

WERRIS CREEK COAL COMMUNITY CONSULTATIVE COMMITTEE
54TH Meeting of the Committee held at the Werris Creek Bowling Club
Wednesday, 11 November 2020 at 9:30am

The normal four monthly meeting will begin at 9:30am - A site tour will not be available today due to COVID-19 restrictions.

Meeting opened at 9:40am.

Record of attendance

Gae Swain	Independent Chairperson
Jane Bradford OAM	Independent Minute Taker
Craig Sullivan	Werris Creek Coal - Operations Manager
Matt Hollis	Werris Creek Coal - Environmental Superintendent
Kelsy Sammons	Whitehaven Coal - Environmental Officer
Andrew Garrett	Whitehaven Coal - General Manager Community Engagement

Clr Ian Lobsey	Councillor – Liverpool Shire Council
Lindsay Bridge	Community Representative – Phone No 0431 319 302
James O'Brien	Community Representative
Mike Lomax	Community Representative

Apologies

Donna Ausling - Director of Environment – Liverpool Shire Council

Noel Taylor - Community Representative

Note - Clr Virginia Black has been replaced by Clr Ian Lobsey – Liverpool Shire Council

Moved Lindsay Bridge, **seconded** Mike Lomax, THAT the apologies be accepted. CARRIED

2 Declaration of Pecuniary or Other Interests –

Gae Swain has non-pecuniary interests – Son works at Whitehaven Administration Office, Gunnedah and Son-in-law at Narrabri Mine

3 New Matters for Discussion under General Business today

3.1 Werris Creek Coal Penalty Infringement Notice: Management of Sediment Basin 10 (SB10)

4 Notes of the Previous Non-Meeting – Wednesday, 8 July 2020

Note As no responses, questions were asked within the time-frame it was agreed that the Notes covered the Non-Meeting accurately.

5 Matters Arising - Nil

6 Environment Monitoring Report from 1 June – 30 September 2020

1.1 Meteorology – Weather Station – nothing to report

2.1.1 Air quality Exceedance on 24.08.2020 – major dust storm – a regional based event.

Crawfords generate dust along their dirt road, timber from Nundle will reduce as China has stopped importing timber for the present. Nundle has to clear the felled timber and stop until further notice.

2.2.1 DG9 “Marengo” and DG34 8 Kurrara Street (deposited dust) – both indicated anomalous results during the reporting period inconsistent with other nearby dust deposition monitors.

2.3. Quirindi Train Dust Deposition

After discussion it was agreed that there had been no issues since this was requested originally by the CCC. Werris Creek Coal requested that the CCC consider cessation of deposited dust

monitoring adjacent to the Main Northern Rail line in Quirindi as significant rail traffic for coal haulage is now present for the wider Gunnedah and Narrabri regions.

Moved Mike Lomax, **seconded** James O'Brien THAT no further Reports on Quirindi Dust Deposition would be required. CARRIED

3.1 Noise levels – no issues for the period

4.0 Blasting – two complaints from Werris Creek – felt at Werris Creek residences – within compliance

5.1 Ground Water – September – Quipolly overflow – not underflow. Little Quipolly had some surface water – going underground

5.3 Surface water – Mine had to release stored stormwater due to forecast for further rainfall – Stormwater releases are all within compliance limits and must be done to satisfy EPA license requirements.

Note Mike Lomax working through Soil Conservation and Matt Hollis with Whitehaven owned properties “Cintra” and “Escott” towards restoring improved controls for surface water run-off in and around the Whitehaven owned properties that neighbour Mike Lomax’s property.

6.0 There were two minor complaints recorded.

Note Matt arranged for 6,000 new trees to be planted over past six months – based on highly favourable weather conditions. WCC plans to plant a similar amount in March / April 2021 following on from the summer period.

Moved Clr Ian Lobsey, **seconded** Lindsay Bridge THAT the Environment Report be accepted. CARRIED

7 General Business

7.1 Werris Creek Coal Penalty Infringement Notice: Management of Sediment Basin 10 (SB10) – Matt Hollis provided detailed commentary on the events leading up to the incident and actions taken following the incident occurrence:

Summary: -

- Werris Creek Coal experienced a rainfall event between 5th Feb and 13th Feb 2020 with a recorded site total of 85.8 mm over the 9 days.
- An uncontrolled discharge from Sediment Basin 10 (SB10) via Licensed Discharge Point “EPA 14” was observed on Sunday 9th February. The discharge was sampled / tested and reported as per the requirements of EPA License (EPL 12290). SB10 is located at the north western corner of the WCC Mining Lease adjacent to the WCC Train Load out complex. SB10 drains to the North via a gully system and eventually reaches Werris Creek just east of the Werris Creek Gap Weir.
- The uncontrolled discharge was observed to cease from EPA 14 on the 12th February 2020.
- SB10 was treated with a flocculent to remove or “settle out” the suspended solids on Friday 14th February in preparation for a controlled discharge (release of treated water) to restore sediment basin capacity as per EPA license requirements. The controlled discharge was scheduled to commence on Monday 17th February following confirmation of laboratory testing that the water was compliant with EPA license discharge criteria.
- A further rain event occurred on Monday 17th February at approximately 3.30am. Initial rainfall was steady and didn’t result in any additional inflow to SB10.
- SB10 was sampled and submitted to the Lab for analysis by 9am on the 17th February. Results were obtained back from the laboratory at approximately 12.30pm the same day indicating EPA 14 was complaint with prescribed discharge requirements for EPL12290.
- A storm event commenced at Werris Creek Coal at approximately 1pm that resulted in the inflow of water to SB10. The planned controlled discharge was aborted due to visible changes in the contents of SB10. No discharge from SB10 had occurred

3...

