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# Mannering Colliery Monthly Website Report – November 2025

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

Mannering Colliery Monthly Environmental Report – November 2025

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## Summary

Environmental monitoring results are presented in this report for monitoring undertaken during the period of November 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 - 24 June 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.

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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 – 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 **November 2025**

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

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## Monitoring Results

### Water – Quality

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

November 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)
4/11/2025	7.79	31	<5	26700
11/11/2025	8.43	18	<5	8240
18/11/2025	7.79	19	<5	28700
25/11/2025	7.76	37	<5	28500
Average	7.9	26.2	<5	23035

There were no exceedances of water quality criteria in November 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		25-Nov-2025 09:15
Compound	CAS Number	LOR	Unit	EN2519884-001
				Result
<b>ED040F: Dissolved Major Anions</b>				
Sulfur as S	63705-05-5	1	mg/L	167
Silicon as SiO2	14464-46-1	0.1	mg/L	13.0
<b>ED093T: Total Major Cations</b>				
Calcium	7440-70-2	1	mg/L	226
Magnesium	7439-95-4	1	mg/L	317
Potassium	7440-09-7	1	mg/L	39
<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	64
Molybdenum	7439-98-7	1	µg/L	6
Nickel	7440-02-0	1	µg/L	3
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	49
<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	213
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	15
Lead	7439-92-1	1	µg/L	<1
Lithium	7439-93-2	1	µg/L	634
Molybdenum	7439-98-7	1	µg/L	12
Nickel	7440-02-0	1	µg/L	3
Selenium	7782-49-2	10	µg/L	<10
Silver	7440-22-4	1	µg/L	<1
Tin	7440-31-5	1	µg/L	2
Titanium	7440-32-6	10	µg/L	<10
Vanadium	7440-62-2	10	µg/L	<10
Zinc	7440-66-6	5	µg/L	68
Boron	7440-42-8	50	µg/L	450
Iron	7439-89-6	50	µg/L	260
<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	0.82
<b>EK067G: Total Phosphorus as P by Discrete Analyser</b>				
Total Phosphorus as P	----	0.01	mg/L	0.03

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### Water – Volume

Monthly water volumes discharged via MC's LDP1 during November 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)
01/11/2025	681.05	4.8
02/11/2025	117.68	0.2
03/11/2025	472.34	0
04/11/2025	1040.25	0.4
05/11/2025	1171.72	0
06/11/2025	908.42	0
07/11/2025	1217.11	0
08/11/2025	491.80	1.6
09/11/2025	0.00	0
10/11/2025	0.00	0
11/11/2025	1926.91	0
12/11/2025	820.41	20.8
13/11/2025	1032.87	0
14/11/2025	721.29	0
15/11/2025	1012.69	0
16/11/2025	980.52	0
17/11/2025	1014.34	0
18/11/2025	958.26	0
19/11/2025	501.26	0
20/11/2025	0.00	1
21/11/2025	765.06	4.4
22/11/2025	925.52	0.2
23/11/2025	230.72	1.8
24/11/2025	452.41	0
25/11/2025	887.52	0
26/11/2025	631.17	4.2
27/11/2025	1954.42	0
28/11/2025	1179.83	0
29/11/2025	885.56	0
30/11/2025	885.55	0

Average	795.6 kL/day	1.3 mm/day
Maximum	1954.4 kL/day	20.8 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

## Air Quality – Depositional Dust

Monthly depositional dust results are shown below.

