
Mannering Colliery Monthly Website Report – December 2025

Site:	Mannering Colliery
Department:	Health Safety and Environment
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Monthly Website Report

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Summary

Environmental monitoring results are presented in this report for monitoring undertaken during the period of December 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	EPL 0191 - 24 June 2025

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.

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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 – PM₁₀
- Air Quality – PM_{2.5}; and
- Meteorological data.

Definitions

g/m²/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 **December 2025**

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

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Monitoring Results

Water – Quality

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

December 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)
3/12/2025	8.47	23	<5	13200
10/12/2025	8.59	12	<5	12200
16/12/2025	7.71	18	<5	26700
23/12/2025	7.78	10	<5	19800
30/12/2025	7.76	12	<5	16100
Average	8.1	15.8	<5	17975

There were no exceedances of water quality criteria in December 2025 at Mannering Colliery.

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

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Sub-Matrix: WATER (Matrix: WATER)		Sample ID		LDP001
		Sampling date / time		10-Dec-2025 11:10
Compound	CAS Number	LOR	Unit	EN2520813-001
				Result
ED040F: Dissolved Major Anions				
Sulfur as S	63705-05-5	1	mg/L	67
Silicon as SiO ₂	14464-46-1	0.1	mg/L	1.8
ED093T: Total Major Cations				
Calcium	7440-70-2	1	mg/L	131
Magnesium	7439-95-4	1	mg/L	147
Potassium	7440-09-7	1	mg/L	20
EG020F: Dissolved Metals by ICP-MS				
Aluminium	7429-90-5	10	µg/L	20
Arsenic	7440-38-2	1	µg/L	5
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	19
Molybdenum	7439-98-7	1	µg/L	5
Nickel	7440-02-0	1	µg/L	2
Selenium	7782-49-2	4	µg/L	<4
Silver	7440-22-4	1	µg/L	<1
Vanadium	7440-62-2	10	µg/L	<10
Zinc	7440-66-6	5	µg/L	10
EG020T: Total Metals by ICP-MS				
Aluminium	7429-90-5	10	µg/L	70
Antimony	7440-36-0	1	µg/L	3
Arsenic	7440-38-2	1	µg/L	6
Beryllium	7440-41-7	1	µg/L	<1
EG020T: Total Metals by ICP-MS - Continued				
Barium	7440-39-3	1	µg/L	206
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	4
Lead	7439-92-1	1	µg/L	<1
Lithium	7439-93-2	1	µg/L	248
Molybdenum	7439-98-7	1	µg/L	6
Nickel	7440-02-0	1	µg/L	2
Selenium	7782-49-2	4	µg/L	<4
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	35
Boron	7440-42-8	50	µg/L	220
Iron	7439-89-6	50	µg/L	470
EG035F: Dissolved Mercury by FIMS				
Mercury	7439-97-6	0.0001	mg/L	<0.0001
EG035T: Total Recoverable Mercury by FIMS				
Mercury	7439-97-6	0.0001	mg/L	<0.0001
EK055G: Ammonia as N by Discrete Analyser				
Ammonia as N	7664-41-7	0.01	mg/L	0.03
EK067G: Total Phosphorus as P by Discrete Analyser				
Total Phosphorus as P	----	0.01	mg/L	0.04

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Water – Volume

Monthly water volumes discharged via MC's LDP1 during December 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)
1/12/2025	899.52	0
2/12/2025	92.43	0
3/12/2025	1.66	0
4/12/2025	497.99	0
5/12/2025	871.79	0
6/12/2025	866.50	0
7/12/2025	880.25	0
8/12/2025	881.40	0.2
9/12/2025	1145.10	0
10/12/2025	1296.59	0.6
11/12/2025	1116.55	4.2
12/12/2025	1533.50	64.6
13/12/2025	2157.86	2.4
14/12/2025	1435.57	1.4
15/12/2025	721.51	0
16/12/2025	807.93	4.8
17/12/2025	900.27	0.2
18/12/2025	1302.61	0
19/12/2025	844.32	0
20/12/2025	458.63	0
21/12/2025	1099.53	0
22/12/2025	1144.27	6
23/12/2025	1175.54	0
24/12/2025	1268.94	0
25/12/2025	795.12	0
26/12/2025	481.91	0.2
27/12/2025	866.06	0.2
28/12/2025	210.60	0.4
29/12/2025	476.69	0
30/12/2025	1960.22	0
31/12/2025	1032.20	0

