

# Chain Valley Colliery Monthly Website Report – December 2020

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<b>Site:</b>	Chain Valley Colliery
<b>Department:</b>	Technical Services
<b>Report Title:</b>	Monthly Environmental Website Report – December 2020
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# Monthly Website Report

CVC Monthly Environmental Report – December 2020

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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 period of 1<sup>st</sup> to 31<sup>st</sup> of December 2020.

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;
- Depositional dust; and
- Weather 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.

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## References

ALS Group - Monthly Water Monitoring Results **December 2020**

ALS Water - Report of Analysis **December 2020**

Steel River Testing - Dust Deposition Report **December 2020**

Development Consent SSD-5465 (as modified)

Environment Protection Licence (EPL) 1770 (Licence version date: 2 April 2019)

## Monitoring Results

### Water – Quality

Water quality results for November 2020 monthly surface water sampling at Chain Valley Colliery, EPA Discharge Point 1 are presented below.

November 2020	
EPL	1770
Licensee	Great Southern Energy Pty Ltd
Premises	Chain Valley Colliery
Date Sampled	29-Dec-20
Date Obtained	07-Jan-21
Date Reported	December
Sampling Point	LDP1

Parameter	Units	Limit	Result
Biochem. Oxygen Demand	mg/L	-	<2
Enterococci	col/100mL	-	~100
Faecal Coliforms	CFU/100mL	200	~100
pH	pH	6.5-8.5	7.58
Total Sus. Solids	mg/L	50	<5

As detailed above, results for monthly surface water sampling did not exceed the relevant limits where applicable.

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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 during December 2020 did not exceed the relevant limit.

December 2020	
EPL	1770
Licensee	Great Soutehrn Energy Pty Ltd
Premises	Chain Valley Colliery
Date Sampled	Daily
Date Reported	Refer report date
Discharge volume limit	12161 kilolitres per day
Sampling Point	1

Date (24 hour period)	Unit	Volume
01/12/2020	kL	6473.16
02/12/2020	kL	7796.41
03/12/2020	kL	6200.64
04/12/2020	kL	5127.39
05/12/2020	kL	7977.00
06/12/2020	kL	6417.46
07/12/2020	kL	6665.09
08/12/2020	kL	5631.43
09/12/2020	kL	6497.48
10/12/2020	kL	5402.54
11/12/2020	kL	5917.79
12/12/2020	kL	6142.74
13/12/2020	kL	7007.74
14/12/2020	kL	6113.56
15/12/2020	kL	3261.71
16/12/2020	kL	5755.80
17/12/2020	kL	7088.05
18/12/2020	kL	4216.23
19/12/2020	kL	6118.53
20/12/2020	kL	7081.29
21/12/2020	kL	8183.93
22/12/2020	kL	9485.16
23/12/2020	kL	9877.52
24/12/2020	kL	7054.63
25/12/2020	kL	7678.51
26/12/2020	kL	7078.60
27/12/2020	kL	8114.35
28/12/2020	kL	7721.57
29/12/2020	kL	7720.96
30/12/2020	kL	8095.90
31/12/2020	kL	8863.72

Average	kL	6257
Minimim	kL	2230
Maximum	kL	9708

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### Water – Groundwater Discharge

Groundwater discharged from underground workings to the CVC Pollution Control Dams 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 8,886 megalitres.

CVC Groundwater to Surface Totals FY2020-2021		
Date (month)	GW Discharge (ML/Month)	GW Discharge (Cumulative ML YTD)
Jul-20	136.01	136.01
Aug-20	94.56	230.57
Sep-20	151.43	382
Oct-20	167.97	490.49
Nov-20	187.72	678.21
Dec-20	205.88	884.09
Jan-21		
Feb-21		
Mar-21		
Apr-21		
May-21		
Jun-21		

