

# Monthly Website Report



<b>SITE:</b>	<b>Mannering Colliery</b>
<b>Department:</b>	<b>Technical Services</b>
<b>REPORT TITLE:</b>	<b>Monthly Environmental Report – December 2016</b>
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<b>Report Date:</b>	<b>13/01/2017</b>
<b>Distribution:</b>	<b>Mannering Colliery Website</b>

# Report

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# Report

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## Summary

Monitoring was undertaken in December 2016 with all results in compliance with the required limits.

## Introduction

LakeCoal Pty Ltd (LakeCoal) operates the Mannering Colliery, an underground coal mine at the southern end of Lake Macquarie.

This monthly report is to satisfy the requirements of;

- section 66(6) of the Protection of the Environment Operations Act, 1997, to make monitoring data related to an Environment Protection Licence publically available and
- condition 7 & 10, schedule 5, of Development Approval 06\_0311 (as modified) to provide details of monitoring results and environmental performance.

This report provides environmental monitoring data from Mannering Colliery for the period 1 December 2016 to 31 December 2016.

Environmental monitoring data is collected as required under Environment Protection Licence 191 (EPL 191).

Details of the Mannering Colliery and EPL 191 are provided below.

<b>Mannering Colliery Information</b>	
Premises name	Mannering Colliery
Address	Rutleys Road, Doyalson, NSW, 2262
Licensee	LakeCoal Pty Ltd
EPL #	191
EPL location	<a href="http://www.epa.nsw.gov.au/prpoeoapp/ViewPOEOLicence.aspx?DOCID=50781&amp;SYSUID=1&amp;LICID=191">http://www.epa.nsw.gov.au/prpoeoapp/ViewPOEOLicence.aspx?DOCID=50781&amp;SYSUID=1&amp;LICID=191</a>

The overall purpose of this report is to keep stakeholders informed of the environmental monitoring results at Mannering Colliery and maintain a transparent and accountable reporting system.

# Report

Title:

Manning Colliery Monthly Environmental Report

## Scope

This report presents the results from the various environmental monitoring undertaken for Manning Colliery.

Results are presented for each specific month and annual data, averages and trends in data are shown to where relevant.

Where applicable, the results of the monitoring programs are compared with the relevant criteria (from the EPL or Project Approval) to determine compliance.

Monitoring results presented include;

- Water – quality;
- Water – volume;
- Air quality;
- Operational noise; and
- Weather data

## Definitions

°C – degrees celsius

dB – decibels

dB(A) – noise level measurement units are decibels (dB). The A-weighting scale is used to approximate human perception of noise

g/m<sup>2</sup>/month – grams per square metre per month

kL – kilolitres

L<sub>Aeq</sub> – the average A-weighted noise energy (in dB) for a measurement period

mg/L – Milligrams per litre

mm – millimetre

µS/cm – microsiemens per centimetre

## References

Project Approval 06\_0311 (as modified)

Environment Protection Licence 191 (Licence version date: 13 May 2015)

Steel River Testing - Dust Deposition Report – December 2016 Report No: 12634-0

ALS Environmental - Monthly Water Monitoring Results December 2016 – ES1628584

Steel River Testing – Water Analysis Report – December 2016 Report No: 12731-0

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## Monitoring Results

### Water – Quality

Water Quality Results (reverted to Daily during discharge as per EPL PRP requirements)

December 2016			
<b>EPL</b>	191		
<b>Licensee</b>	LakeCoal Pty Ltd		
<b>Premises</b>	Mannering Colliery		
<b>Period</b>	1-Dec-16	to	31-Dec-16
<b>Location</b>	LDP001 (EPA ID # 1)		
<b>Date sampled</b>	Weekly		
<b>Date reported</b>	Refer report date		
<b>Monitoring requirement</b>	Weekly		
<b>pH limit</b>	6.5 - 8.5		
<b>TSS limit (mg/L)</b>	50		
<b>Oil and grease limit (mg/L)</b>	10		
<b>Exceedance (Yes/No)</b>	No		
Water Quality Results			
Date	pH	TSS (mg/L)	Oil and grease (mg/L)
1/12/2016			
2/12/2016			
3/12/2016			
4/12/2016			
5/12/2016			
6/12/2016			
7/12/2016	8.0	1	<5
8/12/2016			
9/12/2016			
10/12/2016			
11/12/2016			
12/12/2016			
13/12/2016	7.8	5	<5
14/12/2016			
15/12/2016			
16/12/2016			
17/12/2016			
18/12/2016			
19/12/2016			
20/12/2016			
21/12/2016	8.0	4	<5
22/12/2016			
23/12/2016			
24/12/2016			
25/12/2016			
26/12/2016			
27/12/2016			
28/12/2016	7.9	1	<5
29/12/2016			
30/12/2016			
31/12/2016			

