



Eraring energy

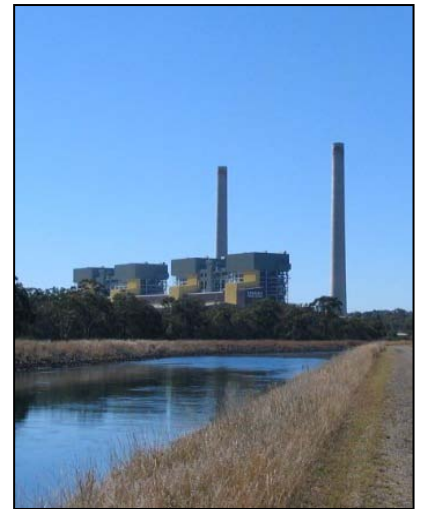
Eraring Power Station – EPA Licence 1429

Coal Unloader – EPA Licence 4297

Hume Power Station - EPA Licence 10675

Environmental Monitoring Data

November 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 - November 2012

Day	Particulate mg/m3			SOx ppm @12% CO2			NOx ppm @12% CO2		
	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	32	11	198	206	176	176	233	132
2	12	13	12	193	209	173	226	253	172
3	12	13	12	189	206	169	213	243	163
4	11	12	10	170	181	145	196	232	156
5	11	13	11	174	186	149	216	246	149
6	12	13	11	176	195	152	220	261	129
7	12	12	11	189	199	169	211	244	146
8	12	14	11	178	203	163	206	242	136
9	12	13	11	198	204	180	177	212	139
10	11	12	10	186	200	164	132	143	123
11	12	14	11	179	194	156	154	166	129
12	12	14	10	174	191	137	175	205	137
13	12	14	11	201	241	153	167	200	109
14	12	13	11	195	220	177	186	231	118
15	12	13	11	199	205	182	202	236	132
16	12	13	11	207	216	180	178	225	131
17	12	14	11	203	218	187	139	150	128
18	11	12	10	190	197	164	145	154	125
19	12	14	11	182	191	160	183	244	136
20	12	14	11	200	213	179	173	214	147
21	11	14	10	199	210	167	166	204	134
22	12	12	11	212	220	194	176	212	136
23	12	13	11	219	227	202	169	205	135
24	12	13	11	201	210	172	157	182	128
25	12	12	11	192	213	160	187	235	120
26	12	13	11	187	202	153	180	237	104
27	12	13	11	198	206	170	184	222	133
28	12	13	11	204	210	183	174	221	122
29	12	13	11	205	217	175	166	197	95
30	12	13	11	211	225	180	173	207	96
31									

Notes

M = Instrument maintenance

O/S = Unit Out of Service

No exceedance of licence limits.

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 - November 2012

Day	Particulate mg/m3			SOx ppm @12% CO2			NOx ppm @12% CO2		
	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	O/S	O/S	O/S	O/S	O/S	O/S	O/S	O/S	O/S
2	O/S	O/S	O/S	O/S	O/S	O/S	O/S	O/S	O/S
3	O/S	O/S	O/S	O/S	O/S	O/S	O/S	O/S	O/S
4	O/S	O/S	O/S	O/S	O/S	O/S	O/S	O/S	O/S
5	O/S	O/S	O/S	O/S	O/S	O/S	O/S	O/S	O/S
6	O/S	O/S	O/S	O/S	O/S	O/S	O/S	O/S	O/S
7	O/S	O/S	O/S	O/S	O/S	O/S	O/S	O/S	O/S
8	O/S	O/S	O/S	O/S	O/S	O/S	O/S	O/S	O/S
9	O/S	O/S	O/S	O/S	O/S	O/S	O/S	O/S	O/S
10	O/S	O/S	O/S	O/S	O/S	O/S	O/S	O/S	O/S
11	O/S	O/S	O/S	O/S	O/S	O/S	O/S	O/S	O/S
12	O/S	O/S	O/S	O/S	O/S	O/S	O/S	O/S	O/S
13	O/S	O/S	O/S	O/S	O/S	O/S	O/S	O/S	O/S
14	O/S	O/S	O/S	O/S	O/S	O/S	O/S	O/S	O/S
15	O/S	O/S	O/S	O/S	O/S	O/S	O/S	O/S	O/S
16	5	10	4	122	152	0*	106	147	0*
17	6	10	4	188	222	56	159	207	143
18	O/S	O/S	O/S	O/S	O/S	O/S	O/S	O/S	O/S
19	O/S	O/S	O/S	O/S	O/S	O/S	O/S	O/S	O/S
20	8	14	5	197	242	0*	198	291	92
21	6	9	5	234	248	207	177	222	149
22	6	12	4	249	256	242	212	253	166
23	7	12	5	255	265	233	224	258	181
24	8	12	5	235	246	209	220	248	192
25	8	11	5	219	233	206	227	352	161
26	8	12	5	227	247	193	207	254	153
27	9	12	6	239	248	218	204	236	166
28	9	12	6	253	264	236	217	248	174
29	9	13	6	249	266	216	199	225	156
30	10	13	8	253	268	210	198	238	146
31									

