



Chain Valley Colliery Monthly Website Report – February 2023

Site:	Chain Valley Colliery
Department:	Technical Services
Report Title:	Monthly Environmental Website Report – February 2023
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Report Date:	14 th March 2023
Distribution:	Delta Coal Website

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Introduction

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

Chain Valley 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;
- Conditions 8 & 11, Schedule 6, of Development Consent SSD-5465 (as modified), issued under the *Environmental Planning and Assessment Act 1979* to provide details of monitoring results and environmental performance;
- An Environment Protection Licence (EPL 1770) issued under the *Protection of the Environment Operations Act 1997*; and
- A Water Access Licence (WAL41508), Aquifer (Sydney Basin – North Coast Groundwater Source) for 4,443 unit shares (megalitres).

The above development consent and licences require various monitoring and reporting requirements to be undertaken by Delta Coal for Chain Valley Colliery.

This report provides environmental monitoring data from Chain Valley Colliery for the month of February 2023.

Details of the Chain Valley Colliery EPL 1770 are provided below.

Chain Valley Colliery Information	
Premises name	Chain Valley Colliery
Address	Construction Road, Chain Valley Bay, NSW, 2259
Licensee	Great Southern Energy Pty Ltd
EPL #	1770
EPL location	EPL 1770 March 2023

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

Scope

This report presents the results from the various environmental monitoring programs undertaken for Chain Valley Colliery. Results are presented monthly with annual data and averages.

Where applicable, the results of the monitoring programs are compared with the relevant criteria (from the EPL or Development Consent) to assess compliance. Monitoring results presented in this report 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.

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References

ALS Group - Monthly Water Monitoring Results **February 2023**

ALS Group - Dust Deposition Report **February 2023**

Development Consent SSD-5465 (as modified)

Environment Protection Licence (EPL) 1770 (Licence version date: 1 March 2023)

Monitoring Results

Water – Quality

Water quality results for February 2023 monthly surface water sampling at Chain Valley Colliery, Licensed Discharge Point (LDP 1) are presented below.

February 2023			
EPL	1770		
Licensee	Great Southern Energy Pty Ltd		
Premises	Chain Valley Colliery		
Date Sampled	14-02-2023		
Date Obtained	17-02-2023		
Sampling Point	LDP1		
Parameter	Units	Limit	Result
Biochem. Oxygen Demand	mg/L	-	<2
Enterococcus	col/100mL	-	82
Faecal Coliforms	CFU/100mL	200	240
pH	pH	6.5-8.5	7.77
Total Sus. Solids (TSS)	mg/L	50	<5
Electrical Conductivity	µS/cm	-	29,800

There was one exceedance of water quality limits at CVC LDP 1. Faecal Coliform limits were exceeded in the LDP1 sample on 14 February 2023. Delta Coal undertook an investigation into the incident and implemented corrective actions. The exceedance was reported to the NSW EPA and NSW Department of Planning and Environment (DPE).

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Water – Volume

Monthly water volumes discharged from the site are summarised below. There was no exceedance of volumetric discharge recorded at CVC for the period of February 2023.

EPL	1770
Licensee	Great Southern Energy Pty Ltd
Premises	Chain Valley Colliery
Date Sampled	Daily
Date Reported	Refer report date
Discharge volume limit	12,161 kilolitres per day
Sampling Point	1

Date (24 hour period)	LDP 1 Volume (kL)	Rainfall (mm)
01/02/2023	4996.6	0
02/02/2023	6474.81	0
03/02/2023	6440.49	0
04/02/2023	6393.19	0
05/02/2023	6433.6	0
06/02/2023	6415.02	0
07/02/2023	6404.92	0
08/02/2023	7673.86	0
09/02/2023	6725.6	31
10/02/2023	7437.03	0.2
11/02/2023	6481.44	0
12/02/2023	5560.26	0
13/02/2023	9354.04	5.2
14/02/2023	7879.44	3.4
15/02/2023	8941.01	1.4
16/02/2023	6980.9	0
17/02/2023	9463.28	0
18/02/2023	4272.42	4.2
19/02/2023	5241.46	0
20/02/2023	6332.18	0
21/02/2023	5917.54	1.8
22/02/2023	7427.51	39.2
23/02/2023	5704.85	0.4
24/02/2023	6354.25	0
25/02/2023	6342.15	0
26/02/2023	6355.05	0
27/02/2023	6383.48	3.6
28/02/2023	6339.96	0.2
Average	6669	3.2
Minimum	4272	0
Maximum	9463	39.2

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Water – Groundwater Discharge

Groundwater discharged from underground workings to the CVC sedimentation ponds within the surface operational area has been detailed below. Chain Valley Colliery operates Water Access License (WAL 41508) permitting the extraction of 4,443 megalitres per water year (financial year calendar) with a roll-over entitlement up to a maximum of 8,886 megalitres.

