



Chain Valley Colliery Monthly Website Report – June 2022

Site:	Chain Valley Colliery
Department:	Technical Services
Report Title:	Monthly Environmental Website Report – June 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 ₁₀	9
Weather Data	10

Monthly Website Report

CVC Monthly Environmental Report – June 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 June 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	http://www.epa.nsw.gov.au/prpoeoapp/ViewPOEOLicence.aspx?DOCID=50980&SYSUID=1&LICID=1770

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.

Monthly Website Report

CVC Monthly Environmental Report – June 2022

References

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

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

June 2022			
EPL	1770		
Licensee	Great Southern Energy Pty Ltd		
Premises	Chain Valley Colliery		
Date Sampled	21-06-2022		
Date Obtained	28-06-2022		
Sampling Point	LDP1		
Parameter	Units	Limit	Result
Biochem. Oxygen Demand	mg/L	-	<2
Enterococcus	col/100mL	-	25
Faecal Coliforms	CFU/100mL	200	18
pH	pH	6.5-8.5	7.52
Total Sus. Solids (TSS)	mg/L	50	15
Electrical Conductivity	µS/cm	-	30,900

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

Monthly Website Report

CVC Monthly Environmental Report – June 2022

Water – Volume

Monthly water volumes discharged from the site are summarised below.

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

EPL	1770
Licensee	Great Soutehrn 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)	Unit	LDP 1 Volume
01/06/2022	kL	3756.83
02/06/2022	kL	4196.81
03/06/2022	kL	4713.19
04/06/2022	kL	3871.23
05/06/2022	kL	3972.08
06/06/2022	kL	4026.72
07/06/2022	kL	3983.34
08/06/2022	kL	4893.88
09/06/2022	kL	5213.72
10/06/2022	kL	5183.29
11/06/2022	kL	4501.08
12/06/2022	kL	4846.66
13/06/2022	kL	5234.89
14/06/2022	kL	5056.38
15/06/2022	kL	3330.85
16/06/2022	kL	4728.97
17/06/2022	kL	4619.07
18/06/2022	kL	6024.8
19/06/2022	kL	3976.57
20/06/2022	kL	6237.88
21/06/2022	kL	8414.88
22/06/2022	kL	6709.48
23/06/2022	kL	8011.71
24/06/2022	kL	8247.46
25/06/2022	kL	7613.07
26/06/2022	kL	8911.26
27/06/2022	kL	7498.45
28/06/2022	kL	8369.36
29/06/2022	kL	6418.36
30/06/2022	kL	7620.24

Average	kL	5673
Minimim	kL	3331
Maximum	kL	8911

Monthly Website Report

CVC Monthly Environmental Report – June 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	168.71	2,045.77

Air Quality - Depositional Dust

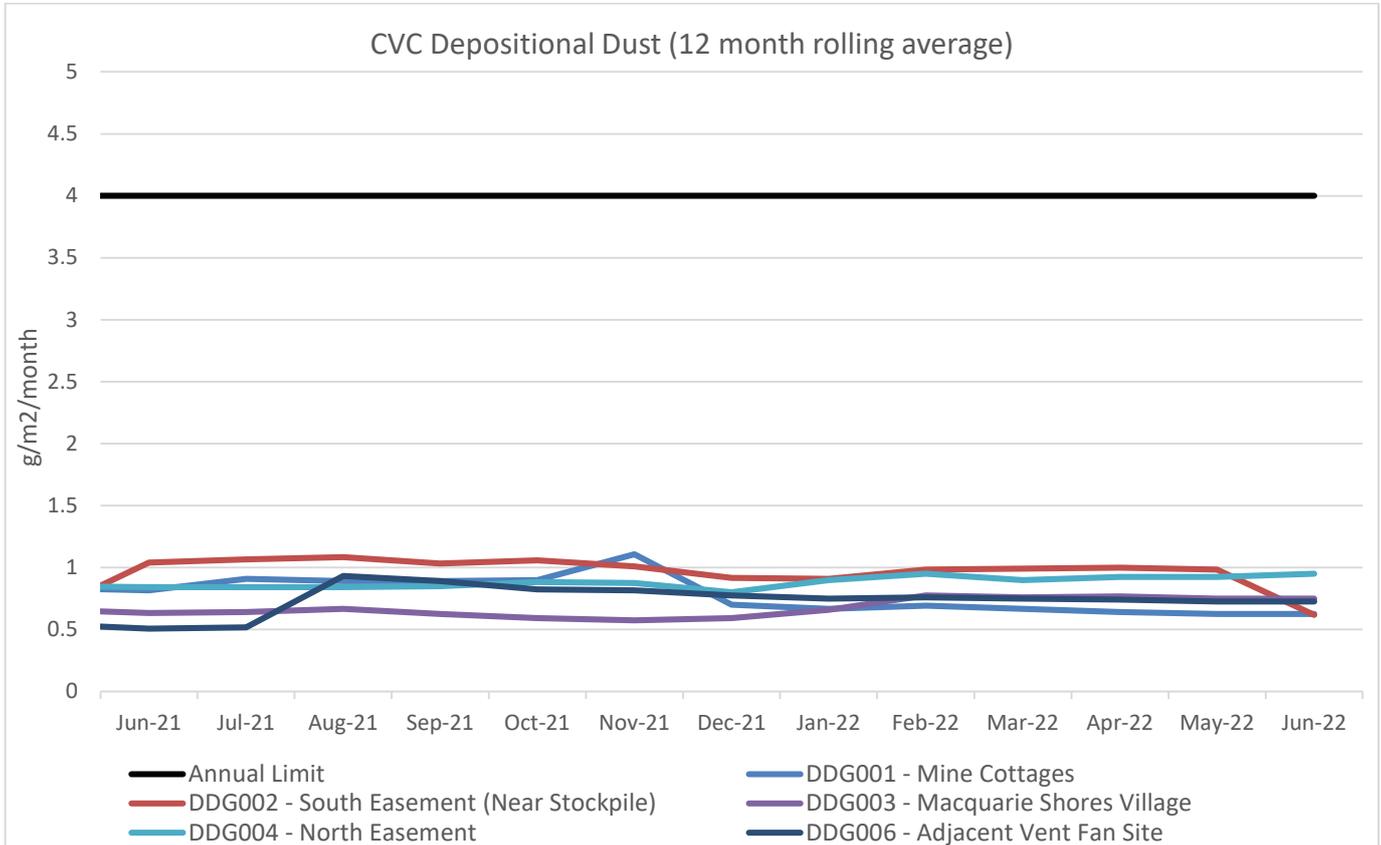
Monthly depositional dust results are shown below. Dust deposition gauges were sampled and analysed in accordance with the development consent, CVC Air Quality Management Plan and relevant Australian Standards.

