



---

# Manning Colliery Monthly Website Report – May 2024

---

<b>Site:</b>	Manning Colliery
<b>Department:</b>	Technical Services
<b>Report Title:</b>	Monthly Environmental Report – May 2024
<b>Report Date:</b>	14 June 2024
<b>Distribution:</b>	Delta Coal website

## Table of Contents

Summary .....	3
Introduction .....	3
Scope.....	4
Definitions .....	4
References .....	4
Monitoring Results.....	5
Water – Quality .....	5
Water – Volume.....	7
Water – Groundwater Discharge.....	8
Air Quality – Depositional Dust .....	8
Air Quality – PM <sub>10</sub> .....	9
Air Quality – PM <sub>2.5</sub> .....	11
Weather Data .....	11

# Monthly Website Report

Manning Colliery Monthly Environmental Report – May 2024

## Summary

Environmental monitoring results are presented in this report for monitoring undertaken during the period of May 2024.

## Introduction

Great Southern Energy Pty Ltd (trading as Delta Coal) operates Manning Colliery, an underground coal mine at the southern end of Lake Macquarie.

Manning Colliery operates under the following regulatory instruments:

- Section 66(6) of the *Protection of the Environmental Operations Act 1997*, to make monitoring data related to an Environment Protection Licence (EPL) publicly available;
- Condition 10 & 13, Schedule 5, of Project Approval 06\_0311 (as modified) to provide details of monitoring results and environmental performance;
- An Environment Protection Licence (EPL 191) issued under the *Protection of the Environment Operations Act 1997*; and
- A Water Access Licence (WAL40461), Aquifer (Sydney Basin – North Coast Groundwater Source) for 450-unit shares (megalitres).

Details of the Manning Colliery EPL 191 are provided below.

Manning Colliery Information	
Premises name	Manning Colliery
Address	Ruttleys Road, Doyalson, NSW, 2262
Licensee	Great Southern Energy Pty Ltd
EPL #	191
EPL location	<a href="#">EPL 0191 - 16 June 2023</a>

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

# Monthly Website Report

Manning Colliery Monthly Environmental Report – May 2024

## Scope

This report presents the results from the various environmental monitoring programs undertaken for Manning Colliery. Results are presented monthly with annual data, averages and trends in data also shown where relevant.

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

Monitoring results presented include:

- Water – quality;
- Water – volume;
- Air Quality – Depositional Dust
- Air Quality – PM<sub>10</sub>
- Air Quality – PM<sub>2.5</sub>; and
- Meteorological data.

## Definitions

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

kL – kilolitre;

ML – megalitre;

mg/L – milligrams per litre;

TSS – total suspended solids;

µg/L – micrograms per litre; and

µS/cm – microSiemens per centimetre.

## References

Project Approval MP06\_0311 (as modified)

Environment Protection Licence 191 (Licence version date: 16 June 2023)

ALS - Dust Deposition Report **May 2024**

ALS – MC Water Analysis Reports **May 2024**

# Monthly Website Report

Manning Colliery Monthly Environmental Report – May 2024

## Monitoring Results

Water – Quality

Weekly water quality results for discharge point LDP001 are presented below.

May 2024				
<b>EPL</b>	191			
<b>Licensee</b>	Great Southern Energy Pty Ltd			
<b>Premises</b>	Manning Colliery			
<b>Location</b>	LDP001 (EPA ID # 1)			
<b>Sample Frequency</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			
Water Quality Results				
Date	pH	TSS (mg/L)	Oil and grease (mg/L)	Electrical Conductivity (µS/cm)
03/05/2024	7.52	169	<5	398
09/05/2024	7.82	16	<5	27200
16/05/2024	7.88	<5	<5	24000
20/05/2024	7.81	13	<5	38000
30/05/2024	7.95	<5	<5	24600
<b>Average</b>	7.80	66	<5	22840

There were no exceedances of water quality criteria in May 2024 at Manning Colliery.

Monthly water quality results, primarily metals and metalloids, at LDP001 are presented below.

