



Chain Valley Colliery Monthly Website Report – August 2022

Site:	Chain Valley Colliery
Department:	Technical Services
Report Title:	Monthly Environmental Website Report – August 2022
Prepared by:	Lachlan McWha
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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 August 2022.

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 10 August 2022

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 **August 2022**

ALS Group - Dust Deposition Report **August 2022**

Development Consent SSD-5465 (as modified)

Environment Protection Licence (EPL) 1770 (Licence version date: 10 August 2022)

Monitoring Results

Water – Quality

Water quality results for August 2022 monthly surface water sampling at Chain Valley Colliery, Licensed Discharge Point (LDP 1) are presented below.

August 2022			
EPL	1770		
Licensee	Great Southern Energy Pty Ltd		
Premises	Chain Valley Colliery		
Date Sampled	17-08-2022		
Date Obtained	24-08-2022		
Sampling Point	LDP1		
Parameter	Units	Limit	Result
Biochem. Oxygen Demand	mg/L	-	5
Enterococcus	col/100mL	-	200
Faecal Coliforms	CFU/100mL	200	27
pH	pH	6.5-8.5	7.73
Total Sus. Solids (TSS)	mg/L	50	6
Electrical Conductivity	µS/cm	-	30,300

There was no exceedance of water quality limits at Chain Valley Colliery for the reporting period (month of August 2022).

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Water – Volume

Monthly water volumes discharged from the site are summarised below.

The daily water volumes at EPA Discharge Point 1 (LDP1) during August 2022 exceeded the EPL 1770 discharge limit on the 5th and 6th August 2022.

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)
01/08/2022	8101	0.20
02/08/2022	6462	0.40
03/08/2022	6459	0.00
04/08/2022	5617	3.80
05/08/2022	5394	0.20
06/08/2022	5252	0.00
07/08/2022	4946	0.00
08/08/2022	4065	0.00
09/08/2022	4396	0.20
10/08/2022	4889	0.20
11/08/2022	5188	0.00
12/08/2022	5347	10.40
13/08/2022	5511	2.20
14/08/2022	5316	0.00
15/08/2022	5298	0.00
16/08/2022	5492	0.00
17/08/2022	8829	0.00
18/08/2022	5544	0.00
19/08/2022	9331	0.20
20/08/2022	7992	0.00
21/08/2022	6912	0.00
22/08/2022	9535	0.00
23/08/2022	7806	20.60
24/08/2022	7341	0.60
25/08/2022	7289	0.00
26/08/2022	7173	2.60
27/08/2022	8554	0.20
28/08/2022	3820	0.20
29/08/2022	8651	0.20
30/08/2022	7237	0.00
31/08/2022	6631	1.80
Average	6464	1.42
Minimum	3820	0
Maximum	9535	20.6

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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		
October 2022		
November 2022		
December 2022		
January 2023		
February 2023		
March 2023		
April 2023		
May 2023		
June 2023		

