

# Maules Creek Coal Mine Community Consultative Committee Meeting #37

## Environmental Monitoring Report For the Q1 period, January – March 2022

### Attended Noise Monitoring

Maules Creek Coal (MCC) engaged an independent acoustic consultant to conduct LAeq (15minutes) and LA1 (1 minute) attended noise monitoring at six monitoring locations on site. The monitoring was carried out over January to March 2022.

#### **A. LAeq, 15minute; GENERATED BY MCCM AGAINST OPERATIONAL DAY NOISE CRITERIA; JANUARY – MARCH 2022.**

The results show that MCCM is within EPL 20221 compliance limits, that operations did not exceed the applicable LAeq (15minute) criteria of 35dB and the EPA's Noise Policy for Industry compliance guidelines.

**Table 1 - January Noise Monitoring**

Location	Start Date and Time	Wind Speed m/s	Rainfall mm	Criterion dB	Criterion Applies <sup>1</sup>	MCCP LAeq dB <sup>2</sup>	Exceedance dB <sup>3</sup>
NM1	10/01/2022 22:30	2.7	0.0	35	Yes	<20	Nil
NM2	10/01/2022 23:30	3.9	0.0	39	No	<20	NA
NM3	10/01/2022 23:40	4.0	0.0	35	No	IA	NA
NM4	10/01/2022 23:00	2.8	0.0	35	Yes	<20	Nil
NM5	10/01/2022 22:00	2.1	0.0	35	Yes	IA	Nil
NM6	10/01/2022 23:56	3.8	0.0	35	No	IA	NA

**Notes:**

- Noise emission limits do not apply during periods of rainfall or winds greater than 3 metres per second (at a height of 10 metres);
- Site-only LAeq,15minute attributed to MCCP, including modifying factors if applicable; and
- NA in exceedance column means criterion was not applicable due to atmospheric conditions outside those specified in project approval.

**Table 2 – February Noise Monitoring**

Location	Start Date and Time	Wind Speed m/s	Rainfall mm	Criterion dB	Criterion Applies <sup>1</sup>	MCCP LAeq dB <sup>2</sup>	Exceedance dB <sup>3</sup>
NM1	08/02/2022 22:45	0.3	0	35	Yes	<25	Nil
NM2	08/02/2022 23:15	0.5	0	39	Yes	<25	Nil
NM3	09/02/2022 00:05	0.6	0	35	Yes	IA	Nil
NM4	08/02/2022 23:45	0.1	0	35	Yes	<20	Nil
NM5	08/02/2022 22:00	0.5	0	35	Yes	25	Nil
NM6	09/02/2022 00:09	0.8	0	35	Yes	<20	Nil

**Notes:**

- Noise emission limits do not apply during periods of rainfall or winds greater than 3 metres per second (at a height of 10 metres);
- Site-only LAeq,15minute attributed to MCCP, including modifying factors if applicable; and
- NA in exceedance column means criterion was not applicable due to atmospheric conditions outside those specified in project approval.

**Table 3 – March Noise Monitoring**

Location	Start Date and Time	Wind Speed m/s	Rainfall mm	Criterion dB	Criterion Applies <sup>1</sup>	MCCP LAeq dB <sup>2</sup>	Exceedance dB <sup>3</sup>
NM1	07/03/2022 22:30	0.3	0.0	35	Yes	20	Nil
NM2	07/03/2022 23:30	0.6	0.0	39	Yes	25	Nil
NM3	07/03/2022 23:33	0.7	0.0	35	Yes	1A	Nil
NM4	07/03/2022 23:00	0.6	0.0	35	Yes	<20	Nil
NM5	07/03/2022 22:00	1.0	0.0	35	Yes	1A	Nil
NM6	07/03/2022 23:56	0.3	0.0	35	Yes	<20	Nil

Notes:

1. Noise emission limits do not apply during periods of rainfall or winds greater than 3 metres per second (at a height of 10 metres);
2. Site-only LAeq,15minute attributed to MCCP, including modifying factors if applicable; and
3. NA in exceedance column means criterion was not applicable due to atmospheric conditions outside those specified in project approval.

#### **B. LA1, 1minute; GENERATED BY MCC AGAINST OPERATIONAL NIGHT NOISE CRITERIA; JANUARY – MARCH 2022.**

MCC's EPL 20221 also has a '1 Minute - Night' criteria (LA1) that applies from 10pm to 7am Monday to Saturday & 10pm to 8am Sundays and Public Holidays. Results are shown on tables 4-6.

The results show that MCCM is within EPL 20221 compliance limits, that operations did not exceed the applicable LA1 (1minute) criteria of 45dB.

**Table 4– January Noise Monitoring – Night**

Location	Start Date and Time	Wind Speed m/s	Rainfall mm	Criterion dB	Criterion Applies <sup>1</sup>	MCCP LA1,1min dB <sup>2</sup>	Exceedance dB <sup>3</sup>
NM1	10/01/2022 22:30	2.7	0.0	45	Yes	<20	Nil
NM2	10/01/2022 23:30	3.9	0.0	45	No	<20	NA
NM3	10/01/2022 23:40	4.0	0.0	45	No	1A	NA
NM4	10/01/2022 23:00	2.8	0.0	45	Yes	20	Nil
NM5	10/01/2022 22:00	2.1	0.0	45	Yes	1A	Nil
NM6	10/01/2022 23:56	3.8	0.0	45	No	1A	NA

Notes:

1. Noise emission limits do not apply during periods of rainfall or winds greater than 3 metres per second (at a height of 10 metres);
2. Site-only LAeq,15minute attributed to MCCP, including modifying factors if applicable; and
3. NA in exceedance column means criterion was not applicable due to atmospheric conditions outside those specified in project approval.

**Table 5 – February Noise Monitoring – Night**

Location	Start Date and Time	Wind Speed m/s	Rainfall mm	Criterion dB	Criterion Applies <sup>1</sup>	MCCP LA1,1min dB <sup>2</sup>	Exceedance dB <sup>3</sup>
NM1	08/02/2022 22:45	0.3	0	45	Yes	<25	Nil
NM2	08/02/2022 23:15	0.5	0	45	Yes	<25	Nil
NM3	09/02/2022 00:05	0.6	0	45	Yes	IA	Nil
NM4	08/02/2022 23:45	0.1	0	45	Yes	<20	Nil
NM5	08/02/2022 22:00	0.5	0	45	Yes	28	Nil
NM6	09/02/2022 00:09	0.8	0	45	Yes	<20	Nil

**Notes:**

1. Noise emission limits do not apply during periods of rainfall or winds greater than 3 metres per second (at a height of 10 metres);
2. Site-only LAeq,15minute attributed to MCCP, including modifying factors if applicable; and
3. NA in exceedance column means criterion was not applicable due to atmospheric conditions outside those specified in project approval.

**Table 6 – March Noise Monitoring – Night**

Location	Start Date and Time	Wind Speed m/s	Rainfall mm	Criterion dB	Criterion Applies <sup>1</sup>	MCCP LA1,1min dB <sup>2</sup>	Exceedance dB <sup>3</sup>
NM1	07/03/2022 22:30	0.3	0.0	45	Yes	25	Nil
NM2	07/03/2022 23:30	0.6	0.0	45	Yes	40	Nil
NM3	07/03/2022 23:33	0.7	0.0	45	Yes	IA	Nil
NM4	07/03/2022 23:00	0.6	0.0	45	Yes	<20	Nil
NM5	07/03/2022 22:00	1.0	0.0	45	Yes	IA	Nil
NM6	07/03/2022 23:56	0.3	0.0	45	Yes	<20	Nil

**Notes:**

1. Noise emission limits do not apply during periods of rainfall or winds greater than 3 metres per second (at a height of 10 metres);
2. Site-only LAeq,15minute attributed to MCCP, including modifying factors if applicable; and
3. NA in exceedance column means criterion was not applicable due to atmospheric conditions outside those specified in project approval.

## **Wind Direction during Attended Monitoring**

Wind direction data is collected from the Maule's Creek Coal Mine (MCCM) Automated Weather Station (AWS). Wind data for the duration of the attended monitoring assessment, recorded at the MCCM AWS is presented in the table below.

**Table 7 - Prevailing Wind Direction**

Monitoring Date	Prevailing Wind Direction
January	SE
February	SE
March	S/SE

## **Blast Monitoring**

There were 30 blasts at MCCM during Q1 2022. All blast monitoring results recorded within the reporting period have complied with applicable overpressure and ground vibration limits specified in the respective approvals.

**Table 8 – Blast Results Summary**

Parameter	Units	Frequency	Number	Average	Max	100% Limit	Exceedance (Yes / No)
Noise	dB (Lin Peak)	All	30	94.2	113.2	120	No
Vibration	mm/s		30	0.20	1.75	10	No

## **Air Quality**

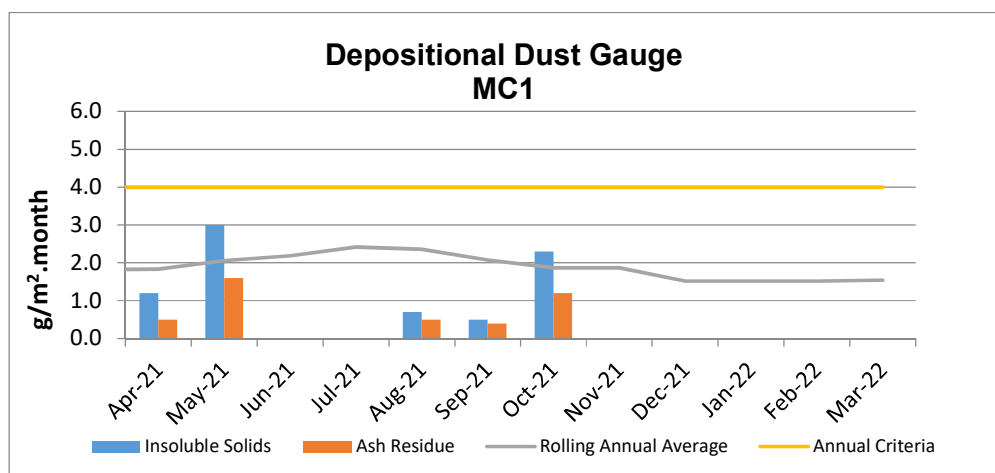
### **A. Total Depositional Dust**

The 12 monthly rolling annual average remains below the relevant Project Approval (PA 10\_0138) criteria of 4g/m<sup>2</sup>/month for the respective monitoring points.

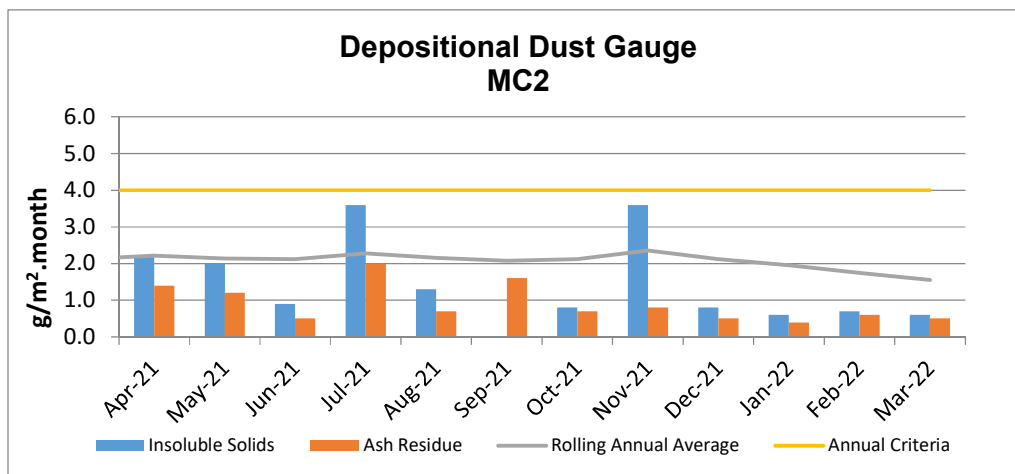
**Table 9 – Deposited Dust Gauge Results [g/m<sup>2</sup>/month]**

MONTH	MC1	MC2	MC3	MC4
January	10.3c	0.6	2.6	3.6
February	22c	0.7	1.5	0.7
March	7.2c	0.6	2.3	0.3
<b>12 MONTH ROLLING AVERAGE</b>	<b>1.5</b>	<b>1.6</b>	<b>1.5</b>	<b>1.2</b>

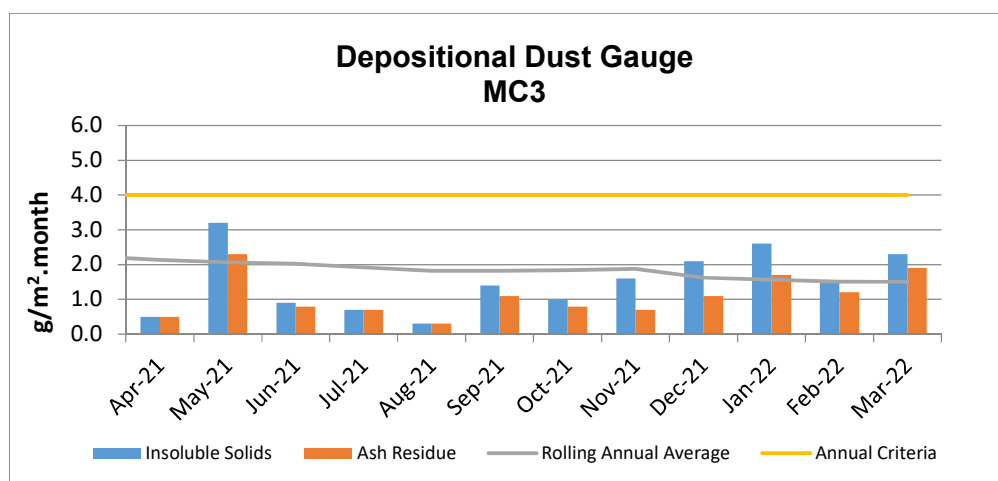
<sup>c</sup> samples contaminated by bird dropping, decomposed insects or vegetable matter.



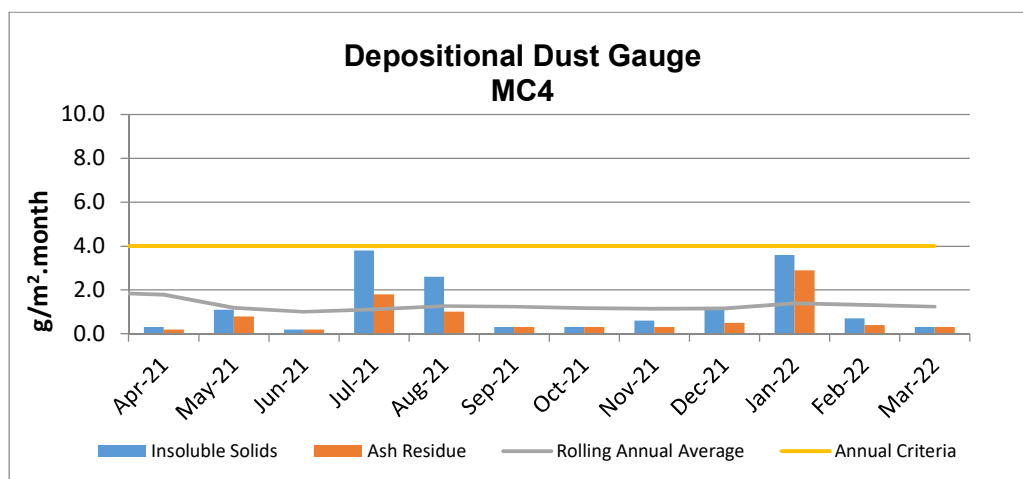
\* Blank cells indicate sample periods where the sample has been contaminated and excluded from the results tables due to contaminated material (insect larvae, bird droppings, vegetation etc.).



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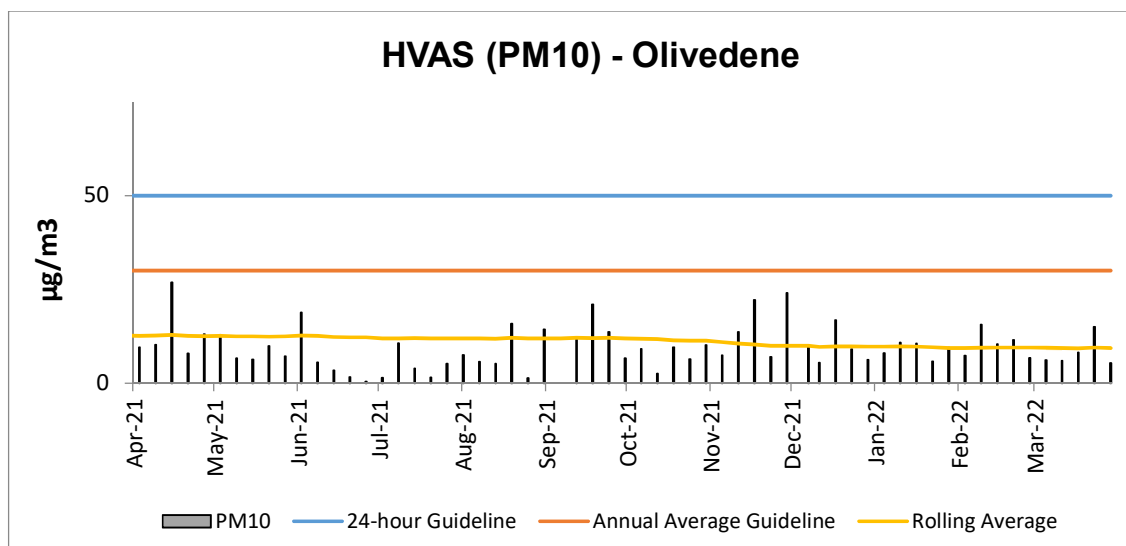


\* Blank cells indicate sample periods where the sample has been contaminated and excluded from the results tables due to contaminated material (insect larvae, bird droppings, vegetation etc.).

## B. High Volume Air Sampling (HVAS)

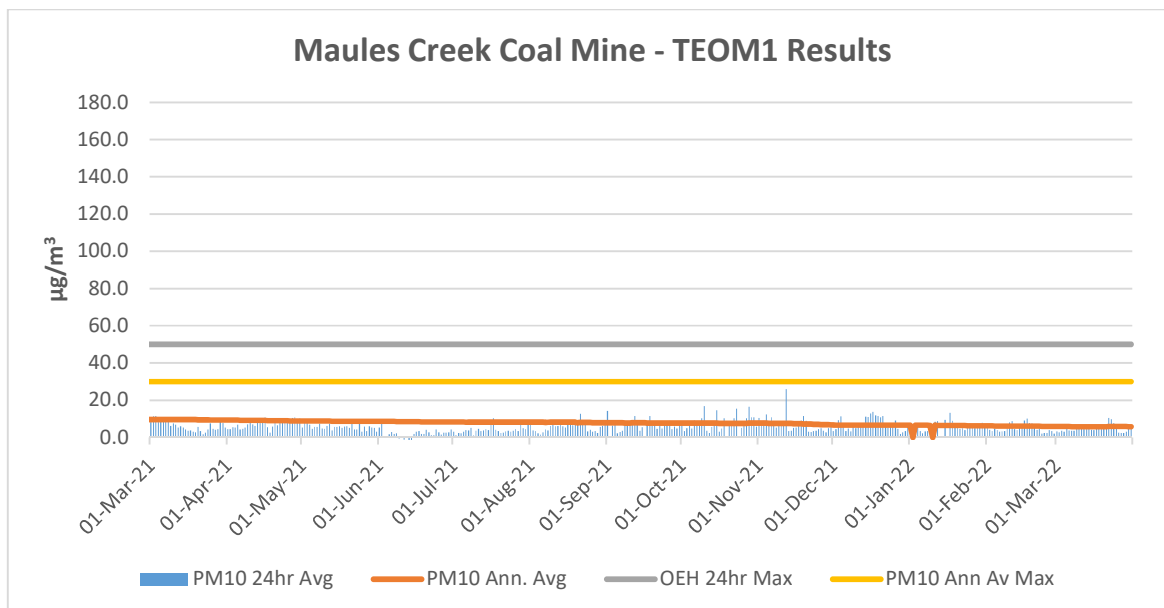
The HVAS monitor is located on the property 'Olivedene,' a mine owned property on Therribri Road. During past 12 months, there have been no exceedances of the 24-hour average of 50  $\mu\text{g}/\text{m}^3$ .

HVAS PM<sub>10</sub> 2021 Rolling Annual Average was **9.4  $\mu\text{g}/\text{m}^3$** , which is below the Annual Average Guideline of 30  $\mu\text{g}/\text{m}^3$ .



## C. TEOM - PM10 Results

The annual rolling average for PM10 at the Maules Creek Coal TEOM was **5.9  $\mu\text{g}/\text{m}^3$** , which is below the Project Approval annual average criteria of 30  $\mu\text{g}/\text{m}^3$  as shown in the following figure. There have been no exceedances of the 24 hour average for Q1.



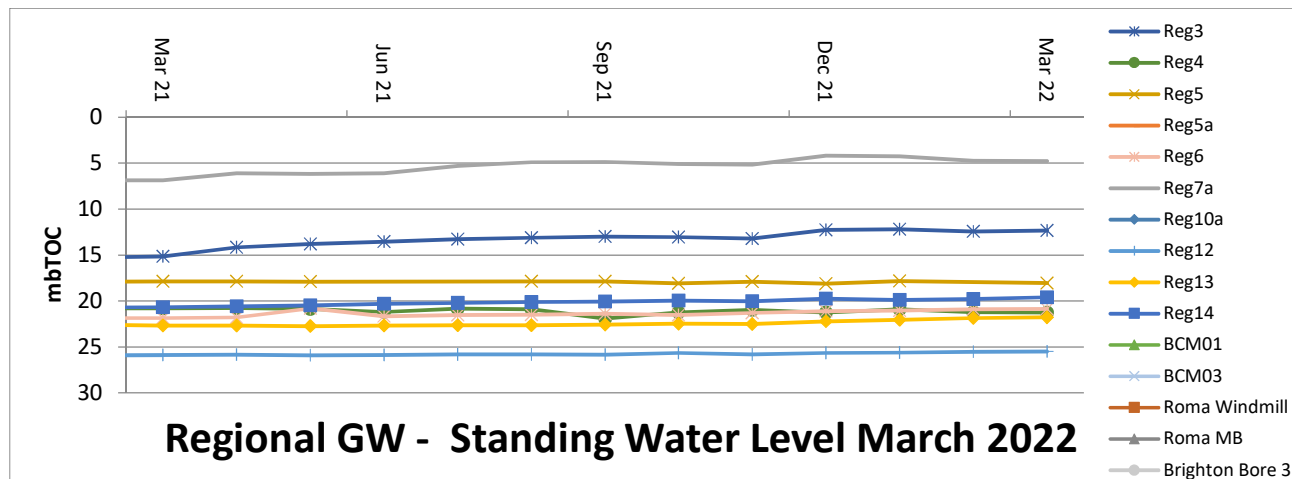
**Figure 1 - TEOM Result – Particulate Matter PM<sub>10</sub> $\mu\text{g}/\text{m}^3$**

\* Blank columns indicate sample periods where there was either power outage, maintenance or other related causes.

