



Chain Valley Colliery Monthly Website Report – July 2022

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Department:	Technical Services
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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) 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 July 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	https://www.deltacoal.com.au/ArticleDocuments/10302/EPL%201770%20August%202022.pdf.aspx

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 **July 2022**

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

July 2022			
EPL	1770		
Licensee	Great Southern Energy Pty Ltd		
Premises	Chain Valley Colliery		
Date Sampled	20-07-2022		
Date Obtained	26-07-2022		
Sampling Point	LDP1		
Parameter	Units	Limit	Result
Biochem. Oxygen Demand	mg/L	-	<2
Enterococcus	col/100mL	-	40
Faecal Coliforms	CFU/100mL	200	56
pH	pH	6.5-8.5	7.53
Total Sus. Solids (TSS)	mg/L	50	12
Electrical Conductivity	µS/cm	-	26,900

A significant rainfall event occurring from 2nd July to 6th July 2022 (279 mm) contributed to the following water quality non-compliances:

- Total suspended solids and Faecal Coliform concentration exceedance for sample collected from Point 27 on 5 July 2022
- Failure to collect Point 27 (spillway) sample during discharge due to failure in un-attended sampler
- Discharge water volume exceeded site daily limits (12,161 kL) on 5 July 2022 and 6 July 2022

The non-compliances were investigated and reported to the NSW Department of Planning and Environment, NSW Environmental Protection Authority and the NSW Resources Regulator. Corrective actions were identified and implemented through the incident investigation process.

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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 July 2022 exceeded the EPL 1770 discharge limit on the 5th and 6th July 2022.

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)	LDP 1 Volume (kL)	Rainfall (mm)
01/07/2022	6592	1
02/07/2022	6283	23
03/07/2022	8613	57
04/07/2022	7971	37
05/07/2022	15371	89
06/07/2022	14689	73
07/07/2022	9529	8
08/07/2022	9535	0
09/07/2022	8122	0
10/07/2022	9414	24
11/07/2022	7689	2
12/07/2022	7463	0
13/07/2022	9044	7
14/07/2022	10299	16
15/07/2022	9229	0
16/07/2022	8611	0
17/07/2022	5725	0
18/07/2022	5188	0
19/07/2022	6872	13
20/07/2022	10197	1
21/07/2022	9367	3
22/07/2022	8182	2
23/07/2022	7823	1
24/07/2022	8115	0
25/07/2022	9322	0
26/07/2022	7983	1
27/07/2022	6131	0
28/07/2022	7801	0
29/07/2022	6693	0
30/07/2022	6317	0
31/07/2022	7469	0

Average	8440	12
Minimum	5188	0
Maximum	15371	89

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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 calander) 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		
September 2022		
October 2022		
November 2022		
December 2022		
January 2023		
February 2023		
March 2023		
April 2023		
May 2023		
June 2023		