# Monthly Website Report

## Manning Colliery Monthly Environmental Report – May 2024

Sub-Matrix: WATER (Matrix: WATER)		Sample ID		LDP001
			Sampling date / time	20-May-2024 13:20
Compound	CAS Number	LOR	Unit	ES2416326-001
				Result
<b>ED040F: Dissolved Major Anions</b>				
Sulfur as S	63705-05-5	1	mg/L	105
Silicon as SiO2	14464-46-1	0.1	mg/L	9.8
<b>ED093T: Total Major Cations</b>				
Calcium	7440-70-2	1	mg/L	176
Magnesium	7439-95-4	1	mg/L	185
Potassium	7440-09-7	1	mg/L	26
<b>EG020F: Dissolved Metals by ICP-MS</b>				
Aluminium	7429-90-5	10	µg/L	<10
Arsenic	7440-38-2	1	µg/L	1
Beryllium	7440-41-7	1	µg/L	<1
Cadmium	7440-43-9	0.1	µg/L	<0.1
Chromium	7440-47-3	1	µg/L	<1
Copper	7440-50-8	1	µg/L	<1
Cobalt	7440-48-4	1	µg/L	<1
Nickel	7440-02-0	1	µg/L	2
Lead	7439-92-1	1	µg/L	<1
Zinc	7440-66-6	5	µg/L	16
Manganese	7439-96-5	1	µg/L	41
Molybdenum	7439-98-7	1	µg/L	5
Selenium	7782-49-2	10	µg/L	<10
Silver	7440-22-4	1	µg/L	<1
Vanadium	7440-62-2	10	µg/L	<10
<b>EG020T: Total Metals by ICP-MS</b>				
Aluminium	7429-90-5	10	µg/L	10
Antimony	7440-36-0	1	µg/L	<1
Arsenic	7440-38-2	1	µg/L	<1
Beryllium	7440-41-7	1	µg/L	<1
<b>EG020T: Total Metals by ICP-MS - Continued</b>				
Barium	7440-39-3	1	µg/L	214
Cadmium	7440-43-9	0.1	µg/L	<0.1
Chromium	7440-47-3	1	µg/L	<1
Copper	7440-50-8	1	µg/L	<1
Cobalt	7440-48-4	1	µg/L	<1
Nickel	7440-02-0	1	µg/L	1
Lead	7439-92-1	1	µg/L	<1
Zinc	7440-66-6	5	µg/L	25
Lithium	7439-93-2	1	µg/L	328
Molybdenum	7439-98-7	1	µg/L	4
Selenium	7782-49-2	10	µg/L	<10
Silver	7440-22-4	1	µg/L	<1
Tin	7440-31-5	1	µg/L	<1
Titanium	7440-32-6	10	µg/L	<10
Vanadium	7440-62-2	10	µg/L	<10
Boron	7440-42-8	50	µg/L	200
Iron	7439-89-6	50	µg/L	<50
<b>EG035F: Dissolved Mercury by FIMS</b>				
Mercury	7439-97-6	0.1	µg/L	<0.1
<b>EG035T: Total Recoverable Mercury by FIMS</b>				
Mercury	7439-97-6	0.1	µg/L	<0.1
<b>EK055G: Ammonia as N by Discrete Analyser</b>				
Ammonia as N	7664-41-7	0.01	mg/L	0.43
<b>EK067G: Total Phosphorus as P by Discrete Analyser</b>				
Total Phosphorus as P	----	0.01	mg/L	0.02

# Monthly Website Report

## Manning Colliery Monthly Environmental Report – May 2024

### Water – Volume

Monthly water volumes discharged via MC's LDP1 during May 2024 at Manning Colliery are summarised below.

