

## **Minutes of Sunnyside Coal Mine Community Consultation Committee**

**Meeting Held:** Wednesday 2<sup>nd</sup> March 2011

**Venue:** The meeting was held in the Board Room at Namoi Valley Brickworks.

**Commencement Time:** 3:30pm

### **1. Present and Apologies**

**Present:** Mr Michael Broekman (MB) (Chairman)  
Mr Bruce Reid (BR) (Community Representative)  
Mr Andrew Kennedy (AK) (Community Representative)  
Mr Glenn Bailey (GB) (Community Representative)  
Miss Jill Scealy (JS) (Environmental Officer - Whitehaven)  
Mr Michael Clark (MC) (Project Manager - Whitehaven)  
Mr Tim Muldoon (TM) (Community Liaison Officer - Whitehaven)  
Mr Danny Young (DY) (Environmental Manager - Whitehaven)

**Apologies:** Mr Stephen Benham (SB) (Council Representative)  
Mrs Vivienne Rooke (VR) (Bruce Reid's Representative)

Moved BR, seconded by AK

### **2. Previous Minutes**

Moved that the minutes of the previous meeting were a true and accurate record by BR, seconded by AK.

### **3. Business Arising from Previous Minutes**

Nil

### **4. Mine Progress**

MC provided an update on the mine progress, as summarised below:

- Operators - 8 full time and 6 permanent casual.
- Fitters - 1 permanent and 1 permanent contractor.
- Site management – 2 permanent and 1 contractor.
- 250 LTI free days as at 28<sup>th</sup> February 2011.
- 3 overburden blasts have been fired since the last meeting with no compliance issues.
- Independent Environmental Audit conducted in February with good closing remarks from the auditors. Report not finalised at this time.
- In the last three months 695,780m<sup>3</sup> of overburden has been moved, 86,684 tonnes of coal has been mined and 79,327 tonnes of coal has been transported offsite.

**5. Environmental Report**

DY provided the Environmental Monitoring Results, a copy of which is attached to these minutes.

BR said he believed that drilling activities are always dry as they emit toxic gas if wet. MC explained that this is incorrect and that water injection is used in drilling operations to reduce dust emissions. BR said he has noticed dust from drilling but is not concerned about dust from blasts because he's never seen it.

BR asked how often drilling is occurring. MC said approximately 70% of the time over strips that are approximately 50m wide and 300m long, but only one hole can be drilled at a time.

**6. Complaints**

Only one complaint received since the last meeting, as discussed in the Environment Monitoring Report.

**7. General Business**

7.1 JS provided an electronic and hard copy of the Annual Environmental Management Report (AEMR) to the Chair for the information of all CCC members. GB indicated that the Namoi CMA would like a copy of the AEMR and would be interested in attending the AEMR site tours.

7.2 DY explained the Independent Environmental Audit process that occurred in early February 2011. He advised that the formal audit document as well as an action plan to address any issues must be submitted to Department of Planning for review. This information will be available to the public.

**8. Date for next meeting**

Wednesday 1<sup>st</sup> June 2011 – 3:30pm, Namoi Valley Brickworks.

Meeting closed 3:50pm



Michael Broekman - Chairman

# Sunnyside Coal Mine Community Consultative Committee Meeting #9

## Environmental Monitoring Report December 2010 – February 2011

### Noise Monitoring

The noise limits applicable to operations on the Sunnyside Coal Mine, as prescribed in the Project Approval and Environment Protection Licence, are as follows:-

Day/Evening LAeq(15 minute)	Land
35	Any residence on, or more than 25% of, any privately owned land, except "Lilydale". Impact Assessment Criteria dB(A).

Monitoring was undertaken on the 8<sup>th</sup> and 9<sup>th</sup> February 2011 with results outlined below:

Noise Monitoring Results – 8 February 2011 (Evening)				
Location	Time	dB(A),Leq (15 min)	Wind speed/ direction	Identified Noise Sources as dB(A) Leq (15 min)
Illili	8:23pm	52	5m/s ESE	Birds & insects (52), wind in trees (48), <b>SCM (est. &lt;30)</b>
Ferndale	9:05pm	52	3.5m/s ESE	Birds & insects (52), wind (40), <b>SCM (30)</b>
Plain View	8:03pm	50	4m/s SE	Birds & insects (50), wind in trees (40), <b>SCM inaudible</b>
Lilydale	7:45pm	45	4m/s SE	Birds & insects (42), wind in trees (40), traffic (38), <b>SCM inaudible</b>

SCM Noise Monitoring Results – 9 February 2011 (Day)				
Location	Time	dB(A),Leq	Wind speed/ direction	Identified Noise Sources
Illili	9:45am	45	3m/s E	Birds (45), traffic (35), <b>SCM (&lt;30)</b>
Ferndale	10:03am	55	3m/s E	Traffic (55), birds & insects (41), <b>SCM inaudible</b>
Plain View	10:22am	47	2.5m/s E	Birds (47), traffic (35), <b>SCM inaudible</b>
Lilydale	10:40am	43	2.5m/s E	Traffic (40), birds & insects (39), wind (30), <b>SCM inaudible</b>

The results indicate compliance at all receivers throughout the monitoring period. Monitoring was also conducted at the "Glendower" residence on the 8<sup>th</sup> and 9<sup>th</sup> February 2011 to confirm if mine noise remained within compliance limits at that residence, with results confirming compliance as per the table below:

Noise Monitoring Results – 8 & 9 February – Glendower				
Date	Time	dB(A),Leq (15 min)	Wind speed/ direction	Identified Noise Sources as dB(A) Leq (15 min)
8 Feb	8:45 pm	46	3.5m/s ESE	<b>Birds &amp; insects (44), wind (40), SCM (34), traffic (30)</b>
9 Feb	9:20 am	46	3m/s E	Birds (45), traffic (40), <b>SCM (&lt;30)</b>

In addition to mine noise assessment, monitoring was undertaken at the “Roslyn” property adjacent to Torrens Lane to determine road noise levels from coal haulage. Over a monitoring period of 1 hour, a total of 19 heavy vehicle movements were measured, consisting of 7 full and 7 empty coal haulage trucks, along with 5 other heavy vehicles. The measured Leq noise level from vehicles on Torrens Lane was of 54 dB(A) Leq (1 hour), which is compliant with the noise criterion of 55 dB(A) Leq (1 hour).

## **Air Quality Monitoring**

### **Deposited Dust**

Deposited dust levels for the site for the last 12 months are shown in the following table.

**Sunnyside Mine – Deposited Dust**

<b>Month</b>	<b>SD1 Ferndale</b>	<b>SD3 Plainview</b>	<b>SD4 Lilydale</b>	<b>SD5 Ivanhoe</b>	<b>SD6 Illili</b>	<b>SD7 Innisvale</b>	<b>SD8 Woodlawn</b>
February 2010	2.5	1.3	0.6	1.2	0.6	0.7	-
March 2010	11.9	3.0	1.9	1.8	1.8	2.5	-
April 2010	0.9	1.2	0.9	1.8	0.6	0.6	-
May 2010	1.0	1.1	0.6	1.4	2.5	0.6	-
June 2010	0.3	1.4	0.9	13.1	1.2	0.4	-
July 2010	0.4	0.4	0.2	4.0	1.3	0.5	-
August 2010	3.2	0.4	0.3	1.2	3.0	2.0	-
September 2010	0.7	0.6	0.9	2.5	6.3	1.8	-
October 2010	10.8	0.5	0.5	1.2	0.3	0.5	-
November 2010	2.8	1.3	2.2	0.8	1.1	2.0	2.0
December 2010	0.5	2.5	33.0	1.5	1.1	4.8	1.4
January 2011	7.1	N/A	18.6	3.5	2.0	6.1	1.0
<b>Annual Average</b>	<b>3.5</b>	<b>1.2</b>	<b>5.1</b>	<b>2.8</b>	<b>1.8</b>	<b>2.0</b>	<b>1.5</b>

Deposited dust levels have increased at some sites over the last 3 months, with varied results recorded during December 2010 and January 2011. Lilydale (project related) recorded very high results of 33.0g/m<sup>2</sup>/month and 18.6g/m<sup>2</sup>/month in December and January. As these results are similar to those experienced during the 2009 dust storms, they are considered to be anomalies with the source of contamination unknown. The results have subsequently pushed the annual average above the annual average limit to 5.1g/m<sup>2</sup>/month. Innisvale has also recorded elevated results of 4.8g/m<sup>2</sup>/month and 6.1g/m<sup>2</sup>/month in December and January, however the annual average remains below the limit of 4.0g/m<sup>2</sup>/month.

The elevated results experienced at some monitoring locations in January are likely to be partly associated with the recent dry conditions. Future deposited dust results will be closely monitored to detect and manage any future exceedances, with the objective to keep the annual average below 4g/m<sup>2</sup>/month.

## PM<sub>10</sub> Data

Compliance with the 24hr criterion of 50µg/m<sup>3</sup> has been maintained during the reporting period.

PM<sub>10</sub> measurements taken for the “Illili” High Volume Air Sampler (HVAS) are returning a running annual average of 8.81µg/m<sup>3</sup>, which is well below the annual average limit of 30µg/m<sup>3</sup>.

PM<sub>10</sub> measurements taken for the “Lilydale” HVAS are returning an annual average of 7.1µg/m<sup>3</sup>, which is also well below the annual average limit of 30µg/m<sup>3</sup>.

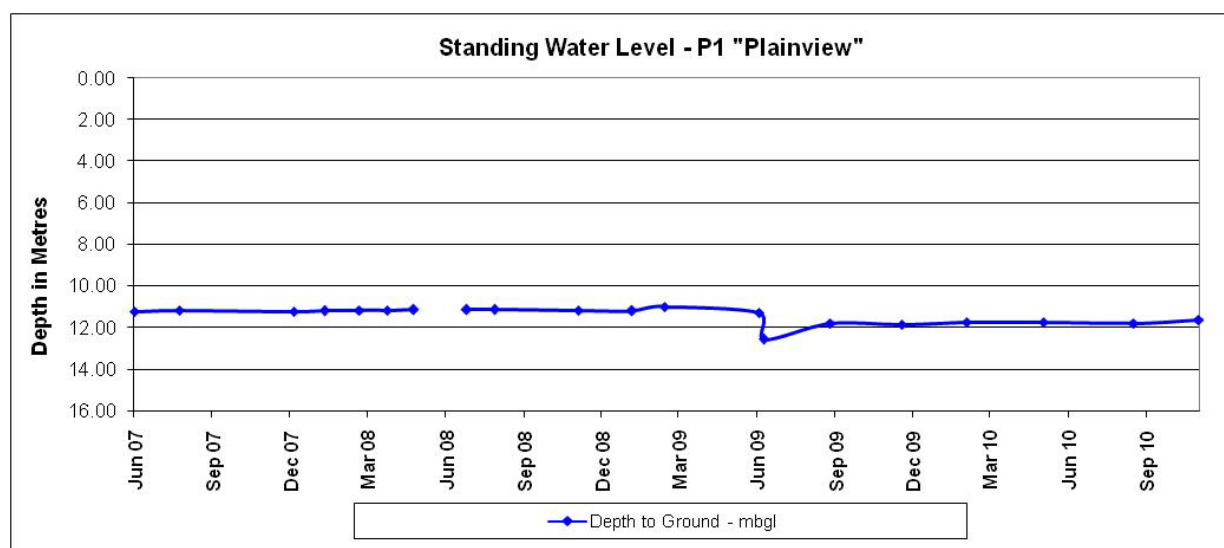
## Blast Monitoring

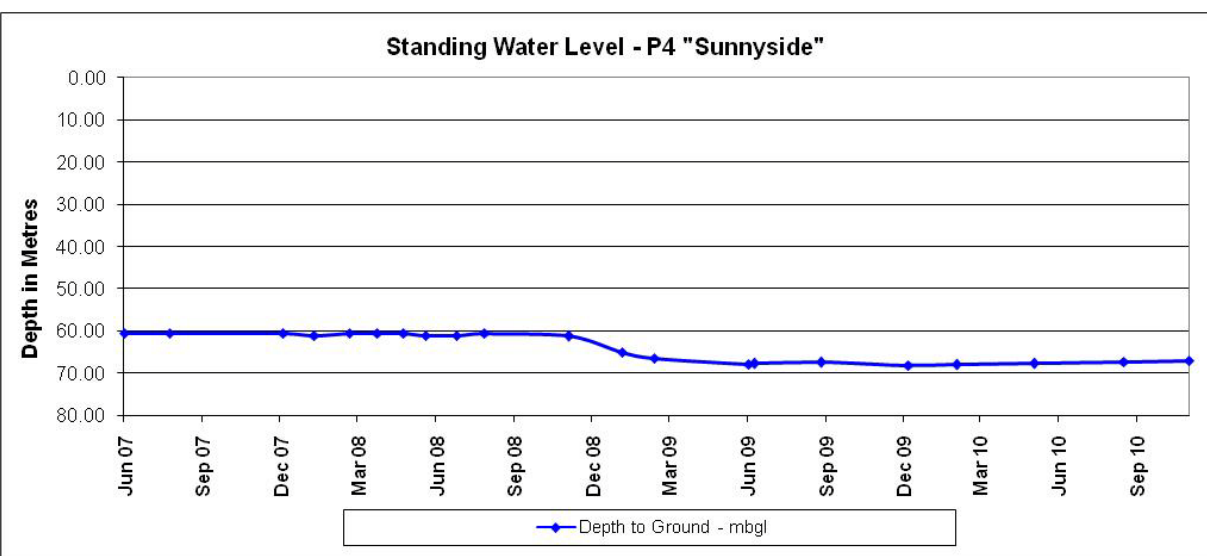
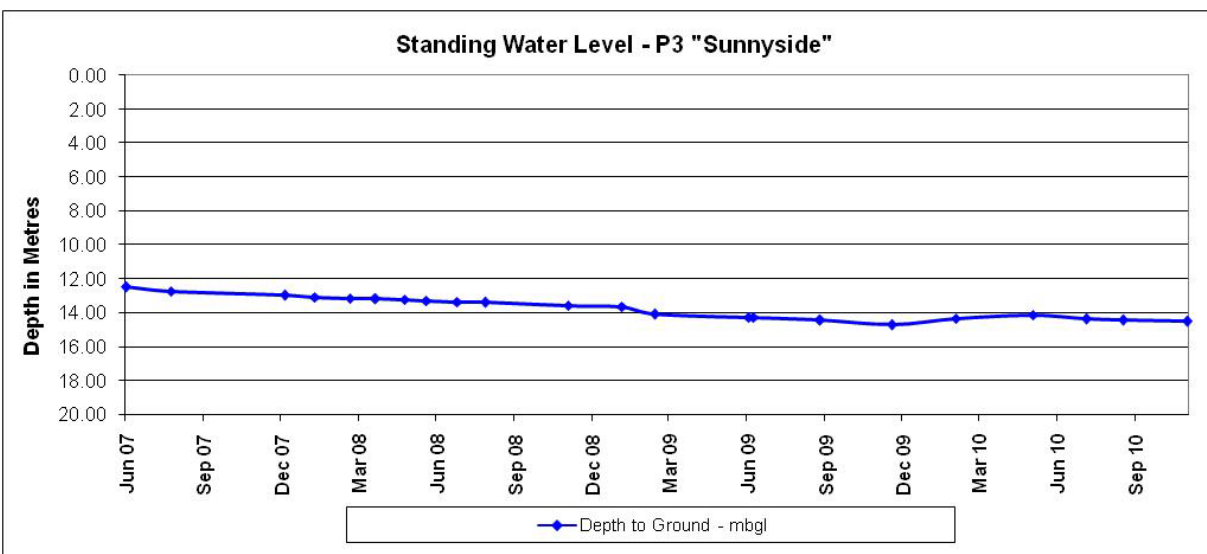
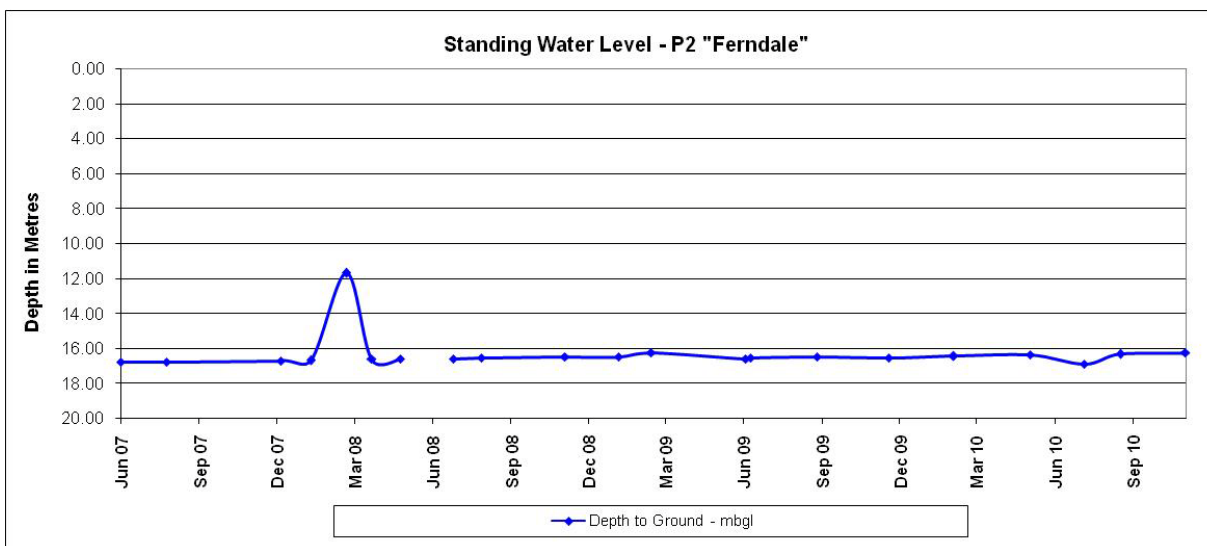
Since the first shot there have been 25 blasts. All blasts during this report period have been compliant within the limits of 115dBL and 5mm/s.