Notes

M = Instrument maintenance

O/S = Unit Out of Service

No exceedance of licence limits.

*Minimums of zero are due to unit return to 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 - November 2012

Day	Particulate mg/m3			SOx ppm @12% CO2			NOx ppm @12% CO2		
	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	O/S	O/S	O/S	O/S	O/S	O/S	O/S	O/S
2	O/S	O/S	O/S	O/S	O/S	O/S	O/S	O/S	O/S
3	9	10	9	169	204	106	197	260	133
4	10	12	9	206	216	190	163	230	141
5	11	16	9	202	212	171	213	255	146
6	10	12	9	206	227	180	229	299	165
7	10	16	9	219	230	208	218	258	173
8	12	25	9	213	233	199	220	248	163
9	15	23	12	234	245	213	204	227	156
10	12	14	11	210	224	199	166	182	159
11	10	13	9	207	221	183	169	188	159
12	9	13	9	205	225	162	209	242	149
13	9	13	9	232	271	185	211	238	147
14	11	14	10	230	247	218	224	266	164
15	11	12	11	231	239	206	204	243	123
16	16	21	11	223	236	191	174	238	125
17	12	20	9	225	241	207	148	164	124
18	9	10	9	227	242	197	154	198	122
19	10	14	8	214	221	193	220	277	181
20	12	20	9	235	246	213	197	247	161
21	10	12	9	238	254	210	175	201	158
22	11	14	10	255	261	239	200	249	161
23	10	11	10	255	264	239	197	244	154
24	11	13	10	249	263	220	202	259	155
25	11	15	10	222	241	186	220	285	145
26	14	18	11	221	243	179	229	286	149
27	13	19	10	238	247	222	219	259	164
28	15	19	11	242	254	218	198	241	161
29	13	16	12	251	268	221	198	241	160
30	13	17	10	246	262	208	199	237	150
31									

Notes

M = Instrument maintenance

O/S = Unit Out of Service

No exceedance of licence limits.

Eraring Power Station - EPA Licence 1429

EPA identification no. 14 - Air emissions monitoring , Boiler 4 stack discharge to air.

Unit 4 Boiler Continuous Emission Monitoring Summary - November 2012

Notes

No exceedance 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 November 2012

Eraring Trace Element Analysis	Location:		EPA 1 (EROC)		EPA 8 (ERIC)	EPA 10 (ERAD)		EPA 17 (ERTOIE)
	Analytes	Units	Monitoring Frequency	Licence Limit	Analysis	Analysis	Licence Limit	Analysis
Total Phosphorus as P	mg/L	Monthly					0.95	0.39
Reactive Phosphorus as P - Total	mg/L	Monthly					0.67	
Nitrite + Nitrate as N	mg/L	Monthly					0.02	0.08
Temperature Average	°C	Continuous	Note 1	30.0	23.2			
Temperature Maximum	°C	Continuous	Note 1	34.6	27.4			
Temperature Minimum	°C	Continuous	Note 1	24.9	20.4			
Total Suspended Solids (TSS)	mg/L	Monthly					5	
Discharge to Outlet Canal	ML/month						359	
Maximum Discharge to Outlet Canal	ML/day	Continuous	11000	9072		150	16	