Average	2157.86 kL/day	64.6 mm/day
Maximum	942.68 kL/day	2.75 mm/day

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

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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 FY2025-2026		
Date (month)	GW Discharge (ML/Month)	GW Discharge (Cumulative ML YTD)
July 2025	22	22
August 2025	24	46
September 2025	20	66
October 2025	25	91
November 2025	23	114
December	22	136

Air Quality – Depositional Dust

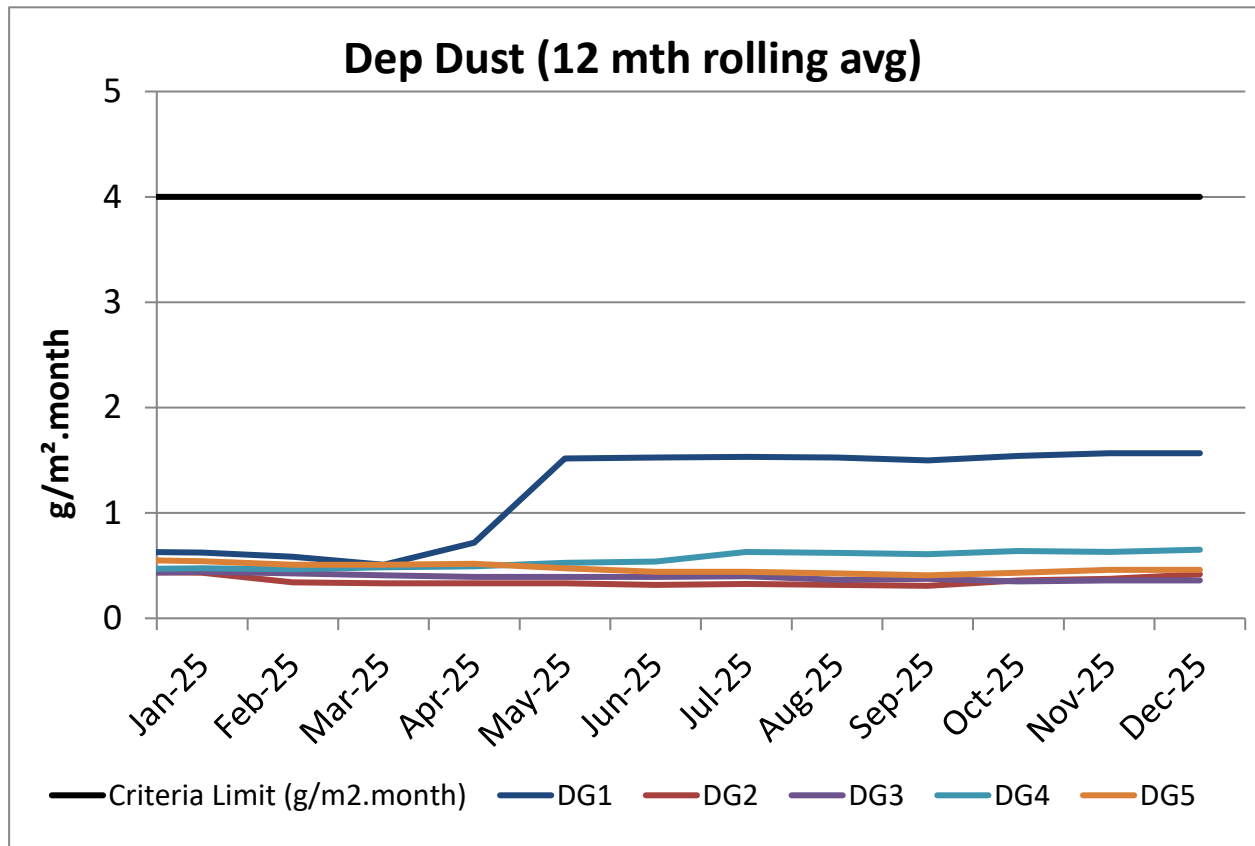
Monthly depositional dust results are shown below.

