

Monthly Environmental Monitoring Report – September 2020

Liddell Coal Operations



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1. Overview

Liddell Coal Operations (LCO) holds an Environmental Protection Licence for the scheduled activities:

- Coal works (> 5000 000 T annual handling capacity)
- Mining for coal (> 5000 000 T annual production capacity)

LCO are licensed to operate in accordance with the conditions and limits contained in EPL 2094. The hyperlink to the EPL is:

<http://www.epa.nsw.gov.au/prpoeoapp/Detail.aspx?instid=2094&id=2094&option=licence&searchrange=licence&range=POEO%20licence&prp=no&status=Issued>

Monitoring and reporting requirements include:

- M2.2 Air
- M2.3 Water & Land
- M4 Meteorological
- M5 Community Complaints
- M8 Blasting
- M10 Noise
- Heavy Plant Tyre Disposal

Monitoring locations are shown in *Figure 1*.

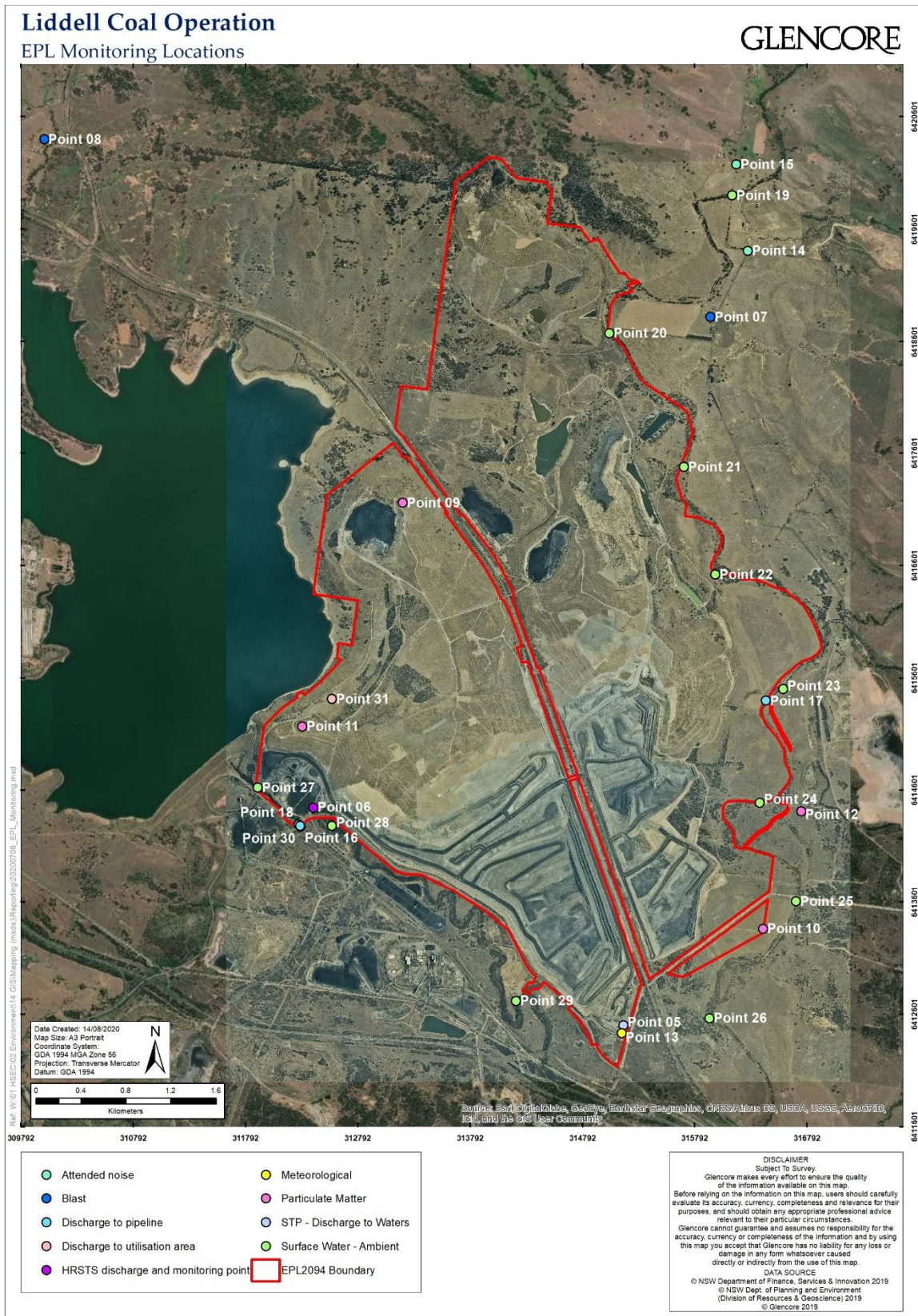


Figure 1 - EPL Monitoring Locations

2. Monitoring Results

2.1 Air Quality

Sampling Point: 9 - 12

Data received: 7 October 2020

Sampling Point	Name	Pollutant	Units of measure	Max Value	Min Value	Average Value	Monitoring Frequency	No. of days required during the month	No. of days measured during the month
9	SX38-D3	PM10	µg/m ³	35.6	8.8	20.4	Continuous	30	30
10	SX38-D4			65.8	10.0	23.8	Continuous		30
11	SX38-D5			25.5	8.0	17.1	Continuous		30
12	SX38-D6			36.4	6.9	16.7	Continuous		30

Notes to table:

Short periods of erroneous data from monitors has been excluded for calculations.

Section 4.5 of the *National Environment Protection (Ambient Air Quality) Measure Technical Paper No. 5 – Data Collection and Handling, 2001* (Prepared by the National Environment Protection Council Peer Review Committee), identifies an average concentration can only be valid if it is based on at least 75% of the expected samples in the averaging period.

