

Rocglen Coal Mine Community Consultative Committee Meeting #13

Environmental Monitoring Report July 2011 – September 2011

Noise Monitoring

Attended Noise Monitoring

Attended noise monitoring was undertaken on the 13th of September 2011, in accordance with the Rocglen Noise Monitoring Program, with results outlined below:

Noise Monitoring Results – 13 September 2011 (Day)				
Location	Time	dB(A),Leq	Wind speed/ direction	Identified Noise Sources
Surrey	3:13 pm	38	0.5m/s, NW	Birds (38), RCM (27)
Costa Vale	3:51 pm	41	0.5m/s, NW	Birds (41), RCM inaudible

Noise Monitoring Results – 13 September 2011 (Evening)				
Location	Time	dB(A),Leq	Wind speed/ direction	Identified Noise Sources
Surrey	8:57 pm	35	<0.5 m/s, NW	RCM (35), frogs (23)
Costa Vale	8:30 pm	25	<0.5 m/s, NW	RCM (25)

Noise Monitoring Results – 13 September 2011 (Night)				
Location	Time	dB(A),Leq	Wind speed/ direction	Identified Noise Sources
Surrey	11:19 pm	28	Calm	RCM (28)
Costa Vale	11:45 pm	31	Calm	RCM (31)

The results indicate that, under the operational and atmospheric conditions at the time, noise emissions from the mine did not exceed the criterion of 35 dB(A) at either monitoring location. "Surrey" recorded equal to the noise criteria during the evening survey. This would be a result of wind blowing from the North West during the time of monitoring.

In addition to the operational noise, the noise from the mine must not exceed 45 dB(A) $L_{1(1 \text{ min})}$ between the hours of 10 pm and 7 am. This is to minimise the potential for sleep disturbance as a result of individual loud noises from the mine.

During the night time measurement circuit the $L_{1(1 \text{ min})}$ noise from the mine did not exceed 45 dB(A) at either monitoring location.

Road Noise Monitoring

Road noise monitoring was undertaken at the “Brooklyn” residence 1 between 7.50am and 8.50am and at “Brooklyn” residence 2 between 8.30am and 9.30am and at “Werona” between 7.25am and 8.25am on the 13th September 2011. The measured noise level from mine related vehicles at “Brooklyn” was 54 dB(A) $L_{eq(1hour)}$ at residence 1, and 49 dB(A) $L_{eq(1hour)}$ at residence 2. The measured noise level from mine-related vehicles at “Werona” was 50 dB(A) $L_{eq(1hour)}$. All results remain below the daytime noise criterion of 60 dB(A) $L_{eq(1hour)}$.

Unattended Noise Monitoring

Unattended noise monitoring was carried out in September 2011 at both the “Costa Vale” and “Surrey” properties with results provided in the following tables. Unattended monitoring provides noise levels from all sources and does not distinguish mine related noise from other noise sources.

Costa Vale

Date	Leq(day)	Leq(eve)	Leq(night)	L90(day)	L90(eve)	L90(night)
13-Sep-11	48.8	50.4	45.3	29.3	28.4	22.1
14-Sep-11	47.9	49.7	45.2	27.0	26.9	21.0
15-Sep-11	48.1	49.1	45.1	27.9	27.7	21.1
LAeq	48	49	45			
L90				28	28	21

Surrey

Date	Leq(day)	Leq(eve)	Leq(night)	L90(day)	L90(eve)	L90(night)
13-Sep-11	44.8	38.1	36.0	29.6	32.2	18.6
14-Sep-11	40.4	42.5	36.5	28.1	29.8	17.1
15-Sep-11	40.0	39.5	38.1	24.3	24.8	20.2
LAeq	42	40	37			
L90				26	30	19

Blast Monitoring

Blasting Results

Since the first shot there have been 83 blasts. All blasts during the monitoring period were compliant within the limits of 115dBL and 5mm/s.

To date, the highest overpressure recorded is 119.9 dBL recorded at “Costa Vale” on the 24th August 2009. The highest ground vibration recorded is 1.50 mm/s recorded at “Roseberry” on the 12th December 2008.

