

Narrabri Coal Operations Pty Ltd ABN 15 129 850 139 10 Kurrajong Creek Road, Baan Baa NSW 2390 Locked Bag 1002, Narrabri NSW 2390 Tel: 02 6794 4755 Fax: 02 6794 4753 www.whitehavencoal.com.au

**Community Consultative Committee Meeting Minutes** 

Meeting No: 24 Date: Wednesday 12<sup>th</sup> March 2014 Time: 4:00pm Location: Narrabri Mine Site Office Present:

Terry Miller (TM) – Chairman James Stieger (JS) Mark Foster (MF) Peter Webb (PW) Sally Hunter (SH) Steve Bow (SB) (Narrabri Mine General Manager) Owen Salisbury (OS) (Narrabri Mine Technical Services Manager) Steve Farrar (SF) (Narrabri Mine Environmental Officer)

#### 1.0 Apologies

Cathy Redding and Danny Young.

#### 2.0 **Previous Minutes**

Moved: Mark Foster

Seconded: James Stieger

#### 2.1 Business Arising from Previous Minutes

Water ponding plan presented showing areas of LW101 and LW102 including volumes of ponded water when full. JS stated that he is concerned about erosion d/s of LW101. He also outlined that ponding water in LW102 eroding the channel during rain could then lead to flash flooding as the water builds up in the panels and eventually cuts through. SF stated that the LW102 water would eventually equalise with the LW101 water. The expert's onsite previously have said that erosion d/s should not be an issue.

JS asked if the complaints line had a message bank, SF advised that this has been setup and a message could now be left with no time limits.

Tree death above LW panels. SF stated that DP&I, EPA and DRE undertook their site inspection for the AEMR review and visited the dead trees. DP&I have requested additional information in relation to this. SF stated that an investigation has been undertaken including an assessment of the root systems but more needs to be done. JS said that the trees target water in gravel layers within the soil and loss of water from these would affect trees. SF said that only one kind appear impacted as other trees in the area are not impacted or have recovered.

Air Quality Monitoring Network – TM advised that previously the EPA had said February but nothing yet. SF advised that as far as he was aware no approach for funding had been made.



TM congratulated the mine on organising for the rubbish to be picked up. JS confirmed and said they collected 16m3 of rubbish. JS asked if we could have a smoke area onsite and setup with a skip bin. SB said they picked up alcohol as well and it was coming 'both ways'. SH asked where the dedicated smoke area is. SF explained that it is a smoke free site. SB said he would investigate further.

CCC membership – SF said he contacted Les Knox who was happy to resign as it conflicted with other commitments. Department of Planning makes the decision on who will be on the CCC. TM advised that he was looking to resign as chair by the end of the year, JS said to get on with it. TM advised that he would not want to see people go and new people come in cold. SH advised that the Santos CCC has an alternative so if one can't make it there is a backup. SB said we will look into replacing the chair and other members. JS congratulated TM on behalf of the committee for his time as chair. TM thanked the committee and said it has been constructive. JS said we currently have 6, maybe extend to a dozen in total and that new members are more likely to show up at the start. JS stated he has been on the committee for 8 years. SF asked if the CCC would be happy to go to 6 monthly meetings. TM asked what the rules were and SF advised that quarterly for 2 years following construction. TM said maybe keep quarterly for now and then go to 6 monthly with new members.

#### 3.0 General Business

#### 3.1 Operations Progress Report

The operations update was provided as follows:

#### Mine Progress Report (to 30 November 2013)

Coal produced (t):	February 2014 FY-to-date	32,000 3,501,000
Coal Railed (t):	February 2014 FY-to-date	235,000 3,463,000
Average workforce nu	umbers (Nov-13):	
	NCO	Waged – 164 Salary – 90 Total – 254
	Contractors	Total – 74
Safety Update (FY to	Feb-14):	
	Lost Time Injury (LTI) Total Recordable Inju	3 ries: 14



SB said since early December LW102 finished in early January. LW103 started last Monday [3 march]. Planned for the next longwall panel in October 2014.

SB stated that late last year we mined a lot of coal which resulted in noise/dust impacts. The longwall is starting again and the plan is for similar production amounts. WHC has taken over the washery, timing expected sooner but is done now.

SB said the mine hasn't gone well in safety. 2 hand incidents, 1 in January and 1 in February, with the January incident person back at work. The February incident involved a worker holding a 64kg pin which he dropped and then tried to catch it, injuring his finger. That is 3 lost time injuries this FY, target is zero.

Longwall has started and it mined 130kt last week and a half. Currently have a 3 day rail shutdown. Production has kicked away and activity has to go with it. Things on the way with dust and noise.

Noise – monitoring at different locations, swap dozers with bigger ones which should lessen movements. Main noise is dozer track noise.

Dust – last 6 months of last year very dusty. JS said it is always dusty. SB stated levels not acceptable, installing a chute on the product tripper to limit coal falling through the air. JS mentioned the fine dust. SB said rejects dusty but now it has been moved. JS said a westerly wind blows to his house, usually a dominant SW. TM asked about a wind break/trees. SB said xmas was the worst, dry, old coal. JS said it is constantly dusty. SB said we are getting design done on a major sprinkler system for stockpile area and this is planned for this year. SF advised that committed to 30 November at this stage. SB stated that technically we meet the criteria for dust, but we aware we are having an impact. Tough road ahead and the EPA are involved. Could expect PIN/fine or operational actions as a result of dusty conditions during a storm on 19 January. SH asked about results of sampling at Pine View. SF advised not yet available for the roof but have a water sample which showed <1% coal dust. JS said that even though <1% coal was found which wasn't there before. SF stated that the roof swab should tell the whole story. If dust is found monitoring will be undertaken.

#### 3.2 Environmental Overview

As per provided report. SF discussed the monitoring report with the CCC members.

Noise and dust already discussed.

JS asked about pre-drainage of water in LW101. Wondered if this could explain results for P19 which showed a drop in early 2009. OS said he would get the info for the next meeting.

TM asked if a summary of complaints could be included, e.g. dates/times, SF advised that there is a register on the website that doesn't include names that could be provided as well.



#### 4.0 New Business

Members complained about a PR company contacting them to attend a focus group. They were not happy with the way the contact was made and that they were asking for contact details of other people. No CCC members attended but JS was told from someone who did attend that it was OK and the people outlined at the end of the meeting that it was on behalf of Whitehaven. SF and SB outlined that they did not know it was occurring and would have been organised by corporate. SF found out when a CCC member contacted him in relation to the call.

JS requested newsletters be an ongoing thing. SF advised that current plan is for yearly. JS stated he has had more calls from locals now that they know he is on the CCC [CCC members listed on newsletters].

#### 5.0 Complaints and Complaints Hotline

As per provided report.

#### 6.0 Next Meeting

Wednesday 18<sup>th</sup> June 2014 at 4:00pm, Narrabri Mine Site Office.

#### 7.0 Closure of Meeting

Meeting closed at 5:25pm.

# Narrabri Mine Community Consultative Committee Meeting #24

# Environmental Monitoring Report December 2013 – February 2014

## **Noise Monitoring**

Attended noise monitoring was undertaken on Tuesday 10<sup>th</sup> to Thursday 12<sup>th</sup> December 2013 (Tables 1-12) to verify if noise levels were within compliance limits. The results from this monitoring are detailed in the tables below.

Table 1							
	١	NCM Operational N	loise Monitoring	Results – 10 E	December 2013 (day)		
Location		Total dB(A),	Wind speed/	Temp			
Location	Time	Leq (15 min) direction Glad (°C/100m		(°C/100m)	Identified Noise Sources		
N1 Bow Hills	2:00 pm	45	6.4/319	n/a	Traffic (44), birds & insects (37), NCM inaudible		
N3 Naroo	1:33 pm	47	6.1/318	n/a	Birds & insects (45), traffic (42), NCM (30)		
N5 Oakleigh	3:40 pm	39	6.2/328	n/a	Traffic (38), birds & insects (30), NCM (25)		
N6 Newhaven	3:41 pm	36	6.2/328	n/a	Traffic (33), insects (31), wind (29), NCM inaudible		
N7 Merriman	12:26 pm	40	6.1/300	n/a	Traffic (39), birds & insects (34), NCM inaudible		
N4 Greylands	3:14 pm	43	6.7/305	n/a	Birds & insects (42), traffic (36), NCM (25)		

\*Noise from gas drainage wells

Table 2 NCM Operational Noise Monitoring Results – 10 December 2013 (evening)							
Total dB(A), Wind speed/ Temp Grad   Location Time Leq (15 min) direction (°C/100m) <sup>1</sup> Identified Noise Sources							
N1 Bow Hills	8:45 pm	45	4.4/192	n/a	Traffic (45), insects (35), NCM (31)		
N3 Naroo	9:17 pm	40	3.9/192	n/a	Traffic (38), insects (34) NCM (23)		
N5 Oakleigh	9:23 pm	38	4.0/190	n/a	Insects (37), traffic (30), NCM inaudible		
N6 Newhaven	8:18 pm	37	3.4/198	n/a	Insects (36), NCM (30)*		
N7 Merriman	8:09 pm	47	3.8/200	n/a	Traffic (45), birds & insects (43), NCM inaudible		
N4 Greylands	8:53 pm	37	4.3/192	n/a	Insects (34), NCM (34)**		

\*Noise from gas drainage wells

\* Noise from gas drainage wells and mining plant

Table 3							
	NC	M Operational Nois	se Monitoring Re	sults – 10/11 I	December 2013 (night)		
	Total dB(A), Wind speed/ Temp						
Location	Time	Leg (15 min)	direction	Grad	Identified Noise Sources		
				(°C/100m)			
N1 Bow Hills	11:40 pm	35	3.3/108	Lapse	Traffic (32), insects (30), NCM (28),		
N3 Naroo	11:31 pm	41	3.5/110	Lapse	Insects (37), traffic (36), wind (35), NCM (22)		
N5 Oakleigh	1:05 am	24	3.3/135	Lapse	Insects (24), NCM inaudible		
N6 Newhaven	10:01 pm	38	5.2/175	Lapse	Insects (37), NCM (30)*		
N7 Merriman	10:05 pm	42	5.2/175	Lapse	Traffic (39), insects (38), NCM (32)		
N4 Greylands	11:07 pm	38	3.1/103	Lapse	Traffic (35), NCM (33)*, insects (28)		

\*Noise from gas drainage wells

Table 4								
	NCM Operational Noise Monitoring Results – 11 December 2013 (day)							
	Total dB(A), Wind speed/ Temp Grad							
Location	Time	Leq (15 min)	direction	(ºC/100m)	Identified Noise Sources			
N1 Bow Hills	8:51 am	35	3.6/135	n/a	Traffic (32), birds & insects (29), NCM (28)			
N3 Naroo	7:13 am	40	4.0/138	n/a	Traffic (38), birds (35), NCM inaudible			
N5 Oakleigh	11:09 pm	33	2.4/160	n/a	Birds & insects (30), traffic (28), NCM (25)			
N6 Newhaven	8:55 am	34	3.6/135	n/a	NCM (32)*, birds & insects (30)			
N7 Merriman	7:06 am	43	4.1/140	n/a	Birds & insects (41), traffic (38), NCM (31)			

\*Noise from gas drainage wells

Table 5							
	NCI	M Operational Nois	se Monitoring R	esults – 11 Dec	cember 2013 (evening)		
Location	Time	Total dB(A), Leq (15 min)	Wind speed/	Temp Grad (ºC/100m)	Identified Noise Sources		
			direction				
N1 Bow Hills	7:38 pm	45	2.6/216	n/a	Traffic (44), NCM (34), insects (32)		
N3 Naroo	9:17 pm	39	3.0/212	n/a	Traffic (36), NCM (36), insects (24)		
N5 Oakleigh	8:30 pm	33	2.7/240	n/a	Insects (33), NCM barely audible		
N6 Newhaven	8:18 pm	33	2.7/240	n/a	Insects (31), NCM (29)*		
N7 Merriman	6:57 pm	46	2.7/216	n/a	Birds (44), traffic (40), NCM (31)		

\*Noise from gas drainage wells

Table 6								
	NCM Operational Noise Monitoring Results – 11/12 December 2013 (night)							
		Total dB(A),	Wind	Temp Grad				
Location	Time	Leq (15 min) speed/		(ºC/100m)	Identified Noise Sources			
			direction					
N1 Bow Hills	11:21 pm	41	3.5/191	+1.1	Traffic (39), NCM (35), insects (31)			
N3 Naroo	11:12 pm	36	3.1/196	+1.1	Traffic (34), NCM (30), insects (26)			
N5 Oakleigh	12:31 am	27	3.5/161	+4.1	Insects (24), traffic (24), NCM inaudible			
N6 Newhaven	10:00 pm	33	2.7/230	Lapse	NCM (32)*, insects (27)			
N7 Merriman	10:14 pm	40	3.0/222	Lapse	Traffic (37), insects (36), NCM (28)			

\*Noise from gas drainage wells

Table 7							
	N	ICM Operational No	oise Monitoring	Results – 12 D	ecember 2013 (day)		
Location	Time	Total dB(A), Leq (15 min)	Wind speed/	Temp Grad (ºC/100m)	Identified Noise Sources		
			direction				
N1 Bow Hills	9:00 am	38	2.9/111	n/a	Traffic (37), birds (31), NCM inaudible		
N3 Naroo	9:18 am	41	2.6/113	n/a	Traffic (40), birds & insects (35), NCM inaudible		
N5 Oakleigh	10:45 am	32	2.5/120	n/a	NCM (29), traffic (26), birds & insects (23)		
N6 Newhaven	7:28 am	46	4.0/127	n/a	Birds (46), NCM (35)*		
N7 Merriman	7:15 am	40	3.8/130	n/a	Birds & insects (38), traffic (36), NCM (24)		

\*Noise from gas drainage wells

Table 8							
	NCI	M Operational Nois	e Monitoring R	esults – 12 Dec	cember 2013 (evening)		
Location	Time	Total dB(A), Leq (15 min)	Wind speed/	Temp Grad (ºC/100m)	Identified Noise Sources		
			direction				
N1 Bow Hills	8:41 pm	41	4.1/269	n/a	Birds (41), traffic (28), NCM (23)		
N3 Naroo	9:02 pm	38	4.5/262	n/a	NCM (34), frogs & insects (34), traffic (31)		
N5 Oakleigh	9:22 pm	44	4.5/252	n/a	Traffic (44), NCM (31), insects (28)		
N6 Newhaven	8:17 pm	31	3.3/279	n/a	Insects (31), NCM (18)*		
N7 Merriman	7:57 pm	46	3.3/282	n/a	Birds (46), traffic (35), NCM inaudible		