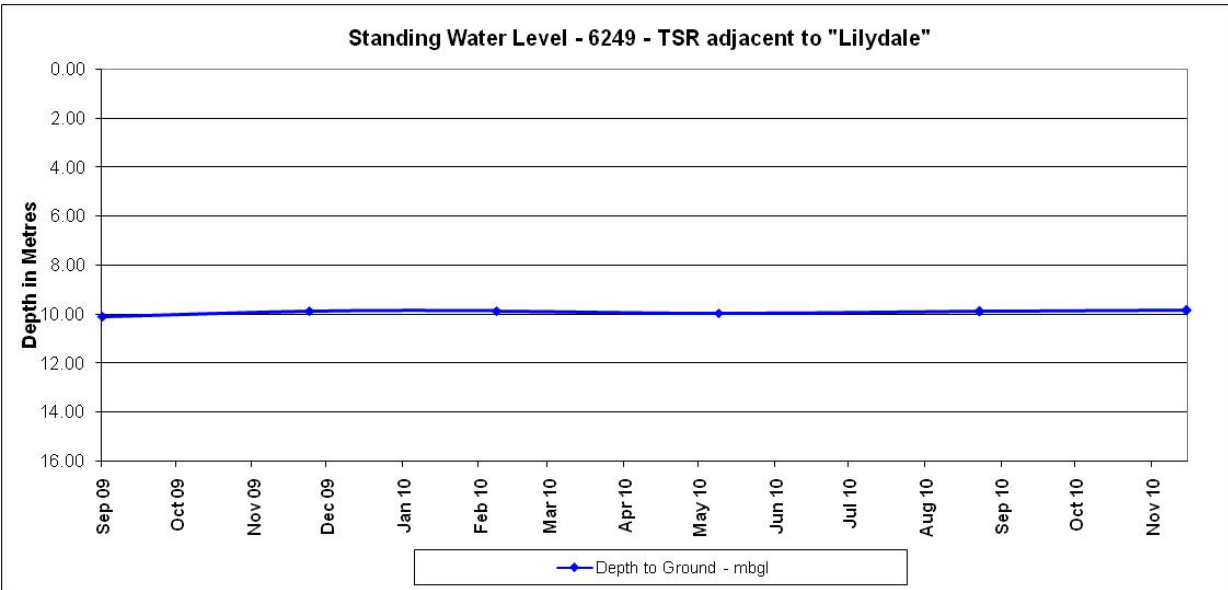
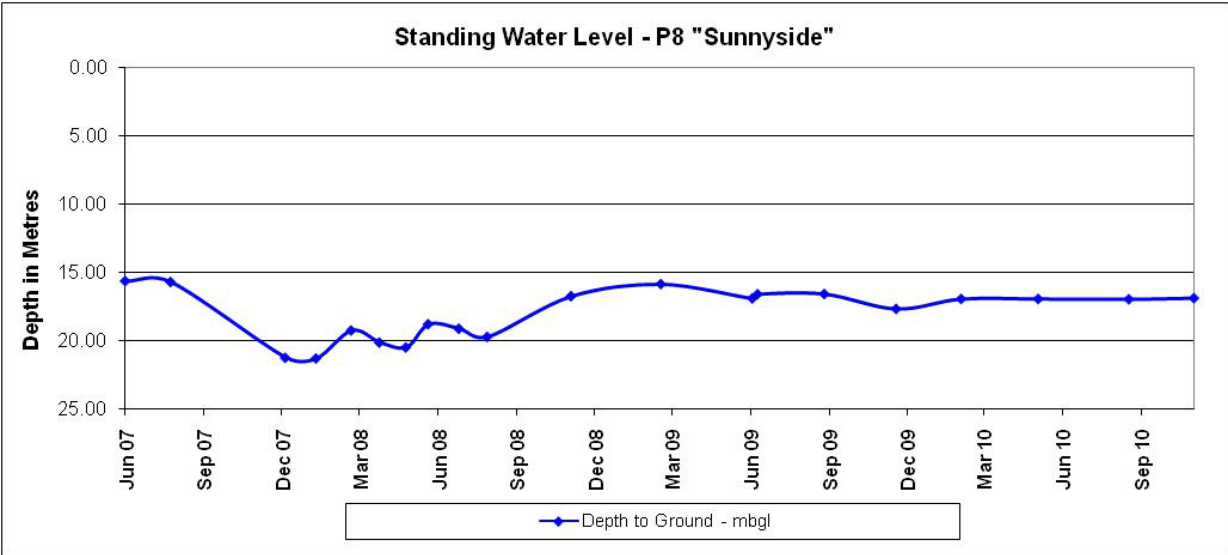
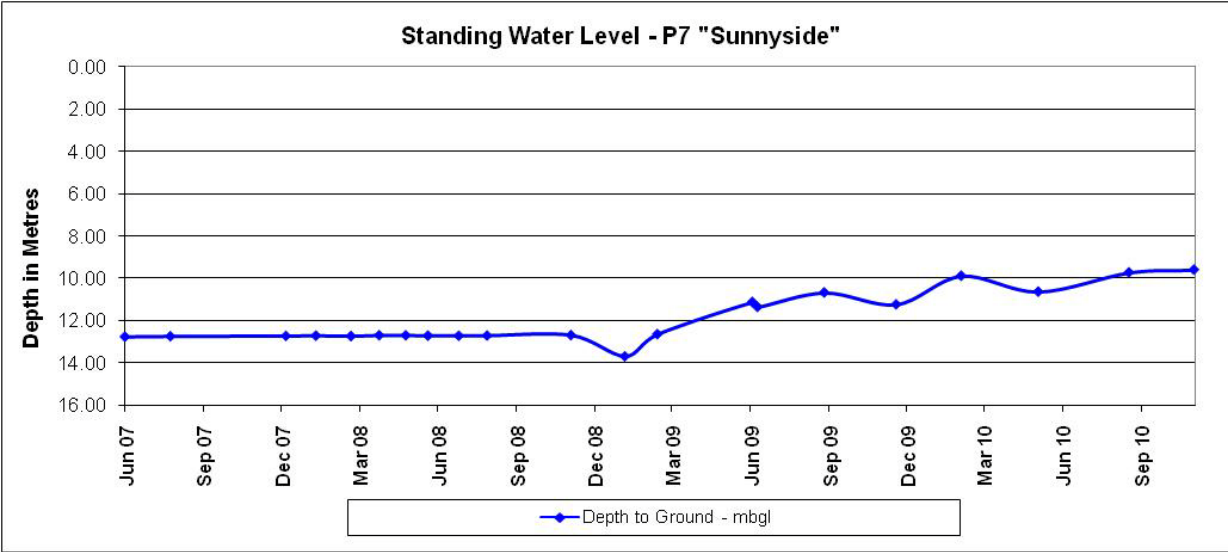
To date, the highest overpressure recorded is 114.8 dBL recorded at “Illili” on the 17<sup>th</sup> April 2010 & 23<sup>rd</sup> June 2010. The highest ground vibration recorded is 2.39mm/s recorded at “Plain View” on the 17<sup>th</sup> April 2009.

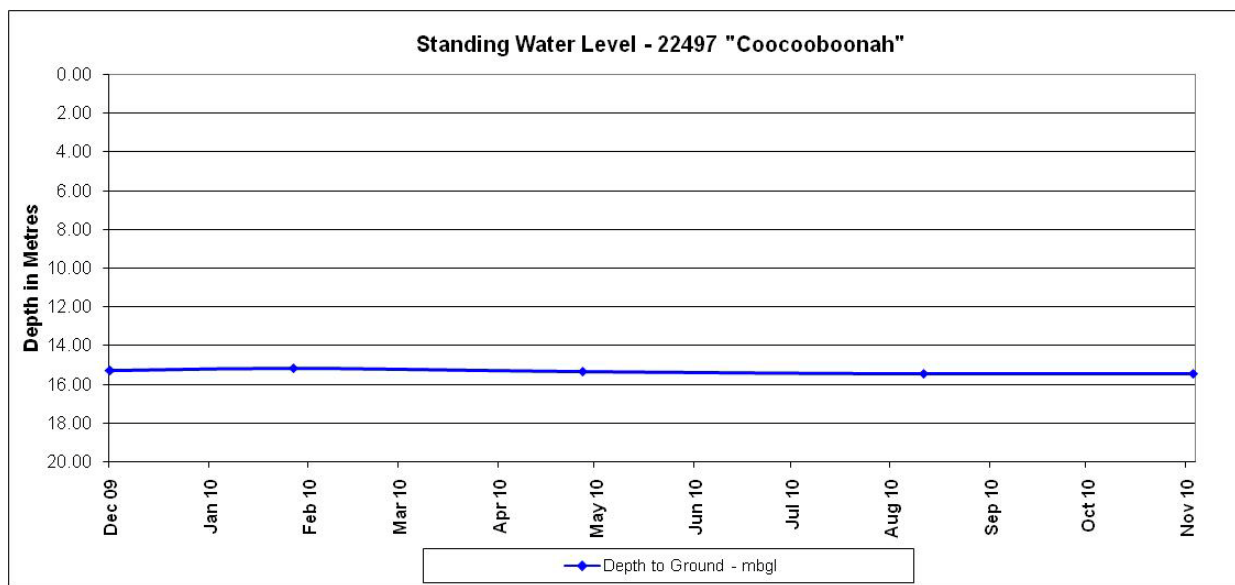
## Groundwater Monitoring

Groundwater monitoring is undertaken from a range of monitoring piezometers and water bores both within and surrounding the mine site. Standing Water Level (SWL) checks are undertaken on a quarterly basis, with full water quality sampling undertaken on a 6 monthly basis. Monitoring results to date for SWLs are shown below with no significant impact/trend indicated from mining operations. The next round of monitoring is expected to be conducted during February 2011.









The above results indicate minor variability in groundwater levels with no significant trend applicable. These graphs represent water bores and piezometers which are currently accessible for monitoring.

### **Surface Water**

One wet weather discharge event has occurred since the last CCC meeting. The wet weather discharge occurred after 64.8mm of rain on the 10<sup>th</sup> December 2010, from storage dams SD3 and SD4. Both SD3 and SD4 recorded results which were compliant with EPL thresholds, with SD4 recording a total suspended solid (TSS) of 50mg/L, equaling the limit of 50mg/L.

Coocooboonah Creek upstream (CCUS) and downstream (CCDS) samples were also taken at the time of discharge. High TSS was recorded at both locations, being 646mg/L at CCU and 2030mg/L at CCD. These high results are likely to be associated with the extreme amount of rainfall received in a short period of time, causing significant flows across the area.

Surface water sampling is due in February and results will be included in the next CCC report.

### **Complaints**

One complaint was received during this reporting period on the 22<sup>nd</sup> December 2010 at 2:34pm, via phone call to the Project Manager. The complaint was in relation to truck noise from coal haulage from Sunnyside, and in particular one truck, with excessive use of exhaust brakes, and failing to stop/give way. The Project Manager advised the complainant they would discuss the matter with the contract truck driver. The Sunnyside Project Manager advised the truck driver about the complaint and requested that he comply with traffic laws and signs. The driver was advised that the use of exhaust brakes in the vicinity of nearby residences should be minimised by some prior speed reduction. The driver indicated that they would attempt such action.



Danny Young (Environmental Manager) provided advice to Toll and asked that they address the matter with the contractor to ensure drivers obey road rules, particularly in terms of stopping and giving way as required, as well as limiting the use of exhaust braking, especially in proximity to residences.

### **Rehabilitation**

Approximately 160 White Box and Yellow Box, or 'Koala friendly' species were planted in early January 2011, along the eastern boundary of the mine site as a part of the Koala Corridor.

# **Minutes of the 10<sup>th</sup> Meeting of the Sunnyside Coal Mine Community Consultative Committee**

**Meeting Held:** 1<sup>st</sup> June 2011, 3:30pm

**Venue:** The meeting was held in the Board Room at Namoi Valley Brickworks.

## **1. Present and Apologies**

**Present:** Mr Michael Broekman (MB) (Chairman)  
Mr Bruce Reid (BR) (Community Representative)  
Mrs Vivienne Rooke (VR) (Bruce Reid's Representative)  
Mr Andrew Kennedy (AK) (Community Representative)  
Mr Glenn Bailey (GB) (3:40pm) (Community Representative)  
Miss Jill Scealy (JS) (Environmental Officer - Whitehaven)  
Mr Michael Clark (MC) (Project Manager - Whitehaven)  
Mr Tim Muldoon (TM) (Community Liaison Officer - Whitehaven)  
Mr Danny Young (DY) (Environmental Manager - Whitehaven)

**Apologies:** Mr Stephen Benham (SB) (Community Representative)

Moved: AK and MC

## **2. Previous Minutes**

Minutes of the previous meeting were adopted as a true record on the motion of AK and BR.