A further storm event was experienced at approximately 3.00am on 18th February.

- SB10 was observed to be discharging via licensed discharge Point EPA14 upon inspection at approximately 8am on the 18th February. Sampling / Laboratory Testing was conducted in accordance with EPA License requirements.
- Laboratory testing results obtained at 2.30pm on the 19th February indicated the discharge water from EPA14 was non-compliant for the parameter of pH. A pH was recorded of 5.45
- Werris Creek Coal enacted the PIRMP at approximately 3:45pm by formally notifying relevant government agencies and relevant neighbouring properties.
- SB10 was resampled again on the afternoon of the 19th February and lab testing indicated the discharge water had returned to a “normal” pH.

Note Werris Creek Coal consider the event to be a regrettable incident and WCC have taken steps to ensure controls and management practices are appropriate to avoid such incidents in future.

Moved Lindsay Bridge **seconded** James O'Brien THAT the explanation covered the discharge incident accurately. **CARRIED**

Next meeting Wednesday, 10 March 2021 at 9:30am –venue to be confirmed and to include a mine tour of Werris Creek Coal (weather and COVID-9 restrictions permitting).

Meeting closed at 10:15AM

Copy to all Committee Members

The Minutes also posted on the Whitehaven Coal Website

Gae Swain
Independent Chairperson

16.11 2020



WERRIS CREEK COAL PTY LTD

QUARTERLY ENVIRONMENTAL MONITORING REPORT

June, July, August and September 2020

This Environmental Monitoring Report covers the period 1st June 2020 to 30th September 2020 for the Werris Creek Coal Mine Community Consultative Committee.

The report includes environmental monitoring results from the on-site Weather Station, Air Quality, Noise, Blasting, Surface Water, Groundwater and Discharge Water Quality together with any community complaints received and general details on site environmental matters.

Note: Elevated monitoring results above the relevant monitoring criteria are highlighted in **yellow**.

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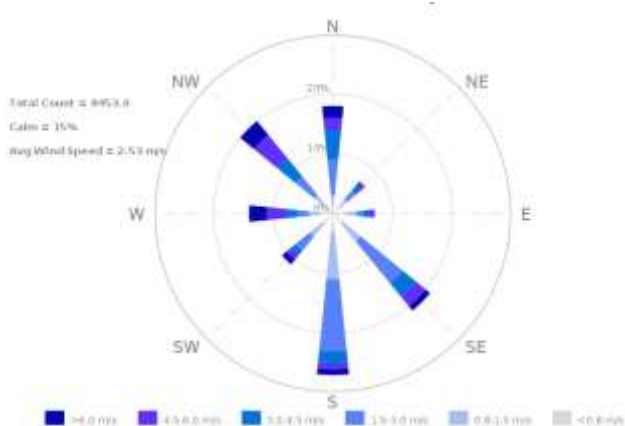
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1.0 METEOROLOGY

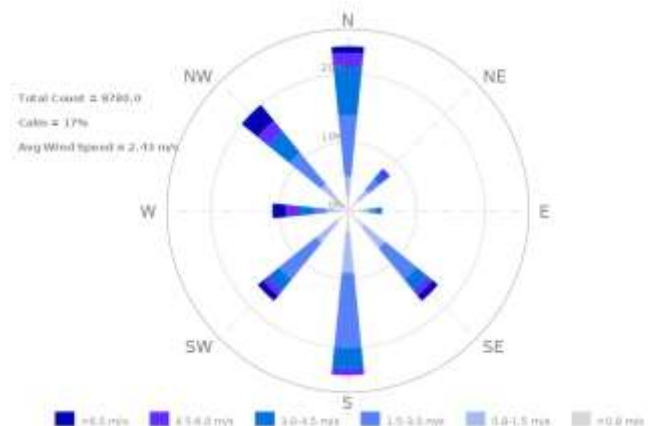
1.1 WEATHER STATION

Werris Creek Coal (WCC) collects meteorological data from the onsite weather station located on the top level of the overburden emplacement. The following table summarises rainfall data for the last four months. The monthly rainfall total in June, August and September 2020 was lower than the historical average, but higher in July 2020. Directional wind data, presented in the wind-rose figures below, indicate the prevailing wind direction was predominantly from the S in June, both N and S in July, NW in August and N in September 2020.