\*Noise from gas drainage wells

Table 9							
	NC	M Operational Noi:	se Monitoring Re	sults – 12/13 [	December 2013 (night)		
		Total dB(A),	Wind speed/	Temp			
Location	Time	Leq (15 min)	direction	Grad	Identified Noise Sources		
		• • • •		(ºC/100m)			
N1 Bow Hills	11:13 pm	38	3.7/236	Lapse	NCM (36), traffic (32), insects (25)		
N3 Naroo	11:20 pm	39	3.7/236	Lapse	NCM (37), insects (31), traffic (31)		
N5 Oakleigh	12:23 am	29	3.3/220	Lapse	Insects (27), traffic (23), NCM inaudible		
N6 Newhaven	10:03 pm	38	4.4/236	Lapse	NCM (35)*, insects (35)		
N7 Merriman	10:03 pm	41	4.2/236	Lapse	Traffic (40), NCM (35), insects (28)		

\*Noise from gas drainage wells

Table 10								
	NCM Sleep Disturbance Monitoring Results – 10/11 December 2013 (night)							
Location Time dB(A),L1 (1 min) Wind speed / direction Temp Grad(°C/100m)								
N1 Bow Hills	11:40 pm	32	3.3/108	n/a				
N3 Naroo	11:31 pm	25	3.5/110	n/a				
N5 Oakleigh	1:05 am	n/a	3.3/135	n/a				
N6 Newhaven	10:01 pm	33	5.2/175	n/a				
N7 Merriman	10:05 pm	41	5.2/175	n/a				
N4 Greylands	11:07 pm	37	3.1/103	n/a				

\*Noise from gas drainage wells

Table 11							
NCM Sleep Disturbance Monitoring Results – 11/12 December 2013 (night)							
Location	Time dB(A),L1 (1 min) Wind speed / direction Temp Grad(°C/100m)						
N1 Bow Hills	11:21 pm	44	3.5/191	n/a			
N3 Naroo	11:12 pm	37	3.1/196	n/a			
N5 Oakleigh	12:31 am	n/a	3.5/161	n/a			
N6 Newhaven	10:00 pm	36	2.7/230				
N7 Merriman	10:14 pm	36	3.0/222	n/a			

Table 12									
	NCM Sleep Disturbance Monitoring Results – 12/13 December 2013 (night)								
Location	on Time dB(A),L1 (1 min) Wind speed / direction Temp Grad(								
N1 Bow Hills	11:13 pm	43	3.7/236	Lapse					
N3 Naroo	11:20 pm	46	3.7/236	Lapse					
N5 Oakleigh	12:23 am	n/a	3.3/220	Lapse					
N6 Newhaven	10:03 pm	41	4.4/236	Lapse					
N7 Merriman	10:03 pm	41	4.2/236	Lapse					

The results in Tables 1 to 12 show that, under the operating and meteorological conditions at the times, for the worst case 15 minute compliance measurement periods, the mine noise exceeded the operational noise criterion at the following monitoring locations and periods:

		Total dB(A),	Wind speed/ Temp Grad		
Location	Date, time	Leq (15 min)	direction	(ºC/100m)	Identified Noise Sources
N3 Naroo	11/12/13 - 8:17 pm	39	3.0/212	n/a	Traffic (36), NCM (36), insects (24)
N1 Bow Hills	12/12/13 – 11:13 pm	38	3.7/236	Lapse	NCM (36), traffic (32), insects (25)
N3 Naroo	12/12/13 - 11:20 pm	39	3.7/236	Lapse	NCM (37), insects (31), traffic (31)
N3 Naroo	12/12/13 – 11:20 pm	46	3.7/236	Lapse	Sleep Disturbance Criteria is 45 dB(A)

The audible mining noise sources during each of these measurements were related to dozers working on the coal stockpiles (both engine and track noise).

NCM environmental licence conditions indicate that compliance with noise emission criteria is not applicable under atmospheric conditions where wind speeds are higher than 3m/s or temperature inversions of  $1.5 - 4^{\circ}C/100$  metres and a source to receiver wind speed greater than 2 metres/second at 10 metres above ground level or temperature inversions of greater than  $4^{\circ}C/100$  metres.

Data from the mine operated weather station indicated that all of the elevated noise levels were measured whilst there were winds at 3 and 3.7 m/s. The elevated noise levels were, therefore, measured under non-compliant meteorological conditions.

Month	ND1 Turrabaa	ND2 Claremont	ND3 Bow Hills	ND4a New Matoppo	ND5 Claremont	ND6 Willarah	ND7 Claremont	ND8 Claremont	ND11 Oakleigh
Mar-13	0.9	0.3	0.6	0.2	5.7	0.4	1.2	0.8	0.9
Apr-13	1.0	0.9	1.3	0.8	1.4	0.3	1.1	0.5	0.4
May-13	0.6	3.1	0.6	0.8	1.8	0.5	1.0	0.5	0.7
Jun-13	2.5	1.1	0.8	0.3	4.8	0.2	0.6	1.0	0.2
Jul-13	2.1	0.5	0.6	0.4	5.7	0.1	0.4	0.2	0.2
Aug-13	0.5	0.9	0.5	0.5	2.4	0.2	0.4	0.5	0.2
Sep-13	0.8	0.8	0.5	1.1	0.7	0.2	1.4	0.2	0.3
Oct-13	0.8	1.7	0.3	0.9	2.7	1.0	3.0	0.4	1.4
Nov-13	0.8	0.9	0.6	0.6	2.5	0.8	2.2	0.7	1.1
Dec-13	0.7	1.2	0.5	0.7	2.0	1.0	1.6	0.5	8.5
Jan-14	0.9	0.4	0.0	0.4	1.0	0.5	0.8	0.3	1.4
Feb-14	0.9	0.5	1.0	0.2	1.4	0.1	1.2	0.3	0.6
Annual Average	1.0	1.0	0.6	0.6	2.7	0.4	1.2	0.5	1.3

## **Deposited Dust Monitoring**

Deposited dust levels have remained at relatively low levels since the last meeting with the exception of ND11 during December 2013. This gauge is located at the Oakleigh residence. The high reading is not considered to be mine related as other gauges and high volume air samplers, see below, are located between the mine and this gauge and results for these monitoring points were consistent with previous sample results. The high result is most likely related to farming activities. All dust deposition annual averages are within compliance limits.

## High Volume Air Sampling (PM<sub>10</sub>)

 $PM_{10}$  measurements taken to the end of February 2014 for the "Claremont" High Volume Air Sampler (HVAS) are returning a running annual average of 12.48 µg/m<sup>3</sup> which is well below the annual average limit of 30 µg/m<sup>3</sup>.



 $PM_{10}$  measurements taken to the end of February 2014 for the "Turrabaa" High Volume Air Sampler are returning a running annual average of 11.49 µg/m<sup>3</sup> which is also well below the annual average limit of 30 µg/m<sup>3</sup>.



 $PM_{10}$  levels have remained compliant since the last meeting with annual averages at both sites displaying a stabilising trend.

## Groundwater Monitoring

Groundwater monitoring was completed in early December 2013. Nested piezometers have been installed on the "Omeo" and "Kurrajong" properties and two sets are also installed on the mine site to monitor the effects of the Longwall operation. Results of these units is included below.





















































## Surface Water Monitoring

No wet weather discharges from licensed discharge points occurred during the December 2013 to February 2014 period.

## Complaints

Eighteen formal complaints were received during December 2013 to February 2014. All eighteen complaints related to visible dust being generated at the site. One complaint included noise as an issue and one included light coming from the mine as an issue. In addition to the Trigger Action Response Plan (TARP) developed for the coal processing facility and the requirements for dust management included on the site's EPL, Narrabri Mine is considering the following options to reduce dust emissions onsite:

- Converting D10 to D11 dozers on stockpiles should result in less dozer movements;
- Removing 'fine dust' from toe of stockpiles and dozer transfer road;
- Undertaking training for dozer operators from the manufacturers on correct operating procedures;
- Adding weekly inspections of transfer point sprays to work order system;
- Engaging a consultant to design a fully automated sprinkler system for ROM/Product Stockpiles;
- Installing coal discharge chutes on the Product Skyline Belt;
- Undertaking training for all CHPP personnel on Environmental Obligations; and
- Requesting CHPP supervisors engage operators etc on awareness when working and generating dust, i.e. need to be responsive.

Narrabri Mine has undertaken the validation of the noise model, report attached. Additional measures to reduce impacts and/or monitor to determine levels will be negotiated with the relevant landholder(s).

## Environmental Incident(s)

During a storm event on 19<sup>th</sup> January 2014 a complaint was made to the EPA in relation to the amount of dust coming from the coal processing area. Narrabri Mine has provided information to the EPA in relation to this event but no action has been taken to date. No other environmental incidents occurred during the December 2013 to February 2014 period.



Narrabri Coal Operations Pty Ltd ABN 15 129 850 139 10 Kurrajong Creek Road, Baan Baa NSW 2390 Locked Bag 1002, Narrabri NSW 2390 Tel: 02 6794 4755 Fax: 02 6794 4753 www.whitehavencoal.com.au

**Community Consultative Committee Meeting Minutes** 

Meeting No: 25 Date: Wednesday 18<sup>th</sup> June 2014 Time: 4:00pm Location: Narrabri Mine Site Office Present: Terry Miller (TM) – Chairman James Stieger (JS) Mark Foster (MF) Peter Webb (PW)

Steve Bow (SB) (Narrabri Mine General Manager) Steve Farrar (SF) (Narrabri Mine Environmental Officer)

#### 1.0 Apologies

Cathy Redding, Sally Hunter and Owen Salisbury.

#### 2.0 **Previous Minutes**

Moved: Mark Foster

Seconded: James Stieger

#### 2.1 Business Arising from Previous Minutes

CCC membership – advertisements in the local newspaper. TM advised that Chamber of Commerce President Russell Stewart was applying for the Independent Chair position. SF advised that one application received for the member position to date but no applications received for the chair position.

WHC Research Call – SF read out the following email from WHC communications personnel:

"The research, polling and focus group activity, commissioned by Whitehaven, and carried out by Newgate Communications on our behalf was done to provide information from a much wider range of people in the community for Whitehaven to design and enhance our community relations and engagement programme going forward. This activity was conducted to provide an additional source of community insight, in addition to the information and insights currently gained from existing CCC's.

While we do not plan to publicly reveal the results of the consultation at this stage, we will be incorporating some of the recommendations into further activity and interaction with the local and regional community in the future."

JS stated that it was done wrong.

Pine View Complaint – SF stated that the results were reported as <1% coal in the samples collected. JS stated that coal is there when it wasn't before. SF advised that the resident had been notified and seemed satisfied with the results.

Dust Monitoring Network – letter received form the EPA advising that a network will be setup initially in Narrabri/Gunnedah. The letter also identified that the EPA would be seeking funding shortly from industry for the network.

WHITEHAVEN COAL

Smoking area onsite – SB stated that options are being looked into in terms of bringing it inside the fence. JS asked if we could go to Council about a bin on the highway. JS stated that he had approached the Mayor but then went on holidays. TM stated that the CCC should write to Council about a bin located in front of Bow Hills, where trucks stop now. MF stated that people tend to put rubbish around the bin instead of inside the bin.

#### 3.0 General Business

#### 3.1 Operations Progress Report

The operations update was provided as follows:

#### Mine Progress Report (to 31 May 2014)

Coal produced (t):	May 2014 FY-to-date	653,000 4,780,000
Coal Railed (t):	May 2014 FY-to-date	582,000 4,620,000

Average workforce numbers (May 2014):

NCO	Waged – 170 Salary – 89 Total – 259
Contractors	Total – 74

Safety Update (FY to May-14):

Lost Time Injury (LTI)	4
Total Recordable Injuries:	20
Planned Task Observations:	3,488
Take 5 Assessments:	77,686
Work Hours (May-14):	78,616
Days LTI Free:	38

SB stated that the TRI is when a worker cannot go back to normal duties on next shift. SB said the 20 TRI's is an improvement from last year but needs to be better.



April 2014 Issues - SB outlined the horizon control issues during April. Shot firing had to be done to get the tailgate end down. Lost 26 days production and had to leave 2 chocks [longwall shields] behind valued at \$750k each which is not being replaced. Hunter Valley is quiet which means more trains for Narrabri. Budgeted to produce 5.5Mt for FY13/14, should get 5.3Mt due to April issues. Biggest issue is price of coal, AUD going up also doesn't help. Biggest competitor is Indonesia which is still making money due to lower production costs. Hunter Valley slowing, some mines closing, e.g. Integra going into care & maintenance, park up until things improve. Narrabri making money – just.

MF asked about the cleanskin programme. SB said not at the moment. Fully employed, industry downturn means experienced people applying for jobs.

TM asked about trains and stated that the first loco is clean and next two dirty. May help image if loco's all clean, not coal dust but diesel exhaust. SB said he would look into it with train companies.

#### 3.2 Environmental Overview

As per provided report. SF discussed the monitoring report with the CCC members.

At previous meeting JS enquired about the levels in P19 and if pre-drainage of water would account for the level drop. SF stated P19 was drilled in 2006 to a depth of 187m, i.e. below the coal. Pre-drainage commenced in November 2009. P19 drop was noticed during the period from December 2008 to February 2009 so drop before pre-drainage commenced.

SF supplied copies of the complaints register, available on the website, to members of the CCC as requested at the previous meeting. Subsidence monitoring results were also included in the report as requested at the previous CCC meeting.

#### 4.0 New Business

CCC Membership – process moving forward. SF read email from Department of Planning and Environment advising that committees usually consist of 3-5 community members, 1 Council rep, and 2-3 people from the mine. SB also stated MF needs to remain objective as the mine is buying his property [declaration of interests to be included in future CCC meetings].

#### 5.0 Complaints and Complaints Hotline

As per provided report.

#### 6.0 Next Meeting

Wednesday 24<sup>th</sup> September 2014 at 4:00pm, Narrabri Mine Site Office.

#### 7.0 Closure of Meeting

Meeting closed at 5:15pm.

# Narrabri Mine Community Consultative Committee Meeting #25

# Environmental Monitoring Report March 2014 – May 2014

## **Noise Monitoring**

Attended noise monitoring was undertaken between Monday 17<sup>th</sup> March and Wednesday 19<sup>th</sup> March 2014 (Tables 1-12) and on Tuesday 6<sup>th</sup> May 2014 (Tables 13-16) to verify if noise levels were within compliance limits. The results from this monitoring are detailed in the tables below.