Air Quality

Deposited Dust Results

The deposited dust results ($\text{g}/\text{m}^2/\text{month}$) obtained for the site over the last 12 months are as follows:

Air Quality (Dust Deposition) Results

Month	BD2 - Glenroc	BD3 - Belah	BD4 - Surrey	BD5 - Stratford	BD6 - Roseberry	BD7 - Roseglass	BD8 - Yarrowonga
November 2010	1.6	1.0	1.4	1.1	2.0	2.2	1.3
December 2010	0.5	0.6	0.5	1.3	1.6	0.7	1.7
January 2011	0.8	1.0	2.2	1.9	0.7	2.1	0.8
February 2011	1.2	1.6	2.6	0.8	0.7	0.6	0.8
March 2011	2.0	5.3	1.2	0.6	1.5	0.8	1.1
April 2011	2.5	0.4	0.4	0.3	0.6	0.7	0.9
May 2011	0.7	2.2	0.3	0.3	0.4	0.6	0.7
June 2011	0.4	0.5		0.5	1.5	0.8	0.6
July 2011	1.0	0.4	0.5	0.2	1.3	0.5	3.4
August 2011	0.8	0.8	0.4	0.5	0.4	0.4	0.4
September 2011	1.9	1.8	0.6	0.7	0.6	0.5	0.6
October 2011	1.3	0.7	0.4	1.0	0.4	0.9	0.4
Annual Average	1.2	1.4	1.0	0.8	1.0	0.9	1.1

Deposited dust levels have continued to remain at low levels since the last CCC meeting and have been relatively consistent over the last 12 months. The annual average at all sites remains well below the concentration threshold of $4\text{g}/\text{m}^2/\text{month}$.

PM₁₀ Results

The annual averages for PM₁₀ levels up until the end of September 2011 remain below the annual average limit of $30\mu\text{g}/\text{m}^3$, as follows:

Glenroc: $12.77\mu\text{g}/\text{m}^3$

Roseberry: $9.74\mu\text{g}/\text{m}^3$

The 24hr criterion of $50\mu\text{g}/\text{m}^3$ was not breached at either Glenroc or Roseberry during the period.

The highest PM₁₀ readings at each site are as follows:

Glenroc: $113\mu\text{g}/\text{m}^3$ (14th December 2009)

Roseberry: $101\mu\text{g}/\text{m}^3$ (8th December 2009)

Water Monitoring

Ground Water

Groundwater monitoring data obtained to date is presented in the following table. Standing Water Level (SWL) graphs are also provided.

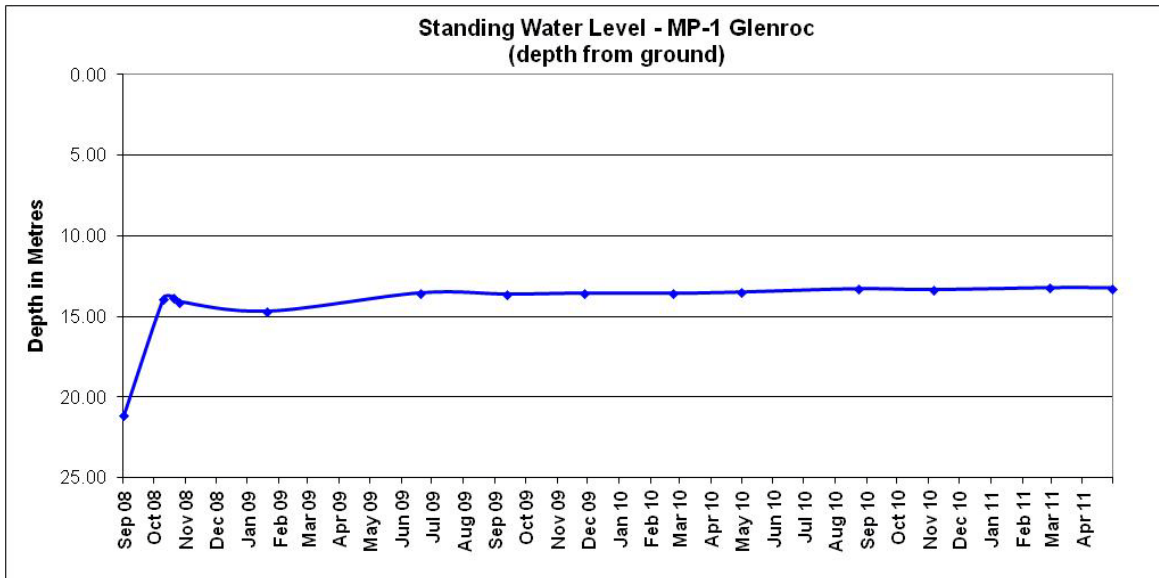
Site	Date	SWL (m)	pH	Elect. Conduct µs/cm	
MP1	September 08	21.14			
	13 October 08	13.87			
	23 October 08	13.83			
	29 October 08	14.10	7.6	2360	
	23 January 09	14.69			
	22 June 09	13.55	7.8	2250	
	15 September 09	13.63			
	30 November 09	13.57	7.85	2250	
	25 February 10	13.58			
	3 May 10	13.5	8.06	2100	
	26 Aug 10	13.42	8	1650	
	8 November 10	13.35	7.36	2080	
	2 March 11	13.23	7.24	1942	
	3 May 11	13.24	7.45	1872	
	Bore covered by production area				
	MP2	September 08	13.53		
13 October 08		12.98			
23 October 08		13.56			
29 October 08		13.20	7.3	4180	
23 January 09		14.60			
22 June 09		13.70	7	5210	
15 September 09		13.88			
30 November 09		13.90	6.99	4560	
25 February 10		14.14			
3 May 10		14	7.37	4760	
26 August 10		13.48	7.07	5060	
8 November 10		12.04	6.72	3720	
7 March 11		10.49	6.98	4060	
3 May 11		11.1	6.95	4110	
30 August 11		11.54	7.27	5320	
MP3		September 08	11.81		
	13 October 08	9.06			
	23 October 08	17.36			
	29 October 08	N/S Bore Dry			
	23 January 09	18.3 (mud)			
	22 June 09	N/S Bore Dry			
	15 September 09	Dry			
	30 November 09	Dry			
	25 February 10	Dry			
	3 May 10	Dry			
	26 August 10	Dry			
	8 November 10	Dry			
	7 March 11	Dry			
	3 May 11	Dry			
	30 August 11	Dry			
	MP4	September 08	22.62		
13 October 08		23.02			