## Water Monitoring

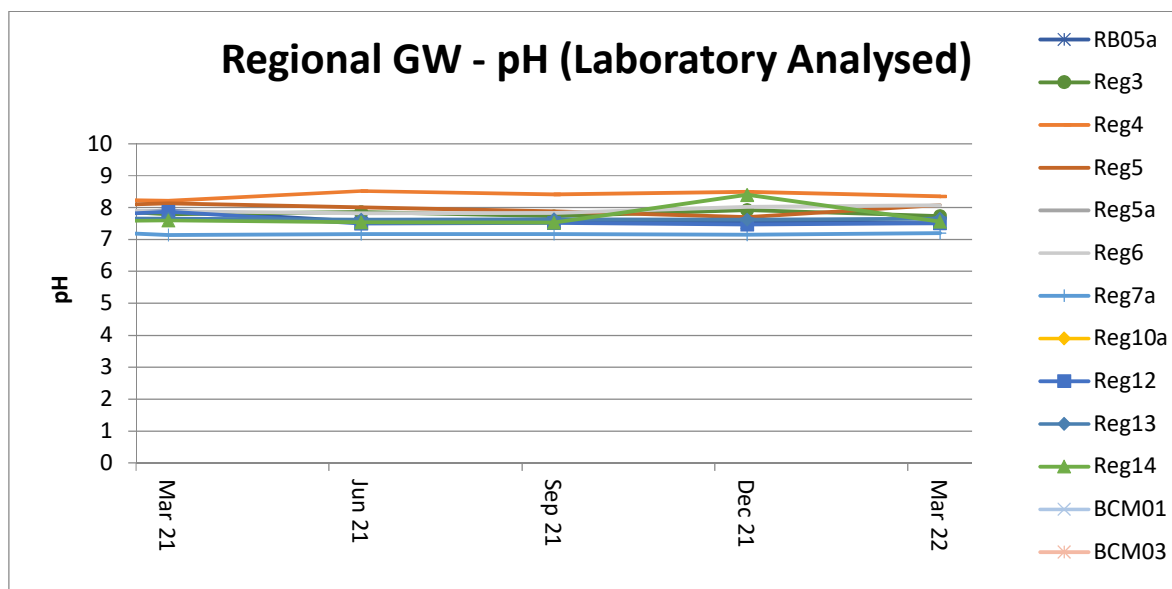
### A. Groundwater

Groundwater monitoring results in open standpipe piezometers show levels to be relatively stable. The Regional bores were installed between Q4, 2013 and Q1, 2014. BCM01, BCM03, Reg10 are shallow bores which have remained dry since construction in 2013.



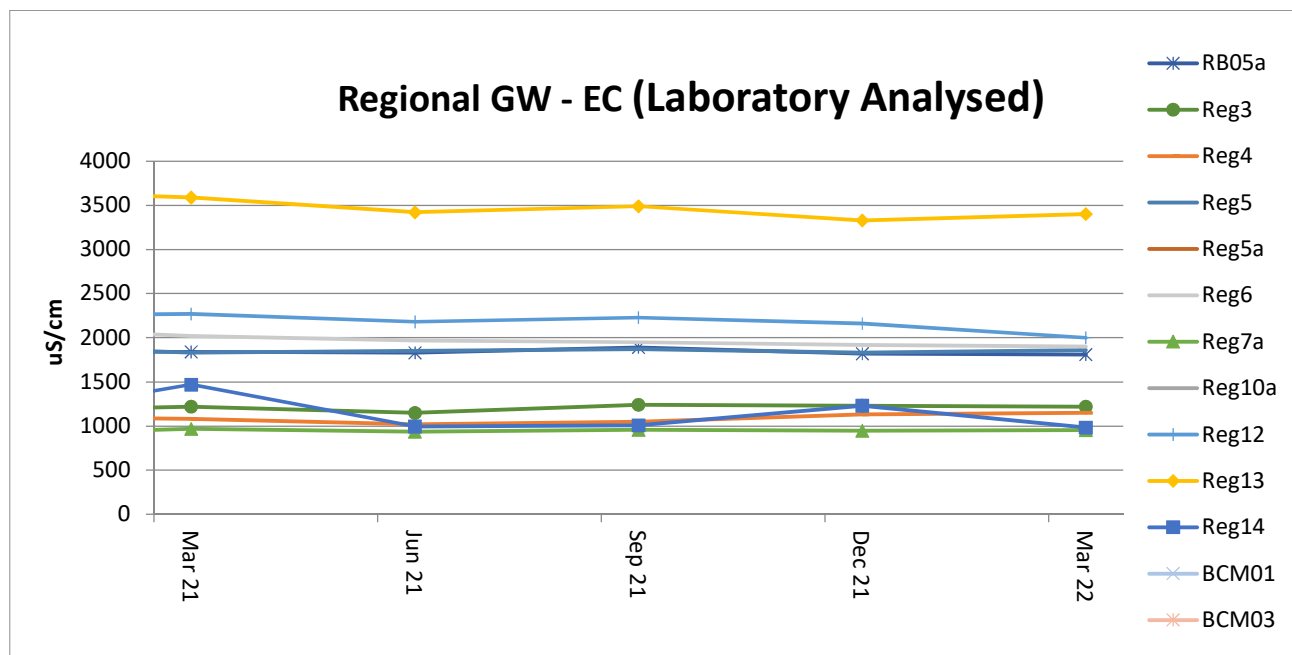
### Acidity / Alkalinity (pH)

Over the past twelve months pH readings across the regional bores have remained static with very little fluctuation.



### Electrical Conductivity

Laboratory Electrical Conductivity (EC) levels are all within historic groundwater EC range of 500 $\mu$ S/cm to 2,500 $\mu$ S/cm, with the exception of monitoring bore Reg13 which has a historic groundwater EC range of 2,500 $\mu$ S/cm to 4,100 $\mu$ S/cm. Within the last twelve months EC has remained static.

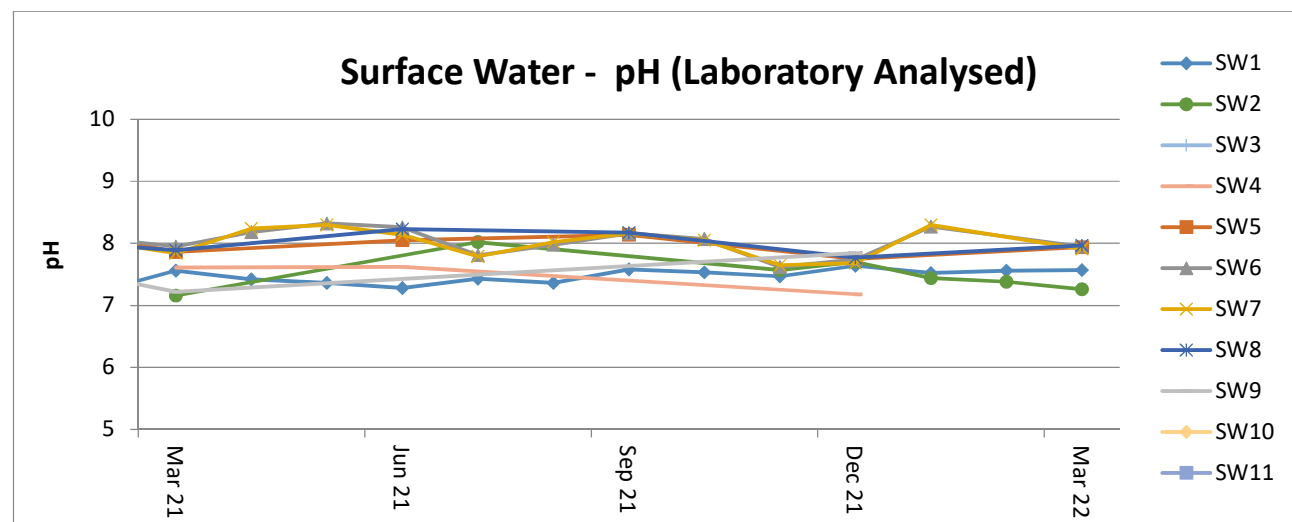


#### B. Surface Water – Creeks and Rivers

Routine surface water monitoring is conducted in surrounding creeks and rivers on a monthly basis. Results for parameters including pH, EC and Total Suspended Solids (TSS) are shown in the figures below. There are eleven surface water monitoring points, of which a maximum of six sites were able to be sampled during Q1 2022.

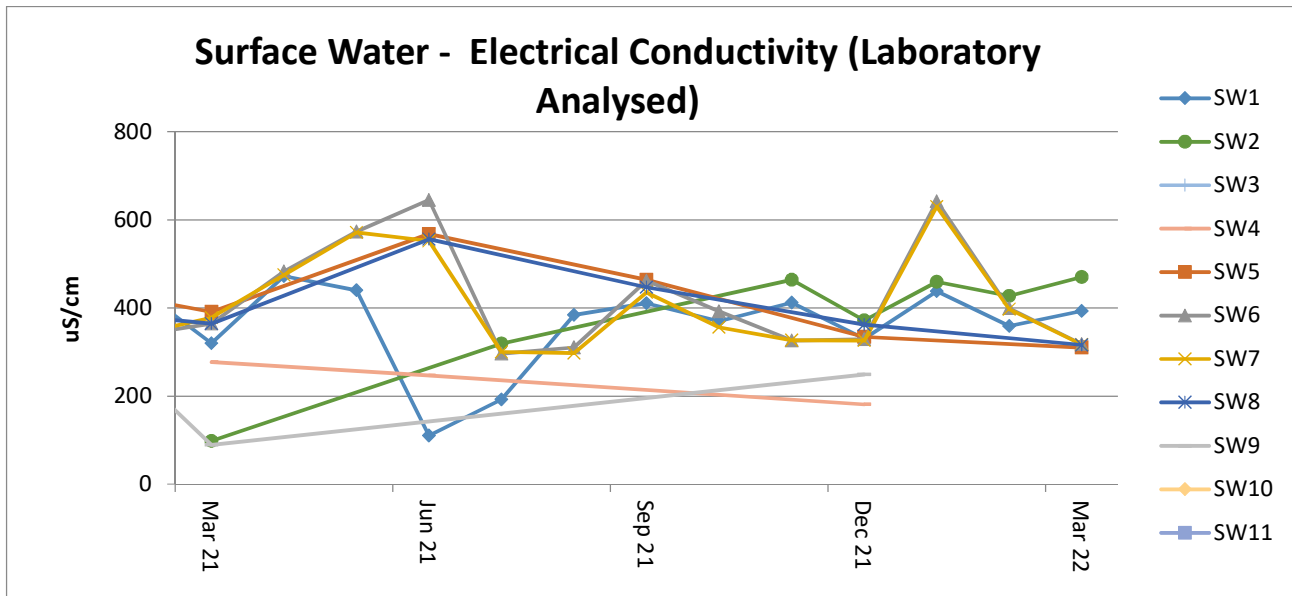
##### Acidity / Alkalinity (pH)

Monitoring results for pH in creeks and rivers surrounding MCCM are all trending within the ANZECC range for Irrigation, Ecosystem Health and Recreation.



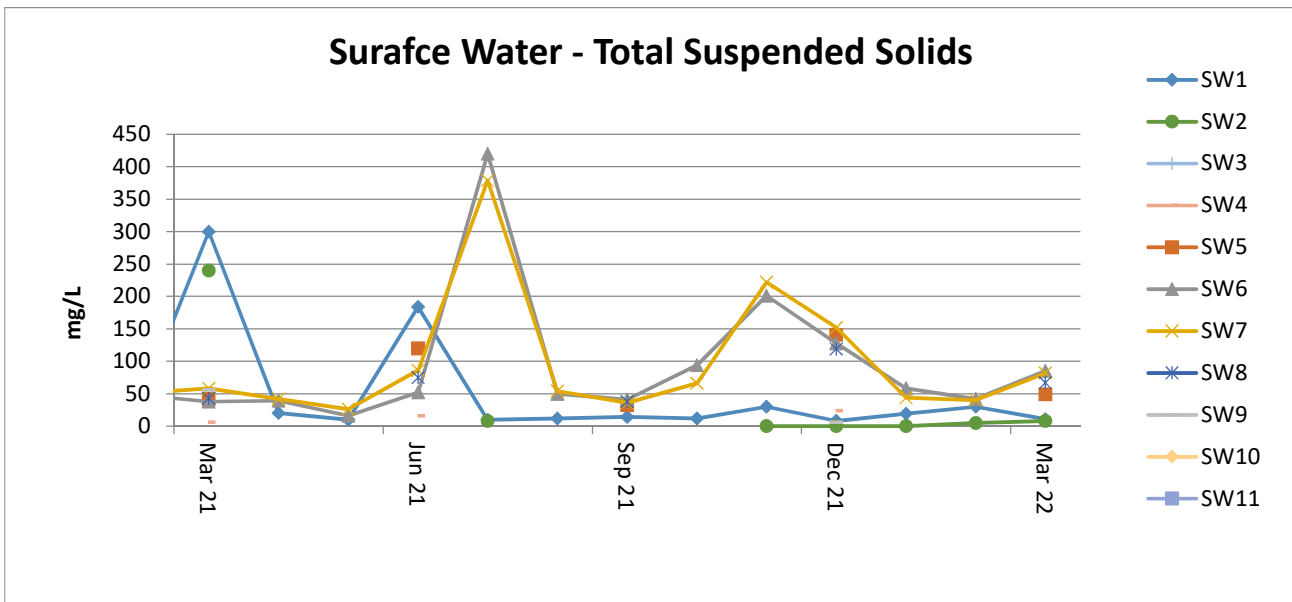
##### Electrical Conductivity

Surface water EC trends have remained consistent with SW5, SW6, SW7 and SW8 all historically variable. SW5, SW6, SW7 and SW8 are points along the Namoi River which are subject to regulated and variable flow regimes.



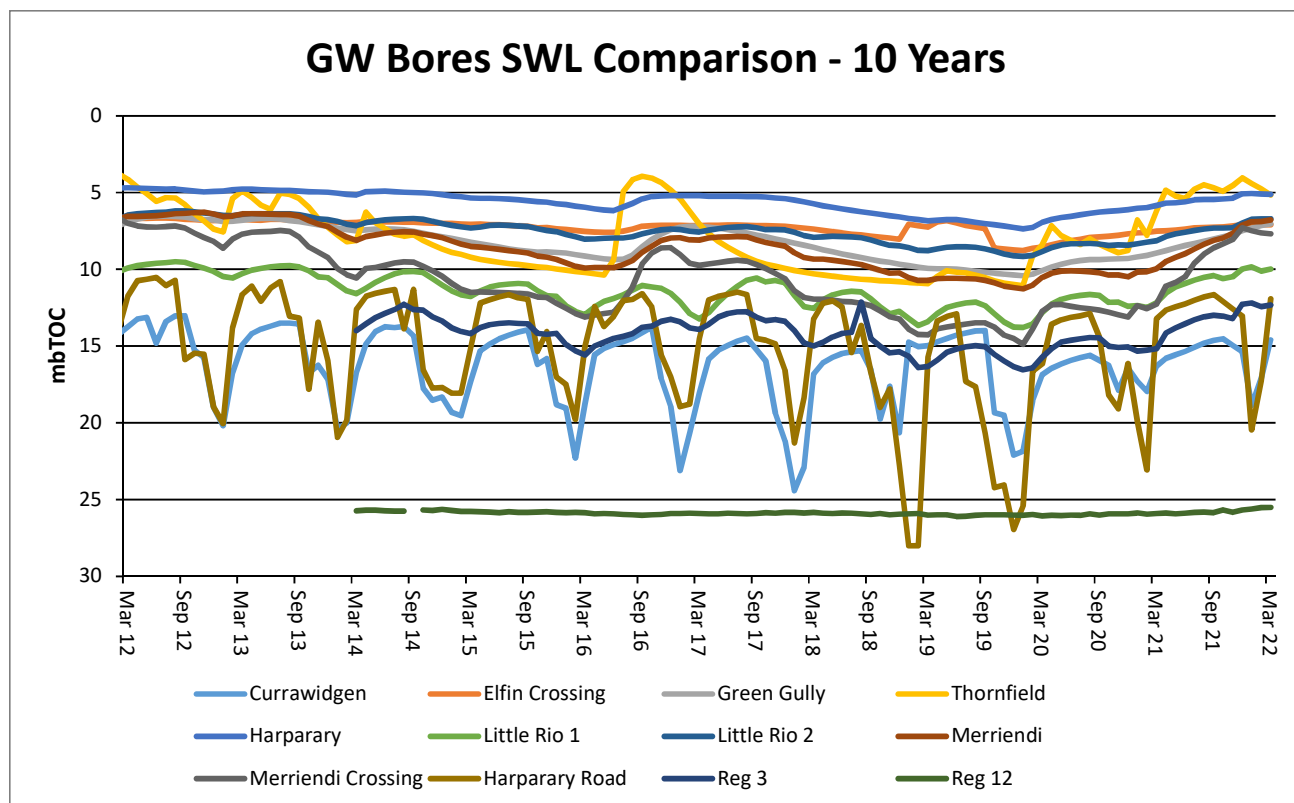
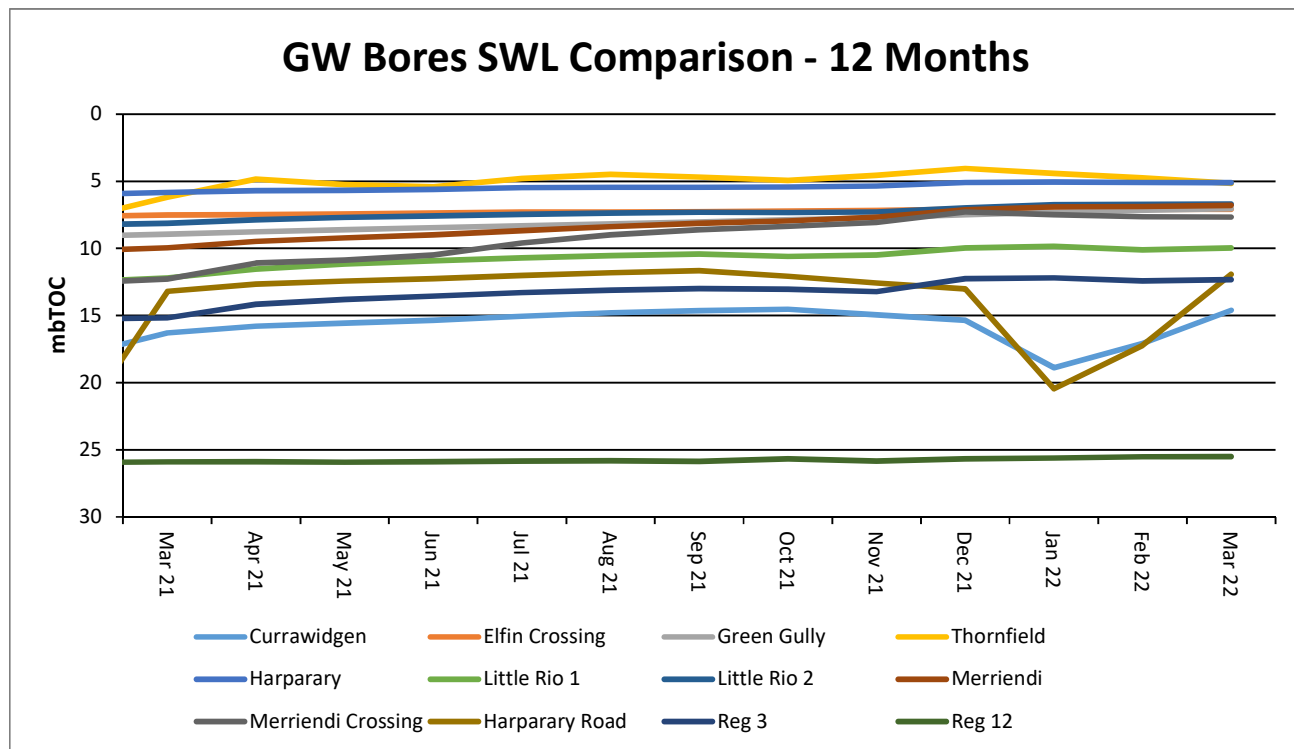
#### Total Suspended Solids (TSS)

Surface water TSS trends have remained generally consistent with historical results. SW5, SW6, SW7 and SW8 are historically variable as they are located along the Namoi River which is subject to regulated and variable flow regimes. The Q3 results were elevated due to significant rainfall events, as demonstrated on the graph below TSS levels have since decreased



## Regional Groundwater monitoring

Maules Creek Coal Mine monitors regional bores across the region.



## Rehabilitation

Progressive rehabilitation works are ongoing. 20 hectares have been reshaped in Q1 with seeding to occur in May 2022.

## Feral Animal Management

Most recent routine Whitehaven Biodiversity Feral Animal Control program (March 2022) was constrained due to flooding, the results included:

- 122 out of total 185 pigs trapped were from the Maules Offset properties; and,
- 426 out of total 1470 baits (1080) taken were from the Maules Offsets properties.

## Weed Control

- Spraying of summer growing invasive grasses like Buffel, African Lovegrass and Coolati Grass completed.
- Targeted seasonal weed control for Sweet Briar and Box Thorn completed.
- Maintenance of fire break tracks to control excessive vegetation growth ongoing given good seasonal conditions.