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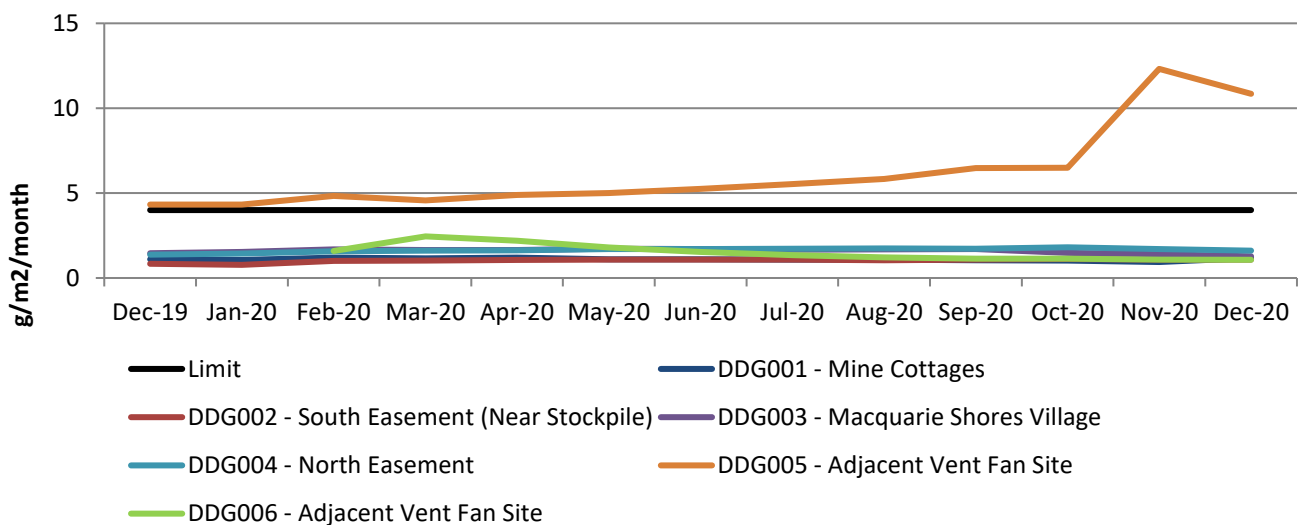
## Air Quality - Depositional Dust

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

December 2020	
<b>EPL</b>	1770
<b>Limit</b>	4g/m <sup>2</sup> /month / Annum
<b>Sampling Date</b>	06/11/2020 to 07/12/2020
Site	Insoluble Matter (g/m <sup>2</sup> /month)
DDG001	5.2
DDG002	1.7
DDG003	1.4
DDG004	2.0
DDG005	9.9
DDG006 (proposed DDG005 Replacement)	0.9
Notes:	
- For site locations refer to Chain Valley Colliery Air Quality Management Plan.	

A 12 month rolling average of depositional dust concentrations has been presented below, it is noted that due to frequent contamination of dust guage DDG005 and the bushfire events occurring in Decemeber 2019 and January 2020 the rolling average exceeds criteria. DPIE have been notified of each contamination event to the dust guage. Dust Guages DDG001, DDG002, DDG003 and DDG004 are located within a closer proximity to Chain Valley Colliery. DDG005 was intended to represent the fan site, subsequently, DDG006 was installed in a location still considered representative of the CVC vent fan site, but not subject to contamination. Delta Coal currently have a submission with DPIE to amend the Chain Valley Colliery Air Quality Management Plan to replace location DDG005 with DDG006.