Table 1: NCM Operational Noise Monitoring Results – 17 March 2014 (day)							
Location	Time	Total dB(A), Leq (15 min)	Wind speed/ direction	Temp Grad (ºC/100m)	Identified Noise Sources		
N1 Bow Hills	2:33 pm	40	2.4/167	n/a	Wind (36), birds (35), traffic (34), NCM faintly audible		
N3 Naroo	2:37 pm	41	2.4/167	n/a	Traffic (38), birds (37), NCM inaudible		
N5 Oakleigh	4:20 pm	34	2.6/325	n/a	Traffic (31), wind (27), NCM (27)		
N6 Newhaven	4:21 pm	45	2.6/325	n/a	NCM (27)*, birds (33)		
N7 Merriman	12:48 pm	35	2.1/180	n/a	Birds & insects (33), traffic (26), wind (26) NCM inaudible		

\*Noise from vent fan and drill rig

Table 2: NCM Operational Noise Monitoring Results – 17 March 2014 (evening)							
		Total dB(A),	Wind speed/	Temp Grad			
Location	Time	Leq (15 min)	direction	(°C/100m) <sup>1</sup>	Identified Noise Sources		
N1 Bow Hills	9:26 pm	48	2.4/176	9.2/100	Traffic (48), NCM (35), insects (33)		
N3 Naroo	8:33 pm	38	2.7/223	6.4/100	Traffic (38), NCM (20)		
N5 Oakleigh	9:15 pm	23	1.4/177	9.0/100	Traffic (23), NCM faintly audible		
N6 Newhaven	8:01pm	52	2.0/224	4.2/100	NCM (34)*		
N7 Merriman	8:48 pm	43	2.5/211	7.2/100	Insects (40), traffic (40), NCM inaudible		

\*Noise from vent fan and drill rig

Table 3: NCM Operational Noise Monitoring Results – 17/18 March 2014 (night)								
Location	Time	Total dB(A), Leg (15 min)	Wind speed/	Temp Grad	Identified Noise Sources			
		204 (10 1111)	un ootion	(ºC/100m)				
N1 Bow Hills	12:35 am	40	2.1/112	6.8/100	NCM (38), traffic (34), insects (26)			
N3 Naroo	10:01 pm	38	3.7/178	6.3/100	Traffic (38), insects (25), NCM inaudible			
N5 Oakleigh	11:14 pm	24	3.1/167	6.4/100	Traffic (23), insects (19), NCM inaudible			
N6 Newhaven	10:13 pm	56	3.7/178	5.3/100	NCM (38)*			
N7 Merriman	11:27 pm	40	3.1/164	6.4/100	Traffic (39), NCM (32), insects (29)			

\*Noise from vent fan and drill rig

Table 4: NCM Operational Noise Monitoring Results – 18 March 2014 (day)							
		Total dB(A),	Wind speed/	Temp Grad			
Location	Time	Leq (15 min)	direction	(ºC/100m)	Identified Noise Sources		
N1 Bow Hills	10:32 am	40	1.4/280	n/a	Traffic (40), birds (26), NCM (25)		
N3 Naroo	8:02 am	40	3.7/145	n/a	Traffic (39), birds (30), NCM inaudible		
N4 Greylands	10:01 am	34	2.8/135	n/a	Wind (32), traffic (30)		
N5 Oakleigh	9:45 am	31	1.8/192	n/a	Traffic (29), NCM (23), birds (21)		
N6 Newhaven	8:45 am	52	3.0/140	n/a	NCM (34)*, birds (30)		
N7 Merriman	4:27 pm	37	4.1/148	n/a	Wind (35), traffic (30), birds (30), NCM inaudible		

\*Noise from vent fan and drill rig

Table 5: NCM Operational Noise Monitoring Results – 18 March 2014 (evening)							
Location	Time	Total dB(A), Leq (15 min)	Wind speed/ direction	Temp Grad (ºC/100m)	Identified Noise Sources		
N1 Bow Hills	9:13 pm	39	3.8/146	1.3/100	Traffic (38), NCM (29), insects (29)		
N3 Naroo	8:22 pm	40	3.2/152	4.9/100	Traffic (38), insects (35), NCM inaudible		
N4 Greylands	8:15 pm	37	3.0/153	5.0/100	Traffic (34), NCM (31), insects (29)		
N5 Oakleigh	9:06 pm	31	3.3/146	1.3/100	Traffic (31), insects (19), NCM inaudible		
N6 Newhaven	7:37 pm	49	3.3/157	3.9/100	NCM (31)*, insects (28)		
N7 Merriman	8:39 pm	38	3.2/152	4.2/100	Traffic (35), NCM (33), insects 29		

\*Noise from vent fan and drill rig

Table 6: NCM Operational Noise Monitoring Results – 18/19 March 2014 (night)							
Location	Time	Total dB(A), Leq (15 min)	Wind speed/ direction	Temp Grad (°C/100m)	Identified Noise Sources		
N1 Bow Hills	12:40 am	37	3.4/147	6.5/100	Traffic (35), NCM (30), insects (25)		
N3 Naroo	10:00 pm	37	3.2/146	1.8/100	Traffic (35), insects (31), NCM inaudible		
N4 Greylands	11:07 pm	35	3.0/150	3.4/100	NCM (35), insects (25)		
N5 Oakleigh	11:15 pm	25	3.0/140	4.7/100	Traffic (24), insects (18), NCM inaudible		
N6 Newhaven	10:00 pm	50	3.2/146	1.8/100	NCM (32)*, insects (28)		
N7 Merriman	11:33 pm	39	3.1/139	5.5/100	Traffic (38), NCM (30), insects 25		

\*Noise from vent fan and drill rig

Table 7: NCM Operational Noise Monitoring Results – 19 March 2014 (day)									
Location	Time	Total dB(A), Leq (15 min)	Wind speed/ direction	Temp Grad (ºC/100m)	Identified Noise Sources				
N1 Bow Hills	12:40 pm	43	2.3/117	n/a	Traffic (41), birds (35), wind (35), NCM faintly audible				
N3 Naroo	7:58 am	43	4.6/147	n/a	Traffic (41), birds (39), NCM inaudible				
N5 Oakleigh	9:44 am	38	4.2/156	n/a	Birds (35), traffic (32), wind (30), NCM (24)				
N6 Newhaven	7:56 am	48	4.6/147	n/a	NCM (30)*, birds (33)				
N7 Merriman	9:38 am	37	4.2/156	n/a	Birds (32), traffic (31), wind (31), NCM (27)				

\*Noise from vent fan and drill rig

Table 8: NCM Operational Noise Monitoring Results – 19 March 2014 (evening)									
Location	Time	Total dB(A), Leq (15 min)	Wind speed/ direction	Temp Grad (ºC/100m)	Identified Noise Sources				
N1 Bow Hills	9:03 pm	34	2.4/111	0.2/100	Traffic (32), NCM (26), birds & insects (25)				
N3 Naroo	7:30 pm	49	4.1/85	Lapse	Traffic (46), wind (46), insects (30), NCM inaudible				
N5 Oakleigh	8:39 pm	30	2.4/125	0.0	Traffic (29), NCM (20)				
N6 Newhaven	7:44 pm	54	4.5/73	Lapse	NCM (36)*				
N7 Merriman	8:26 pm	46	2.4/125	Lapse	Wind (46), traffic (35), NCM inaudible				

\*Noise from vent fan and drill rig

	Table 9: NCM Operational Noise Monitoring Results – 19/20 March 2014 (night)									
Location	Time	Total dB(A), Wind speed/ Tem   Time Leq (15 min) direction Grad		Temp Grad	Identified Noise Sources					
				(ºC/100m)						
N1 Bow Hills	12:17 am	26	2.5/104	1.4/100	Insects (24), traffic (20) NCM faintly audible					
N3 Naroo	10:00 pm	41	3.3/96	2.0/100	Traffic (41), insects (28), NCM inaudible					
N5 Oakleigh	11:33 pm	35	2.5/113	1.0/100	Traffic (35), insects (25), NCM inaudible					
N6 Newhaven	10:00 pm	54	3.3/96	2.0/100	NCM (36)*, insects (27)					
N7 Merriman	11:10 pm	38	3/116	0.9/100	Insects (36), traffic (29), wind (29), NCM inaudible					

\*Noise from vent fan and drill rig

Table 10: NCM Sleep Disturbance Monitoring Results – 17/18 March 2014 (night)								
Location	tion Time dB(A),L1 (1 min) Wind speed / direction Temp Grad(°C/100r							
N1 Bow Hills	12:35 am	47	2.1/112	6.8/100				
N3 Naroo	10:1 pm	n/a	3.7/176	6.3/100				
N5 Oakleigh	11:14 pm	n/a	3.1/167	6.4/100				
N6 Newhaven	10:13 pm	n/a	3.7/178	5.3/100				
N7 Merriman	11:27 pm	35	3.1/164	6.4/100				

Table 11: NCM Sleep Disturbance Monitoring Results – 18/19 March 2014 (night)									
Location	Time dB(A),L1 (1 min) Wind speed / direction Temp Grad(°C/100m)								
N1 Bow Hills	12:40 am	35	3.4/147	6.5/100					
N3 Naroo	10:00 pm	n/a	3.2/146	1.8/100					
N4 Greylands	11:07 pm	40	3/150	3.4/100					
N5 Oakleigh	11:15 pm	n/a	3/140	4.7/100					
N6 Newhaven	10:00 pm	n/a	3.2/146	1.8/100					
N7 Merriman	11:33 pm	36	3.1/139	5.5/100					

Table 12: NCM Sleep Disturbance Monitoring Results – 19/20 March 2014 (night)								
Location Time dB(A),L1 (1 min) Wind speed / direction Temp Grad(ºC/100m)								
N1 Bow Hills	12:17 am	25	2.5/104	1.4/100				
N3 Naroo	10:00 pm	n/a	3.3/96	2.0/100				
N5 Oakleigh	11:33 pm	n/a	2.5/113	1.0/100				
N6 Newhaven	10:00 pm	n/a	3.3/96	2.0/100				
N7 Merriman	11:10 pm	n/a	3/116	0.9/100				

	Table 13: NCM Noise Monitoring Results – 6 May 2014 (Day)							
			Wind speed					
Location	Time	dB(A),	(m/s)/	Identified Noise Sources				
		L <sub>eq(15min)</sub>	direction°					
Merriman	2:58 pm	43	3.3 / 126	Birds (41), traffic (36), wind (32), NCM inaudible				
Bow Hills	2:31 pm	38	3.4 / 129	Traffic (38), birds (25), NCM faintly audible				
Oakleigh	4:31 pm	44	1.6 / 95	Birds (43), traffic (38), NCM inaudible				
Naroo	2:08 pm	41	3.2 / 130	Traffic (37), birds (34), wind (34), NCM inaudible				
Newhaven	3:30 pm	43	3.4 / 114	NCM (25)*				
Greylands	3:55 pm	37	2.0 / 107	Traffic (33), wind (32), birds (29), NCM (26)				
*noise from vent fa	n – see text							

Table 14: NCM Noise Monitoring Results - 6 May 2014 (Evening) Wind speed Location Time dB(A), (m/s)/ **Identified Noise Sources** Leg(15min) direction° Merriman 8:17 pm 38 0.9/176 Traffic (38), insects (23), NCM inaudible Bow Hills Traffic (36), insects (20), NCM inaudible 8:39 pm 36 0.8 / 201 Oakleigh 9:20 pm 35 1.0 / 208 Traffic (35) insects (22), NCM inaudible 47 Traffic (47), insects (20), NCM inaudible Naroo 6:58 pm 1.4/173 42 0.9/187 NCM (23)\*, drill rig (35), insects (23) Newhaven 7:28 pm Greylands 7:54 pm 37 1.1/176 Traffic (37), insects (21), NCM inaudible

\*noise from vent fan - see text

Table 15: NCM Noise Monitoring Results – 6 May 2014 (Night)								
Location	Time	dB(A), L <sub>eq(15min)</sub>	Wind speedTemp Grad(m/s)/(°C/100m)direction°		Identified Noise Sources			
Merriman	11:32 pm	38	CALM	+2.1	NCM (36), traffic (34), insects (20)			
Bow Hills	11:55 pm	43	0.2 / 101	+4.2	NCM (42), traffic (37), insects (22)			
Oakleigh	12:37 am	36	0.9 / 61	+2.9	NCM (35), traffic (28), insects (27)			
Naroo	10:22 pm	44	0.9 / 183	+7.7	Traffic (44), insects (23), NCM inaudible			
Newhaven	10:51 pm	47	0.3 / 239	+5.8	NCM (29)*, drill rig (35)			
Greylands	11:11 pm	40	0.9 / 202	+4.7	NCM (38), traffic (36), insects (23)			

\*noise from vent fan – see text

Table 16: L1 (1 min) – 6 May 2014 (Night)								
Location Time dB(A),L1(1 min)								
Merriman	10:44 pm	42						
Bow Hills	11:09 pm	48						
Oakleigh	12:00 am	44						
Naroo	11:36 pm	N/A						
Newhaven 10:01 pm 31*								
Greylands	Greylands 10:22 pm 44							
*noise from vent	fan							

Some exceedances were recorded during the March 2014 monitoring (Tables 1-12) however the Narrabri Mine Environment Protection Licence conditions indicate that compliance with noise emission criteria is not applicable under atmospheric conditions where winds speeds are higher than 3m/s or temperature inversions of

1.5 - 4°C/100 metres and a source to receiver wind speed greater than 2 metres/second at 10 metres above ground level or temperature inversions of greater than 4°C/100 metres. The elevated noise levels were, therefore, measured under non-compliant meteorological conditions.

During May 2014 temperature inversion data showed that the noise measurements at Bow Hills and Greylands were made under non-compliant meteorological conditions (i.e. temperature inversions of greater than  $4^{\circ}$ C/100 metres). It should be noted that the Greylands property is mine owned. In addition, at the Merriman residence the noise was 1 dB(A) above the noise criterion. It is noted that an exceedance of less than 2 dB(A) above a statutory noise limit specified in a licence condition is not considered to be a non-compliance as per the discussion in Section 11.1.3 of the NSW Industrial Noise Policy.

Monitoring was also undertaken at the Ardmona and Matilda residences during March and May 2014. Monitoring confirmed compliance at both properties.