## Fencing & Waste Management

- Final removal of waste stockpiles from Wirradale, Bimbooria and Velyama completed derelict infrastructure removal program.
- Additional fencing constructed for Mt Lindesay and Bimbooria as well as new Heritage Site had demarcation fencing installed.

## Community Complaints

- **Two** complaints were received during Q1 2022.

Date	Method	Category	Nature Of Complaint	MCCM Response
11/01/2022	Email	Blast	Complaint received from Local resident relating to vibration following a blast at MCCM.	MCC reviewed the monitoring data from a location in close proximity to complainant, this indicated compliance with blasting conditions. This information was provided to the resident. All information was also supplied to the EPA for their records.
22/02/2022	Phone	Bus	Complaint received from a community member relating to the park-up location of employees transport bus.	MCC reviewed the location and the bus location was moved.

# Maules Creek Coal Mine Community Consultative Committee Meeting #38

## Environmental Monitoring Report For the Q2 period, April – June 2022

### Attended Noise Monitoring

Maules Creek Coal (MCC) engaged an independent acoustic consultant to conduct LAeq (15minutes) and LA1 (1 minute) attended noise monitoring at six monitoring locations on site. The monitoring was carried out over April to June 2022.

#### **A. LAeq, 15minute; GENERATED BY MCCM AGAINST OPERATIONAL DAY NOISE CRITERIA; APRIL – JUNE 2022.**

The results show that MCCM is within EPL 20221 compliance limits, that operations did not exceed the applicable LAeq (15minute) criteria of 35dB and the EPA's Noise Policy for Industry compliance guidelines.

**Table 1 - April Noise Monitoring**

Location	Start Date and Time	Wind Speed m/s	Rainfall mm	Criterion dB	Criterion Applies <sup>1</sup>	MCCP LAeq dB <sup>2</sup>	Exceedance dB <sup>3</sup>
NM1	12/04/2022 23:30	0.4	0	35	Yes	1A	Nil
NM2	12/04/2022 23:00	0.1	0	39	Yes	28	Nil
NM3	12/04/2022 23:32	0.3	0	35	Yes	1A	Nil
NM4	12/04/2022 22:30	0.8	0	35	Yes	26	Nil
NM5	13/04/2022 00:00	0.6	0	35	Yes	1A	Nil
NM6	12/04/2022 22:00	0.5	0	35	Yes	25	Nil

Notes:

1. Noise emission limits do not apply during periods of rainfall or winds greater than 3 metres per second (at a height of 10 metres);
2. Site-only LAeq,15minute attributed to MCCP, including modifying factors if applicable; and
3. NA in exceedance column means criterion was not applicable due to atmospheric conditions outside those specified in project approval.

**Table 2 – May Noise Monitoring**

Location	Start Date and Time	Wind Speed m/s	Rainfall mm	Criterion dB	Criterion Applies <sup>1</sup>	MCCP LAeq dB <sup>2</sup>	Exceedance dB <sup>3</sup>
NM1	05/05/2022 22:30	1.6	0	35	Yes	<25	Nil
NM2	05/05/2022 23:30	1.4	0	39	Yes	25	Nil
NM3	05/05/2022 23:45	1.3	0	35	Yes	1A	Nil
NM4	05/05/2022 23:00	1.1	0	35	Yes	<25	Nil
NM5	05/05/2022 22:00	1.9	0	35	Yes	1A	Nil
NM6	05/05/2022 23:56	1.6	0	35	Yes	1A	Nil

Notes:

1. Noise emission limits do not apply during periods of rainfall or winds greater than 3 metres per second (at a height of 10 metres);
2. Site-only LAeq,15minute attributed to MCCP, including modifying factors if applicable; and
3. NA in exceedance column means criterion was not applicable due to atmospheric conditions outside those specified in project approval.

**Table 3 – June Noise Monitoring**

Location	Start Date and Time	Wind Speed m/s	Rainfall mm	Criterion dB	Criterion Applies <sup>1</sup>	MCCP L <sub>Aeq</sub> dB <sup>2</sup>	Exceedance dB <sup>3</sup>
NM1	08/06/2022 22:30	0.5	0	35	Yes	<25	Nil
NM2	08/06/2022 23:30	0.9	0	39	Yes	<25	Nil
NM3	08/06/2022 23:37	1	0	35	Yes	1A	Nil
NM4	08/06/2022 23:00	0.3	0	35	Yes	<25	Nil
NM5	08/06/2022 22:00	0.3	0	35	Yes	22	Nil
NM6	08/06/2022 23:57	1.3	0	35	Yes	1A	Nil

*Notes:*

1. Noise emission limits do not apply during periods of rainfall or winds greater than 3 metres per second (at a height of 10 metres);
2. Site-only L<sub>Aeq,15minute</sub> attributed to MCCP, including modifying factors if applicable; and
3. NA in exceedance column means criterion was not applicable due to atmospheric conditions outside those specified in project approval.

**B. LA1, 1minute; GENERATED BY MCC AGAINST OPERATIONAL NIGHT NOISE CRITERIA; APRIL – JUNE 2022.**

MCC's EPL 20221 also has a '1 Minute - Night' criteria (LA1) that applies from 10pm to 7am Monday to Saturday & 10pm to 8am Sundays and Public Holidays. Results are shown on tables 4-6.

The results show that MCCM is within EPL 20221 compliance limits, that operations did not exceed the applicable LA1 (1minute) criteria of 45dB.

**Table 4– April Noise Monitoring – Night**

Location	Start Date and Time	Wind Speed m/s	Rainfall mm	Criterion dB	Criterion Applies <sup>1</sup>	MCCP L <sub>A1,1min</sub> dB <sup>2</sup>	Exceedance dB <sup>3</sup>
NM1	12/04/2022 23:30	0.4	0	45	Yes	1A	Nil
NM2	12/04/2022 23:00	0.1	0	45	Yes	31	Nil
NM3	12/04/2022 23:32	0.3	0	45	Yes	1A	Nil
NM4	12/04/2022 22:30	0.8	0	45	Yes	32	Nil
NM5	13/04/2022 00:00	0.6	0	45	Yes	1A	Nil
NM6	12/04/2022 22:00	0.5	0	45	Yes	28	Nil

*Notes:*

1. Noise emission limits do not apply during periods of rainfall or winds greater than 3 metres per second (at a height of 10 metres);
2. Site-only L<sub>A1,1minute</sub> attributed to MCCP; and
3. NA in exceedance column means criterion was not applicable due to atmospheric conditions outside those specified in project approval.

**Table 5 – May Noise Monitoring – Night**

Location	Start Date and Time	Wind Speed m/s	Rainfall mm	Criterion dB	Criterion Applies <sup>1</sup>	MCCP L <sub>A1,1min</sub> dB <sup>2</sup>	Exceedance dB <sup>3</sup>
NM1	05/05/2022 22:30	1.6	0	45	Yes	28	Nil
NM2	05/05/2022 23:30	1.4	0	45	Yes	30	Nil
NM3	05/05/2022 23:45	1.3	0	45	Yes	1A	Nil
NM4	05/05/2022 23:00	1.1	0	45	Yes	<25	Nil
NM5	05/05/2022 22:00	1.9	0	45	Yes	1A	Nil
NM6	05/05/2022 23:56	1.6	0	45	Yes	1A	Nil

Notes:

1. Noise emission limits do not apply during periods of rainfall or winds greater than 3 metres per second (at a height of 10 metres);
2. Site-only L<sub>A1,1minute</sub> attributed to MCCP; and
3. NA in exceedance column means criterion was not applicable due to atmospheric conditions outside those specified in project approval.

**Table 6 – June Noise Monitoring – Night**

Location	Start Date and Time	Wind Speed m/s	Rainfall mm	Criterion dB	Criterion Applies <sup>1</sup>	MCCP L <sub>A1,1min</sub> dB <sup>2</sup>	Exceedance dB <sup>3</sup>
NM1	08/06/2022 22:30	0.5	0	45	Yes	28	Nil
NM2	08/06/2022 23:30	0.9	0	45	Yes	<25	Nil
NM3	08/06/2022 23:37	1	0	45	Yes	1A	Nil
NM4	08/06/2022 23:00	0.3	0	45	Yes	<25	Nil
NM5	08/06/2022 22:00	0.3	0	45	Yes	25	Nil
NM6	08/06/2022 23:57	1.3	0	45	Yes	1A	Nil

Notes:

1. Noise emission limits do not apply during periods of rainfall or winds greater than 3 metres per second (at a height of 10 metres);
2. Site-only L<sub>A1,1minute</sub> attributed to MCCP; and
3. NA in exceedance column means criterion was not applicable due to atmospheric conditions outside those specified in project approval.

### **Wind Direction during Attended Monitoring**

Wind direction data is collected from the Maule's Creek Coal Mine (MCCM) Automated Weather Station (AWS). Wind data for the duration of the attended monitoring assessment, recorded at the MCCM AWS is presented in the table below.

**Table 7 - Prevailing Wind Direction**

Monitoring Date	Prevailing Wind Direction
April	-
May	S
June	E

## **Blast Monitoring**

There were 25 blasts at MCCC during Q2 2022. All blast monitoring results recorded within the reporting period have complied with applicable overpressure and ground vibration limits specified in the respective approvals.

**Table 8 – Blast Results Summary**

Parameter	Units	Frequency	Number	Average	Max	100% Limit	Exceedance (Yes / No)
Noise	dB (Lin Peak)	All	25	91.87	107.9	120	No
Vibration	mm/s		25	0.14	0.90	10	No

## **Air Quality**

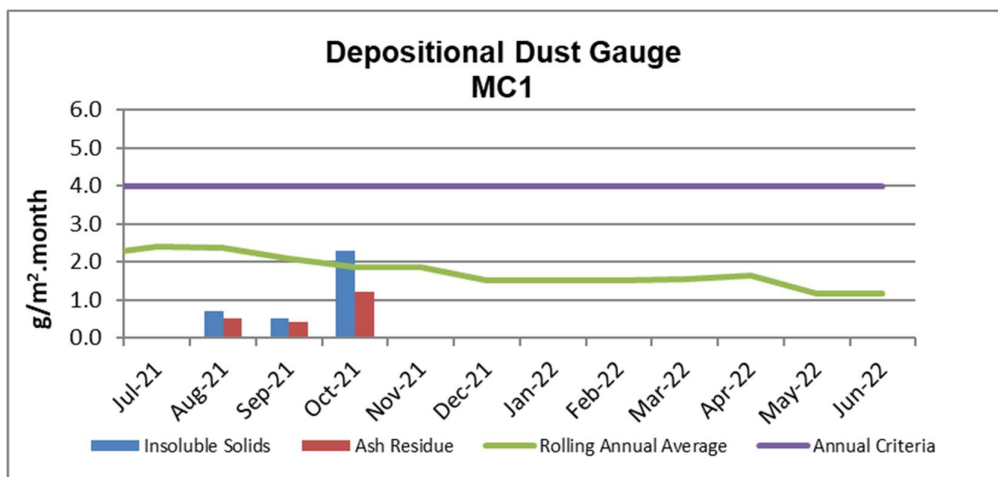
### **A. Total Depositional Dust**

The 12 monthly rolling annual average remains below the relevant Project Approval (PA 10\_0138) criteria of 4g/m<sup>2</sup>/month for the respective monitoring points.

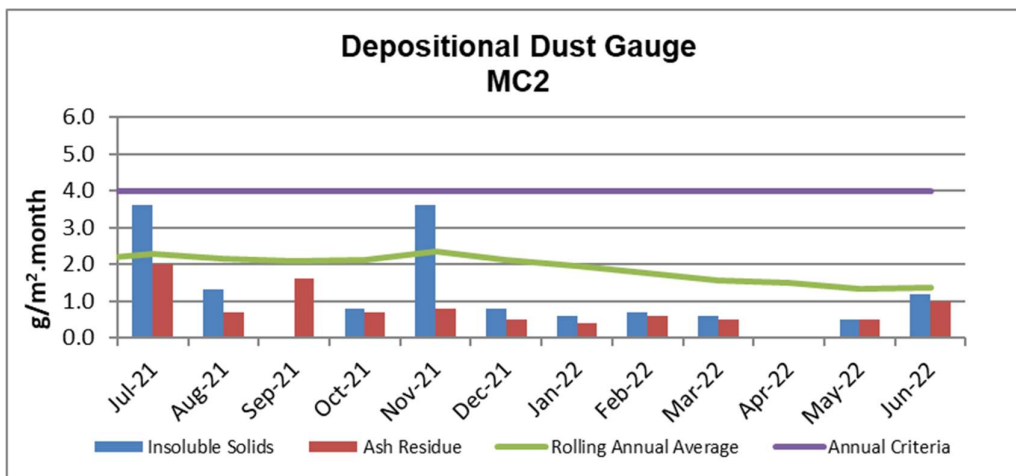
**Table 9 – Deposited Dust Gauge Results [g/m<sup>2</sup>/month]**

MONTH	MC1	MC2	MC3	MC4
<b>April</b>	36.3c	12.5c	1.9	0.6
<b>May</b>	36.1c	0.5	2.3	0.8
<b>June</b>	23.4c	1.2	3.1	4.2c
<b>12 MONTH ROLLING AVERAGE</b>	<b>1.2</b>	<b>1.4</b>	<b>1.7</b>	<b>1.3</b>

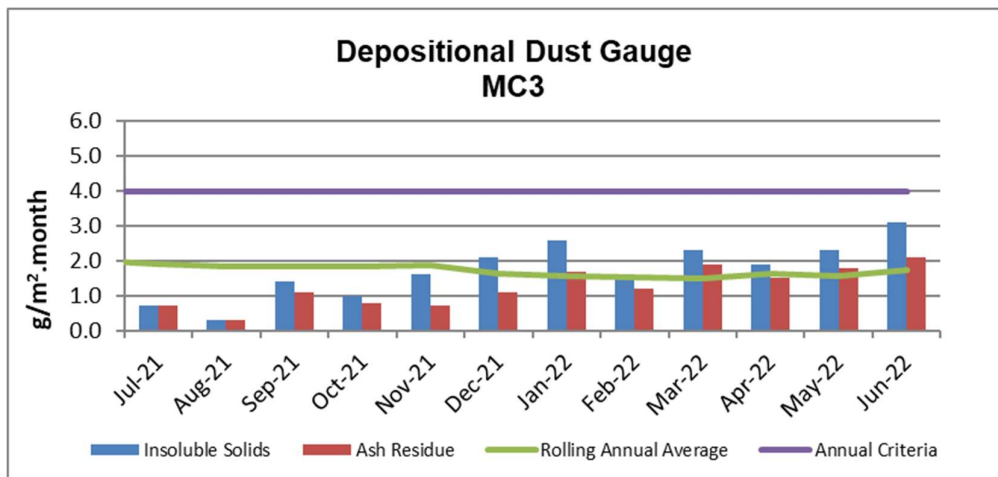
<sup>c</sup> samples contaminated by bird dropping, decomposed insects or vegetable matter.



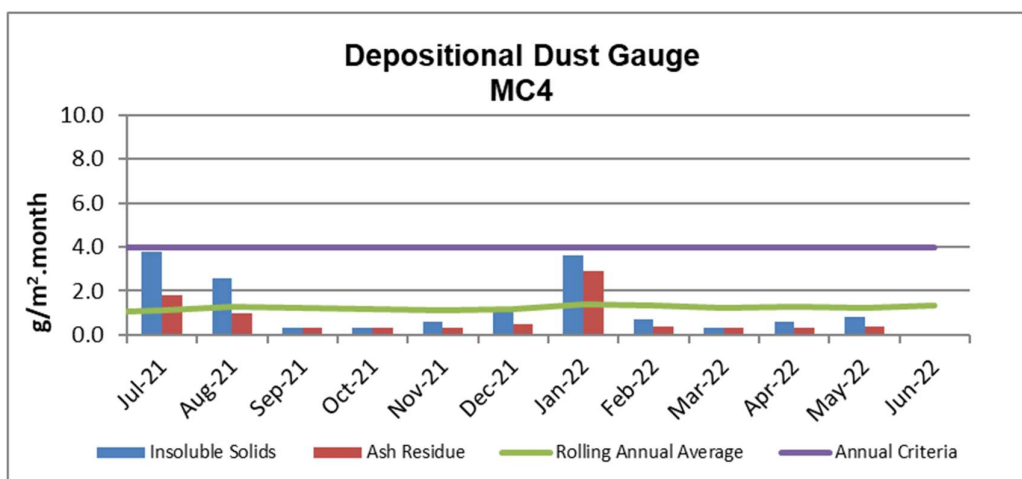
\* Blank cells indicate sample periods where the sample has been contaminated and excluded from the results tables due to contaminated material (insect larvae, bird droppings, vegetation etc.).



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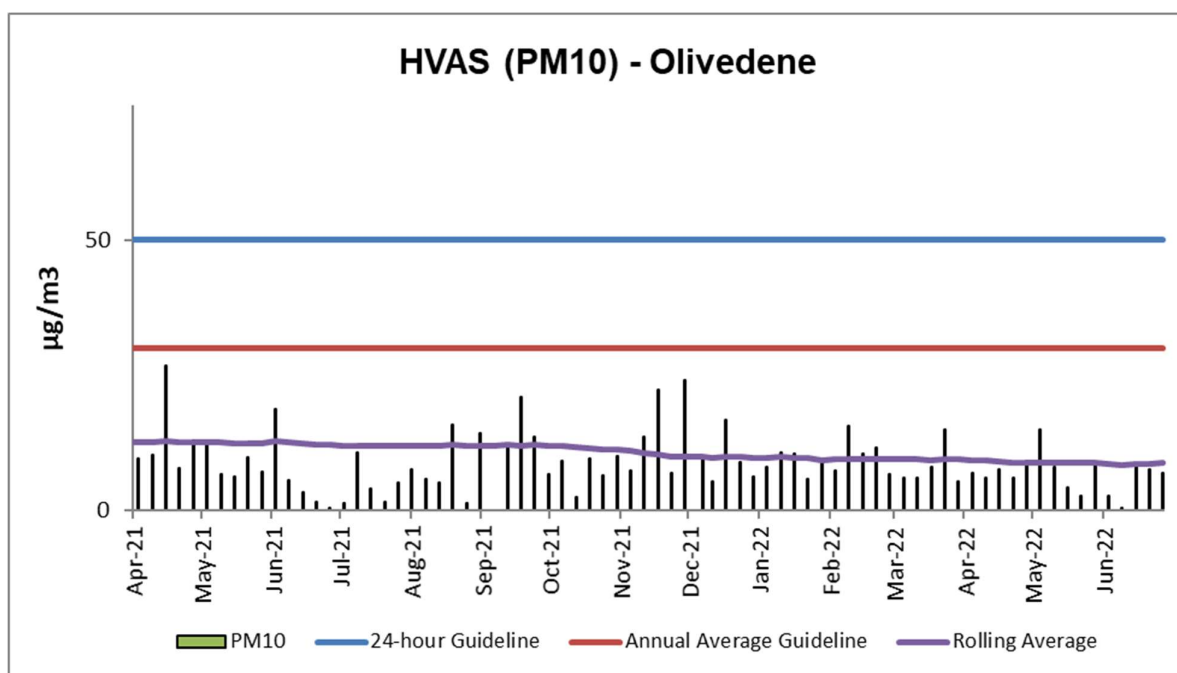


\* Blank cells indicate sample periods where the sample has been contaminated and excluded from the results tables due to contaminated material (insect larvae, bird droppings, vegetation etc.).

### B. High Volume Air Sampling (HVAS)

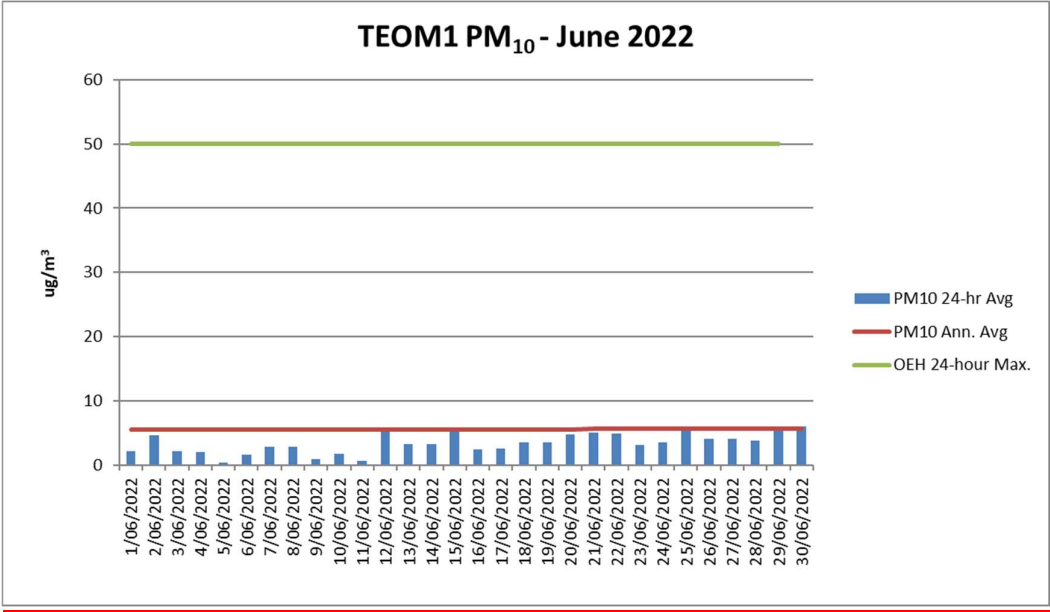
The HVAS monitor is located on the property 'Olivedene,' a mine owned property on Therribri Road. During past 12 months, there have been no exceedances of the 24-hour average of 50 µg/m³.

HVAS PM<sub>10</sub> Rolling Annual Average as of June was **8.7 µg/m³**, which is below the Annual Average Guideline of 30 µg/m³.



### C. TEOM - PM10 Results

The annual rolling average for PM10 at the Maules Creek Coal TEOM1 was **5.6 µg/m³**, which is below the Project Approval annual average criteria of 30µg/m³ as shown in the following figure. There have been no exceedances of the 24-hour average for Q2.

