



Centennial Coal



CENTENNIAL Clarence

Environmental Monitoring Data

October 2018



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INTRODUCTION

This monitoring report has been prepared to make environmental monitoring data collected at Clarence Colliery available to members of the public in accordance with the requirements of Part 3.5, Section 66(6) of the Protection of the Environment Operations Act 1997. This document also satisfies conditions 13 (Air Quality Impact Assessment Criteria) and 15 (Noise Impact Assessment Criteria) under Schedule 3 of Development Consent 504-00 and summarises environmental monitoring results for Clarence Colliery for the period of 1 October 2018 to 31 October 2018 (herein referred to as the reporting period).

Table 1 – Colliery Information

Premises Details	Clarence Colliery
Address	Off Bells Line of Road, Newnes Junction NSW 2790
Licensee	Clarence Colliery
EPL no	726
EPL location	EPL 726

SURFACE WATER QUALITY

The following parameters are monitored monthly during discharge at Licensed Discharge Point 2 (LDP002), Licensed Discharge Point 3 (LDP003) and Licensed Discharge Point 4 (LDP004) in accordance with the requirements of Environmental Protection License 726 (EPL 726). Licensed Discharge Point 1 (LDP001) is no longer used by Clarence Colliery.

LDP002 discharges treated underground water from the Clarence water treatment plant and treated surface water. LDP003 and LDP004 provide emergency discharge during periods of sustained heavy rainfall. There were no discharges from LDP003 and LDP004 during the reporting period.

Water quality results are tabulated in Table 2.

Table 2 – Water Quality

Data Published:	26/11/2018	Licensee:	Clarence Colliery Pty Ltd	
Data Sampled:	17/10/2018	Address:	Off Bells Line Road Newnes Junction 2790	
Data Obtained:	16//11/2018	EPL No.	726	
LDP002				
Analyte	Unit	Limit	17/10/2018	Compliant
Arsenic (Filtered)	mg/L	0.013	<0.001	Yes
Boron (Filtered)	mg/L	0.1	<0.05	Yes
Cadmium (Filtered)	mg/L	0.0002	<0.0001	Yes
Chloride	mg/L	25	3	Yes
Chromium (Filtered)	mg/L	0.001	<0.001	Yes
Cobalt (Filtered)	mg/L	0.0025	0.003	No
Copper (Filtered)	mg/L	0.0014	<0.001	Yes
Iron (Filtered)	mg/L	0.3	<0.05	Yes
Fluoride (Total)	mg/L	1	<0.1	Yes
Lead (Filtered)	mg/L	0.0034	<0.001	Yes
Lithium (Filtered)	mg/L	0.1	0.02	Yes
Manganese (Filtered)	mg/L	0.5	0.016	Yes
Mercury (Filtered)	mg/L	0.00006	<0.00004	Yes
Nickel (Filtered)	mg/L	0.011	0.012	No
Nitrogen (Total)	mg/L	0.25	<0.1	Yes
Oil & Grease	mg/L	10	<5	Yes
pH	pH Units	6-8.5	8.9	Yes
Phosphorous (Total)	mg/L	0.02	0.02	Yes
Selenium (Total)	mg/L	0.005	<0.0002	Yes
Silver (Filtered)	mg/L	0.00005	<0.00001	Yes
Sulphur as Sulphate (Total)	mg/L	250	159	Yes
TSS	mg/L	30	15	Yes
Zinc (Filtered)	mg/L	0.008	<0.005	Yes
Electrical Conductivity	µS/cm	Monitor Only	341	Yes
LDP003				
Analyte	Unit	Limit	Result	Compliant
No Discharge				
LDP004				
Analyte	Unit	Limit	Result	Compliant
No Discharge				
Point 9				
Analyte	Unit	Limit	17/10/2018	Compliant
Arsenic (Filtered)	mg/L	Monitor Only	<0.001	Yes
Boron (Filtered)	mg/L	Monitor Only	<0.05	Yes
Cadmium (Filtered)	mg/L	Monitor Only	<0.0001	Yes
Chloride	mg/L	Monitor Only	3	Yes
Chromium (Filtered)	mg/L	Monitor Only	<0.001	Yes
Cobalt (Filtered)	mg/L	Monitor Only	0.013	Yes
Copper (Filtered)	mg/L	Monitor Only	<0.001	Yes
Iron (Filtered)	mg/L	Monitor Only	0.19	Yes
Fluoride (Total)	mg/L	Monitor Only	<0.1	Yes
Lead (Filtered)	mg/L	Monitor Only	<0.001	Yes
Lithium (Filtered)	mg/L	Monitor Only	0.020	Yes