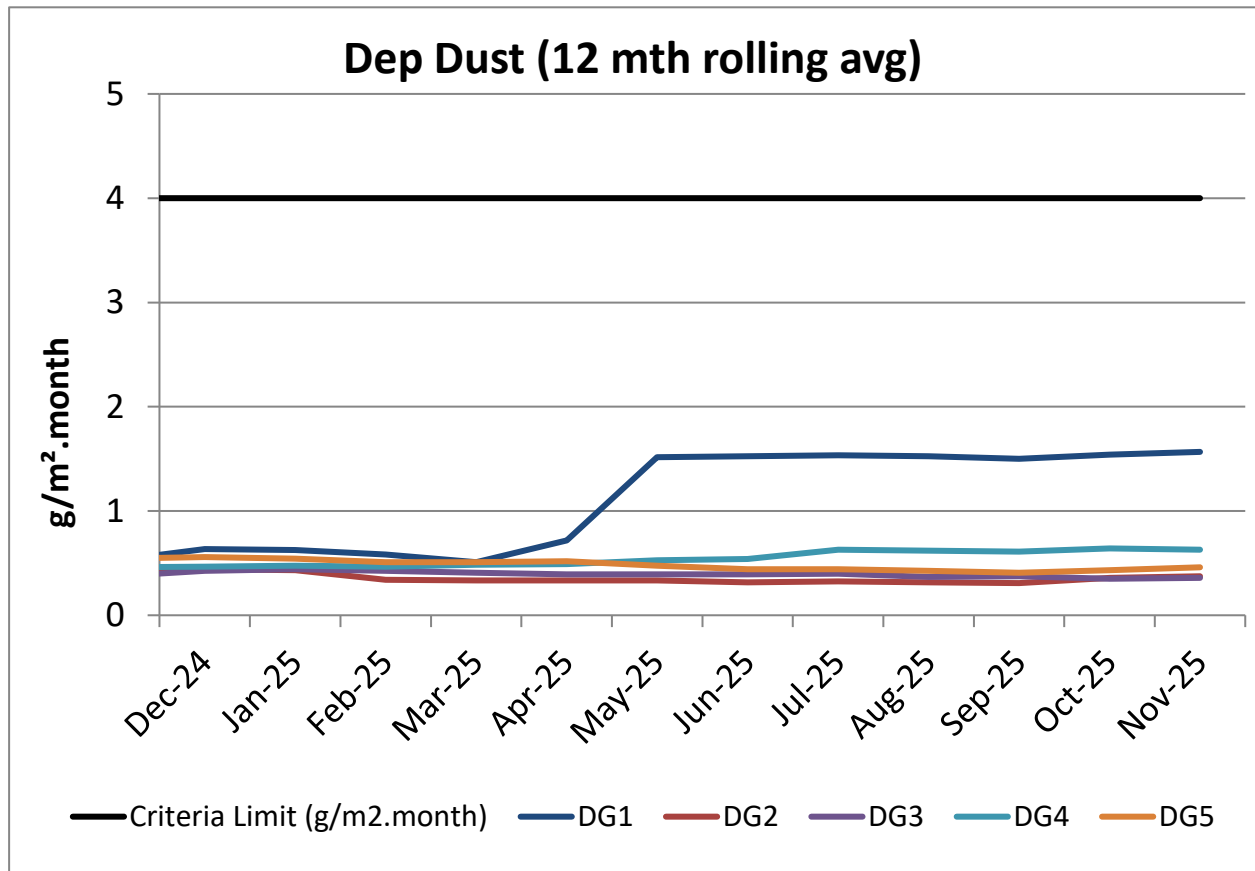
November 2025		
<b>EPL</b>	191	
<b>Limits</b>	Max. total deposited dust level	4g/m <sup>2</sup> /month
	Max. increase in deposited dust level	2g/m <sup>2</sup> /month
<b>Sampling Date</b>	7/10/2025 – 5/11/2025	
EPA ID no.	Site	Insoluble Matter (g/m <sup>2</sup> /month)
3	DG1	<b>0.5</b>
4	DG2	<b>0.7</b>
5	DG3	<b>0.5</b>
6	DG4	<b>0.4</b>
7	DG5	<b>0.5</b>
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. Manning Colliery's dust gauges are located around the perimeter of the Manning Colliery site boundary.