December 2025		
EPL 191		
Limits	Max. total deposited dust level	4g/m ² /month
	Max. increase in deposited dust level	2g/m ² /month
Sampling Date	5/11/2025 – 5/12/2025	
EPA ID no.	Site	Insoluble Matter (g/m ² /month)
3	DG1	2.0
4	DG2	1.0
5	DG3	0.8
6	DG4	0.8
7	DG5	0.7
Notes:	Sampling locations provided in Delta Coal Air Quality and Greenhouse Gas Management Plan available on the Delta Coal website.	

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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.

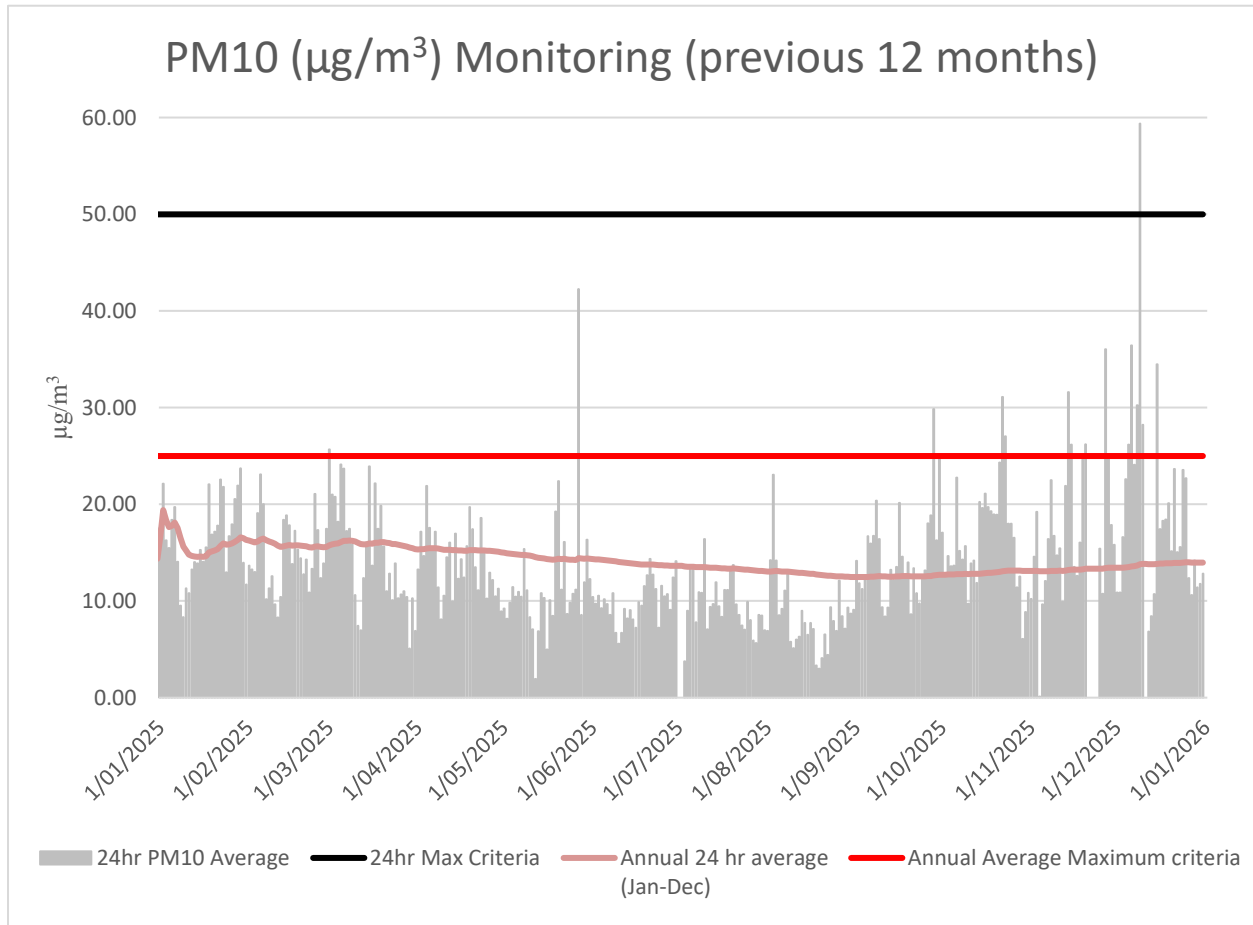


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Air Quality – PM₁₀

The 24hr PM₁₀ 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 PM₁₀ average maximum criteria for December 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 98.1% for the month of December 2025.