Point 9				
Analyte	Unit	Limit	17/10/2018	Compliant
Manganese (Filtered)	mg/L	Monitor Only	0.159	Yes
Mercury (Filtered)	mg/L	Monitor Only	<0.00004	Yes
Nickel (Filtered)	mg/L	Monitor Only	0.045	Yes
Nitrogen (Total)	mg/L	Monitor Only	<0.1	Yes
Oil & Grease	mg/L	Monitor Only	<5	Yes
pH	pH Units	Monitor Only	6.8	Yes
Phosphorous (Total)	mg/L	Monitor Only	0.1	Yes
Selenium (total)	mg/L	Monitor Only	0.0002	Yes
Silver (Filtered)	mg/L	Monitor Only	<0.00001	Yes
Sulphur as Sulphate (Total)	mg/L	Monitor Only	142	Yes
TSS	mg/L	Monitor Only	<5	Yes
Zinc (Filtered)	mg/L	Monitor Only	0.054	Yes
Electrical Conductivity	µS/cm	Monitor Only	332	Yes

Figure 1 below depicts 12 monthly pH results at LDP002, as well as the upper and lower concentration limits.

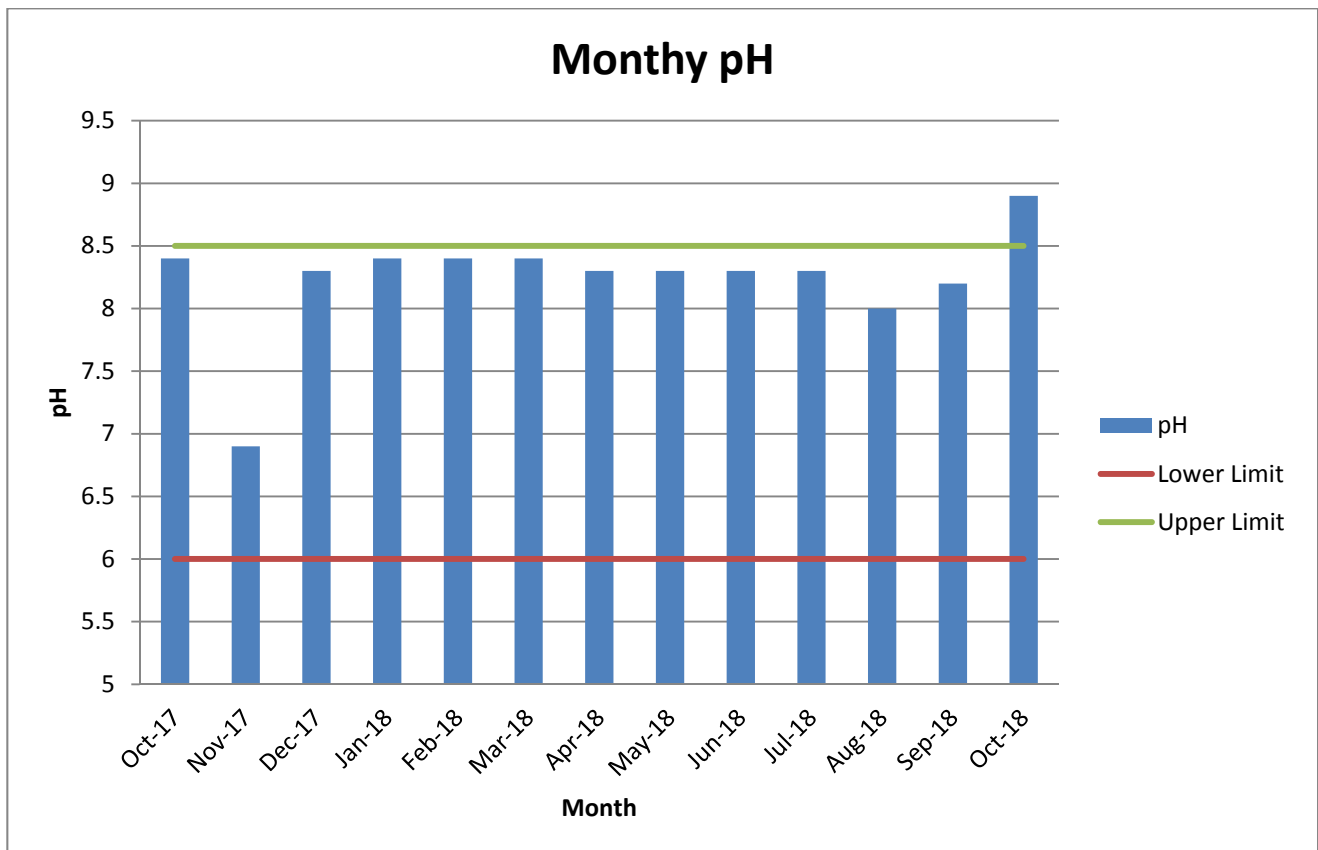


Figure 1 - LDP002 Monthly pH

WATER VOLUME

Water volume discharged off site at LDP002 is measured in accordance with EPL 726. EPL 726 limits the maximum volume of water discharged from LDP002 to 25,000 kL/day. This limit may be exceeded when there is greater than 10mm of rainfall within a 24 hour period. A total of 402280 kL of water was discharged from LDP002 during the reporting period.

A summary of total water volume discharged, including maximum daily discharge for the month, is provided in Table 3.

Table 3 – Discharge Summary for LDP002-LDP004

Date Published	26/11/2018	Licensee	Clarence Colliery				
Date Sampled	Continuous	Address	Off Bells Line of Road, Newnes Junction				
Date Obtained	26/11/2018	EPL No.	726				
Discharge Point	Unit of Measure	Monitoring Frequency Required by Licence	No. of Days	Min. Value	Daily Average	Max Value	Licence Exceed (YES/NO)
LDP002 - Treated Mine Water and Surface Water Discharge	kl	Continuous [#]	31	3776	12190	19523	NO
LDP003 – Emergency Discharge Only	kl	Estimate During Discharge	0	n/a	n/a	n/a	NO
LDP004 – Emergency Discharge Only	kl	Estimate During Discharge	0	n/a	n/a	n/a	NO

- Taken from WTP SCADA system as LDP002 flow meter was not operational for part of June.

Figure 2 below depicts the monthly discharges at LDP002.