EPL	191
Licensee	Great Southern Energy Pty Ltd
Premises	Manning 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)	LDP 1 Volume (kL/day)	Rainfall (mm)
01/05/2024	3728.56	53.6
02/05/2024	1964.66	2.6
03/05/2024	794.08	10.8
04/05/2024	1728.94	20.4
05/05/2024	2517.03	47
06/05/2024	4381.51	44.8
07/05/2024	777.47	0
08/05/2024	265.89	7.2
09/05/2024	561.47	0.4
10/05/2024	1399.13	3
11/05/2024	1444.62	20.4
12/05/2024	1262.76	3.4
13/05/2024	1181.41	2
14/05/2024	1088.45	0.2
15/05/2024	896.39	0.2
16/05/2024	1534.62	0
17/05/2024	1060.6	0
18/05/2024	1774.73	28.6
19/05/2024	1175.56	0
20/05/2024	1332.4	6.2
21/05/2024	1157.86	6.2
22/05/2024	1135.62	0.2
23/05/2024	1120.82	0
24/05/2024	1124.9	0
25/05/2024	1127.47	0
26/05/2024	1109.58	0.2
27/05/2024	1090.09	0
28/05/2024	1103.49	0.2
29/05/2024	1081.31	0
30/05/2024	1553.54	0.2
31/05/2024	2347.87	5

Average	1445.90kL/day	8.5 mm/day
Maximum	4381.51kL/day	53.6 mm/day

There was one exceedance of the volumetric discharge limit at LDP1 during the monitoring period. On 7 May 2024, the total flow was 4,382kL against the limit of 4,000 kL per day.

# Monthly Website Report

Manning Colliery Monthly Environmental Report – May 2024

## Water – Groundwater Discharge

Groundwater discharged from underground workings to the MCs surface retention Dams has been detailed below. Manning Colliery operates Water Access License 40461 permitting the extraction of 450 megalitres per financial year and reports annual use to the Water NSW, Water Accounting System (iWAS).

MC Groundwater Pumped to Surface Totals FY2023-2024		
Date (month)	GW Discharge (ML/Month)	GW Discharge (Cumulative ML YTD)
July 2023	23	23
August 2023	30	53
September 2023	26	79
October 2023	30	109
November 2023	18	127
December 2023	28	155
January 2024	32	187
February 2024	27	214
March 2024	22	226
April 2024	16	242
May 2024	24	266
June 2024		

## Air Quality – Depositional Dust

Monthly depositional dust results are shown below.

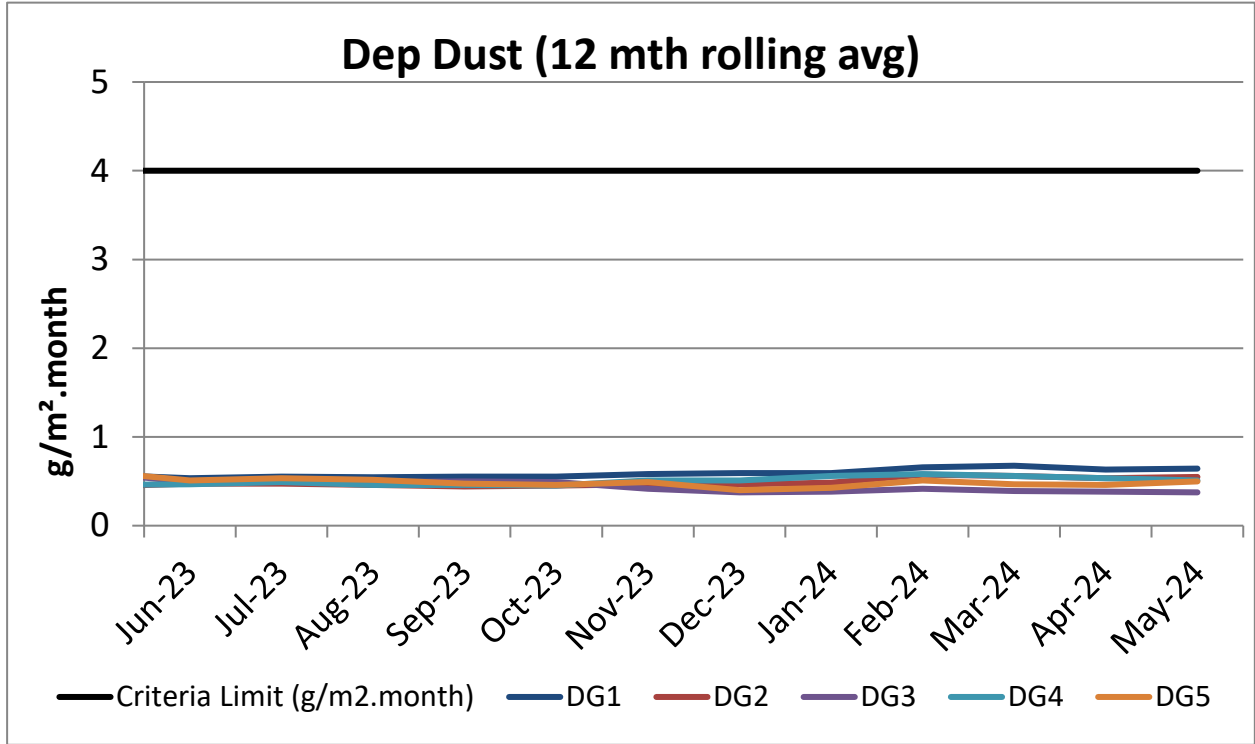
May 2024		
<b>EPL</b>	191	
<b>Limits</b>	Max. total deposited dust level	4g/m <sup>2</sup> /month
	Max. increase in deposited dust level	2g/m <sup>2</sup> /month
<b>Sampling Date</b>	04/04/2024 – 03/05/2024	
EPA ID no.	Site	Insoluble Matter (g/m <sup>2</sup> /month)
3	DG1	<b>0.4</b>
4	DG2	<b>0.3</b>
5	DG3	<b>0.2</b>
6	DG4	<b>0.1</b>
7	DG5	<b>0.8</b>
<b>Notes:</b>	Sampling locations provided in Delta Coal Air Quality and Greenhouse Gas Management Plan available on the Delta Coal website.	



