



# Chain Valley Colliery Monthly Website Report – May 2022

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<b>Site:</b>	Chain Valley Colliery
<b>Department:</b>	Technical Services
<b>Report Title:</b>	Monthly Environmental Website Report – May 2022
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## Table of Contents

Introduction .....	3
Scope.....	4
Definitions .....	4
References .....	5
Monitoring Results.....	5
Water – Quality .....	5
Water – Volume.....	5
Water – Groundwater Discharge.....	7
Air Quality - Depositional Dust .....	7
Air Quality – PM <sub>10</sub> .....	9
Weather Data .....	10

# Monthly Website Report

CVC Monthly Environmental Report – May 2022

## 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) publically 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 May 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	<a href="http://www.epa.nsw.gov.au/prpoeoapp/ViewPOEOLicence.aspx?DOCID=50980&amp;SYSUID=1&amp;LICID=1770">http://www.epa.nsw.gov.au/prpoeoapp/ViewPOEOLicence.aspx?DOCID=50980&amp;SYSUID=1&amp;LICID=1770</a>

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 – 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.

# Monthly Website Report

CVC Monthly Environmental Report – May 2022

## References

ALS Group - Monthly Water Monitoring Results **May 2022**

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

Development Consent SSD-5465 (as modified)

Environment Protection Licence (EPL) 1770 (Licence version date: 24 February 2022)

## Monitoring Results

### Water – Quality

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

May 2022			
EPL	1770		
Licensee	Great Southern Energy Pty Ltd		
Premises	Chain Valley Colliery		
Date Sampled	17-05-2022		
Date Obtained	24-05-2022		
Sampling Point	LDP1		
Parameter	Units	Limit	Result
Biochem. Oxygen Demand	mg/L	-	<2
Enterococcus	col/100mL	-	11
Faecal Coliforms	CFU/100mL	200	2
pH	pH	6.5-8.5	7.57
Total Sus. Solids (TSS)	mg/L	50	<5
Electrical Conductivity	µS/cm	-	27,100

Water quality results at Chain Valley Colliery were in compliance with EPL 1770 for the month of May 2022.

# Monthly Website Report

CVC Monthly Environmental Report – May 2022

## Water – Volume

Monthly water volumes discharged from the site are summarised below.

The daily water volumes at EPA Discharge Point 1 (LDP1) during May 2022 did not exceed the EPL 1770 discharge limit.

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

<b>Date (24 hour period)</b>	<b>Unit</b>	<b>LDP 1 Volume</b>
01/05/2022	kL	6909.72
02/05/2022	kL	6783.5
03/05/2022	kL	4935.04
04/05/2022	kL	5249.65
05/05/2022	kL	8560.97
06/05/2022	kL	6020.17
07/05/2022	kL	5211.68
08/05/2022	kL	5275.63
09/05/2022	kL	4462.74
10/05/2022	kL	4941.8
11/05/2022	kL	5338.97
12/05/2022	kL	5963.05
13/05/2022	kL	5624.44
14/05/2022	kL	4799.88
15/05/2022	kL	4378.89
16/05/2022	kL	4708.89
17/05/2022	kL	5090.97
18/05/2022	kL	3786.65
19/05/2022	kL	4138.55
20/05/2022	kL	4593.24
21/05/2022	kL	5190.99
22/05/2022	kL	7069.79
23/05/2022	kL	7751.51
24/05/2022	kL	6936.37
25/05/2022	kL	5649.54
26/05/2022	kL	3912.1
27/05/2022	kL	3102.58
28/05/2022	kL	7003.54
29/05/2022	kL	3938.67
30/05/2022	kL	3156.43
31/05/2022		5026.4

Average	kL	5339
Minimim	kL	3102
Maximum	kL	8561

# Monthly Website Report

CVC Monthly Environmental Report – May 2022

## 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 calander) with a roll-over entitlement up to a maximum of 8,886 megalitres.

