

Monthly Data Summary

LIDDELL MONTHLY DATA SUMMARY MAY 2019

LICENCE NO	2122
LICENCE HOLDER	AGL MACQUARIE
REPORTING PERIOD	MAY 2019

A1 Licence Holder

Licence Number 2122
Licence Holder AGL MACQUARIE
Trading Name (if applicable)
ABN 18 167 859 494

A2 Premises to which Licence Applies (if applicable)

Common Name (if any) LIDDELL POWER STATION
Premises NEW ENGLAND HIGHWAY MUSWELLBROOK NSW 2333

A3 Activities to which Licence Applies

Electricity Generating Works
Coal Works

A4 Other Activities (if applicable)

Helicopter-related facilities
Chemical storage
Operation of Emergency 1.5 MW diesel generator
Operation of Gas turbine
Sewage treatment
Waste storage

A5 Fee-Based Activity Classifications

Note that the fee based activity classification is used to calculate the administrative fee.

Fee-based activity	Activity scale	Unit of measure
Coal works	> 5,000,000.00	T handled
Generation of electrical power from coal	> 4,000.00	Gwh generated

Monthly Data Summary

Discharge & Monitoring Point 7

301204 East 6416350 North

Discharge to Air

In the flue gases of unit 1 boiler labelled as "Unit 1 Boiler 1-2 Chimney Stack" on plan no. LD 800474 amended 03 and dated 6/5/2003

Month	Date of Publication	Pollutant	Unit of measure	Sampling / measurement frequency	Averaging period	Data capture %	Lowest sample value	Mean of samples	Highest sample value	EPL Limit
MAY 2019	14/06/2019	Nitrogen Oxides	milligrams per cubic metre	Continuous	One hour	>99%	231.0	686.1	962.3	1500 mg/m ³
MAY 2019	14/06/2019		parts per million				112.5	334.3	468.8	700 ppm
MAY 2019	14/06/2019	Sulphur dioxide	milligrams per cubic metre	Continuous	One hour	>99%	767.1	964.6	1488.7	
MAY 2019	14/06/2019		parts per million				268.4	337.5	520.9	600 ppm
MAY 2019	14/06/2019	Opacity - Undifferentiated particles	Percent	Continuous	One hour	>99%	3.0	4.7	10.5	20%

Comments:

Annual monitoring of discharges to air

Air emission monitoring, Boiler 1 stack emissions, shown on plan no LD800474 amended 03 and dated 6/5/2003

Month	Date of Publication	Pollutant	Unit of measure	No. of samples required by licence	Samples collected and analysed	Sample value	EPL Limit mg/m ³
Oct-18	8/11/2018	Cadmium	milligrams per cubic metre	1	1	<0.0001	1.0
Oct-18	8/11/2018	Chlorine	milligrams per cubic metre	1	1	0.0	200
Oct-18	8/11/2018	Copper	milligrams per cubic metre	1	1	0.0017	
Oct-18	8/11/2018	Hazardous substances (Metals)	milligrams per cubic metre	1	1	≤0.058	5
Oct-18	8/11/2018	Hydrogen chloride	milligrams per cubic metre	1	1	26.0	100
Oct-18	8/11/2018	Mercury	milligrams per cubic metre	1	1	0.00330	1.0
Oct-18	8/11/2018	Nitrogen oxides	milligrams per cubic metre	1	1	810	1500
Oct-18	8/11/2018	Solid particles	milligrams per cubic metre	1	1	5.5	100
Oct-18	8/11/2018	Sulfuric acid mist and sulfur trioxide	milligrams per cubic metre	1	1	2.000	100
Oct-18	8/11/2018	Sulphur dioxide	milligrams per cubic metre	1	1	1200	
Oct-18	8/11/2018	Total fluoride	milligrams per cubic metre	1	1	12.0	50
Oct-18	8/11/2018	Volatile organic compounds	milligrams per cubic metre	1	1	<0.03	

Comments:

Monitoring of emission from each of the 4 boilers for the substances in this table is required annually.