Averaging periods where PM₁₀ data availability was <75%:

- Nil

2.2 Water & Land

Sampling Point: 5 Sewerage Treatment Plant Discharge

Data received: 1 October 2020

Pollutant	Unit of Measure	Monitoring Frequency	Criteria	Date Sampled	Result
E Coli	CFU/100mL	Monthly	100	10/8/20	<17
pH	-		6.5 – 9.0		7.32

Notes to table:

bold Criteria exceeded

DNR Data not received

Monthly Environmental Monitoring Report – June 2020

EPL: 2094

Licensee: Liddell Coal Operations

Premises: Liddell Coal Operations, Old New England Highway, Ravensworth NSW 2330

Sampling Point: 6 HRSTS Discharge

Data received: 1 October 2020

No discharges occurred this month.

Pollutant	Unit of Measure	Criteria	Date Sampled	Result	Monitoring Frequency
pH	-	6.5 – 9.0	-	-	Daily during any discharge
EC	uS/cm	-		-	Continuous during discharge
TSS	Mg/L	120		-	Daily during any discharge
Turbidity	NTU	-		-	Continuous during discharge
Volume	ML/day	-		-	Daily during any discharge

Notes to table:

bold Criteria exceeded

DNR Data not received

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Sampling Point: 19 - 29 Surface water

Date sampled: 14 September 2020

Data received: 12 October 2020

EPL Monitoring Point	Name	Investigation Trigger Levels						Results				
		Flow			No Flow			Flow Condition	pH	EC	TSS	NTU
		pH	EC	TSS	pH	EC	TSS					
19	BCK1	8.3	2020	50	8.8	4570	97	Steady	7.65	913	8	0.8
20	BCK1A							Steady	7.83	1060	9	0.7
21	BCK2							Still	7.74	1030	12	1.0
22	BCK2a							Trickle	7.81	1220	12	0.6
23	BCK3							Still	8.39	1180	<5	1.0
24	BCK4							Trickle	7.96	1120	10	1.4
25	BCK5							Still	7.72	1250	7	1.2
26	BCK6							Slow	7.03	1250	19	1.2
27	Bayswater Upstream	8.3	5130	50	8.5	7300	302	Slow	7.83	3420	11	3
28	Bayswater Midstream							Still	7.91	4560	16	0.4
29	Bayswater Downstream							Dry	-	-	-	-