CVC Groundwater to Surface Totals FY2021-2022		
Date (month)	GW Discharge (ML/Month)	GW Discharge (Cumulative ML YTD)
July 2021	189.98	189.98
August 2021	164.83	354.82
September 2021	135.72	490.54
October 2021	187.79	678.33
November 2021	173.63	851.96
December 2021	157.59	1,009.55
January 2022	159.53	1,169.08
February 2022	178.73	1,347.81
March 2022	178.10	1,525.91
April 2022	199.78	1,725.69
May 2022	151.37	1,877.06
June 2022		

## Air Quality - Depositional Dust

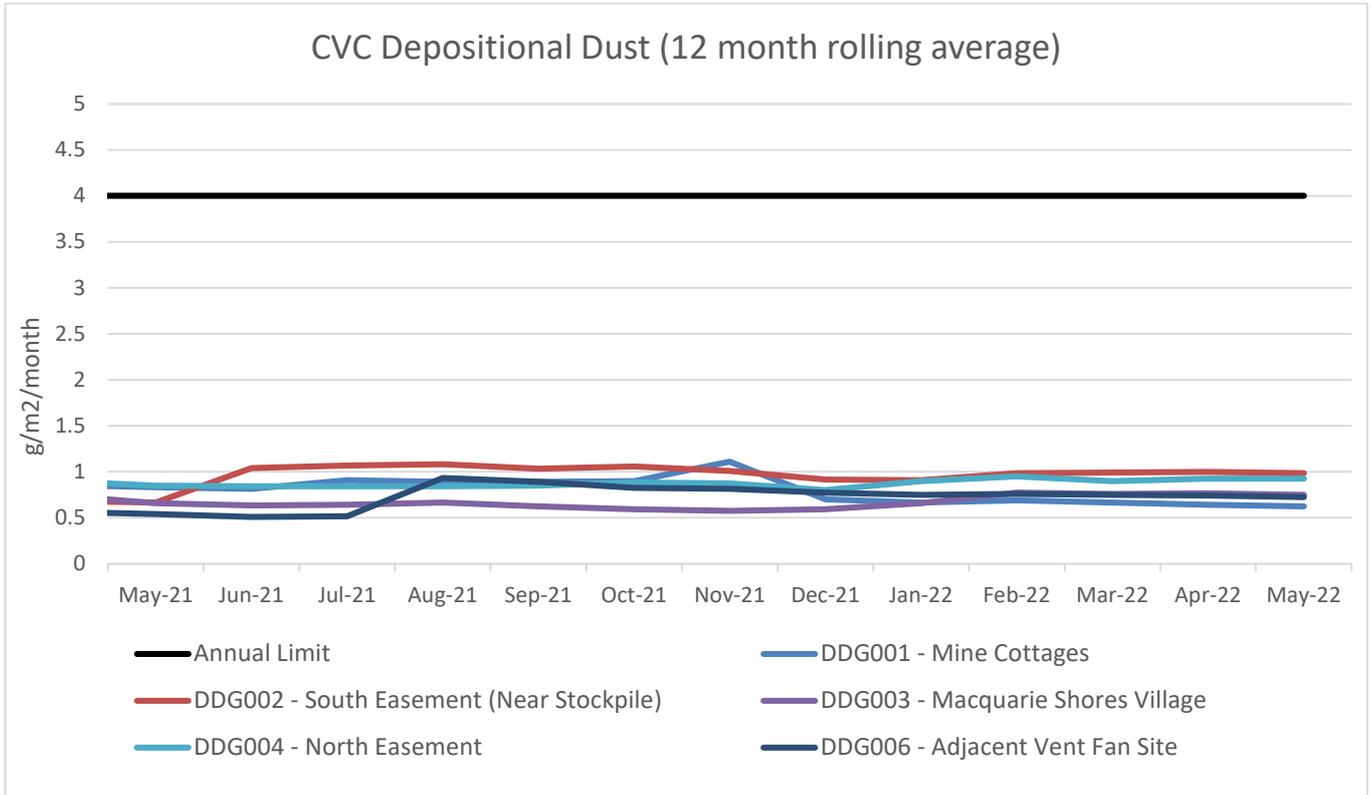
Monthly depositional dust results are shown below. Dust deposition gauges were sampled and analysed in accordance with the development consent, CVC Air Quality Management Plan and relevant Australian Standards.

April 2022	
<b>EPL</b>	1770
<b>Limit</b>	4g/m <sup>2</sup> /month / Annum 2g/m <sup>2</sup> /month increase from previous result
<b>Sampling Date</b>	07/04/2022 to
<b>Site</b>	<b>Insoluble Matter (g/m<sup>2</sup>/month)</b>
DDG001	0.1
DDG002	0.1
DDG003	0.1
DDG004	0.4
DDG006	0.1
<b>Notes:</b> For site locations refer to Chain Valley Colliery Air Quality Management Plan.	