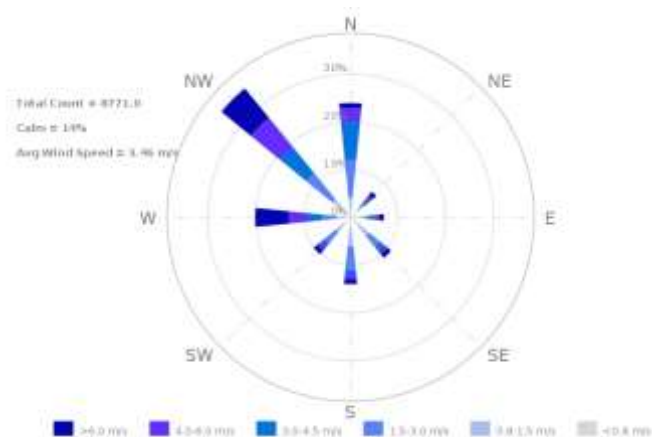
Month	Rainfall (mm)		
	Onsite	Historical Average	2020 Total
June 2020	39.0	59.7	425.2
July 2020	59.2	38.7	484.4
August 2020	27.8	33.2	512.2
September 2020	32.2	42.0	544.4



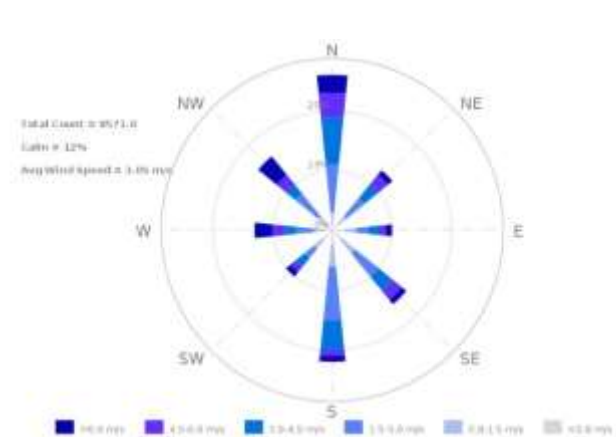
June 2020



July 2020



August 2020



September 2020

2.0 AIR QUALITY

2.1 HVAS (PM₁₀) and TEOM (PM₁₀ & PM_{2.5})

WCC operates five High Volume Air Samplers (HVAS) measuring particulate matter less than 10 micron (PM₁₀) and total suspended particulate (TSP) matter at four sites. HVAS sampling is scheduled every 6 days for a 24-hour run period in accordance with Environment Protection Authority (EPA) guidelines. Results are reported in micro grams per cubic metre (µg/m³) of air sampled. In addition, WCC operates a Tapered Element Oscillating Microbalance (TEOM) monitor in Werris Creek measuring real time PM₁₀ and PM_{2.5} (particulate matter less than 2.5 micron) dust levels. Dust monitoring locations are identified in **Figure 1**.

2.1.1 Monitoring Data Results

The average results for the last four months are provided in the table below.

Monitor Location	24Hr Maximum (µg/m ³)	Jun 2020 (µg/m ³)	Jul 2020 (µg/m ³)	Aug 2020 (µg/m ³)	Sep 2020 (µg/m ³)	2020 Average (g/m ² /month)	Criteria (µg/m ³)	
							Annual	24hr
PM _{2.5} – TEOM92 “Werris Creek”	16.0	7.0	4.1	4.6	4.5	9.1	-	-
PM ₁₀ – TEOM92 “Werris Creek”	123.1	10.3	7.4	12.7	10.4	16.5	30	50
PM ₁₀ – HVP20 “Tonsley Park”	34.6	11.8	9.5	14.3	14.8	18.8	30	50
PM ₁₀ – HVP1 “Escott”	20.1	5.7	2.5	3.4	8.4	9.6	30	50
PM ₁₀ – HVP11 “Glenara”	37.4	12.6	5.3	8.2	10.6	14.8	30	50
PM ₁₀ – HVP98 “Kyooma”	15.0	4.2	2.5	4.9	8.9	11	30	50
TSP – HVT98 “Kyooma”	44.5	12.5	8.9	15.8	32.2	27.6	90	-

Yellow Bold – Elevated dust level.

2.1.2 Discussion - Compliance / Non Compliance

All TSP, PM₁₀ and PM_{2.5} dust results were within criteria during the period. A single daily (24Hr) average result was obtained on the 24th August which coincided with a regional dust alert (NSW OEH) triggered by a widespread dust storm.

2.2 WERRIS CREEK MINE DEPOSITED DUST

Deposited dust monitoring measures particulate matter greater than 30 microns in size that readily settles out of the air related to visual impact. Dust deposition is monitored at 20 locations around WCC. Sampling is scheduled monthly in accordance with EPA guidelines and results are reported as grams per square metre per month (g/m²/month). Dust monitoring locations are identified in **Figure 1**.

2.2.1 Monitoring Data Results

The results for the last four months are provided in the table below.

