



Eraring Power Station – EPA Licence 1429

Environmental Monitoring Data

April 2012



Eraring Power Station - EPA Licence 1429

EPA identification no. 11 - Air emissions monitoring , Boiler 1 stack discharge to air.

Unit 1 Boiler Continuous Emission Monitoring Summary - April 2012

Day	Particulate mg/m ³			SOx ppm @12% CO ₂			NOx ppm @12% CO ₂		
	24 hr Avg	Max hr avg	Min Hr Avg	24 Hr Avg	Max Hr Avg	Min Hr Avg	24 Hr Avg	Max Hr Avg	Min HrAvg
1	3	5	2	Note 1	Note 1	Note 1	124	148	112
2	4	8	2	Note 1	Note 1	Note 1	162	203	131
3	3	5	2	161	214	141	194	300	157
4	3	5	2	201	239	153	186	213	144
5	4	6	2	215	248	150	175	201	148
6	3	5	2	207	230	166	170	182	156
7	2	4	2	202	224	150	166	177	154
8	2	4	2	206	224	176	166	169	156
9	3	5	2	206	222	176	174	186	155
10	5	9	3	206	290	174	174	211	141
11	4	9	2	188	208	157	138	224	108
12	4	8	2	184	197	160	152	172	129
13	5	10	2	180	203	144	147	210	126
14	3	11	2	179	194	148	159	176	130
15	4	13	2	171	185	138	149	252	118
16	3	5	2	172	187	135	186	243	110
17	3	6	2	188	215	142	170	225	116
18	4	6	2	198	218	153	171	207	117
19	3	6	2	190	207	145	180	235	123
20	3	4	2	203	224	155	178	205	120
21	4	5	3	202	222	159	164	200	120
22	3	5	2	183	202	151	159	225	135
23	4	7	2	179	199	136	179	226	118
24	4	6	2	188	203	150	179	232	124
25	4	7	3	206	225	169	143	213	121
26	5	7	3	200	217	166	174	209	136
27	5	7	3	194	210	147	164	213	119
28	5	8	3	200	216	180	130	187	108
29	5	10	3	202	215	183	138	219	110
30	5	9	3	191	202	175	143	203	120

Notes

No exceedence of licence limits.

Note 1 - Instrument maintenance.

Eraring Power Station - EPA Licence 1429

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

Unit 2 Boiler Continuous Emission Monitoring Summary - April 2012

Day	Particulate mg/m ³			SO _x ppm @12% CO ₂			NO _x ppm @12% CO ₂		
	24 hr Avg	Max hr avg	Min Hr Avg	24 Hr Avg	Max Hr Avg	Min Hr Avg	24 Hr Avg	Max Hr Avg	Min HrAvg
1	13	15	12	215	234	180	141	161	126
2	14	21	10	210	223	189	146	161	124
3	10	11	10	199	238	159	144	194	111
4	10	10	10	208	293	157	149	212	137
5	10	10	10	223	246	185	151	164	140
6	8	10	4	211	232	168	161	181	138
7	4	4	3	199	220	167	147	156	117
8	3	3	3	198	206	179	150	155	143
9	3	3	3	200	209	182	156	178	137
10	4	4	3	196	215	152	160	212	115
11	4	4	4	201	225	161	155	178	137
12	4	9	3	192	201	179	156	175	134
13	3	4	3	186	205	147	147	165	129
14	3	4	3	185	204	156	149	159	143
15	3	4	3	180	206	143	151	159	139
16	3	3	3	180	188	153	147	156	138
17	4	4	3	192	213	152	140	158	125
18	4	5	3	204	226	166	148	172	125
19	5	18	3	187	208	136	141	193	115
20	O/S	O/S	O/S	O/S	O/S	O/S	O/S	O/S	O/S
21	O/S	O/S	O/S	O/S	O/S	O/S	O/S	O/S	O/S
22	O/S	O/S	O/S	O/S	O/S	O/S	O/S	O/S	O/S
23	O/S	O/S	O/S	O/S	O/S	O/S	O/S	O/S	O/S
24	O/S	O/S	O/S	O/S	O/S	O/S	O/S	O/S	O/S
25	O/S	O/S	O/S	O/S	O/S	O/S	O/S	O/S	O/S
26	O/S	O/S	O/S	O/S	O/S	O/S	O/S	O/S	O/S
27	O/S	O/S	O/S	O/S	O/S	O/S	O/S	O/S	O/S
28	O/S	O/S	O/S	O/S	O/S	O/S	O/S	O/S	O/S
29	O/S	O/S	O/S	O/S	O/S	O/S	O/S	O/S	O/S
30	O/S	O/S	O/S	O/S	O/S	O/S	O/S	O/S	O/S