BR commented on Section 5 of the minutes where it said MC had explained he was incorrect about drilling activities being dry as they emit toxic gas when they are wet. He said that even when it rains there is some dust coming from the area that's being drilled. He said he is concerned about his drinking water and doesn't believe the mine is using water for drilling.

MC said he stands by his statement that the drill rigs use water during drilling. He said they do their best to minimise dust but there will always be some dust associated with drilling.

The committee agreed that the minutes shall remain as presented.

## **3. Business Arising**

- 3.1. JS provided an electronic copy of the AEMR to Glenn Bailey (CMA) and advised that she was awaiting a reply from DTIRIS regarding inclusion of the CMA in AEMR site inspections. Update to be provided at next meeting.
- 3.2. JS advised that the Independent Environmental Audit had been submitted with an action plan to the Department of Planning and Infrastructure (DoPI) for review. A copy of the audit report will be issued to the CCC on acceptance from DoPI.

#### **4. Mine Progress Report**

MC provided an update on the mine's progress as follows:

- Operators - 12 full time, 7 permanent casual and 3 part time casual.
- Fitters - 1 permanent and 1 permanent contractor.
- Site management – 2 permanent and 1 part time contractor.
- 332 LTI free days as at 31<sup>st</sup> May 2011.
- Five overburden blasts have been fired since the last meeting with an issue with Shot 28 (details provided in Environmental Monitoring Report).
- Some reshaping and topsoiling of the north and eastern faces of the main waste emplacement undertaken with the north east corner of the emplacement seeded to crop in early May.
- In the last three months 926,023 bcm of overburden has been moved, 97,484 tonnes of coal has been mined and 53,646 tonnes of coal has been transported offsite. Quantities are estimates as May survey results not available at time of meeting.
- The Sunnyside breaker feeder/crusher unit was commissioned in mid March. This infrastructure, with an in-built water spray system, has greatly helped in ROM pad coal dust suppression.

MC said that production had increased and VR asked by how much. MC explained that it's actually a recovery in production rates following the reduced production which resulted from the wet weather in 2010.

MC also advised that substantial works had been conducted on Coocooboonah Lane to repair damage caused during the wet weather in 2010.

VR asked how many truck movements were occurring each day and MC advised that the average was about 75 truck loads (ie. 150 truck movements). VR said that the original figure provided when the Company announced the mine was 120 truck movements. Whitehaven representatives committed to investigating this and providing an update at the next meeting.

VR said that it is very noisy at the Woodlawn property. JS asked whether the noise was from Coocooboonah Land or the Oxley Highway. VR said the noise was from the highway and acknowledged that she couldn't distinguish whether the noise was from mine related vehicles or not but that the highway was much noisier than when she was younger.

#### **5. Environmental Monitoring Report**

DY presented the environmental monitoring results which are attached in the Environmental Monitoring Report.

VR asked how many dust monitors are on privately owned land. DY advised that all monitors are with the exception of Lilydale which is mine-owned.

BR advised that whilst he wasn't at home at the time of the blast on the 9<sup>th</sup> April 2011 he had been advised that it was "a home wrecker". BR said

nobody knows what damage blasts are doing to farmer's bores and other infrastructure. He told the committee that he had paid for an engineer's report when the mine started but he wasn't sure what good it would do. He said money talks all languages and that by the time anything happened at his property the engineer might be working for the mine.

MC committed to reviewing the blast monitor results for the 9<sup>th</sup> April shot and providing them at the next meeting. He said he could guarantee that the blast wouldn't have exceeded any limits as we would have dealt with it already.

The issue of blast exceedance on the 3<sup>rd</sup> May 2011 was discussed, and that it was thought that shot design, including the extent of stemming used in the blast holes, contributed to the shot ejecting from the holes rather than being absorbed by the burden. MC explained that stemming (20mm aggregate) in the blast holes is used to prevent ejection of the blast energy from the hole. He also explained the concept of double stitching which is an increase in the frequency of holes in the back row of the shot pattern with the additional holes usually at half depth (ie. 7m spacing reduced to 3.5m spacing in the final row). Double stitching reduces highwall back-break which allows greater highwall stability. In the case of the blast exceedance, the depth of stemming used and the double stitch design contributed to the elevated overpressure result.

## **6. Complaints**

Complaints were discussed in the Environmental Monitoring Report.

MB said that Bruce's report of concern about the 9<sup>th</sup> April 2011 blast should be recorded as an official complaint. Bruce was unable to provide details about who complained.

BR indicated that he thought bigger blasts were more economically efficient and asked what area is blasted at one time. MC said the area varies but is generally about 120m x 50m. He said that large blasts aren't necessarily more cost effective and that the size of a blast doesn't correlate with the noise impact.


## **7. General Business**

JS (on behalf of SB) requested that the meetings be moved to another time so as not to clash with Council meetings. The committee agreed that meetings would be held on the second Wednesday of the month.

## **8. Next Meeting**

Wednesday 14<sup>th</sup> September 2011, 3:30pm

Meeting closed at 4:10pm



Michael Broekman - Chairman

# Sunnyside Coal Mine Community Consultative Committee Meeting #10

## Environmental Monitoring Report March 2011 – May 2011

### Noise Monitoring

The noise limits applicable to operations on the Sunnyside Coal Mine, as prescribed in the Project Approval and Environment Protection Licence, are as follows:-

Day/Evening LAeq(15 minute)	Land
35	Any residence on, or more than 25% of, any privately owned land, except "Lilydale". Impact Assessment Criteria dB(A).

Monitoring was undertaken on the 19<sup>th</sup> May 2011 with results outlined below:

Sunnyside Noise Monitoring Results – 19 May 2011 (Day)				
Location	Time	dB(A), Leq	Wind speed/ direction	Identified Noise Sources as dB(A) Leq (15 min)
Illili	4:19 pm	41	1.2m/s S	Birds & insects (40), <b>SCM (33)</b>
Ferndale	4:55 pm	43	1m/s S	Birds & insects (40), traffic (39), <b>SCM (30)</b>
Plain View	4:00 pm	40	2m/s SSW	Birds & insects (38), traffic (36), <b>SCM inaudible</b>
Lilydale	3:40 pm	40	2m/s SSW	Traffic (39), birds (32), <b>SCM inaudible</b>

Sunnyside Noise Monitoring Results – 19 May 2011 (Evening)				
Location	Time	dB(A), Leq	Wind speed/ direction	Identified Noise Sources as dB(A) Leq (15 min)
Illili	8:24 pm	34	0.3m/s S	Birds (30), <b>SCM (29)</b> , traffic (28)
Ferndale	9:05 pm	32	Calm	<b>SCM (32)</b> , insects (23)
Plain View	7:58 pm	35	0.8m/s S	Traffic (33), insects (30), <b>SCM (&lt;25)</b>
Lilydale	7:40 pm	26	0.8m/s S	Insects (26), <b>SCM inaudible</b>

The results indicate compliance at all receivers throughout the monitoring period. Monitoring was also conducted at the "Glendower" residence on the 19<sup>th</sup> May 2011 to confirm if mine noise remained within compliance limits at that residence, with results confirming compliance as per the table below:

Sunnyside Noise Monitoring Results – 19 May 2011 - Glendower				
Date	Time	dB(A), Leq	Wind speed/ direction	Identified Noise Sources as dB(A) Leq (15 min)
19 May	4:38 pm	46	1.2m/s S	Birds & insects (45), traffic (38), <b>SCM (31)</b>
19 May	8:44 pm	33	Calm	<b>SCM (31)</b> , traffic (26), birds (26)

Road noise monitoring was not undertaken, as no haulage was being carried out from Sunnyside during the monitoring period.

### Air Quality Monitoring

#### **Deposited Dust**

Deposited dust levels for the site for the last 12 months are shown in the following table.

#### **Sunnyside Mine – Deposited Dust**

Month	SD1 Ferndale	SD3 Plainview	SD4 Lilydale	SD5 Ivanhoe	SD6 Illili	SD7 Innisvale	SD8 Woodlawn
May 2010	1.0	1.1	0.6	1.4	2.5	0.6	-
June 2010	0.3	1.4	0.9	13.1	1.2	0.4	-
July 2010	0.4	0.4	0.2	4.0	1.3	0.5	-
August 2010	3.2	0.4	0.3	1.2	3.0	2.0	-
September 2010	0.7	0.6	0.9	2.5	6.3	1.8	-
October 2010	10.8	0.5	0.5	1.2	0.3	0.5	-
November 2010	2.8	1.3	2.2	0.8	1.1	2.0	2.0
December 2010	0.5	2.5	33.0	1.5	1.1	4.8	1.4
January 2011	7.1	N/A	18.6	3.5	2.0	6.1	1.0
February 2011	7.4	N/A	2.6	0.7	0.6	0.8	1.0
March 2011	2.7	0.8	1.1	0.6	0.8	0.7	0.5
April 2011	0.7	0.8	0.8	1.0	0.6	2.1	0.7
<b>Annual Average</b>	<b>3.1</b>	<b>1.0</b>	<b>5.1</b>	<b>2.6</b>	<b>1.7</b>	<b>1.9</b>	<b>1.1</b>

The deposited dust monitoring over the reporting period has showed that the annual average at all sites is below the 4g/m<sup>2</sup>/month criterion, excluding “Lilydale” where contamination in December 2010 and January 2011 caused elevated results. Over time the annual average at “Lilydale” is expected to decrease. It’s noted also that SD1 at “Ferndale” had elevated results in January and February, due to sample contamination (organic matter). The results from March and April have shown a dramatic decrease in deposited dust at this site.

## **PM<sub>10</sub> Data**

Compliance with the 24hr criterion of 50µg/m<sup>3</sup> has been maintained during the reporting period.

PM<sub>10</sub> measurements taken for the “Illili” High Volume Air Sampler (HVAS) are returning a running annual average of 8.31µg/m<sup>3</sup>, which is well below the annual average limit of 30µg/m<sup>3</sup>.

PM<sub>10</sub> measurements taken for the “Lilydale” HVAS are returning an annual average of 6.32µg/m<sup>3</sup>, which is also well below the annual average limit of 30µg/m<sup>3</sup>.

## **Blast Monitoring**

Since the first shot there have been 30 blasts. On the 3<sup>rd</sup> of May, during blast 28, an exceedance of the overpressure criteria of 115.0dBL was recorded at monitoring points “Innisvale” (128.8dBL), “Plain View” (120.6dBL) and “Illili” (120.3dBL). A full investigation into the cause of the overpressure exceedance was carried out by the blasting contractor Orica, and identified a design fault to be the cause in the overpressure exceedance. Three main factors were identified in the blast design that were found to be the cause of the overpressure exceedance. These included:

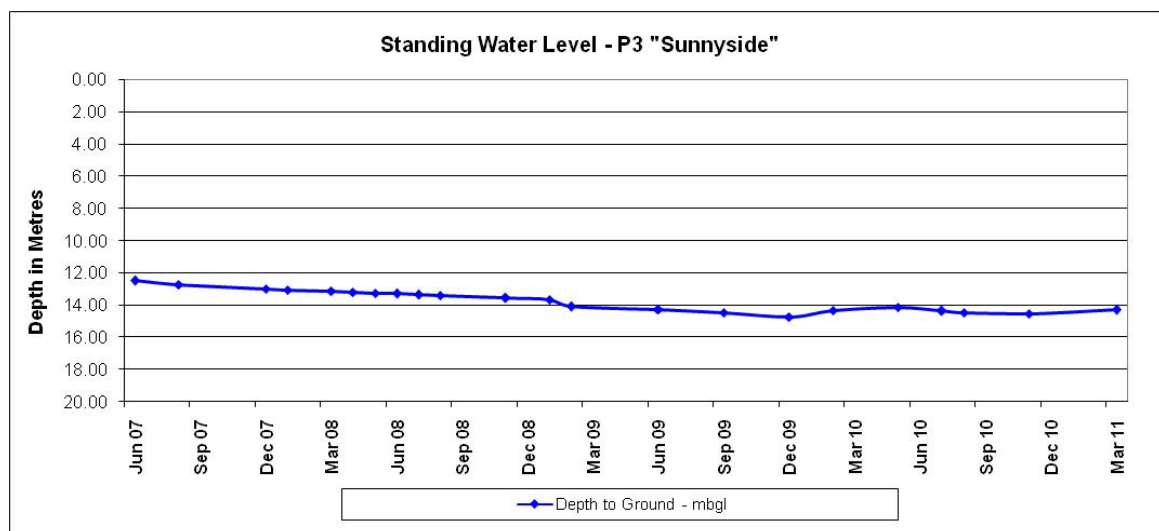
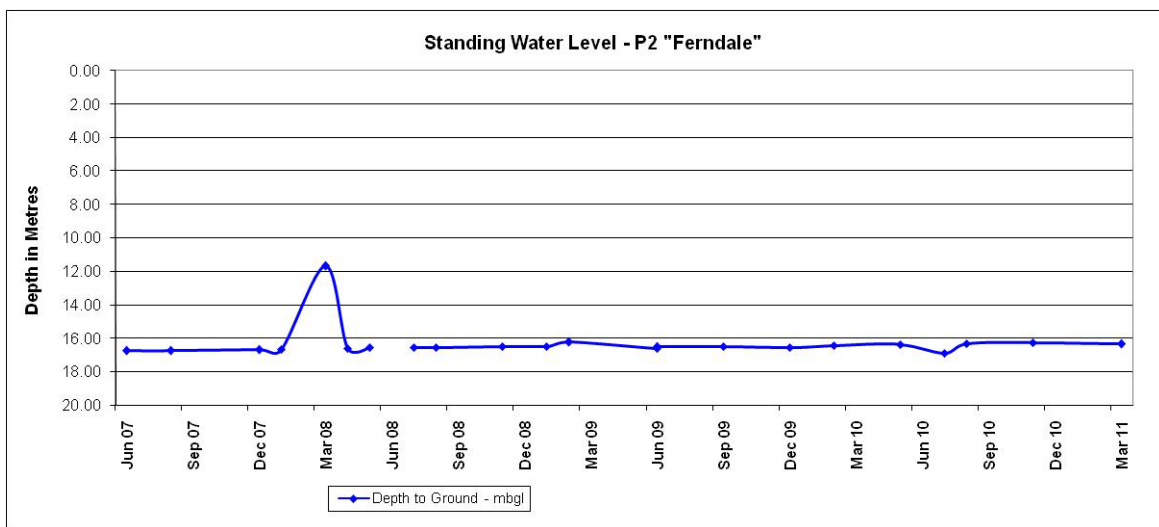
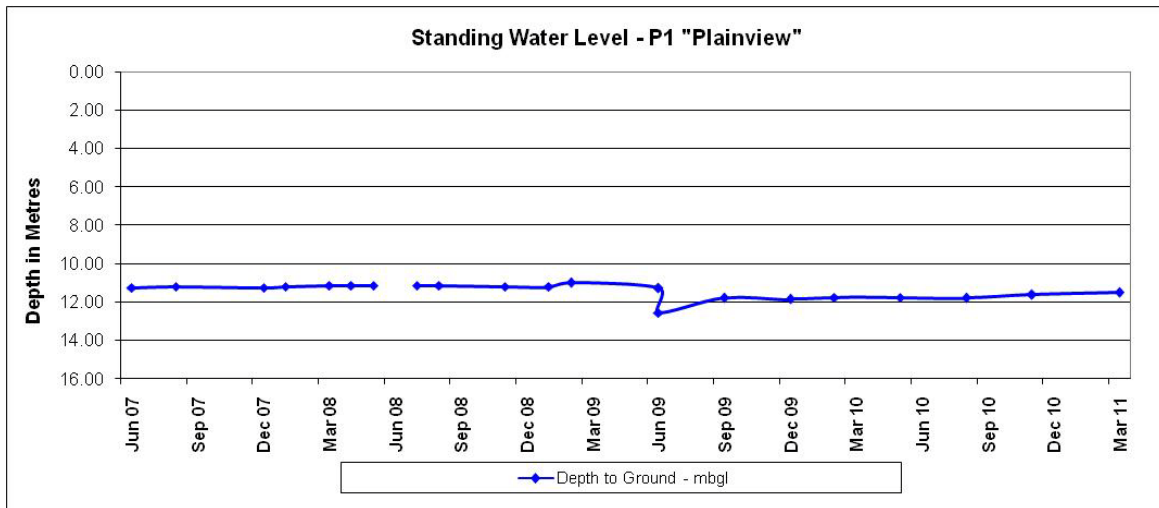
1. Holes having a lower than recommended stemming height and pocket charges which was done in an attempt to reduce oversize;
2. The row in which the ejection occurred had groups of 2 holes initiating very close together in time and space;
3. The area in which the ejection occurred was double stitched, giving a high powder factor close to the surface where the holes converge.