Notes to Table:

pH pH units

EC Electrical Conductivity (uS/cm)

NTU Turbidity (NTU)

Bold Result triggering as per LCO Water Management Plan

NDR No data received

2.3 Meteorological

Sampling Points: 13 Weather

Data received: Next day

Date	2m Temp Ave	10m Temp Ave	Humidity Ave	Barometer Ave	Wind Speed Ave (m/s)	Wind Direction Ave	Daily Rain (mm)	Cumulative Rain (mm)	Delta Temp Ave	Sigma Theta Ave	Solar Rad Avg
1/09/2020	14.7	14.0	60.8	1013	3.3	124.9	0	0	-0.8	10.8	163.3
2/09/2020	16.3	15.9	60.1	1011	2.8	265.6	0	0	-0.4	14.4	161.9
3/09/2020	21.6	21.1	46.0	1009	4.0	282.9	0	0	-0.5	15.2	172.6
4/09/2020	23.1	22.5	42.9	1007	4.7	257.6	1.8	1.8	-0.6	14.4	137.9
5/09/2020	18.8	18.2	57.7	1009	3.0	249.8	2.2	4	-0.6	14.6	194.7
6/09/2020	15.3	14.9	71.0	1017	3.7	124.1	1.2	5.2	-0.5	9.1	170.6
7/09/2020	15.6	15.4	66.8	1021	2.0	122.7	0	5.2	-0.3	17.1	194.8
8/09/2020	17.5	17.3	59.2	1019	1.7	224.7	0	5.2	-0.2	14.6	190.6
9/09/2020	15.3	14.6	79.4	1017	3.0	171.5	13.6	18.8	-0.8	11.5	29.8
10/09/2020	13.7	12.9	79.0	1018	3.7	134.7	4.8	23.6	-0.8	8.9	79.6
11/09/2020	15.0	14.2	75.9	1020	3.3	129.9	0	23.6	-0.8	9.9	168.5
12/09/2020	15.2	14.8	67.9	1018	1.8	225.2	0	23.6	-0.4	13.5	206.1
13/09/2020	18.2	17.5	55.5	1015	2.7	282.8	0	23.6	-0.7	18.5	174.1
14/09/2020	18.8	18.0	62.0	1015	3.2	237.7	0	23.6	-0.7	14.0	185.1

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Date	2m Temp Ave	10m Temp Ave	Humidity Ave	Barometer Ave	Wind Speed Ave (m/s)	Wind Direction Ave	Daily Rain (mm)	Cumulative Rain (mm)	Delta Temp Ave	Sigma Theta Ave	Solar Rad Avg
15/09/2020	18.1	17.3	75.4	1018	2.0	115.9	0	23.6	-0.7	15.7	171.2
16/09/2020	19.5	19.1	63.0	1014	2.4	249.5	0	23.6	-0.4	14.1	196.3
17/09/2020	21.9	21.3	50.3	1014	3.5	263.9	0	23.6	-0.6	14.2	206.3
18/09/2020	17.2	16.4	78.9	1020	3.8	129.4	0	23.6	-0.8	9.6	56.6
19/09/2020	20.2	19.4	71.9	1014	2.4	150.9	0	23.6	-0.7	17.3	172.6
20/09/2020	17.7	17.1	85.0	1006	1.6	155.1	8.6	32.2	-0.6	16.1	69.8
21/09/2020	20.5	19.9	78.8	1002	2.5	179.7	16.4	48.6	-0.6	18.9	166.4
22/09/2020	21.6	21.0	53.9	1002	4.5	284.3	0.2	48.8	-0.6	16.0	216.7
23/09/2020	18.8	18.0	41.5	1005	4.7	298.8	0	48.8	-0.7	13.7	221.4
24/09/2020	16.4	15.7	45.2	1005	3.7	295.5	0	48.8	-0.7	14.5	198.2
25/09/2020	15.5	14.8	50.2	999	6.2	291.4	0.6	49.4	-0.6	14.7	203.8
26/09/2020	12.4	11.5	50.9	1005	6.9	300.8	0	49.4	-0.9	15.1	214.9
27/09/2020	13.6	12.9	53.2	1013	3.7	226.1	0	49.4	-0.7	13.2	174.3
28/09/2020	14.4	13.9	56.9	1016	2.1	133.0	0	49.4	-0.5	16.6	209.9
29/09/2020	14.2	13.7	63.6	1015	2.7	123.4	0	49.4	-0.5	13.2	238.7
30/09/2020	14.5	14.2	72.0	1009	1.9	226.0	0	49.4	-0.4	18.5	97.5
Monthly	17.2	16.6	62.5	1012	3.3	208.6	49.4	49.4	-0.6	14.3	168.1