Monitor Location	Jun 2020 (g/m ² /month)	Jul 2020 (g/m ² /month)	Aug 2020 (g/m ² /month)	Sep 2020 (g/m ² /month)	2020 Average (g/m ² /month)	Annual Criteria (g/m ² /month)
DG1 “Escott”	3.1	1.1	0.4	2.1	1.4	4.0
DG2 “Cintra”	4.7#	6.1	4.6	2.6	6.4	4.0
DG3 “Eurunderee”	1.1	0.6	1.4	0.8	1.8	4.0
DG5 “Railway View”	1.6	0.7	1.0	0.8	1.7	4.0
DG9 “Marengo”	0.8	0.7	0.7	1.5	10.6	4.0
DG11 “Glenara”	0.8	0.4	0.7	0.7	1.2	4.0
DG14 “Greenslopes”	0.9	0.7	0.5	0.7	0.9	4.0
DG15 “Plain View”	1.2	1.7	0.5	0.7	1.5	4.0
DG17 “Woodlands”	1.0	1.1	0.9	1.2	1.7	4.0
DG20 “Tonsley Park”	1.5	1.9	2.2	2.5	2.1	4.0
DG22 “Mountain View”	0.8	0.3	0.4	0.8	1.5	4.0
DG24 “Hazeldene”	2.6	0.8	1.2	2.8	1.7	4.0

Monitor Location	Jun 2020 (g/m ² /month)	Jul 2020 (g/m ² /month)	Aug 2020 (g/m ² /month)	Sep 2020 (g/m ² /month)	2020 Average (g/m ² /month)	Annual Criteria (g/m ² /month)
DG34 8 Kurrara St	0.9	15.7	0.6	0.8	2.9	4.0
DG62 Werris Creek South	0.8	0.5	0.4	0.5	1.3	4.0
DG92 Werris Creek Centre	0.7	0.5	0.7	0.5	0.9	4.0
DG96 "Talavera"	NS	NS	NS	NS	NS	NA
DG98 "Kyooma"	0.4	0.2	0.4	1.9	1.2	4.0
DG101 "Westfall"	1.3	1.1	1.0	0.8	1.5	4.0
DG103 West Street	1.1	0.7	1.4	0.9	1.6	4.0

* - sample contaminated with excessive organic matter (>50%) from non-mining source (i.e. bird droppings and insects); # - indicates sample is contaminated from a Non-Werris Creek Coal dust source; **Yellow Bold** – Elevated dust level; NS – Not Sampled; Broken- Dust bottle broken in transit

2.2.2 Discussion - Compliance / Non Compliance

All monthly dust deposition gauge results were below the annual criteria of 4.0 g/m²/month throughout the period with the exception of:

- DG2 (Cintra) had high results in June and July 2020 and a rolling 2020 average above criteria.
- DG34 (8 Kurrara St) had a high result in July 2020

DG2 (Cintra) has consistently high dust levels (July – August 2020) at this gauge and low deposited dust levels at other nearby isolated gauges indicate a localised source of dust generation, unrelated to activities at Werris Creek Coal Mine. The July 2020 result for DG34 is considered to be an anomaly when compared to other nearby isolated gauges and results from all other months during the reporting period.

2.3 QUIRINDI TRAIN DUST DEPOSITION

2.3.1 Monitoring Data Results

The results for the last three months are provided in the table below.

Monitor Location	Jun 2020		Jul 2020		Aug 2020		Sep 2020		2020 Average (g/m ² /month)
	g/m ² /month	% Coal	g/m ² /month	% Coal	g/m ² /month	% Coal	g/m ² /month	% Coal	
DDW30	0.6	30%	1.1	20%	1.1	10%	1.5	20%	1.6
DDW20	0.5	30%	0.4	40%	1.1	<10%	0.9	50%	1.4
DDW13	2.3	30%	0.6	60%	1.1	10%	1.2	20%	1.8
Train Line									
DDE13	0.7	40%	0.3	60%	1.8	30%	1.0	60%	2.0
DDE20	0.4	20%	0.8	10%	1.4	30%	2.0	40%	2.7
DDE30	0.4	10%	0.6	30%	1.5	10%	1.1	40%	1.0

* - sample contaminated with excessive organic matter (>50%) from non-mining source (i.e. bird droppings and insects); NS – Not Sampled, bottle and funnel smashed. NR- change in service provider microscopic analysis not conducted as result <4

2.3.2 Discussion - Compliance / Non Compliance

Overall, the dust fallout levels adjacent to the train line are low, well below the impact assessment criteria nominated by the EPA of 4.0 g/m²/month and comparable to the levels monitored around Werris Creek Coal Mine. Coal contributions to the dust fraction remain generally low.

2.4 AIR QUALITY COMPLAINTS

There was no dust complaints recorded during the period.

3.0 NOISE

3.1 OPERATIONAL NOISE

Monthly attended noise monitoring is undertaken representative of the following 16 properties from 13 monitoring points below. Attended noise monitoring was undertaken twice for either 60 minutes at privately owned properties or 15 minutes at properties with private agreements; representative of the day period and the evening/night period.

3.1.1 Monitoring Data Results

The WCC operations only noise level (not ambient noise) results for the last four months are outlined in the tables below. Noise monitoring locations are identified in **Figure 2**.