Monthly Data Summary

Discharge & Monitoring Point 8

301204 East 6416350 North

In the flue gases of unit 2 boiler labelled as "Unit 2 Boiler 1-2 Chimney Stack" on plan no LD800474 amended 03 and dated 6/5/2003

Month	Date of Publication	Pollutant	Unit of measure	Sampling / measurement frequency	Averaging period	Data capture %	Lowest sample value	Mean of samples	Highest sample value	EPL Limit
MAY 2019	14/06/2019	Nitrogen Oxides	milligrams per cubic metre	Continuous	One hour	>99%	367	643	1092	1500 mg/m ³
MAY 2019	14/06/2019		parts per million				179	313	532	700 ppm
MAY 2019	14/06/2019	Sulphur dioxide	milligrams per cubic metre	Continuous	One hour	>99%	769	965	1225	
MAY 2019	14/06/2019		parts per million				269	338	428	600 ppm
MAY 2019	14/06/2019	Opacity - Undifferentiated particles	Percent	Continuous	One hour	>99%	2.9	6.9	14.0	20%
Comments:										

Annual monitoring of discharges to air

Air emission monitoring, Boiler 2 stack emissions, shown on plan no LD800474 amended 03 and dated 6/5/2003

Month	Date of Publication	Pollutant	Unit of measure	No. of samples required by licence	Samples collected and analysed	Sample value	EPL Limit mg/m ³			
Apr-19	14/05/2019	Cadmium	milligrams per cubic metre	1	1	<0.0002	1.0			
Apr-19	14/05/2019	Chlorine	milligrams per cubic metre	1	1	<0.008	200			
Apr-19	14/05/2019	Copper	milligrams per cubic metre	1	1	0.0029				
Apr-19	14/05/2019	Hazardous substances (Metals)	milligrams per cubic metre	1	1	≤0.067	5			
Apr-19	14/05/2019	Hydrogen chloride	milligrams per cubic metre	1	1	27.0	100			
Apr-19	14/05/2019	Mercury	milligrams per cubic metre	1	1	0.00047	1.0			
Apr-19	14/05/2019	Nitrogen oxides	milligrams per cubic metre	1	1	800	1500			
Apr-19	14/05/2019	Solid particles	milligrams per cubic metre	1	1	30.0	100			
Apr-19	14/05/2019	Sulfuric acid mist and sulfur trioxide	milligrams per cubic metre	1	1	11.000	100			
Apr-19	14/05/2019	Sulphur dioxide	milligrams per cubic metre	1	1	1200				
Apr-19	14/05/2019	Total fluoride	milligrams per cubic metre	1	1	15.0	50			
Apr-19	14/05/2019	Volatile organic compounds	milligrams per cubic metre	1	1	<0.02				
Comments:		Monitoring of emission from each of the 4 boilers for the substances in this table is required annually. In most years one boiler is tested each quarter. This table contains the latest results from Boiler 2.								

Monthly Data Summary

Discharge & Monitoring Point 9

301204 East 6416350 North

In the flue gases of unit 3 boiler labelled as "Unit 3 Boiler 3-4 Chimney Stack" on plan no LD800474 amended 03 and dated 6/5/2003

Month	Date of Publication	Pollutant	Unit of measure	Sampling / measurement frequency	Averaging period	Data capture %	Lowest sample value	Mean of samples	Highest sample value	EPL Limit
MAY 2019	14/06/2019	Nitrogen Oxides	milligrams per cubic metre	Continuous	One hour	>99%	518.3	729.0	877.0	1500 mg/m ³
MAY 2019	14/06/2019		parts per million				252.5	355.2	427.3	700 ppm
MAY 2019	14/06/2019	Sulphur dioxide	milligrams per cubic metre	Continuous	One hour	>99%	897.2	1042.3	1308.1	
MAY 2019	14/06/2019		parts per million				313.9	364.7	457.7	600 ppm
MAY 2019	14/06/2019	Opacity - Undifferentiated particles	Percent	Continuous	One hour	>99%	6.0	7.2	8.7	20%

Comments:

Annual monitoring of discharges to air

Air emission monitoring, Boiler 3 stack emissions, shown on plan no LD800474 amended 03 and dated 6/5/2003