Air Quality - Depositional Dust

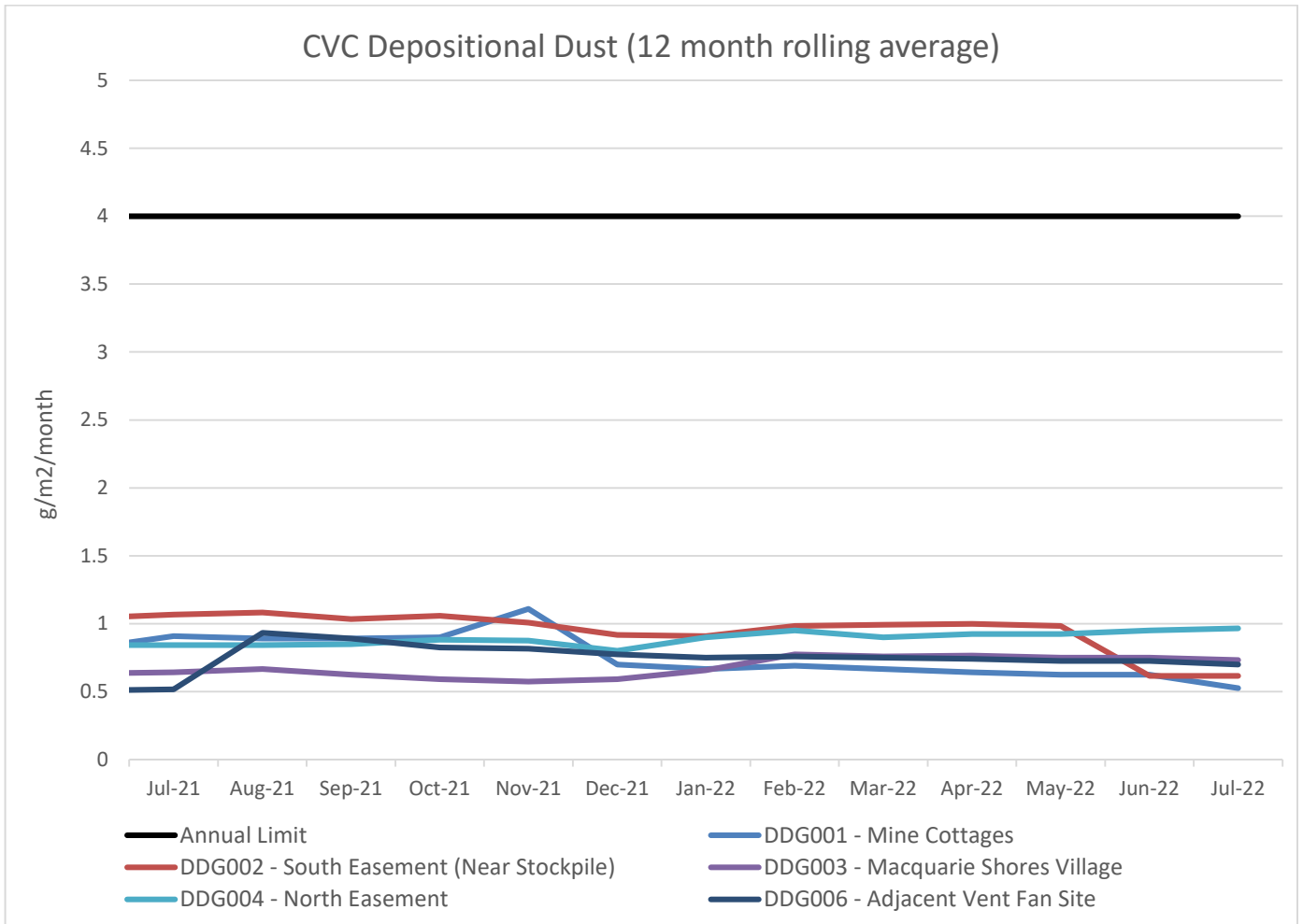
Monthly depositional dust results are shown below. Dust deposition gauges were sampled and analysed in accordance with the development consent, CVC Air Quality Management Plan and relevant Australian Standards.

July 2022	
EPL	1770
Limit	4g/m ² /month / Annum 2g/m ² /month increase from previous result
Sampling Date	06/06/22 – 07/07/2022
Site	Insoluble Matter (g/m ² /month)
DDG001	0.1
DDG002	0.5
DDG003	0.1
DDG004	0.6
DDG006	0.2
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 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.