Air Quality - Depositional Dust

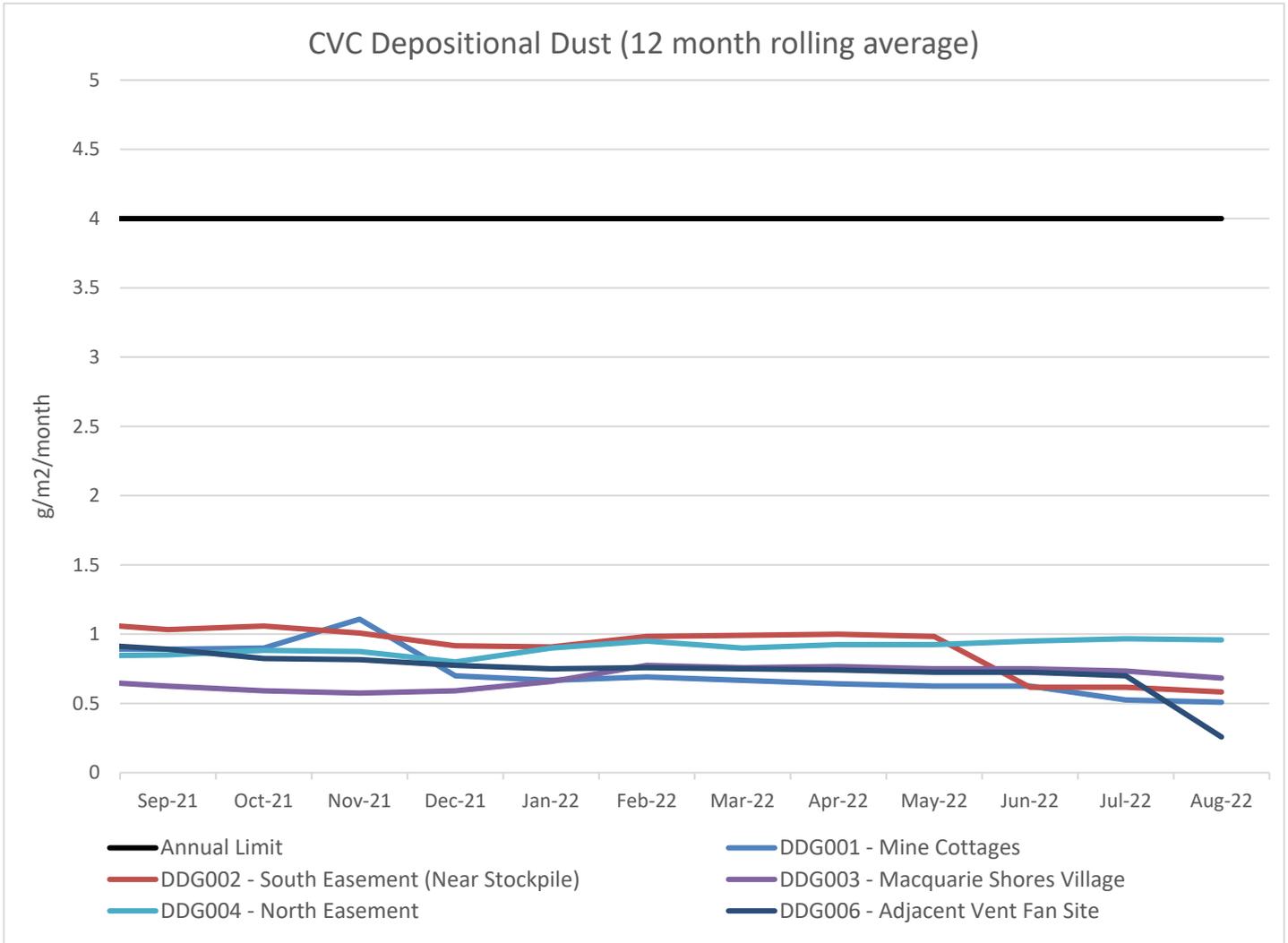
Monthly depositional dust results are shown below. Dust deposition gauges were sampled and analysed in accordance with the development consent, CVC Air Quality Management Plan, and relevant Australian Standards.

August 2022	
EPL	1770
Limit	4g/m ² /month / Annum 2g/m ² /month increase from previous result
Sampling Date	07/07/22 – 04/08/2022
Site	Insoluble Matter (g/m ² /month)
DDG001	0.1
DDG002	0.1
DDG003	0.1
DDG004	0.5
DDG006	0.1
Notes: For site locations refer to Chain Valley Colliery Air Quality Management Plan.	

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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.