Month	Date of Publication	Pollutant	Unit of measure	No. of samples required by licence	Samples collected and analysed	Sample value	EPL Limit mg/m ³
Mar-19	9/05/2019	Cadmium	milligrams per cubic metre	1	1	<0.0002	1.0
Mar-19	9/05/2019	Chlorine	milligrams per cubic metre	1	1	0.1	200
Mar-19	9/05/2019	Copper	milligrams per cubic metre	1	1	0.0009	
Mar-19	9/05/2019	Hazardous substances (Metals)	milligrams per cubic metre	1	1	≤0.013	5
Mar-19	9/05/2019	Hydrogen chloride	milligrams per cubic metre	1	1	25.0	100
Mar-19	9/05/2019	Mercury	milligrams per cubic metre	1	1	0.00043	1.0
Mar-19	9/05/2019	Nitrogen oxides	milligrams per cubic metre	1	1	690	1500
Mar-19	9/05/2019	Solid particles	milligrams per cubic metre	1	1	9.7	100
Mar-19	9/05/2019	Sulfuric acid mist and sulfur trioxide	milligrams per cubic metre	1	1	1.600	100
Mar-19	9/05/2019	Sulphur dioxide	milligrams per cubic metre	1	1	1100	
Mar-19	9/05/2019	Total fluoride	milligrams per cubic metre	1	1	13.0	50
Mar-19	9/05/2019	Volatile organic compounds	milligrams per cubic metre	1	1	<0.02	

Comments:

Monitoring of emission from each of the 4 boilers for the substances in this table is required annually.

Monthly Data Summary

Discharge & Monitoring Point 10

301204 East 6416350 North

In the flue gases of unit 4 boiler labelled as "Unit 4 Boiler 3-4 Chimney Stack" on plan no LD800474 amended 03 and dated 6/5/2003

Month	Date of Publication	Pollutant	Unit of measure	Sampling / measurement frequency	Averaging period	Data capture %	Lowest sample value	Mean of samples	Highest sample value	EPL Limit
MAY 2019	14/06/2019	Nitrogen Oxides	milligrams per cubic metre	Continuous	One hour					1500 mg/m ³
MAY 2019	14/06/2019		parts per million							700 ppm
MAY 2019	14/06/2019	Sulphur dioxide	milligrams per cubic metre	Continuous	One hour					
MAY 2019	14/06/2019		parts per million							600 ppm
MAY 2019	14/06/2019	Opacity - Undifferentiated particles	Percent	Continuous	One hour					20%
Comments:	Unit was out of service for the May monitoring period									

Annual monitoring of discharges to air

Air emission monitoring, Boiler 4 stack emissions, shown on plan no LD800474 amended 03 and dated 6/5/2003

Month	Date of Publication	Pollutant	Unit of measure	No. of samples required by licence	Samples collected and analysed	Sample value	EPL Limit mg/m ³
Oct-18	29/11/2018	Cadmium	milligrams per cubic metre	1	1	<0.0001	1.0
Oct-18	29/11/2018	Chlorine	milligrams per cubic metre	1	1	0.0	200
Oct-18	29/11/2018	Copper	milligrams per cubic metre	1	1	0.0007	
Oct-18	29/11/2018	Hazardous substances (Metals)	milligrams per cubic metre	1	1	≤0.013	5
Oct-18	29/11/2018	Hydrogen chloride	milligrams per cubic metre	1	1	21.0	100
Oct-18	29/11/2018	Mercury	milligrams per cubic metre	1	1	0.00037	1.0
Oct-18	29/11/2018	Nitrogen oxides	milligrams per cubic metre	1	1	540	1500
Oct-18	29/11/2018	Solid particles	milligrams per cubic metre	1	1	16.0	100
Oct-18	29/11/2018	Sulfuric acid mist and sulfur trioxide	milligrams per cubic metre	1	1	0.900	100
Oct-18	29/11/2018	Sulphur dioxide	milligrams per cubic metre	1	1	1100	
Oct-18	29/11/2018	Total fluoride	milligrams per cubic metre	1	1	11.0	50
Oct-18	29/11/2018	Volatile organic compounds	milligrams per cubic metre	1	1	<0.2	
Comments:	Monitoring of emission from each of the 4 boilers for the substances in this table is required annually.						