# Monthly Website Report

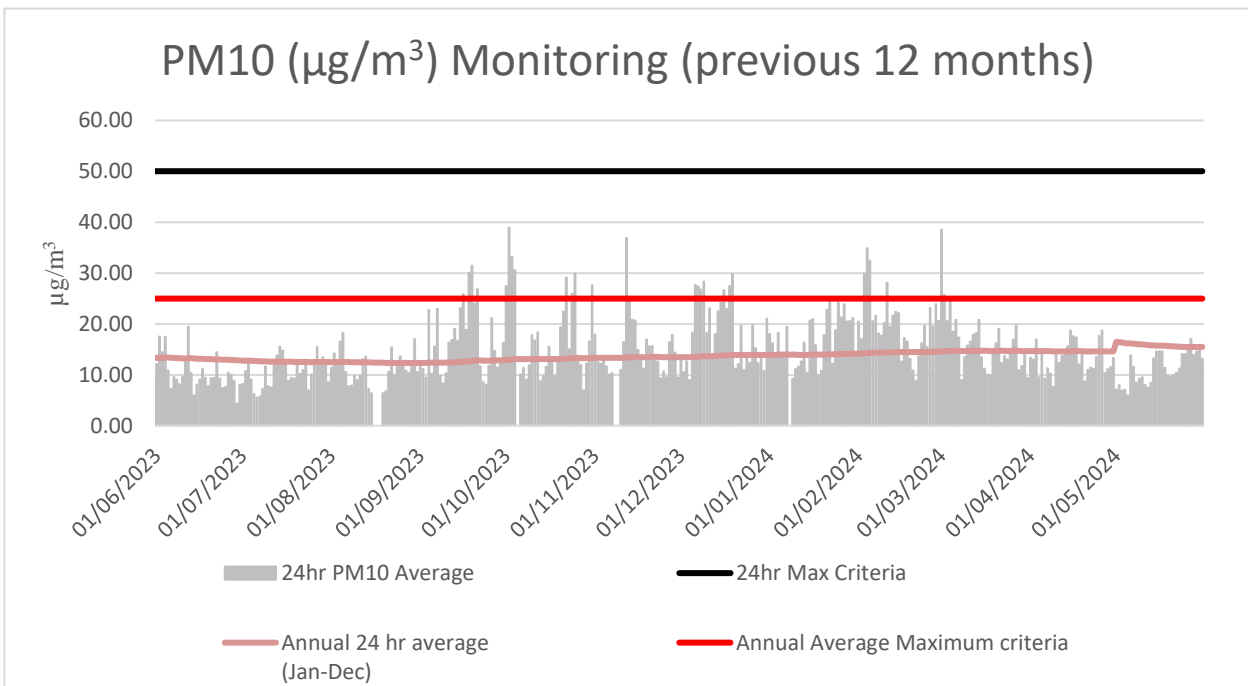
Manning Colliery Monthly Environmental Report – May 2024

A 12-month rolling average of depositional dust concentrations has been presented below. Manning Colliery's dust gauges are located around the perimeter of the Manning Colliery site boundary.



