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# Mannering Colliery Monthly Website Report – August 2025

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<b>Site:</b>	Mannering Colliery
<b>Department:</b>	Health Safety and Environment
<b>Report Title:</b>	Monthly Environmental Report – August 2025
<b>Report Date:</b>	5 <sup>th</sup> September 2025
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# Monthly Website Report

Mannering Colliery Monthly Environmental Report – August 2025

## 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> .....	10
Air Quality – PM <sub>2.5</sub> .....	12
Weather Data .....	12

# Monthly Website Report

Mannering Colliery Monthly Environmental Report – August 2025

## Summary

Environmental monitoring results are presented in this report for monitoring undertaken during the period of August 2025.

## Introduction

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

Mannering Colliery operates under the following regulatory instruments:

- Section 66(6) of the *Protection of the Environment 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 Mannering Colliery EPL 191 are provided below.

Mannering Colliery Information	
Premises name	Mannering Colliery
Address	Ruttleys Road, Doyalson, NSW, 2262
Licensee	Great Southern Energy Pty Ltd
EPL #	191
EPL location	<a href="#">EPL 0191 - 9 April 2025</a>

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

# Monthly Website Report

Mannering Colliery Monthly Environmental Report – August 2025

## Scope

This report presents the results from the various environmental monitoring programs undertaken for Mannering 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: 9 April 2025)

ALS - Dust Deposition Report **August 2025**

ALS – MC Water Analysis Reports **August 2025**

# Monthly Website Report

Mannering Colliery Monthly Environmental Report – August 2025

## Monitoring Results

### Water – Quality

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

August 2025				
EPL	191			
Licensee	Great Southern Energy Pty Ltd			
Premises	Mannering Colliery			
Location	LDP001 (EPA ID # 1)			
Sample Frequency	Weekly			
pH limit	6.5 - 8.5			
TSS limit (mg/L)	50			
Oil and grease limit (mg/L)	10			
Water Quality Results				
Date	pH	TSS (mg/L)	Oil and grease (mg/L)	Electrical Conductivity (µS/cm)
6/08/2025	7.80	18	<5	21200
14/08/2025	7.81	19	<5	98200
20/08/2025	7.76	80	<5	4520
26/08/2025	7.71	10	<5	17600
Average	7.8	31.8	<5	35380

One exceedance of water quality criteria was recorded during the August 2025 monitoring period. On 20 August 2025, the TSS result was 80 mg/L against the limit of 50 mg/L.

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

# Monthly Website Report

## Mannering Colliery Monthly Environmental Report – August 2025

Sub-Matrix: WATER (Matrix: WATER)		Sample ID		LDP001
		Sampling date / time		14-Aug-2025 08:20
Compound	CAS Number	LOR	Unit	EN2513747-001
				Result
<b>ED040F: Dissolved Major Anions</b>				
Sulfur as S	63705-05-5	1	mg/L	59
Silicon as SiO2	14464-46-1	0.1	mg/L	7.2
<b>ED093T: Total Major Cations</b>				
Calcium	7440-70-2	1	mg/L	102
Magnesium	7439-95-4	1	mg/L	98
Potassium	7440-09-7	1	mg/L	14
<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
Cobalt	7440-48-4	1	µg/L	<1
Copper	7440-50-8	1	µg/L	<1
Lead	7439-92-1	1	µg/L	<1
Manganese	7439-96-5	1	µg/L	27
Molybdenum	7439-98-7	1	µg/L	3
Nickel	7440-02-0	1	µg/L	<1
Selenium	7782-49-2	10	µg/L	<10
Silver	7440-22-4	1	µg/L	<1
Vanadium	7440-62-2	10	µg/L	<10
Zinc	7440-66-6	5	µg/L	22
<b>EG020T: Total Metals by ICP-MS</b>				
Aluminium	7429-90-5	10	µg/L	590
Antimony	7440-36-0	1	µg/L	1
Arsenic	7440-38-2	1	µg/L	2
Beryllium	7440-41-7	1	µg/L	<1
<b>EG020T: Total Metals by ICP-MS - Continued</b>				
Barium	7440-39-3	1	µg/L	129
Cadmium	7440-43-9	0.1	µg/L	<0.1
Chromium	7440-47-3	1	µg/L	<1
Cobalt	7440-48-4	1	µg/L	<1
Copper	7440-50-8	1	µg/L	1
Lead	7439-92-1	1	µg/L	1
Lithium	7439-93-2	1	µg/L	206
Molybdenum	7439-98-7	1	µg/L	4
Nickel	7440-02-0	1	µg/L	<1
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
Zinc	7440-66-6	5	µg/L	28
Boron	7440-42-8	50	µg/L	140
Iron	7439-89-6	50	µg/L	270
<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	0.34
<b>EK067G: Total Phosphorus as P by Discrete Analyser</b>				
Total Phosphorus as P	----	0.01	mg/L	0.02