Monthly Data Summary

Discharge & Monitoring Point 12

Discharge to waters <301204 East 6416350 North> Update

Liddell Outfall Canal

Month	Date of Publication	Pollutant	Unit of measure	Sampling / measurement frequency	Samples collected and analysed	Lowest sample value	Mean of samples	Highest sample value	EPL Limit
MAY 2019	14/06/2019	Ammonia	milligrams per litre	Fortnightly	2	<0.01	0.0225	0.04	-
MAY 2019	14/06/2019	Antimony	milligrams per litre	Fortnightly	2	0.009	0.01	0.011	
MAY 2019	14/06/2019	Arsenic	milligrams per litre	Fortnightly	2	0.008	0.008	0.008	-
MAY 2019	14/06/2019	Barium	milligrams per litre	Fortnightly	2	0.109	0.111	0.113	
MAY 2019	14/06/2019	Beryllium	milligrams per litre	Fortnightly	2	<0.001	0.0005	<0.001	-
MAY 2019	14/06/2019	Boron	milligrams per litre	Fortnightly	2	1.28	1.34	1.4	
MAY 2019	14/06/2019	Cadmium	milligrams per litre	Fortnightly	2	<0.0001	0.00005	<0.0001	-
MAY 2019	14/06/2019	Chlorine	milligrams per litre	Fortnightly	2	0.1	0.115	0.13	
MAY 2019	14/06/2019	Chromium	milligrams per litre	Fortnightly	2	<0.01	0.005	<0.01	-
MAY 2019	14/06/2019	Chromium (total)	milligrams per litre	Fortnightly	2	<0.001	0.0005	<0.001	
MAY 2019	14/06/2019	Cobalt	milligrams per litre	Fortnightly	2	<0.001	0.0005	<0.001	-
MAY 2019	14/06/2019	Conductivity	uS/cm	Fortnightly	2	2670.0	2685.0	2700.0	
MAY 2019	14/06/2019	Copper	milligrams per litre	Fortnightly	2	0.003	0.0035	0.004	-
MAY 2019	14/06/2019	Flouride	milligrams per litre	Fortnightly	2	1.38	1.4	1.42	
MAY 2019	14/06/2019	Lead	milligrams per litre	Fortnightly	2	<0.001	0.0005	<0.001	-
MAY 2019	14/06/2019	Manganese	milligrams per litre	Fortnightly	2	0.007	0.01	0.012	
MAY 2019	14/06/2019	Mercury	milligrams per litre	Fortnightly	2	<0.0001	0.00005	<0.0001	-
MAY 2019	14/06/2019	Methylene Blue Active Substance	milligrams per litre	Fortnightly	2	<0.1	0.05	<0.1	
MAY 2019	14/06/2019	Molybdenum	milligrams per litre	Fortnightly	2	0.118	0.119	0.12	-
MAY 2019	14/06/2019	Nickel	milligrams per litre	Fortnightly	2	0.004	0.004	0.004	
MAY 2019	14/06/2019	Nitrogen (total)	milligrams per litre	Fortnightly	2	0.4	1.2	2	-
MAY 2019	14/06/2019	Oil and Grease	milligrams per litre	Weekly	4	<5	2.5	<5	
MAY 2019	14/06/2019	pH	pH Units	Daily	31	8.4	8.5	8.6	-
MAY 2019	14/06/2019	Phosphorus	milligrams per litre	Fortnightly	2	0.02	0.06	0.1	

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Month	Date of Publication	Pollutant	Unit of measure	Sampling / measurement frequency	Samples collected and analysed	Lowest sample value	Mean of samples	Highest sample value	EPL Limit
MAY 2019	14/06/2019	Selenium	milligrams per litre	Fortnightly	2	<0.01	0.005	<0.01	-
MAY 2019	14/06/2019	Sulfur	milligrams per litre	Fortnightly	2	600	620	640	
MAY 2019	14/06/2019	Temperature	milligrams per litre	Fortnightly	2	20.2	23.2	26.2	
MAY 2019	14/06/2019	Tin	milligrams per litre	Fortnightly	2	<0.001	0.0005	<0.001	-
MAY 2019	14/06/2019	Total Dissolved Solids	milligrams per litre	Fortnightly	2	1730	1780	1830	
MAY 2019	14/06/2019	Total Organic Carbon	milligrams per litre	Fortnightly	2	6	6	6	-
MAY 2019	14/06/2019	TSS	milligrams per litre	Fortnightly	2	5	5	5	
MAY 2019	14/06/2019	Vanadium	milligrams per litre	Fortnightly	2	0.01	0.01	0.01	-
MAY 2019	14/06/2019	Zinc	milligrams per litre	Fortnightly	2	<0.005	0.0025	<0.005	
Comments									