Whitehaven and the blasting contractor will work closely to ensure this fault does not occur in future. Advice has issued to the Department of Planning and Department of Environment, Climate Change and Water advising of the exceedance in blast criteria. Whitehaven is currently awaiting a formal response from these agencies as to any additional actions required. Advice also issued to the residents of the monitoring locations which recorded the overpressure exceedance.

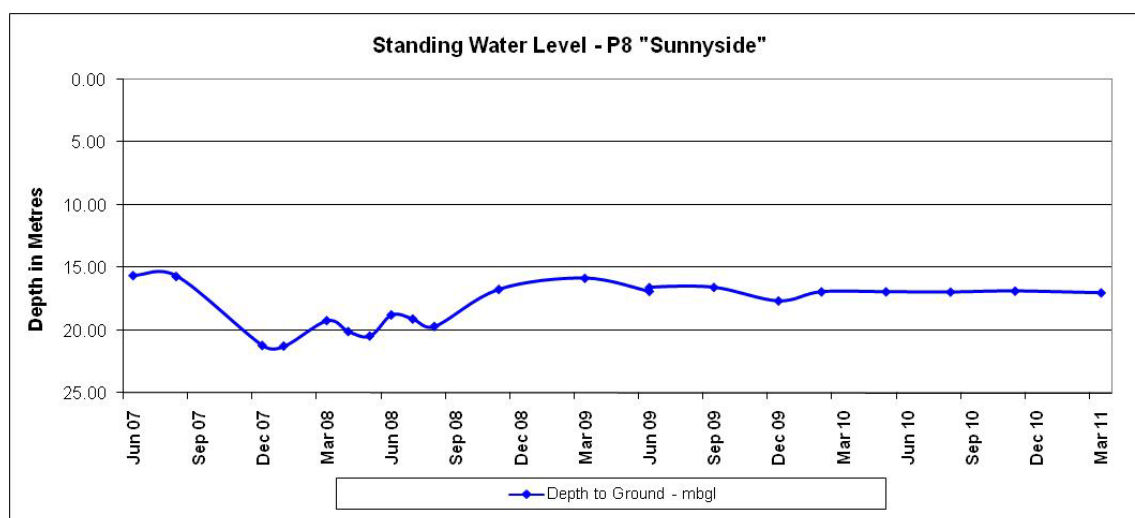
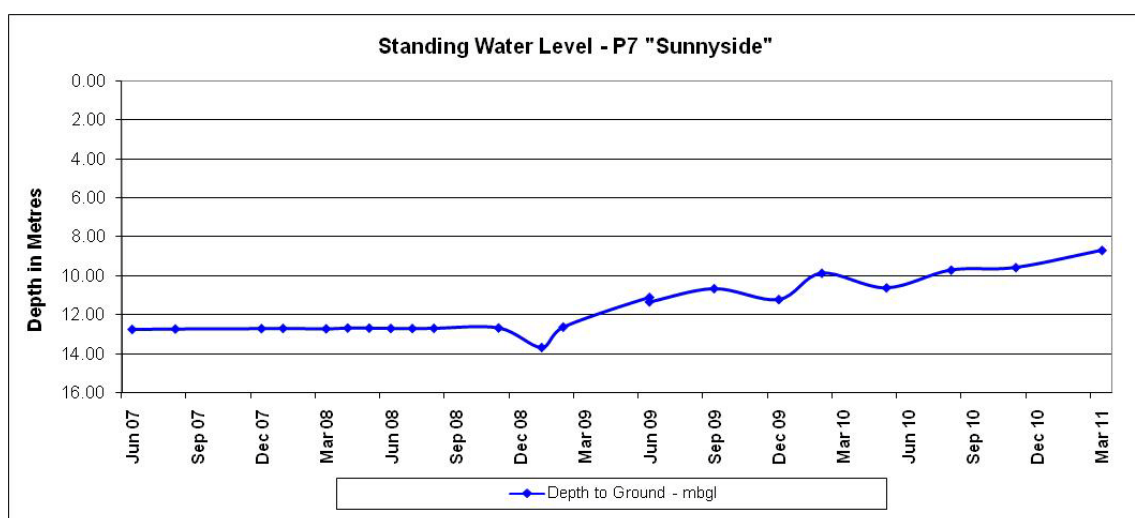
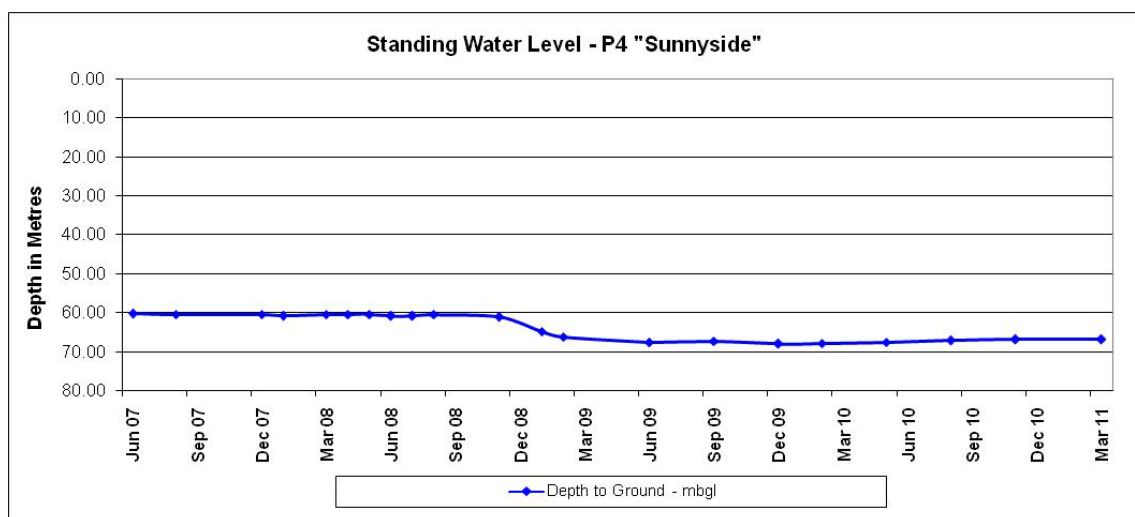
This exceedance now measures as the highest recorded overpressure, being 128.8 dBL as recorded at “Innisvale” on the 3<sup>rd</sup> May 2011. The highest ground vibration recorded is 2.39mm/s recorded at “Plain View” on the 17<sup>th</sup> April 2009.

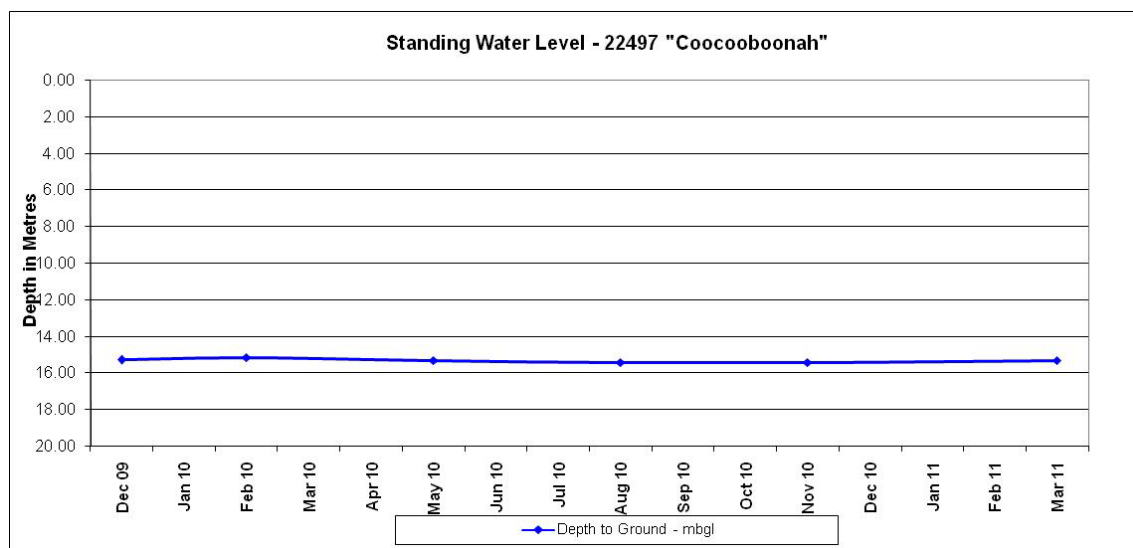
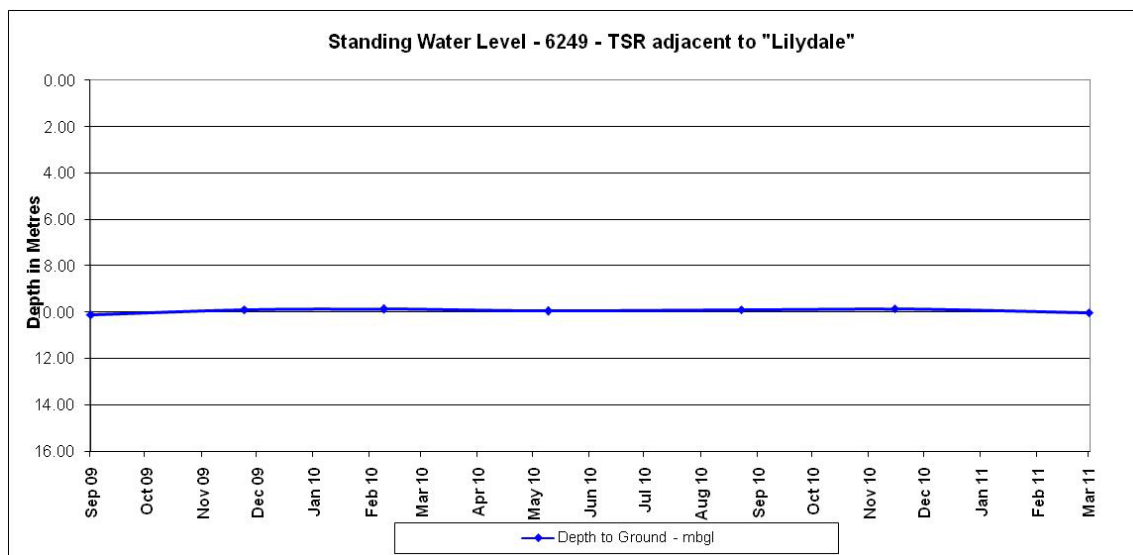
## **Groundwater Monitoring**

Groundwater monitoring is undertaken from a range of monitoring piezometers and water bores both within and surrounding the mine site. Standing Water Level (SWL) checks are undertaken on a quarterly basis, with full water quality sampling undertaken on a 6 monthly basis. Monitoring was undertaken on the 8<sup>th</sup> and 9<sup>th</sup> March 2011 with results for SWL shown below, with no significant impact/trend indicated from mining operations. The next round of monitoring is expected to be conducted during June 2011.









The above results indicate minor variability in groundwater levels with no significant trend applicable. These graphs represent water bores and piezometers which are currently accessible for monitoring.

## Surface Water

Surface water sampling was carried out in March and May. Results from the sampling were generally good compared to past monitoring; some elevated Total Suspended solids were detected in some of the sites sediment basins, however as the storages have dropped in storage level over an extended dry period, there is limited potential for any discharge of sediment laden water. No wet weather discharge has occurred during the reporting period.

## **Complaints**

One complaint was received during this reporting period on the 5<sup>th</sup> May 2011 at 7:15am, via a phone call to the Sunnyside Complaints Line. The Complaint was in relation to the blast conducted on Tuesday 3rd May 2011 and impacts on their residence. The complainant described the blast as the worst they has ever encountered, not having felt Sunnyside blasts previously. It was explained to the complainant that the blast did not go as expected and that Orica blasting services were instructed to complete an investigation into the blast as to why the event occurred.

The outcome of the Orica investigation was discussed, including the identification of a fault in blast design which led to the enhanced overpressure felt at his property. It was also explained that monitors at adjoining properties had confirmed an exceedance in blast compliance criteria, and that advice had issued to the Department of Planning and Department of Environment, Climate Change and Water. The complainant was advised that Whitehaven would work closely with Orica Blasting Services to ensure the potential for poor blast designs could be avoided in future.

## **Rehabilitation**

Approximately 5 hectares of the northern emplacement area was shaped and seeded with a winter pasture mix, which included Rye Grass, Oats and Arrow Leaf Clover. A contour bank was also constructed to combat the issue of erosion on the already rehabilitated lower tier of the northern emplacement. Tree rip lines were also installed in the lower tier rehabilitation, in preparation of a spring tree planting campaign.

## **Minutes of the 11<sup>th</sup> Meeting of the Sunnyside Coal Mine Community Consultative Committee**

**Meeting Held:** 14<sup>th</sup> September 2011, 3:30pm

**Venue:** The meeting was held in the Board Room at Namoi Valley Brickworks.

### **1. Present and Apologies**

**Present:** Mr Michael Broekman (MB) (Chairman)  
Mr Bruce Reid (BR) (Community Representative)  
Mrs Vivienne Rooke (VR) (Bruce Reid's Representative)  
Mr Andrew Kennedy (AK) (Community Representative)  
Mr Glenn Bailey (GB) (3:40pm) (Community Representative)  
Mrs Jill Johnson (JJ) (Environmental Officer - Whitehaven)  
Mr Michael Clark (MC) (Project Manager - Whitehaven)  
Mr Tim Muldoon (TM) (Community Liaison Officer - Whitehaven)  
Mr Danny Young (DY) (Environmental Manager - Whitehaven)

**Apologies:** Mr Danny Young (DY) (Environmental Manager - Whitehaven)

Moved: MC and AK

### **2. Previous Minutes**

Minutes of the previous meeting were adopted as a true record on the motion of GB and AK.

### **3. Business Arising**

- 3.1. JJ noted that Michael Lloyd from Division of Resources and Energy (DRE, formerly I&I NSW) had advised Whitehaven that DRE didn't have an issue with CMA being supplied with a copy of the AEMR but that they didn't intend to invite CMA to the annual inspections. GB said that he would contact DRE directly.
- 3.2. JJ advised the committee that the Independent Environmental Audit had been submitted to DoPI with an action plan to address any issues. A copy of the audit report was provided to the Committee.
- 3.3. In response to VR's question at the last meeting about allowable truck movements, MC provided a copy of the statement in the Environmental Assessment that estimated approximately 125 truck loads per day (ie. 250 truck movements). He said on the current budget of 40,000t per month and use of the trucks which carry the smallest loads (single trailer trucks) there would be approximately 70 loads per day.