# Monthly Website Report

## Mannering Colliery Monthly Environmental Report – August 2025

### Water – Volume

Monthly water volumes discharged via MC's LDP1 during August 2025 at Mannering Colliery are summarised below.

EPL	191
Licensee	Great Southern Energy Pty Ltd
Premises	Mannering Colliery
Date Sampled	Daily
Discharge volume limit	4000 kilolitres per day
Sampling Point	LDP001 (EPA ID # 1)

Date (24 hour period)	LDP 1 Volume (kL/day)	Rainfall (mm)
01/07/2025	1575.8	8.4
02/07/2025	2306.01	46.2
03/07/2025	2810	27.8
04/07/2025	1167.84	1.6
05/07/2025	1238.55	0.2
06/07/2025	1236.45	0
07/07/2025	1713.93	11.6
08/07/2025	1717.49	16.2
09/07/2025	3381.09	40.6
10/07/2025	2812.81	5.4
11/07/2025	1543.78	1.2
12/07/2025	1315.7	0.2
13/07/2025	1233.84	0
14/07/2025	1758.38	19.4
15/07/2025	1590.32	4.6
16/07/2025	888.66	0.6
17/07/2025	1157.25	0
18/07/2025	1804.35	30.6
19/07/2025	2830.84	18
20/07/2025	1521.24	18.8
21/07/2025	2379.81	22.6
22/07/2025	1804.97	11.4
23/07/2025	1322.1	0
24/07/2025	997.41	0
25/07/2025	648.01	0
26/07/2025	766.39	0
27/07/2025	727.69	0
28/07/2025	894.46	0
29/07/2025	1207.09	0
30/07/2025	1037.27	0
31/07/2025	1134.33	0

Average	1565 kL/day	9 mm/day
Maximum	3381 kL/day	46 mm/day

Volumetric discharge remained below the daily limit of 4,000 kL per day.

# Monthly Website Report

## Mannering Colliery Monthly Environmental Report – August 2025

### Water – Groundwater Discharge

Groundwater discharged from underground workings to the MCs surface retention Dams has been detailed below. Mannering 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 FY2025-2026		
Date (month)	GW Discharge (ML/Month)	GW Discharge (Cumulative ML YTD)
July 2025	22	22
August 2025	24	46

### Air Quality – Depositional Dust

Monthly depositional dust results are shown below.

