	104.60	8.01	2.25
050cm	16.38	8.48	34.90	113.60	8.70	
100cm	16.39	8.51	35.00	115.10	8.82	
150cm	16.43	8.51	35.00	105.80	8.08	
200cm	16.52	8.54	35.00	110.10	8.39	
250cm	16.42	8.47	35.40	109.30	8.34	
300cm	16.46	8.52	35.40	111.60	8.54	
350cm	16.46	8.54	35.40	112.80	8.62	
400cm	16.47	8.54	35.40	114.60	8.74	
450cm	15.78	8.58	35.50	102.20	7.84	
500cm	15.65	8.57	35.70	96.10	7.49	
550cm	15.35	8.58	35.80	94.50	7.33	
Bottom	15.32	8.57	35.80	87.20	6.79	

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	-	04/08/2015
Copper	2.0	ug/L	-	04/08/2015
Iron	6.0	ug/L	-	04/08/2015
Lead	0.20	ug/L	-	04/08/2015
Manganese	68	ug/L	-	04/08/2015
Nitrite and Nitrate as N	712	ug/L	-	04/08/2015
Phosphorus Reactive as P - Total	201	ug/L	-	04/08/2015
Phosphorus as P - Total	200	ug/L	-	04/08/2015
Selenium	17.0	ug/L	-	04/08/2015
Suspended Solids (SS)	5.0	mg/L	-	04/08/2015
Zinc	5.0	ug/L	-	04/08/2015
pH	8.8	-	-	04/08/2015

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	0.50	ug/L	-	04/08/2015
Iron	4.0	ug/L	-	04/08/2015
Selenium	1.00	ug/L	-	04/08/2015
Temperature - Average	15.1	deg C	-	Aug 2015
Temperature - Minimum	13.1	deg C	-	Aug 2015
Temperature - Maximum	17.2	deg C	-	Aug 2015

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	0.50	ug/L	5	04/08/2015
Iron	31.0	ug/L	300	04/08/2015
Selenium	1.00	ug/L	2	04/08/2015
Temperature - Average	22.5	deg C	35	Aug 2015
Temperature - Minimum	18.3	deg C	35	Aug 2015
Temperature - Maximum	28.0	deg C	35	Aug 2015
Maximum Daily Discharge from Ash Dam	17.1	ML	150	Aug 2015
Monthly Discharge from Ash Dam	379	ML	-	Aug 2015

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	111	ug/L	-	04/08/2015
Phosphorus as P - Total	169	ug/L	-	04/08/2015
pH	7.1	-	-	04/08/2015