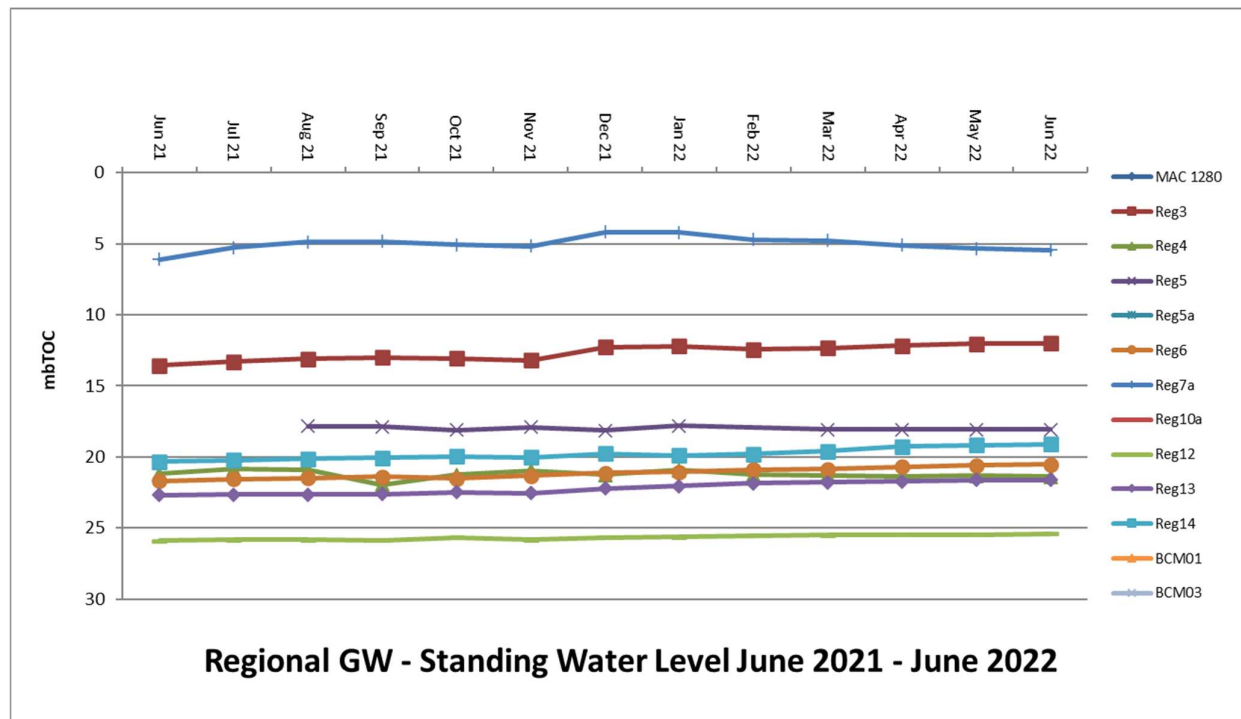


**Figure 1 - TEOM Result – Particulate Matter PM<sub>10</sub>µg/m<sup>3</sup>**  
\* Blank columns indicate sample periods where there was either power outage, maintenance or other related causes.

## Water Monitoring

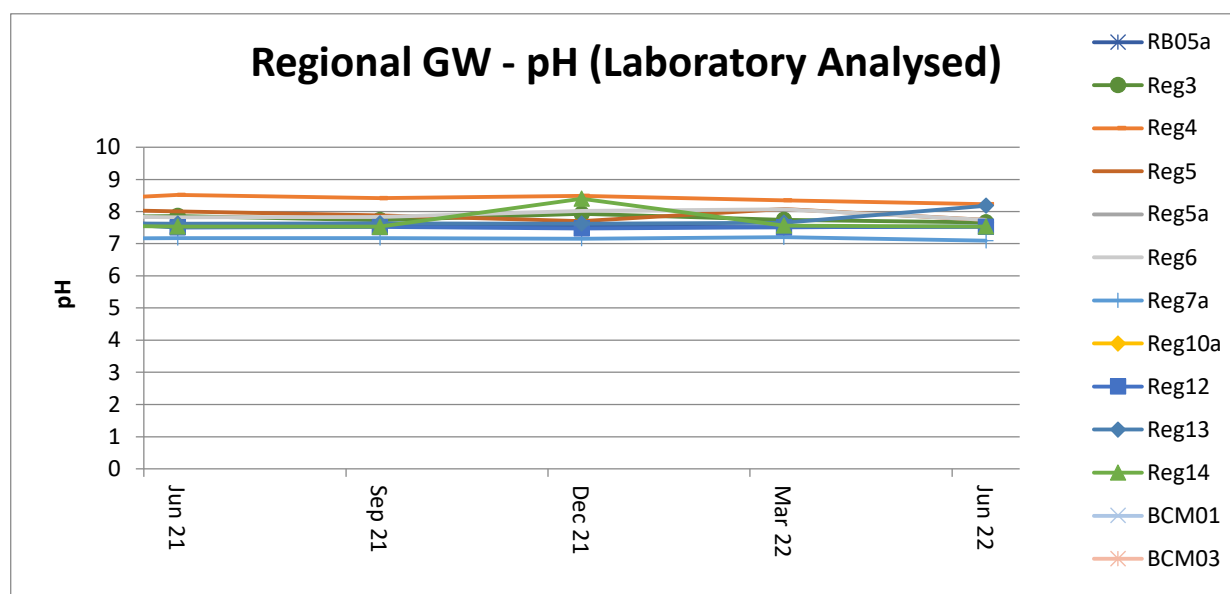
### A. Groundwater

Groundwater monitoring results in open standpipe piezometers show levels to be relatively stable. The Regional bores were installed between Q4, 2013 and Q1, 2014. BCM01, BCM03, Reg10 are shallow bores which have remained dry since construction in 2013.



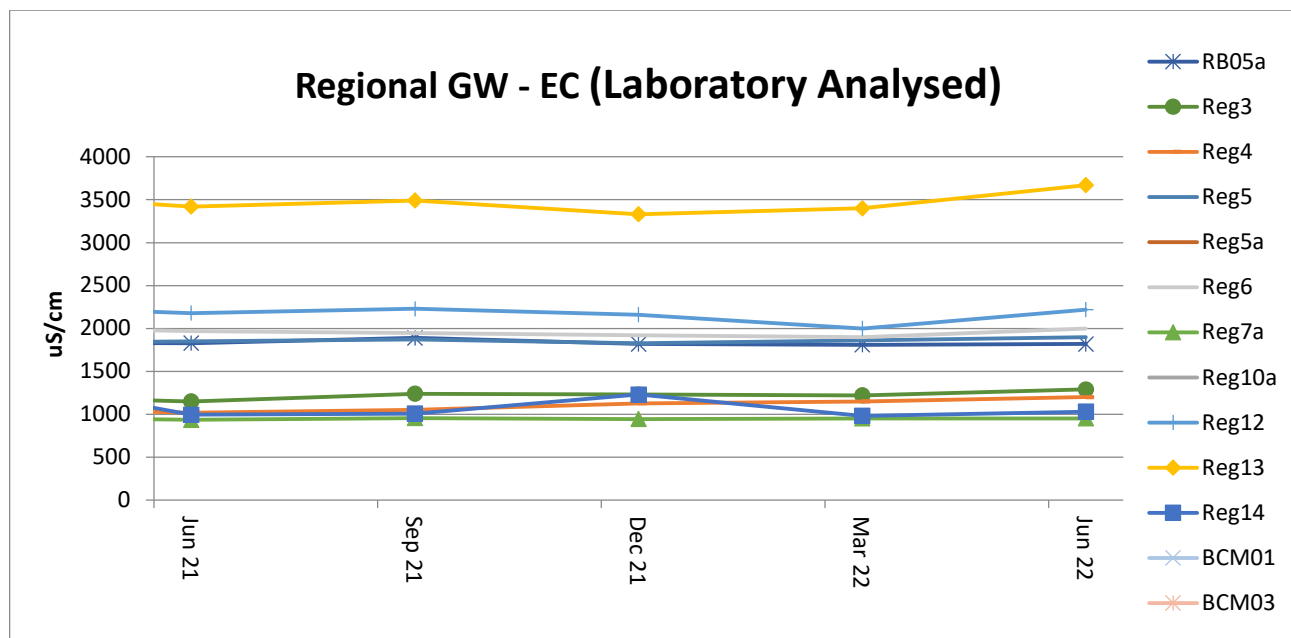
### Acidity / Alkalinity (pH)

Over the past twelve months pH readings across the regional bores have remained static with very little fluctuation.



## Electrical Conductivity

Laboratory Electrical Conductivity (EC) levels are all within historic groundwater EC range of 500 $\mu$ S/cm to 2,500 $\mu$ S/cm, with the exception of monitoring bore Reg13 which has a historic groundwater EC range of 2,500 $\mu$ S/cm to 4,100 $\mu$ S/cm. Within the last twelve months EC has remained static.

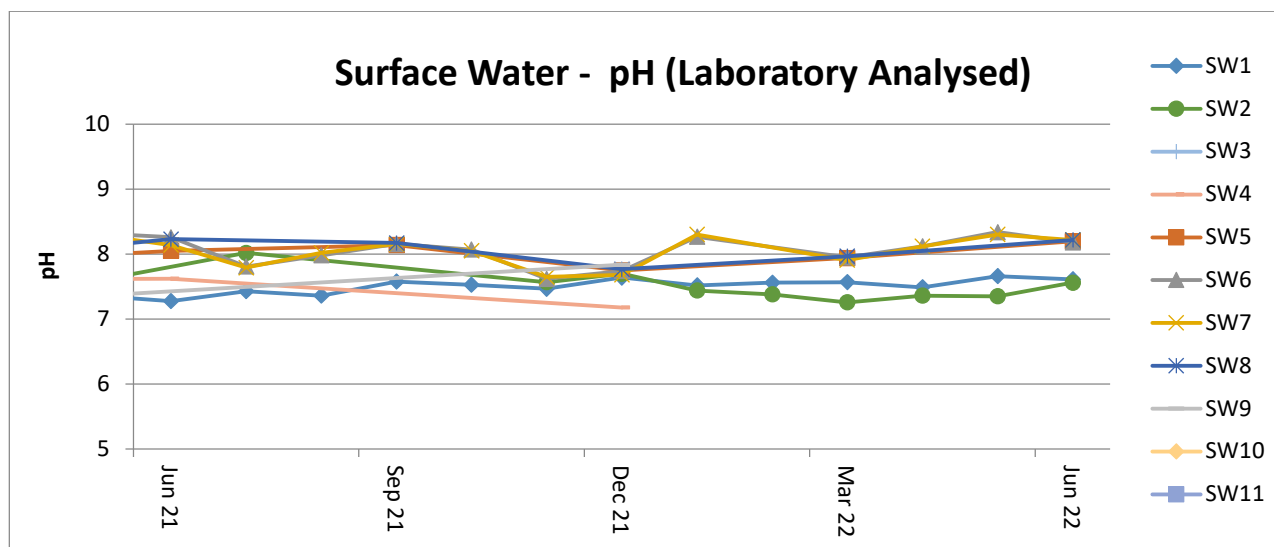


## B. Surface Water – Creeks and Rivers

Routine surface water monitoring is conducted in surrounding creeks and rivers on a monthly basis. Results for parameters including pH, EC and Total Suspended Solids (TSS) are shown in the figures below. There are eleven surface water monitoring points, of which a maximum of six sites were able to be sampled during Q2 2022.

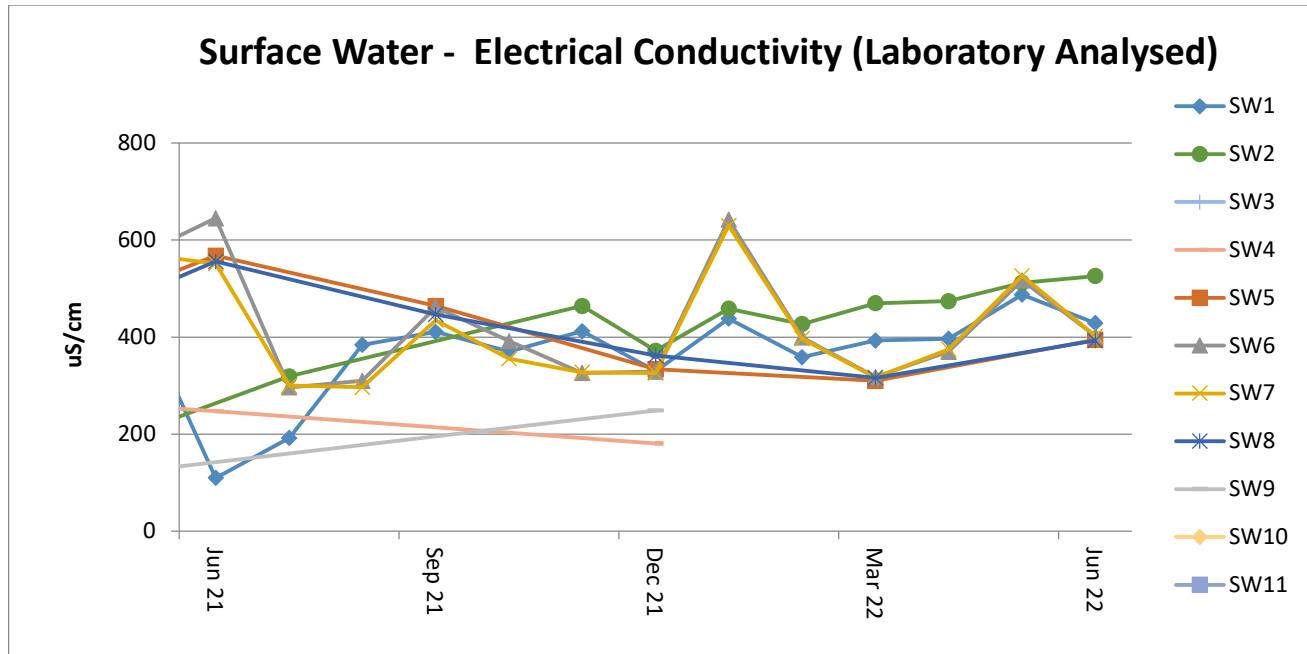
### Acidity / Alkalinity (pH)

Monitoring results for pH in creeks and rivers surrounding MCCM are all trending within the ANZECC range for Irrigation, Ecosystem Health and Recreation.



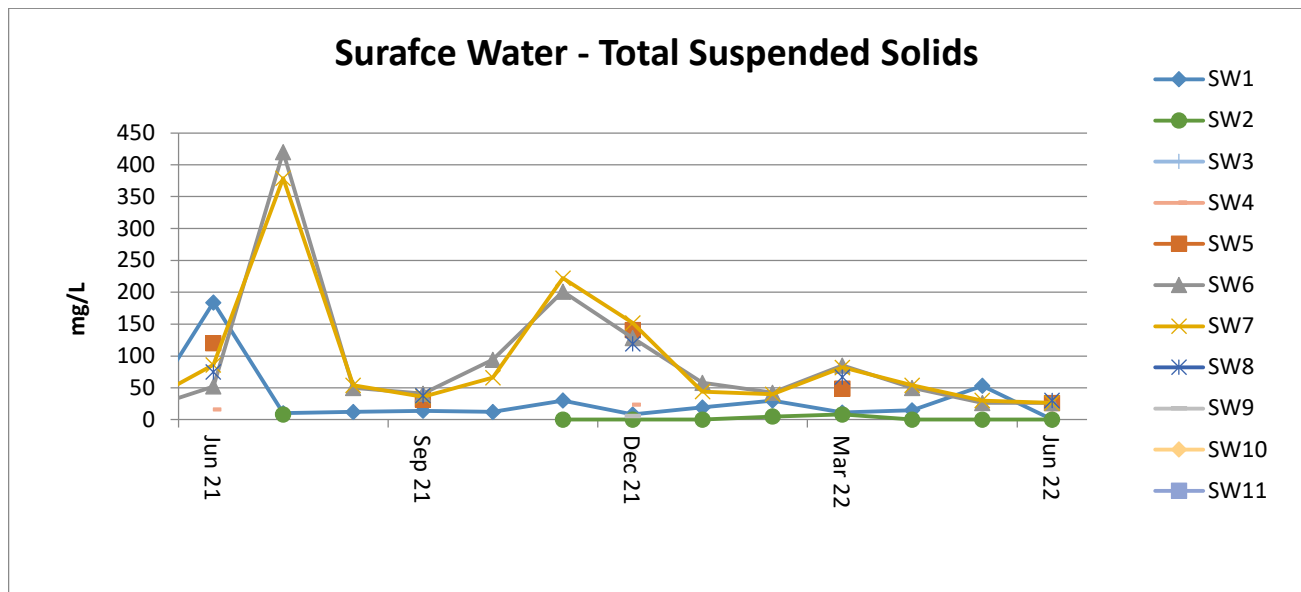
### Electrical Conductivity

Surface water EC trends have remained consistent with SW5, SW6, SW7 and SW8 all historically variable. SW5, SW6, SW7 and SW8 are points along the Namoi River which are subject to regulated and variable flow regimes.



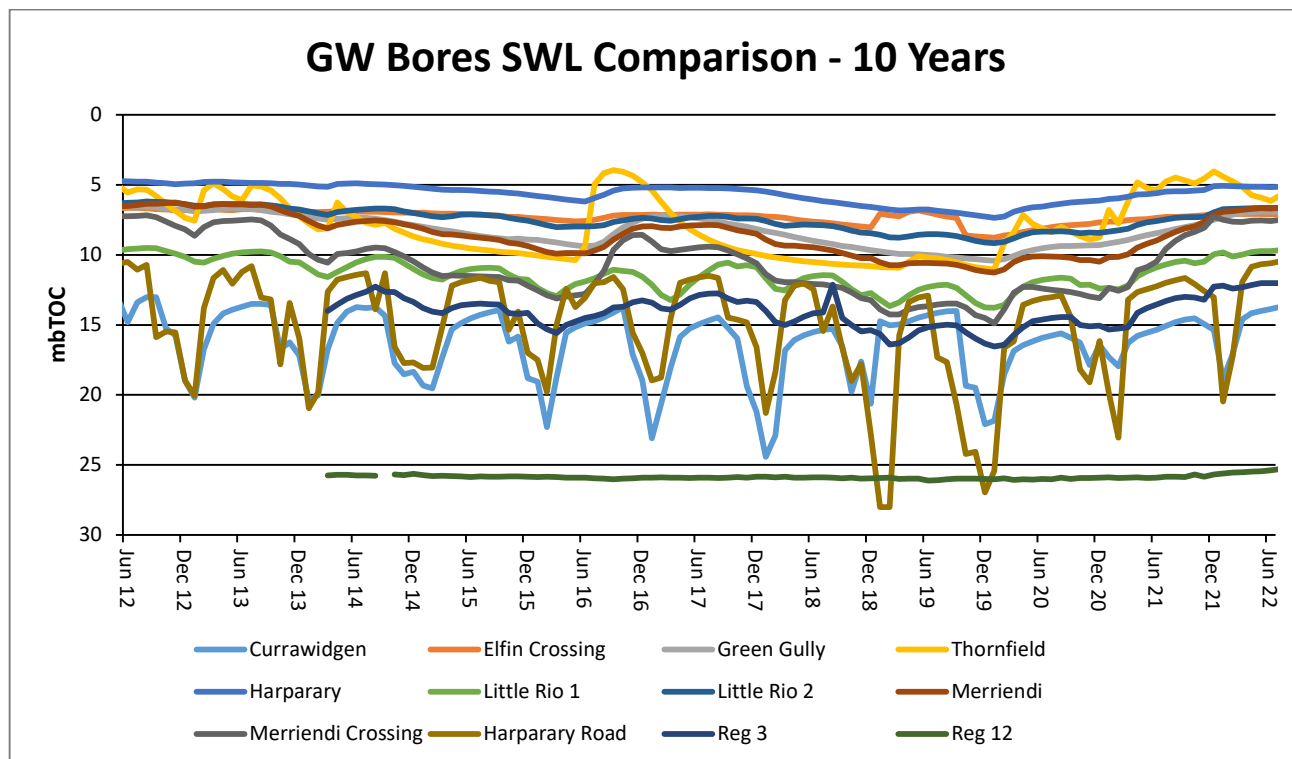
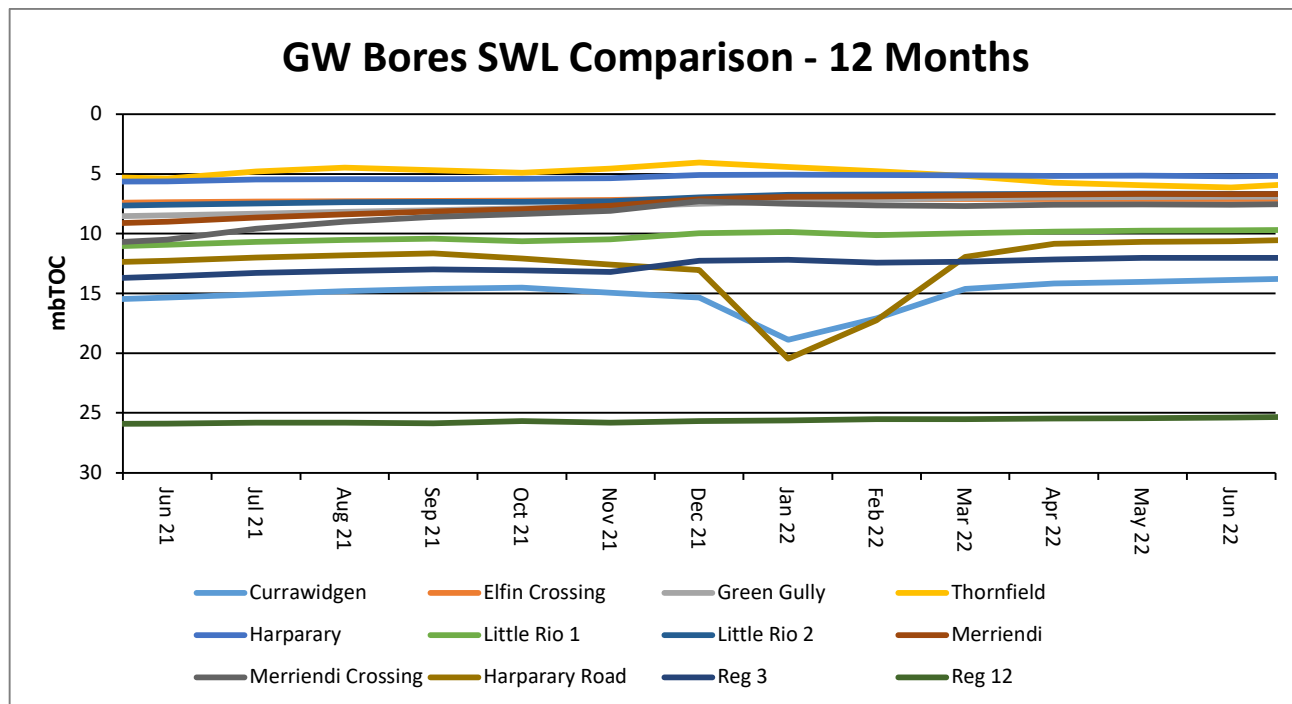
### Total Suspended Solids (TSS)

Surface water TSS trends have remained generally consistent with historical results. SW5, SW6, SW7 and SW8 are historically variable as they are located along the Namoi River which is subject to regulated and variable flow regimes. The Q3 results were elevated due to significant rainfall events, as demonstrated on the graph below TSS levels have since decreased



## Regional Groundwater monitoring

Maules Creek Coal Mine monitors regional bores across the region.