GB asked about the cumulative number of trucks on Blackjack Road in relation to Sunnyside and fine reject haulage to the former Melville open cut. Whitehaven representatives noted that reject haulage is a separate operation to Sunnyside but committed to providing the estimated truck movements for the reject at the next meeting.

- 3.4. MC provided the blast monitor results for the blast on the 9<sup>th</sup> April 2011, which BR had noted at the last meeting as a 'damaging' blast. The highest recorded overpressure and ground vibration was 105.3dBL and 0.99mm/s respectively which is well below the compliance limits of 115.0dBL and 5mm/s. Two of the monitors did not trigger (ie. the overpressure and ground vibration was not high enough to trigger the monitor) and one monitor malfunctioned so a result was not recorded. Despite this, a Whitehaven representative was at the property where the monitor malfunctioned and advised that the blast wasn't any more significant than other blasts.

#### 4. Mine Progress Report

MC provided an update on the mine's progress as follows:

- Operators - 13 full time, 8 permanent casual and 3 part time casual.
- Fitters - 2 permanent.
- Site management – 2 permanent and 1 part time contractor.
- 434 LTI free days as at 31<sup>st</sup> August 2011.
- Some reshaping and topsoil of the north western face of the waste emplacement has occurred and this area will be seeded in the next couple of months.
- Six overburden blasts have been fired since the last meeting. A complaint was received following Shot 34. Monitor results at all monitoring locations were well within compliance limits or did not trigger.
- 16,966 bcm of topsoil has been stripped and 9,034 bcm spread on the north western corner of the waste emplacement.
- In the last three months 1,004,000 bcm of overburden has been removed and 45,000 tonnes of coal mined. Nil coal was mined during July and August owing to both digger fleets pre-stripping upper benches in advance. It is anticipated that a payback will ensue during the course of the year, and year to date coal budget targets are expected to be met.
- 95,755 tonnes of ROM coal has been transported offsite.

VR asked about the direction of mining. MC said there is approximately 50m to mine to the south, 150m to the east and then the rest will be to the west.

BR asked if Whitehaven would then start mining on the "Lilydale" property. MC said "Lilydale" is not part of the approved ML.

MC was asked about the timing for completion of mining operations at Sunnyside. He said the consent allowed for mining until end 2015 but current budgets (which are subject to change) have mining being completed in July 2014.

GB asked about Whitehaven's response to the blast complaint. JJ advised that Danny Young had contacted the complainant on the day of the blast and stated that he would follow up with written advice. The complainant said that he was going to be away for a few weeks. The letter was issued this week. GB thought a more prompt response should have been

provided. Whitehaven noted his concern but reiterated that a phone call on the day of the complaint was a prompt response and that the letter had not been issued earlier as the complainant advised that he would be away.

## **5. Environmental Monitoring Report**

JJ presented the environmental monitoring results which are attached in the Environmental Monitoring Report.

VR asked about whether noise monitoring had been conducted as requested at "Woodlawn". She said she was used to silence from when she grew up at the property but that BR was just worried about the dust. JJ thought it had but couldn't remember the exact details. BR said no-one had been at his property. JJ said she would investigate and provide the results if it had happened or organise for monitoring to occur if it hadn't already occurred.

There was some discussion about the noise level allowance under inversion conditions, as per the Project Approval.

VR asked about the noise monitoring process. JJ said that the monitors are not permanently situated at a monitoring location. Specialist consultants visit the site on a quarterly basis and Whitehaven are not aware of the exact date and time that monitoring occurs. This means the mine is not able to deliberately cease noise generating activities whilst the noise monitoring is being conducted. JJ also said that the benefit of having attended noise monitoring conducted by specialist consultants is that they can decipher the source of different noises (ie. mining, birds, dogs etc).

GB asked about whether blast monitoring could be conducted at the property where 2 blast complaints had been generated. JJ advised that the letter issued to the complainant had made the offer of blast monitoring to determine whether there are compliance issues. Whitehaven will await a response from the complainant.

## **6. Complaints**

Complaints were discussed in the Environmental Monitoring Report.

## **7. General Business**

MB advised the committee that the company that he is a director of has entered into an agreement to dispose of fine reject at the old Brickworks open cut on "Wilga Park" and ultimately rehabilitate it. He was concerned that members of the committee may see the situation as a conflict of interest. AK asked if it was a deal with Sunnyside and MB replied that it was with Whitehaven, not Sunnyside. AK stated that he saw no conflict and other committee members didn't identify any concerns.

AK asked whether Sunnyside was going to receive water from Santos. MC and JJ said that Whitehaven had been in discussions with Santos

regarding the receipt of excess water from their exploration activities. The water will not be from their production holes, is within all guidelines and approvals and will be used for dust suppression purposes onsite. It is the same as water from a bore or seepage into the pit.

VR advised that she would no longer be able to attend the committee meetings with BR. She asked if the committee would be agreeable to another representative attending the meetings with BR. MB provided a copy of the letter from DoP advising that there is no issue with a family member attending. VR to write a letter to Whitehaven advising that she is no longer able to attend and nominating another representative.

#### **8. Next Meeting**

Wednesday 14<sup>th</sup> December 2011, 3:30pm

Meeting closed at 4:22pm



Michael Broekman - Chairman

# Sunnyside Coal Mine Community Consultative Committee Meeting #11

## Environmental Monitoring Report June 2011 – August 2011

### Noise Monitoring

The noise limits applicable to operations on the Sunnyside Coal Mine, as prescribed in the Project Approval and Environment Protection Licence, are as follows:-

Day/Evening LAeq(15 minute)	Land
35	Any residence on, or more than 25% of, any privately owned land, except "Lilydale". Impact Assessment Criteria dB(A).

Monitoring was undertaken on the 4<sup>th</sup> August 2011 with results outlined below:

SCM Noise Monitoring Results – 4 August 2011 (Day)				
Location	Time	dB(A),Leq (15 min)	Wind speed/ direction	Identified Noise Sources as dB(A) Leq (15 min)
Illili	3:35 pm	37	0.5m/s SE	Birds (37), traffic (39), <b>SCM (25)</b>
Ferndale	4:17 pm	45	1m/s SE	Traffic (45), birds (35), <b>SCM (&lt;20)</b>
Plain View	3:13 pm	33	1m/s SE	Birds (32), <b>SCM (25)</b>
Lilydale	2:55 pm	54	2m/s SE	Birds (54), <b>SCM (30)</b>

SCM Noise Monitoring Results – 4 August 2011 (Evening)				
Location	Time	dB(A),Leq	Wind speed/ direction	Identified Noise Sources
Illili	8:23 pm	29	0.4m/s SE	<b>SCM (29)</b>
Ferndale	9:02 pm	30	1.2m/s S	<b>SCM (30)</b>
Plain View	8:00 pm	42	0.5m/s SE	Plane (40), <b>SCM (37)</b> , traffic (30)
Lilydale	7:38 pm	39	0.5m/s SE	Traffic (36), <b>SCM (36)</b>

The results indicate compliance at all non-project related receivers except "Plain View" which recorded 37dB(A). At the time of monitoring, it was determined that a temperature inversion was present as verified by meteorological data obtained. This inversion would have exacerbated noise levels from the mine. As a consequence of the presence of inversion, the noise measurements taken are not strictly an exceedance in criteria under the development consent.

Monitoring was also conducted at the "Glendower" residence on the 4<sup>th</sup> August 2011 to confirm if mine noise remained within compliance limits at that residence, with results confirming compliance as per the table below:



SCM Noise Monitoring Results – 4 August 2011 - Glendower				
Date	Time	dB(A),Leq (15 min)	Wind speed/ direction	Identified Noise Sources as dB(A) Leq (15 min)
4 August	3:55 pm	42	0.6m/s SE	Birds (42), traffic (30), <b>SCM (&lt;20)</b>
4 August	8:41 pm	28	Calm	Dog (27), <b>SCM (22)</b>

Road noise monitoring was undertaken on Friday the 5<sup>th</sup> August 2011 for a one hour period from 8:05am. A total of 8 heavy vehicles travelled along Torrens Lane during the monitoring period, consisting of 4 full and 4 empty coal haulage trucks entering and leaving the CHPP. The measured Leq noise level from all vehicles on Torrens Lane was of 51.6 dB(A) Leq (1 hour). This is in compliance with the noise criterion for a local road of 55 dB(A) Leq (1 hour).

### **Air Quality Monitoring**

#### **Deposited Dust**

Deposited dust levels for the site for the last 12 months are shown in the following table.

#### **Sunnyside Mine – Deposited Dust**

Month	SD1 Ferndale	SD3 Plainview	SD4 Lilydale	SD5 Ivanhoe	SD6 Illili	SD7 Innisvale	SD8 Woodlawn
September 2010	0.7	0.6	0.9	2.5	6.3	1.8	-
October 2010	10.8	0.5	0.5	1.2	0.3	0.5	-
November 2010	2.8	1.3	2.2	0.8	1.1	2.0	2.0
December 2010	0.5	2.5	33.0	1.5	1.1	4.8	1.4
January 2011	7.1	N/A	18.6	3.5	2.0	6.1	1.0
February 2011	7.4	N/A	2.6	0.7	0.6	0.8	1.0
March 2011	2.7	0.8	1.1	0.6	0.8	0.7	0.5
April 2011	0.7	0.8	0.8	1.0	0.6	2.1	0.7
May 2011	0.5	0.7	1.1	5.5	0.6	0.7	1.5
June 2011	0.5	1.6	0.7	0.3	0.4	1.6	0.5
July 2011	0.5	1.0	0.2	0.5	0.5	0.7	0.3
August 2011	0.4	0.9	0.4	2.7	0.5	0.8	0.5
<b>Annual Average</b>	<b>2.9</b>	<b>1.1</b>	<b>5.2</b>	<b>1.7</b>	<b>1.2</b>	<b>1.9</b>	<b>0.9</b>

Deposited dust rates over the last few months have generally been at very low levels. SD5 at “Ivanhoe” had an elevated result in May, due to sample contamination (bird droppings and plant material). All other results at SD5 were well below criterion during the reporting period. Annual average dust levels remain similar to those reported in the last monitoring report, with all sites below the 4g/m<sup>2</sup>/month criterion with the exception of project-related “Lilydale”. This monitoring location was affected by anomalous results in December 2010 and January 2011.

## **PM<sub>10</sub> Data**

Compliance with the 24hr criterion of 50µg/m<sup>3</sup> has been maintained during the reporting period.

PM<sub>10</sub> measurements taken for the “Illili” High Volume Air Sampler (HVAS) are returning a running annual average of 9.33µg/m<sup>3</sup>, which is well below the annual average limit of 30µg/m<sup>3</sup>.

PM<sub>10</sub> measurements taken for the “Lilydale” HVAS are returning an annual average of 7.24µg/m<sup>3</sup>, which is also well below the annual average limit of 30µg/m<sup>3</sup>.

## **Blast Monitoring**

Since the first blast there has been 36 blasts. On the 25<sup>th</sup> of June 2011, during blast 31, a minor exceedance of the overpressure (site criteria 115.0dBL) was recorded at monitoring point “Plain View” (115.9dBL). An investigation into the cause of the overpressure exceedance was carried out by the blasting contractor Orica.

It was identified though the blast video and an analysis of blast monitor data, that there was no stemming ejection or face burst, and that the cause of the overpressure exceedance was face movement.

### **The following recommendations were made by Orica:**

- Future designs where stand up blasts are to occur should be vertical holes, with the initiation through the centre of the blast
- If initiation is through the free face then avoid the use of fast timing that promotes forward movement of the blast
- Consideration of using soft start or deliberate slowing of lead holes when initiating through the free face

In response to the complaint lodged at the previous CCC meeting, the results of blast 27 are presented below; showing compliance across all monitors, with “Ivanhoe” not showing data due to monitor malfunction. Despite this, a Whitehaven representative was at “Ivanhoe” at the time of the blast and noted ground vibration and overpressure similar to other standard blasts.

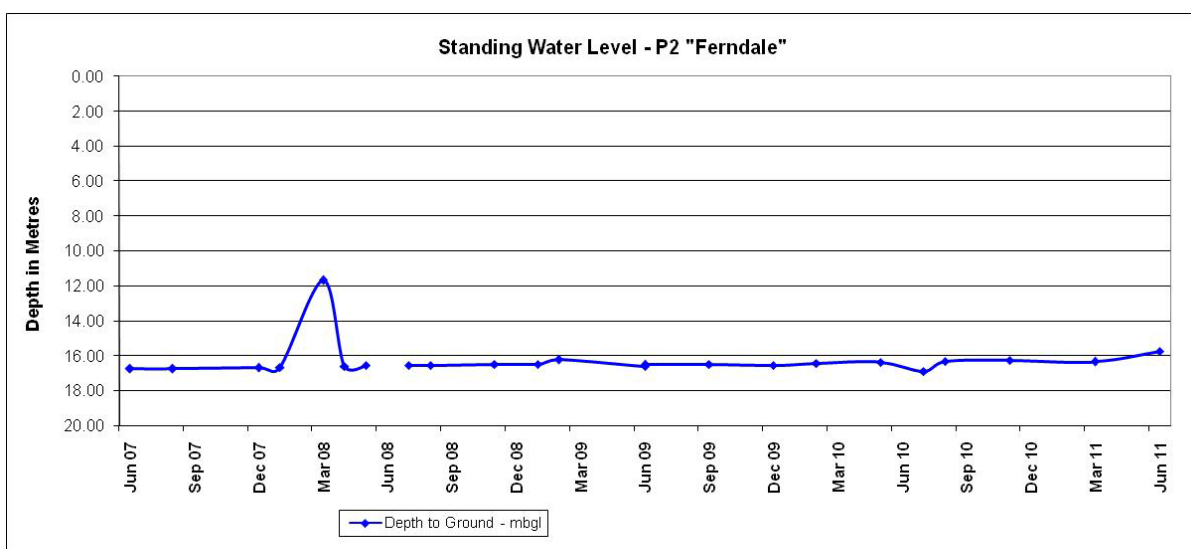
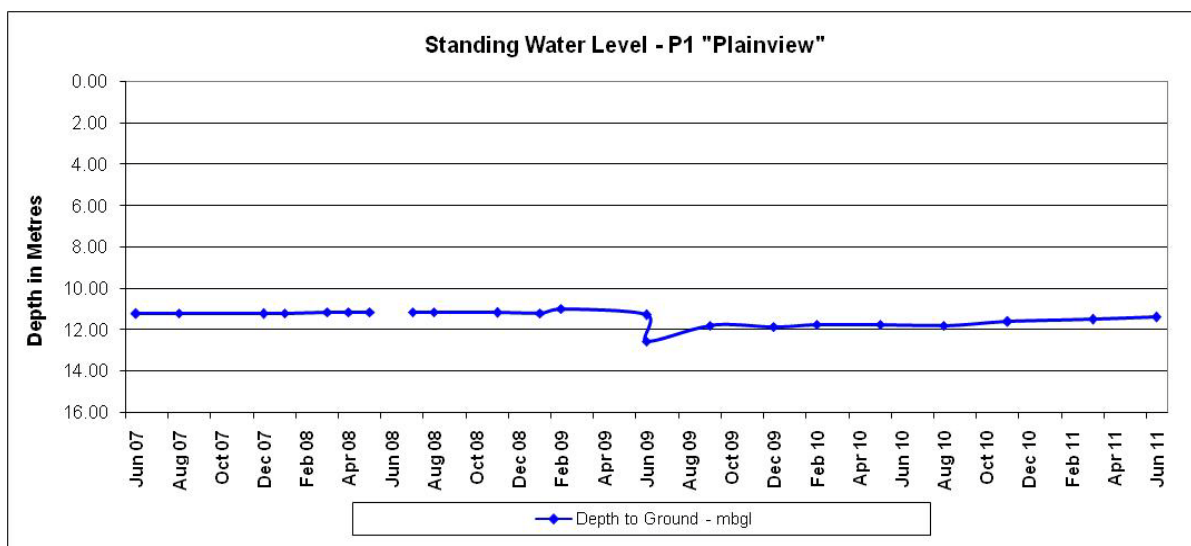
### **Blast no. 27 monitoring results**

