



Chain Valley Colliery Monthly Website Report – September 2022

Site:	Chain Valley Colliery
Department:	Technical Services
Report Title:	Monthly Environmental Website Report – September 2022
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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 September 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 **September 2022**

ALS Group - Dust Deposition Report **September 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 September 2022 monthly surface water sampling at Chain Valley Colliery, Licensed Discharge Point (LDP 1) are presented below.

September 2022			
EPL	1770		
Licensee	Great Southern Energy Pty Ltd		
Premises	Chain Valley Colliery		
Date Sampled	13-09-2022		
Date Obtained	20-09-2022		
Sampling Point	LDP1		
Parameter	Units	Limit	Result
Biochem. Oxygen Demand	mg/L	-	<2
Enterococcus	col/100mL	-	58
Faecal Coliforms	CFU/100mL	200	~5
pH	pH	6.5-8.5	7.66
Total Sus. Solids (TSS)	mg/L	50	<5
Electrical Conductivity	µS/cm	-	33,900

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

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Water – Volume

Monthly water volumes discharged from the site are summarised below. There were no exceedance of volumetric discharge recorded at CVC for the period of September 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)
01/09/2022	9331.41	2.2
02/09/2022	5420.22	13
03/09/2022	7056.37	16.6
04/09/2022	10488.89	5.6
05/09/2022	9691.98	0
06/09/2022	8280.45	1.4
07/09/2022	5162.52	0.2
08/09/2022	8011.32	0.2
09/09/2022	10450.39	4.6
10/09/2022	5917.5	0.2
11/09/2022	8413.68	0
12/09/2022	7203.99	0
13/09/2022	6174.57	10
14/09/2022	4977.57	0.4
15/09/2022	8875.85	12
16/09/2022	8485.84	1.4
17/09/2022	8885.76	0
18/09/2022	8412.86	0
19/09/2022	5061.77	0
20/09/2022	3524.02	0
21/09/2022	4459.34	0.4
22/09/2022	8259.17	17.2
23/09/2022	7621.46	3.6
24/09/2022	6706.78	2
25/09/2022	5241.43	0.2
26/09/2022	5306.98	0
27/09/2022	5577.78	1.4
28/09/2022	10524.21	8.4
29/09/2022	8340.56	5.2
30/09/2022	7970.68	13.8
Average	7328	4
Minimum	3524	0
Maximum	10524	17.2