	22 October 08	23.17		
	29 October 08	N/S Bore Dry		
	23 January 09	24.16 (mud)		
	22 June 09	N/S Bore Dry		
	15 September 09	Dry		
	30 November 09	Dry		
	25 February 10	Dry		
	3 May 10	Dry		
	26 August 10	Dry		
	8 November 10	Dry		
	7 March 11	Dry		
	3 May 11	Dry		
	30 August 10	Dry		
MP5	September 08	53.13		
	13 October 08	52.9		
	23 October 08	52.96		
	29 October 08	N/S Bore Dry		
	23 January 09	54.44 (mud)		
	22 June 09	N/S Bore Dry		
	15 September 09	Dry		
	30 November 09	54.4	Insufficient water to sample	
	25 February 10	54.48		
	3 May 10	54.6		
	26 August 10	54.69		
	8 November 10	54.88	Insufficient water to sample	
	2 March 11	54.85	Insufficient water to sample	
	3 May 11	54.8	Insufficient water to sample	
	30 August 11	54.89	Insufficient water to sample	
WB1	13 October 08	8.95		
	28 October 08	8.85	7.9	1996
	NO ACCESS			
WB2	September 08	16.87		
	13 October 08	16.49		
	28 October 08	16.60	7.7	3430
	23 January 09	17.00		
	22 June 09	16.65	7.2	3160
	15 September 09	16.45		
	6 January 09	16.45	7.51	2010
	25 February 10	16.48		
	3 May 10	16.56	7.84	2190
	26 August 10	19.54	7.4	3000
	8 November 10	17.00	7.3	2410
	2 March 11	16.96	7.31	2450
	3 May 11	16.53	7.55	2360
	30 August 11	16.36	7.87	2880
WB3	September 08	8.82		
	13 October 08	8.87		
	29 October 08	8.95	7.2	4480
	23 January 09	23.72		
	10 February 09	9.0		
	22 June 09	8.99	7.5	4380
	15 September 09	8.76		
	30 November 09	8.8	7.74	3890
	25 February 10	8.69		
	3 May 10	18.53	7.88	4000
	26 August 10	8.94	8.28	3260