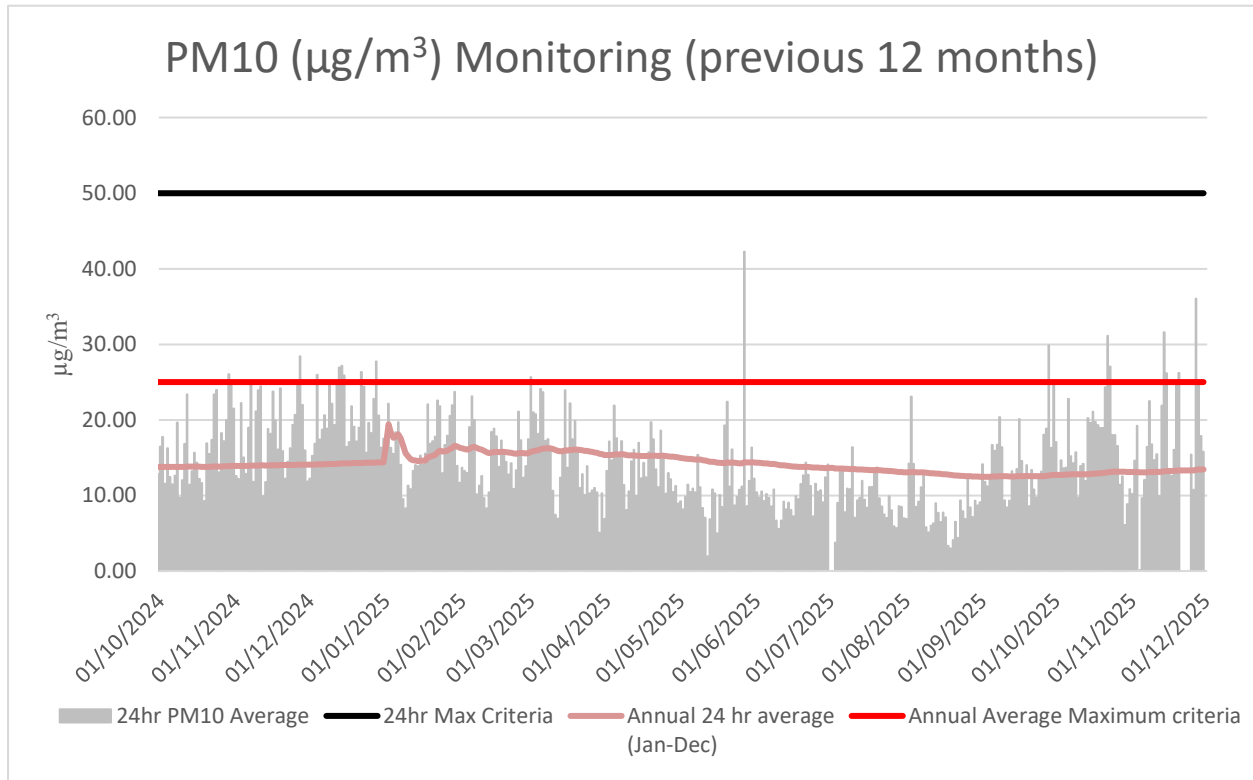


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### Air Quality – PM<sub>10</sub>