# Monthly Website Report

CVC Monthly Environmental Report – May 2022

A 12 month rolling average of depositional dust concentrations has been presented below. Dust Guages 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.

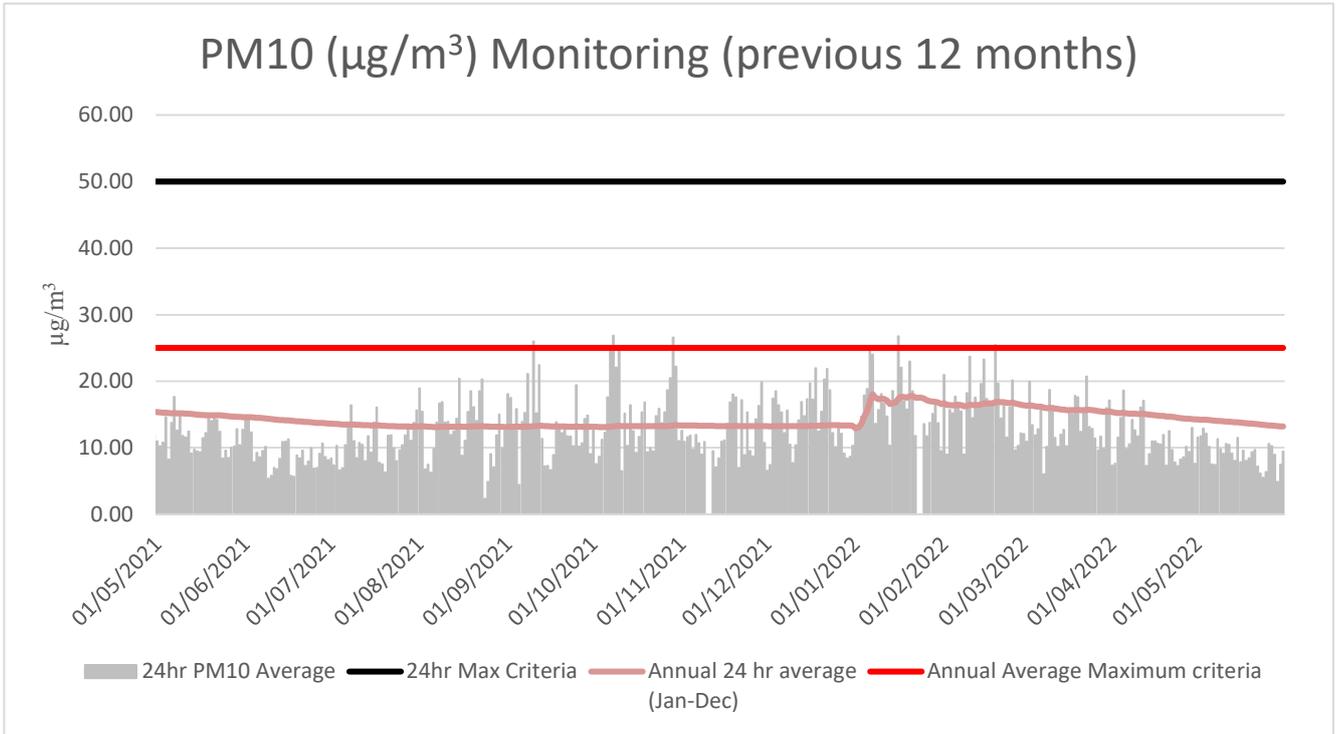


# Monthly Website Report

## CVC Monthly Environmental Report – May 2022

### 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 Mannering Park Sewage Treatment Plant, is presented below for the year to date.



Annual 24hr PM<sub>10</sub> average maximum criteria for April 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 **99.9%** for the month of May 2022.