### **Rehabilitation**

Progressive rehabilitation works are ongoing. 180.6 hectares were ariel seeded during April 2022.

### **Feral Animal Management**

Most recent routine Whitehaven Biodiversity Feral Animal Control program (June 2022) results were: 150 out of total 222 pigs trapped or baited were from the Maules Offset properties; and 369 out of total 1470 fox baits (1080) taken were from the Maules Offsets properties.

Feral animal control program will be conducted within the MCC project boundary on site during Q3. The dominant animals that will be of focus are pigs, foxes, cats and goats.

### **Weed Control**

Spraying of early Winter growing broadleaf weeds like Turnip and Patterson Curse is underway. Targeted seasonal weed control for Pear and Box Thorn completed. Maintenance of fire break tracks to control excessive vegetation growth ongoing given good seasonal conditions.

### **Fencing & Waste Management**

Old fencing removed and new constructed for Mt Lindesay and Velyama East as well as new fencing installed on Additional properties of Triangle and Long Gully.

### **Community Complaints**

No complaints were received during Q2 2022.

# Maules Creek Coal Mine Community Consultative Committee Meeting #39

## Environmental Monitoring Report For the Q3 period, July – September 2022

### Attended Noise Monitoring

Maules Creek Coal (MCC) engaged an independent acoustic consultant to conduct LAeq (15minutes) and LA1 (1 minute) attended noise monitoring at six monitoring locations on site.

#### **A. LAeq, 15minute; GENERATED BY MCCM AGAINST OPERATIONAL DAY NOISE CRITERIA; JULY – SEPTEMBER 2022.**

The results show that MCCM is within EPL 20221 compliance limits, that operations did not exceed the applicable LAeq (15minute) criteria of 35dB and the EPA's Noise Policy for Industry compliance guidelines.

**Table 1 - July Noise Monitoring**

Location	Start Date and Time	Wind Speed m/s	Rainfall mm	Criterion dB	Criterion Applies? <sup>1</sup>	MCCP LAeq dB <sup>2</sup>	Exceedance dB <sup>3</sup>
NM1	14/07/2022 22:30	0.3	0.0	35	Yes	25	Nil
NM2	14/07/2022 23:30	0.4	0.0	39	Yes	30	Nil
NM3	14/07/2022 23:30	0.4	0.0	35	Yes	<25	Nil
NM4	14/07/2022 23:00	0.5	0.0	35	Yes	<20	Nil
NM5	14/07/2022 22:00	1.2	0.0	35	Yes	IA	Nil
NM6	14/07/2022 23:55	0.3	0.0	35	Yes	<25	Nil

- Noise emission limits do not apply during periods of rainfall or winds greater than 3 metres per second (at a height of 10 metres);
- Site-only LAeq,15minute attributed to MCCP, including modifying factors if applicable; and
- NA in exceedance column means criterion was not applicable due to atmospheric conditions outside those specified in project approval.

**Table 2 – August Noise Monitoring**

Location	Start Date and Time	Wind Speed m/s	Rainfall mm	Criterion dB	Criterion Applies? <sup>1</sup>	MCCP LAeq dB <sup>2</sup>	Exceedance dB <sup>3</sup>
NM1	22/08/2022 22:30	1.1	0.0	35	Yes	IA	Nil
NM2	22/08/2022 23:30	0.6	0.0	39	Yes	IA	Nil
NM3	22/08/2022 23:32	0.7	0.0	35	Yes	IA	Nil
NM4	22/08/2022 23:00	0.6	0.0	35	Yes	IA	Nil
NM5	22/08/2022 22:00	0.6	0.0	35	Yes	IA	Nil
NM6	22/08/2022 23:56	0.3	0.0	35	Yes	IA	Nil

- Notes:
- Noise emission limits do not apply during periods of rainfall or winds greater than 3 metres per second (at a height of 10 metres).
  - Site-only LAeq,15minute attributed to MCCP, including modifying factors if applicable.
  - NA in exceedance column means criterion was not applicable due to atmospheric conditions outside those specified in project approval.

**Table 3 – September Noise Monitoring**

Location	Start Date and Time	Wind Speed m/s	Rainfall mm	Criterion dB	Criterion Applies? <sup>1</sup>	MCCP LAeq dB <sup>2</sup>	Exceedance dB <sup>3</sup>
NM1	13/09/2022 22:30	0.5	0	35	Yes	IA	Nil
NM2	13/09/2022 23:30	0.3	0	39	Yes	25	Nil
NM3	13/09/2022 23:27	0.5	0	35	Yes	26	Nil
NM4	13/09/2022 23:00	0.3	0	35	Yes	IA	Nil
NM5	13/09/2022 22:00	0.8	0	35	Yes	IA	Nil
NM6	13/09/2022 23:56	0.4	0	35	Yes	IA	Nil

Notes: 1. Noise emission limits do not apply during periods of rainfall or winds greater than 3 metres per second (at a height of 10 metres).  
2. Site-only LAeq,15minute attributed to MCCP, including modifying factors if applicable.  
3. NA in exceedance column means criterion was not applicable due to atmospheric conditions outside those specified in project approval.

**B. LA1, 1minute; GENERATED BY MCC AGAINST OPERATIONAL NIGHT NOISE CRITERIA; JULY – SEPTEMBER 2022.**

MCC's EPL 20221 also has a '1 Minute - Night' criteria (LA1) that applies from 10pm to 7am Monday to Saturday & 10pm to 8am Sundays and Public Holidays. Results are shown on tables 4-6.

The results show that MCCM is within EPL 20221 compliance limits, that operations did not exceed the applicable LA1 (1minute) criteria of 45dB.

**Table 4– July Noise Monitoring – Night**

Location	Start Date and Time	Wind Speed m/s	Rainfall mm	Criterion dB	Criterion Applies? <sup>1</sup>	MCCP LA1,1min dB <sup>2</sup>	Exceedance dB <sup>3</sup>
NM1	14/07/2022 22:30	0.3	0.0	45	Yes	27	Nil
NM2	14/07/2022 23:30	0.4	0.0	45	Yes	35	Nil
NM3	14/07/2022 23:30	0.4	0.0	45	Yes	27	Nil
NM4	14/07/2022 23:00	0.5	0.0	45	Yes	35	Nil
NM5	14/07/2022 22:00	1.2	0.0	45	Yes	IA	Nil
NM6	14/07/2022 23:55	0.3	0.0	45	Yes	<25	Nil

1. Noise emission limits do not apply during periods of rainfall or winds greater than 3 metres per second (at a height of 10 metres);  
2. Site-only LA1,1minute attributed to MCCP; and  
3. NA in exceedance column means criterion was not applicable due to atmospheric conditions outside those specified in project approval.

**Table 5 –August Noise Monitoring – Night**

Location	Start Date and Time	Wind Speed m/s	Rainfall mm	Criterion dB	Criterion Applies? <sup>1</sup>	MCCP L <sub>A1,1min</sub> dB <sup>2</sup>	Exceedance dB <sup>3</sup>
NM1	22/08/2022 22:30	1.1	0.0	45	Yes	IA	Nil
NM2	22/08/2022 23:30	0.6	0.0	45	Yes	IA	Nil
NM3	22/08/2022 23:32	0.7	0.0	45	Yes	IA	Nil
NM4	22/08/2022 23:00	0.6	0.0	45	Yes	IA	Nil
NM5	22/08/2022 22:00	0.6	0.0	45	Yes	IA	Nil
NM6	22/08/2022 23:56	0.3	0.0	45	Yes	IA	Nil

Notes: 1. Noise emission limits do not apply during periods of rainfall or winds greater than 3 metres per second (at a height of 10 metres).  
2. Site-only L<sub>A1,1minute</sub> attributed to MCCP.  
3. NA in exceedance column means criterion was not applicable due to atmospheric conditions outside those specified in project approval.

**Table 6 – September Noise Monitoring – Night**

Location	Start Date and Time	Wind Speed m/s	Rainfall mm	Criterion dB	Criterion Applies? <sup>1</sup>	MCCP L <sub>A1,1min</sub> dB <sup>2</sup>	Exceedance dB <sup>3</sup>
NM1	13/09/2022 22:30	0.5	0	45	Yes	IA	Nil
NM2	13/09/2022 23:30	0.3	0	45	Yes	28	Nil
NM3	13/09/2022 23:27	0.5	0	45	Yes	30	Nil
NM4	13/09/2022 23:00	0.3	0	45	Yes	IA	Nil
NM5	13/09/2022 22:00	0.8	0	45	Yes	IA	Nil
NM6	13/09/2022 23:56	0.4	0	45	Yes	IA	Nil

Notes: 1. Noise emission limits do not apply during periods of rainfall or winds greater than 3 metres per second (at a height of 10 metres).  
2. Site-only L<sub>A1,1minute</sub> attributed to MCCP.  
3. NA in exceedance column means criterion was not applicable due to atmospheric conditions outside those specified in project approval.

### **Wind Direction during Attended Monitoring**

Wind direction data is collected from the Maule's Creek Coal Mine (MCCM) Automated Weather Station (AWS). Wind data for the duration of the attended monitoring assessment, recorded at the MCCM AWS is presented in the table below.

**Table 7 - Prevailing Wind Direction**

Monitoring Date	Prevailing Wind Direction
July	SSE
August	SW
September	S

## **Blast Monitoring**

There was 29 blasts at MCCM during Q3 2022. All blast monitoring results recorded within the reporting period have complied with applicable overpressure and ground vibration limits specified in the respective approvals.

**Table 8 – Blast Results Summary**

Parameter	Units	Frequency	Number	Average	Max	100% Limit	Exceedance (Yes / No)
Noise	dB (Lin Peak)	All	29	92.16	111.1	120	No
Vibration	mm/s		29	0.15	0.64	10	No

## **Air Quality**

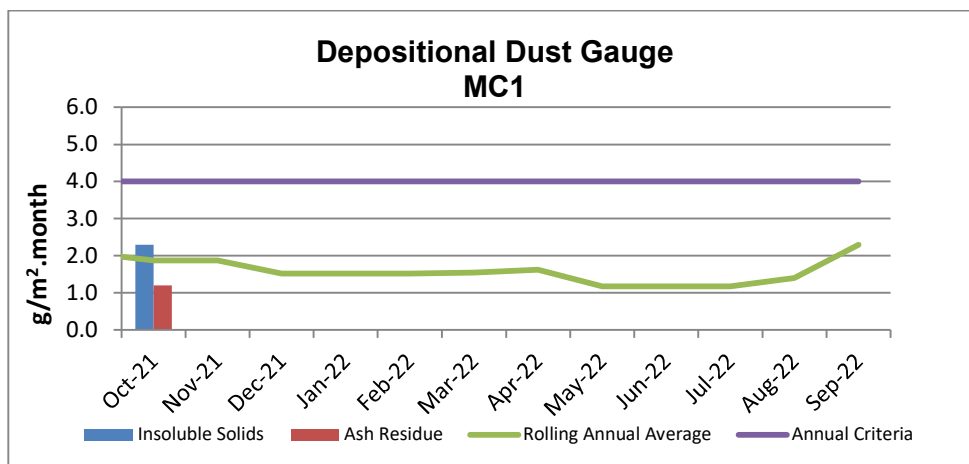
### **A. Total Depositional Dust**

The 12 monthly rolling annual average remains below the relevant Project Approval (PA 10\_0138) criteria of 4g/m<sup>2</sup>/month for the respective monitoring points.

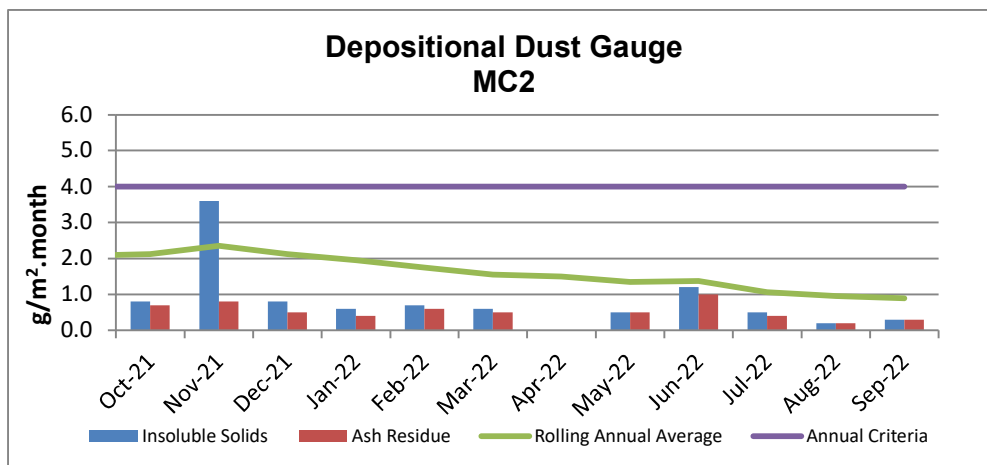
**Table 9 – Deposited Dust Gauge Results [g/m<sup>2</sup>/month]**

MONTH	MC1	MC2	MC3	MC4
July	28.7 <sup>c</sup>	0.5	1.9	2.2
August	7.2 <sup>c</sup>	0.2	1.2	0.6
September	12.9 <sup>c</sup>	0.3	2.4	1.0
<b>12 MONTH ROLLING AVERAGE</b>	<b>2.3</b>	<b>0.9</b>	<b>2.0</b>	<b>1.1</b>

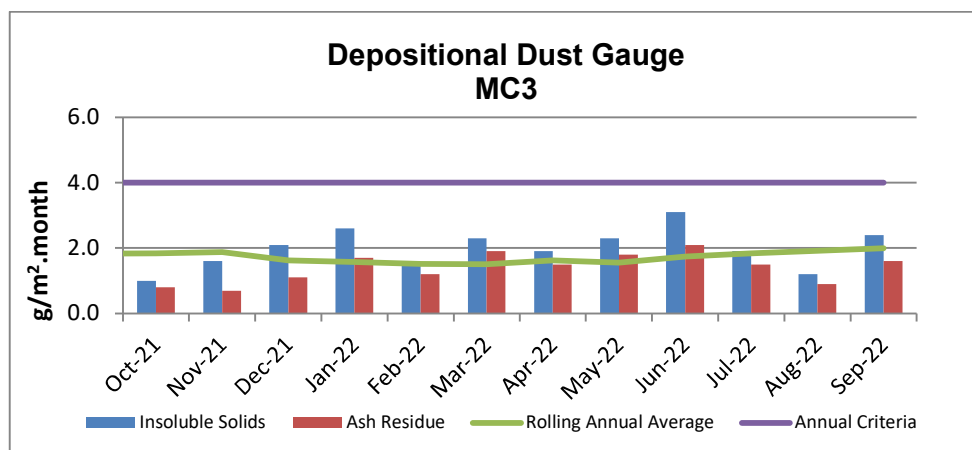
<sup>c</sup> samples contaminated by bird dropping, decomposed insects or vegetable matter.



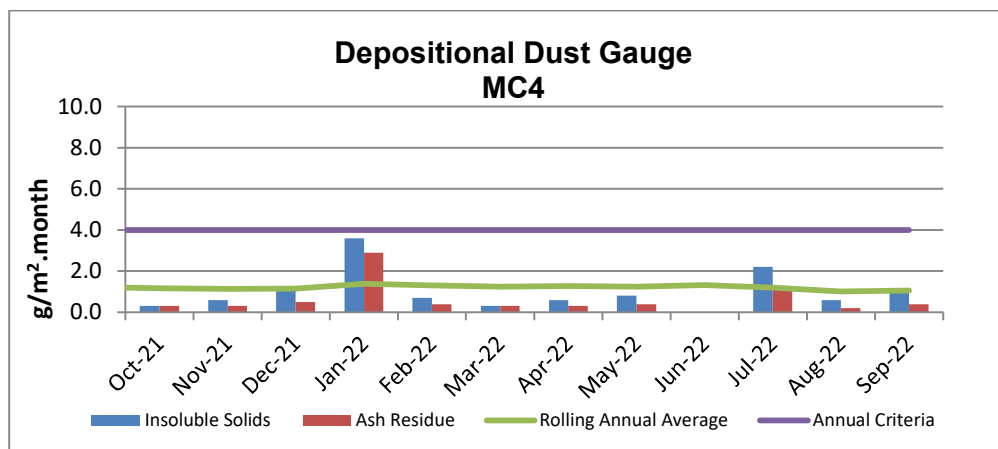
\* Blank cells indicate sample periods where the sample has been contaminated and excluded from the results tables due to contaminated material (insect larvae, bird droppings, vegetation etc.).



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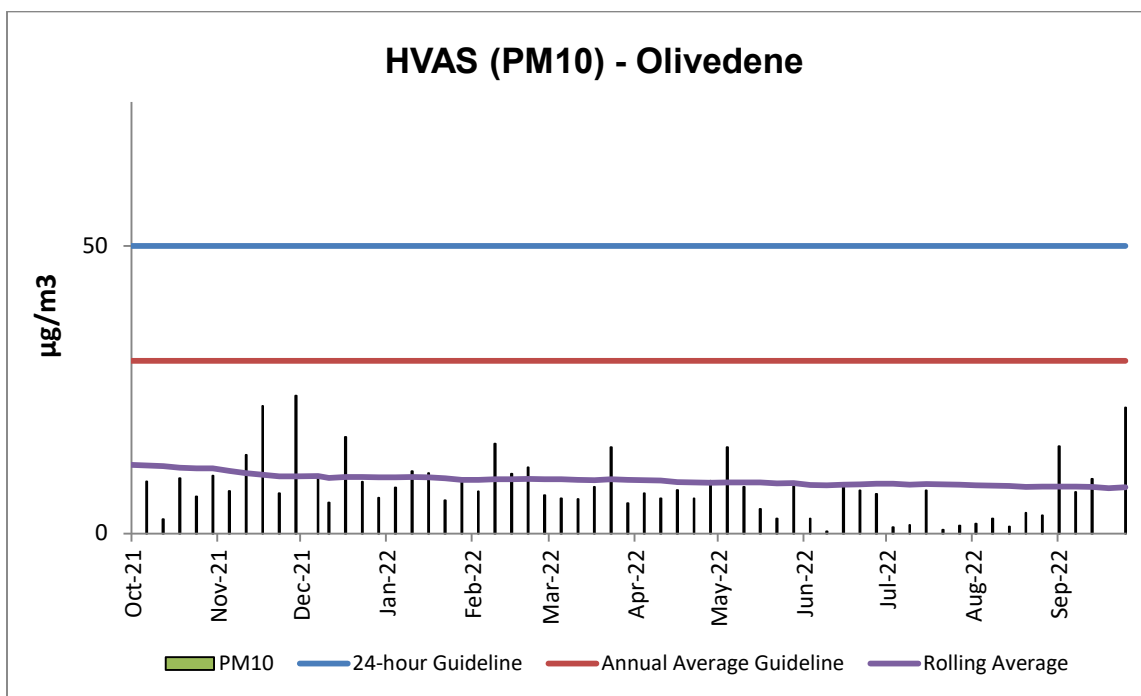


\* Blank cells indicate sample periods where the sample has been contaminated and excluded from the results tables due to contaminated material (insect larvae, bird droppings, vegetation etc.).

#### B. High Volume Air Sampling (HVAS)

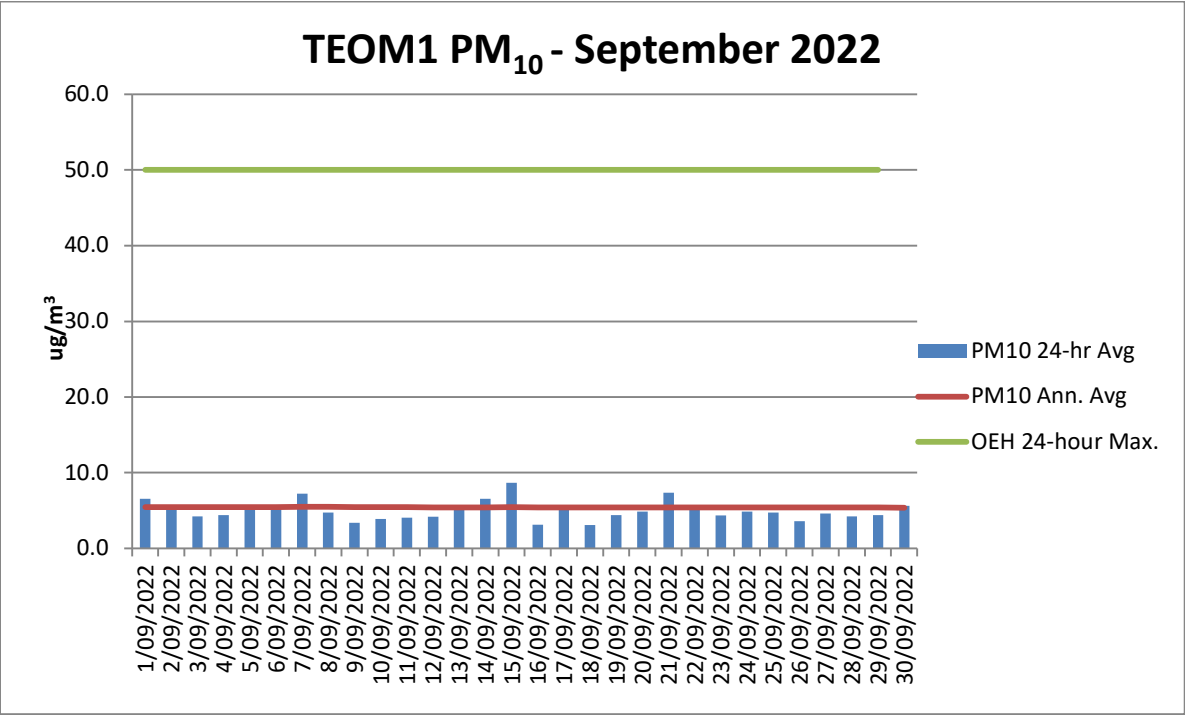
The HVAS monitor is located on the property 'Olivedene,' a mine owned property on Therribri Road. During past 12 months, there have been no exceedances of the 24-hour average of 50  $\mu\text{g}/\text{m}^3$ .