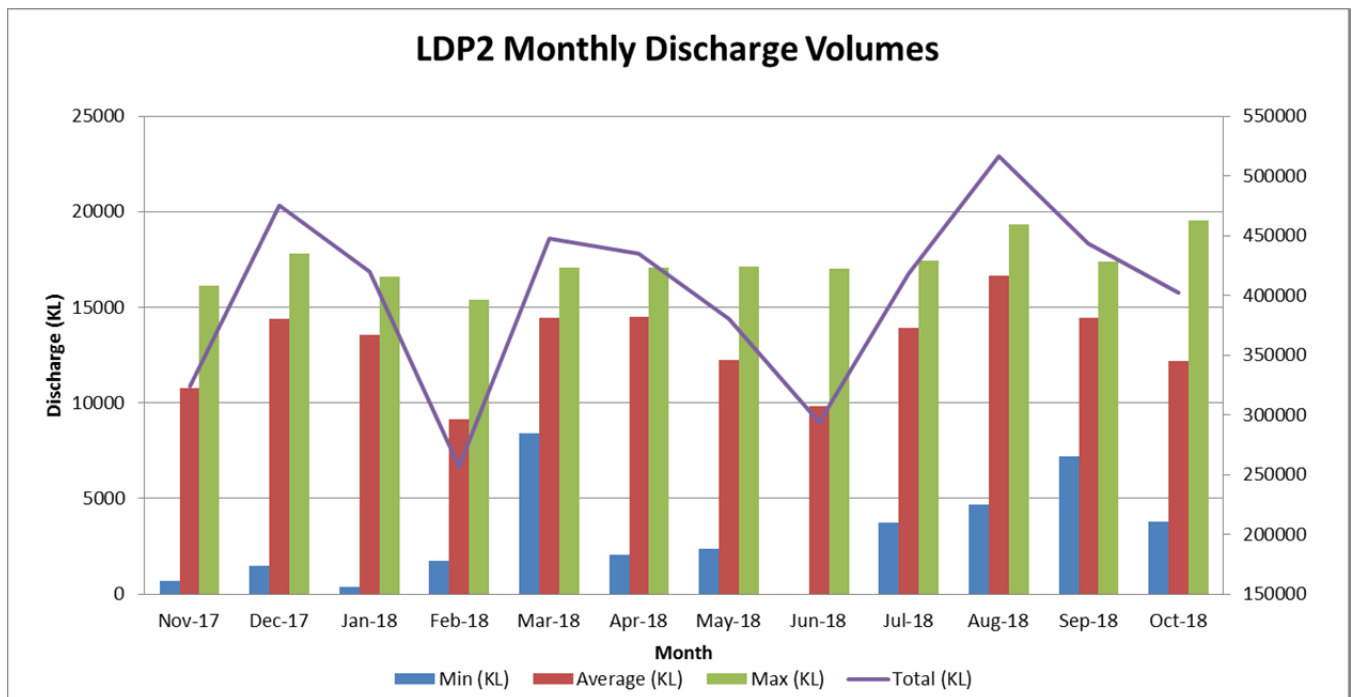


Figure 2 – LDP2 Monthly Discharge Volumes

AIR QUALITY MONITORING

The air quality monitoring results for the reporting period are summarized below.

Depositional Dust

Depositional dust (g/m²/mth) results (insoluble solids) for the reporting period are shown in Table 4. The average year to date is below the maximum allowable annual average dust level of 4g/m²/mth in accordance with Schedule 3 Condition 13 of Development Consent DA504-00.

Table 4 – Depositional Dust

Date Published	26/11/2018	Licensee	Clarence Colliery	
Date Sampled	October 2018	Address	Off Bells Line of Road, Newnes Junction	
Date Obtained	16/11/2018	EPL No.	726	
Dust Gauge	Unit of measure	Days Exposed	Insoluble Solids	Annual Average Limit
DG1	g/m ² /month	30	1.0	4
DG2	g/m ² /month	30	0.9	4
DG3	g/m ² /month	30	0.8	4

Figure 3 and 4 depict the monthly dust gauge results and the rolling 12 month average depositional dust gauge.

