

# 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 <sup>3</sup>
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 <sup>3</sup>
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 <sup>3</sup>
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 <sup>3</sup>			
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 <sup>3</sup>
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 <sup>3</sup>
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.

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## 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 <sup>3</sup>
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 <sup>3</sup>
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									
<b>Discharge &amp; Monitoring Point 13</b>									
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	-



# Monthly Data Summary

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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