Month	ND1 Turrabaa	ND2 Claremont	ND3 Bow Hills	ND4a New Matoppo	ND5 Claremont	ND6 Willarah	ND7 Claremont	ND8 Claremont	ND11 Oakleigh
Jun-13	2.5	1.1	0.8	0.3	4.8	0.2	0.6	1.0	0.2
Jul-13	2.1	0.5	0.6	0.4	5.7	0.1	0.4	0.2	0.2
Aug-13	0.5	0.9	0.5	0.5	2.4	0.2	0.4	0.5	0.2
Sep-13	0.8	0.8	0.5	1.1	0.7	0.2	1.4	0.2	0.3
Oct-13	0.8	1.7	0.3	0.9	2.7	1.0	3.0	0.4	1.4
Nov-13	0.8	0.9	0.6	0.6	2.5	0.8	2.2	0.7	1.1
Dec-13	0.7	1.2	0.5	0.7	2.0	1.0	1.6	0.5	8.5
Jan-14	0.9	0.4	0.0	0.4	1.0	0.5	0.8	0.3	1.4
Feb-14	0.9	0.5	1.0	0.2	1.4	0.1	1.2	0.3	0.6
Mar-14	0.4	1.7	0.6	<0.1	2.6	1.0	1.0	0.9	0.6
Apr-14	5.8	0.5	0.3	<0.1	1.2	0.4	<0.1	0.4	1.8
May-14	0.8	0.2	1.2	0.4	0.6	<0.1	0.5	0.4	0.8
Annual Average	1.4	0.9	0.6	0.6	2.3	0.5	1.2	0.5	1.4

## **Deposited Dust Monitoring**

Deposited dust levels have remained at relatively low levels since the last meeting with the exception of ND1 during April 2014. This gauge is located at the Turrabaa residence. The high reading is not considered to be mine related as there is a high volume air sampler nearby and other gauges closer to the operation that did not report high measurements during April 2014. The high result is most likely related to farming activities. All dust deposition annual averages are within compliance limits.

## High Volume Air Sampling (PM<sub>10</sub>)

 $PM_{10}$  measurements taken to the end of May 2014 for the "Claremont" High Volume Air Sampler (HVAS) are returning a running annual average of 11.63 µg/m<sup>3</sup> which is well below the annual average limit of 30 µg/m<sup>3</sup>.



 $PM_{10}$  measurements taken to the end of May 2014 for the "Turrabaa" High Volume Air Sampler are returning a running annual average of 11.50 µg/m<sup>3</sup> which is also well below the annual average limit of 30 µg/m<sup>3</sup>.



 $PM_{10}$  levels have remained compliant since the last meeting. Annual averages at both sites are displaying a slightly increasing trend likely due to the period of hot, dry weather that occurred mid-late last year.

## Groundwater Monitoring

Groundwater monitoring was completed in March 2014. Nested piezometers have been installed on the "Omeo" and "Kurrajong" properties and two sets are also installed on the mine site to monitor the effects of the Longwall operation. Results of these units is included below. Narrabri Mine Community Consultative Committee


















































Monitroing well P13 has shown a steady decrease in water levels since September 2013. In the area of P13 pre-drainage of water and gas commenced in February 2011 and was completed during November 2013. It is considered likely that any impacts to the standing water level would have been identified during 2011. Bore P13 is 30 m deep and targets the Garrawilla Volcanics. A production bore, WB2, is

approximately 300 m to the south and targets the same aquifer. Given the extended hot, dry period experienced over the second half of 2013 the drop in water level in P13 is likely associated with increased production from WB2.

# Surface Water Monitoring

A wet weather discharge from licensed discharge points occurred during March 2014. Narrabri Mine's Environmental Protection Licence (EPL) outlines the limits for the following water quality parameters: Oil and Grease – 10mg/L; pH – 6.5-8.5; and Total Suspended Solids – 50mg/L (no limits are set for Total Organic Carbon (TOC) or Electrical Conductivity (EC)). The table below shows compliance with these parameters.

				<u> </u>		
Site	Date	рН	EC (us/cm)	TSS (mg/L)	TOC (mg/L)	Oil/Grease (mg/L)
SD2	28/03/2014	7.21	103	26	12	<5
SD5	28/03/2014	7.06	72	18	10	<5

Table 1: Discharge Water Quality – 28<sup>th</sup> March 2014

Flows were also monitored in surrounding creek points on the 21<sup>st</sup>, 25<sup>th</sup>, 26<sup>th</sup> and 27<sup>th</sup> March 2014.

# Subsidence

Narrabri Mine has monitored the subsidence movement across the surface of LW101 to LW103 in accordance with the approved Extraction Plan. The table below outlines the maximum subsidence parameters recorded as part of the subsidence monitoring program and a comparison with the maximum predicted subsidence parameters as outlined in the Extraction Plan. Monitoring has been undertaken on the 11kv power line that traverses the southern end of LW101 to LW103.

LW101, LW102 and Part of LW103					
	Maximum Predicted Extraction Plan	Maximum Measured			
Line 101 – Centre of LW101					
Subsidence (m)	2.44	2.628			
Tilt (mm/m)	47	29.1 – 46.3			
Tensile Strain (mm/m)	11 – 22^	8.7 – 20.7			
Compressive Strain (mm/m)	14 – 28^	7.5 – 26.6			
Angle of Draw (°, Degrees)	22.5 – 26.5	20.2			
Line 102 – Centre of LW102					
Subsidence (m)	2.44	2.665			
Tilt (mm/m)	41	43.7			
Tensile Strain (mm/m)	10 – 20^	20.5			
Compressive Strain (mm/m)	12 – 24^	46.7			
Angle of Draw (°, Degrees)	22.5 – 26.5	20.8			
Line 103 North – Centre of LW103 Northern E	nd				
Subsidence (m)	2.44	2.589*			

LW101, LW102 and Part of LW103		
Tilt (mm/m)	35	40.2*
Tensile Strain (mm/m)	8 – 16^	18.8*
Compressive Strain (mm/m)	10 – 20^	16.2*
Angle of Draw (°, Degrees)	22.5 – 26.5	18.1*
Line A – Cross Panel Survey Line		
Subsidence (m)	2.44	2.558*
Tilt (mm/m)	47	56.3*
Tensile Strain (mm/m)	11 – 22^	17.1*
Compressive Strain (mm/m)	14 – 28^	26.7*
Angle of Draw (°, Degrees)	22.5 – 26.5	25.7*
Line B – Pine Creek Tributary 1		
Subsidence (m)	2.44	2.557*
Tilt (mm/m)	47	54.8*
Tensile Strain (mm/m)	11 – 22^	13.1*
Compressive Strain (mm/m)	14 – 28^	11.0*
Gradient Change (%)	Up to 6	5.47*
Line E – Pine Creek Tributary 1 Crossline 1		
Subsidence (m)	2.44	0.952*
Tilt (mm/m)	47	26.9*
Tensile Strain (mm/m)	11 – 22^	9.2*
Compressive Strain (mm/m)	14 – 28^	2.9*
Line F – Pine Creek Tributary 1 Crossline 2		
Subsidence (m)	2.44	2.514*
Tilt (mm/m)	41	53.5*
Tensile Strain (mm/m)	10 – 20^	6.6*
Compressive Strain (mm/m)	12 – 24^	11.9*
Line G – Pine Creek Tributary 1 Crossline 3		
Subsidence (m)	2.44	0.089*
Tilt (mm/m)	47	2.8*
Tensile Strain (mm/m)	11 – 22^	1.8*
Compressive Strain (mm/m)	14 – 28^	1.5*
Electricity Transmission Lines – 11kV Power Li	nes	
Pole 2		
Subsidence (m)	0	0.046
Dynamic Tilt (mm/m)	0	8.38
Final Tilt (mm/m)	0	7.21
Conductor length change between poles 2-3 (m)	0.13	0.56
Conductor Clearance Loss (m)	0.77	+0.20
Pole 3		
Subsidence (m)	2.18	2.085
Dynamic Tilt (mm/m)	30	66.3

LW101, LW102 and Part of LW103					
Final Tilt (mm/m)	12	52.47			
Conductor length change between poles 3 - 4 (m)	0.28	-0.81			
Conductor Clearance Loss (m)	1.10	0.91			
Pole 4					
Subsidence (m)	2.11	2.010			
Dynamic Tilt (mm/m)	25	74.22			
Final Tilt (mm/m)	15	43.49			
Conductor length change between poles 4 - 5 (m)	0.13	0.48			
Conductor Clearance Loss (m)	0.07	+0.21			
Pole 5					
Subsidence (m)	0.31	0.047			
Dynamic Tilt (mm/m)	2	16.32			
Final Tilt (mm/m)	2	16.32			
Conductor length change between poles 5 - 6 (m)	0.024	-0.12			
Conductor Clearance Loss (m)	0.30	0.08			
Pole 6					
Subsidence (m)	0.01	0.008			
Dynamic Tilt (mm/m)	1	3.5			
Final Tilt (mm/m)	1	1.65			
Conductor length change between poles 6 - (m)	-	-			
Conductor Clearance Loss (m)	-	-			

Based on the table above, subsidence prediction exceedances have occurred above LW101, LW102 and LW103:

- The maximum subsidence measurements are within +/- 10% of the predicted value of 2.44 m.
- The maximum tilt measurements are within 15% of the predicted values for the centreline lines of LW101, LW102 and LW103.
- The maximum tensile strain measurements are generally within the predicted range of the values of 11 mm/m (smooth profile) and 22 mm/m (discontinuous or crack affected profiles).
- The maximum compressive strain measurements are generally within the range of the predicted values of 14 mm/m (smooth profile) and 28 mm/m (discontinuous or crack affected profiles) with the exception of LW102 which recorded a maximum compressive strain of 46.7 mm/m.

The centreline subsidence results for LW101, LW102 and LW103 indicate that the Garrawilla Volcanics and Basalt Sill have not reduced subsidence through spanning behaviour. The maximum subsidence is also considered to be closer to 63% of the average mining height of 4.2m when compared to the value of 58% used in the prediction modelling.

However, since the measured subsidence effects were all within 15% of the current predicted maximum values, and surface impacts have not been greater than anticipated, it is not considered necessary to increase the values presented in the Extraction Plan for future longwall panels at this stage.

# Complaints

Four formal complaints were received during the period March to May 2014. Two were in relation to noise, one was in relation to a smell and one was in relation to tenants in a house leased by the mine to another person.

The smell complaint was found not to be originating from site as no instances of spontaneous combustion were occurring at the time as this is the main cause of offensive odours at the site. The complaint in relation to the tenants was directed through the WHC community liaison team and the lease holder was notified.

One of the complaints in relation to noise was found to be a temporary ventilation fan operating near the mine boundary. The fan has since been enclosed in a shed to minimise noise impacts and it is scheduled for decommissioning during June 2014. The complainant also noted that black material was present in the water tank and in a water filter at their property. A sample of the tank and filter were sent to a lab for analysis and the results indicated that the tank sample was humic acids from decayed plant material with no coal observed in this sample. The water filter sample reported trace amounts of coal (<1%) with the majority of the material found to be minerals, quartz, clay and plant and insect fragments. Narrabri Mine is not proposing to undertake any further action at this time.

The other noise complaint related to general mine noise during early May 2014. This coincided with cooler than normal conditions and the mine's weather station recording temperature inversion conditions at this time. The complainant was contacted and advised of the weather conditions that may have attributed to the noise levels. Noise monitoring is now undertaken at this residence and the mobile noise unit is also located at the residence indicating compliant noise levels. The CHPP, which generates most of the noise onsite, was notified and a tool box talk was issued to staff outlining what measures can be undertaken to reduce noise generation, particularly during the night/morning period when temperature inversion conditions are more likely.

# Environmental Incident(s)

No environmental incidents occurred during the March to May 2014 period.



## Narrabri Mine Community Consultative Committee Meeting Minutes

Meeting No:	26
Date:	Wednesday 8th October 2014
Time:	4:00pm
Location:	Railway Hotel, Baan Baa
Present:	Terry Miller (TM) – Outgoing Chairman
	Russell Stewart (RS) – Incoming Chairman
	James Stieger (JS)
	Mark Foster (MF)
	Peter Webb (PW)
	Sally Hunter (SH)
	Rodney Dunlop (RD)
	Cathy Redding (CR) – Narrabri Shire Council Delegate
	Steve Bow (SB) – Narrabri Mine General Manager
	Owen Salisbury (OS) – Narrabri Mine Technical Services Manager
	Steve Farrar (SF) – Narrabri Mine Environmental Officer

### 1. APOLOGIES

Nil (MF arrived late)

## 2. PREVIOUS MINUTES

Moved: James Stieger

Seconded: Rodney Dunlop

## 2.1. BUSINESS ARISING FROM PREVIOUS MINUTES

CCC membership – TM welcomed new members Rodney Dunlop and Russell Stewart. TM said he hoped the members would continue meeting in the same vain and that the meetings were pretty casual so everyone can have input.

Smoking Area – SB said smoking area not progressed, SF to prepare letter. TM advised CR that committee wants to approach Council for rubbish bin for people to use.

## 3. GENERAL BUSINESS

## 3.1. OPERATIONS PROGRESS REPORT

The operations update was provided as follows:

#### Mine Progress Report (to 30 September 2014)

Coal produced (t):	September 2014	656,000
	FY-to-date	2,082,000
Coal Railed (t):	September 2014	585,000



	FY-to-date	1,800,000
Average workforce num	nbers (September 2014):	
	NCO	Waged – 176
		Salary – 99
		Total – 275
	Contractors	Total – 83
Safety Update (FY to S	eptember-14):	
	Lost Time Injury (LTI)	1
	Total Recordable Injuries:	9
	Planned Task Observations:	1,613
	Take 5 Assessments:	26,746
	Work Hours (May-14):	87,681
	Days LTI Free:	41

SB stated that LW103 almost complete, stockpiles should be consumed in a month or two. Employment steady and safety ok but could be better. CR asked when we do LW104, SB replied just finishing LW103, CR asked about subsidence on Greylands Road, SB said we should have another visit, JS said would be good for new members as well. SB stated that subsidence pretty normal, topography undulating. SB stated that market still biggest issue although falling Australian dollar helps, TM said dollar going would be good, SB agreed.

JS asked about the type of injuries, SB replied finger injury and sprains/strains, TM asked if we got the two propos [shield] out, SB said no they've gone, lost in April, insurance claim with two new ones being made in Germany.

JS asked if the mine is going to recover the higher coal, SB stated that we not going to do Longwall Top Coal Caving (LTCC), due to not good quality coal and the current price. SB stated there were more efficient ways of mining instead of capital spend. TM asked if China ash content limits affect NCO, SB said no our coal quality well below the limits set, restrictions limited to coal power stations around the bigger Chinese cities.

CR asked if the 'cleanskin' programme still ongoing, SB said the mine has been fully employed for about 12 months ago so no plans for the programme to keep going. Chasing apprentices, 1 electrician and 1 fitter. CR asked if we target locally, schools etc, SB said local and beyond.

### 3.2. ENVIRONMENTAL OVERVIEW

As per provided report. SF discussed the monitoring report with the CCC members.

JS asked how noise monitoring results were going in other areas, SF said results showing compliance. JS stated that weekend trains at night seem louder, concertina affect as they slow down to the mine, JS said should be detected in noise trailer, SF to check, SB to follow up with Pacific National. RD said monitoring along the line may help.

SH asked about the trees in the longwall panels that had died, SF replied ecologists want to improve the area as a wetland around the ponding area and that dead trees make great habitat. SF advised area will regenerate naturally and planting may be undertaken if warranted.