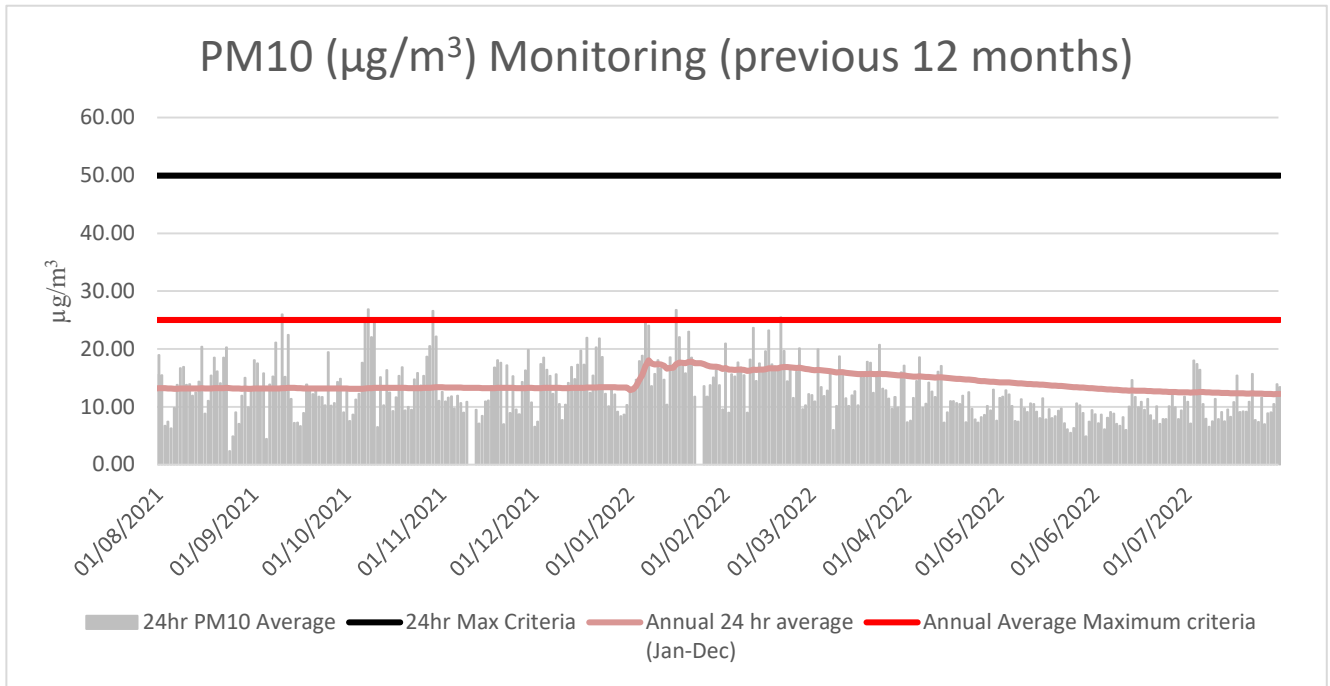


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Air Quality – PM₁₀

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 July 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 July 2022.