CVC Groundwater to Surface Totals FY2022-2023		
Date (month)	GW Discharge (ML/Month)	GW Discharge (Cumulative ML YTD)
July 2022	225	225
August 2022	204	429
September 2022	222	651
October 2022	220	872
November 2022	223	1,095
December 2022	215	1,310
January 2023	206	1,516
February 2023	194	1,710
March 2023		
April 2023		
May 2023		
June 2023		

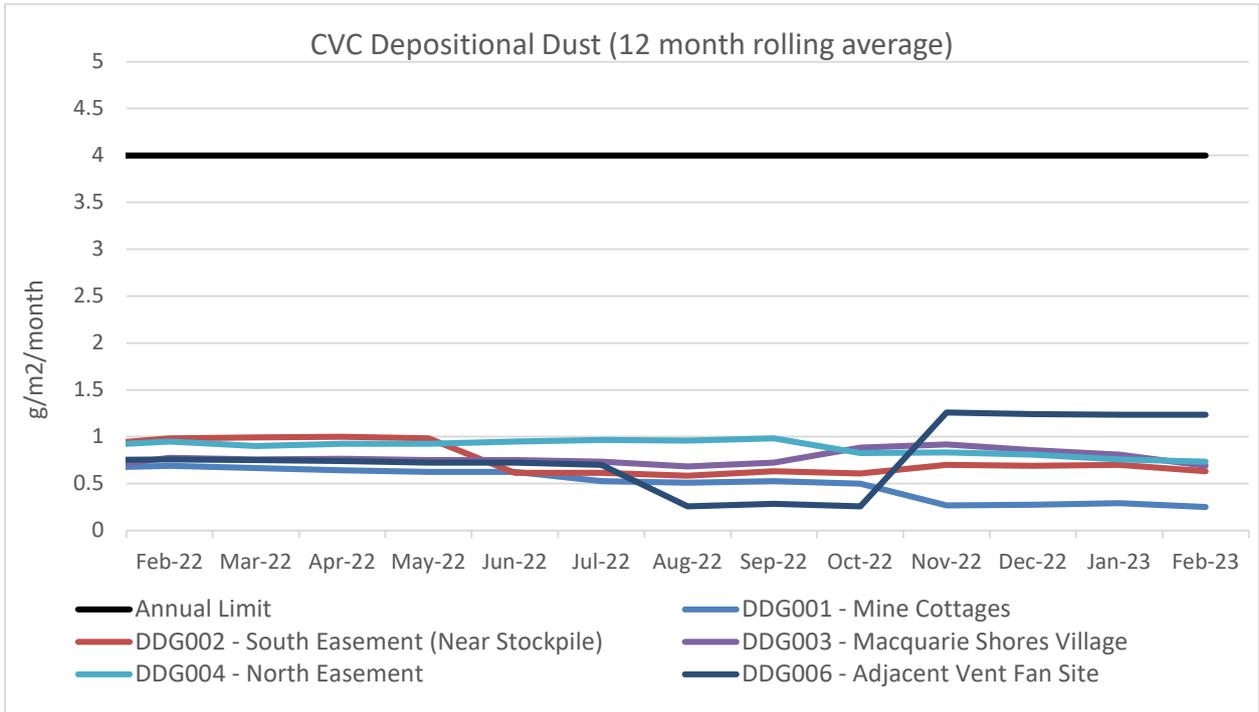
Air Quality - Depositional Dust

Monthly depositional dust results are shown below. Dust deposition gauges were sampled and analysed in accordance with the development consent, Delta Coal Air Quality and Greenhouse Gas Management Plan, and relevant Australian Standards.

February 2023	
EPL	1770
Limit	4g/m ² /month / Annum 2g/m ² /month increase from previous result
Sampling Date	04/01/2023 – 03/02/2023
Site	Insoluble Matter (g/m²/month)
DDG001	0.2
DDG002	0.8
DDG003	0.5
DDG004	0.9
DDG006	0.4
Notes: For site locations refer to the Delta Coal Air Quality and Greenhouse Gas Management Plan.	