## Air Quality – $\text{PM}_{10}$

The 24hr  $\text{PM}_{10}$  average from Delta Coal's Tapered Element Oscillating Microbalance (TEOM), located at the Manning Park Sewage Treatment Plant, is presented below for the previous 12 months.



# Monthly Website Report

## Manning Colliery Monthly Environmental Report – May 2024

Annual 24hr PM<sub>10</sub> average maximum criteria for May 2024 was below the annual average maximum criteria limit. A summary of data availability for Delta Coal’s TEOM is presented below for the reporting period. Delta Coals TEOM had a data availability of 98% for the month of May 2024.

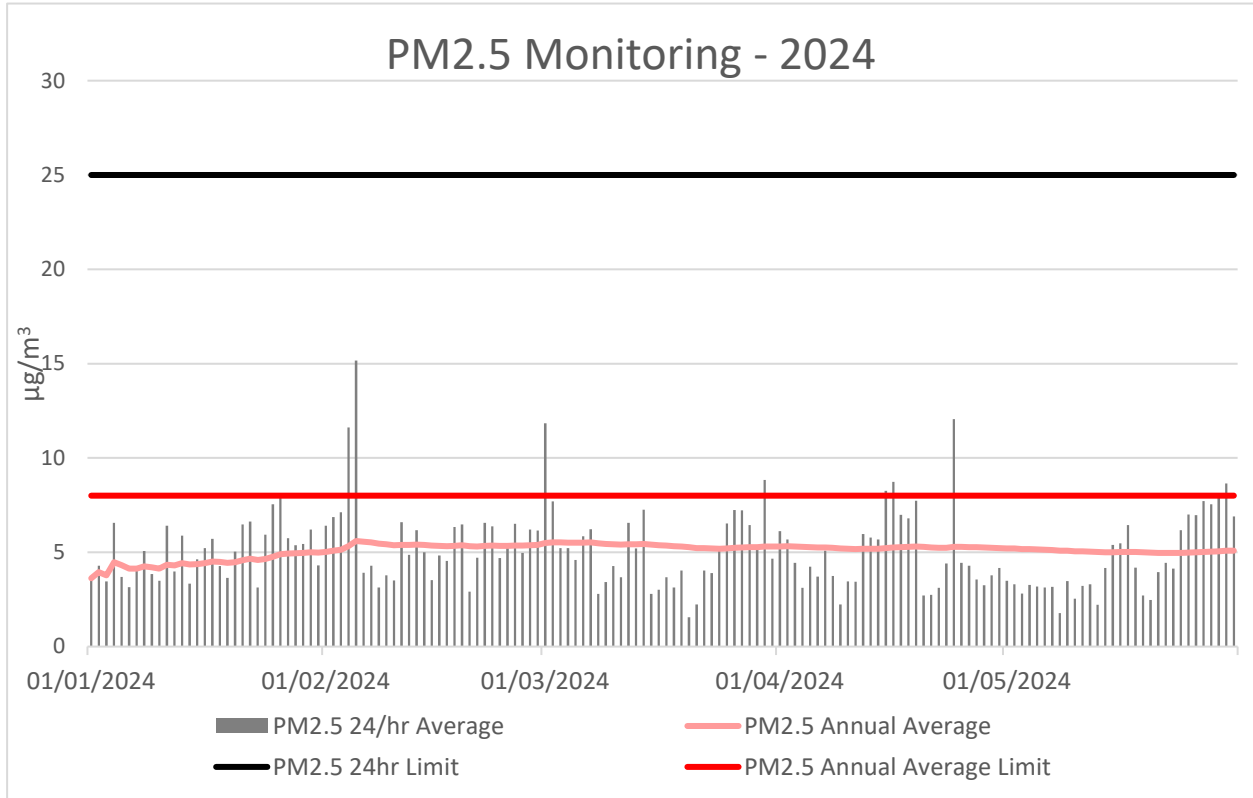
Variable	May	Total	Valid
A/C Temp	99.9%	8928	8918
A1_Scaled	99.9%	8928	8918
Band	99.9%	8928	8918
Bypass Flow	99.9%	8928	8917
Cap Temp	99.9%	8928	8918
Case Temp	99.9%	8928	8917
Config	99.9%	8928	8918
Dew Point	99.9%	8928	8918
Dig-In	99.9%	8928	8918
Dig-Latch	99.9%	8928	8918
ESN	99.9%	8928	8918
Filter Freq	99.9%	8928	8918
Filter Load	99.9%	8928	8918
Humidity	99.9%	8928	8918
MC	99.9%	8928	8918
MC 12Hr	99.9%	8928	8918
MC 1Hr	99.9%	8928	8918
MC 24Hr	99.9%	8928	8918
MC 30min	99.9%	8928	8918
MC 8Hr	99.9%	8928	8918
MC Total	99.9%	8928	8918
Mobile Signal	99.9%	8928	8918
Noise	99.9%	8928	8918
PM10 Flow	99.9%	8928	8917
Pressure	99.9%	8928	8918
Site	0.0%	8928	0
Temperature	99.9%	8928	8918
Tube Temp	99.9%	8928	8917
Vac Pressure	99.9%	8928	8918
Volts	99.9%	8928	8918