HVAS PM<sub>10</sub> Rolling Annual Average as of September was **8.0  $\mu\text{g}/\text{m}^3$** , which is below the Annual Average Guideline of 30  $\mu\text{g}/\text{m}^3$ .



#### C. TEOM - PM10 Results

The annual rolling average for PM10 at the Maules Creek Coal TEOM1 was **5.4  $\mu\text{g}/\text{m}^3$** , which is below the Project Approval annual average criteria of 30  $\mu\text{g}/\text{m}^3$  as shown in the following figure. There have been no exceedances of the 24-hour average for Q2.

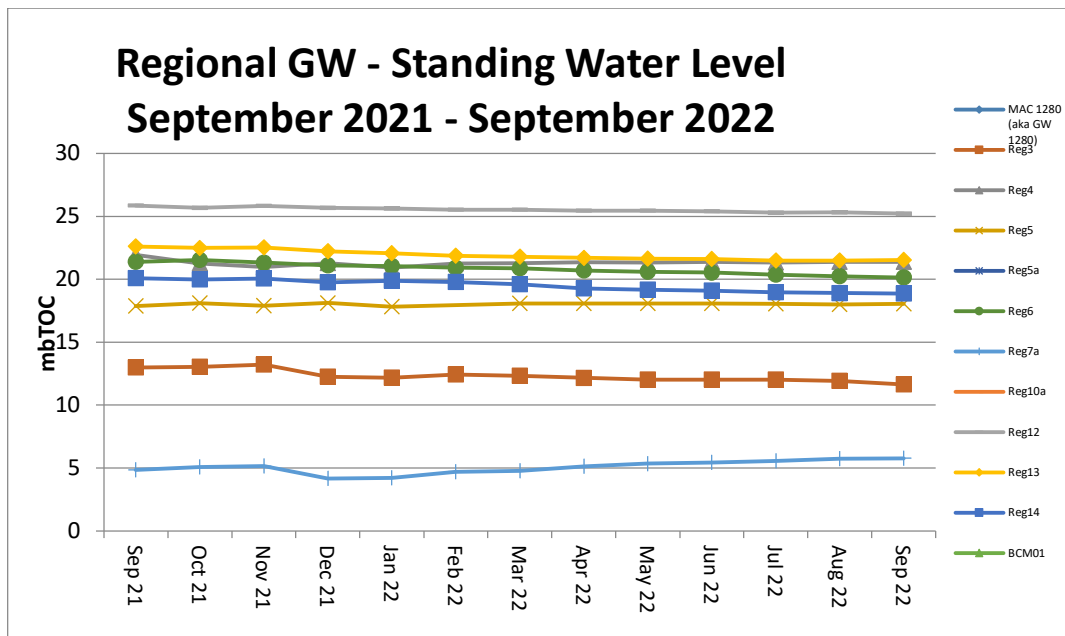


**Figure 1 - TEOM Result – Particulate Matter  $PM_{10\mu g/m^3}$**   
\* Blank columns indicate sample periods where there was either power outage, maintenance or other related causes.

## Water Monitoring

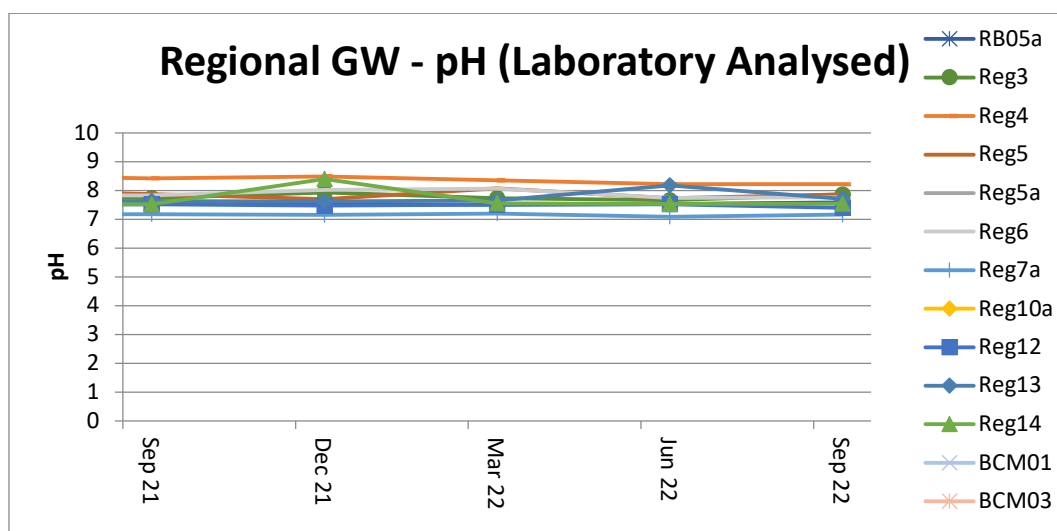
### A. Groundwater

Groundwater monitoring results in open standpipe piezometers show levels to be relatively stable. The Regional bores were installed between Q4, 2013 and Q1, 2014. BCM01, BCM03, Reg10 are shallow bores which have remained dry since construction in 2013.



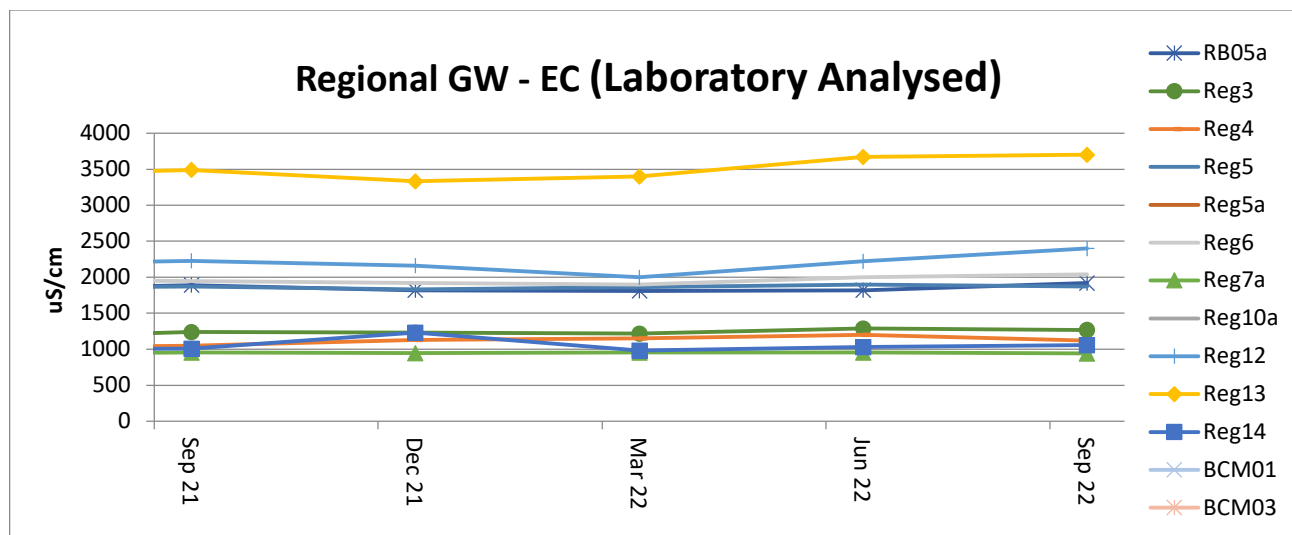
### Acidity / Alkalinity (pH)

Over the past twelve months pH readings across the regional bores have remained static with very little fluctuation.



## Electrical Conductivity

Laboratory Electrical Conductivity (EC) levels are all within historic groundwater EC range of 500 $\mu\text{S}/\text{cm}$  to 2,500 $\mu\text{S}/\text{cm}$ , with the exception of monitoring bore Reg13 which has a historic groundwater EC range of 2,500 $\mu\text{S}/\text{cm}$  to 4,100 $\mu\text{S}/\text{cm}$ . Within the last twelve months EC has remained static.

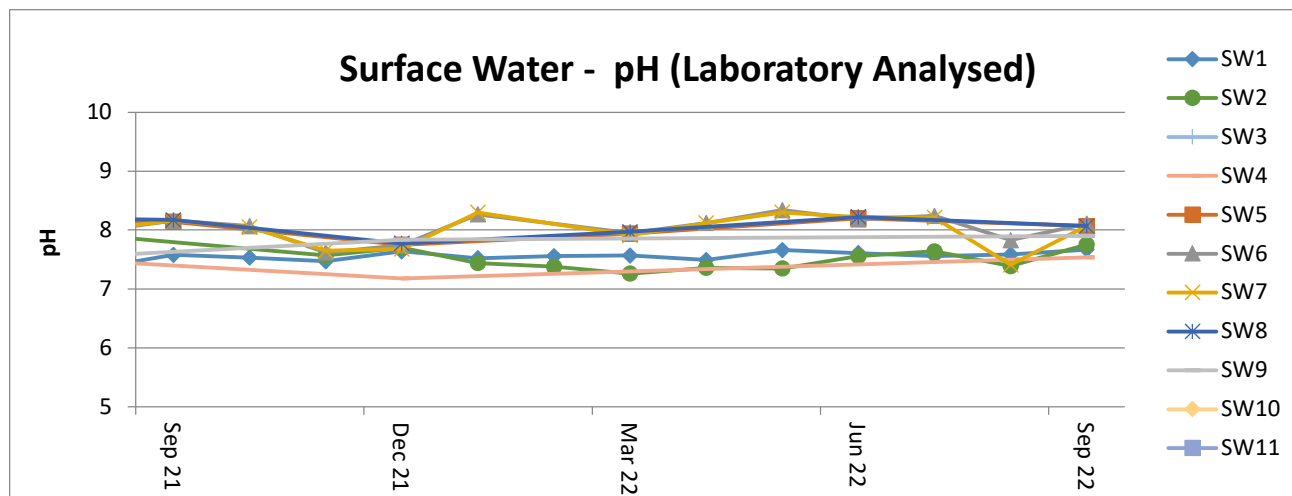


## B. Surface Water – Creeks and Rivers

Routine surface water monitoring is conducted in surrounding creeks and rivers on a monthly basis. Results for parameters including pH, EC and Total Suspended Solids (TSS) are shown in the figures below. There are eleven surface water monitoring points, of which a maximum of six sites were able to be sampled during Q3 2022.

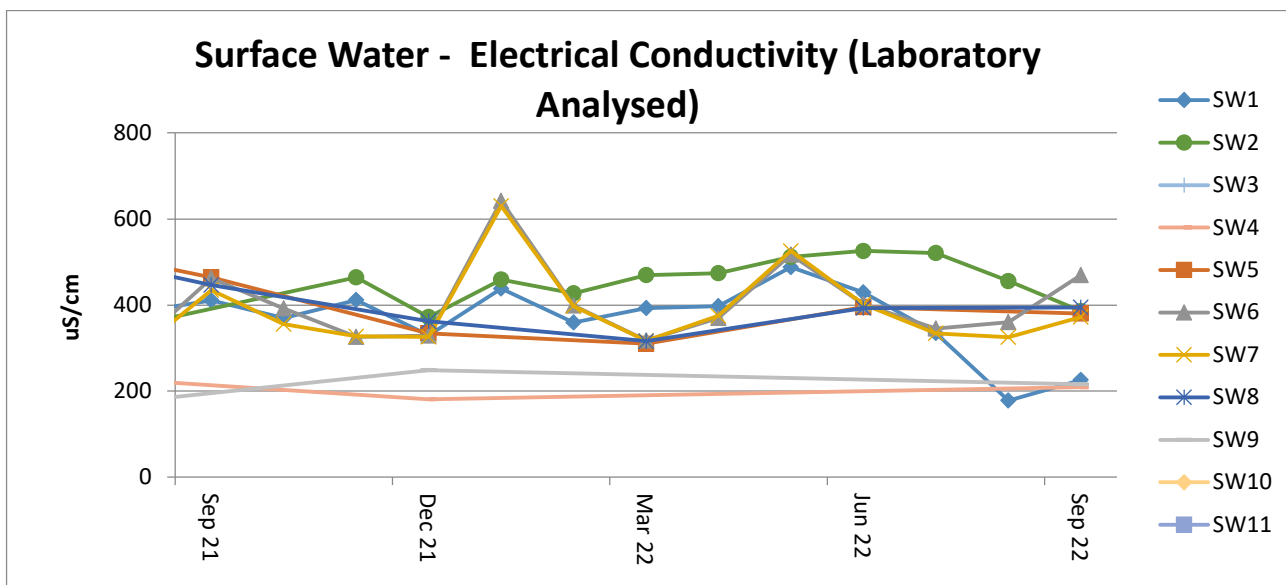
### Acidity / Alkalinity (pH)

Monitoring results for pH in creeks and rivers surrounding MCCM are all trending within the ANZECC range for Irrigation, Ecosystem Health and Recreation.



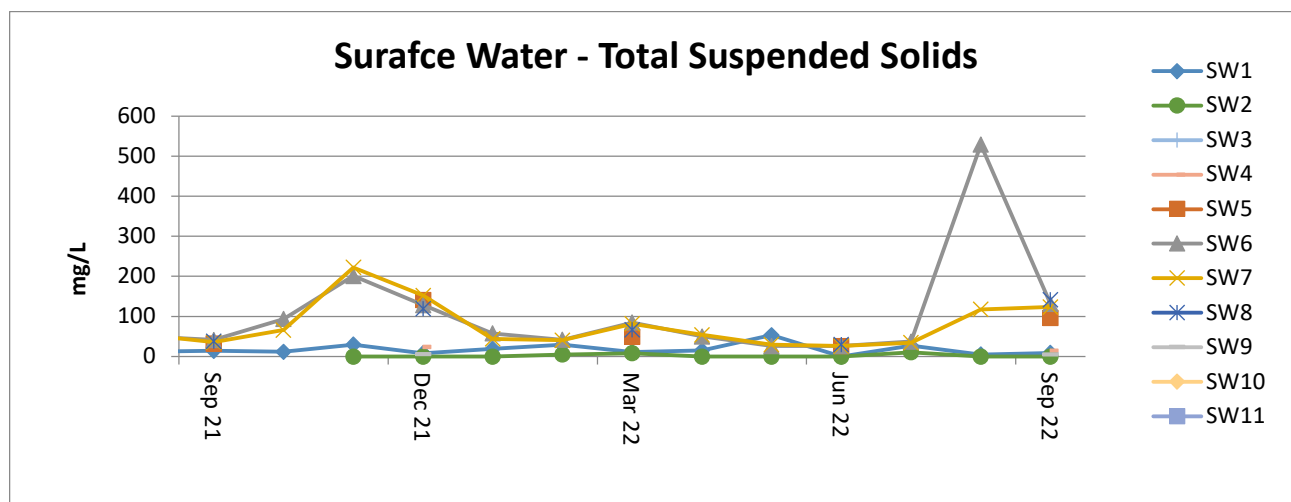
## Electrical Conductivity

Surface water EC trends have remained consistent with SW5, SW6, SW7 and SW8 all historically variable. SW5, SW6, SW7 and SW8 are points along the Namoi River which are subject to regulated and variable flow regimes.



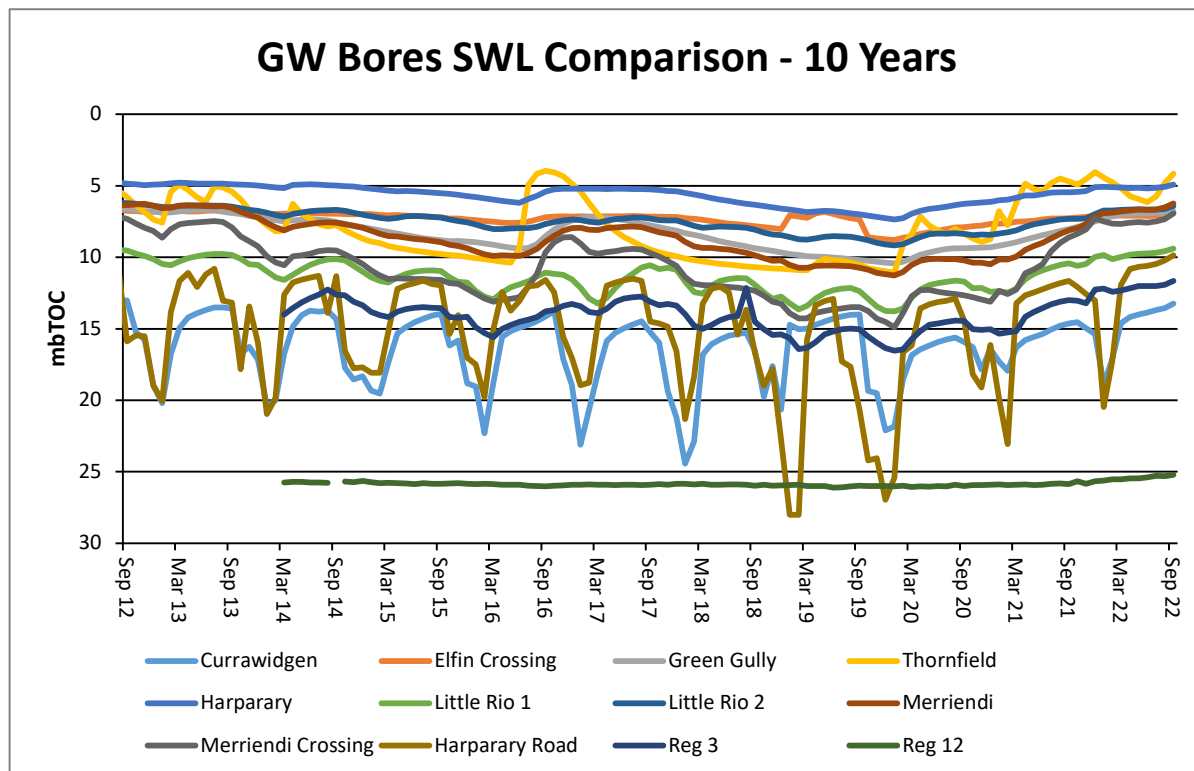
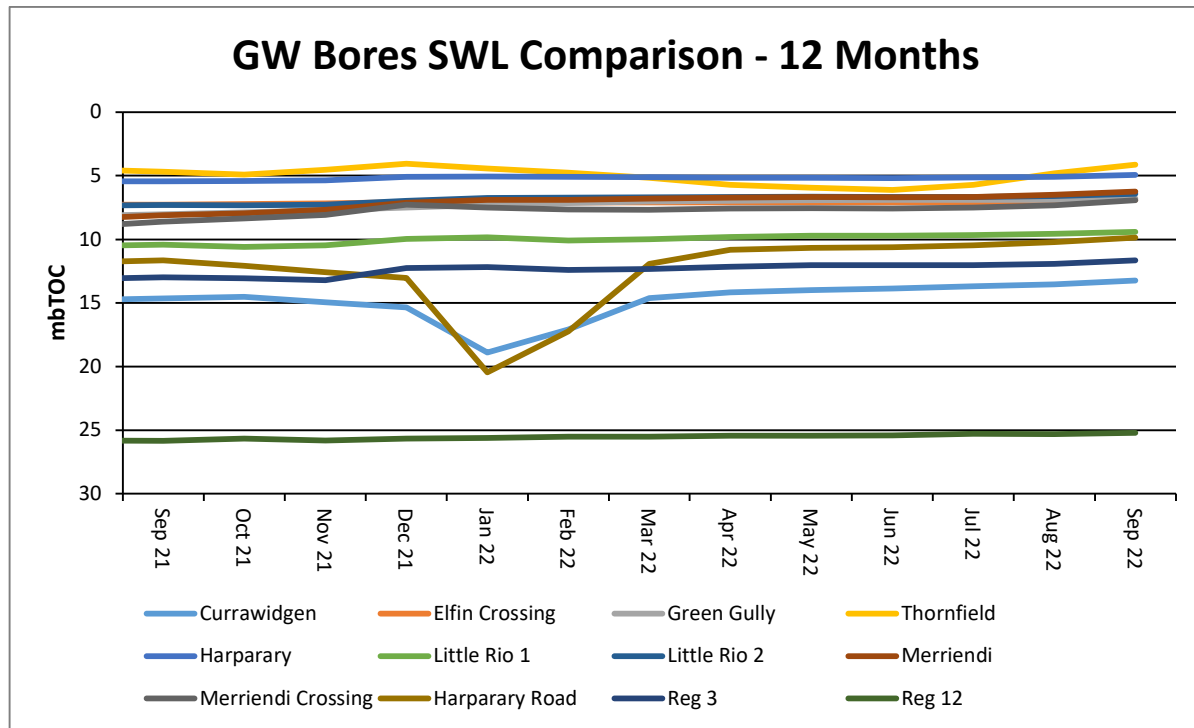
#### Total Suspended Solids (TSS)

Surface water TSS trends have remained generally consistent with historical results. SW5, SW6, SW7 and SW8 are historically variable as they are located along the Namoi River which is subject to regulated and variable flow regimes. The Q3 results were elevated due to significant rainfall events, as demonstrated on the graph below TSS levels have since decreased



## Regional Groundwater monitoring

Maules Creek Coal Mine monitors regional bores across the region.