17th Wednesday and 18th Thursday June 2020

Location		Day dB(A) L_{eq} 15min	Criteria dB(A) L_{eq} 15min	Evening/Night dB(A) L_{eq} 15min	Criteria dB(A) L_{eq} 15min
A	"Rosehill" R5	Inaudible	35	Inaudible	35
B	West Quipolly (R7*, R8*, R9* & R22*)	Inaudible	40	Inaudible	40
C	Central Quipolly (R10*, R11*)	Inaudible#	40	Inaudible	40
D	"Hazeldene" R24	Inaudible#	37	Inaudible#	37
E	"Railway Cottage" R12	Inaudible#	38	Inaudible	38
F	"Talavera" R96	Inaudible#	38	Inaudible	38
H	"Kyooma" R98	Inaudible#	38	Inaudible	38
I	Kurrara St, WC R57	Inaudible#	35	Inaudible	35
J	Coronation Ave, WC	Inaudible#	35	Inaudible	35
K	Alco Park (R21*)	Inaudible#	40	Inaudible#	40
L	West St, WC (R103)	Inaudible#	35	Inaudible#	35

WC – Werris Creek; * - Private agreement in place with resident; **Yellow Bold** – Elevated noise; # Adverse weather with wind >3m/s, temperature inversions >+12°C/100m or >2m/s and >0°C/100m; 1 – R22 criteria is 36 dB(A) L_{eq} 15min while R9 is 37 dB(A) L_{eq} 15min

NM- Denotes Not Measurable. If site only noise is noted as NM, this means some noise from the source of interest was audible at low-levels, but could not be quantified

6th Monday and 9th Tuesday July 2020

Location		Day dB(A) L_{eq} 15min	Criteria dB(A) L_{eq} 15min	Evening/Night dB(A) L_{eq} 15min	Criteria dB(A) L_{eq} 15min
A	"Rosehill" R5	24	35	Inaudible	35
B	West Quipolly (R7*, R8*, R9* & R22*)	29	40	Inaudible	40
C	Central Quipolly (R10*, R11*)	Inaudible	40	Inaudible	40
D	"Hazeldene" R24	Inaudible	37	Inaudible	37
E	"Railway Cottage" R12	Inaudible	38	Inaudible	38
F	"Talavera" R96	Inaudible	38	Inaudible	38
H	"Kyooma" R98	Inaudible	38	Inaudible	38
I	Kurrara St, WC R57	Inaudible	35	Inaudible	35
J	Coronation Ave, WC	Inaudible	35	Inaudible	35
K	Alco Park (R21*)	Inaudible	40	Inaudible	40
L	West St, WC (R103)	Inaudible	35	Inaudible#	35

WC – Werris Creek; * - Private agreement in place with resident; **Yellow Bold** – Elevated noise; # Adverse weather with wind >3m/s, temperature inversions >+12°C/100m or >2m/s and >0°C/100m; 1 – R22 criteria is 36 dB(A) L_{eq} 15min while R9 is 37 dB(A) L_{eq} 15min

NM- Denotes Not Measurable. If site only noise is noted as NM, this means some noise from the source of interest was audible at low-levels, but could not be quantified

27th Thursday and 28th Friday August 2020

Location		Day dB(A) L_{eq} 15min	Criteria dB(A) L_{eq} 15min	Evening/Night dB(A) L_{eq} 15min	Criteria dB(A) L_{eq} 15min
A	"Rosehill" R5	Inaudible	35	Inaudible#	35
B	West Quipolly (R7*, R8*, R9* & R22*)	Inaudible#	40	21#	40
C	Central Quipolly (R10*, R11*)	Inaudible#	40	Inaudible	40
D	"Hazeldene" R24	Inaudible#	37	27#	37
E	"Railway Cottage" R12	Inaudible	38	23#	38
F	"Talavera" R96	29	38	29#	38
H	"Kyooma" R98	Inaudible	38	23#	38
I	Kurrara St, WC R57	Inaudible	35	Inaudible#	35
J	Coronation Ave, WC	Inaudible	35	Inaudible#	35
K	Alco Park (R21*)	Inaudible#	40	22	40
L	West St, WC (R103)	Inaudible	35	Inaudible	35

WC – Werris Creek; * - Private agreement in place with resident; **Yellow Bold** – Elevated noise; # Adverse weather with wind >3m/s, temperature inversions >+12°C/100m or >2m/s and >0°C/100m; 1 – R22 criteria is 36 dB(A) L_{eq} 15min while R9 is 37 dB(A) L_{eq} 15min

NM- Denotes Not Measurable. If site only noise is noted as NM, this means some noise from the source of interest was audible at low-levels, but could not be quantified

Monday 28th and Tuesday 29th September 2020

	Location	Day dB(A) L_{eq}	Criteria dB(A) L_{eq}	Evening/Night dB(A)	Criteria dB(A) L_{eq}
		15min	15min	L_{eq} 15min	15min
A	"Rosehill" R5	Inaudible#	35	Inaudible#	35
B	West Quipolly (R7*, R8*, R9* & R22*)	Inaudible#	40	Inaudible#	40
C	Central Quipolly (R10*, R11*)	Inaudible#	40	21#	40
D	"Hazeldene" R24	Inaudible	37	Inaudible#	37
E	"Railway Cottage" R12	Inaudible	38	Inaudible#	38
F	"Talavera" R96	Inaudible	38	Inaudible#	38
H	"Kyooma" R98	Inaudible	38	Inaudible	38
I	Kurrara St, WC R57	Inaudible	35	21	35
J	Coronation Ave, WC	Inaudible#	35	Inaudible	35
K	Alco Park (R21*)	23	40	Inaudible#	40
L	West St, WC (R103)	22	35	25#	35

WC – Werris Creek; * - Private agreement in place with resident; **Yellow Bold** – Elevated noise; # Adverse weather with wind >3m/s, temperature inversions >+12°C/100m or >2m/s and >0°C/100m; 1 – R22 criteria is 36 dB(A) L_{eq} 15min while R9 is 37 dB(A) L_{eq} 15min

NM- Denotes Not Measurable. If site only noise is noted as NM, this means some noise from the source of interest was audible at low-levels, but could not be quantified

3.1.2 Discussion - Compliance / Non Compliance

Noise from Werris Creek Coal Mine was inaudible at a high percentage of the monitoring sites during the quarter. Throughout the period, Werris Creek Coal Mine adjusted mining operations and shut down equipment at various times to reduce noise generation potential in response to noise levels measured at the real time noise monitors.