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

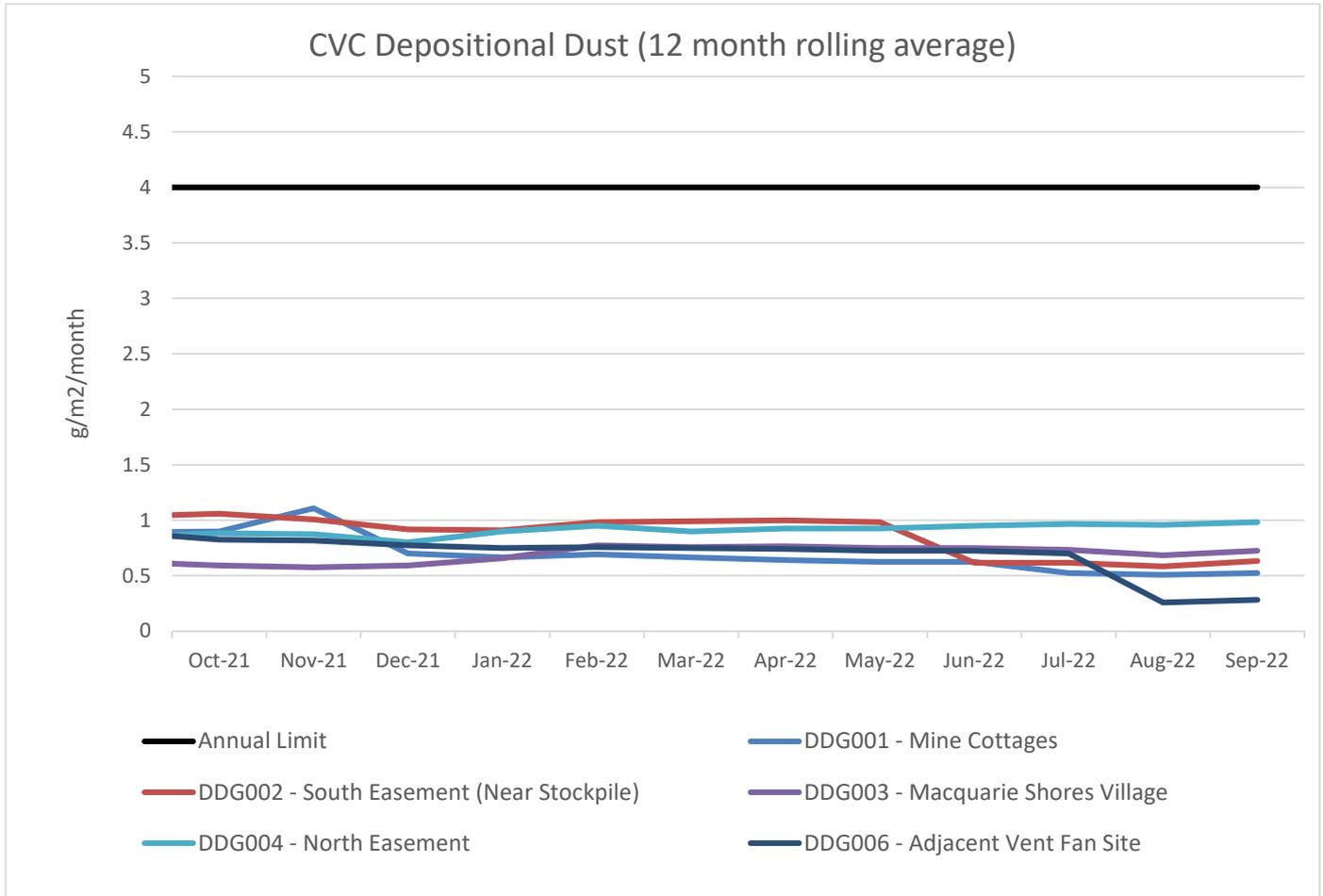
Air Quality - Depositional Dust

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

September 2022	
EPL	1770
Limit	4g/m ² /month / Annum 2g/m ² /month increase from previous result
Sampling Date	04/08/2022 – 02/09/2022
Site	Insoluble Matter (g/m²/month)
DDG001	0.6
DDG002	1.1
DDG003	1.0
DDG004	0.9
DDG006	0.4
Notes: For site locations refer to Chain Valley Colliery Air Quality Management Plan.	