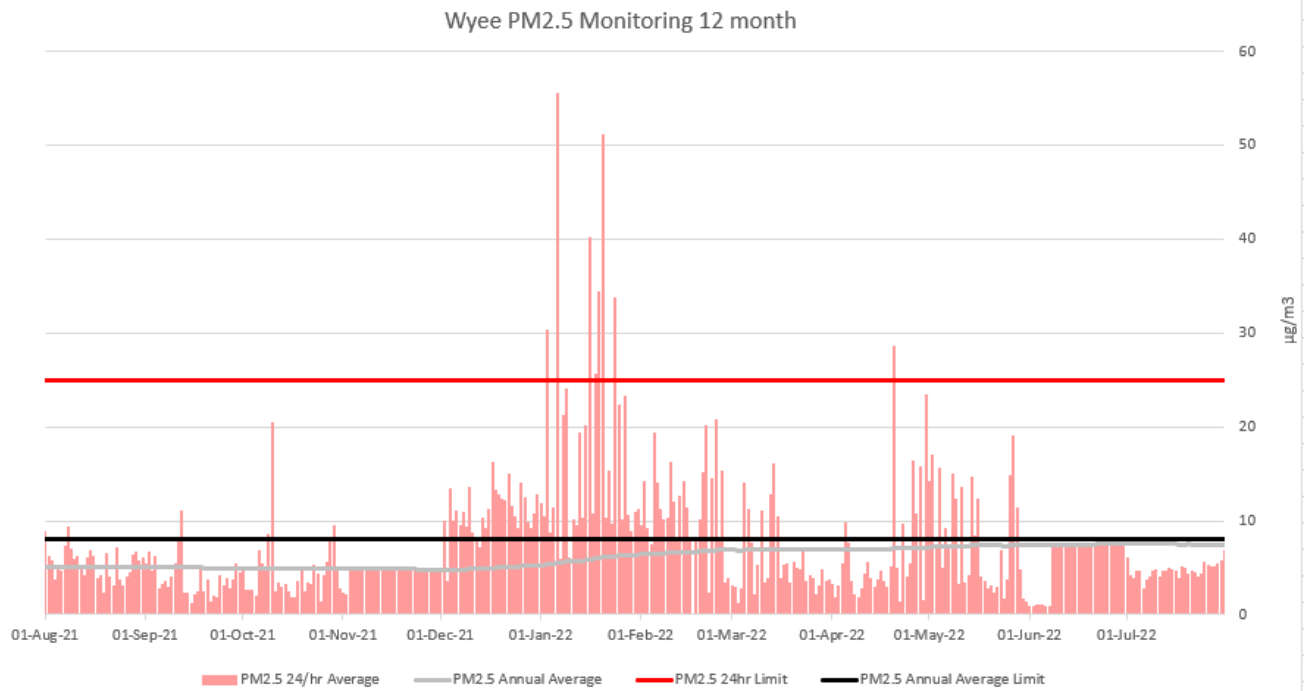
Variable	July	Total	Valid
A/C Temp	100%	8928	8928
A1	100%	8928	8928
A1_Scaled	100%	8928	8928
Bypass Flow	100%	8928	8928
Cap Temp	100%	8928	8928
Case Temp	100%	8928	8928
Config	100%	8928	8928
Dew Point	100%	8928	8928
Dig-In	100%	8928	8928
Dig-Latch	0.0%	8928	0
ESN	100%	8928	8928
Filter Freq	100%	8928	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 – PM_{2.5}

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 July 2022. The 12 month rolling average PM_{2.5} value on 30 June 2022 was 7.48 µg/m³. PM_{2.5} data availability for July 2022 was 99%. 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	14 July 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

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Variable	July	Total	Valid
Baro (Corrected)	99.8%	2976	2969
10m Temp	99.8%	2976	2969
2m Temp	99.8%	2976	2969
A1	99.8%	2976	2969
A1_Scaled	99.8%	2976	2969
Assumed Temp	99.8%	2976	2969
Barometric	99.8%	2976	2969
Config	99.8%	2976	2969
Daily Evap	99.8%	2976	2969
Daily Rain	99.8%	2976	2969
Delta T	99.8%	2976	2969
Dew Point	99.8%	2976	2969
Dig-In	99.8%	2976	2969
Dig-Latch	0.0%	2976	0
ESN	99.8%	2976	2969
FDI	99.8%	2976	2969
Heat Index	99.8%	2976	2969
Humidity	99.8%	2976	2969
Mobile Signal	99.8%	2976	2969
Rain	99.8%	2976	2969
Raw Evap	99.8%	2976	2969
S Class	99.8%	2976	2969
Scalar WS	99.8%	2976	2969
Sigma	99.8%	2976	2969
Site	0.0%	2976	0
Solar Radiation	99.8%	2976	2969
Vector WD	99.8%	2976	2969
Vector WS	99.8%	2976	2969
Volts	99.8%	2976	2969
Wind Chill	99.8%	2976	2969
Wind Direction	99.8%	2976	2969
Wind Speed	99.8%	2976	2969
WS Avg	99.8%	2976	2969
WS Gust	99.8%	2976	2969