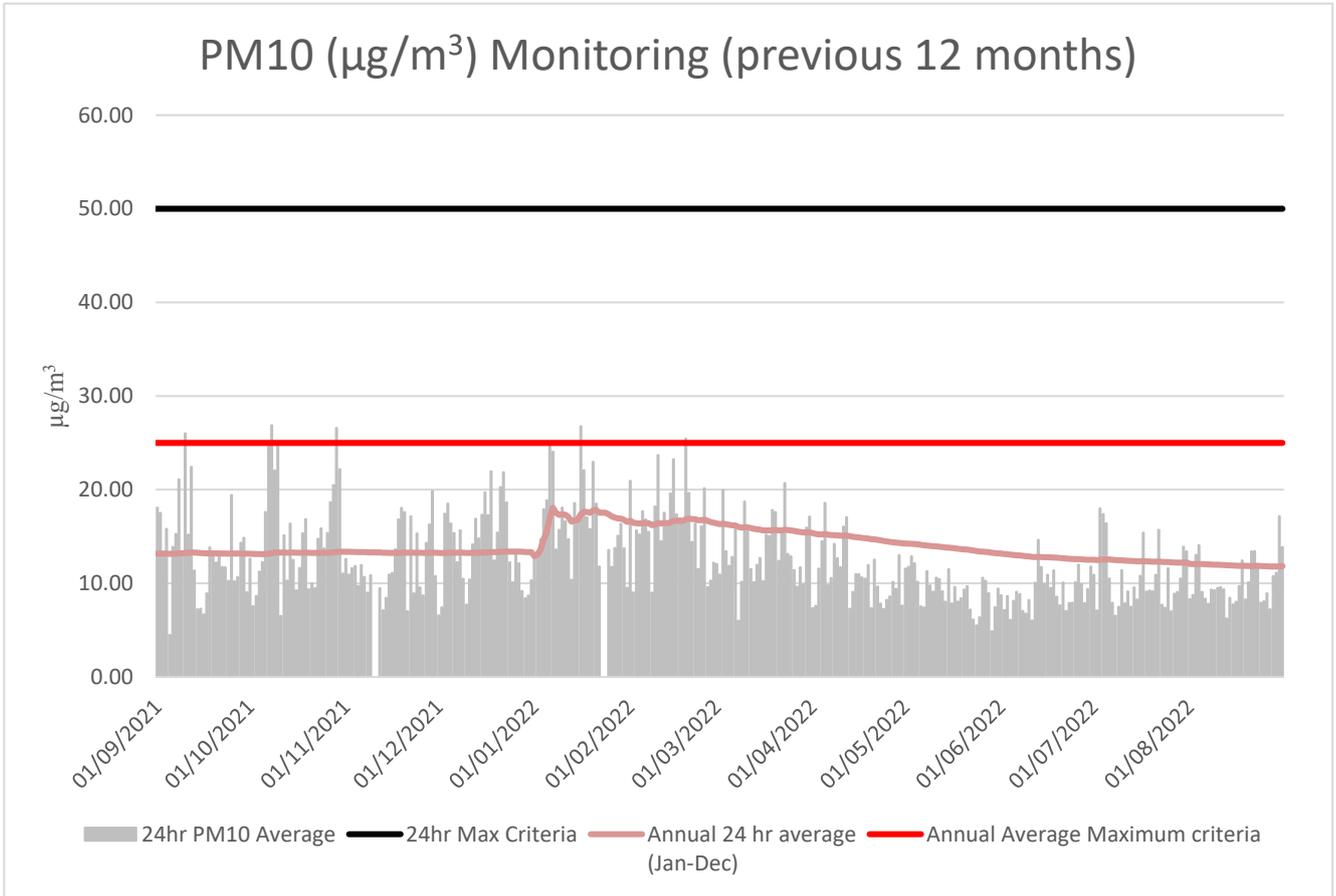


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Air Quality – PM₁₀

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 year to date.



Annual 24hr PM₁₀ average maximum criteria for August 2022 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 **100%** for the month of August 2022.