### 4. NEW BUSINESS

Locomotives – SB said request had been passed on. JS asked about covering train wagons and air quality monitoring network, SF said Whitehaven has not been approached for funding as yet, TM asked CR if NSC had heard anything, CR replied nothing from NSC but has been talked about.

RS asked if the mine loses coal on the way to Port, SB said no, measured three times between site and Port.

AEMR/Annual Review submitted to the CCC. Hard copy and CD given to RS, JS requested another copy for himself. JS also requested a copy of the first newsletter issued by the mine.

TM formally handed over to RS, said he had enjoyed his experience and thanks for everything, SB said on behalf of Whitehaven even though it predates him, thanked TM for his guidance and stewardship moving things forward. JS thanked TM as well. RS said to meet before Christmas and start 0.5hrs early and have a tour of the mine.

## 5. COMPLAINTS AND COMPLAINTS HOTLINE

As per provided report.

### 6. NEXT MEETING

Wednesday 10<sup>th</sup> December 2014 at 3:30pm, Narrabri Mine Site Tour followed by meeting at the Railway Hotel, Baan Baa.

## 7. CLOSURE OF MEETING

Meeting closed at 4:53pm.



### Narrabri Mine Community Consultative Committee Meeting #26

### Environmental Monitoring Report June 2014 – September 2014

#### **Noise Monitoring**

Attended noise monitoring was undertaken between Monday 2<sup>nd</sup> and Thursday 5<sup>th</sup> June 2014 (Tables 1-12), Tuesday 29<sup>th</sup> July 2014 (Tables 13-16), between Wednesday 20<sup>th</sup> and Thursday 21<sup>st</sup> August 2014 (Tables 17-20), and between 17<sup>th</sup> and 19<sup>th</sup> September 2014 (Tables 21-32) to verify if noise levels were within compliance limits. The results from this monitoring are detailed in the tables below.

Table 1: NCM Operational Noise Monitoring Results – 2 June 2014 (evening)							
		Total dB(A),	Wind speed/	Temp Grad			
Location	Time	Leq (15 min)	direction	(ºC/100m)	Identified Noise Sources		
N1 Bow Hills	8:15 pm	47	2.1/223	0	Traffic (47), NCM (35), insects (25)		
N3 Naroo	8:07 pm	40	2.2/225	0	Traffic (36), NCM (34), frogs & insects (34)		
N5 Oakleigh	8:45 pm	36	1.1/205	+1.1	Frogs & insects (34), traffic (30), NCM (23)		
N6 Newhaven	9:25 pm	n/a	0.6/90	+1.3	See text		
N7 Merriman	8:56 pm	42	1.8/127	+1.3	Traffic (41), NCM (32), frogs & insects (33)		

Table 2: NCM Operational Noise Monitoring Results – 2 June 2014 (night)							
		Total dB(A),	Wind speed/	Temp Grad			
Location	Time	Leq (15 min)	direction	(°C/100m) <sup>1</sup>	Identified Noise Sources		
N1 Bow Hills	10:17 pm	40	0.5/265	+1.2	Traffic (38), frogs & insects (34), NCM (31)		
N3 Naroo	10:10 pm	42	0.4/282	+1.2	Traffic (41), NCM (32), frogs & insects (32)		
N5 Oakleigh	11:15 pm	40	0.6/263	+1.3	Traffic (38), NCM (32), frogs & insects (31)		
N6 Newhaven	12:40 am	n/a	1.8/253	+2.9	See text		
N7 Merriman	11:30 pm	32	0.6/284	+1.2	Frogs & insects (28), traffic (28), NCM (24)		

Table 3: NCM Operational Noise Monitoring Results – 3 June 2014 (day)						
		Total dB(A),	Wind speed/	Temp Grad		
Location	Time	Leq (15 min)	direction	(°C/100m)	Identified Noise Sources	
N1 Bow Hills	9:05 am	43	0.6/333	n/a	Traffic (43), birds (30), NCM (26)	
N3 Naroo	9:48 am	52	0.8/312	n/a	Birds (52), traffic (34), NCM (28)	
N4 Greylands	9:22 am	37	0.4/327	n/a	Birds (36), traffic (30), NCM inaudible	
N5 Oakleigh	11:54 am	36	1.6/272	n/a	Birds & insects (34), traffic (30), NCM (25)	
N6 Newhaven	11:38 am	37	1.5/278	n/a	NCM (29*), birds (27)	
N7 Merriman	1:17 pm	36	1.1/276	n/a	Traffic (35), birds (29), NCM inaudible	

\*Noise from vent fan and drill rig (see note in Section 1.1)



Table 4: NCM Operational Noise Monitoring Results – 3 June 2014 (evening)							
		Total dB(A),	Wind speed/	Temp Grad			
Location	Time	Leq (15 min)	direction	(°C/100m)	Identified Noise Sources		
N1 Bow Hills	9:22 pm	47	2.3/186	+1.1	Traffic (46), insects (40), NCM (35)		
N3 Naroo	7:47 pm	37	2.7/170	Lapse	Traffic (36), NCM (29), frogs & insects (26)		
N4 Greylands	8:24 pm	37	3.0/198	Lapse	NCM (34), frogs & insects (34)		
N5 Oakleigh	9:28 pm	30	2.3/186	+2.4	Traffic (29), frogs & insects (23) NCM inaudible		
N6 Newhaven	8:10 pm	38	2.8/192	Lapse	Insects (26), NCM (20*)		
N7 Merriman	8:47 pm	43	2.8/191	Lapse	Traffic (42), NCM (33), insects (30)		

\*Noise from vent fan and drill rig (see discussion in Section 1.1)

Table 5: NCM Operational Noise Monitoring Results – 3 June 2014 (night)							
		Total dB(A),	Wind speed/	Temp Grad			
Location	Time	Leq (15 min)	direction	(ºC/100m)	Identified Noise Sources		
N1 Bow Hills	12:21 am	38	0.4/121	+1.1	Traffic (36), insects (31), NCM (31)		
N3 Naroo	10:32 pm	41	0.3/111	+2.2	Traffic (41), frogs & insects (28), NCM inaudible		
N4 Greylands	11:38 pm	39	-	+2.9	Traffic (37), NCM (34), frogs & insects (30)		
N5 Oakleigh	12:25 am	35	0.4/121	+1.1	Frogs & insects (33), traffic (31), NCM inaudible		
N6 Newhaven	10:10 pm	39	0.5/133	+2.4	NCM (21*), insects (20)		
N7 Merriman	11:15 pm	37	-	+2.1	Traffic (34), NCM (33)		

\*Noise from vent fan and drill rig (see discussion in Section 1.1)

Table 6: NCM Operational Noise Monitoring Results – 4 June 2014 (day)							
		Total dB(A),	Wind speed/	Temp Grad			
Location	Time	Leq (15 min)	direction	(°C/100m)	Identified Noise Sources		
N1 Bow Hills	1:55 pm	40	1.2/139	n/a	Traffic (39), NCM (34), insects (25)		
N3 Naroo	9:40 am	46	2.6/145	n/a	Birds (46), traffic (35), NCM inaudible		
N5 Oakleigh	11:28 am	43	1.3/137	n/a	Birds (43), traffic (24), NCM barely audible		
N6 Newhaven	10:42 am	37	2.0/142	n/a	Birds & insects (36), NCM (16*)		
N7 Merriman	12:49 pm	34	1.1/128	n/a	Traffic (32), NCM (28), insects (25)		

\*Noise from vent fan and drill rig (see discussion in Section 1.1)

Table 7: NCM Operational Noise Monitoring Results – 4 June 2014 (evening)							
		Total dB(A),	Wind speed/	Temp Grad			
Location	Time	Leq (15 min)	direction	(°C/100m)	Identified Noise Sources		
N1 Bow Hills	9:15 pm	47	-	+3.9	Traffic (44), frogs & insects (44), NCM inaudible		
N3 Naroo	9:02 pm	40	-	+2.5	Traffic (40), frogs & insects (27), NCM (20)		
N5 Oakleigh	8:25 pm	39	0.4/166	+2.9	Traffic (37), frogs & insects (34), NCM inaudible		
N6 Newhaven	8:00 pm	34	-	+3.5	Traffic (27), NCM (16*)		
N7 Merriman	8:37 pm	39	0.5/177	+3.3	Traffic (38), frogs & insects (33), NCM inaudible		

\*Noise from vent fan and drill rig (see discussion in Section 1.1)



Table 8: NCM Operational Noise Monitoring Results – 4 June 2014 (night)							
		Total dB(A),	Wind speed/	Temp Grad			
Location	Time	Leq (15 min)	direction	(°C/100m)	Identified Noise Sources		
N1 Bow Hills	12:26 am	39		+1.3	Traffic (37), frogs & insects (34), NCM (27)		
N3 Naroo	11:15 pm	40		+0.4	Traffic (39), NCM (30), frogs & insects (23)		
N5 Oakleigh	10:02 pm	40		+0.3	Frogs & insects (37), traffic (36), NCM (24)		
N6 Newhaven	10:01 pm	37		+0.3	NCM (19*)		
N7 Merriman	11:11 pm	35		+0.4	Traffic (34), NCM (28), frogs & insects (25)		

\*Noise from vent fan and drill rig (see discussion in Section 1.1)

Table 9: NCM Operational Noise Monitoring Results – 5 June 2014 (day)							
		Total dB(A),	Wind speed/	Temp Grad			
Location	Time	Leq (15 min)	direction	(ºC/100m)	Identified Noise Sources		
N1 Bow Hills	8:37 am	43	2.5/144	n/a	Traffic (41), birds & insects (37), NCM (30)		
N3 Naroo	8:40 am	45	1.6/148	n/a	Birds & insects (44), traffic (36), NCM (30)		
N5 Oakleigh	10:20 am	47	-	n/a	Birds & insects (47), traffic (34), NCM (30)		
N6 Newhaven	10:52 am	38	-	n/a	Birds & insects (37), NCM (12*)		
N7 Merriman	9:16 am	45	1.1/147	n/a	Birds & insects (44), traffic (38), NCM (29)		

\*Noise from vent fan and drill rig (see discussion in Section 1.1)

Table 10: NCM Sleep Disturbance Monitoring Results – 2 June 2014 (night)					
Location	Time	dB(A),L1 (1 min)	Wind speed / direction	Temp Grad(°C/100m)	
N1 Bow Hills	10:17 pm	39	0.5/265	+1.2	
N3 Naroo	10:10 pm	40	0.4/282	+1.2	
N5 Oakleigh	11:15 pm	36	0.6/263	+1.3	
N6 Newhaven	12:40 am	n/a	1.8/253	+2.9	
N7 Merriman	11:30 pm	30	0.6/284	+1.2	

Table 11: NCM Sleep Disturbance Monitoring Results – 3 June 2014 (night)						
Location	Time	dB(A),L1 (1 min)	Wind speed / direction	Temp Grad(°C/100m)		
N1 Bow Hills	12:21 am	37	0.4/121	+1.1		
N3 Naroo	10:32 pm	n/a	0.3/111	+2.2		
N4 Greylands	11:38 pm	40	-	+2.9		
N5 Oakleigh	12:25 am	n/a	0.4/121	+1.1		
N6 Newhaven	10:10 pm	n/a	0.5/133	+2.4		
N7 Merriman	11:15 pm	39	-	+2.1		

Table 12: NCM Sleep Disturbance Monitoring Results – 4 June 2014 (night)						
Location	Time	dB(A),L1 (1 min)	Wind speed / direction	Temp Grad(°C/100m)		
N1 Bow Hills	12:26 am	35	2.0/165	+1.3		
N3 Naroo	11:15 pm	39	1.7/150	+0.4		
N5 Oakleigh	10:02 pm	28	-	+0.3		
N6 Newhaven	10:01 pm	n/a	-	+0.3		
N7 Merriman	11:11 pm	36	1.7/150	+0.4		



Table 13: NCM Noise Monitoring Results – 29 July 2014 (Day)						
Location	Time	dB(A), L <sub>eq(15min)</sub>	Wind speed (m/s)/ direction°	Identified Noise Sources		
Merriman	12:38 pm	38	3.9 / 299	Traffic (36), birds (32), wind (29), NCM inaudible		
Bow Hills	1:03 pm	43	3.3 / 237	Traffic (43), NCM (30), birds (26)		
Oakleigh	1:51 pm	33	2.3 / 294	Wind (30), NCM (27), birds (27)		
Naroo	11:14 am	44	4.3 / 305	Birds (41), traffic (40), wind (35), NCM inaudible		
Newhaven	11:53 am	30	3.9 / 299	Wind (28), birds (25), NCM inaudible		
Greylands	12:14 pm	35	2.3 / 293	Birds (31), traffic (30), wind (30), NCM inaudible		

Table 14: NCM Noise Monitoring Results – 29 July 2014 (Evening)							
			Wind speed	Temp Grad			
Location	Time	dB(A),	(m/s)/	(ºC/100m)	Identified Noise Sources		
		L <sub>eq(15min)</sub>	direction°				
Merriman	8:22 pm	39	1.2 / 296	+6.1	Traffic (39), NCM (27), frogs (25)		
Bow Hills	8:46 am	46	Calm	+7.4	Traffic (44), NCM (41), frogs (28)		
Oakleigh	9:31 am	37	1.8 / 284	+7.3	Traffic (35), NCM (33), frogs (23)		
Naroo	7:06 pm	45	1.7 / 226	+4.9	Traffic (44), NCM (37), frogs (27)		
Newhaven	7:34 pm	28	1.6 / 286	+6.8	Traffic (23), NCM (<20)*		
Greylands	7:58 pm	40	2.1 / 302	+5.6	Traffic (38), NCM (36, vent fan (35)**, mine (27))		

\*noise from drill rig – see text \*\*noise from vent fan – see text

Table 15: NCM Noise Monitoring Results – 29/30 July 2014 (Night)							
Location	Time	dB(A), L <sub>eq(15min)</sub>	Wind speed (m/s)/ direction°	Temp Grad (°C/100m)	Identified Noise Sources		
Merriman	11:41 pm	29	0.7 / 335	+6.5	NCM (26), domestic (24), frogs (21)		
Bow Hills	12:04 am	45	0.9/318	+6.5	NCM (44), traffic (38), frogs (22)		
Oakleigh	12:53 am	41	0.7 / 286	+7.2	NCM (38), traffic (38)		
Naroo	10:28 pm	50	0.3 / 303	+8.4	Traffic (50), NCM (39), frogs (24)		
Newhaven	10:56 pm	39	Calm	+6.9	Traffic (35), NCM (<20)*		
Greylands	11:18 pm	35	1.0 / 28	+7.2	Traffic (34), NCM (30, mine (27), vent fan (26)**)		