# Monthly Website Report

Manning Colliery Monthly Environmental Report – May 2024

## Air Quality – PM2.5

Delta Coal utilises PM<sub>2.5</sub> data obtained from Delta Electricity owned and operated beta attenuation monitor (BAM). The PM<sub>2.5</sub> monitor is located on Tingley Road, Wyee.



There were no exceedances of the PM<sub>2.5</sub> daily average limit in May 2024. The 12-month rolling average PM<sub>2.5</sub> value on 31 May was 5.1 µg/m<sup>3</sup>. PM<sub>2.5</sub> data availability in May was 100%. The 2024 year to date PM<sub>2.5</sub> data availability is 100%.

## Weather Data

A summary of weather data recorded by a meteorological monitoring station at the adjacent Manning Colliery is presented below for the year to date. (EPA ID no. 26).

Monthly Weather Data 2024			
Licensee	Great Southern Energy Pty Ltd		
Location	Manning Colliery Meteorological station		
Date published	Refer report date		
Date sampled	Daily		
Date obtained	11 June 2024		
Month	Total Rainfall/Month (mm)	Min Temp	Max Temp
Jan-24	53.6	13.8	40.9
Feb-24	163	16.4	39
Mar-24	18.6	13.3	33.8
Apr-24	362	13.2	17.9
May-24	263	12.1	16.6

# Monthly Website Report

Mannering Colliery Monthly Environmental Report – May 2024

Variable	May	Total	Valid
Baro (Corrected)	100%	2976	2976
10m Temp	100%	2976	2976
2m Temp	100%	2976	2976
A1	100%	2976	2976
A1_Scaled	100%	2976	2976
Assumed Temp	100%	2976	2976
Barometric	100%	2976	2976
Config	100%	2976	2976
Daily Evap	100%	2976	2976
Daily Rain	100%	2976	2976
Delta T	100%	2976	2976
Dew Point	100%	2976	2976
Dig-In	100%	2976	2976
Dig-Latch	100%	2976	2976
ESN	100%	2976	2976
FDI	100%	2976	2976
Heat Index	100%	2976	2976
Humidity	100%	2976	2976
Mobile Signal	100%	2976	2976
Rain	100%	2976	2976
Raw Evap	100%	2976	2976
S Class	100%	2976	2976
Scalar WS	100%	2976	2976
Sigma	100%	2976	2976
Site	0.0%	2976	0
Solar Radiation	100%	2976	2976
Vector WD	100%	2976	2976
Vector WS	100%	2976	2976
Volts	100%	2976	2976
Wind Chill	100%	2976	2976
Wind Direction	100%	2976	2976
Wind Speed	100%	2976	2976
WS Avg	100%	2976	2976
WS Gust	100%	2976	2976