Notes

No exceedence of licence limits.

O/S = Out of Service

Eraring Power Station - EPA Licence 1429

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

Unit 3 Boiler Continuous Emission Monitoring Summary - April 2012

Day	Particulate mg/m ³			SO _x ppm @12% CO ₂			NO _x ppm @12% CO ₂		
	24 hr Avg	Max hr avg	Min Hr Avg	24 Hr Avg	Max Hr Avg	Min Hr Avg	24 Hr Avg	Max Hr Avg	Min HrAvg
1	22	22	22	214	229	191	146	169	116
2	22	23	22	215	233	194	160	217	134
3	22	23	22	198	233	156	183	243	117
4	23	23	23	201	220	154	187	254	117
5	23	23	22	219	244	172	167	301	112
6	22	22	22	219	232	197	129	150	83
7	19	22	15	201	222	178	137	158	105
8	11	18	4	205	214	184	145	156	97
9	6	7	6	211	231	176	150	166	100
10	7	7	5	218	245	203	169	225	109
11	6	7	6	224	243	171	187	329	99
12	6	6	6	203	211	191	195	248	140
13	6	6	6	206	240	174	215	426	120
14	6	6	5	203	220	172	163	312	87
15	5	6	5	197	214	168	160	249	96
16	5	5	5	199	361	164	218	401	111
17	5	6	5	215	237	168	199	299	143
18	5	6	5	222	235	199	186	234	114
19	5	5	5	214	226	185	206	258	108
20	5	6	5	229	253	196	209	296	118
21	5	5	5	226	244	191	162	209	110
22	5	5	5	207	229	165	145	240	100
23	5	6	4	204	240	154	183	266	102
24	5	5	4	210	228	184	188	243	110
25	4	6	4	229	254	173	136	205	104
26	5	7	5	229	267	193	180	226	149
27	6	11	5	228	250	212	172	223	142
28	6	7	5	220	247	178	163	218	118
29	6	8	5	229	249	197	173	231	141
30	6	8	5	225	260	202	172	232	143

Notes

No exceedence of licence limits.

No Data for Unit 4 this month due to upgrade outage.

Eraring Power Station - EPA Licence 1429
EPA Surface Water Monitoring - 2nd April 2012

Eraring Trace Element Analysis	Location:		EPA 1 (EROC)		EPA 8 (ERIC)	EPA 10 (ERAD)		EPA 17 (ERTO)
	Analytes	Units	Monitoring Frequency	Licence Limit	Analysis	Analysis	Licence Limit	Analysis
Selenium	µg/L	Quarterly	2	<1	<1			
Iron	µg/L	Quarterly	300	6	<5		<2	4780
Manganese	µg/L	Quarterly					5.4	955
Selenium	µg/L	Quarterly					6	0.4
Cadmium	µg/L	Quarterly					0.06	0.07
Copper	µg/L	Quarterly	5	2.2	1.5		4.9	1.9
Lead	µg/L	Quarterly					0.1	0.2
Zinc	µg/L	Quarterly					9	16
Total Phosphorus as P	mg/L	Monthly					0.33	0.37
Reactive Phosphorus as P - Total	mg/L	Monthly					0.33	
Nitrite + Nitrate as N	mg/L	Monthly					112	63
pH	Units	Quarterly					8.8	6.7
Temperature Average	°C	Continuous	Note 1	27.45	22.2			
Temperature Maximum	°C	Continuous	Note 1	34.15	25.3			
Temperature Minimum	°C	Continuous	Note 1	22.26	19.3			
Total Suspended Solids (TSS)	mg/L	Monthly					<2	
Discharge to Outlet Canal	ML/month						346.63	
Maximum Discharge to Outlet Canal	ML/day	Continuous				150	24.43	

Orange cells above indicate that EPA licence limits apply - Notes on limits given below.