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## Water – Volume

December 2016	
EPL	191
Licensee	LakeCoal Pty Ltd
Premises	Mannering Colliery
Date Sampled	Daily
Date Reported	Refer report date
Discharge volume limit	4000 kilolitres per day
Sampling Point	LDP001 (EPA ID # 1)

Date (24 hour period)	Unit	Volume
1/12/2016	kL	0
2/12/2016	kL	506
3/12/2016	kL	1263
4/12/2016	kL	1250
5/12/2016	kL	1253
6/12/2016	kL	1238
7/12/2016	kL	337
8/12/2016	kL	1167
9/12/2016	kL	947
10/12/2016	kL	64
11/12/2016	kL	1077
12/12/2016	kL	1092
13/12/2016	kL	1043
14/12/2016	kL	0
15/12/2016	kL	1025
16/12/2016	kL	1227
17/12/2016	kL	1216
18/12/2016	kL	842
19/12/2016	kL	707
20/12/2016	kL	75
21/12/2016	kL	444
22/12/2016	kL	1220
23/12/2016	kL	1123
24/12/2016	kL	1234
25/12/2016	kL	470
26/12/2016	kL	855
27/12/2016	kL	1225
28/12/2016	kL	1222
29/12/2016	kL	1126
30/12/2016	kL	646
31/12/2016	kL	658

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## Air Quality

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### Monthly depositional dust results

Monthly Depositional Dust Data	
December 2016	
<b>EPL</b>	191
<b>Licensee</b>	LakeCoal Pty Ltd
<b>Premises</b>	Mannering Colliery
<b>Date Sampled</b>	11-Nov-16 to 12-Dec-16
<b>Date Obtained</b>	20-Dec-16
<b>Date Reported</b>	Refer report date
<b>Sampling Point</b>	As per site below

Site	Insoluble Matter (g/m2/month)
DG1 (EPA ID # 3)	0.4
DG2 (EPA ID # 4)	1.1
DG3 (EPA ID # 5)	1.3
DG4 (EPA ID # 6)	1.0
DG5 (EPA ID # 7)	0.6

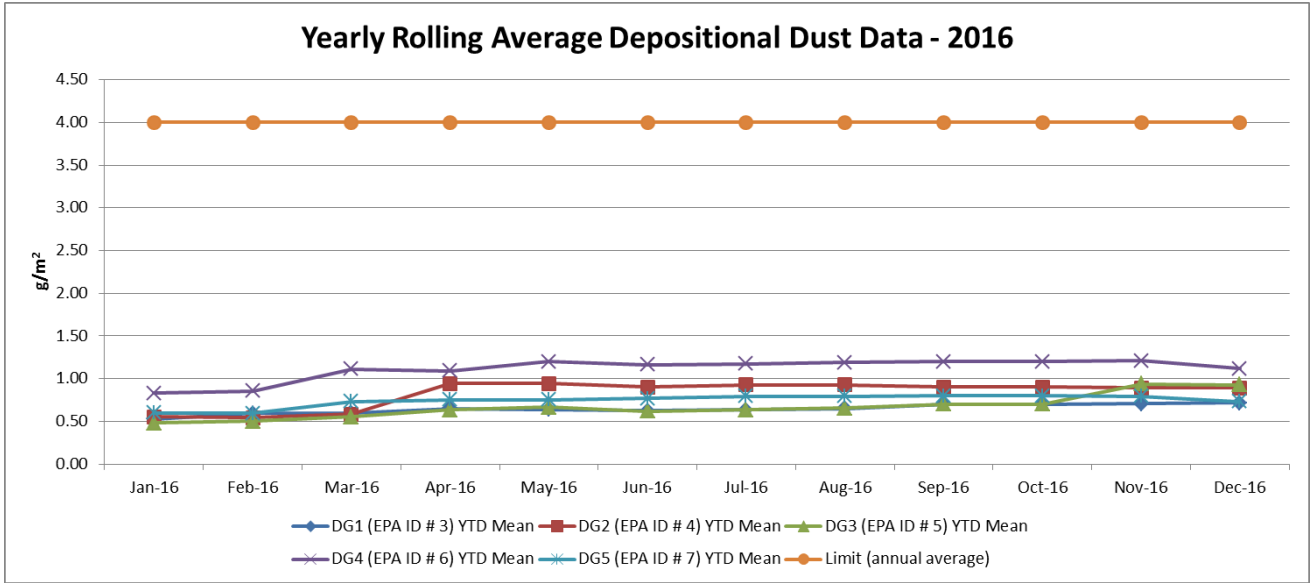
**Notes:**

- For site locations refer to Air Quality Management Plan

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## Rolling annual average depositional dust results



## Operational Noise

Attended noise monitoring was undertaken in November. There were no exceedances against relevant criteria identified in the attended noise monitoring conducted.