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



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

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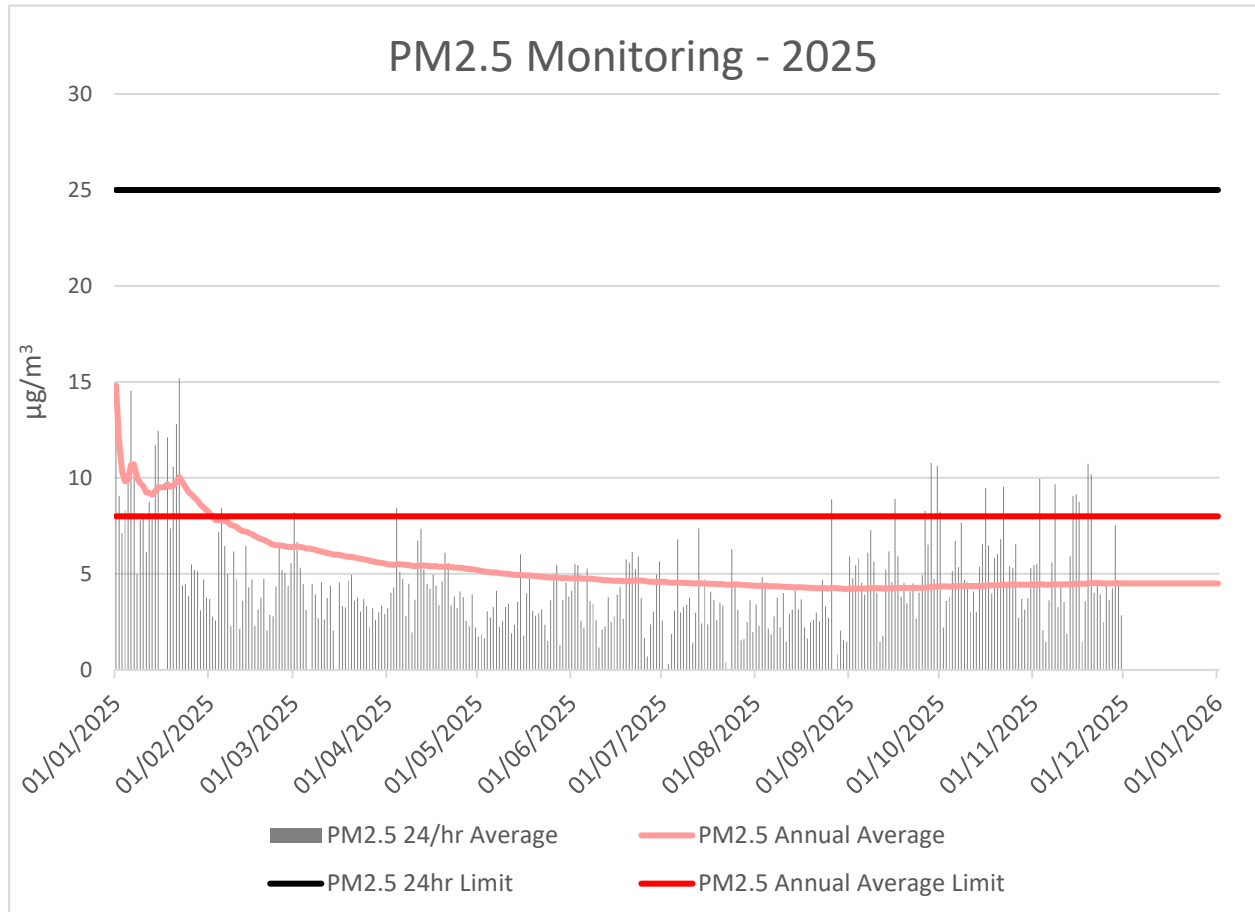
Variable	November	Total	Valid
A/C Temp	90.9%	8640	7851
A1_Scaled	90.9%	8640	7851
Band	90.9%	8640	7851
Bypass Flow	90.9%	8640	7850
Cap Temp	90.9%	8640	7851
Case Temp	90.9%	8640	7850
Config	90.9%	8640	7851
Dew Point	90.9%	8640	7851
Dig-In	90.9%	8640	7851
Dig-Latch	90.9%	8640	7851
ESN	90.9%	8640	7851
Filter Freq	90.9%	8640	7851
Filter Load	90.9%	8640	7851
Humidity	90.9%	8640	7851
MC	90.9%	8640	7851
MC 12Hr	90.9%	8640	7851
MC 1Hr	90.9%	8640	7851
MC 24Hr	90.9%	8640	7851
MC 30min	90.9%	8640	7851
MC 8Hr	90.9%	8640	7851
MC Total	90.9%	8640	7851
Mobile Signal	90.9%	8640	7851
Noise	90.9%	8640	7851
PM10 Flow	90.9%	8640	7850
Pressure	90.9%	8640	7851
Site	0.0%	8640	0
Temperature	90.9%	8640	7851
Tube Temp	90.9%	8640	7850
Vac Pressure	90.9%	8640	7851
Volts	90.9%	8640	7851

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## 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 November 2025. The 12-month rolling average PM<sub>2.5</sub> value on 30 November was 4.5 µg/m<sup>3</sup>. PM<sub>2.5</sub> data availability in November was 99.1%. The 2025 year to date PM<sub>2.5</sub> data availability is 94.47%.

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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	5 December 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
Sep-25	109	5.4	28.6
Oct-25	31	7.3	37.7
Nov-25	39	7.3	36.3

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A1_Scaled	90.9%	8640	7851
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MC 8Hr	90.9%	8640	7851
MC Total	90.9%	8640	7851
Mobile Signal	90.9%	8640	7851
Noise	90.9%	8640	7851
PM10 Flow	90.9%	8640	7850
Pressure	90.9%	8640	7851
Site	0.0%	8640	0
Temperature	90.9%	8640	7851
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