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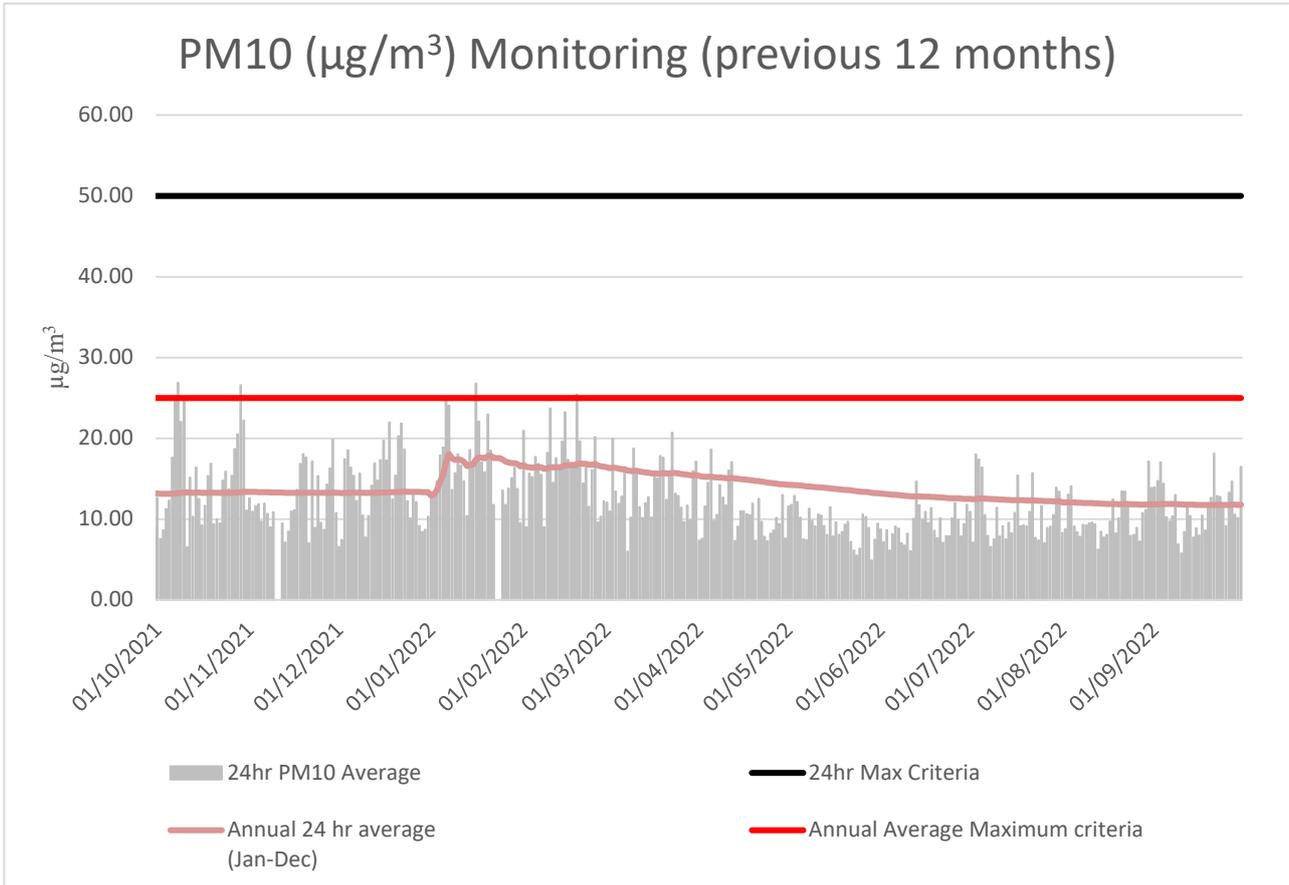
A 12 month rolling average of depositional dust concentrations has been presented below. Dust Gauges DDG001, DDG002, DDG003 and DDG004 are located within a closer proximity to Chain Valley Colliery and DDG006 is positioned in a location representative of the Chain Valley Colliery ventilation fan site 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 September 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 September 2022.