\*noise from drill rig – see text \*\*noise from vent fan – see text

Table 16: L1 (1 min) – 29/30 July 2014 (Night)					
Location	Time	dB(A),L1(1 min)			
Merriman	11:41 pm	32			
Bow Hills	12:04 pm	49			
Oakleigh	12:53 am	42			
Naroo	10:28 pm	44			
Newhaven	10:56 pm	<20*			
Greylands	11:18 pm	35			

\*modified by correction factor



Table 17: NCM Noise Monitoring Results – 20 August 2014 (Evening)							
Location	Time	dB(A), L <sub>eq(15min)</sub>	Wind speed (m/s)/ direction°	Temp Grad (°C/100m)	Identified Noise Sources		
Merriman	8:14 pm	39	3.1 / 150	Lapse	Traffic (38), NCM (29), frogs (24)		
Bow Hills	8:38 pm	42	4.3 / 144	Lapse	Traffic (40), frogs (37), NCM (24)		
Oakleigh	9:29 pm	35	4.2 / 142	Lapse	Traffic (32), wind (30), frogs (27), NCM inaudible		
Naroo	6:58 pm	54	3.7 / 149	Lapse	Dog (53), traffic (46), frogs (27), NCM inaudible		
Newhaven	7:27 pm	39	3.2 / 153	Lapse	Traffic (31), NCM (21, drill rig (20)*, mine (11))		
Greylands	7:50 pm	39	2.8 / 154	Lapse	Traffic (37), NCM (35, mine (33), drill rig (30)*)		

\*noise from drill rig – see text

Table 18: NCM Noise Monitoring Results – 20/21 August 2014 (Night)									
			Wind speed	Temp Grad					
Location	Time	dB(A),	(m/s)/	(°C/100m)	Identified Noise Sources				
		Leq(15min)	direction°						
Merriman	11:33 pm	42	4.3 / 138	Lapse	Traffic (39), wind in trees (39), NCM faintly audible				
Bow Hills	11:57 pm	45	4.6 / 139	Lapse	Traffic (44), frogs (38), NCM faintly audible				
Oakleigh	12:44 am	31	4.1 / 135	Lapse	Wind in trees (29), traffic (26), NCM inaudible				
Naroo	10:22 pm	38	4.1 / 134	Lapse	Traffic (37), wind in trees (30), frogs (26), NCM				
					inaudible				
Newhaven	10:48 pm	39	4.2 / 133	Lapse	Traffic (32), NCM (20, mine (18), drill rig (15)*)				
Greylands	11:11 pm	37	4.2 / 138	Lapse	NCM (35, mine (33), drill rig (30)*), wind in trees (33)				
*poiso from drill r	inging from drill right soon tout								

\*noise from drill rig – see text

Table 19: NCM Noise Monitoring Results – 21 August 2014 (Day)							
			Wind speed				
Location	Time	dB(A),	(m/s)/	Identified Noise Sources			
		Leq(15min)	direction°				
Merriman	9:43 am	50	6.0 / 136	Wind in trees (49), birds (40), traffic (33), NCM inaudible			
Bow Hills	10:05 am	44	5.4 / 134	Traffic (41), wind in trees (41), birds (27), NCM inaudible			
Oakleigh	10:58 am	40	5.3 / 137	Wind (39), birds (31), traffic (25), NCM inaudible			
Naroo	8:27 am	47	5.3 / 142	Traffic (44), wind in trees (44), birds (34), NCM inaudible			
Newhaven	8:56 am	40	5.6 / 137	Birds (36), wind in trees (31), traffic (29), NCM (17)*			
Greylands	9:17 am	46	5.5 / 130	Wind in trees (44), traffic (40), birds (34), NCM inaudible			

\*noise from drill rig - see text

Table 20: L1 (1 min) – 20/21 August 2014 (Night)						
Location	Time	dB(A),L <sub>1(1 min)</sub>				
Merriman	11:33 pm	n/a				
Bow Hills	11:57 pm	25				
Oakleigh	12:44 am	n/a				
Naroo	10:22 pm	n/a				
Newhaven	10:48 pm	24*				
Greylands	11:11 pm	37				

\*modified by correction factor



Table 21: NCM Operational Noise Monitoring Results – 17 September 2014 (day)								
Location	Time	Total dB(A), Leq (15 min)	Wind speed/ direction	Temp Grad (°C/100m)	Identified Noise Sources			
N1 Bow Hills	2:33 pm	45	4.4/210	n/a	Wind in trees (45), traffic (27), birds (25), NM faintly			
N2 Naroo	12.54 pm	44	4 7/225	nla	Wind in troos $(44)$ traffic $(21)$ birds $(20)$ NM $(25)$			
INS INDIOU	12.34 pm	44	4.77220	II/d	wind in tees (44), traine (51), bitus (50), twi (25)			
N5 Oakleigh	3:51 pm	48	3.9/226	n/a	Domestic construction noise (47), wind in trees (41),			
_	-				birds (30), NM inaudible			
N6 Newhaven	2:06 pm	45	4.9/218	n/a	Wind in trees (45), NM (<20*)			
N7 Merriman	4:12 pm	42	3.6/221	n/a	Traffic (41), wind in trees (34), birds (26), NM inaudible			

\*Noise from vent fan and drill rig

Table 22: NCM Operational Noise Monitoring Results – 17 September 2014 (evening)								
		Total dB(A),	Wind speed/	Temp Grad				
Location	Time	Leq (15 min)	direction	(°C/100m)	Identified Noise Sources			
N1 Bow Hills	8:19 pm	41	2.1/218	+2.9	Traffic (39), NM (37), insects (24)			
N3 Naroo	9:06 pm	40	2.5/234	+2.6	Traffic (38), NM (36), insects (25)			
N5 Oakleigh	9:09 pm	36	2.5/234	+2.6	Traffic (35), NM (29)			
N6 Newhaven	8:21 am	36	2.1/218	+2.9	NM (<20*)			
N7 Merriman	7:40 pm	41	2.1/213	Lapse	Traffic (40), NM (32), insects (25)			

Table 23: NCM Operational Noise Monitoring Results – 17/18 September 2014 (Night)							
		Total dB(A),	Wind speed/	Temp Grad			
Location	Time	Leq (15 min)	direction	(°C/100m)	Identified Noise Sources		
N1 Bow Hills	11:08 pm	40	3.5/209	+3.1	NM (39), traffic (33), frogs & insects (22)		
N3 Naroo	12:15 am	31	3.5/184	Lapse	NM (27), traffic (26), wind in trees (26)		
N5 Oakleigh	11:21 pm	24	3.6/200	+1.8	Traffic (23), NM (<20)		
N6 Newhaven	10:00 pm	35	2.5/228	+3.7	NM (<20*)		
N7 Merriman	10:00 pm	38	2.5/228	+3.7	Traffic (36), NM (33), insects (21)		

\*Noise from vent fan and drill rig

Table 24: NCM Operational Noise Monitoring Results – 18 September 2014 (day)								
		Total dB(A),	Wind speed/	Temp Grad				
Location	Time	Leq (15 min)	direction	(°C/100m)	Identified Noise Sources			
N1 Bow Hills	10:14 am	42	2.0/131	n/a	Birds (39), traffic (39), NM (29)			
N3 Naroo	11:52 am	40	1.9/207	n/a	Birds (38), traffic (34), NM (29)			
N4 Greylands	8:48 am	39	2.8/130	n/a	Wind in trees' (36), traffic (34), NM (32)			
N5 Oakleigh	12:15 pm	36	2.1/218	n/a	Birds (36), wind in trees (25) NM faintly audible			
N6 Newhaven	9:22 am	33	2.5/138	n/a	Birds (30), wind in trees (28), traffic (24), NM faintly			
					audible			
N7 Merriman	8:37 am	35	2.8/126	n/a	Birds (32), traffic (31), NM (24)			



Table 25: NCM Operational Noise Monitoring Results – 18 September 2014 (evening)								
		Total dB(A),	Wind speed/	Temp Grad				
Location	Time	Leq (15 min)	direction	(°C/100m)	Identified Noise Sources			
N1 Bow Hills	8:38 pm	42	1.9/167	+4.4	Traffic (40), NM (37), frogs & insects (25)			
N3 Naroo	9:17 pm	43	1.0/156	+4.1	Traffic (43), NM (32)			
N4 Greylands	7:54 pm	40	3.5/208	+1.6	NM (40), traffic (24)			
N5 Oakleigh	9:07 pm	23	1.8/159	+3.7	Frogs & insects (20), traffic (20), NM inaudible			
N6 Newhaven	8:18 pm	37	0.9/344	+4.1	NM (19, drill rig (17*), mine (14)), insects (24)			
N7 Merriman	7:58 pm	40	3.5/208	+1.6	Traffic (39), insects (32), NM (29)			

\*Noise from vent fan and drill rig

Table 26: NCM Operational Noise Monitoring Results – 18/19 September 2014 (night)								
		Total dB(A),	Wind speed/	Temp Grad				
Location	Time	Leq (15 min)	direction	(°C/100m)	Identified Noise Sources			
N1 Bow Hills	11:09 pm	41	1.0/49	+4.9	Traffic (41), frogs & insects (23), NM faintly audible			
N3 Naroo	12:17 am	45	0.7/162	+6.4	Traffic (45), NM (23)			
N4 Greylands	10:51 pm	40	1.2/37	+5.1	NM (40), vent fan (37), mine (36)), traffic (28)			
N5 Oakleigh	12:31 am	27	0.8/166	+7	Traffic (26), insects (21), NM inaudible			
N6 Newhaven	11:14 pm	37	0.8/69	+4.9	NM (19, mine (16), drill rig (16*)), insects (23)			
N7 Merriman	10:00 pm	43	0.8/339	+5.8	Traffic (41), NM (36), frogs & insects (25)			

\*Noise from vent fan and drill rig

Table 27: NCM Operational Noise Monitoring Results – 19 September 2014 (day)							
		Total dB(A),	Wind speed/	Temp Grad			
Location	Time	Leq (15 min)	direction	(°C/100m)	Identified Noise Sources		
N1 Bow Hills	12:13 pm	40	0.9/176	n/a	NM (38), traffic (34), birds (33)		
N3 Naroo	8:53 am	47	3.4/113	n/a	Birds (46), traffic (39), NM inaudible		
N5 Oakleigh	11:24 am	38	1.2/177	n/a	Birds (37), wind in trees (28), traffic (24), NM inaudible		
N6 Newhaven	9:36 am	37	3.0/111	n/a	Wind in trees (35), birds (30), NM (12*)		
N7 Merriman	10:31 am	34	1.8/141	n/a	Birds (30), wind in trees (28), NM (26), traffic (25)		

\*Noise from vent fan and drill rig

Table 28: NCM Operational Noise Monitoring Results – 19 September 2014 (evening)								
		Total dB(A),	Wind speed/	Temp Grad				
Location	Time	Leq (15 min)	direction	(°C/100m)	Identified Noise Sources			
N1 Bow Hills	8:41 pm	46	3.4/216	+0.3	Traffic (45), NM (38), insects (28)			
N3 Naroo	9:17 pm	36	3.1/219	+1	NM (33), wind in trees (33)			
N5 Oakleigh	9:24 pm	25	3.1/213	+0.2	Traffic (25), NM faintly audible			
N6 Newhaven	8:40 pm	39	3.4/216	+1	NM (21, drill rig (20*), mine (14)), insects (20)			
N7 Merriman	8:00 pm	43	303/221	Lapse	Traffic (42), NM (33), insects (32)			

\*Noise from vent fan and drill rig (see discussion in Section 1.1)



Table 29: NCM Operational Noise Monitoring Results – 19/20 September 2014 (night)							
		Total dB(A),	Wind speed/	Temp Grad			
Location	Time	Leq (15 min)	direction	(°C/100m)	Identified Noise Sources		
N1 Bow Hills	11:08 pm	36	1.2/82	+1	Traffic (35), NM (28)		
N3 Naroo	12:17 am	41	1.6/144	+2.7	Traffic (41), birds (30), NM (30)		
N5 Oakleigh	11:24 pm	32	1.1/104	+2.4	Traffic (32), insects (21), NM inaudible		
N6 Newhaven	10:09 pm	39	2.1/139	+1	NM (21, drill rig (19*), mine (16)), insects (23)		
N7 Merriman	10:01 pm	43	2.5/171	+1.1	Traffic (43), NM (30)		

\*Noise from vent fan and drill rig

Table 30: NCM Sleep Disturbance Monitoring Results – 17/18 September 2014 (night)				
Location	Time	dB(A),L1 (1 min)	Wind speed / direction	Temp Grad (°C/100m)
N1 Bow Hills	11:08 pm	45	3.5/209	+3.1
N3 Naroo	12:15 am	33	3.5/184	Lapse
N5 Oakleigh	11:21 pm	23	3.6/200	+1.8
N6 Newhaven	10:00 pm	21	2.5/228	+3.7
N7 Merriman	10:00 pm	36	2.5/228	+3.7

Table 31: NCM Sleep Disturbance Monitoring Results – 18/19 September 2014 (night)				
Location	Time	dB(A),L1 (1 min)	Wind speed / direction	Temp Grad (°C/100m)
N1 Bow Hills	11:09 pm	23	1.0/49	+4.9
N3 Naroo	12:17 am	26	0.7/162	+6.4
N4 Greylands	10:51 pm	41	1.2/37	+5.1
N5 Oakleigh	12:31 am	n/a	0.8/166	+7
N6 Newhaven	11:14 pm	23	0.8/69	+4.9
N7 Merriman	10:00 pm	40	0.8/339	+5.8

Table 32: NCM Sleep Disturbance Monitoring Results – 19/20 September 2014 (night)				
Location	Time	dB(A),L1 (1 min)	Wind speed / direction	Temp Grad (°C/100m)
N1 Bow Hills	11:08 pm	34	1.2/82	+1
N3 Naroo	12:17 am	35	1.6/144	+2.7
N5 Oakleigh	11:23 pm	n/a	1.1/104	+2.4
N6 Newhaven	10:09 pm	25	2.1/139	+1
N7 Merriman	10:01 pm	35	2.5/171	+1.1

June 2014 – The results for the June 2014 monitoring show that, under the operating and meteorological conditions at the times, for the worst case 15 minute compliance measurement periods, the mine noise did not exceed the operational noise criterion at any monitoring locations during at any time.

July 2014 – The results for the July monitoring indicate that, under the operational and atmospheric conditions at the time, noise emissions from NCM were higher than the noise criterion of 35 dB(A) Leq at the Bow Hills and Naroo monitoring locations during both the evening and night time periods. Temperature inversion data showed, however, that noise measurements made during the evening and night time periods were done under non-compliant meteorological conditions (i.e. temperature inversions of greater than 4°C/100 metres). Noise emissions from NCM, therefore, did not exceed the relevant noise criterion at any location during any monitoring period. During the night time measurement circuit the (1 min) noise from NCM exceeded 45 dB(A)



at the Bow Hills monitoring location. The noise was a result from of emissions from a dozer on the stockpile. The measurement at Bow Hills was made under non-compliant meteorological conditions.

