

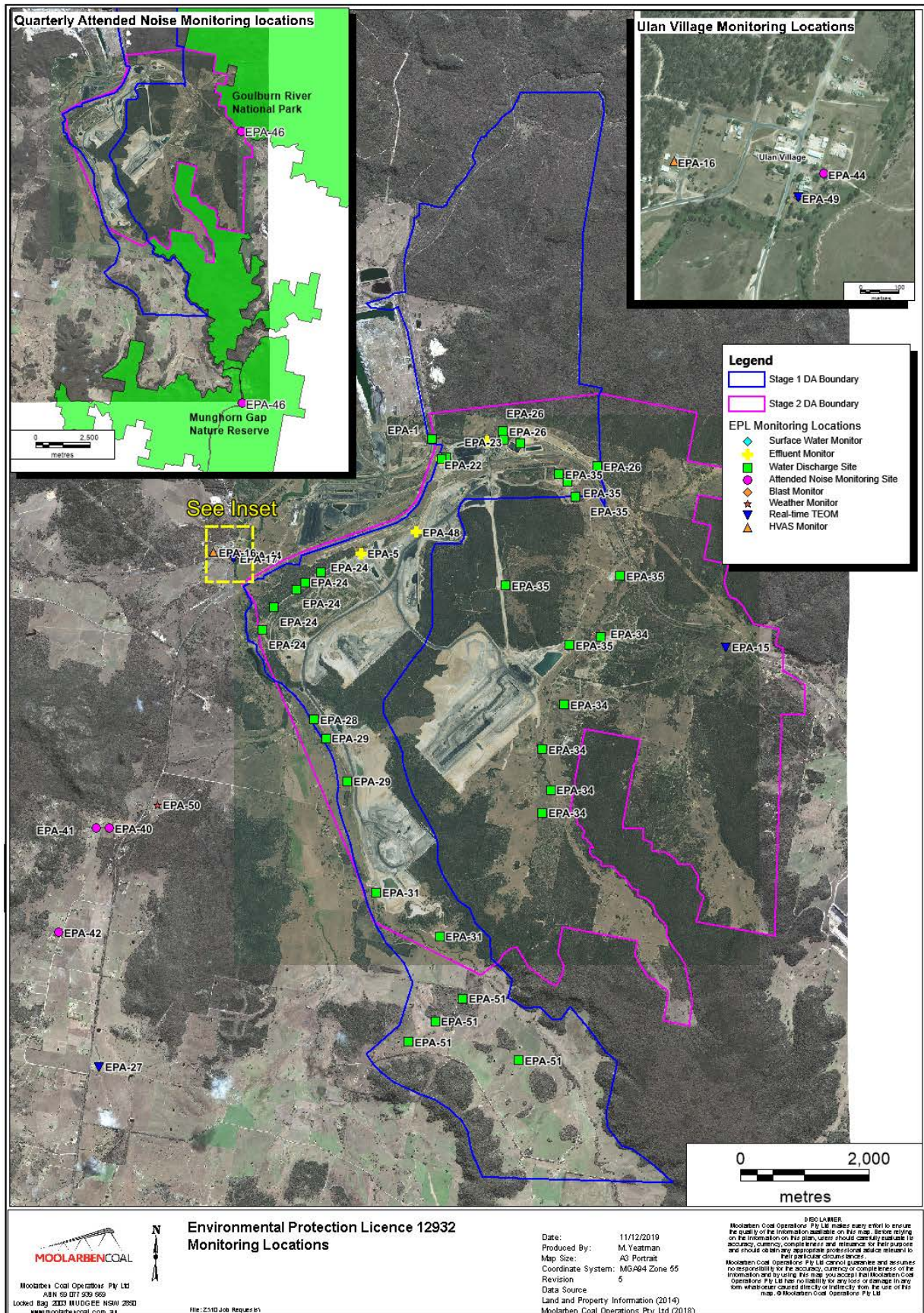


Monthly Environmental Monitoring Report

For the Month Ending 30 April 2020

Name of Operation	Moolarben Coal Complex
Name of License Holder	Moolarben Coal Operations Pty Ltd
Premises	Moolarben Coal Mine 12 Ulan-Wollar Rd, Ulan NSW 2850
Environmental Protection Licence Number	12932
EPL Link	http://www.epa.nsw.gov.au/prpoeoapp/ViewPOEOLicence.aspx?DOCID=75423&SYSUID=1&LICID=12932
Premises	Moolarben Coal Mine
Reporting Period	1 April 2020 to 30 April 2020
Date last sampled data obtained	22 May 2020
Publication Date	22 May 2020
Version	1
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EPL 12932 MCO Environmental Monitoring Network



MOOLARBEN COAL

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**Environmental Protection Licence 12932
 Monitoring Locations**