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 exceedances 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
 Sampling Results for November 2012

Sampling Frequency: Monthly

Date	Site	Depth (Metres)	Temp (°C)	pH Units	Salinity (ppt)	DO %	DO mg/L	Secchi (Metres)	Descriptor
1-Nov-12	EPA 4 (LM10)	Air	31.6					1.5	Midway between Cooling Water Canal Inlet and Hungary Point
		0.1	23.2	7.8	42.3	102	6.7		
		0.5	23.1	7.8	42.2	101	6.7		
		1.0	22.7	7.8	42.2	101	6.7		
		1.5	22.8	7.8	42.1	100	6.7		
		2.0	22.6	7.8	42.2	100	6.7		
		2.5	22.6	7.8	42.3	100	6.7		
		2.7	22.6	7.8	42.3	100	6.7		
1-Nov-12	EPA 5 (LM7)	Air	32.6					2.5	Off the Old Wangi Power Station Inlet Canal
		0.1	25.1	7.8	42.2	121	7.8		
		0.5	25.1	7.8	42.3	122	7.8		
		1.0	25.1	7.8	42.2	121	7.8		
		1.5	24.6	7.9	40.8	121	8.1		
		2.0	23.0	7.9	41.5	113	7.6		
		2.5	22.4	7.9	42.1	104	7.0		
		3.0	22.1	7.8	42.0	101	6.8		
		3.5	22.0	7.8	42.0	99	6.7		
		4.0	21.4	7.8	41.9	96	6.6		
		4.5	21.0	7.8	41.9	93	6.4		
		5.0	20.8	7.8	42.0	87	6.0		
		5.5	20.8	7.8	41.9	87	6.0		
5.9	20.8	7.8	41.9	54	6.0				
1-Nov-12	EPA 6 (LM12)	Air	30.2					2.5	Eraring / Vales Point mixing zone off Fishery Point
		0.1	24.7	7.9	42.5	103	6.6		
		0.5	24.4	7.9	42.3	103	6.7		
		1.0	24.4	7.9	42.3	103	6.7		
		1.5	23.1	7.9	42.3	101	6.7		
		2.0	22.5	7.9	42.2	101	6.8		
		2.5	22.5	7.9	42.2	100	6.7		
		3.0	22.2	7.9	42.1	100	6.8		
		3.5	22.1	7.9	42.1	100	6.8		
		4.0	22.0	7.9	42.2	100	6.8		
		4.5	22.0	7.9	42.2	100	6.8		
		5.0	22.0	7.9	42.2	100	6.8		
		5.5	22.0	7.9	42.2	100	6.7		
		6.0	21.1	7.9	42.1	96	6.6		
6.5	21.0	7.9	42.0	94	6.5				
7.0	21.0	7.8	42.0	90	6.2				
7.5	21.0	7.8	42.0	89	6.1				
1-Nov-12	EPA 7 (LM4)	Air	28.0					4.5	Northern waters of Lake east of Lake Macquarie Yacht Club
		0.1	21.0	7.8	42.3	102	7.0		
		0.5	21.0	7.9	42.3	102	7.0		
		1.0	21.0	7.9	42.3	102	7.1		
		1.5	21.0	7.9	42.1	102	7.1		
		2.0	20.5	7.9	42.2	102	7.1		
		2.5	20.4	7.9	42.2	102	7.1		
		3.0	20.4	7.9	42.2	102	7.1		
		3.5	20.3	7.9	42.2	102	7.1		
		4.0	20.3	7.9	42.3	102	7.1		
		4.5	20.3	7.9	42.2	101	7.1		
		5.0	20.3	7.9	42.2	101	7.1		
		5.5	20.3	7.9	42.2	101	7.1		
		6.0	20.3	7.9	42.2	101	7.1		
		6.5	20.2	7.9	42.2	101	7.0		
7.0	19.9	7.9	42.1	99	7.0				
7.5	19.8	7.9	42.2	96	6.7				
8.0	19.8	7.9	42.2	95	6.7				
8.5	19.8	7.9	42.2	94	6.6				
9.0	19.7	7.9	42.2	92	6.5				
9.5	19.7	7.9	42.2	89	6.3				