During the period, there was one exceedance of the PM₁₀ 24hr average limit of 50 µg/m³. The 24hr average on 9 December 2025 was 59.4 µg/m³.

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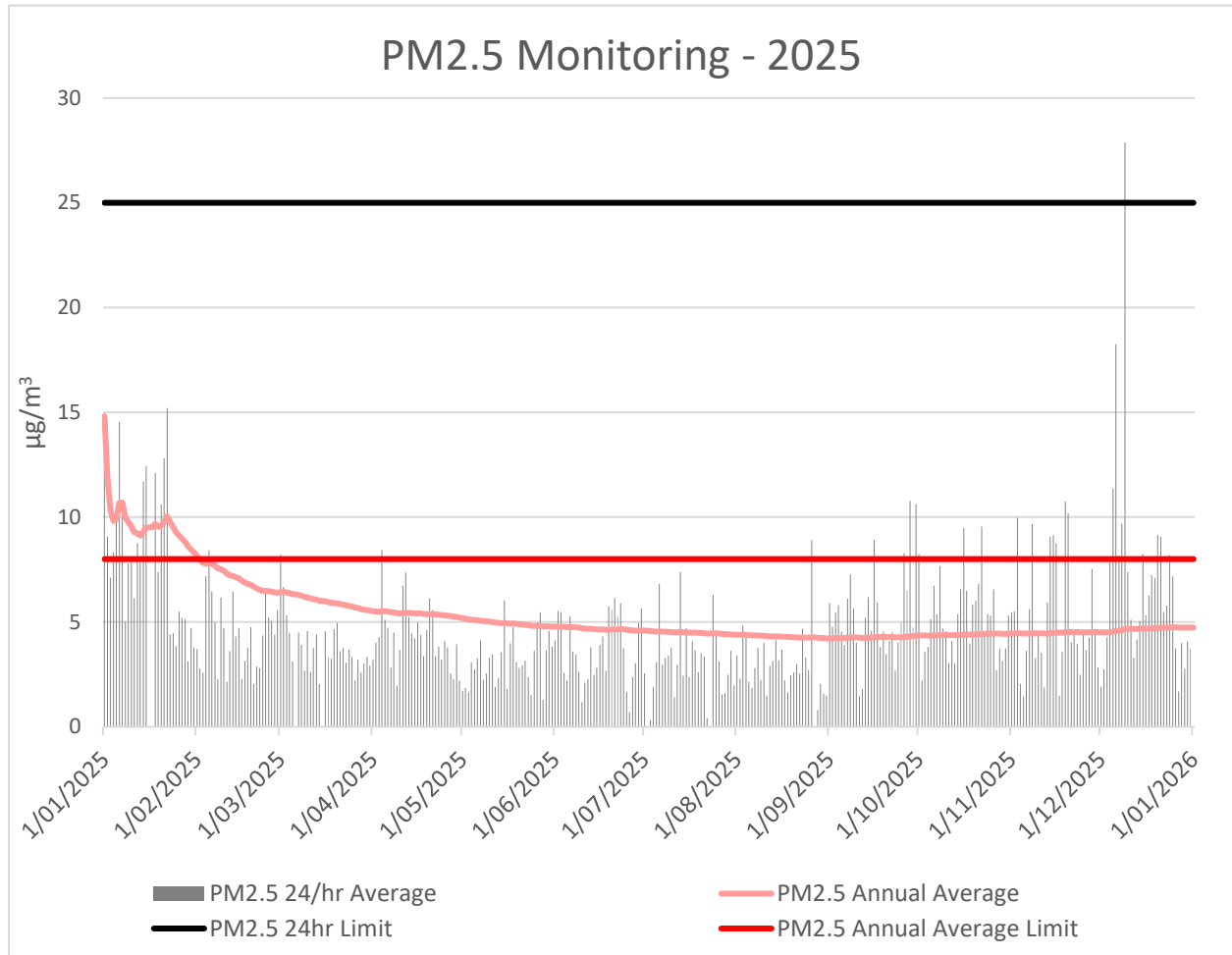
Variable	December	Total	Valid
A/C Temp	98.8%	8928	8819
A1_Scaled	98.8%	8928	8820
Band	98.8%	8928	8820
Bypass Flow	98.8%	8928	8817
Cap Temp	98.8%	8928	8819
Case Temp	98.8%	8928	8817
Config	98.8%	8928	8820
Dew Point	98.8%	8928	8819
Dig-In	98.8%	8928	8820
Dig-Latch	98.8%	8928	8820
ESN	98.8%	8928	8820
Filter Freq	98.8%	8928	8819
Filter Load	98.8%	8928	8819
Humidity	98.8%	8928	8819
MC	98.8%	8928	8819
MC 12Hr	98.8%	8928	8819
MC 1Hr	98.8%	8928	8819
MC 24Hr	98.8%	8928	8819
MC 30min	98.8%	8928	8819
MC 8Hr	98.8%	8928	8819
MC Total	98.8%	8928	8819
Mobile Signal	98.8%	8928	8820
Noise	98.8%	8928	8819
PM10 Flow	98.8%	8928	8817
Pressure	98.8%	8928	8819
Site	0.0%	8928	0
Temperature	98.8%	8928	8819
Tube Temp	98.8%	8928	8817
Vac Pressure	98.8%	8928	8819
Volts	98.8%	8928	8819