### **Rehabilitation**

Progressive rehabilitation works are ongoing. MCC is on track to complete 40ha of rehabilitation for CY23.

### **Feral Animal Management**

Weather constraints have put the proposed MCC feral animal management control program on hold. The program will be revisited early 2023.

### **Community Complaints**

No complaints were received during Q3 2022.

# Maules Creek Coal Mine Community Consultative Committee Meeting #40

## Environmental Monitoring Report For the Q4 period, October – December 2022

### Attended Noise Monitoring

Maules Creek Coal (MCC) engaged an independent acoustic consultant to conduct LAeq (15minutes) and LA1 (1 minute) attended noise monitoring at six monitoring locations on site.

#### **A. LAeq, 15minute; GENERATED BY MCCM AGAINST OPERATIONAL DAY NOISE CRITERIA; OCTOBER-DECEMBER 2022.**

The results show that MCCM is within EPL 20221 compliance limits, that operations did not exceed the applicable LAeq (15minute) criteria of 35dB and the EPA's Noise Policy for Industry compliance guidelines.

**Table 1 – October Noise Monitoring**

Location	Start Date and Time	Wind Speed m/s	Rainfall mm	Criterion dB	Criterion Applies? <sup>1</sup>	MCCP LAeq dB <sup>2</sup>	Exceedance dB <sup>3</sup>
NM1	4/10/2022 23:00	0.9	0	35	Yes	29	Nil
NM2	4/10/2022 23:45	0.3	0	39	Yes	32	Nil
NM3	5/10/2022 00:04	0.3	0	35	Yes	IA	Nil
NM4	5/10/2022 00:15	0.4	0	35	Yes	25	Nil
NM5	4/10/2022 22:18	0.5	0	35	Yes	<20	Nil
NM6	5/10/2022 00:46	0.5	0	35	Yes	<25	Nil

Notes: 1. Noise emission limits do not apply during periods of rainfall or winds greater than 3 metres per second (at a height of 10 metres).  
2. Site-only LAeq,15minute attributed to MCCP, including modifying factors if applicable.  
3. NA in exceedance column means criterion was not applicable due to atmospheric conditions outside those specified in project approval.

**Table 2 – November Noise Monitoring**

Location	Start Date and Time	Wind Speed m/s	Rainfall mm	Criterion dB	Criterion Applies? <sup>1</sup>	MCCP LAeq dB <sup>2</sup>	Exceedance dB <sup>3</sup>
NM1	10/11/2022 22:30	0.9	0.0	35	Yes	27	Nil
NM2	10/11/2022 23:30	0.8	0.0	39	Yes	<20	Nil
NM3	10/11/2022 23:51	0.5	0.0	35	Yes	<25	Nil
NM4	10/11/2022 23:00	0.3	0.0	35	Yes	<20	Nil
NM5	10/11/2022 22:00	0.5	0.0	35	Yes	IA	Nil
NM6	10/11/2022 23:56	0.6	0.0	35	Yes	IA	Nil

Notes: 1. Noise emission limits do not apply during periods of rainfall or winds greater than 3 metres per second (at a height of 10 metres).  
2. Site-only LAeq,15minute attributed to MCCP, including modifying factors if applicable.  
3. NA in exceedance column means criterion was not applicable due to atmospheric conditions outside those specified in project approval.

**Table 3 – December Noise Monitoring**

Location	Start Date and Time	Wind Speed m/s	Rainfall mm	Criterion dB	Criterion Applies? <sup>1</sup>	MCCP LAeq dB <sup>2</sup>	Exceedance dB <sup>3</sup>
NM1	20/12/2022 22:30	3.3	0.0	35	No	<20	NA
NM2	20/12/2022 23:30	2.8	0.0	39	Yes	29	Nil
NM3	20/12/2022 23:51	3.0	0.0	35	Yes	1A	Nil
NM4	20/12/2022 23:00	3.5	0.0	35	No	26	NA
NM5	20/12/2022 22:00	4.2	0.0	35	No	1A	NA
NM6	21/12/2022 0:00	3.4	0.0	35	No	<20	NA

Notes:

1. Noise emission limits do not apply during periods of rainfall or winds greater than 3 metres per second (at a height of 10 metres).
2. Site-only LAeq,15minute attributed to MCCP, including modifying factors if applicable.
3. NA in exceedance column means criterion was not applicable due to atmospheric conditions outside those specified in project approval.

**B. LA1, 1minute; GENERATED BY MCC AGAINST OPERATIONAL NIGHT NOISE CRITERIA; OCTOBER - DECEMBER 2022.**

MCC's EPL 20221 also has a '1 Minute - Night' criteria (LA1) that applies from 10pm to 7am Monday to Saturday & 10pm to 8am Sundays and Public Holidays. Results are shown on tables 4-6.

The results show that MCCM is within EPL 20221 compliance limits, that operations did not exceed the applicable LA1 (1minute) criteria of 45dB.

**Table 4– October Noise Monitoring – Night**

Location	Start Date and Time	Wind Speed m/s	Rainfall mm	Criterion dB	Criterion Applies? <sup>1</sup>	MCCP LA1,1min dB <sup>2</sup>	Exceedance dB <sup>3</sup>
NM1	4/10/2022 23:00	0.9	0	45	Yes	34	Nil
NM2	4/10/2022 23:45	0.3	0	45	Yes	35	Nil
NM3	5/10/2022 00:04	0.3	0	45	Yes	1A	Nil
NM4	5/10/2022 00:15	0.4	0	45	Yes	26	Nil
NM5	4/10/2022 22:18	0.5	0	45	Yes	<20	Nil
NM6	5/10/2022 00:46	0.5	0	45	Yes	27	Nil

- Notes:
1. Noise emission limits do not apply during periods of rainfall or winds greater than 3 metres per second (at a height of 10 metres).
  2. Site-only LA1,1minute attributed to MCCP.
  3. NA in exceedance column means criterion was not applicable due to atmospheric conditions outside those specified in project approval.

**Table 5 – November Noise Monitoring – Night**

Location	Start Date and Time	Wind Speed m/s	Rainfall mm	Criterion dB	Criterion Applies? <sup>1</sup>	MCCP L <sub>A1,1min</sub> dB <sup>2</sup>	Exceedance dB <sup>3</sup>
NM1	10/11/2022 22:30	0.9	0.0	45	Yes	30	Nil
NM2	10/11/2022 23:30	0.8	0.0	45	Yes	25	Nil
NM3	10/11/2022 23:51	0.5	0.0	45	Yes	<25	Nil
NM4	10/11/2022 23:00	0.3	0.0	45	Yes	<20	Nil
NM5	10/11/2022 22:00	0.5	0.0	45	Yes	IA	Nil
NM6	10/11/2022 23:56	0.6	0.0	45	Yes	IA	Nil

Notes:

1. Noise emission limits do not apply during periods of rainfall or winds greater than 3 metres per second (at a height of 10 metres).
2. Site-only L<sub>A1,1minute</sub> attributed to MCCP.
3. NA in exceedance column means criterion was not applicable due to atmospheric conditions outside those specified in project approval.

**Table 6 – December Noise Monitoring – Night**

Location	Start Date and Time	Wind Speed m/s	Rainfall mm	Criterion dB	Criterion Applies? <sup>1</sup>	MCCP L <sub>A1,1min</sub> dB <sup>2</sup>	Exceedance dB <sup>3</sup>
NM1	20/12/2022 22:30	3.3	0.0	45	No	27	NA
NM2	20/12/2022 23:30	2.8	0.0	45	Yes	32	Nil
NM3	20/12/2022 23:51	3.0	0.0	45	Yes	IA	Nil
NM4	20/12/2022 23:00	3.5	0.0	45	No	30	NA
NM5	20/12/2022 22:00	4.2	0.0	45	No	IA	NA
NM6	21/12/2022 0:00	3.4	0.0	45	No	23	NA

Notes:

1. Noise emission limits do not apply during periods of rainfall or winds greater than 3 metres per second (at a height of 10 metres).
2. Site-only L<sub>A1,1minute</sub> attributed to MCCP.
3. NA in exceedance column means criterion was not applicable due to atmospheric conditions outside those specified in project approval.

### **Wind Direction during Attended Monitoring**

Wind direction data is collected from the Maule's Creek Coal Mine (MCCM) Automated Weather Station (AWS). Wind data for the duration of the attended monitoring assessment, recorded at the MCCM AWS is presented in the table below.

**Table 7 - Prevailing Wind Direction**

Monitoring Date	Prevailing Wind Direction
October	SE
November	SW
December	SE

### **Blast Monitoring**

There was 25 blasts at MCCM during Q4 2022. All blast monitoring results recorded within the reporting period have complied with applicable overpressure and ground vibration limits specified in the respective approvals.

**Table 8 – Blast Results Summary**

Parameter	Units	Frequency	Number	Average	Max	100% Limit	Exceedance (Yes / No)
Noise	dB (Lin Peak)	All	25	92.784	106.6	120	No
Vibration	mm/s		25	0.1316	0.81	10	No

### **Air Quality**

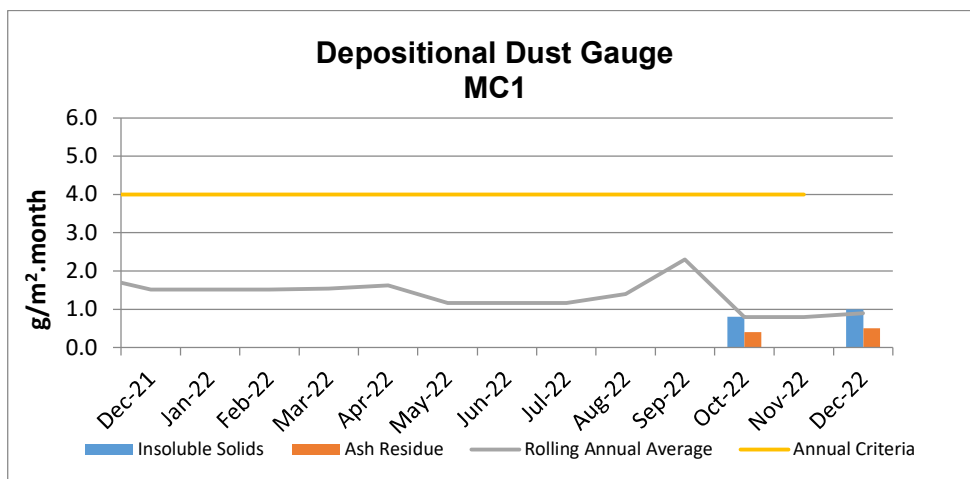
#### **A. Total Depositional Dust**

The 12 monthly rolling annual average remains below the relevant Project Approval (PA 10\_0138) criteria of 4g/m<sup>2</sup>/month for the respective monitoring points.

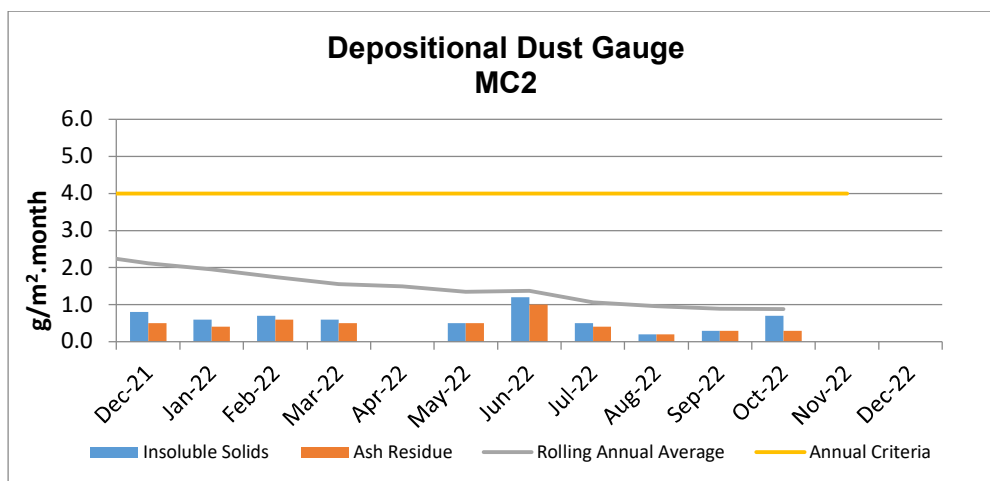
**Table 9 – Deposited Dust Gauge Results [g/m<sup>2</sup>/month]**

MONTH	MC1	MC2	MC3	MC4
October	0.8	0.7	5.6c	0.3
November	36.5c	0.0	6.4c	2.1
December	1.0	4.9c	1.5	0.6
<b>12 MONTH ROLLING AVERAGE</b>	<b>0.9</b>	<b>0.5</b>	<b>2.1</b>	<b>1.2</b>

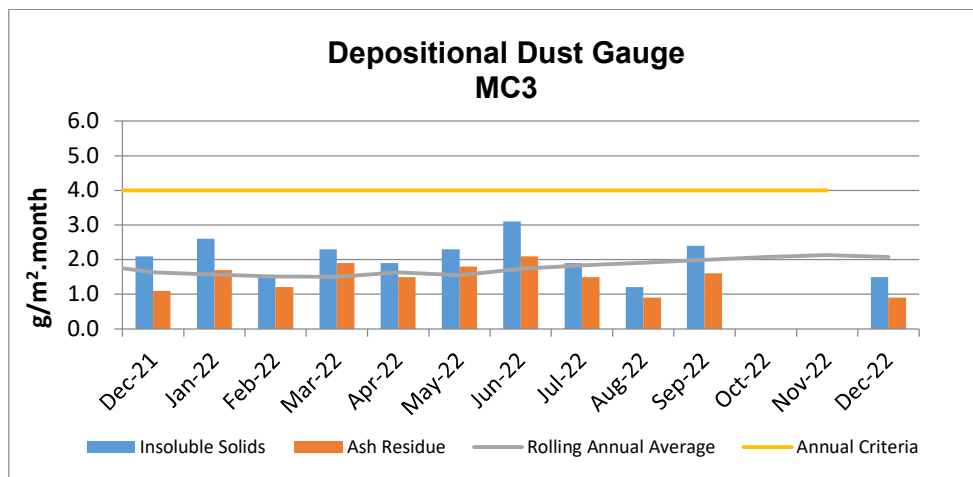
<sup>c</sup> samples contaminated by bird dropping, decomposed insects or vegetable matter.



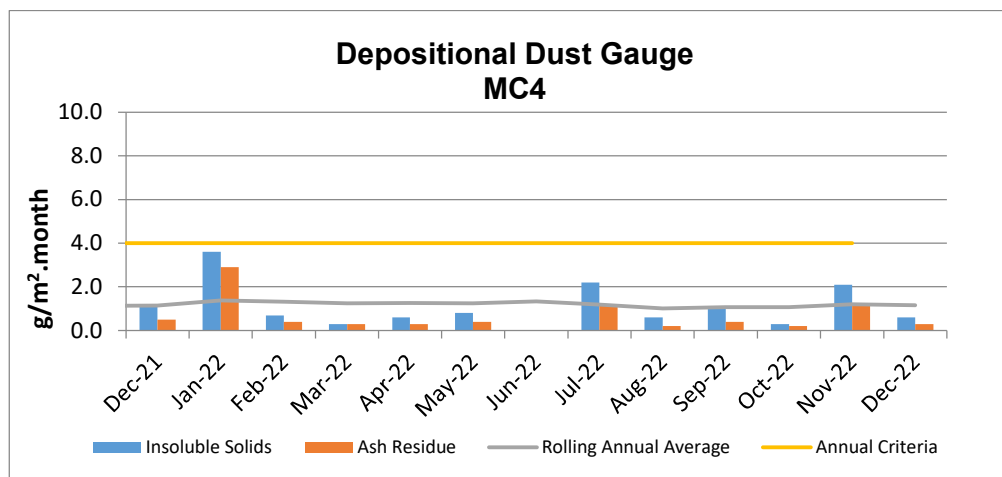
\* Blank cells indicate sample periods where the sample has been contaminated and excluded from the results tables due to contaminated material (insect larvae, bird droppings, vegetation etc.).



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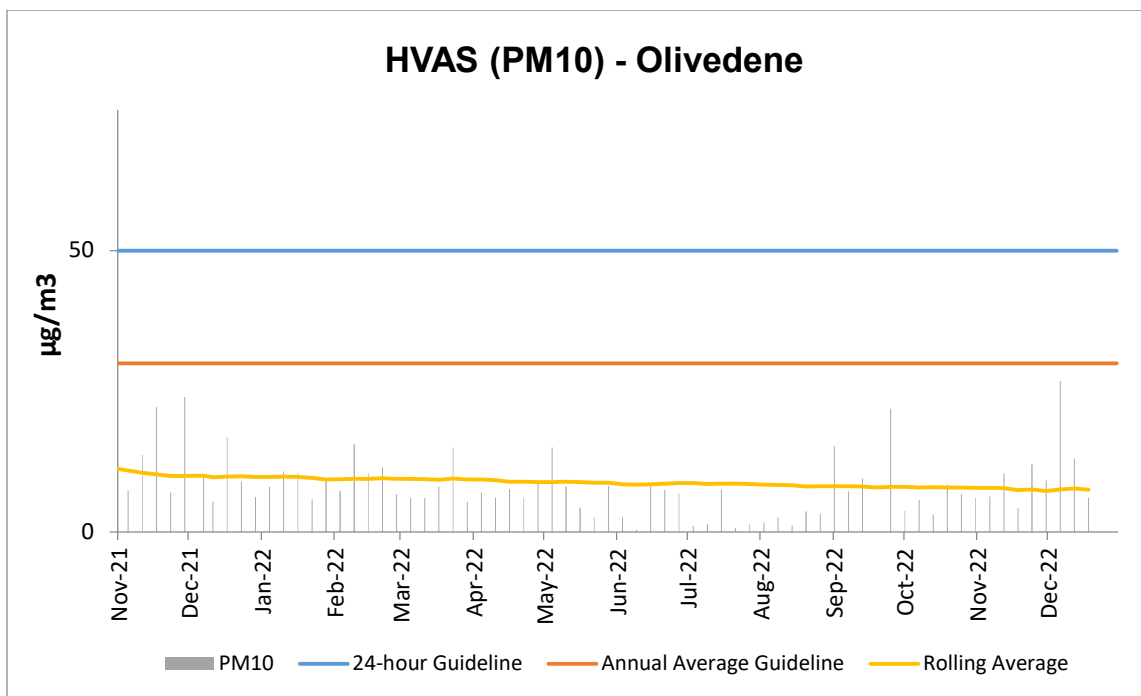


\* Blank cells indicate sample periods where the sample has been contaminated and excluded from the results tables due to contaminated material (insect larvae, bird droppings, vegetation etc.).

#### B. High Volume Air Sampling (HVAS)

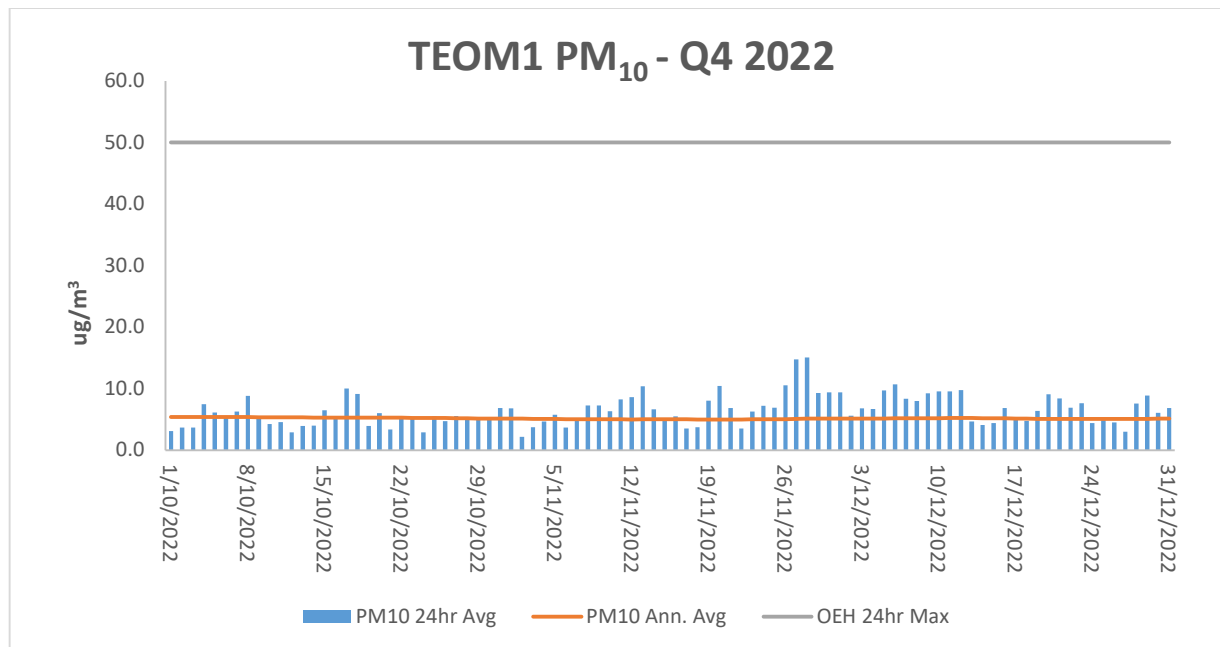
The HVAS monitor is located on the property 'Olivedene,' a mine owned property on Therribri Road. During past 12 months, there have been no exceedances of the 24-hour average of 50  $\mu\text{g}/\text{m}^3$ .

HVAS  $\text{PM}_{10}$  Rolling Annual Average as of December was **7.5  $\mu\text{g}/\text{m}^3$** , which is below the Annual Average Guideline of 30  $\mu\text{g}/\text{m}^3$ .



### C. TEOM - PM10 Results

The annual rolling average for PM10 at the Maules Creek Coal TEOM1 was **5.1  $\mu\text{g}/\text{m}^3$** , which is below the Project Approval annual average criteria of **30 $\mu\text{g}/\text{m}^3$**  as shown in the following figure. There have been no exceedances of the 24-hour average for Q4.