Note 1	The 98.5% percentile limit specified for temperature at EPA point 1 means during normal electricity supply conditions, cooling water may be discharged over 35°C but up to a maximum temperature of 37.5°C for up to 131 hours over the reporting period. An additional 69 hours are allocated under the shortfall of electricity supply conditions as per EPA Licence Conditions.
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Notes

There were no licence exceedences for water monitoring points.

mg/L = milligrams per litre

µg/L = micrograms per litre

ML = megalitre

Eraring Power Station - EPA Licence 1429
 EPA identification no's. 4,5,6 & 7 - Ambient water monitoring Lake Macquarie
 Sample Results for April 2012

Sampling Frequency: Monthly

Date	Site	Depth (Metres)	Temp (°C)	pH Units	Salinity (ppt)	DO %	DO mg/L	Secchi (Metres)	Descriptor
2-Apr-12	EPA 4 (LM10)	Air	26.1					2.4	Midway between Cooling Water Canal Inlet and Hungary Point
		0.1	24.4	8.1	34.5	98	6.6		
		0.5	24.4	8.1	34.5	98	6.6		
		1.0	24.3	8.1	34.5	98	6.6		
		1.5	24.2	8.1	34.5	97	6.6		
		2.0	24.1	8.1	34.5	96	6.6		
		2.5	24.1	8.1	34.5	97	6.6		
		2.9	24.0	8.1	34.5	97	6.6		
2-Apr-12	EPA 5 (LM 7)	Air	25.8					3.1	Off the Old Wangi Power Station Inlet Canal
		0.1	26.4	8.1	34.5	127	8.4		
		0.5	26.2	8.1	34.5	128	8.4		
		1.0	26.1	8.1	34.4	127	8.4		
		1.5	25.8	8.1	34.4	127	8.4		
		2.0	25.6	8.1	34.4	125	8.3		
		2.5	25.5	8.1	34.4	123	8.2		
		3.0	25.3	8.1	34.4	123	8.2		
		3.5	25.2	8.1	34.2	121	8.1		
		4.0	23.7	8.1	34.6	102	7.0		
		4.5	23.2	8.0	35.0	85	5.9		
		5.0	23.2	8.0	35.1	72	4.9		
		5.5	23.1	7.9	35.3	50	3.4		
6.0	23.0	7.8	35.4	42	2.9				
2-Apr-12	EPA 6 (LM12)	Air	25.0					6.0	Eraring / Vales Point mixing zone off Fishery Point
		0.1	25.1	8.1	34.6	99	6.6		
		0.5	25.0	8.1	34.6	99	6.6		
		1.0	24.7	8.1	34.6	99	6.7		
		1.5	24.5	8.1	34.6	98	6.6		
		2.0	24.4	8.1	34.6	98	6.7		
		2.5	24.3	8.1	34.5	98	6.7		
		3.0	24.2	8.1	34.5	98	6.7		
		3.5	24.1	8.1	34.5	98	6.7		
		4.0	24.0	8.1	34.5	98	6.7		
		4.5	23.6	8.2	34.6	98	6.8		
		5.0	23.2	8.1	34.9	99	6.8		
		5.5	22.9	8.1	35.2	80	5.5		
		6.0	22.8	8.0	35.5	72	5.0		
		6.5	22.7	8.0	35.6	57	4.0		
7.0	22.7	8.0	35.6	52	3.6				
7.5	22.7	8.0	35.6	52	3.6				
7.7	22.7	8.0	35.6	52	3.6				
2-Apr-12	EPA 6 (LM4)	Air	22.6					5.7	Northern waters of Lake east of Lake Macquarie Yacht Club
		0.1	23.1	8.1	35.0	102	7.0		
		0.5	23.1	8.1	35.0	102	7.0		
		1.0	23.1	8.1	35.0	102	7.0		
		1.5	23.1	8.1	35.0	102	7.1		
		2.0	23.1	8.1	35.0	102	7.1		
		2.5	23.1	8.1	35.0	102	7.1		
		3.0	23.0	8.1	35.0	102	7.1		
		3.5	23.0	8.2	35.0	102	7.1		
		4.0	23.0	8.2	35.0	102	7.1		
		4.5	23.0	8.2	35.0	102	7.1		
		5.0	22.7	8.1	35.7	102	7.1		
		5.5	22.6	8.2	35.8	94	6.5		
		6.0	22.6	8.2	35.9	95	6.6		
		6.5	22.5	8.2	36.2	93	6.5		
7.0	22.4	8.2	36.4	87	6.1				
7.5	22.3	8.2	36.6	86	6.0				
8.0	22.3	8.2	36.8	84	5.8				
8.5	22.2	8.2	37.3	82	5.7				
9.0	22.2	8.2	37.3	82	5.7				
9.5	22.2	8.2	37.3	82	5.7				