June 2022	
EPL	1770
Limit	4g/m ² /month / Annum 2g/m ² /month increase from previous result
Sampling Date	06/05/2022 to 06/06/2022
Site	Insoluble Matter (g/m ² /month)
DDG001	0.3
DDG002	0.6
DDG003	0.3
DDG004	0.8
DDG006	0.1
Notes: For site locations refer to Chain Valley Colliery Air Quality Management Plan.	

Monthly Website Report

CVC Monthly Environmental Report – June 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.

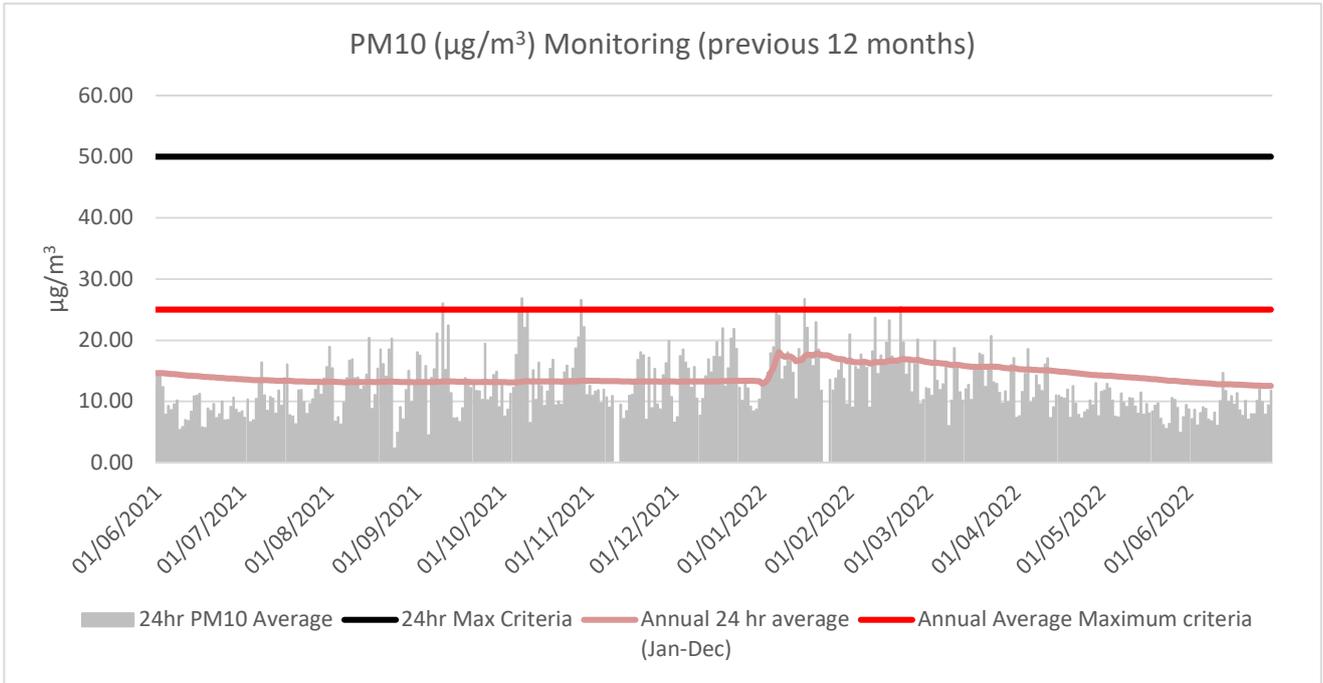


Monthly Website Report

CVC Monthly Environmental Report – June 2022

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 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 **100%** for the month of June 2022.