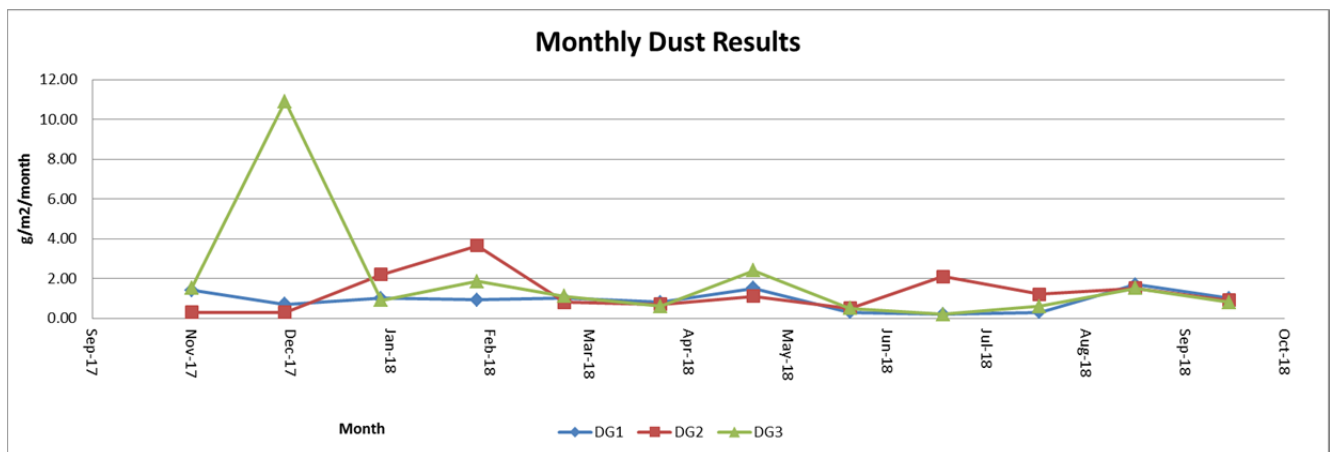


Figure 3 – Monthly Dust Gauge Results

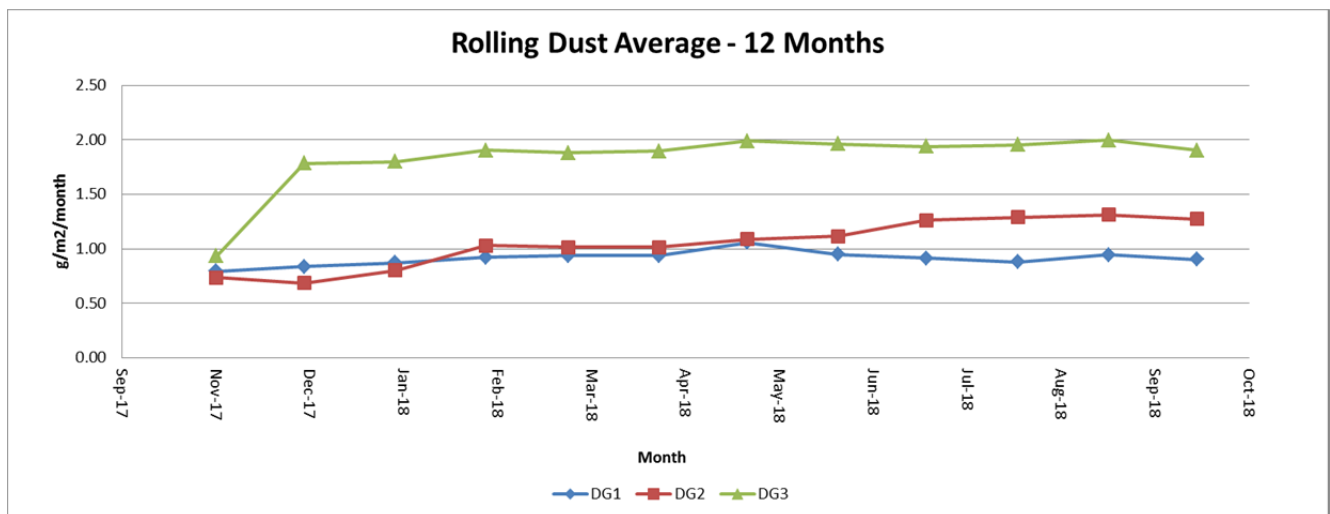


Figure 4 – Rolling 12 Month Dust Gauge Averages

COMPLAINTS

No Complaints were received for the reporting period. A summary of complaints received at Clarence Colliery for 2018 is shown in Table 5 below.

Table 5 – Complaints received at Clarence Colliery 2018

Data Published:		26/11/2018	Licensee:		Clarence Colliery
Data Obtained:		1/11//2018	EPL No.		726
Month	Air/Dust	Water	Noise	Other	
January 2018	Nil	Nil	Nil	Nil	
February 2018	Nil	Nil	Nil	Nil	
March 2018	Nil	Nil	Nil	Nil	
April 2018	Nil	Nil	Nil	Nil	
May 2018	Nil	Nil	Nil	Nil	
June 2018	Nil	Nil	Nil	Nil	
July 2018	Nil	Nil	Nil	Traffic on Bells line of Road	
August 2018	Nil	Nil	Nil	Nil	
September 2018	Nil	Nil	Nil	Nil	
October 2018	Nil	Nil	Nil	Nil	

WEATHER

A summary of rainfall and temperature data recorded at the onsite meteorological monitoring station during the reporting period is shown in Table 6.