Eraring Power Station - EPA Licence 1429
 EPA Identification no. 15 & 16
 Ambient Air Monitoring April 2012

Summary of Ambient Monitoring Results - Monitoring Point 15 - Marks Point Ambient				
1/04/2012 to 30/04/2012				
	Monitoring Point 15 - Marks Point Ambient			
	SO ₂ (pphm)	NO ₂ (pphm)	NO (pphm)	NO _x (pphm)
Maximum 10 minute Average	1.9	2.9	8.8	10.4
Maximum 1 hour Average	1.2	2.6	7.6	9.4
Maximum 24 hour Average	0.2	1.1	0.7	1.6
90th Percentile	0.2	1.3	0.4	1.7
Geometric Mean	0.6	0.5	0.5	0.6
Geometric Standard Deviation	2.4	1.9	2.7	2.2
Availability (%)	95	95	95	95

Summary of Ambient Monitoring Results - Monitoring Point 16 - Dora Creek Ambient				
1/04/2012 to 30/04/2012				
	Monitoring Point 16 - Dora Creek Ambient			
	SO ₂ (pphm)	NO ₂ (pphm)	NO (pphm)	NO _x (pphm)
Maximum 10 minute Average	3.8	2.3	5.4	6.4
Maximum 1 hour Average	1.7	2.1	4.4	5.5
Maximum 24 hour Average	0.2	0.9	1.3	2.0
90th Percentile	0.1	1.0	1.6	2.4
Geometric Mean	0.7	0.5	0.6	0.7
Geometric Standard Deviation	2.3	1.8	2.6	2.4
Availability (%)	94	95	95	95

Summary of Fluoride Monitoring for Dora Creek Ambient

Reporting Month	April			May		
Sampling Period	28/03/2012	to	1/05/2012	1/05/2012	to	30/05/2012
Parameter	Gaseous Fluoride (ug/m ³)	Particulate Fluoride (ug/m ³)	Total Fluoride (ug/m ³)	Gaseous Fluoride (ug/m ³)	Particulate Fluoride (ug/m ³)	Total Fluoride (ug/m ³)
Week 1 Results	<0.1 (0.10)	<0.1 (0.01)	0.10	<0.1 (0.02)	<0.1 (0.00)	<0.1 (0.02)
Week 2 Results	<0.1 (0.03)	<0.1 (0.00)	<0.1 (0.03)	<0.1 (0.01)	<0.1 (0.00)	<0.1 (0.02)
Week 3 Results	<0.1 (0.00)	<0.1 (0.00)	<0.1 (0.01)	<0.1 (0.05)	<0.1 (0.00)	<0.1 (0.05)
Week 4 Results	<0.1 (0.00)	<0.1 (0.03)	<0.1 (0.03)	<0.1 (0.04)	<0.1 (0.00)	<0.1 (0.04)
Week 5 Results	<0.1 (0.00)	<0.1 (0.04)	<0.1 (0.04)			
% Data Availability	100%			100%		
Remarks	Data are reported as per AS3580.13.2, with a lowest reportable value of <0.1 ug/m ³ , exact figures appearing in brackets. Samples analysed by Australian Laboratory Services, Report No. EN1201669			Data are reported as per AS3580.13.2, with a lowest reportable value of <0.1 ug/m ³ , exact figures appearing in brackets. Samples analysed by Australian Laboratory Services, Report No. EN1202098		