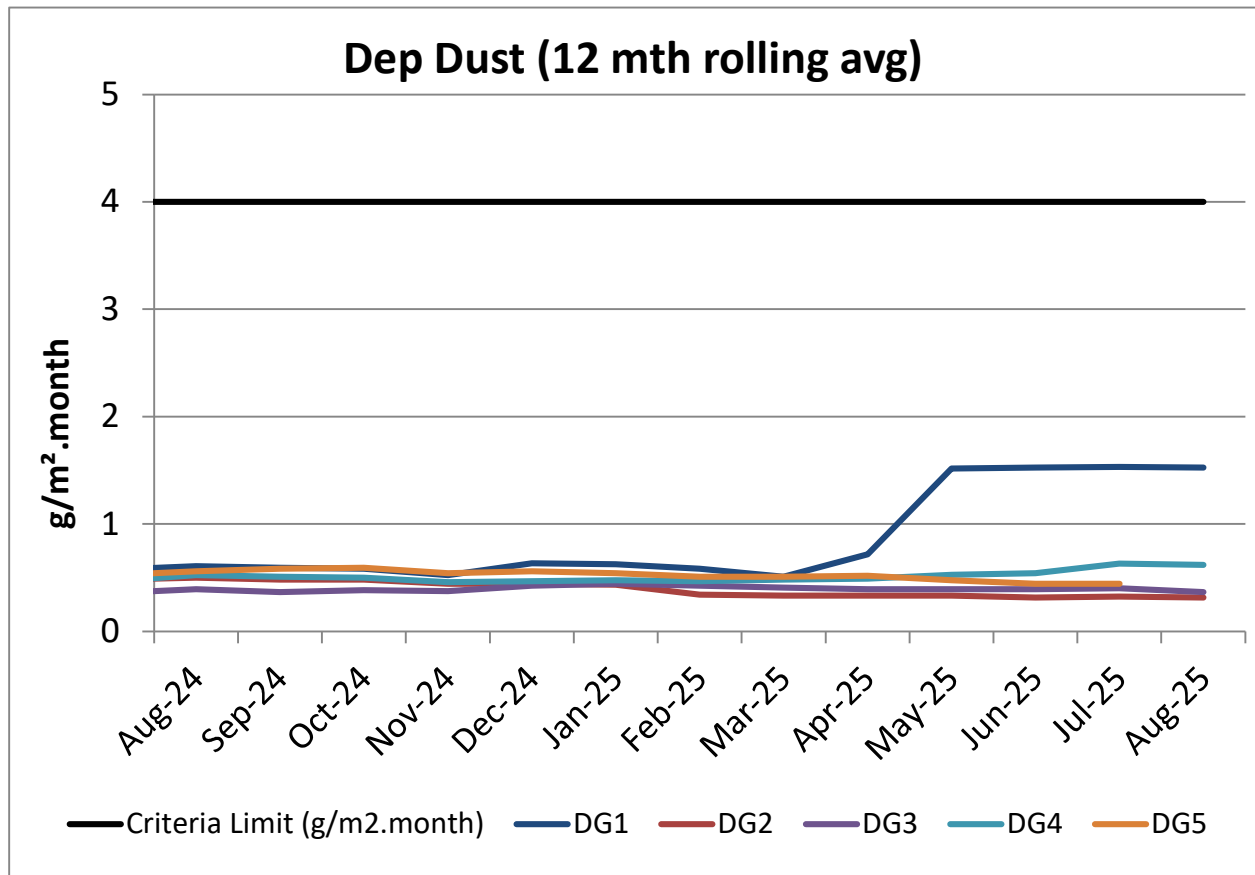
August 2025		
<b>EPL</b>	191	
<b>Limits</b>	Max. total deposited dust level	4g/m <sup>2</sup> /month
	Max. increase in deposited dust level	2g/m <sup>2</sup> /month
<b>Sampling Date</b>	7/07/2025 – 7/08/2025	
EPA ID no.	Site	Insoluble Matter (g/m <sup>2</sup> /month)
3	DG1	<b>0.3</b>
4	DG2	<b>0.1</b>
5	DG3	<b>0.1</b>
6	DG4	<b>0.4</b>
7	DG5	<b>0.3</b>
Notes: Sampling locations provided in Delta Coal Air Quality and Greenhouse Gas Management Plan available on the Delta Coal website.		