3.2 Noise complaints

There were no noise complaints recorded during the period.

4.0 BLASTING

During the reporting period there was a total of twenty-three blasts fired by WCC with monitoring of each blast undertaken at "Glenara", "Kyooma", "Werris Creek South" and "Werris Creek Mid". Compliance limits for blasting overpressure is 115dBL (and up to 120dBL for only 5% of blasts) and vibration is 5mm/s (and up to 10mm/s for only 5% of blasts). Blast monitoring locations are identified in **Figure 3**.

4.1 BLAST MONITORING

4.1.1 Monitoring Data Results

The summary tables of blasting results over the last four months are provided below.

Jun 2020		"Glenara" R11		"Kyooma" R98		Werris Creek South R62		Werris Creek Mid R92	
		mm/s	dB(L)	mm/s	dB(L)	mm/s	dB(L)	mm/s	dB(L)
Monthly Average		0.12	94.1	0.53	96.6	0.29	94.7	0.22	94.5
Monthly Maximum		0.24	103.7	1.20	102.6	0.53	105.3	0.40	106.0
Annual Average		0.12	98.3	0.66	99.5	0.36	98.8	0.26	98.3
Criteria		5	115	5	115	5	115	5	115
% >115dB(L) or 5mm/s	Rolling Ave	0.00%	0.00%	0.00%	0.00%	0.00%	0.66%	0.00%	0.00%
	Reporting Year	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

Jul 2020		"Glenara" R11		"Kyooma" R98		Werris Creek South R62		Werris Creek Mid R92	
		mm/s	dB(L)	mm/s	dB(L)	mm/s	dB(L)	mm/s	dB(L)
Monthly Average		0.16	96.2	1.07	98.9	0.56	99.1	0.34	98.7
Monthly Maximum		0.26	100.8	1.74	105.8	0.99	102.6	0.67	100.7
Annual Average		0.12	98.0	0.72	99.4	0.39	98.9	0.27	98.4
Criteria		5	115	5	115	5	115	5	115
% >115dB(L) or 5mm/s	Rolling Ave	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	Reporting Year	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

Aug 2020		"Glenara" R11		"Kyooma" R98		Werris Creek South R62		Werris Creek Mid R92	
		mm/s	dB(L)	mm/s	dB(L)	mm/s	dB(L)	mm/s	dB(L)
Monthly Average		0.14	97.1	0.66	102.7	0.37	103.9	0.22	100.6
Monthly Maximum		0.31	101.1	1.05	111.0	0.56	109.7	0.37	105.9
Annual Average		0.12	97.9	0.71	99.9	0.39	99.5	0.26	98.6
Criteria		5	115	5	115	5	115	5	115
% >115dB(L) or 5mm/s	Rolling Ave	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	Reporting Year	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

Sep 2020		"Glenara" R11		"Kyooma" R98		Werris Creek South R62		Werris Creek Mid R92	
		mm/s	dB(L)	mm/s	dB(L)	mm/s	dB(L)	mm/s	dB(L)
Monthly Average		0.10	95.8	0.50	96.1	0.33	95.9	0.26	97.1
Monthly Maximum		0.20	102.6	1.35	101.5	0.48	101.7	0.36	107.2
Annual Average		0.12	97.7	0.69	99.4	0.38	99.1	0.26	98.5
Criteria		5	5	115	5	115	5	115	5
% >115dB(L) or 5mm/s	Rolling Ave	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	Reporting Year	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

Yellow – overpressure >115dB(L) or Werris Creek vibration >5.0mm/s.

4.1.2 Discussion - Compliance / Non Compliance

All blasts over the period complied with maximum licence limits (120dB(L) and 10mm/s) as well as the 95th percentile limits (115dB(L) and 5mm/s).

4.2 BLAST COMPLAINTS

There were two blast complaints (July 2020) during the period regarding vibration.

5.0 WATER

The groundwater monitoring program monitors groundwater levels bi-monthly and groundwater quality six monthly. Surface water monitoring is undertaken quarterly.

5.1 GROUND WATER

Groundwater monitoring is undertaken to identify if there are any impacts on groundwater quality and water levels as a result of the mining operations. WCC monitors approximately 38 groundwater wells/bore and piezometers in the key aquifers surrounding WCC including Werrie Basalt (next to WCC and further afield) and Quipolly Creek Alluvium. Groundwater level surveys were completed on the 6, 7 and 9 July 2020 and 8, 9 and 11 September 2020. Groundwater monitoring locations are identified in **Figure 4**.

5.1.1 Monitoring Data Results

A summary of groundwater monitoring results has been provided below.