2.4 Community Complaints

No complaints received during September 2020

Date	Time	Complaint Type	Residential Area	Complaint Details	Corrective Action
17/09/20	20:00	Lighting	Hebden Community	A large static light had been shining in the direction of the Hebden residence and was causing nuisance.	Mining operations immediately reviewed and changed. All lighting plants potentially visible to the Hebden area shut down.

2.5 Blasting

Sampling Points: 7 - 8

Data received: Day of blast

Date	Time	Criteria				Result			
		Vibration (mm/s)		Overpressure (dB)		Point 7 Scrivens		Point 8 Burlings	
		Allowable Exceedance of 5% of total blasts	Maximum	Allowable Exceedance of 5% of total blasts	Maximum	Vibration (mm/s)	Overpressure (dB)	Vibration (mm/s)	Overpressure (dB)
1/09/2020	15:32	5	10	115	120	0.02	92.2	0.01	90.3
2/09/2020	9:02					0.02	100	0.02	97.6
7/09/2020	12:53					0.09	95.8	0.11	86.8
8/09/2020	13:18					0.03	83	0.05	81.9
10/09/2020	13:01					0.03	97.5	0.05	99.9
14/09/2020	12:59					0.05	88.3	0.05	91.6
18/09/2020	12:25					0.06	97.2	0.11	98.6
21/09/2020	9:02					0.09	92.7	0.15	86
24/9/2020	9:00					0.03	99.4	0.03	91.8
29/9/2020	13:03					0.05	106.4	0.07	96
30/9/2020	12:56					0.02	84.8	0.01	100.2

Notes to Table:

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Bold Results above vibration or overpressure criteria

NDR No data received

Blasting shall only take place between 9 am and 5 pm (EST) Monday to Saturday inclusive. No blasting is allowed on Sundays and public holidays, or at any other time without the prior approval of the EPA.

2.6 Noise

Sampling Points: 14 - 15

Data received: 15 October 2020

EPL Monitoring Point	Name	Start Date & Time	Wind Speed (m/s)	Stability Class	Criteria (dB)		Criterion Applies? ¹	Result		Exceedance ^{3,4}
					L _{Aeq,15 min} ^{2,3} dB	L _{A1,1 min} ^{2,3} dB		L _{Aeq,15 min} ^{2,3} dB	L _{A1,1 min} ^{2,3} dB	
14	1317 Hebden Rd	16/9/20 22:24	1.2	D	35	45	Yes	IA	IA	Nil
15	1246 Hebden Rd	16/9/20 22:24	1.6	E	35	45	Yes	25	30	Nil

Notes to Table:

- 1 Noise emission limits apply for all meteorological conditions except those detailed in Appendix 6 of DA 305-11-01;
 - 2 Site-only LAeq,15minute attributed to LCO, including modifying factors if applicable;
 - 3 Bold results in red indicate exceedance of the relevant criterion (if applicable); and
 - 4 N/A in exceedance column means atmospheric conditions outside conditions specified in Appendix 6 of DA 305-11-01, therefore criterion was not applicable.
- IA Site noise inaudible at monitoring location

2.7 Heavy Plant Tyre Disposal

Heavy plant-tyres disposed of in pit this month:	0
Cumulative total disposed 2020/2021 FY:	108

GLENCORE