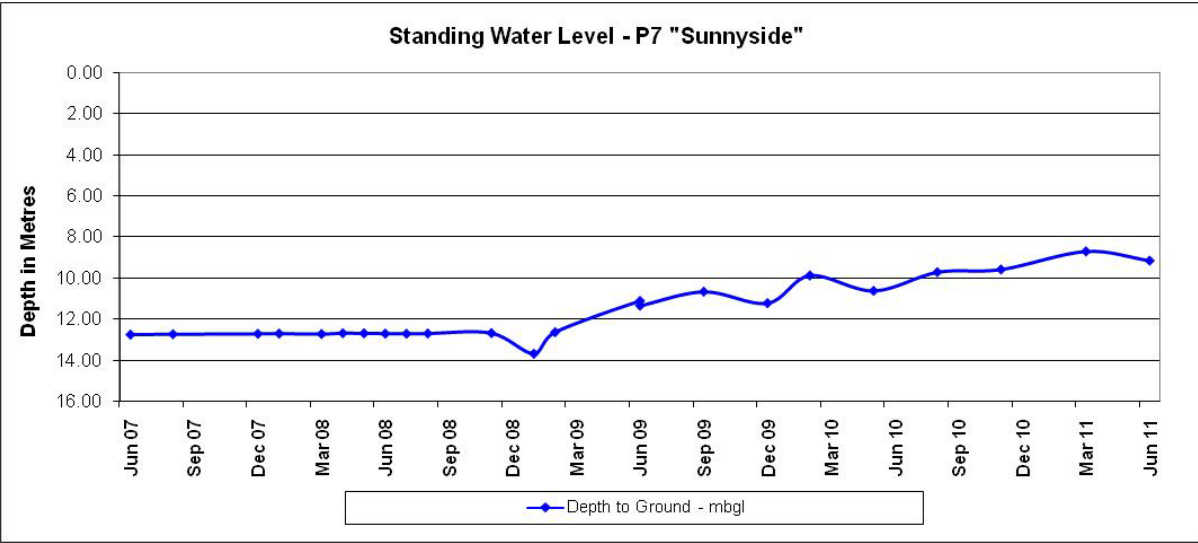
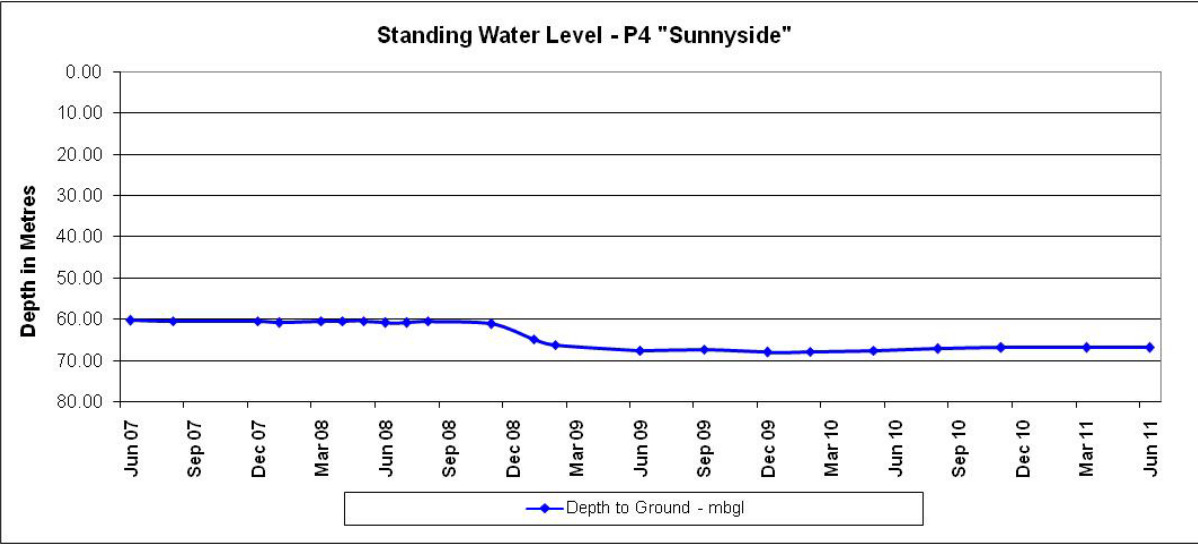
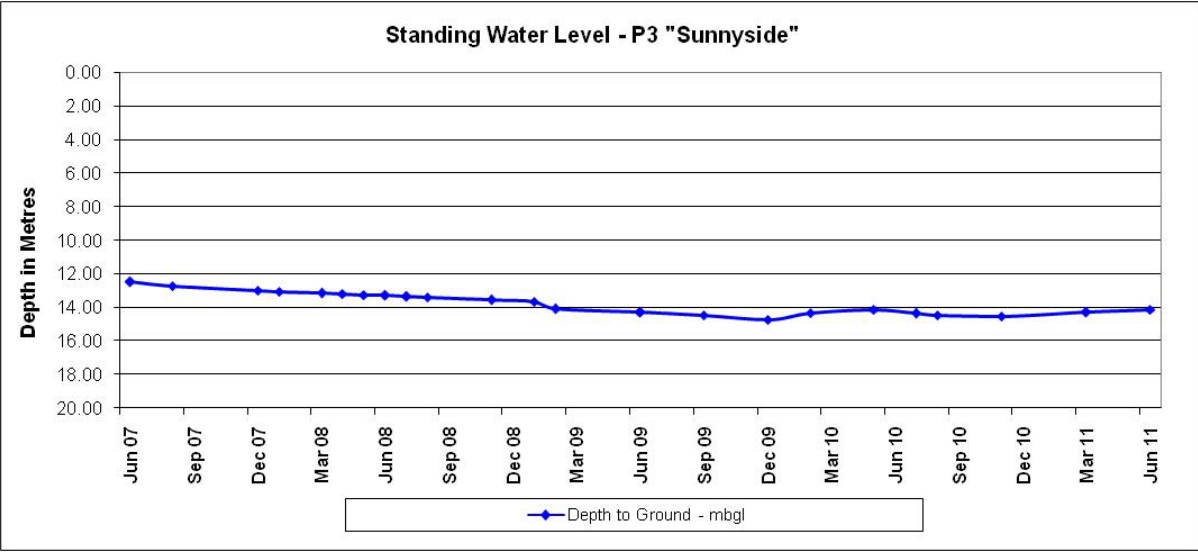
<b>SHOT NO.</b>	<b>DATE</b>	<b>MONITOR LOCATION</b>	<b>PEAK GROUND PRESSURE (mm/s)</b>	<b>PEAK OVERPRESSURE (dBL)</b>	<b>TIME</b>
27	09/Apr/11	Innisvale	0.99	105.3	10:51:21 AM
27	09/Apr/11	Plain View	DNT	DNT	10:51:00 AM
27	09/Apr/11	Illili	DNT	DNT	10:51:00 AM
27	09/Apr/11	Ivanhoe	No data	No data	No data

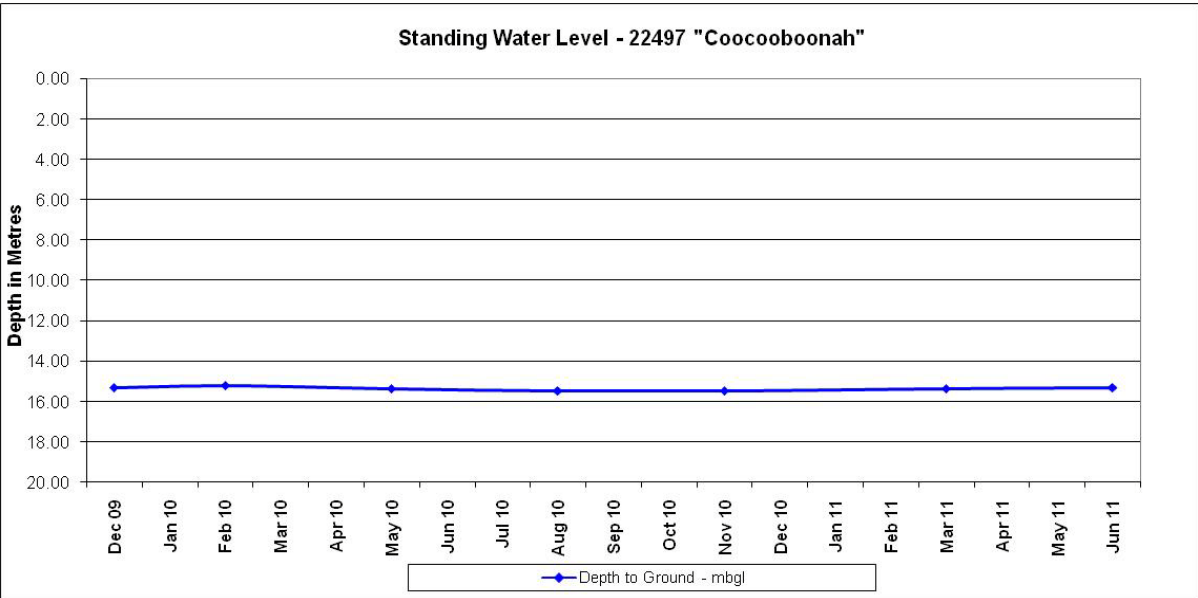
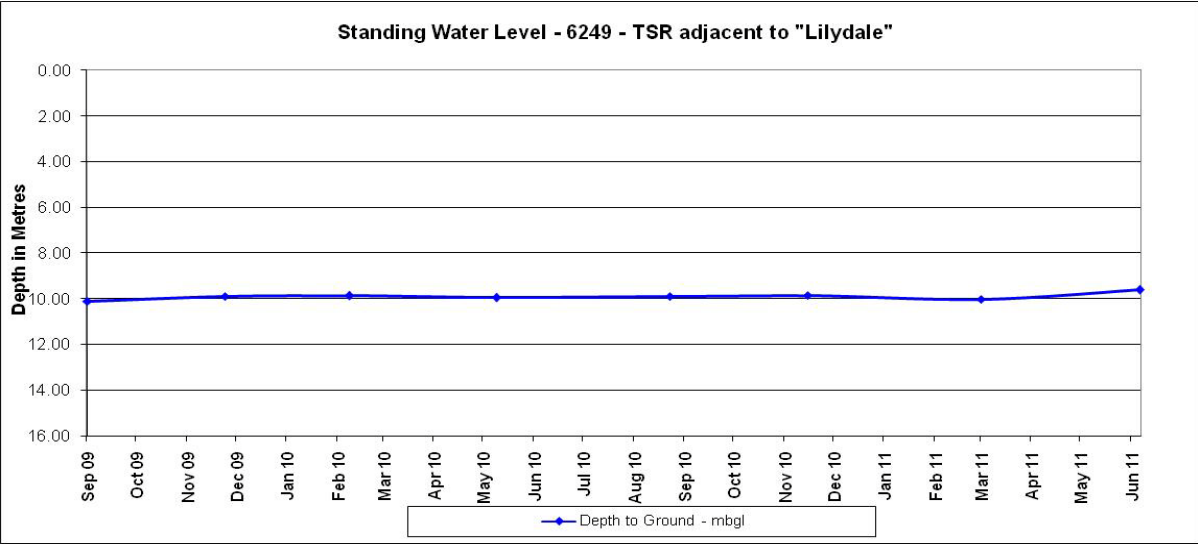
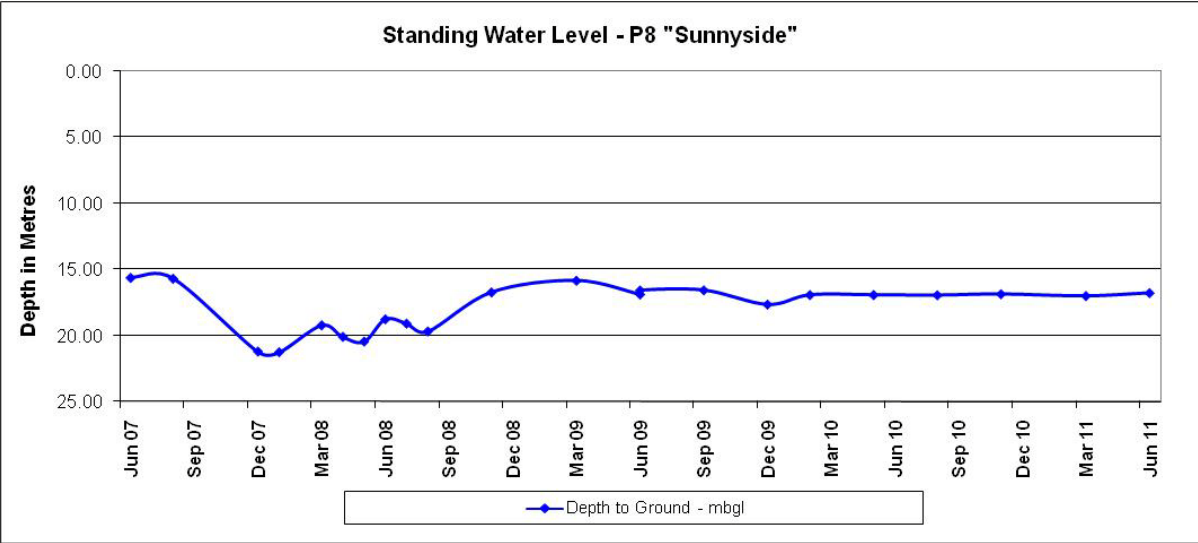
Since blasting commenced, the highest recorded overpressure was 128.8 dBL recorded at “Innisvale” on the 3<sup>rd</sup> May 2011. The highest ground vibration recorded is 2.39mm/s recorded at “Plain View” on the 17<sup>th</sup> April 2009.

### **Groundwater Monitoring**

Groundwater monitoring is undertaken from a range of monitoring piezometers and water bores both within and surrounding the mine site. Standing Water Level (SWL) checks are undertaken on a quarterly basis, with full water quality sampling undertaken on a 6 monthly basis. Monitoring was undertaken on the 14<sup>th</sup> and 21<sup>st</sup> June 2011. Results for SWL are shown below with no significant impact/trend indicated from mining operations. These graphs represent water bores and piezometers which are currently accessible for monitoring. The next round of monitoring is expected to be conducted during September 2011.