# Monthly Website Report

Mannering Colliery Monthly Environmental Report – August 2025

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

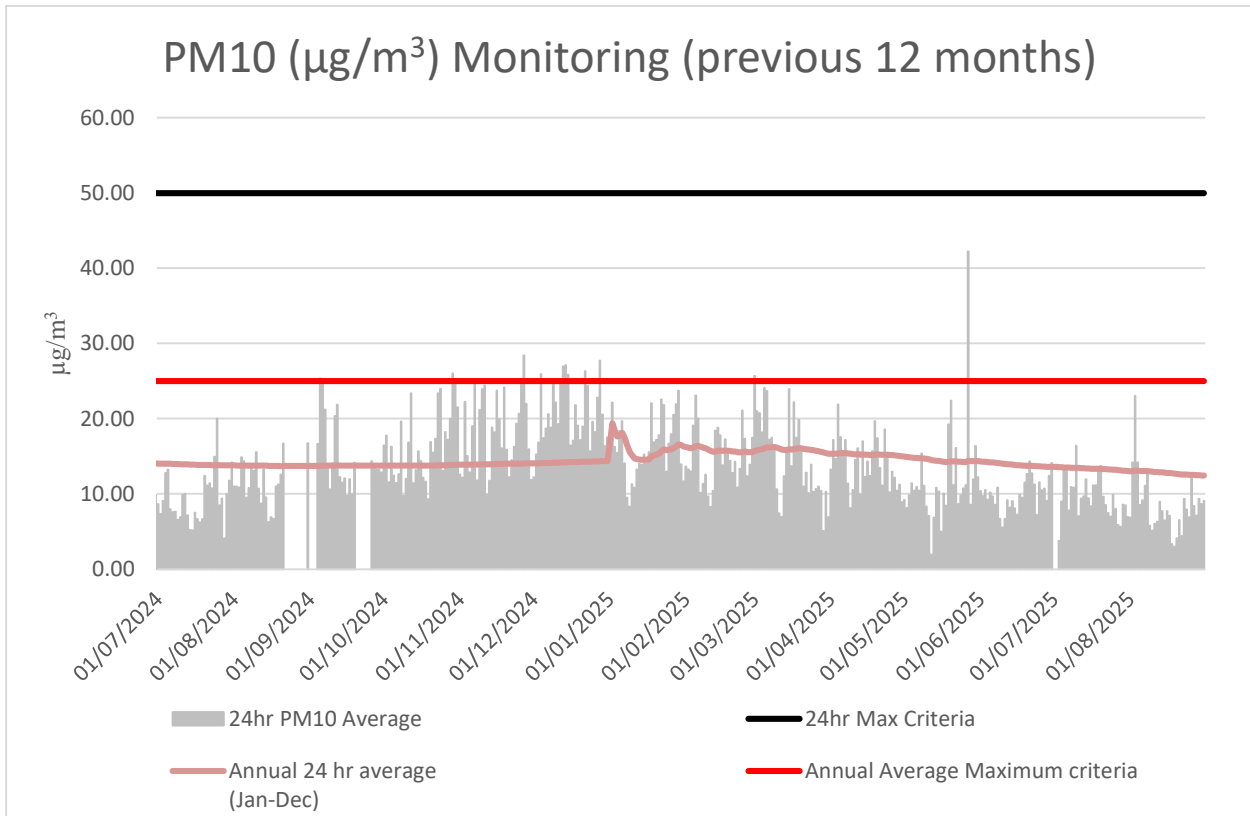


# Monthly Website Report

Mannering Colliery Monthly Environmental Report – August 2025

## Air Quality – PM<sub>10</sub>

The 24hr PM<sub>10</sub> average from Delta Coal's Tapered Element Oscillating Microbalance (TEOM), located at the Mannering Park Sewage Treatment Plant, is presented below for the previous 12 months.



Annual 24hr PM<sub>10</sub> average maximum criteria for August 2025 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 99.1% for the month of August 2025.