Site		July-20	
		mbgl	%
Werrie Basalt near WCC	MW1	Dry	
	MW2	57.34	-7%
	MW3	21.17	0%
	MW4B	20.16	-1%
	MW5	14.16	0%
	MW6	16.30	0%
	MW27*	52.75	1%
	MW36A	15.78	12%
	MW36B	15.79	12%
Werrie Basalt	MW8*	21.18	-2%
	MW10	12.45	3%
	MW14	11.85	16%
	MW17B*	14.83	-1%
	MW19A*	Pump over bore	
	MW20*	23.54	0%
	MW38A	10.42	10%
	MW38B*	9.78	4%
	MW38C*	23.82	-2%
	MW38E*	11.13	10%
#1	MW41	10.48	-1%
	MW43	9.07	-1%
	MW24A*	16.39	2%
	MW29*	11.38	2%
Quipolly Alluvium	MW12*	Dry	
	MW13*	Dry	
	MW13B*	6.09	-1%
	MW13D*	6.18	-2%
	MW15*	No access	
	MW16*	Dry	
	MW17A*	8.36	-1%
	MW18A*	Dry	
	MW21A*	Dry	
	MW22A*	Dry	
	MW22B*	Dry	
	MW23A*	4.40	4%
	MW23B*	No access	
	MW26B*	10.83	-1%
	MW28A*	17.71	-1%
	MW32*	Pump over bore	
	#2	MW40	10.51
MW42		9.04	-1%
MW34*		10.79	-2%

Site		September-20	
		mbgl	%
Werrie Basalt near WCC	MW1	Dry	
	MW2	56.52	1%
	MW3	21.08	0%
	MW4B	20.21	0%
	MW5	13.95	2%
	MW6	16.30	0%
	MW27*	53.39	-1%
	MW36A	16.64	-5%
	MW36B	16.65	-5%
	MW8*	17.97	18%
Werrie Basalt	MW10	11.87	5%
	MW14	12.85	-8%
	MW17B*	14.65	1%
	MW19A*	Pump over bore	
	MW20*	23.55	0%
	MW38A	9.75	7%
	MW38B*	9.64	1%
	MW38C*	22.98	4%
	MW38E*	10.82	3%
	MW41	9.90	6%
#1	MW43	8.47	8%
	MW24A*	16.40	0%
	MW29*	11.53	-1%
Quipolly Alluvium	MW12*	Dry	
	MW13*	Dry	
	MW13B*	5.19	17%
	MW13D*	5.66	9%
	MW15*	No access	
	MW16*	Dry	
	MW17A*	7.76	8%
	MW18A*	Dry	
	MW21A*	Dry	
	MW22A*	Dry	
	MW22B*	Dry	
	MW23A*	4.27	3%
	MW23B*	No access	
	MW26B*	10.28	5%
	MW28A*	15.27	16%
	MW32*	Pump over bore	
	#2	MW40	9.92
MW42		8.26	9%
MW34*		10.42	4%

5.2 SURFACE WATER

Surface water monitoring is undertaken in local creeks offsite as well as from discharge point dirty water dams to monitor for potential water quality issues. Quarterly surface water monitoring was undertaken on the 10 and 12 August 2020. Surface water monitoring locations are identified in **Figure 5**.

5.2.1 Monitoring Data Results

Summary of surface water quality monitoring results has been provided below.

10th and 12th August 2020

Site	pH	EC	TSS	O&G	Change from Previous Quarter or General Comments
ONSITE					
SB2	8.5	400	10	<5	Previously wet, now dry
SB9	6.83	411	47	<5	Previously wet and now dry
SB10	7.57	158	9	<5	Previously wet and now dry
SB18	7.75	158	5	<5	Previously wet and now dry
OFFSITE					
QCU	Dry	Dry	Dry	Dry	Previously dry, still dry
QCD	7.51	940	15	<5	Previously only pools, now still pools
WCU	7.50	452	21	<5	Previously only pools, now flowing
WCD	7.49	571	106	<5	Not previously flowing, now flowing

pH – measure of acidity/alkalinity; EC – Electrical Conductivity measures salinity; TSS – Total Suspended Solids is a measure of suspended sediment in water (i.e. similar to turbidity); O&G – Oil and Grease measures amount of hydrocarbons (oils and fuels) in water

5.2.2 Discussion - Compliance / Non Compliance

Quarterly surface water monitoring was undertaken on 10th and 12th August 2020. All water quality results were within long-term averages and the Site Water Management Plan trigger values.

5.3 SURFACE WATER DISCHARGES

5.3.1 Monitoring Data Results

There were four control discharge events between June and August 2020.

Sample Date	Dam	pH	EC	TSS	O&G	Compliance	Type	5 Day Rain
9/6/2020	SB2 (EPA10)	8.2	730	7	<5	Yes	Controlled	N/A
17/6/2020	SB3 (EPA10)	8.4	470	7	<5	Yes	Controlled	N/A
9/7/2020	SB2 (EPA10)	8.2	810	14	<5	Yes	Controlled	N/A
7/8/2020	SB3 (EPA10)	7.9	640	6	<5	Yes	Controlled	N/A
Criteria		6.5 - 8.5	N/A	50	10			

pH – measure of acidity/alkalinity; EC – Electrical Conductivity measures salinity; TSS – Total Suspended Solids is a measure of suspended sediment in water (i.e. similar to turbidity); O&G – Oil and Grease measures amount of hydrocarbons (oils and fuels) in water; **Bold** – indicates results outside criteria due to 5 day rain trigger >39.2mm.