## **Surface Water**

Surface water sampling was carried out in August 2011. Results from the sampling were generally good with some elevated Total Suspended Solids detected in some of the site's sediment basins. However, as the water level in these storages has dropped over an extended dry period there is limited potential for any discharge of sediment laden water. No wet weather discharge has occurred during the reporting period. The pH of storages ranged from 8 to 9.

## **Complaints**

Two complaints were received during this reporting period. The first was on the 1<sup>st</sup> June 2011 during the previous CCC meeting regarding a blast on the 9<sup>th</sup> of April 2011, and as a result, the blast monitoring results from the blast in question are presented above.

The second complaint was received on the 11<sup>th</sup> August at 3:10pm, via a phone call to the Sunnyside Complaints Line. The complaint was in relation to the blast conducted on that day and impacts on the complainant's residence. The complainant described the blast as 2/3 as bad as the shot that they complained about previously. The complainant also believed Orica to be deficient in their blast practices as this is the second event in the last 4 months.

The complainant was advised that at the time the monitoring results were not available but that Whitehaven would investigate their concerns once the monitoring results were available. On review of monitoring data, all monitoring locations were well below the blasting limits with the highest overpressure recorded being 105.9dBL at "Plain View" and the highest vibration being 0.7mm/s, also at "Plain View". These results indicate the blast performed as expected.

Review of the video of the shot also did not indicate any significant ejection from the blast. The blast had already been delayed from 10am that day due to unfavourable weather conditions and the shot was taken at a time more conducive to blasting. Written advice was issued to the complainant confirming the blast was within allowable limits.

## **Rehabilitation**

Approximately 5 hectares of the north western corner of the emplacement area has been shaped and spread with topsoil. This area will be seeded with a summer pasture and cover crop mix in the coming months. Previous seeding on the adjacent emplacement area has had slow progress due to dry conditions, but should make better progress due to the recent rainfall.

## **Minutes of the 12<sup>th</sup> Meeting of the Sunnyside Coal Mine Community Consultative Committee**

**Meeting Held:** 14<sup>th</sup> December 2011, 3:30pm

**Venue:** The meeting was held in the Board Room at Namoi Valley Brickworks.

### **1. Present and Apologies**

**Present:** Mr Michael Broekman (MB) (Chairman)  
Mr Bruce Reid (BR) (Community Representative)  
Mrs Jill Johnson (JJ) (Environmental Officer - Whitehaven)  
Mr Michael Clark (MC) (Project Manager - Whitehaven)  
Mr Tim Muldoon (TM) (Community Liaison Officer - Whitehaven)  
Mr Danny Young (DY) (Environmental Manager - Whitehaven)  
Clr Hans Allgayer (HA) (Gunnedah Shire Council Representative)

**Apologies:** Mr Andrew Kennedy (AK) (Community Representative)  
Mr Glenn Bailey (GB) (3:40pm) (Community Representative)

Moved: BR and MC

### **2. Previous Minutes**

Minutes of the previous meeting were adopted as a true record on the motion of BR and TM.

### **3. Business Arising**

**3.1.** In response to Glenn Bailey's question about the number of trucks carting coal tailings from the CHPP to the Melville open cut, JJ advised that the average daily loads between July and November 2011 was 72. JJ noted that whilst this is the daily average, the trucks do not always operate. For example, in October 2011 they only operated for 4 or 5 days during the entire month.

**3.2.** JJ advised the committee that attended noise monitoring was conducted at the "Woodlawn" property in August 2010 following a request from Bruce Reid. Following the last CCC meeting, a letter was issued to BR in September 2011 advising that the monitoring had been undertaken in August 2010. The letter included a copy of the noise consultant's report as well as the initial letter issued to Mr Reid in 2010 which contained a copy of the consultant's report. BR said that noise doesn't worry him.

**3.3.** A letter had not been received from Vivienne Rooke (BR's daughter) advising that she would no longer be able to assist BR at the meetings. The letter was to advise of an alternative family member.

BR said he would like Liz Ferguson to assist him at the meetings but the Committee reminded BR that the person assisting him is required to be a family member (as per advice from DoP).

Environmental Monitoring Report was moved by MC and seconded by BR.

## **6. Complaints**

Complaints were discussed in the Environmental Monitoring Report.

## **7. General Business**

JJ tabled a letter from GSC advising that Hans Allgayer is the new Council representative for the Sunnyside CCC.

BR commended MB on being a good chairman and supplying the Brickworks facilities for the meetings.

## **8. Next Meeting**

Wednesday 14<sup>th</sup> March 2012, 3:30pm

Meeting closed at 4:05pm

A handwritten signature in black ink, appearing to be 'Michael Broekman', written over a horizontal line.

Michael Broekman - Chairman



# Sunnyside Coal Mine Community Consultative Committee Meeting #12

## Environmental Monitoring Report September 2011 – November 2011

### Noise Monitoring

The noise limits applicable to operations on the Sunnyside Coal Mine, as prescribed in the Project Approval and Environment Protection Licence, are as follows:-

Day/Evening LAeq(15 minute)	Land
35	Any residence on, or more than 25% of, any privately owned land, except "Lilydale". Impact Assessment Criteria dB(A).

Monitoring was undertaken on the 7<sup>th</sup> November 2011 with results outlined below:

SCM Noise Monitoring Results – 7 November 2011 (Day)				
Location	Time	dB(A),Leq (15 min)	Wind speed/ direction	Identified Noise Sources as dB(A) Leq (15 min)
Illili	4:00 pm	37	2m/s NW	Birds (37), <b>SCM inaudible</b>
Ferndale	4:38 pm	39	2.5m/s NW	Birds & insects (37), <b>SCM inaudible</b>
Plain View	3:43 pm	39	2m/s NW	Birds & insects (36), traffic (36), <b>SCM (25)</b>
Lilydale	3:25 pm	43	2m/s NW	Traffic (41), <b>SCM (34)</b> , birds & insects (33)

SCM Noise Monitoring Results – 7 November 2011 (Evening)				
Location	Time	dB(A),Leq	Wind speed/ direction	Identified Noise Sources
Illili	7:39 pm	44	0.5m/s NW	Birds & insects (44), <b>SCM inaudible</b>
Ferndale	7:21 pm	46	0.5m/s NW	Birds & sheep (46), <b>SCM inaudible</b>
Plain View	8:02 pm	45	0.5m/s NW	Birds & insects (45), <b>SCM (25)</b>
Lilydale	8:19 pm	41	0.5m/s NW	Birds & insects (39), traffic (38), <b>SCM (30)</b>

The results indicate compliance at all non-project related receivers. The highest reading was at the project related property "Lilydale" during the day monitoring.

Monitoring was also conducted at the "Glendower" residence on the 7<sup>th</sup> November 2011 to confirm if mine noise remained within compliance limits at that residence, with results confirming compliance as per the table below:

SCM Noise Monitoring Results – 7 November 2011 - Glendower				
Date	Time	dB(A), Leq (15 min)	Wind speed/ direction	Identified Noise Sources as dB(A) Leq (15 min)
7 November	4:17 pm	41	2m/s NW	Birds (41), traffic (31), <b>SCM inaudible</b>
7 November	8:47 pm	37	0.5m/s NW	Insects (37), <b>SCM inaudible</b>

Road noise monitoring was undertaken on Friday the 7<sup>th</sup> November 2011 for a one hour period from 5:00pm. A total of 6 heavy vehicles travelled along Torrens Lane during the monitoring period, consisting of 4 full and 1 empty coal haulage trucks entering and leaving the CHPP and one fuel truck leaving site. The measured Leq noise level from all vehicles on Torrens Lane was of 50.7 dB(A) Leq (1 hour). This is in compliance with the noise criterion for a local road of 55 dB(A) Leq (1 hour).

### **Air Quality Monitoring**

#### **Deposited Dust**

Deposited dust levels for the site for the last 12 months are shown in the following table.

#### **Sunnyside Mine – Deposited Dust**

Month	SD1 Ferndale	SD3 Plainview	SD4 Lilydale	SD5 Ivanhoe	SD6 Illili	SD7 Innisvale	SD8 Woodlawn
December 2010	0.5	2.5	33.0	1.5	1.1	4.8	1.4
January 2011	7.1	-	18.6	3.5	2.0	6.1	1.0
February 2011	7.4	-	2.6	0.7	0.6	0.8	1.0
March 2011	2.7	0.8	1.1	0.6	0.8	0.7	0.5
April 2011	0.7	0.8	0.8	1.0	0.6	2.1	0.7
May 2011	0.5	0.7	1.1	5.5	0.6	0.7	1.5
June 2011	0.5	1.6	0.7	0.3	0.4	1.6	0.5
July 2011	0.5	1.0	0.2	0.5	0.5	0.7	0.3
August 2011	0.4	0.9	0.4	2.7	0.5	0.8	0.5
September 2011	0.9	0.6	0.3	0.7	0.3	0.6	0.3
October 2011	0.6	0.7	0.4	1.7	0.8	0.5	0.7
November 2011	3.7	0.7	1.9	2.6	1.4	1.2	0.9
<b>Annual Average</b>	<b>2.1</b>	<b>1.0</b>	<b>5.1</b>	<b>1.8</b>	<b>0.8</b>	<b>1.7</b>	<b>0.8</b>

Deposited dust rates over the last three months have generally been at very low levels. Annual average dust levels are continuing to decrease, with all sites below the 4g/m<sup>2</sup>/month criterion with the exception of project-related “Lilydale”. This monitoring location was affected by anomalous results in December 2010 and January 2011, with its annual average expected to continue to decrease in the coming months.

## **PM<sub>10</sub> Data**

Compliance with the 24hr criterion of 50µg/m<sup>3</sup> has been maintained during the reporting period.

PM<sub>10</sub> measurements taken for the “Illili” High Volume Air Sampler (HVAS) are returning a running annual average of 9.32µg/m<sup>3</sup>, which is well below the annual average limit of 30µg/m<sup>3</sup>.

PM<sub>10</sub> measurements taken for the “Lilydale” HVAS are returning an annual average of 7.23µg/m<sup>3</sup>, which is also well below the annual average limit of 30µg/m<sup>3</sup>.

## **Blast Monitoring**

Since the first blast there have been 41 blasts. On the 25<sup>th</sup> of October 2011, during blast 38, a minor exceedance of the overpressure criteria (115.0dBL) was recorded at monitoring point “Plain View” (115.1dBL). An investigation into the cause of the overpressure exceedance was carried out by the blasting contractor Orica.

It was identified though the blast video that a series of cratering events (blow-outs) starting near the point of initiation was the root cause of the overpressure exceedance. These cratering events were caused by high energy, and low burden at the point of initiation. Some blast holes had inadequate stemming.

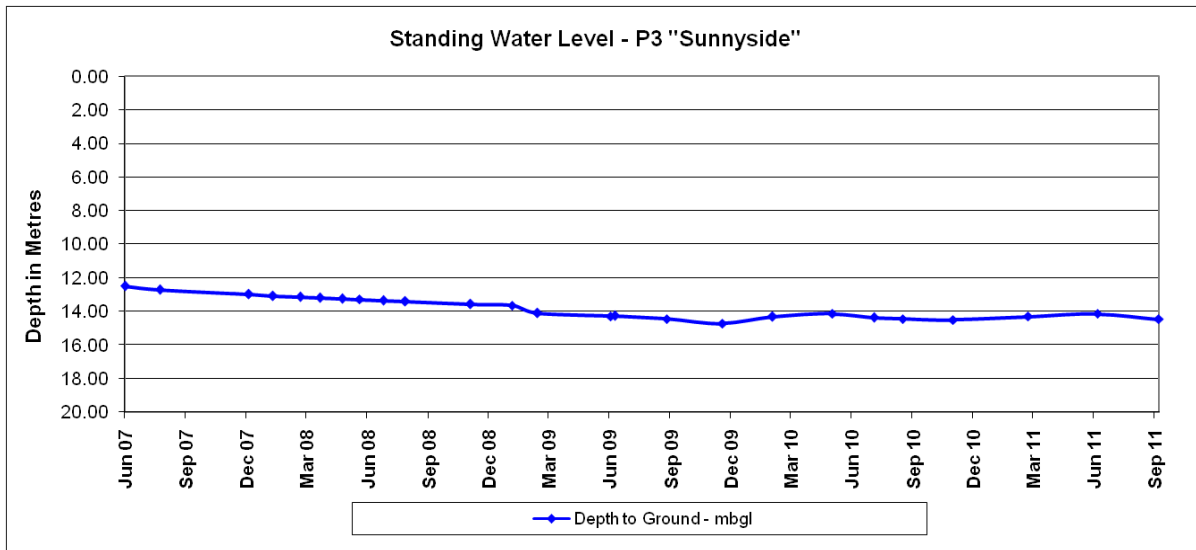
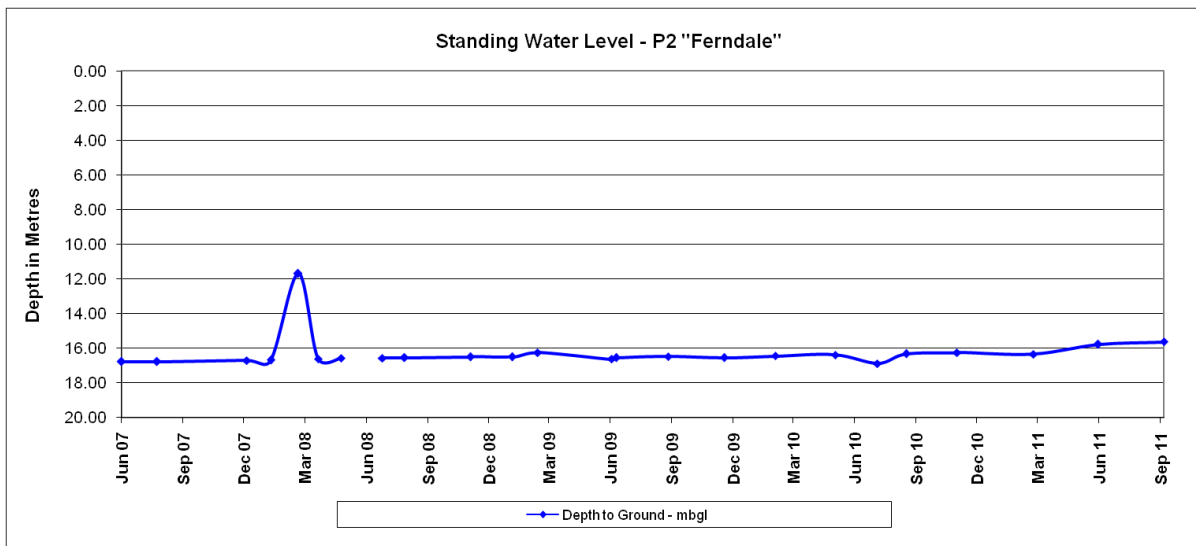
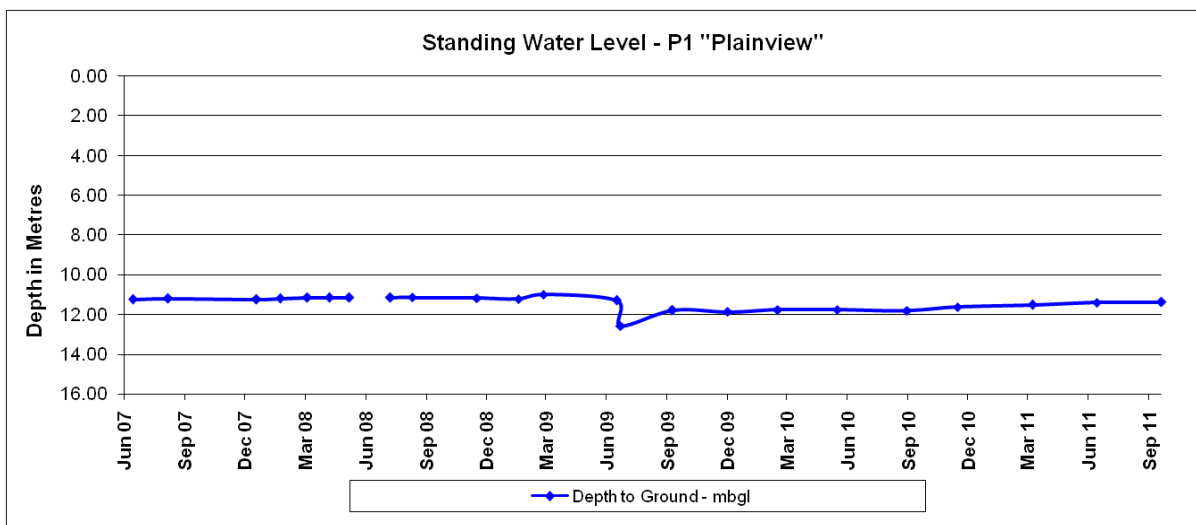
### **The following recommendations were made by Orica:**