August 2014 – The results for the August 2014 monitoring indicate that, under the operational and atmospheric conditions at the time, noise emissions from NCM did not exceed the relevant noise criteria at any location during any monitoring period.

September 2014 – The results for September 2014 shows that six exceedances occurred under meteorological conditions outside the range of applicability of the noise criteria and are not exceedances. The exceedance at Bow Hills on the evening of 17 September was 2 dB and is not a non-compliance. The 2 dB 'tolerance' is given because this represents the theoretical minimum noise level difference discernible by the human ear, refer to Section 11.1.3 of the INP. The level of 38 dB(A) measured at Bow Hills during the day on 19 September is a non-compliance. Relevant notifications were made.

Month	ND1 Turrabaa	ND2 Claremont	ND3 Bow Hills	ND4a New Matoppo	ND5 Claremont	ND6 Willarah	ND7 Claremont	ND8 Claremont	ND11 Oakleigh	ND12 Merriman
Oct-13	0.8	1.7	0.3	0.9	2.7	1.0	3.0	0.4	1.4	-
Nov-13	0.8	0.9	0.6	0.6	2.5	0.8	2.2	0.7	1.1	-
Dec-13	0.7	1.2	0.5	0.7	2.0	1.0	1.6	0.5	8.5	-
Jan-14	0.9	0.4	-	0.4	1.0	0.5	0.8	0.3	1.4	-
Feb-14	0.9	0.5	1.0	0.2	1.4	0.1	1.2	0.3	0.6	-
Mar-14	0.4	1.7	0.6	<0.1	2.6	1.0	1.0	0.9	0.6	1.2
Apr-14	5.8	0.5	0.3	<0.1	1.2	0.4	<0.1	0.4	1.8	0.5
May-14	0.8	0.2	1.2	0.4	0.6	<0.1	0.5	0.4	0.8	0.7
Jun-14	4.2	0.8	0.2	<0.1	0.3	0.5	0.7	<0.1	0.3	<0.1
Jul-14	2.9	1.4	<0.1	<0.1	1.0	0.2	0.2	0.1	0.5	0.1
Aug-14	10.3	1.0	1.2	0.1	1.1	0.3	3.4	2.4	1.3	0.2
Sep-14	3.6	1.7	1.2	0.4	1.1	0.1	0.4	0.3	0.4	0.6
Annual Average	2.7	1.0	0.6	0.5	1.5	0.5	1.4	0.6	1.6	0.6

#### **Deposited Dust Monitoring**

Deposited dust levels have remained at relatively low levels since the last meeting with the exception of ND1 during April and August 2014. This gauge is located at the Turrabaa residence. The high reading is not considered to be mine related as there is a high volume air sampler nearby and other gauges closer to the operation that did not report high measurements during these months. All dust deposition annual averages are within compliance limits.



### High Volume Air Sampling (PM<sub>10</sub>)

 $PM_{10}$  measurements taken to the end of August 2014 for the "Claremont" High Volume Air Sampler (HVAS) are returning a running annual average of 11.50 µg/m<sup>3</sup> which is well below the annual average limit of 30 µg/m<sup>3</sup>.



 $PM_{10}$  measurements taken to the end of August 2014 for the "Turrabaa" High Volume Air Sampler are returning a running annual average of 11.46  $\mu$ g/m<sup>3</sup> which is also well below the annual average limit of 30  $\mu$ g/m<sup>3</sup>.



 $PM_{10}$  levels have remained compliant since the last meeting. Annual averages at both sites are displaying a slightly increasing trend likely due to the period of hot, dry weather that occurred late last year and early this year.



#### **Groundwater Monitoring**

Groundwater monitoring was completed in September 2014. Nested piezometers have been installed on the "Omeo" and "Kurrajong" properties and two sets are also installed on the mine site to monitor the effects of the Longwall operation. Results of these units is included below.































































Monitroing well P13 has shown a steady decrease in water levels since September 2013. In the area of P13 pre-drainage of water and gas commenced in February 2011 and was completed during November 2013. It is considered likely that any impacts to the standing water level would have been identified during 2011. Bore P13 is 30 m deep and targets the Garrawilla Volcanics. A production bore, WB2, is approximately 300 m to the south and targets the same aquifer. Given the extended hot, dry period experienced over the second half of 2013 the drop in water level in P13 is likely associated with increased production from WB2.

Montoring well P15 has shown a steady decrease in water level since March 2014. P15 is located above longwall panel (LW) 105 which is currently being developed for extraction and this is the likely cause of the water level drop in P15.

#### **Surface Water Monitoring**

No wet weather discharges from licensed discharge points occurred during June to September 2014; however flows were monitored in surrounding creek points on the 27<sup>th</sup> August 2014.

#### Subsidence

Narrabri Mine has monitored the subsidence movement across the surface of LW101 to LW103 in accordance with the approved Extraction Plan. The table below outlines the maximum subsidence parameters recorded as part of the subsidence monitoring program and a comparison with the maximum predicted subsidence parameters as outlined in the Extraction Plan. Monitoring has been undertaken on the 11kv power line that traverses the southern end of LW101 to LW103.

Longwall Panels 101, LW102 and Part of LW103				
	Maximum Predicted Extraction Plan	Maximum Measured		
Line 101 – Centre of LW101				
Subsidence (m)	2.44	2.628		
Tilt (mm/m)	47	29.1 - 46.3		
Tensile Strain (mm/m)	11 – 22^	8.7 – 20.7		
Compressive Strain (mm/m)	14 – 28^	7.5 – 26.6		
Angle of Draw (°, Degrees)	22.5 – 26.5	20.2		
Line 102 – Centre of LW102				



Longwall Panels 101, LW102 and Part of LW103				
Subsidence (m)	2.44	2.665		
Tilt (mm/m)	41	43.7		
Tensile Strain (mm/m)	10 – 20^	20.5		
Compressive Strain (mm/m)	12 – 24^	46.7		
Angle of Draw (°, Degrees)	22.5 – 26.5	20.8		
Line 103 North – Centre of LW103 Northern End				
Subsidence (m)	2.44	2.671*		
Tilt (mm/m)	35	40.2*		
Tensile Strain (mm/m)	8 – 16^	18.8*		
Compressive Strain (mm/m)	10 – 20^	23.4*		
Angle of Draw (°, Degrees)	22.5 – 26.5	18.1*		
Line A – Cross Panel Survey Line				
Subsidence (m)	2.44	2.590*		
Tilt (mm/m)	47	56.3*		
Tensile Strain (mm/m)	11 – 22^	17.1*		
Compressive Strain (mm/m)	14 – 28^	26.7*		
Angle of Draw (°, Degrees)	22.5 – 26.5	25.7*		
Line B – Pine Creek Tributary 1				
Subsidence (m)	2.44	2.575*		
Tilt (mm/m)	47	54.8*		
Tensile Strain (mm/m)	11 – 22^	13.1*		
Compressive Strain (mm/m)	14 – 28^	11.0*		
Gradient Change (%)	Up to 6	5.47*		
Line E – Pine Creek Tributary 1 Crossline 1				
Subsidence (m)	2.44	1.012*		
Tilt (mm/m)	47	26.9*		
Tensile Strain (mm/m)	11 – 22^	9.2*		
Compressive Strain (mm/m)	14 – 28^	2.9*		
Line F – Pine Creek Tributary 1 Crossline 2				
Subsidence (m)	2.44	2.665*		
Tilt (mm/m)	41	53.5*		
Tensile Strain (mm/m)	10 – 20^	6.6*		
Compressive Strain (mm/m)	12 – 24^	11.9*		
Line G – Pine Creek Tributary 1 Crossline 3				
Subsidence (m)	2.44	0.816*		
Tilt (mm/m)	47	20.4*		
Tensile Strain (mm/m)	11 – 22^	7.0*		
Compressive Strain (mm/m)	14 – 28^	1.5*		
Electricity Transmission Lines – 11kV Power Lines				
Pole 2				
Subsidence (m)	0	0.046		
Dynamic Tilt (mm/m)	0	8.38		
Final Tilt (mm/m)	0	7.21		
Conductor length change between poles 2-3 (m)	0.13	0.56		



Longwall Panels 101, LW102 and Part of LW103		
Conductor Clearance Loss (m)	0.77	+0.20
Pole 3		
Subsidence (m)	2.18	2.085
Dynamic Tilt (mm/m)	30	66.3
Final Tilt (mm/m)	12	52.47
Conductor length change between poles 3 - 4 (m)	0.28	-0.81
Conductor Clearance Loss (m)	1.10	0.91
Pole 4		
Subsidence (m)	2.11	2.010
Dynamic Tilt (mm/m)	25	74.22
Final Tilt (mm/m)	15	43.49
Conductor length change between poles 4 - 5 (m)	0.13	0.48
Conductor Clearance Loss (m)	0.07	+0.21
Pole 5		
Subsidence (m)	0.31	0.047
Dynamic Tilt (mm/m)	2	16.32
Final Tilt (mm/m)	2	16.32
Conductor length change between poles 5 - 6 (m)	0.024	-0.12
Conductor Clearance Loss (m)	0.30	0.08
Pole 6		
Subsidence (m)	0.01	0.008
Dynamic Tilt (mm/m)	1	3.5
Final Tilt (mm/m)	1	1.65
Conductor length change between poles 6 - (m)	-	-
Conductor Clearance Loss (m)	-	-

Based on the table above, subsidence prediction exceedances have occurred above LW101, LW102 and LW103:

- The maximum subsidence measurements were within +/- 10% of the predicted value of 2.44 m.
- The maximum tilt measurements were within 15% of the predicted values for the centrelines of LW101, LW102 and LW103.
- The maximum tensile strain measurements were generally within the predicted range of the values of 11 mm/m (smooth profile) and 22 mm/m (discontinuous or crack affected profiles).
- The maximum compressive strain measurements were generally within the range of the predicted values of 14 mm/m (smooth profile) and 28 mm/m (discontinuous or crack affected profiles) with the exception of LW102 which recorded a maximum compressive strain of 46.7 mm/m.

The centreline subsidence results for LW101, LW102 and LW103 indicate that the Garrawilla Volcanics and Basalt Sill have not reduced subsidence through spanning behavior. The maximum subsidence is also considered to be closer to 63% of the average mining height of 4.3m.

However, since the measured subsidence effects were all within 15% of the current predicted maximum values, and surface impacts have not been greater than anticipated, it is not considered necessary to increase the values presented in the Extraction Plan for future longwall panels at this stage.



#### **Complaints**

Three formal complaints were received during the period June to September 2014. One was in relation to noise, one was in relation to gates being left open on leased land and one was in relation to dust/noise and lighting.

The noise complaint was found to be originating from the mine as a general hum. Review of weather data indicated temperature inversion conditions present at the time of the complaint. Complainant contacted and advised of the unfavourable weather conditions. A low frequency noise assessment was initiated at the residence however this has since been postponed and a meeting has been arranged to discuss options moving forward with the landholder.

The complaint received in relation to gates been left open on leased land was a result of operations moving west and employees/contractors not realising the change in land tenure and undertaken operations as normal. A Tool Box Talk was issued to all surface personnel reminding them of the requirement to close gates on leased land.

The third complaint had three issues: dust from the coal processing area; light from behind the coal processing area; and noise from the coal processing area. EO notified civil supervisor and CHPP Supervisor of complaint and measures to be taken as outlined in various dust TARP's implemented onsite. The lighting plant causing the light issue was rectified. The noise issue was general noise from coal processing area and train loading activities. Nothing out of the ordinary occurring at the time of the complaint. Noise levels recorded on the mobile noise trailer showed noise levels within compliance limits.

#### **Environmental Incident(s)**

No environmental incidents occurred during the June to September 2014 period.







#### Narrabri Mine Community Consultative Committee Meeting Minutes

Meeting No:	27				
Date:	Wednesday 10 <sup>th</sup> December 2014				
Time:	3:30pm				
Location:	Mine Site Tour followed by meeting at Railway Hotel, Baan Baa				
Present:	Russell Stewart (RS) – Independent Chairman				
	James Stieger (JS)				
	Peter Webb (PW)				
	Geoff Hunter (SH) – Alternative for Sally Hunter				
	Rodney Dunlop (RD)				
	Cathy Redding (CR) – Narrabri Shire Council Delegate				
	Steve Bow (SB) – Narrabri Mine General Manager				
	Tony Dwyer (TD) – Whitehaven Environmental Superintendent				
	Steve Farrar (SF) – Narrabri Mine Environmental Officer				

## 1. MINE TOUR

Prior to the meeting, SF and TD escorted the members of the CCC around the mine site. The tour encompassed the subsidence area and the main ventilation fans.

### 2. APOLOGIES

Owen Salisbury and Mark Foster

### 3. DECLARATION OF PECUNIARY OR OTHER INTERESTS

None

### 4. PREVIOUS MINUTES

Moved: James Stieger

Seconded: Peter Webb

### 4.1. BUSINESS ARISING FROM PREVIOUS MINUTES

Bins – SF handed letter to RS for the CCC. RS handed to CCC members for review and signed two copies, one for Council and one to be filed. The letter for Council was handed to CR to give to the Council General Manager.

Smoking Area – JS asked if the mine is going to do anything. SB replied that his preference is to get the rubbish picked up on an as needs basis. SF stated that an order exists with Namoi Waste Corp and it has been done twice recently.

Trains – SB stated that there was a WHC quarterly meeting with Pacific National where these issues are raised and SB will raise at the next meeting. JS said it is usually the concertina affect at 4am Friday/Saturday mornings. JS also said the bells seem to be quieter and SB said they can be muffled but the horn is a requirement when approaching crossings. SF said it would be good if we


get a date/time of noise to make it easier to follow up, JS said he would make a note next time it happens.

## 5. GENERAL BUSINESS

# 5.1. OPERATIONS PROGRESS REPORT

The operations update was provided as follows:

#### Mine Progress Report (to 30 November 2014)

Coal produced (t):	November 2014	22,000
	FY-to-date	2,382,000
Coal Railed (t):	November 2014	220,000
	FY-to-date	2,563,000
Average workforce r	numbers (November 2014):	
	NCO	Waged – 173
		Salary – 100
		Total – 273
	Contractors	Total – 72
Safety Update (FY to	o November 2014):	
	Lost Time Injury (LTI)	1
	Total Recordable Injuries:	11
	Planned Task Observations:	3,014
	Take 5 Assessments:	46,548
	Work Hours (May-14):	96,050
	Days LTI Free:	102

SB said LW104 started last week, ramp up for the next couple of weeks and go through to August 2015, everything else is standard. Safety is good. Biggest issue is price of coal but the mine is currently on right side of the equation. GH asked about the workforce, SB stated that the NCO employees listed above all live locally with about  $\frac{2}{3}$  in Gunnedah and a  $\frac{1}{3}$  in Narrabri. The mine is a residential mine requiring employees to live within an hour of the mine. The contractors usually don't live locally but the mine does utilise long-term contractors and some do live locally.