Date: 11/12/2019
 Produced By: M. Yeatman
 Map Size: A3 Portrait
 Coordinate System: MGA94 Zone 55
 Revision: 5
 Data Source: Land and Property Information (2014)
 Moolarben Coal Operations Pty Ltd (2018)

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Concentration Monitoring Summary

Air Quality Monitoring

EPL ID	Location	Pollutant	Unit of Measure	No. of Samples collected and analysed	EPL Monitoring Frequency	12 mth rolling average			Annual 100%ile concentration limit
						Min Value	Mean Value	Max Value	
15	TEOM 6	PM10	µg/m ³	96.7%	Continuous	20.64	20.83	20.99	25
16	PM01	PM10	µg/m ³	5	Every 6 days	16.53	16.94	17.51	25
N/A	PM02	PM10	µg/m ³	5	Every 6 days	15.43	15.88	16.55	25
17	TEOM 1	PM10	µg/m ³	97.5%	Continuous	17.27	17.45	17.66	25
27	TEOM 7	PM10	µg/m ³	95.7%	Continuous	14.58	14.98	15.34	25
27	TEOM 7	PM2.5	µg/m ³	95.7%	Continuous	6.02	6.17	6.32	8
N/A	TEOM 4	PM10	µg/m ³	97.5%	Continuous	18.3	18.65	19.01	25

EPL ID	Location	Pollutant	Unit of Measure	EPL Monitoring Frequency	No. of Samples collected and analysed	Min Value	Mean Value	Max Value	100%ile concentration limit
15	TEOM 6	PM10	µg/m ³	Continuous (24 Hr Average)	96.7%	6.4	17.55	32.2	50
16	PM01	PM10	µg/m ³	Every 6 days	5	7	10.6	17	50
N/A	PM02	PM10	µg/m ³	N/A	5	9	11.6	19	50
17	TEOM 1	PM10	µg/m ³	Continuous (24 Hr Average)	97.5%	4.6	14.78	24.1	50
27	TEOM 7	PM10	µg/m ³	Continuous (24 Hr Average)	95.7%	3.3	9.93	20	50
27	TEOM 7	PM2.5	µg/m ³	Continuous (24 Hr Average)	95.7%	1.2	4.23	7.9	25
N/A	TEOM 4	PM10	µg/m ³	N/A (24 Hr Average)	97.5%	5	14.02	21.8	50

Surface Water Quality Monitoring

EPL ID	Location	Pollutant	Unit of Measure	No. of Samples collected and analysed	Date Sampled	Min Value	Mean Value	Max Value
N/A	SW01	Conductivity	µS/cm	0	14/4/20	*	*	*
		pH	pH	0	14/4/20	*	*	*
		Total Suspended Solids	mg/L	0	14/4/20	*	*	*
N/A	SW02	Conductivity	µS/cm	1	14/4/20	436	436	436
		pH	pH	1	14/4/20	7.07	7.07	7.07
		Total Suspended Solids	mg/L	1	14/4/20	16	16	16
N/A	SW04	Conductivity	µS/cm	1	14/4/20	442	442	442
		pH	pH	1	14/4/20	6.13	6.13	6.13
		Total Suspended Solids	mg/L	1	14/4/20	10	10	10
N/A	SW05	Conductivity	µS/cm	1	14/4/20	345	345	345
		pH	pH	1	14/4/20	7.17	7.17	7.17
		Total Suspended Solids	mg/L	1	14/4/20	7	7	7
N/A	SW07	Conductivity	µS/cm	1	14/4/20	1390	1390	1390
		pH	pH	1	14/4/20	7.52	7.52	7.52
		Total Suspended Solids	mg/L	1	14/4/20	5	5	5
N/A	SW08	Conductivity	µS/cm	1	14/4/20	2640	2640	2640
		pH	pH	1	14/4/20	7.26	7.26	7.26
		Total Suspended Solids	mg/L	1	14/4/20	30	30	30
N/A	SW09	Conductivity	µS/cm	1	14/4/20	5120	5120	5120
		pH	pH	1	14/4/20	7.2	7.2	7.2
		Total Suspended Solids	mg/L	1	14/4/20	8	8	8
N/A	SW12	Conductivity	µS/cm	1	14/4/20	211	211	211
		pH	pH	1	14/4/20	7.38	7.38	7.38
		Total Suspended Solids	mg/L	1	14/4/20	10	10	10
N/A	SW15	Conductivity	µS/cm	1	14/4/20	192	192	192
		pH	pH	1	14/4/20	6.7	6.7	6.7
		Total Suspended Solids	mg/L	1	14/4/20	6	6	6
N/A	SW16	Conductivity	µS/cm	1	14/4/20	247	247	247
		pH	pH	1	14/4/20	6.32	6.32	6.32