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

Summary of Ambient Monitoring Results - Monitoring Point 15 - Marks Point Ambient				
1/10/2012 to 31/10/2012				
	Monitoring Point 15 - Marks Point Ambient			
	SO ₂ (pphm)	NO ₂ (pphm)	NO (pphm)	NO _x (pphm)
Maximum 10 minute Average	4.7	4.0	7.6	9.9
Maximum 1 hour Average	3.0	3.0	4.3	6.2
Maximum 24 hour Average	0.3	1.2	0.5	1.6
90th Percentile	0.1	1.3	0.2	1.4
Geometric Mean	0.1	0.5	0.2	0.5
Geometric Standard Deviation	4.9	2.0	5.5	2.2
Availability (%)	98	98	98	98

Summary of Ambient Monitoring Results - Monitoring Point 16 - Dora Creek Ambient				
1/10/2012 to 31/10/2012				
	Monitoring Point 16 - Dora Creek Ambient			
	SO ₂ (pphm)	NO ₂ (pphm)	NO (pphm)	NO _x (pphm)
Maximum 10 minute Average	4.3	8.7	7.5	9.2
Maximum 1 hour Average	2.7	6.5	7.2	8.3
Maximum 24 hour Average	0.4	1.0	1.2	2.2
90th Percentile	0.2	1.4	1.2	2.6
Geometric Mean	0.6	0.5	0.7	0.6
Geometric Standard Deviation	2.6	2.1	2.4	2.5
Availability (%)	94	95	95	95

Summary of Fluoride Monitoring for Dora Creek Ambient

Monitoring Location	Dora Creek / EPA Monitoring Point 17								
Reporting Month	October			November			December		
Sampling Period	3/10/2012 to 31/10/2012			to			to		
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)	Gaseous Fluoride (ug/m ³)	Particulate Fluoride (ug/m ³)	Total Fluoride (ug/m ³)
Week 1 Results	<0.1 (0.04)	<0.1 (0.00)	<0.1 (0.04)						
Week 2 Results	<0.1 (0.06)	<0.1 (0.00)	<0.1 (0.06)						
Week 3 Results	<0.1 (0.05)	<0.1 (0.01)	<0.1 (0.06)						
Week 4 Results	<0.1 (0.05)	<0.1 (0.00)	<0.1 (0.06)						
Week 5 Results									
% Data Availability	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. EN1204307			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.			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.		

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

October 2012

<i>Gauge Number</i>	<i>Insolubles</i>	<i>Ash</i>	<i>*Combustible</i>
E1	0.9	0.5	0.4
E2	1.0	0.5	0.5
E3	1.5	0.6	0.9
E4	0.6	0.3	0.3
E5	0.4	0.2	0.2
E6	2.2	0.3	1.9

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

Eraring Power Station - Coal Delivery Facility - EPA Licence 4297
EPA Identification no's. 1 to 6

October 2012

<i>Gauge Number</i>	<i>Insolubles</i>	<i>Ash</i>	<i>*Combustible</i>
U1	0.7	0.3	0.4
U2	0.5	0.4	0.1
U3	1.4	0.6	0.8
U4	0.8	0.7	0.1
U5	0.4	0.2	0.2
U6	0.9	0.5	0.4

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

Hume Power Station - EPA Licence 10675
Monitoring/Discharge Points 1 & 2 - November 2012

EPA 1 (Power Station Drain)	November		Sampled 28/11/2012		EPA 2 (Switchyard Drain)	November		Sampled	No Discharge
	Units	Monitoring Frequency	Licence Limit	Analysis		Units	Monitoring Frequency		
Oil and Grease	mg/L	Monthly	10	<5	Oil and Grease	mg/L	Special Frequency	10	n/a
					TSS (wet)	mg/L	Special Frequency	50	n/a

TSS =Total Suspended Solids

There were no licence exceedences for monitoring points.

mg/L = milligrams per litre

Special Frequency - sampling and analysis prior to any discharge taking place.