Monthly Data Summary

Comments									
Discharge & Monitoring Point 13									
Discharge to waters <301204 East 6416350 North> Update									
Liddell Oil and Grit Trap									
Month	Date of Publication	Pollutant	Unit of measure	Sampling / measurement frequency	Samples collected and analysed	Lowest sample value	Mean of samples	Highest sample value	EPL Limit
MAY 2019	14/06/2019	Ammonia	milligrams per litre	Fortnightly	2	0.06	0.06	0.06	-
MAY 2019	14/06/2019	Antimony	milligrams per litre	Fortnightly	2	0.01	0.01	0.01	
MAY 2019	14/06/2019	Arsenic	milligrams per litre	Fortnightly	2	0.012	0.012	0.012	-
MAY 2019	14/06/2019	Barium	milligrams per litre	Fortnightly	2	0.102	0.107	0.112	
MAY 2019	14/06/2019	Beryllium	milligrams per litre	Fortnightly	2	<0.001	0.0005	<0.001	-
MAY 2019	14/06/2019	Boron	milligrams per litre	Fortnightly	2	1.24	1.3	1.36	
MAY 2019	14/06/2019	Cadmium	milligrams per litre	Fortnightly	2	<0.0001	0.00005	<0.0001	-
MAY 2019	14/06/2019	Chlorine	milligrams per litre	Fortnightly	2	0.05	0.055	0.06	
MAY 2019	14/06/2019	Chromium	milligrams per litre	Fortnightly	2	<0.01	0.005	<0.01	-
MAY 2019	14/06/2019	Chromium (total)	milligrams per litre	Fortnightly	2	<0.001	0.0005	<0.001	
MAY 2019	14/06/2019	Cobalt	milligrams per litre	Fortnightly	2	<0.001	0.0005	<0.001	-
MAY 2019	14/06/2019	Conductivity	uS/cm	Fortnightly	2	2470.0	2490.0	2510.0	
MAY 2019	14/06/2019	Copper	milligrams per litre	Fortnightly	2	0.003	0.0035	0.004	-
MAY 2019	14/06/2019	Flouride	milligrams per litre	Fortnightly	2	1.43	1.54	1.65	
MAY 2019	14/06/2019	Lead	milligrams per litre	Fortnightly	2	<0.001	0.0005	<0.001	-
MAY 2019	14/06/2019	Manganese	milligrams per litre	Fortnightly	2	0.012	0.013	0.014	
MAY 2019	14/06/2019	Mercury	milligrams per litre	Fortnightly	2	<0.0001	0.00005	<0.0001	-
MAY 2019	14/06/2019	Methylene Blue Active Substance	milligrams per litre	Fortnightly	2	<0.1	0.05	<0.1	
MAY 2019	14/06/2019	Molybdenum	milligrams per litre	Fortnightly	2	0.119	0.1215	0.124	-
MAY 2019	14/06/2019	Nickel	milligrams per litre	Fortnightly	2	0.004	0.004	0.004	
MAY 2019	14/06/2019	Nitrogen (total)	milligrams per litre	Fortnightly	2	0.4	0.45	0.5	-
MAY 2019	14/06/2019	Oil and Grease	milligrams per litre	Weekly	4	<5	2.5	<5	
MAY 2019	14/06/2019	pH	pH Units	Daily	31	6.1	8.4	8.9	-