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EPL ID	Location	Pollutant	Unit of Measure	No. of Samples collected and analysed	Date Sampled	Min Value	Mean Value	Max Value
		Total Suspended Solids	mg/L	1	14/4/20	5	5	5
N/A	SW17	Conductivity	µS/cm	1	14/4/20	726	726	726
		pH	pH	1	14/4/20	5.42	5.42	5.42
		Total Suspended Solids	mg/L	1	14/4/20	56	56	56
N/A	SW18	Conductivity	µS/cm	1	14/4/20	332	332	332
		pH	pH	1	14/4/20	6.15	6.15	6.15
		Total Suspended Solids	mg/L	1	14/4/20	5	5	5

* Goulburn River National Park & Goulburn River State Conservation Area closed by NPWS.

Blasting

EPL ID	Location	Pollutant	Unit of Measure	Frequency	No. of Blasts during the reporting period	Min Value	Mean Value	Max Value	Limits dBL
49	BM1 Ulan School	Blast Overpressure	dBL	Every Blast	14	86.4	95.32	107.3	115 (95% of Blasts) 120 (100% of Blasts)
		Ground Vibration	mm/s	Every Blast		0.05	0.15	0.29	5mm/s (95% of Blasts) 10mm/s (100% of Blasts)
N/A	BM5 Ridge Rd	Blast Overpressure	dBL	Every Blast	14	87.6	96.05	105.3	115 (95% of Blasts) 120 (100% of Blasts)
		Ground Vibration	mm/s	Every Blast		0.09	0.16	0.32	5mm/s (95% of Blasts) 10mm/s (100% of Blasts)
N/A	BM8 Moolarben Rd	Blast Overpressure	dBL	Every Blast	14	96.7	110.18	123.7	115 (95% of Blasts) 120 (100% of Blasts)
		Ground Vibration	mm/s	Every Blast		0.35	1.44	4.15	5mm/s (95% of Blasts) 10mm/s (100% of Blasts)

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Noise

EPL ID	Location	Site ID	Monitoring Type	Frequency	Measured Level ^{1,2,3}	Measured Level ^{1,2,3}	Noise Emission Limit(s) ⁴	Monitoring Completed during the period	(Potential) Non-Compliance/Breach ⁵
					LA1,1minute dB (15min)	LAeq dB (1min)			
44	Ulan Public School	NA1	Compliance - Attended	Monthly	NA	IA	Daytime (07:00 – 18:00) LAeq,15minute: 43 dB	Yes	Nil
N/A	Cope Road (Receiver 258)	NA11	Management - Attended	Annually	-	-	-	No	-
N/A	Lagoons Road	NA2	Validation - Attended	Annually	-	-	-	No	-
42	Winchester Crescent	NA12	Compliance/Validation - Attended	Quarterly	IA	IA	Night time (22:00 – 07:00) LAeq,15minute: 35 dB LA1,1minute: 45 dB	Yes	Nil
N/A	Upper Ridge Road (Receiver 176)	NA3	Validation - Attended	Annually	-	-	-	No	-
40, 41	Lower Ridge Road	NA6	Compliance -Attended	Monthly	IA	IA	Night time (22:00 – 07:00) LAeq,15minute: 37 dB LA1,1minute: 45 dB	Yes	Nil
N/A	Moolarben Road (Receiver 28)	NA10	Validation - Attended	Annually	-	-	-	No	-
46	Goulburn River National Park	GRNP	Compliance -Attended	Quarterly	-	-	All periods LAeq,15minute: 50 dB	No	-
46	Munghorn Gap Nature Reserve	MGNR	Compliance -Attended	Quarterly	-	-	All periods LAeq,15minute: 50 dB	No	-

1. NA indicates meteorological conditions during the measurement did not correspond with any modelled meteorological conditions, and were not applicable for comparison
2. IA is Inaudible. When site only noise is noted as IA, there was no noise from the source of interest audible at the monitoring location
3. Site-only noise levels attributed to MCO, including modifying factors where applicable
4. As detailed in the EPL, noise emission limits apply under all meteorological conditions except:

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- Wind speeds greater than 3 m/s at 10 metres above ground level; or
 - Stability class F temperature inversion conditions, and wind speeds greater than 2 m/s at 10 metres above ground level; or
 - Stability class G temperature inversions
5. NA in last column means atmospheric conditions outside those specified in EPL, therefore criterion was not applicable