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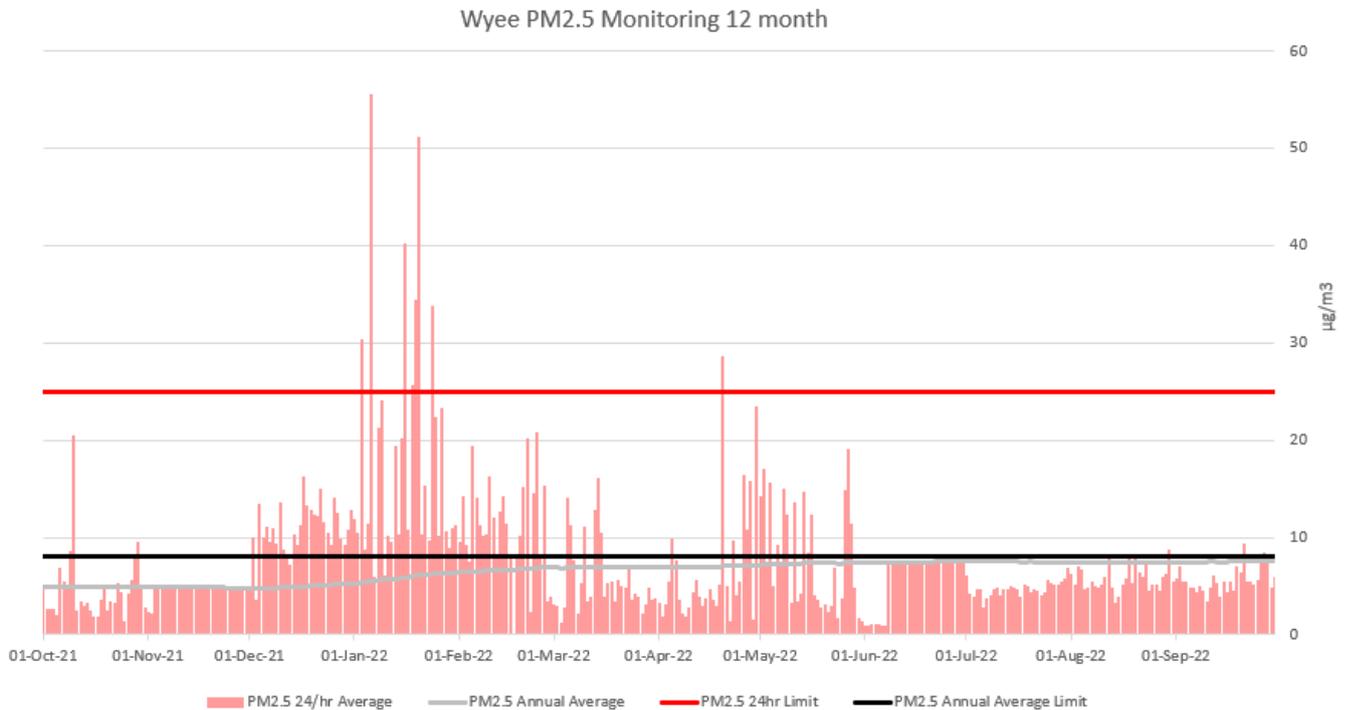
Variable	September	Total	Valid
A/C Temp	100%	8640	8637
A1	100%	8640	8637
A1_Scaled	100%	8640	8637
Bypass Flow	100%	8640	8637
Cap Temp	100%	8640	8637
Case Temp	100%	8640	8637
Config	100%	8640	8637
Dew Point	100%	8640	8637
Dig-In	100%	8640	8637
Dig-Latch	0.0%	8640	0
ESN	100%	8640	8637
Filter Freq	100%	8640	8637
Filter Load	100%	8640	8637
Humidity	100%	8640	8637
MC	100%	8640	8637
MC 12Hr	100%	8640	8637
MC 1Hr	100%	8640	8637
MC 24Hr	100%	8640	8637
MC 30min	100%	8640	8637
MC 8Hr	100%	8640	8637
MC Total	100%	8640	8637
Mobile Signal	100%	8640	8637
Noise	100%	8640	8637
PM10 Flow	100%	8640	8637
Pressure	100%	8640	8637
Site	0.0%	8640	0
Temperature	100%	8640	8637
Tube Temp	100%	8640	8637
Vac Pressure	100%	8640	8637
Volts	100%	8640	8637

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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 September 2022. The 12 month rolling average PM_{2.5} value on 30 September 2022 was 7.63 µg/m³. PM_{2.5} data availability for September 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	12 October 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
Sep-22	120	6	23.6

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Variable	September	Total	Valid
Baro (Corrected)	100%	2880	2880
10m Temp	100%	2880	2880
2m Temp	100%	2880	2880
A1	100%	2880	2880
A1_Scaled	100%	2880	2880
Assumed Temp	100%	2880	2880
Barometric	100%	2880	2880
Config	100%	2880	2880
Daily Evap	100%	2880	2880
Daily Rain	100%	2880	2880
Delta T	100%	2880	2880
Dew Point	100%	2880	2880
Dig-In	100%	2880	2880
Dig-Latch	0.0%	2880	0
ESN	100%	2880	2880
FDI	100%	2880	2880
Heat Index	100%	2880	2880
Humidity	100%	2880	2880
Mobile Signal	100%	2880	2880
Rain	100%	2880	2880
Raw Evap	100%	2880	2880
S Class	100%	2880	2880
Scalar WS	100%	2880	2880
Sigma	100%	2880	2880
Site	0.0%	2880	0
Solar Radiation	100%	2880	2880
Vector WD	100%	2880	2880
Vector WS	100%	2880	2880
Volts	100%	2880	2880
Wind Chill	100%	2880	2880
Wind Direction	100%	2880	2880
Wind Speed	100%	2880	2880
WS Avg	100%	2880	2880
WS Gust	100%	2880	2880