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Month	Date of Publication	Pollutant	Unit of measure	Sampling / measurement frequency	Samples collected and analysed	Lowest sample value	Mean of samples	Highest sample value	EPL Limit
MAY 2019	14/06/2019	Phosphorus	milligrams per litre	Fortnightly	2	0.04	0.055	0.07	
MAY 2019	14/06/2019	Selenium	milligrams per litre	Fortnightly	2	<0.01	0.005	<0.01	-
MAY 2019	14/06/2019	Sulfur	milligrams per litre	Fortnightly	2	570	595	620	
MAY 2019	14/06/2019	Temperature	milligrams per litre	Fortnightly	2	20.6	21.8	23	
MAY 2019	14/06/2019	Tin	milligrams per litre	Fortnightly	2	<0.001	0.0005	<0.001	-
MAY 2019	14/06/2019	Total Dissolved Solids	milligrams per litre	Fortnightly	2	1470	1530	1590	
MAY 2019	14/06/2019	Total Organic Carbon	milligrams per litre	Fortnightly	2	5	5.5	6	-
MAY 2019	14/06/2019	TSS	milligrams per litre	Fortnightly	2	6	6.5	7	
MAY 2019	14/06/2019	Vanadium	milligrams per litre	Fortnightly	2	0.02	0.02	0.02	-
MAY 2019	14/06/2019	Zinc	milligrams per litre	Fortnightly	2	<0.005	0.01075	0.019	
Comments									

Discharge & Monitoring Point 14

Discharge to waters <301204 East 6416350 North> Update

The skimmer dam overflow spillway, located at the left abutment of the skimmer dam.

Month	Date of Publication	Pollutant	Unit of measure	Sampling / measurement frequency	Samples collected and analysed	Lowest sample value	Mean of samples	Highest sample value	EPL Limit
MAY 2019	14/06/2019	Arsenic	milligrams per litre	Weekly	4	0.056	0.0595	0.069	-
MAY 2019	14/06/2019	Boron	milligrams per litre	Weekly	4	1.8	1.9425	2.2	
MAY 2019	14/06/2019	Cadmium	milligrams per litre	Weekly	4	<0.0001	0.0001	0.0002	-
MAY 2019	14/06/2019	Chromium	milligrams per litre	Weekly	4	<0.01	0.005	<0.01	-
MAY 2019	14/06/2019	Chromium (total)	milligrams per litre	Weekly	4	0.002	0.00275	0.004	
MAY 2019	14/06/2019	Conductivity	uS/cm	Weekly	4	2940.0	3040.0	3140.0	
MAY 2019	14/06/2019	Copper	milligrams per litre	Weekly	4	<0.001	0.000625	0.001	-
MAY 2019	14/06/2019	Flouride	milligrams per litre	Weekly	4	2.5	2.65	2.8	
MAY 2019	14/06/2019	Lead	milligrams per litre	Weekly	4	<0.001	0.0005	<0.001	-
MAY 2019	14/06/2019	Mercury	milligrams per litre	Weekly	4	<0.0001	0.00005	<0.0001	-
MAY 2019	14/06/2019	Oil and Grease	milligrams per litre	Weekly	4	<5	2.5	<5	

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Month	Date of Publication	Pollutant	Unit of measure	Sampling / measurement frequency	Samples collected and analysed	Lowest sample value	Mean of samples	Highest sample value	EPL Limit
MAY 2019	14/06/2019	pH	pH Units	Weekly	4	8.1	8.2	8.3	-
MAY 2019	14/06/2019	Selenium	milligrams per litre	Weekly	4	0.03	0.03	0.03	-
MAY 2019	14/06/2019	TSS	milligrams per litre	Weekly	4	2	4.25	7	
MAY 2019	14/06/2019	Zinc	milligrams per litre	Weekly	4	<0.005	0.01	0.03	
Comments									

Monthly Data Summary

Details of Non-Compliance with Licence

Licence condition number not complied with

L3.4

Summary of particulars of the non-compliance **(NO MORE THAN 50 WORDS)**

Daily sampling carried out at 10:35 recorded a pH of 6.1 at the EPL point 13. pH was checked again at 11:50 and had returned above 6.5. The event did not cause material harm to the environment

If required, further details on particulars of non-compliance

-

Date(s) when the non-compliance occurred, if applicable

27-May-19

If applicable, registration numbers of any vehicles or the chassis number of any mobile plant involved in the non-compliance

N/A

Cause of non-compliance

Cause remains under investigation.

Action taken or that will be taken to mitigate any adverse effects of the non-compliance

No adverse effects were noted.

Action taken or that will be taken to prevent a recurrence of the non-compliance

Any actions arising from the finalised investigation will be carried out in a timely manner

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