# Monthly Website Report

Mannering Colliery Monthly Environmental Report – August 2025

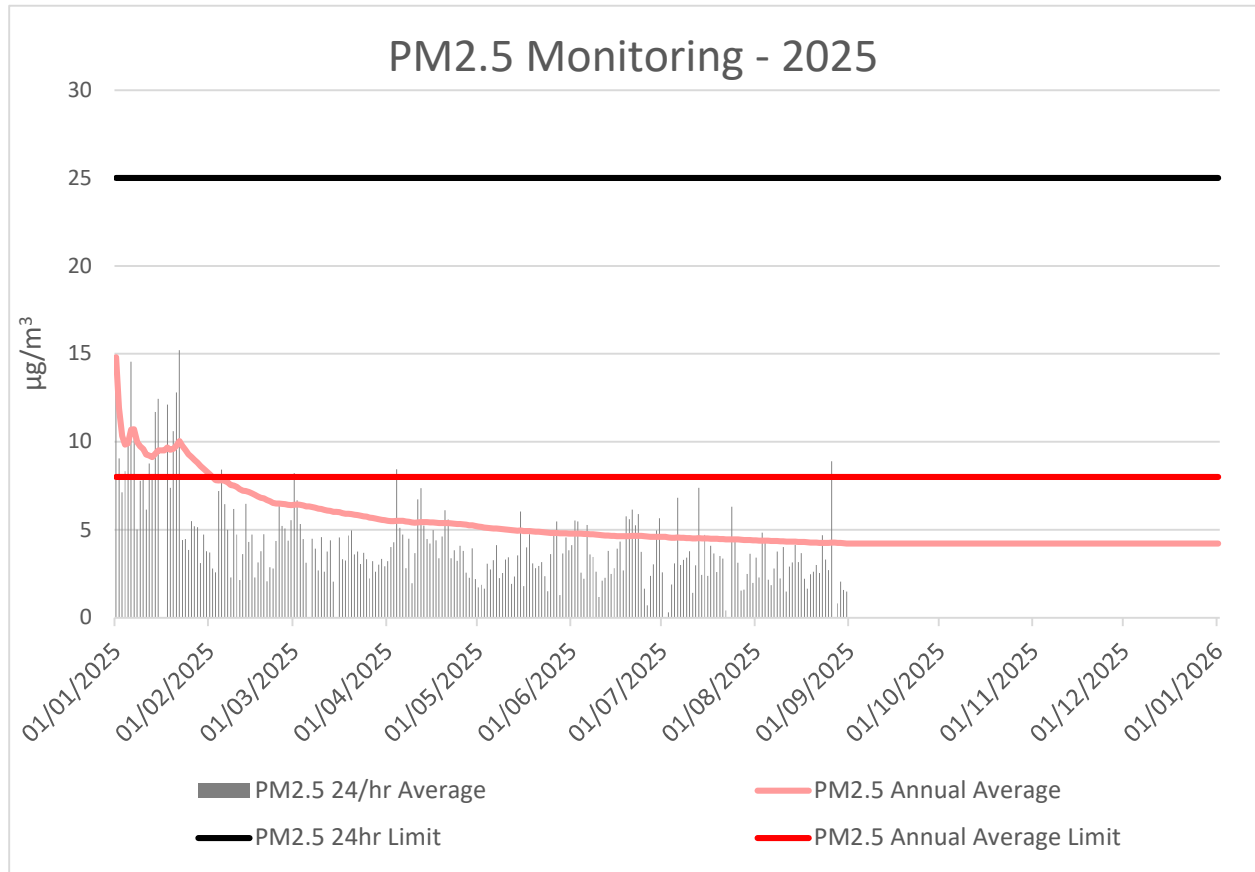
Variable	August	Total	Valid
A/C Temp	99.9%	8928	8922
A1_Scaled	99.9%	8928	8922
Band	99.9%	8928	8922
Bypass Flow	99.9%	8928	8922
Cap Temp	99.9%	8928	8922
Case Temp	99.9%	8928	8922
Config	99.9%	8928	8922
Dew Point	99.9%	8928	8922
Dig-In	99.9%	8928	8922
Dig-Latch	99.9%	8928	8922
ESN	99.9%	8928	8922
Filter Freq	99.9%	8928	8922
Filter Load	99.9%	8928	8922
Humidity	99.9%	8928	8922
MC	99.9%	8928	8922
MC 12Hr	99.9%	8928	8922
MC 1Hr	99.9%	8928	8922
MC 24Hr	99.9%	8928	8922
MC 30min	99.9%	8928	8922
MC 8Hr	99.9%	8928	8922
MC Total	99.9%	8928	8922
Mobile Signal	99.9%	8928	8922
Noise	99.9%	8928	8922
PM10 Flow	99.9%	8928	8922
Pressure	99.9%	8928	8922
Site	0.0%	8928	0
Temperature	99.9%	8928	8922
Tube Temp	99.9%	8928	8922
Vac Pressure	99.9%	8928	8922
Volts	99.9%	8928	8922

# Monthly Website Report

## Manning Colliery Monthly Environmental Report – August 2025

### Air Quality – PM<sub>2.5</sub>

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 August 2025. The 12-month rolling average PM<sub>2.5</sub> value on 31 August was 4.2 µg/m<sup>3</sup>. PM<sub>2.5</sub> data availability in August was 91.5%. The 2025 year to date PM<sub>2.5</sub> data availability is 92.6%.

# Monthly Website Report

## Mannering Colliery Monthly Environmental Report – August 2025

### Weather Data

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

Monthly Weather Data 2025			
Licensee	Great Southern Energy Pty Ltd		
Location	Mannering Colliery Meteorological station		
Date published	Refer report date		
Date sampled	Daily		
Date obtained	4 September 2025		
Month	Total Rainfall/Month (mm)	Min Temp	Max Temp
Jan-25	237	11.9	41.3
Feb-25	31	12.5	33.8
Mar-25	138	15.4	36.3
Apr-25	232	11	29.4
May-25	387	7.5	26
Jun-25	37.8	2.8	22.2
July-25	131	2.1	22.1
Aug-25	286	2.6	24.2

# Monthly Website Report

Mannering Colliery Monthly Environmental Report – August 2025

Variable	August	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