RS stated that at the previous Chamber of Commerce meeting it was raised that someone had spoken to a WHC recruitment person who did not know anything about Narrabri. SB said not sure who that would be. SF stated that it could have been someone recruiting for the Maules Creek Project. SF said that the mine has previously included information on Narrabri in the employee packs and CR noted that a DVD had been provided previously. SB said if he gets more details he can follow up.

# 5.2. ENVIRONMENTAL OVERVIEW

GH asked about the groundwater data and what the graphs represent. SF explained the difference between the standpipe piezometers and the vibrating wire piezometers (VWP). Both measure water level but one is a direct measurement of water and the other graphs changes in pressure. GH asked if the mining lowers the groundwater table. SF said we do however the shallow aquifer such is at P47 has not been affected to date and this bore is installed to around 50m. The biggest drawdown



will be in the coal seam. GH asked about the quality and what we do with the left over water. SF stated that the quality is not good in the coal seam and we currently pump water to site as we are in water deficit. GH asked about the amount of water held in licences for river/bore water. SF replied that we hold around 650ML in surface water but only 20ML of this is high security and 217ML in bore water allocation. GH asked if the groundwater was from Zone 5 as this is the water they use as well, SF said that it was.

# 6. NEW BUSINESS

RS raised the issue of the 'rush' of workers leaving the site following the end of their shift. Asked if the mine can do anything. SB said that legally once their outside the gate the mine's responsibility ends. SB said we could do something though to remind the staff not to speed.

RS said that WHC should get a pat on the back for the 'Meet the Biz' meeting held in Narrabri and thanked SB for his efforts. There were approximately 80 local businesses there and the plan is to do another one in the next 12 months.

RS enquired as to why we have a 'New Business' section. JS replied that he thinks it is in the guidelines for the format of the meetings.

GH asked if we can do anymore for a local resident that lives to the south of the mine as he has a dust issue which wasn't there before. SF said the mine had provided a report on testing done on the house roof/rain water tank to the resident and they seemed satisfied with that. SF also stated that a dust gauge is located between the mine and the property and it shows levels well within compliance limits. SB stated that we underestimated last summer that led to the dust issues but the sprays will help. RS asked does he know about the sprays. SF said the mine will follow up with him to let him know about the sprays.

SF asked the CCC to consider at the next meeting in 3 months' time whether the timing of the meetings could be moved to 6 monthly.

# 7. COMPLAINTS AND COMPLAINTS HOTLINE

As per provided report.

## 8. NEXT MEETING

Wednesday 11<sup>th</sup> March 2015 at 9:00am to allow for an underground visit. Underground tour to precede meeting to be held at around 12pm at the mine site.

# 9. CLOSURE OF MEETING

Meeting closed at 5:30pm.



## Narrabri Mine Community Consultative Committee Meeting #27

## Environmental Monitoring Report October 2014 – November 2014

## **Noise Monitoring**

No attended noise monitoring undertaken during October and November 2014.

### **Deposited Dust Monitoring**

Month	ND1 Turrabaa	ND2 Claremont	ND3 Bow Hills	ND4a New Matoppo	ND5 Claremont	ND6 Willarah	ND7 Claremont	ND8 Claremont	ND11 Oakleigh	ND12 Merriman
Dec-13	0.7	1.2	0.5	0.7	2.0	1.0	1.6	0.5	8.5	
Jan-14	0.9	0.4	0.0	0.4	1.0	0.5	0.8	0.3	1.4	
Feb-14	0.9	0.5	1.0	0.2	1.4	0.1	1.2	0.3	0.6	
Mar-14	0.4	1.7	0.6	0.1	2.6	1.0	1.0	0.9	0.6	1.2
Apr-14	5.8	0.5	0.3	0.1	1.2	0.4	0.1	0.4	1.8	0.5
May-14	0.8	0.2	1.2	0.4	0.6	0.1	0.5	0.4	0.8	0.7
Jun-14	4.2	0.8	0.2	0.1	0.3	0.5	0.7	0.1	0.3	0.1
Jul-14	2.9	1.4	0.1	0.1	1.0	0.2	0.2	0.1	0.5	0.1
Aug-14	10.3	1.0	1.2	0.1	1.1	0.3	3.4	2.4	1.3	0.2
Sep-14	3.6	1.7	1.2	0.4	1.1	0.1	0.4	0.3	0.4	0.6
Oct-14	0.7	1.9	0.1	0.1	0.6	0.3	1.2	0.1	0.9	0.1
Nov-14	5.8	2.0	1.1	1.1	3.4	1.5	1.4	1.0	0.1	1.7
Annual Average	3.1	1.1	0.6	0.3	1.4	0.5	1.0	0.6	1.4	0.6

Deposited dust levels have remained at relatively low levels since the last meeting with the exception of ND1 during April, August and November 2014. This gauge is located at the Turrabaa residence. The high reading is not considered to be mine related as there is a high volume air sampler nearby and other gauges closer to the operation that did not report high measurements during these months. All dust deposition annual averages are within compliance limits.

### High Volume Air Sampling (PM<sub>10</sub>)

 $PM_{10}$  measurements taken to the end of October 2014 for the "Claremont" High Volume Air Sampler (HVAS) are returning a running annual average of 10.77  $\mu$ g/m<sup>3</sup> which is well below the annual average limit of 30  $\mu$ g/m<sup>3</sup>.





 $PM_{10}$  measurements taken to the end of October 2014 for the "Turrabaa" High Volume Air Sampler are returning a running annual average of 10.17  $\mu$ g/m<sup>3</sup> which is also well below the annual average limit of 30  $\mu$ g/m<sup>3</sup>.



 $PM_{10}$  levels have remained compliant since the last meeting. Annual averages at both sites are displaying a slightly increasing trend likely due to the period of hot, dry weather that occurred late last year and early this year.

## **Groundwater Monitoring**

Groundwater monitoring was completed in September 2014. Nested piezometers have been installed on the "Omeo" and "Kurrajong" properties and two sets are also installed on the mine site to monitor the effects of the Longwall operation. Results of these units is included below.

































































Monitroing well P13 has shown a steady decrease in water levels since September 2013. In the area of P13 pre-drainage of water and gas commenced in February 2011 and was completed during November 2013. It is



considered likely that any impacts to the standing water level would have been identified during 2011. Bore P13 is 30 m deep and targets the Garrawilla Volcanics. A production bore, WB2, is approximately 300 m to the south and targets the same aquifer. Given the extended hot, dry period experienced over the second half of 2013 the drop in water level in P13 is likely associated with increased production from WB2.

Montoring well P15 has shown a steady decrease in water level since March 2014. P15 is located above longwall panel (LW) 105 which is currently being developed for extraction and this is the likely cause of the water level drop in P15.

#### **Surface Water Monitoring**

No wet weather discharges from licensed discharge points occurred during October and November 2014 and no flows were monitored in surrounding creek points during this period.

### Subsidence

Narrabri Mine has monitored the subsidence movement across the surface of LW101 to LW103 in accordance with the approved Extraction Plan. The table below outlines the maximum subsidence parameters recorded as part of the subsidence monitoring program and a comparison with the maximum predicted subsidence parameters as outlined in the Extraction Plan. Monitoring has been undertaken on the 11kv power line that traverses the southern end of LW101 to LW103.

Longwall Panels (LW) 101, LW102 and LW103				
	Maximum Predicted Extraction Plan	Maximum Measured		
Line 101 – Centre of LW101				
Subsidence (m)	2.44	2.633		
Tilt (mm/m)	47	29.1 – 46.3		
Tensile Strain (mm/m)	11 – 22^	8.7 – 20.7		
Compressive Strain (mm/m)	14 – 28^	7.5 – 26.6		
Angle of Draw (°, Degrees)	22.5 - 26.5	20.2		
Line 102 – Centre of LW102				
Subsidence (m)	2.44	2.694		
Tilt (mm/m)	41	43.7		
Tensile Strain (mm/m)	10 – 20^	20.5		
Compressive Strain (mm/m)	12 – 24^	46.7		
Angle of Draw (°, Degrees)	22.5 - 26.5	20.8		
Line 103 North – Centre of LW103 Northern End				
Subsidence (m)	2.44	2.671		
Tilt (mm/m)	35	40.2		
Tensile Strain (mm/m)	8 – 16^	18.8		
Compressive Strain (mm/m)	10 – 20^	27.9		
Angle of Draw (°, Degrees)	22.5 – 26.5	18.1		
Line 103 South – Centre of LW103 Southern End				
Subsidence (m)	2.44	2.494*		
Tilt (mm/m)	35	30.3*		
Tensile Strain (mm/m)	8 – 16^	9.3*		



Longwall Panels (LW) 101, LW102 and LW103					
Compressive Strain (mm/m)	10 – 20^	8.5*			
Angle of Draw (°, Degrees)	22.5 – 26.5	20.2*			
Line A – Cross Panel Survey Line					
Subsidence (m)	2.44	2.590*			
Tilt (mm/m)	47	56.3*			
Tensile Strain (mm/m)	11 – 22^	17.1*			
Compressive Strain (mm/m)	14 – 28^	26.7*			
Angle of Draw (°, Degrees)	22.5 - 26.5	25.7*			
Line B – Pine Creek Tributary 1					
Subsidence (m)	2.44	2.587*			
Tilt (mm/m)	47	54.8*			
Tensile Strain (mm/m)	11 – 22^	13.1*			
Compressive Strain (mm/m)	14 – 28^	11.0*			
Gradient Change (%)	Up to 6	5.47*			
Line E – Pine Creek Tributary 1 Cross	line 1				
Subsidence (m)	2.44	1.013*			
Tilt (mm/m)	47	26.9*			
Tensile Strain (mm/m)	11 – 22^	9.2*			
Compressive Strain (mm/m)	14 – 28^	2.9*			
Line F – Pine Creek Tributary 1 Cross	line 2				
Subsidence (m)	2.44	2.669*			
Tilt (mm/m)	41	59.1*			
Tensile Strain (mm/m)	10 – 20^	6.6*			
Compressive Strain (mm/m)	12 – 24^	21.7*			
Line G – Pine Creek Tributary 1 Crossline 3					
Subsidence (m)	2.44	1.120*			
Tilt (mm/m)	47	22.2*			
Tensile Strain (mm/m)	11 – 22^	8.0*			
Compressive Strain (mm/m)	14 – 28^	1.5*			
Electricity Transmission Lines – 11kV Power Lines					
Pole 2					
Subsidence (m)	0	0.046			
Dynamic Tilt (mm/m)	0	9.09			
Final Tilt (mm/m)	0	9.09			
Conductor length change between poles 2-3 (m)	0.13	0.56			
Conductor Clearance Loss (m)	0.77	+0.759			
Pole 3					
Subsidence (m)	2.18	2.085			



Longwall Panels (LW) 101, LW102 and LW103					
Dynamic Tilt (mm/m)	30	66.3			
Final Tilt (mm/m)	12	50.08			
Conductor length change between poles 3 - 4 (m)	0.28	0.53			
Conductor Clearance Loss (m)	1.10	-1.377			
Pole 4					
Subsidence (m)	2.11	2.061			
Dynamic Tilt (mm/m)	25	74.23			
Final Tilt (mm/m)	15	31.80			
Conductor length change between poles 4 - 5 (m)	0.13	0.59			
Conductor Clearance Loss (m)	0.07	+1.400			
Pole 5					
Subsidence (m)	0.31	0.183			
Dynamic Tilt (mm/m)	2	25.66			
Final Tilt (mm/m)	2	19.40			
Conductor length change between poles 5 - 6 (m)	0.024	0.30			
Conductor Clearance Loss (m)	0.30	+2.042			
Pole 6					
Subsidence (m)	0.01	1.540			
Dynamic Tilt (mm/m)	1	129.68			
Final Tilt (mm/m)	1	129.68			
Conductor length change between poles 6 - (m)	-	-			
Conductor Clearance Loss (m)	-	-			

Based on the table above, subsidence prediction exceedances have occurred above LW101, LW102 and LW103:

- The maximum subsidence measurements were within +/- 10% of the predicted value of 2.44 m.
- The maximum tilt measurements were within 15% of the predicted values for the centrelines of LW101, LW102 and LW103.
- The maximum tensile strain measurements were generally within the predicted range of the values of 11 mm/m (smooth profile) and 22 mm/m (discontinuous or crack affected profiles).
- The maximum compressive strain measurements were generally within the range of the predicted values of 14 mm/m (smooth profile) and 28 mm/m (discontinuous or crack affected profiles) with the exception of LW102 which recorded a maximum compressive strain of 46.7 mm/m.

The centreline subsidence results for LW101, LW102 and LW103 indicate that the Garrawilla Volcanics and Basalt Sill have not reduced subsidence through spanning behaviour. The maximum subsidence is also considered to be closer to 63% of the average mining height of 4.3m.



However, since the measured subsidence effects were all within 15% of the current predicted maximum values, and surface impacts have not been greater than anticipated, it is not considered necessary to increase the values presented in the Extraction Plan for future longwall panels at this stage.

#### **Complaints**

Eleven formal complaints were received during the period October to November 2014. Eight were in relation to dust and three were in relation to noise.

The eight dust complaints were managed at the time of the complaint or investigated where they related to events that occurred prior to the complaint being received. Generally complaints relate to dust from the coal processing area and the use of dozers. In addition to the TARP developed for the coal processing area, the mine is implementing a permanent spray system around the stockpiles which is due to be commissioned by the end of December 2014 and this should allow for more effective control of dust from the stockpiles.

The three noise complaints generally related to dozers working on stockpiles during the night/morning periods. Additional attended monitoring was undertaken at the residence and results confirmed impacts exceeding the relevant criteria in the mine's development consent and EPL. The mine is now in negotiations with the owner to determine the path forward.

#### **Environmental Incident(s)**

The mine had one environmental incident during the reporting period when an area previously identified as a cultural heritage site was potentially impacted by site civil works. Investigations are ongoing to determine if an impact has occurred to the two artefacts identified in the area known as Site 15. The investigations have been undertaken in consultation with the Department of Planning and Environment (DP&E) and representatives from the Registered Aboriginal Parties (RAPs). The mine has been issued with a fine from DP&E in relation to a non-compliance with the Aboriginal Cultural Heritage Management Plan.