Eraring Power Station - EPA Licence 1429
EPA Identification no. 18
Particulates - Deposited Matter

April 2012

<i>Gauge Number</i>	<i>Insolubles</i>	<i>Ash</i>	<i>*Combustible</i>
E1	0.4	0.3	0.1
E2	0.3	0.1	0.2
E3	0.8	0.5	0.3
E4	1.9	1.2	0.7
E5	0.4	0.3	0.1
E6	0.3	0.1	0.2

*All measurements are expressed as g/m2/month
(* Calculated Result*

Earing Power Station - EPA Licence 1429
 EPA Identification no. 16

Earing Power Station - Monthly Ambient Site Report							
Climatic Results for Monitoring Point 16 - Dora Creek Ambient Air							
1/04/2012 to 30/04/2012							
Date	Wind Speed (m/s)	Wind Direction (deg)	Rainfall (mm)	Temperature 1.2m (°C)	Temperature 10m (°C)	Solar Rad (w/m ²)	Sigma Theta (deg)
1/04/2012	0.4	111	0.0	18.9	18.9	204	20
2/04/2012	0.2	131	0.3	19.2	19.1	171	21
3/04/2012	0.5	71	0.0	19.8	19.7	200	19
4/04/2012	0.7	79	0.0	19.8	19.7	196	21
5/04/2012	0.7	82	0.0	20.1	19.8	185	23
6/04/2012	0.5	83	0.0	18.8	18.8	179	20
7/04/2012	1.5	180	0.0	20.4	20.2	169	23
8/04/2012	0.7	107	2.3	21.5	21.2	98	30
9/04/2012	0.9	265	0.0	17.7	17.8	210	31
10/04/2012	2.2	215	0.0	14.9	14.7	179	29
11/04/2012	1.4	219	10.7	14.8	14.7	125	32
12/04/2012	0.8	235	0.0	15.9	16.0	109	26
13/04/2012	0.3	69	0.3	16.0	16.0	169	21
14/04/2012	0.4	96	0.0	17.7	17.6	159	21
15/04/2012	0.1	279	0.5	18.9	18.7	75	23
16/04/2012	0.8	185	2.3	19.3	19.2	98	21
17/04/2012	1.0	222	32.8	17.8	17.6	37	26
18/04/2012	0.3	239	61.0	18.4	18.0	41	33
19/04/2012	0.2	85	1.8	19.5	19.1	103	27
20/04/2012	0.5	101	0.0	20.3	20.2	169	23
21/04/2012	0.3	177	0.3	18.9	18.9	109	22
22/04/2012	0.5	353	0.3	19.1	18.7	103	23
23/04/2012	0.8	353	3.3	18.3	18.4	19	32
24/04/2012	1.2	305	0.3	17.5	17.7	147	26
25/04/2012	2.3	294	0.0	14.2	14.3	180	24
26/04/2012	0.9	243	0.0	16.4	16.3	151	23
27/04/2012	0.3	48	0.0	15.1	14.9	141	19
28/04/2012	0.5	355	0.0	15.6	15.3	76	29
29/04/2012	1.0	228	5.3	14.5	14.7	88	26
30/04/2012	0.2	312	0.0	14.5	14.4	124	24