Table 6 – 12 Month Meteorological Data for Clarence Colliery

Data Published:		14/10//2018	Licensee:		Clarence Colliery
Data Obtained:		14/10//2018	EPL No.		726
Month	Total Rainfall (mm)	Minimum Temperature (°C) @2m	Maximum Temperature (°C) @2m		
November 2017	55.2	4.15	25.88		
December 2017	81.0	8.3	32.3		
January 2018	39.4	7.83	36.55		
February 2018	103	7.58	33.88		
March 2018	82.2	2.75	30.73		
April 2018	22.8	5.34	29.17		
May 2018	12.6	0.69	20.18		
June 2018	2.0	-1.28	13.26		
July 2018	13.4	-2.9	16.7		
August 2018	50.2	-4.1	17.29		
September 2018	53.4	-1.36	23.13		
October 2018	133.6	2.71	25.33		

Figures 5, 6, and 7 below depicts the 12 months worth of weather data recorded at Clarence Colliery including Rainfall, Maximum and Minimum temperatures, Wind speed and direction, and relative humidity.

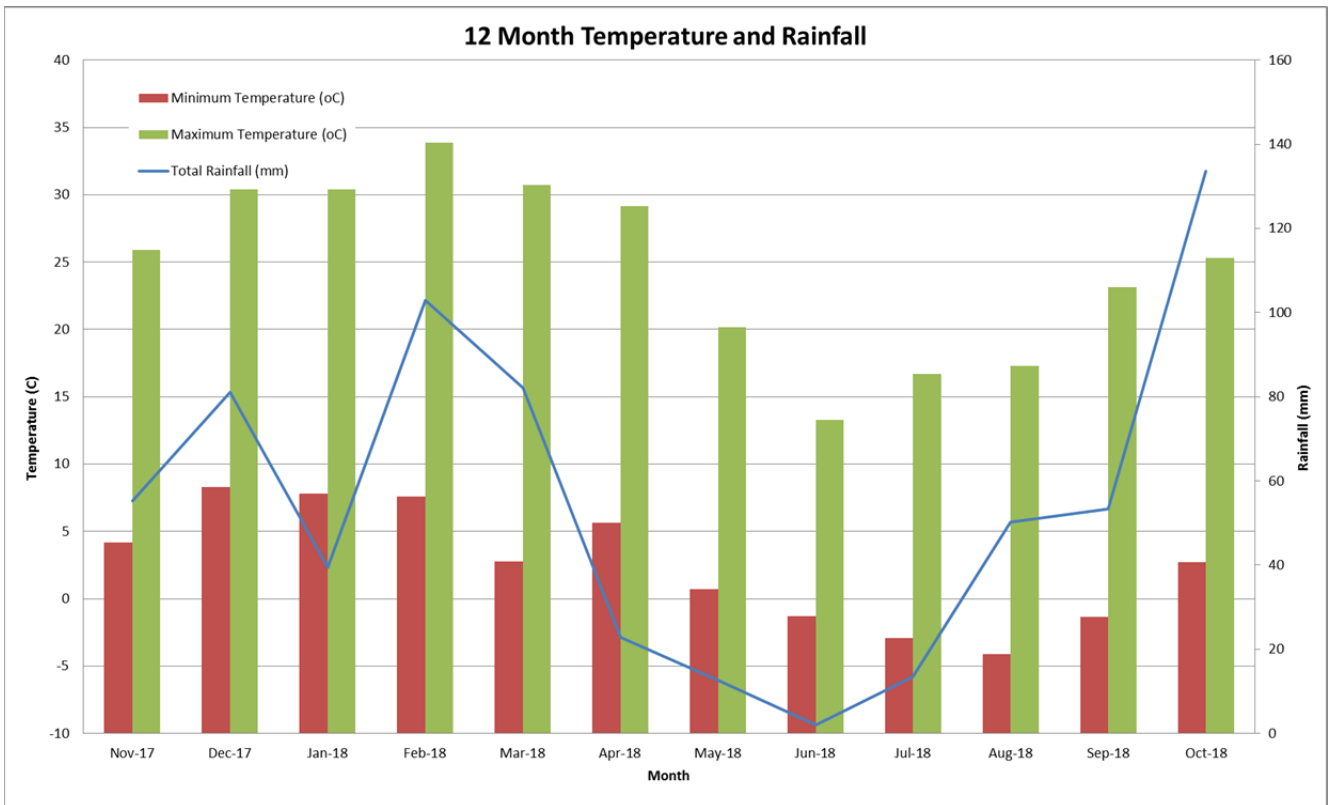