Excerpts from the report can be found below.



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Table 4.2:  $L_{Aeq,15\text{minute}}$  GENERATED BY MANNERING COLLIERY AGAINST OPERATIONAL NOISE IMPACT ASSESSMENT CRITERIA – NOVEMBER 2016

Location	Start Date And Time	Wind Speed (m/s)	VTG ( $^{\circ}\text{C}$ per 100m) <sup>1</sup>	$L_{Aeq}$ Criteria dB	Criteria Applies? <sup>2</sup>	MC $L_{Aeq}$ dB <sup>3,4,5</sup>	Exceedance <sup>4,5</sup>
<i>Day</i>							
RA1	25/11/2016 10:45	1.3	-2	42	Yes	IA	Nil
RA2	25/11/2016 11:08	1.5	-2	39	Yes	IA	Nil
RA3	25/11/2016 11:30	2.1	-2	39	Yes	IA	Nil
<i>Evening</i>							
RA1	24/11/2016 18:24	2.5	-2	42	Yes	IA	Nil
RA2	24/11/2016 19:07	1.5	3	39	Yes	IA	Nil
RA3	24/11/2016 19:27	1.3	3	39	Yes	IA	Nil
<i>Night</i>							
RA1	25/11/2016 01:37	0.6	-1	41	Yes	IA	Nil
RA2	24/11/2016 23:22	0.4	3	39	Yes	IA	Nil
RA3	24/11/2016 23:42	0.7	0.5	39	Yes	IA	Nil

Notes:

1. Sigma theta data used to calculate Vertical Temperature Gradient (VTG) in accordance with procedures detailed in the INP;
2. In accordance with Appendix 4A of the Project Approval, noise emission limits do not apply for wind speeds greater than 3m/s at 10 metres above ground level; stability category F temperature inversion conditions and wind speeds greater than 2m/s at 10m above ground level; or stability category G temperature inversion conditions;
3. These are results for MC in the absence of all other noise sources;
4. Bold results in red are those greater than the relevant criterion (if applicable); and
5. NA in exceedance column means atmospheric conditions outside conditions specified in project approval and so criterion is not applicable.

Table 4.3:  $L_{A1,1\text{minute}}$  GENERATED BY MANNERING COLLIERY AGAINST OPERATIONAL NOISE IMPACT ASSESSMENT CRITERIA – NOVEMBER 2016

Location	Start Date And Time	Wind Speed (m/s)	VTG ( $^{\circ}\text{C}$ per 100m) <sup>1</sup>	$L_{A1,1\text{min}}$ Criteria dB	Criteria Applies? <sup>2</sup>	MC $L_{A1,1\text{min}}$ dB <sup>3,4,5</sup>	Exceedance <sup>5</sup>
RA1	25/11/2016 01:37	0.6	-1	49	Yes	IA	Nil
RA2	24/11/2016 23:22	0.4	3	47	Yes	IA	Nil
RA3	24/11/2016 23:42	0.7	0.5	49	Yes	IA	Nil

Notes:

1. Sigma theta data used to calculate Vertical Temperature Gradient (VTG) in accordance with procedures detailed in the INP;
2. In accordance with Appendix 4A of the Project Approval, noise emission limits do not apply for wind speeds greater than 3m/s at 10 metres above ground level; stability category F temperature inversion conditions and wind speeds greater than 2m/s at 10m above ground level; or stability category G temperature inversion conditions;
3. These are results for MC in the absence of all other noise sources;
4. Bold results in red are those greater than the relevant criterion (if applicable); and
5. NA in exceedance column means atmospheric conditions outside conditions specified in project approval and so criterion is not applicable.

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## Weather

A summary of weather data recorded by an on-site meteorological monitoring station at the Colliery is presented below for the year to date.

Monthly Weather Data			
2016			
<b>EPL</b>	191		
<b>Licensee</b>	LakeCoal Pty Ltd		
<b>Premises</b>	Mannering Colliery		
<b>Location</b>	W1 (on-site weather station)		
<b>Date published:</b>	Refer report date		
<b>Date sampled:</b>	Daily		
<b>Date obtained:</b>	6/01/2016		
Month	Total Rainfall / Month (mm)	Minimum Temperature (°C)	Maximum Temperature (°C)
Jan-16	329	14.3	36
Feb-16	17.4	16.4	37.7
Mar-16	92.2	14.3	30.1
Apr-16	36.2	12.1	33.5
May-16	46.6	5.3	27.8
Jun-16	248.2	3.4	21.4
Jul-16	73.2	2.5	25
Aug-16	115	4.5	24.3
Sep-16	68	7.4	24.2
Oct-16	61	7.3	33.3
Nov-16	46.8	10.9	35.2
Dec-16	85.2	14.5	38.9