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Air Quality – PM2.5

Delta Coal utilises PM_{2.5} data obtained from Delta Electricity owned and operated beta attenuation monitor (BAM). The PM_{2.5} monitor is located on Tingley Road, Wyee.



There were no exceedances of the PM_{2.5} daily average limit in December 2025. The 12-month rolling average PM_{2.5} value on 31 December was 4.7 µg/m³. PM_{2.5} data availability in December was 99.7%. The 2025 year to date PM_{2.5} data availability is 94.92%.

During the period, there was one exceedance of the PM_{2.5} 24hr average limit of 25 µg/m³. The 24hr average on 9 December 2025 was 27.9 µg/m³.

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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	6 January 2026		
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
Sep-25	109	5.4	28.6
Oct-25	31	7.3	37.7
Nov-25	39	7.3	36.3
Dec-25	88.2	10.6	42

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Variable	December	Total	Valid
Baro (Corrected)	99.3%	2976	2954
10m Temp	99.3%	2976	2954
2m Temp	99.3%	2976	2954
A1_Scaled	99.3%	2976	2954
Assumed Temp	99.3%	2976	2954
Band	99.3%	2976	2954
Barometric	99.3%	2976	2954
Config	99.3%	2976	2954
Daily Evap	99.3%	2976	2954
Daily Rain	99.3%	2976	2954
Delta T	99.3%	2976	2954
Dew Point	99.3%	2976	2954
Dig-In	99.3%	2976	2954
Dig-Latch	99.3%	2976	2954
ESN	99.3%	2976	2954
FDI	99.3%	2976	2954
Heat Index	99.3%	2976	2954
Humidity	99.3%	2976	2954
Mobile Signal	99.3%	2976	2954
Rain	99.3%	2976	2954
Raw Evap	99.3%	2976	2954
S Class	99.3%	2976	2954
Scalar WS	99.3%	2976	2954
Sigma	99.3%	2976	2954
Site	0.0%	2976	0
Solar Radiation	99.3%	2976	2954
Vector WD	99.3%	2976	2954
Vector WS	99.3%	2976	2954
Volts	99.3%	2976	2954
Wind Chill	99.3%	2976	2954
Wind Direction	99.3%	2976	2954
Wind Speed	99.3%	2976	2954
WS Avg	99.3%	2976	2954
WS Gust	99.3%	2976	2954