Figure 5 - 12 Month Temperature and Rainfall Data

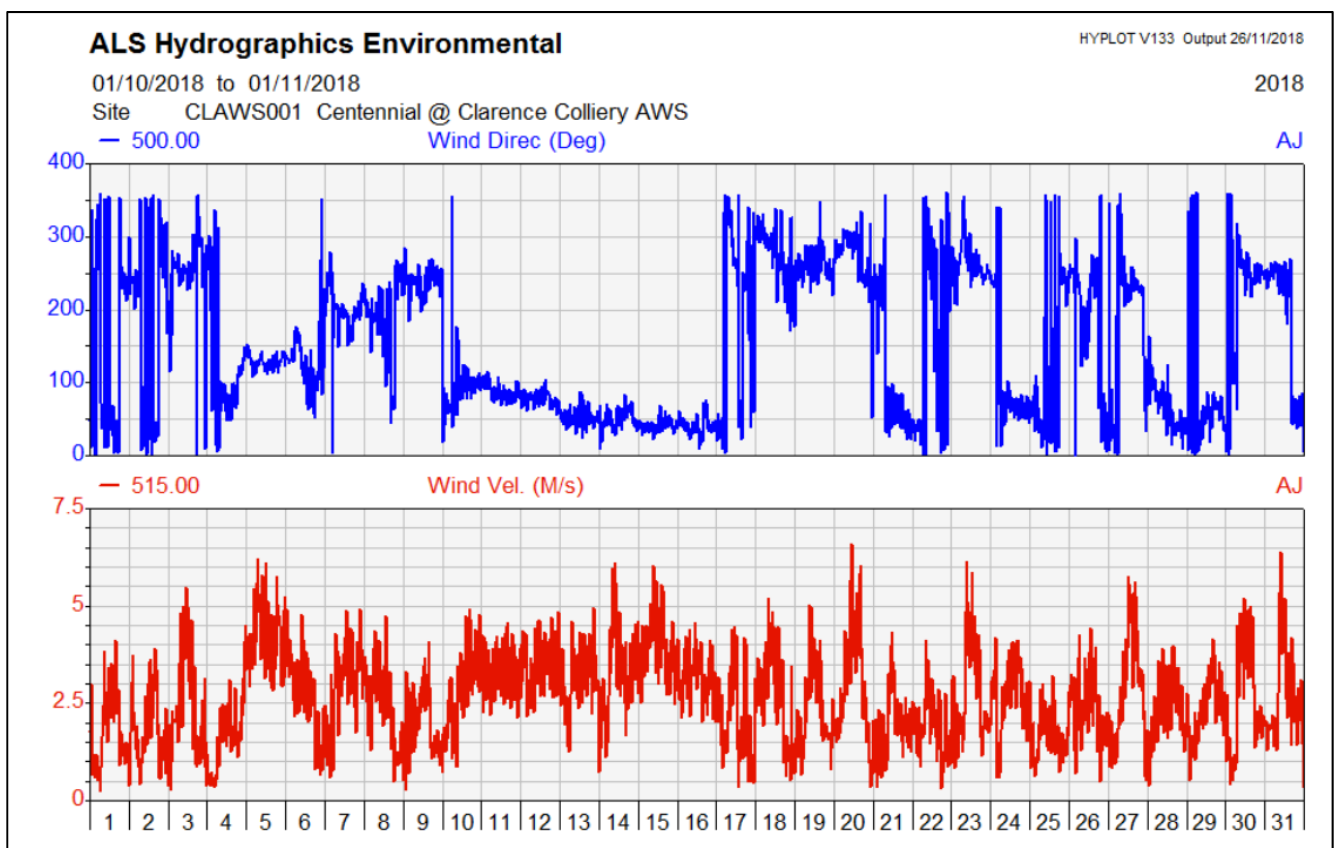


Figure 6 - Wind Speed and direction - September

ALS Hydrographics Environmental

HYPLOT V133 Output 26/11/2018

01/10/2018 to 01/11/2018

2018

— CLAWS001

Clarence Colliery WS 430.00

Humidity (%)

AJ

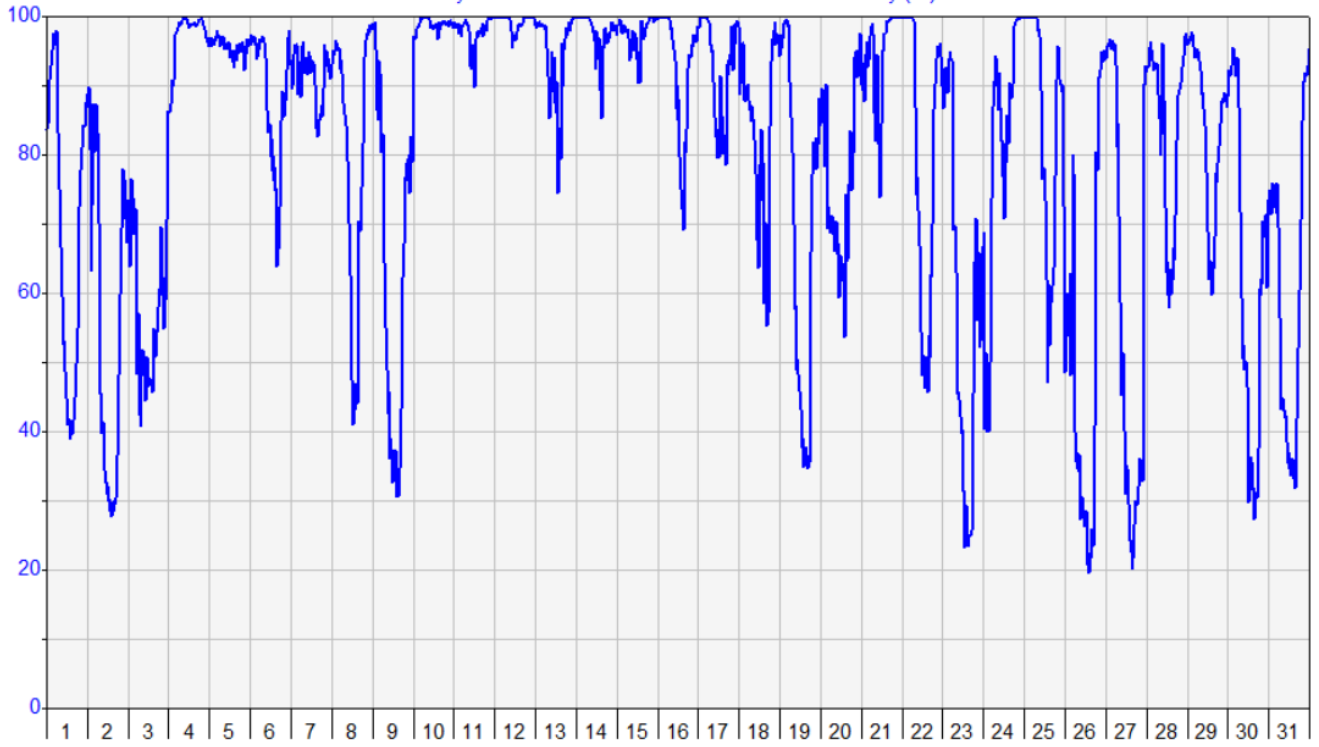


Figure 7 –Relative humidity September

APPENDIX 1 – PLAN CL1405

Figure 8 – Clarence Colliery Pit Top Monitoring Locations