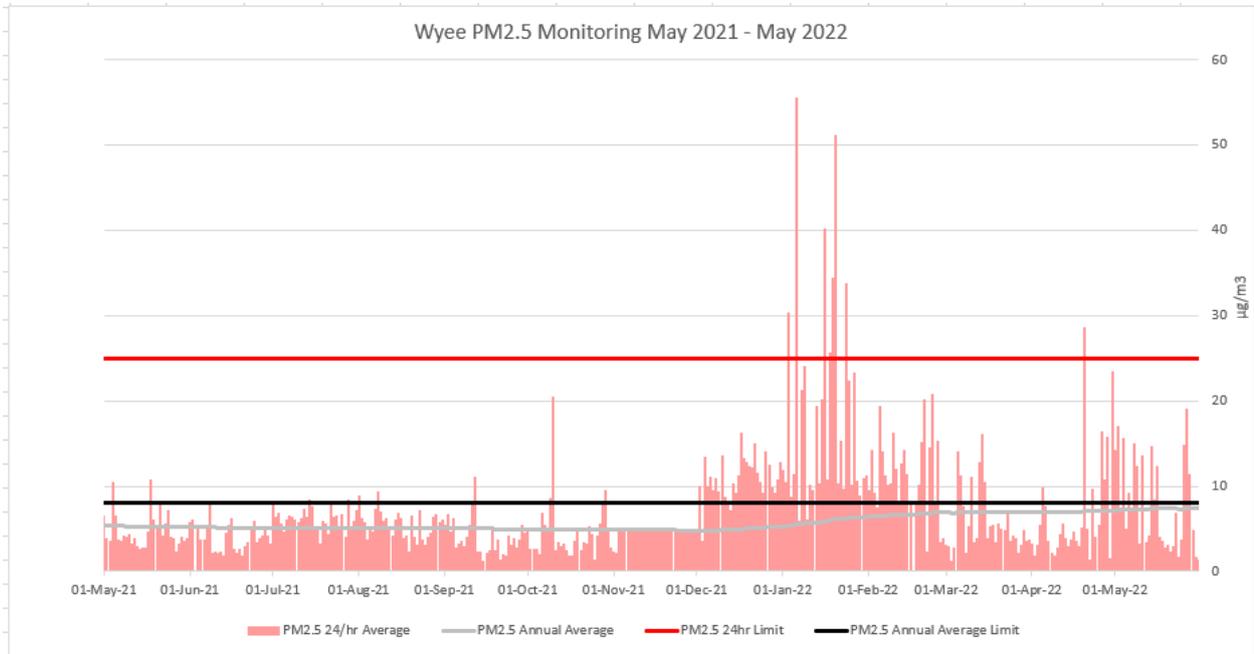
Variable	May	Total	Valid
A/C Temp	99.9%	8028	8018
A1	99.9%	8028	8018
A1_Scaled	99.9%	8028	8018
Bypass Flow	99.9%	8028	8018
Cap Temp	99.9%	8028	8018
Case Temp	99.9%	8028	8018
Config	99.9%	8028	8018
Dew Point	99.9%	8028	8018
Dig-In	99.9%	8028	8018
Dig-Latch	72.4%	8028	6468
ESN	99.9%	8028	8018
Filter Freq	99.9%	8028	8018
Filter Load	99.9%	8028	8018
Humidity	99.9%	8028	8018
MC	99.9%	8028	8018
MC 12Hr	99.9%	8028	8018
MC 1Hr	99.9%	8028	8018
MC 24Hr	99.9%	8028	8018
MC 30min	99.9%	8028	8018
MC 8Hr	99.9%	8028	8018
MC Total	99.9%	8028	8018
Mobile Signal	99.9%	8028	8018
Noise	99.9%	8028	8018
PM10 Flow	99.9%	8028	8018
Pressure	99.9%	8028	8018
Site	0.0%	8028	0
Temperature	99.9%	8028	8018
Tube Temp	99.9%	8028	8018
Vac Pressure	99.9%	8028	8018
Volts	99.9%	8028	8018

# Monthly Website Report

## CVC Monthly Environmental Report – May 2022

### Air Quality – PM2.5

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 May 2022. The 12 month rolling average PM<sub>2.5</sub> value on 30 April 2022 was 7.4 µg/m<sup>3</sup>. PM<sub>2.5</sub> data availability for May 2022 was 99.44% and 2022 year to date PM<sub>2.5</sub> data availability was 99.58%.

### 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	11 May 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

# Monthly Website Report

## CVC Monthly Environmental Report – May 2022

Variable	May	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	72.8%	2976	2180
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