Effluent Discharge Points

EPL ID	Pollutant	Unit of Measure	No. of samples required by Licence	No. of Samples collected and analysed	Date Sampled	Min Value	Mean Value	Max Value
5	BOD	mg/L	Quarterly	0				
	Nitrogen (total)	mg/L	Quarterly	0				
	Oil and Grease	mg/L	Quarterly	0				
	pH	pH	Quarterly	0				
	Phosphorus (total)	mg/L	Quarterly	0				
	Total Suspended Solids	mg/L	Quarterly	0				
22	BOD	mg/L	Quarterly	0				
	Nitrogen (total)	mg/L	Quarterly	0				
	Oil and Grease	mg/L	Quarterly	0				
	pH	pH	Quarterly	0				
	Phosphorus (total)	mg/L	Quarterly	0				
	Total Suspended Solids	mg/L	Quarterly	0				
23	BOD	mg/L	Quarterly	0				
	Nitrogen (total)	mg/L	Quarterly	0				
	Oil and Grease	mg/L	Quarterly	0				
	pH	pH	Quarterly	0				
	Phosphorus (total)	mg/L	Quarterly	0				
	Total Suspended Solids	mg/L	Quarterly	0				
48	BOD	mg/L	Quarterly	0				
	Nitrogen (total)	mg/L	Quarterly	0				
	Oil and Grease	mg/L	Quarterly	0				
	pH	pH	Quarterly	0				
	Phosphorus (total)	mg/L	Quarterly	0				
	Total Suspended Solids	mg/L	Quarterly	0				

* Effluent system not able to be sampled due to unscheduled maintenance

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Discharge Points

Moolarben Coal did not have any licensed discharges during the period.

EPL ID	Pollutant	Unit of Measure	No. of samples required by Licence	No. of Samples collected and analysed	Date Sampled	Min Value	Mean Value	Max Value	100%ile concentration limit
1	Conductivity	µS/cm	Continuous during discharge	0					685
	Iron	mg/L	Daily During Discharge	0					
	Oil and Grease	mg/L	Daily During Discharge	0					10
	pH	pH	Continuous during discharge	0					6.5-8.5
	Total Suspended Solids	mg/L	Daily During Discharge	0					50
	Turbidity	NTU	Continuous during discharge	0					25
	Zinc	mg/L	Daily During Discharge	0					
	Discharge Volume	Megalitres per day	Continuous during discharge	0					10
2	Conductivity	µS/cm	Continuous during discharge	0					685
	Iron	mg/L	Daily During Discharge	0					
	Oil and Grease	mg/L	Daily During Discharge	0					10
	pH	pH	Continuous during discharge	0					6.5-8.5
	Total Suspended Solids	mg/L	Daily During Discharge	0					50
	Turbidity	NTU	Continuous during discharge	0					25
	Zinc	mg/L	Daily During Discharge	0					
	Discharge Volume	Megalitres per day	Continuous during discharge	0					
24	Oil and Grease	mg/L	Daily During Discharge	0					
	pH	pH	Daily During Discharge	0					6.5-8.5
	Total Suspended Solids	mg/L	Daily During Discharge	0					50
	Turbidity	NTU	Daily During Discharge	0					25
26	Oil and Grease	mg/L	Daily During Discharge	0					
	pH	pH	Daily During Discharge	0					6.5-8.5
	Total Suspended Solids	mg/L	Daily During Discharge	0					50
	Turbidity	NTU	Daily During Discharge	0					25
28	Conductivity	µS/cm	Continuous during discharge	0					685
	Iron	mg/L	Daily During Discharge	0					
	Oil and Grease	mg/L	Daily During Discharge	0					10

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EPL ID	Pollutant	Unit of Measure	No. of samples required by Licence	No. of Samples collected and analysed	Date Sampled	Min Value	Mean Value	Max Value	100%ile concentration limit
	pH	pH	Continuous during discharge	0					6.5-8.5
	Total Suspended Solids	mg/L	Daily During Discharge	0					50
	Turbidity	NTU	Continuous during discharge	0					25
	Zinc	mg/L	Daily During Discharge	0					
	Discharge Volume	Kilolitres per day	Continuous during discharge	0					
29	Oil and Grease	mg/L	Daily During Discharge	0					
	pH	pH	Daily During Discharge	0					6.5-8.5
	Total Suspended Solids	mg/L	Daily During Discharge	0					50
	Turbidity	NTU	Daily During Discharge	0					25
31	Oil and Grease	mg/L	Daily During Discharge	0					
	pH	pH	Daily During Discharge	0					6.5-8.5
	Total Suspended Solids	mg/L	Daily During Discharge	0					50
	Turbidity	NTU	Daily During Discharge	0					25
35	Oil and Grease	mg/L	Daily During Discharge	0					
	pH	pH	Daily During Discharge	0					6.5-8.5
	Total Suspended Solids	mg/L	Daily During Discharge	0					50
	Turbidity	NTU	Daily During Discharge	0					25
51	Oil and Grease	mg/L	Daily During Discharge	0					
	pH	pH	Daily During Discharge	0					6.5-8.5
	Total Suspended Solids	mg/L	Daily During Discharge	0					50
	Turbidity	NTU	Daily During Discharge	0					25