5.3.2 Discussion - Compliance / Non Compliance

Sampling results were in compliance with WCC's Environmental Protection Licence.

5.4 WATER COMPLAINTS

There were no water release complaints during the period.

6.0 COMPLAINTS SUMMARY

There were two complaints received during the period, which are summarised below.

#	Date	Issue	Complaint	Investigation	Action Taken
621	07/07/20	Vibration	Phone to EO	Complainant advised they felt the blast at their residence and it frightened the family dog. Requested results via email.	EO confirmed blast was within compliance limits.
622	07/07/20	Vibration	Email to WHC	Complainant emailed to advise they were concerned by the noise and vibration from the blast	EO confirmed blast was within compliance limits.

7.0 GENERAL

Please feel free to ask any questions in relation to the information contained within this document during Item 7 of the meeting agenda.

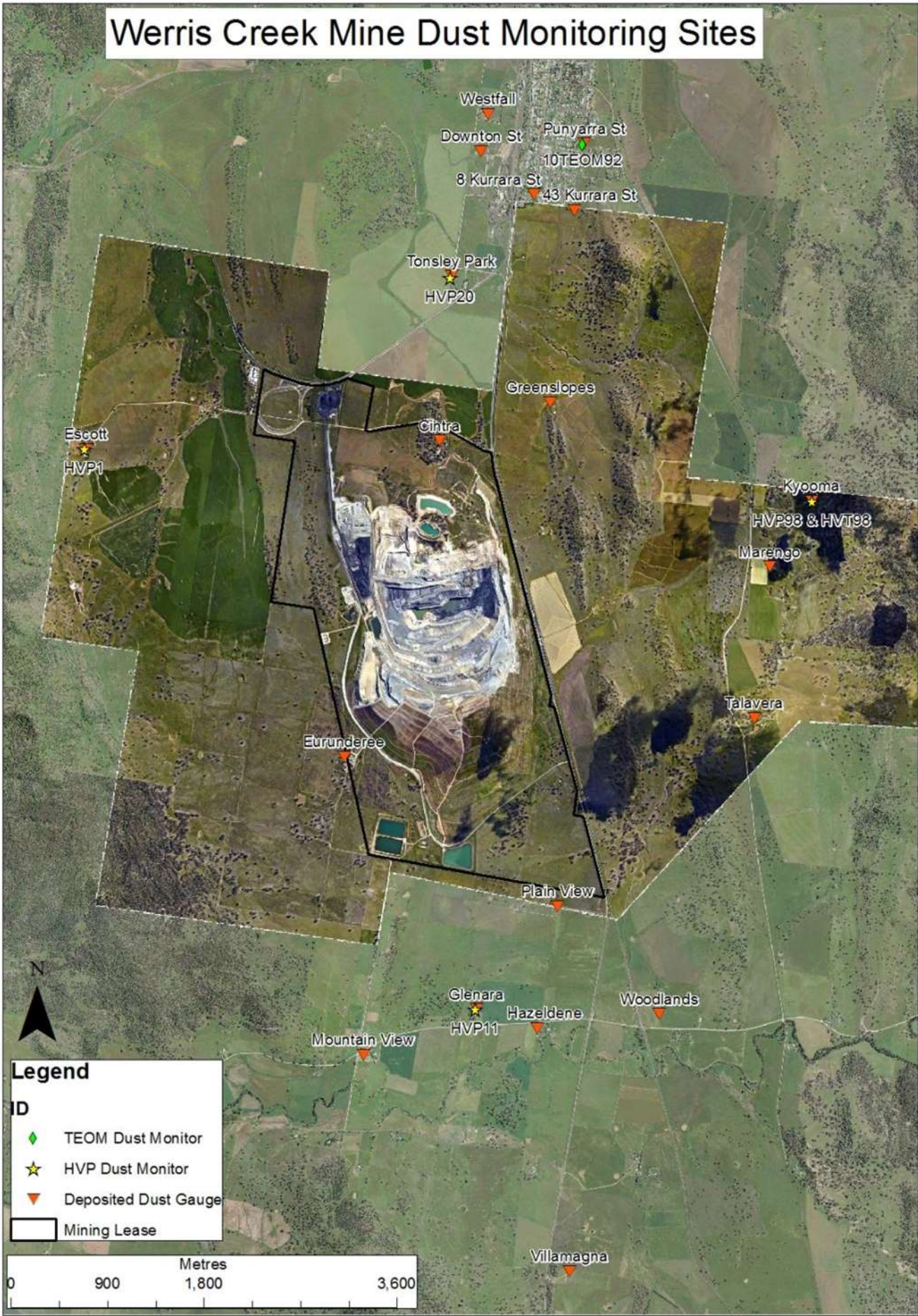


Figure 1 – WCC Dust Monitoring Locations



Figure 2– WCC Noise Monitoring Locations



Figure 3 – WCC Blast Monitoring Locations



Figure 4 – WCC Groundwater Monitoring Locations



Figure 5 – WCC Surface Water Monitoring Locations