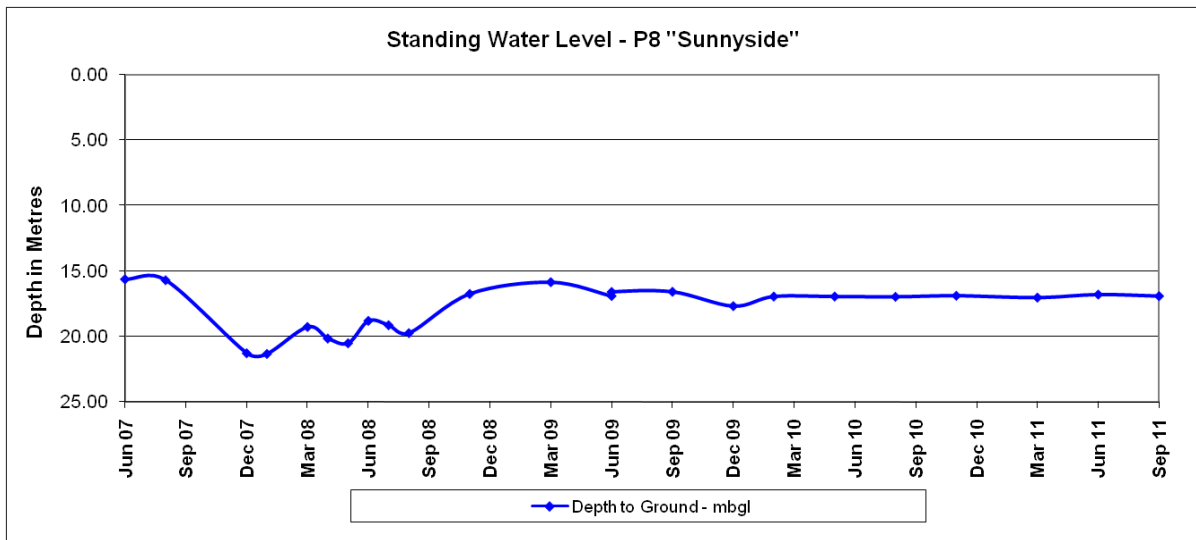
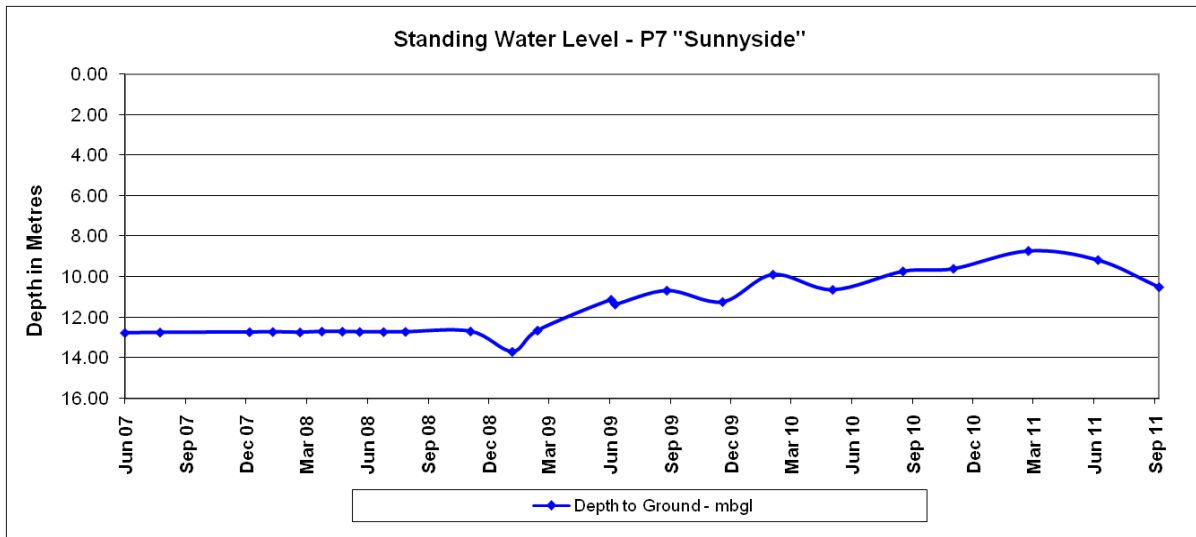
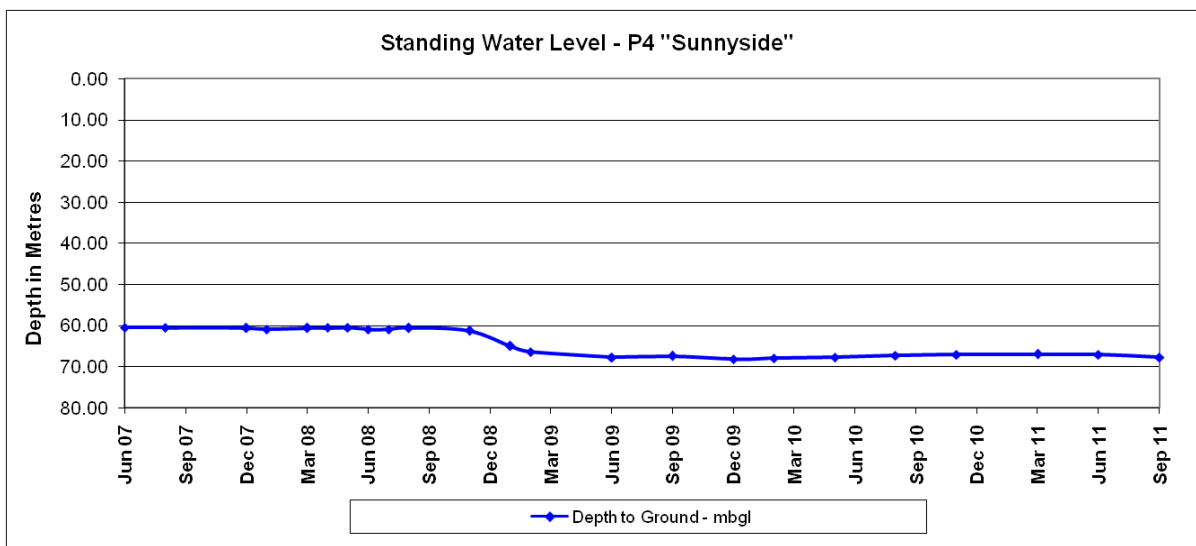
1. Train Technical Services Engineers in the use of the face profile and blasthole measurement holes as well as loading of face holes so that each blast is designed with appropriate charges to control overpressure.
2. Increase the stemming length in holes to 3.8m and ensure adequate burden is present, which should control the overpressure from ejection and cratering.
3. Use end blast initiation when blasting in circumstances (environmentally) where overpressure is likely to be a problem.

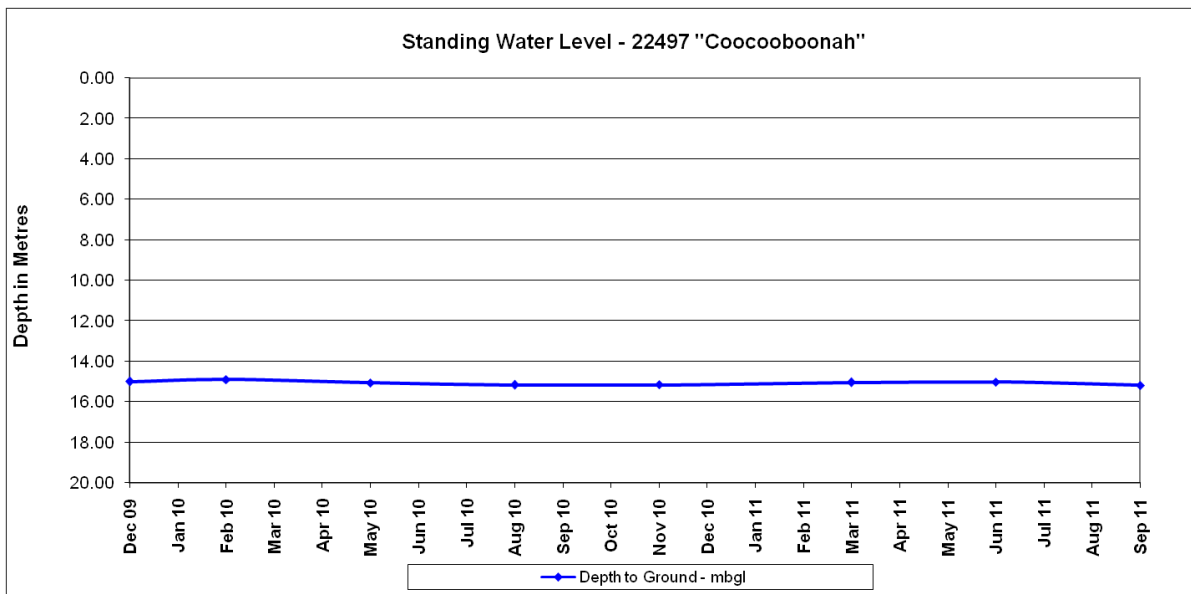
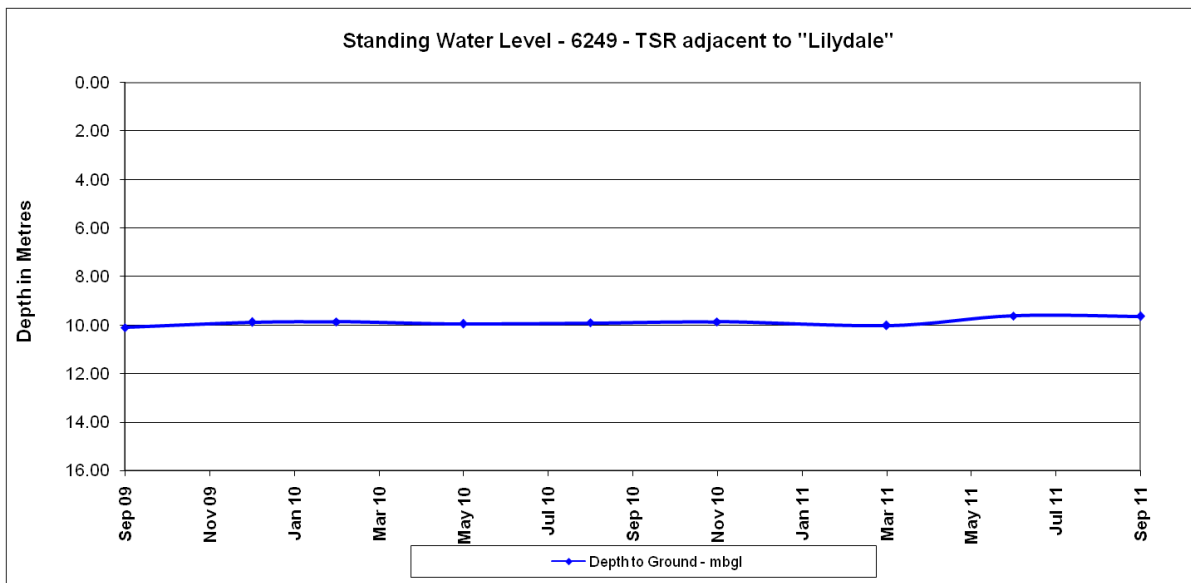
Since blasting commenced, the highest recorded overpressure was 128.8 dBL recorded at “Innisvale” on the 3<sup>rd</sup> May 2011. The highest ground vibration recorded is 2.39mm/s recorded at “Plain View” on the 17<sup>th</sup> April 2009.

## **Groundwater Monitoring**

Groundwater monitoring is undertaken from a range of monitoring piezometers and water bores both within and surrounding the mine site. Standing Water Level (SWL) checks are undertaken on a quarterly basis, with full water quality sampling undertaken on a 6 monthly basis. Monitoring was undertaken on the 20<sup>th</sup> and 21<sup>st</sup> September 2011. Results for SWL are shown below with no significant impact/trend indicated from mining operations. These graphs represent water bores and piezometers which are currently accessible for monitoring. The next round of monitoring is expected to be conducted during December 2011.







## **Surface Water**

Surface water sampling was carried out in November 2011. Results from the sampling were generally good with some elevated Total Suspended Solids detected in some of the site's sediment basins. However, these sediment basins will be utilised over the coming weeks for site dust suppression. This ensures these basins have sufficient capacity for further inflow and thus eliminates potential overflow into the final discharge dam. No wet weather discharge has occurred during the reporting period.

## **Complaints**

No complaints were received during this reporting period.

## **Rehabilitation**

Approximately 5 hectares of the north western corner of the emplacement area has had contour banks installed, to assist drainage and to prevent erosion. The area has also been seeded with pasture. This pasture consists of Bambatsi Panic, Japanese Millet, Premier Digit, Arrowleaf Clover and Green Panic at a rate of 25kg per hectare. The area was also fertilised with granular super Z at a rate of 50kg per hectare. Successful germination has occurred over the past weeks and the pasture is making good progress with recent rainfall. The area was also mounded with a specialised mounding implement. These mounds have two main purposes; to promote tree growth by providing a suitable earthen mound and to prevent erosion by capturing and slowing water runoff on the slope. This captured water inevitably waters the planted trees within the furrow, below the mound. Previous seeding in May 2011, on the north east area of the emplacement area has also made good progress due to rainfall over the past 3 months.

Additionally, to assist with the capture of sediment, a series of sediment traps have been installed between the eastern amenity bund and the north eastern emplacement. This area carries a large amount of dirty water during wet weather, which drains from the active emplacement and production areas. These traps have proved successful through their overflow system in reducing velocity of this water and capturing sediment which would usually drain directly into sediment basin 3 and cause erosion problems. These structures have been seeded and are showing a good germination rate to date. Vetiver reeds were also planted around the top water line of the primary sediment trap to assist with stability.

Over the past 3 months 1,000 trees have been planted at Sunnyside during 3 planting campaigns. The primary areas targeted were the north and north eastern emplacement areas. Mixes of Eucalypts, Ironbark, Kurrajong and a range of understory wattles were planted.



Established cover crop on rehabilitated waste emplacement



Cover crop on rehabilitated waste emplacement



Rehabilitation establishment