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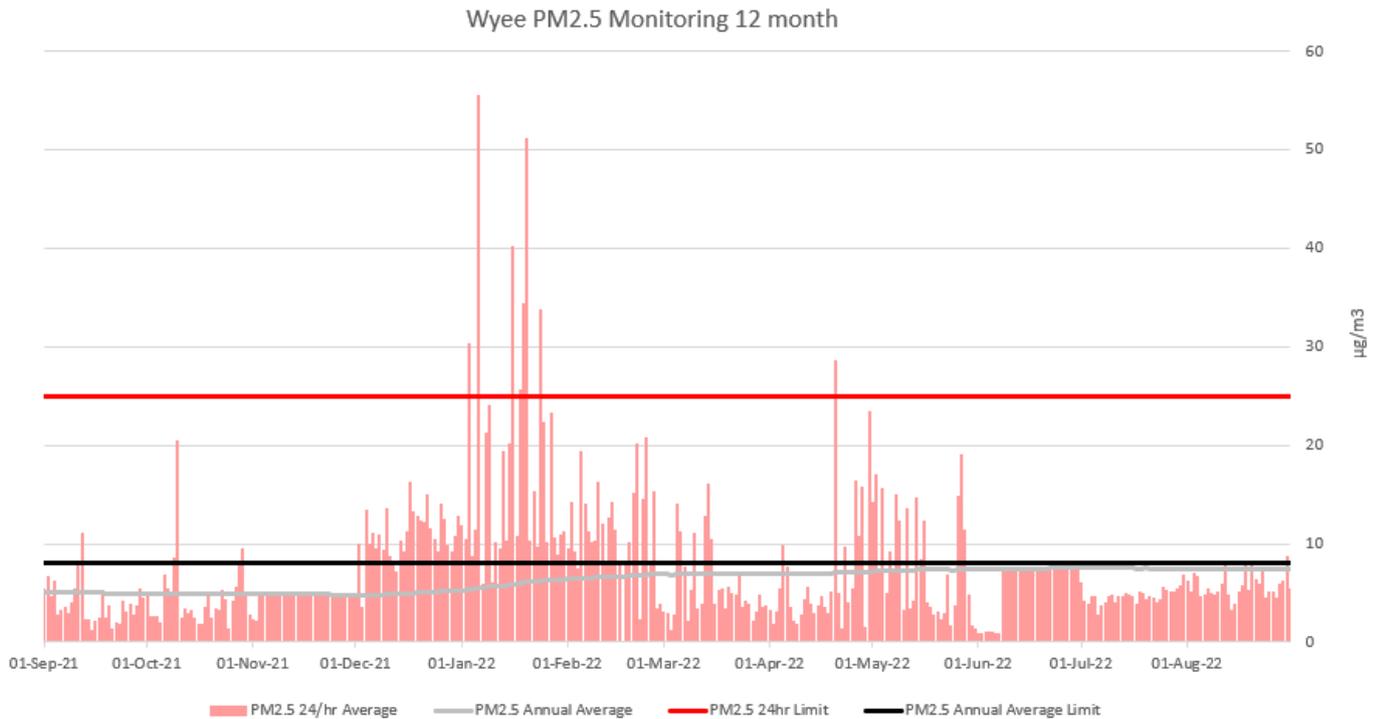
Variable	August Total	Valid
A/C Temp	100%	8928 8928
A1	100%	8928 8928
A1_Scaled	100%	8928 8928
Bypass Flow	100%	8928 8928
Cap Temp	100%	8928 8928
Case Temp	100%	8928 8928
Config	100%	8928 8928
Dew Point	100%	8928 8928
Dig-In	100%	8928 8928
Dig-Latch	0.0%	8928 0
ESN	100%	8928 8928
Filter Freq	100%	8928 8928
Filter Load	100%	8928 8928
Humidity	100%	8928 8928
MC	100%	8928 8928
MC 12Hr	100%	8928 8928
MC 1Hr	100%	8928 8928
MC 24Hr	100%	8928 8928
MC 30min	100%	8928 8928
MC 8Hr	100%	8928 8928
MC Total	100%	8928 8928
Mobile Signal	100%	8928 8928
Noise	100%	8928 8928
PM10 Flow	100%	8928 8928
Pressure	100%	8928 8928
Site	0.0%	8928 0
Temperature	100%	8928 8928
Tube Temp	100%	8928 8928
Vac Pressure	100%	8928 8928
Volts	100%	8928 8928

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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 August 2022. The 12 month rolling average PM_{2.5} value on 31 August 2022 was 7.49 µg/m³. PM_{2.5} data availability for August 2022 was 100%. The 2022 year to date PM_{2.5} data availability was 98%.

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 2022			
Licensee	Great Southern Energy Pty Ltd		
Location	Mannering Colliery Meteorological station		
Date published	Refer report date		
Date sampled	Daily		
Date obtained	9 September 2022		
Month	Total Rainfall/Month (mm)	Min Temp	Max Temp
Jan-22	110.6	15.4	30.5
Feb-22	187.2	14.1	34
Mar-22	398.4	13.1	29
Apr-22	174.4	9.8	28.3
May-22	132.4	5.3	26.1
Jun-22	24.8	3	21.5
Jul-22	356.8	2.8	21.4
Aug-22	44	3.9	23.6

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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	0.0%	2976	0
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