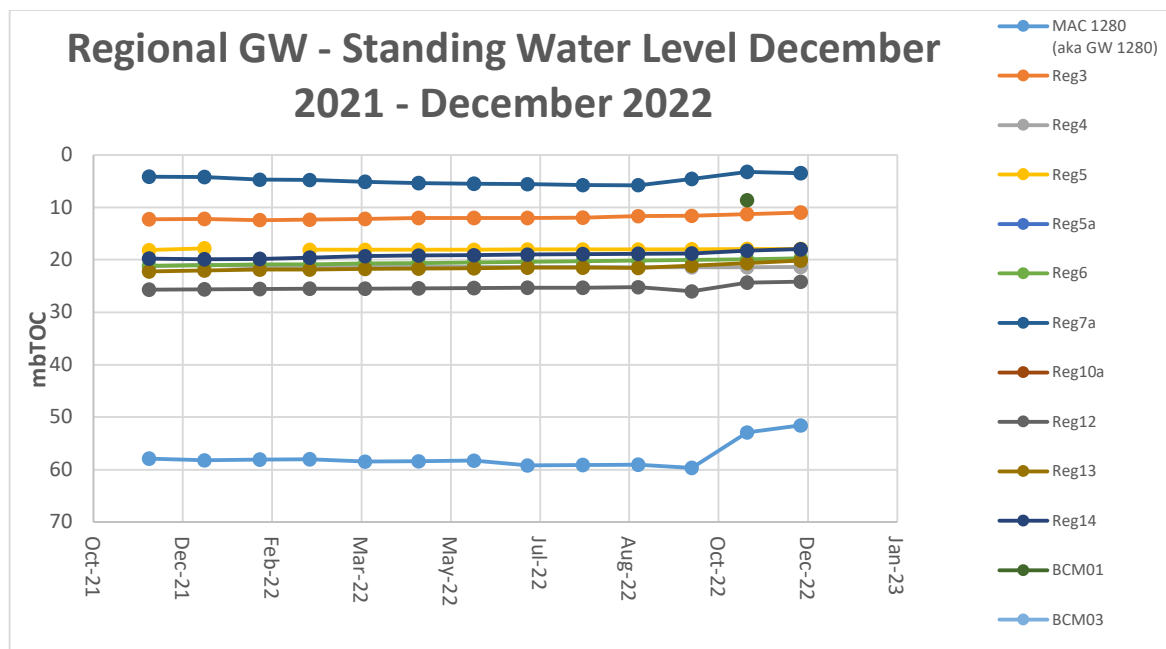
**Figure 1 - TEOM Result – Particulate Matter PM<sub>10 $\mu\text{g}/\text{m}^3$</sub>**

\* Blank columns indicate sample periods where there was either power outage, maintenance or other related causes.

## Water Monitoring

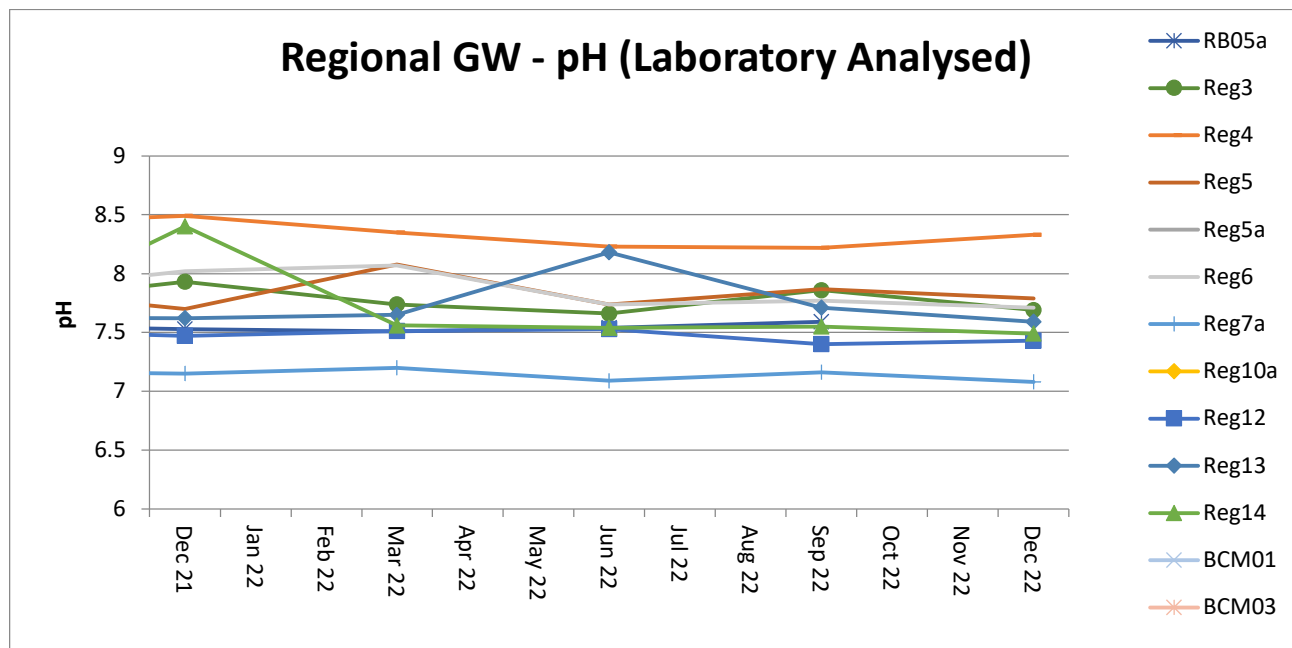
### A. Groundwater

Groundwater monitoring results in open standpipe piezometers show levels to be relatively stable. The Regional bores were installed between Q4, 2013 and Q1, 2014. BCM01, BCM03, Reg10 are shallow bores which have remained dry since construction in 2013.



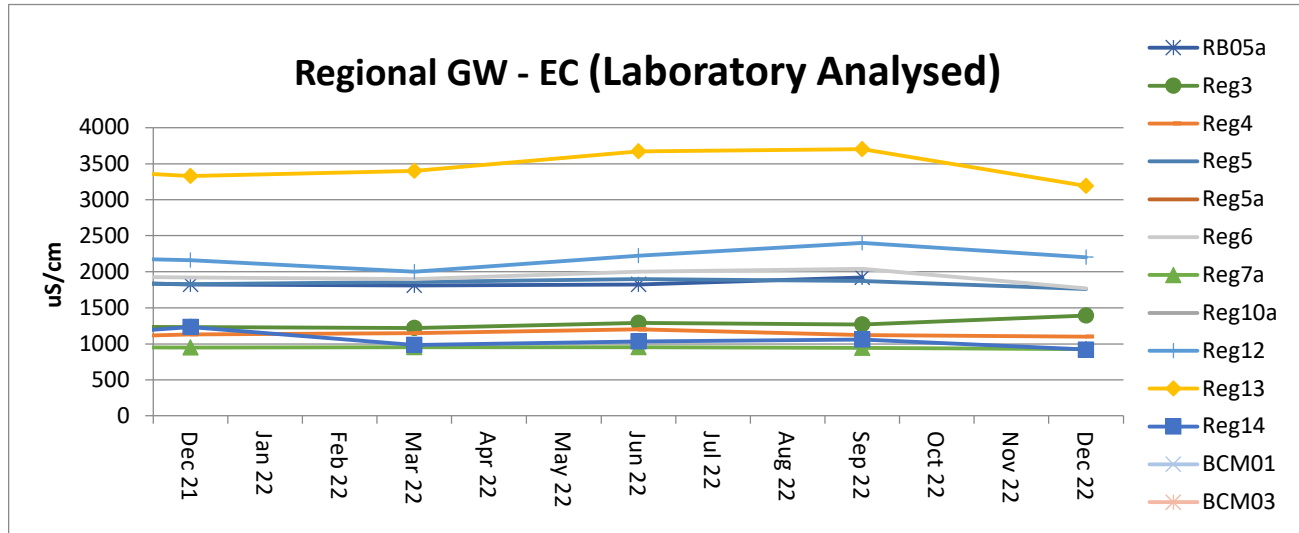
### Acidity / Alkalinity (pH)

Over the past twelve months pH readings across the regional bores have remained static with very little fluctuation.



### Electrical Conductivity

Laboratory Electrical Conductivity (EC) levels are all within historic groundwater EC range of 500 $\mu\text{S}/\text{cm}$  to 2,500 $\mu\text{S}/\text{cm}$ , with the exception of monitoring bore Reg13 which has a historic groundwater EC range of 2,500 $\mu\text{S}/\text{cm}$  to 4,100 $\mu\text{S}/\text{cm}$ . Within the last twelve months EC has remained static.

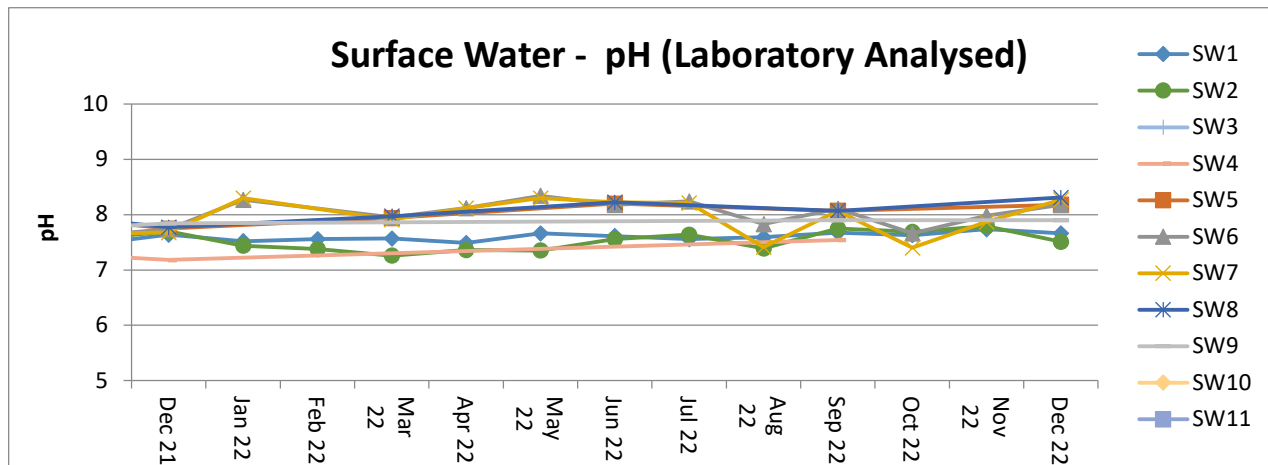


### B. Surface Water – Creeks and Rivers

Routine surface water monitoring is conducted in surrounding creeks and rivers on a monthly basis. Results for parameters including pH, EC and Total Suspended Solids (TSS) are shown in the figures below.

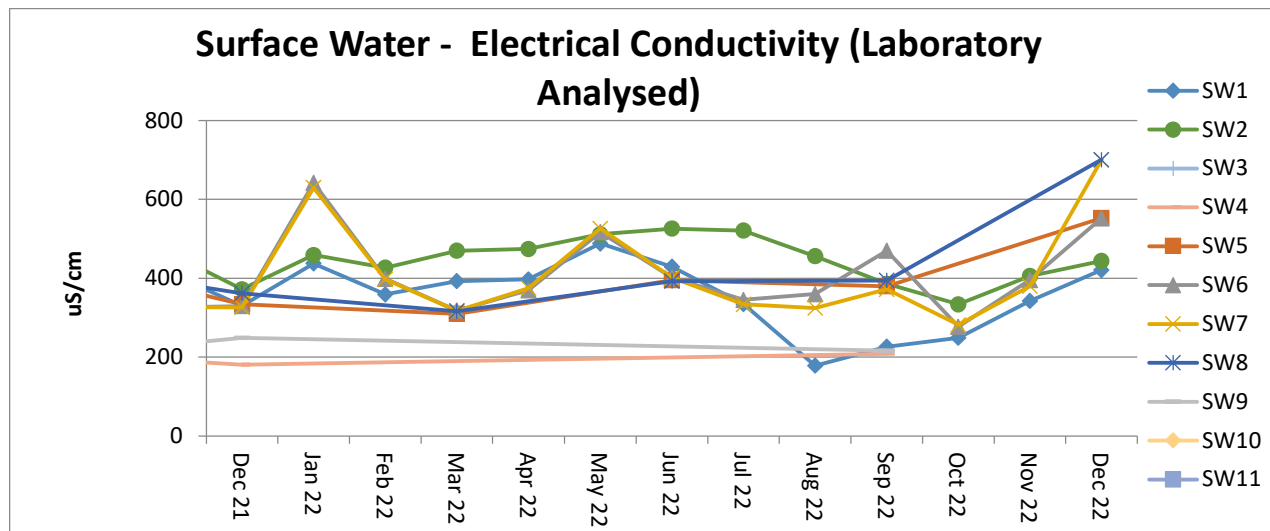
#### Acidity / Alkalinity (pH)

Monitoring results for pH in creeks and rivers surrounding MCCM are all trending within the ANZECC range for Irrigation, Ecosystem Health and Recreation.



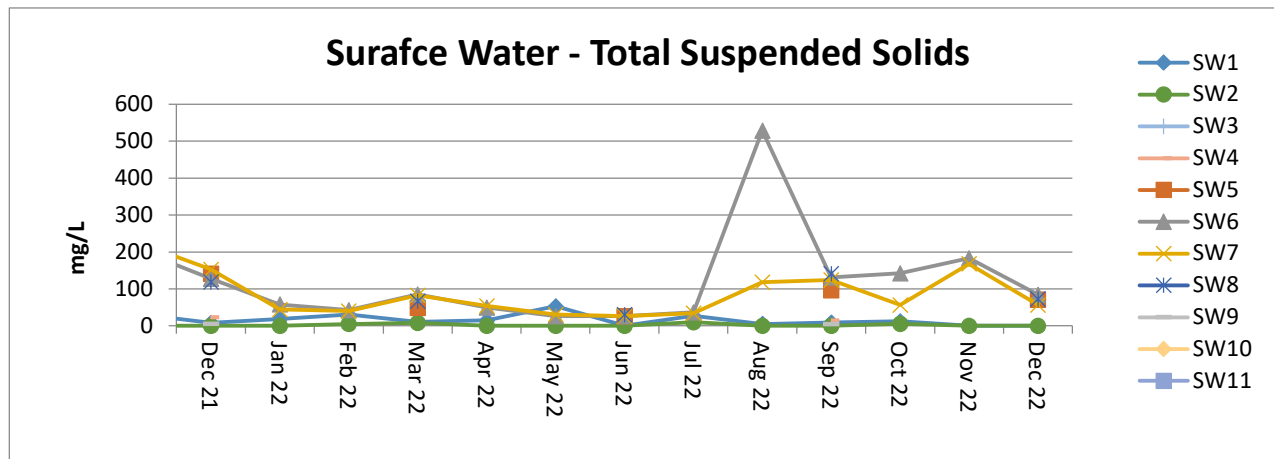
### Electrical Conductivity

Surface water EC trends have remained consistent with SW5, SW6, SW7 and SW8 all historically variable. SW5, SW6, SW7 and SW8 are points along the Namoi River which are subject to regulated and variable flow regimes.



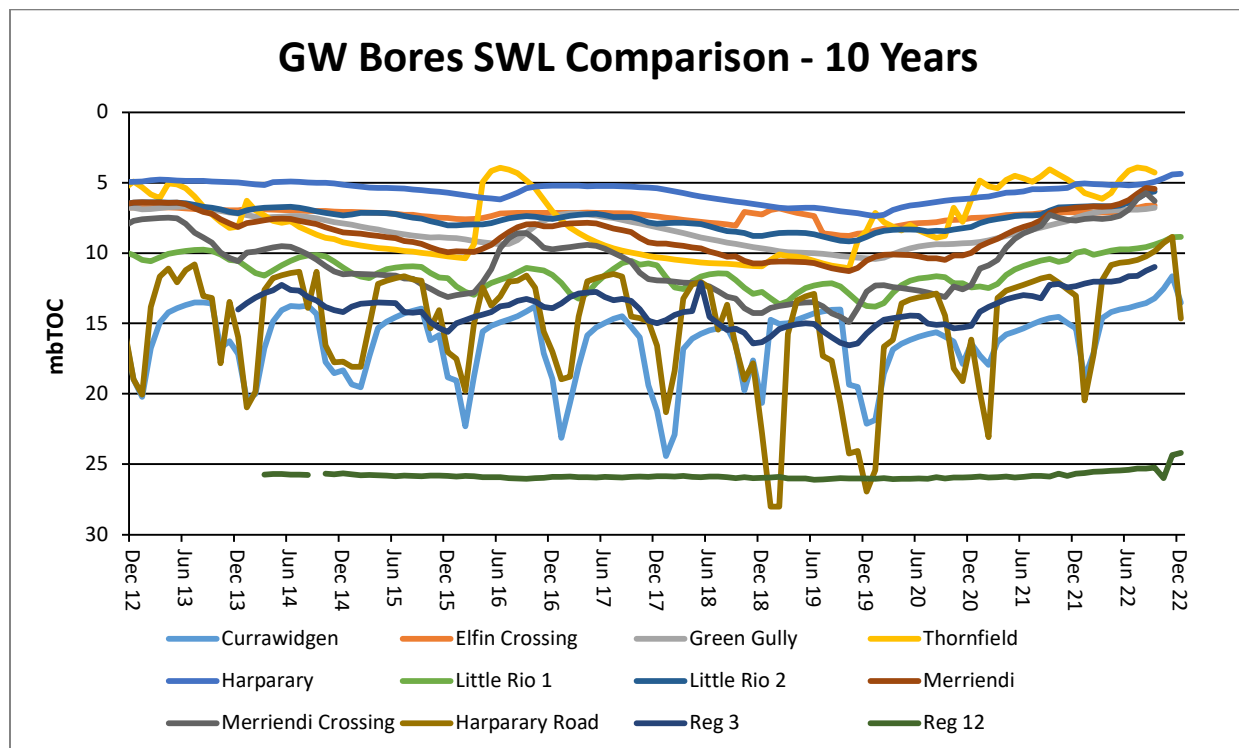
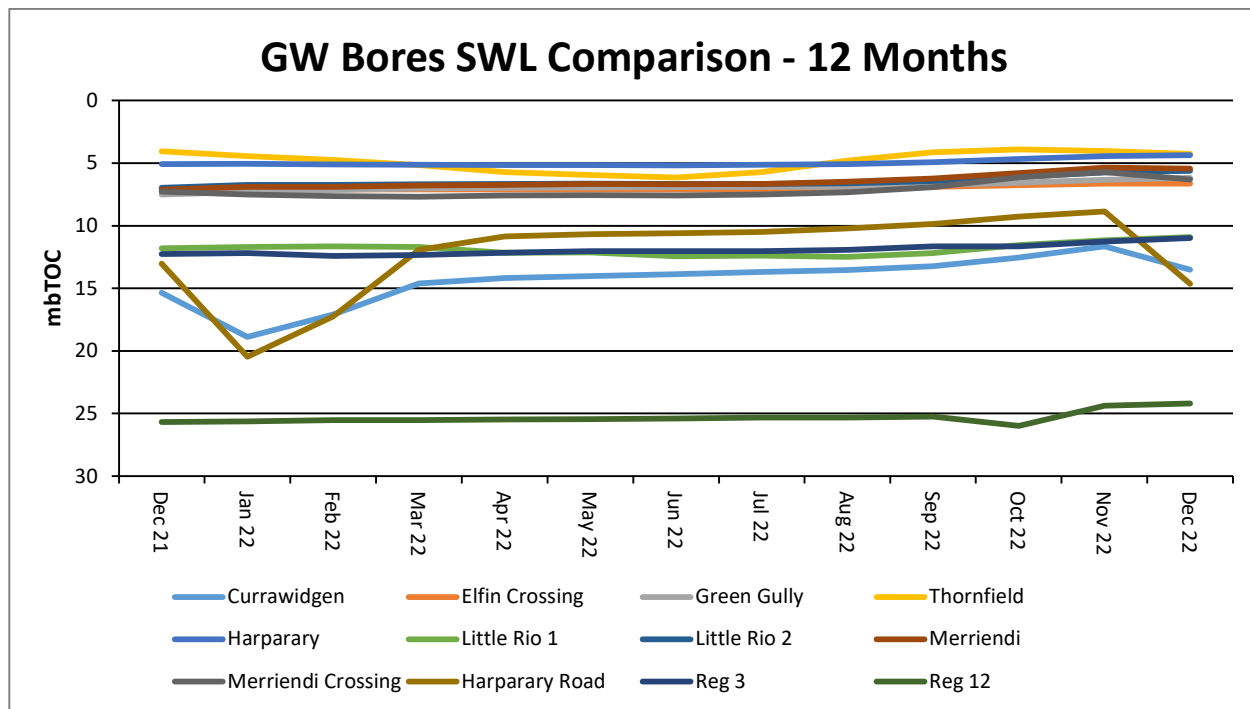
### Total Suspended Solids (TSS)

Surface water TSS trends have remained generally consistent with historical results. SW5, SW6, SW7 and SW8 are historically variable as they are located along the Namoi River which is subject to regulated and variable flow regimes. The Q4 results are still recovering from the significant rainfall events in Q3, as demonstrated on the graph below.



## Regional Groundwater monitoring

Maules Creek Coal Mine monitors regional bores across the region.



### **Rehabilitation**

Progressive rehabilitation works are ongoing. MCC completed 40ha of rehabilitation during 2022.

### **Feral Animal Management**

A feral animal control program will be taking place from the 6<sup>th</sup> of February until the 10<sup>th</sup> of March 2023 targeting feral pigs, goats, cats and foxes.

Most recent routine Whitehaven Biodiversity Feral Animal Control program (October to December 2022) results were:

- 493 out of total 798 pigs trapped or baited were from the Maules Offset properties; and,
- 20 out of total 25 Canid Pest Ejectors (1080) consumed were from the Maules Offsets properties.
- 136 Goats were captured from the Maules Offset properties.

### **Community Complaints**

2 complaints were received during Q4 CY2022. Please refer to the Community Complaints Register on the Whitehaven Coal Maules Creek website.