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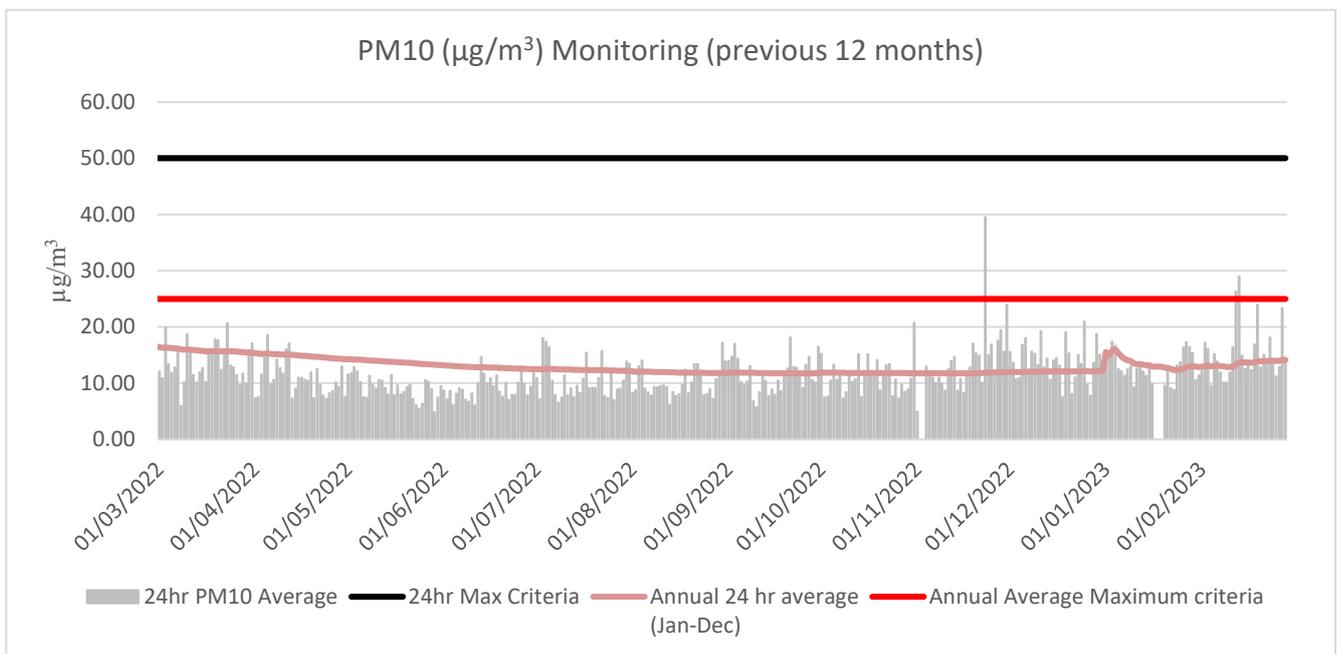
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A 12-month rolling average of depositional dust concentrations has been presented below. Dust Gauges DDG001, DDG002, DDG003 and DDG004 are located within a closer proximity to Chain Valley Colliery and DDG006 is positioned in a location representative of the Chain Valley Colliery ventilation fan site at Summerland Point.

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.



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Annual 24hr PM₁₀ average maximum criteria for February 2023 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 **94.9%** for the month of February 2023.