### Depositional Dust (12 mth rolling avg)



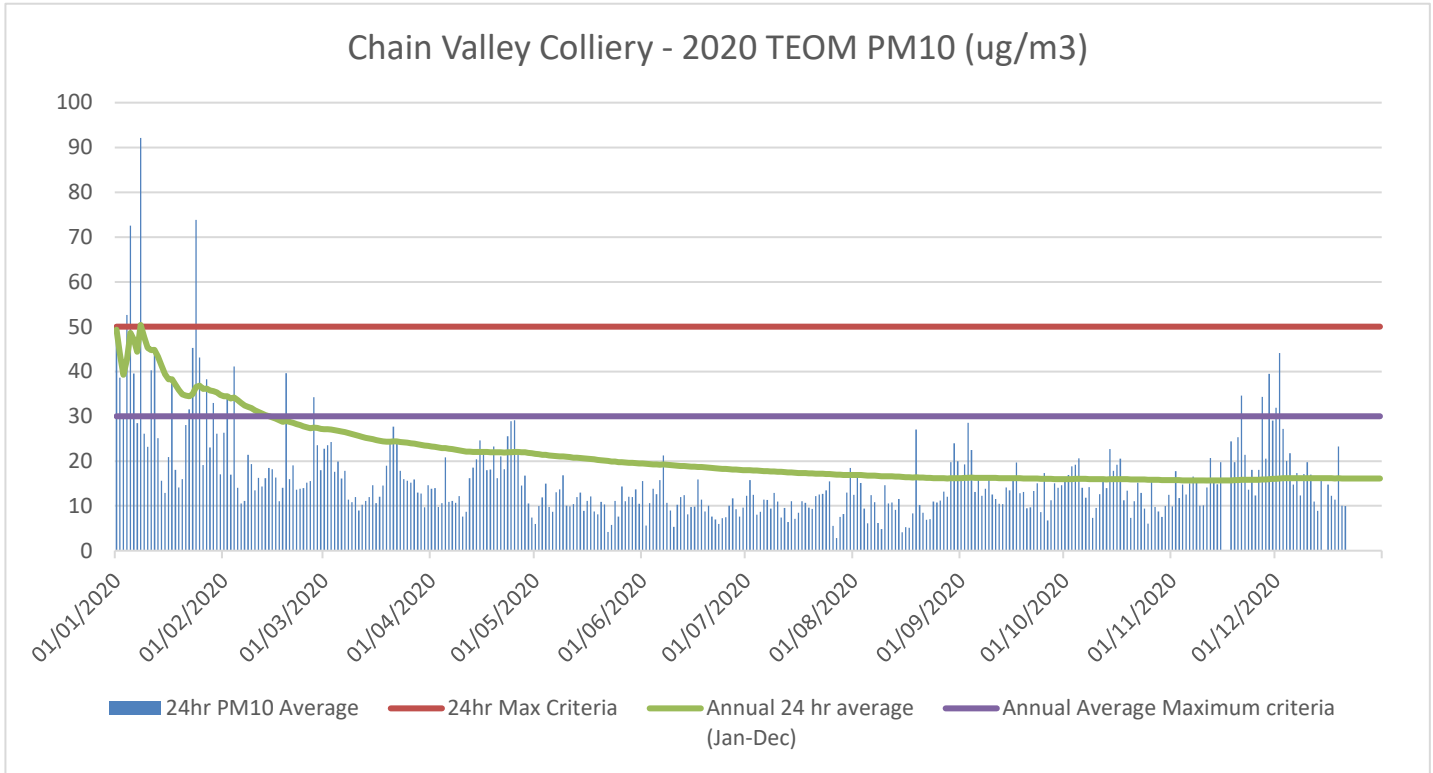


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### Air Quality – PM<sub>10</sub>

The 24hr PM<sub>10</sub> average from Delta Coal's Tapered Element Oscillating Microbalance (TEOM) is presented below for the year to date.



Annual 24hr PM<sub>10</sub> average maximum criteria for December 2020 is below the annual average maximum criteria limit. A summary of data availability for Delta Coal's TEOM is presented below for the year to date.