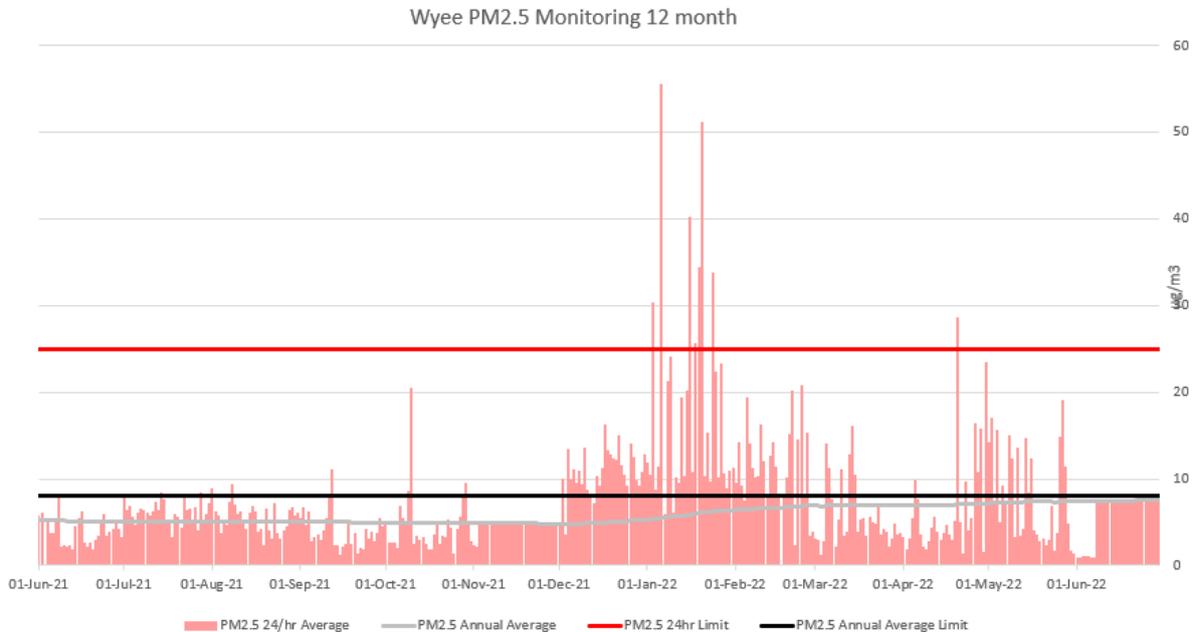
Variable	June	Total	Valid
A/C Temp	100%	8840	8839
A1	100%	8840	8839
A1_Scaled	100%	8840	8839
Bypass Flow	100%	8840	8839
Cap Temp	100%	8840	8839
Case Temp	100%	8840	8839
Config	100%	8840	8839
Dew Point	100%	8840	8839
Dig-In	100%	8840	8839
Dig-Latch	0.0%	8840	0
ESN	100%	8840	8839
Filter Freq	100%	8840	8839
Filter Load	100%	8840	8839
Humidity	100%	8840	8839
MC	100%	8840	8839
MC 12Hr	100%	8840	8839
MC 1Hr	100%	8840	8839
MC 24Hr	100%	8840	8839
MC 30min	100%	8840	8839
MC 8Hr	100%	8840	8839
MC Total	100%	8840	8839
Mobile Signal	100%	8840	8839
Noise	100%	8840	8839
PM10 Flow	100%	8840	8839
Pressure	100%	8840	8839
Site	0.0%	8840	0
Temperature	100%	8840	8839
Tube Temp	100%	8840	8839
Vac Pressure	100%	8840	8839
Volts	100%	8840	8839

Monthly Website Report

CVC Monthly Environmental Report – June 2022

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 June 2022. The 12 month rolling average PM_{2.5} value on 30 June 2022 was 7.58 µg/m³. PM_{2.5} data availability for June 2022 was 27% due to a vandalism incident, impacting data collected between 8 and 30 June 2022 (data substituted with annual average) and 2022 year to date PM_{2.5} data availability was 97.86%.

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
Jun-22	24.8	3	21.5

Monthly Website Report

CVC Monthly Environmental Report – June 2022

Variable	June	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