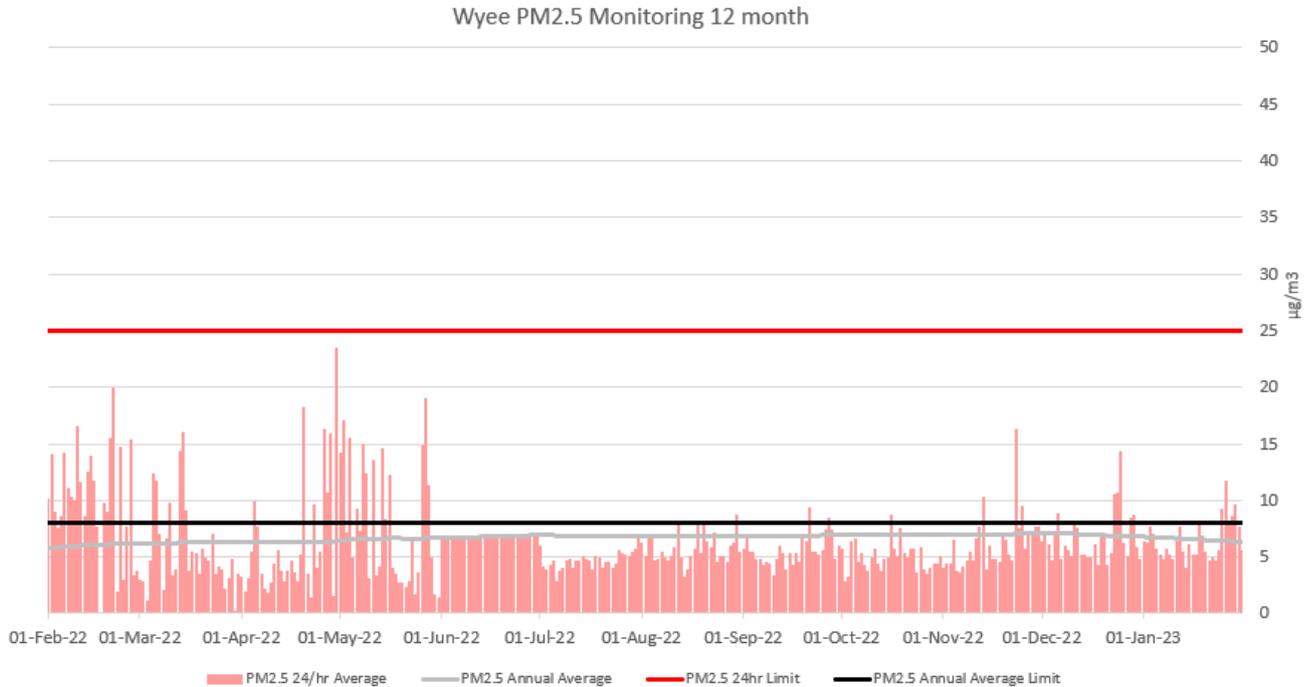
Variable	February	Total	Valid
A/C Temp	99.8%	8064	8044
A1	99.8%	8064	8044
A1_Scaled	99.8%	8064	8044
Bypass Flow	99.7%	8064	8043
Cap Temp	99.7%	8064	8043
Case Temp	99.7%	8064	8043
Config	99.8%	8064	8044
Dew Point	99.7%	8064	8043
Dig-In	99.8%	8064	8044
Dig-Latch	99.8%	8064	8044
ESN	99.8%	8064	8044
Filter Freq	99.7%	8064	8043
Filter Load	99.7%	8064	8043
Humidity	99.7%	8064	8043
MC	99.7%	8064	8043
MC 12Hr	99.7%	8064	8043
MC 1Hr	99.7%	8064	8043
MC 24Hr	99.7%	8064	8043
MC 30min	99.7%	8064	8043
MC 8Hr	99.7%	8064	8043
MC Total	99.7%	8064	8043
Mobile Signal	99.8%	8064	8044
Noise	99.7%	8064	8043
PM10 Flow	99.7%	8064	8043
Pressure	99.7%	8064	8043
Site	0.0%	8064	0
Temperature	99.7%	8064	8043
Tube Temp	99.7%	8064	8043
Vac Pressure	99.7%	8064	8043
Volts	99.8%	8064	8044

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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 January 2023. The 12-month rolling average PM_{2.5} value on 31 January 2023 was 6.35 µg/m³. PM_{2.5} data availability for January 2023 was 100%. The 2023 year to date PM_{2.5} data availability is 99.6%. It is noted that due to the validation of PM_{2.5} results, there is a one-month delay in publishing PM_{2.5} results, however, real-time alarms remain active to ensure mitigation responses to elevated results can be applied when necessary.

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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 2023			
Licensee	Great Southern Energy Pty Ltd		
Location	Mannering Colliery Meteorological station		
Date published	Refer report date		
Date sampled	Daily		
Date obtained	14 March 2023		
Month	Total Rainfall/Month (mm)	Min Temp	Max Temp
Jan-23	111.8	14.4	31.7
Feb-23	91	12.6	33.2

Variable	February	Total	Valid
A/C Temp	99.8%	8064	8044
A1	99.8%	8064	8044
A1_Scaled	99.8%	8064	8044
Bypass Flow	99.7%	8064	8043
Cap Temp	99.7%	8064	8043
Case Temp	99.7%	8064	8043
Config	99.8%	8064	8044
Dew Point	99.7%	8064	8043
Dig-In	99.8%	8064	8044
Dig-Lateh	99.8%	8064	8044
ESN	99.8%	8064	8044
Filter Freq	99.7%	8064	8043
Filter Load	99.7%	8064	8043
Humidity	99.7%	8064	8043
MC	99.7%	8064	8043
MC 12Hr	99.7%	8064	8043
MC 1Hr	99.7%	8064	8043
MC 24Hr	99.7%	8064	8043
MC 30min	99.7%	8064	8043
MC 8Hr	99.7%	8064	8043
MC Total	99.7%	8064	8043
Mobile Signal	99.8%	8064	8044
Noise	99.7%	8064	8043
PM10 Flow	99.7%	8064	8043
Pressure	99.7%	8064	8043
Site	0.0%	8064	0
Temperature	99.7%	8064	8043
Tube Temp	99.7%	8064	8043
Vac Pressure	99.7%	8064	8043
Volts	99.8%	8064	8044