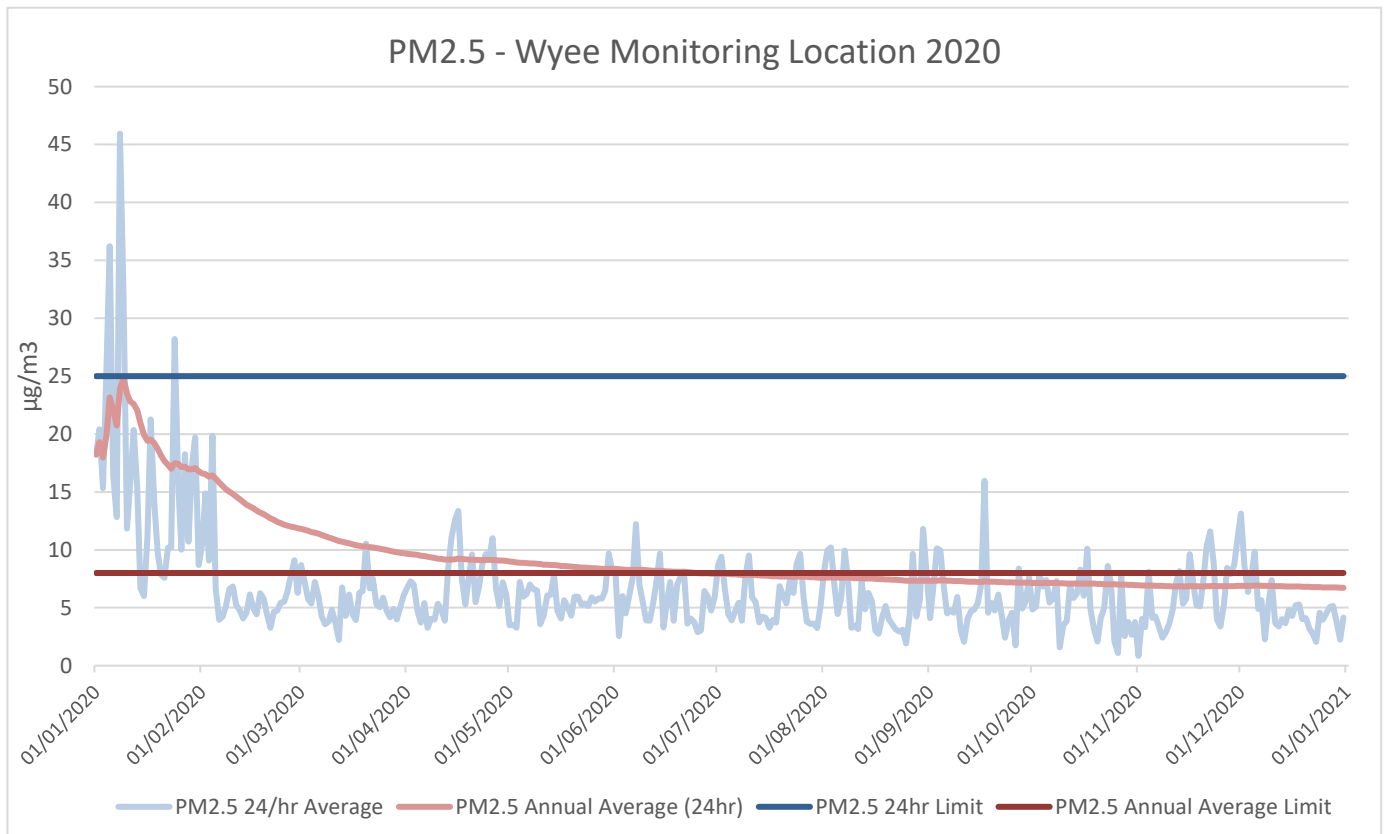
Variable	December	Total	Valid
A/C Temp	74.0%	8928	8609
A1	74.0%	8928	8609
A1_Scaled	74.0%	8928	8609
Bypass Flow	74.0%	8928	8609
Cap Temp	74.0%	8928	8609
Case Temp	74.0%	8928	8609
Config	74.0%	8928	8609
Dew Point	74.0%	8928	8609
Dig-In	74.0%	8928	8609
Dig-Latch	74.0%	8928	8609
ESN	74.0%	8928	8609
Filter Freq	74.0%	8928	8609
Filter Load	74.0%	8928	8609
Humidity	74.0%	8928	8609
MC	74.0%	8928	8609
MC 12Hr	74.0%	8928	8609
MC 1Hr	74.0%	8928	8609
MC 24Hr	74.0%	8928	8609
MC 30min	74.0%	8928	8609
MC 8Hr	74.0%	8928	8609
MC Total	74.0%	8928	8609
Mobile Signal	74.0%	8928	8609
Noise	74.0%	8928	8609
PM10 Flow	74.0%	8928	8609
Pressure	74.0%	8928	8609
Site	0.0%	8928	0
Temperature	74.0%	8928	8609
Tube Temp	74.0%	8928	8609
Vac Pressure	74.0%	8928	8609
Volts	74.0%	8928	8609

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## Air Quality – PM<sub>2.5</sub>

Delta Coal utilises PM<sub>2.5</sub> data obtained from Vales Point Power Station owned and operated beta attenuation monitor (BAM). The PM<sub>2.5</sub> monitor is located on Tingley Road, Wyee. Delta Coal has been required to monitor PM<sub>2.5</sub> concentration following the approval of Development Consent SSD-5465 Modification 3 and Project Approval MP06\_0311 Modification 5 on the 26<sup>th</sup> June 2020.



Data obtained from PM<sub>2.5</sub> monitoring indicates that through January and February of 2020 regional PM<sub>2.5</sub> was impacted by extensive bush-fires, impacting the annual average value thereafter. For the period of December 2020, the 24-hr PM<sub>2.5</sub> average concentration and annual average PM<sub>2.5</sub> concentration did not exceed limits of 25 µg/m<sup>3</sup> and 8 µg/m<sup>3</sup> respectively.

PM<sub>2.5</sub> data availability for the:

- December 2020 period was 98%; and
- 2020 period to current data availability has been 96%.

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### 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			
Licensee	Great Southern Energy Pty Ltd		
Location	Mannering Colliery Meteorological station		
Date published	Refer report date		
Date sampled	Daily		
Date obtained	05/11/2020		
Month	Total Rainfall/Month mm	Min Temp	Max Temp
Jan-20	28	18	44
Feb-20	350	16	37
Mar-20	159	12	38
Apr-20	46	9	28
May-20	88	5	27
Jun-20	67.6	4.5	22.7
Jul-20	232.8	3.7	23.3
Aug-20	55.2	2.1	25.2
Sep-20	29.2	5.3	30.2
Oct-20	169.4	8.8	31.8
Nov-20	54.8	9.9	41.4
Dec-20	197.2	13.3	33.4

Variable	December	Total	Valid
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	100%	2976	2976
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