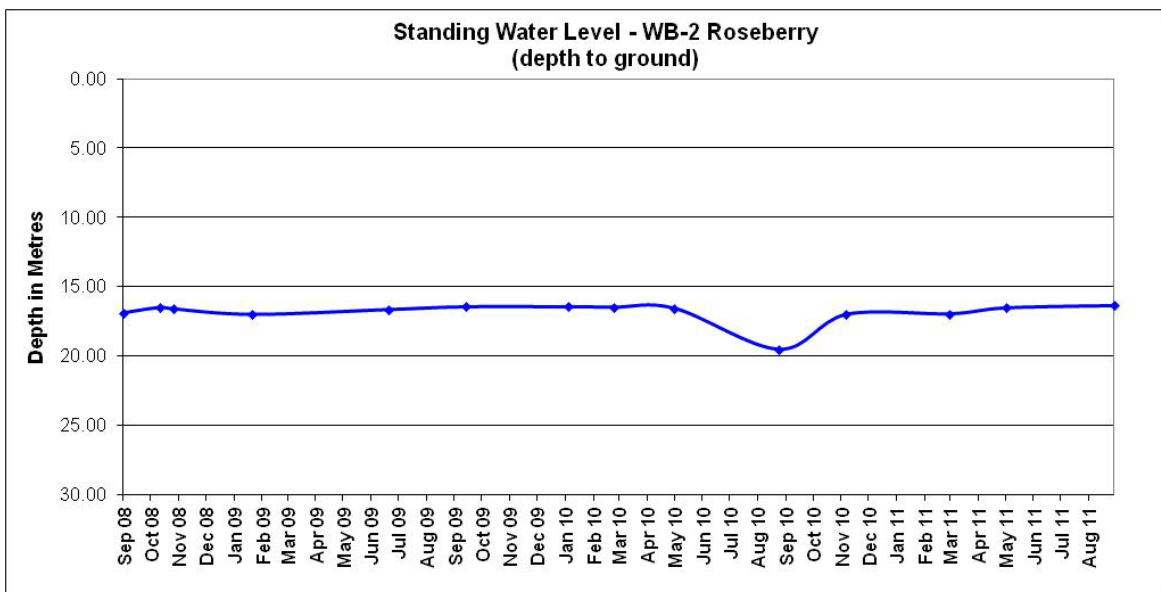
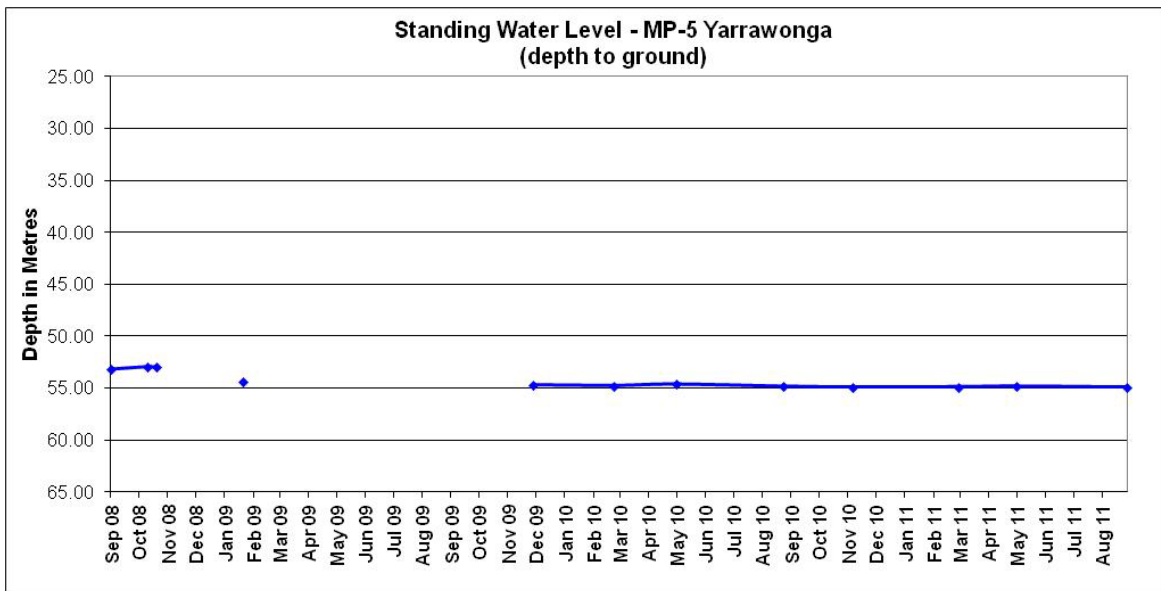
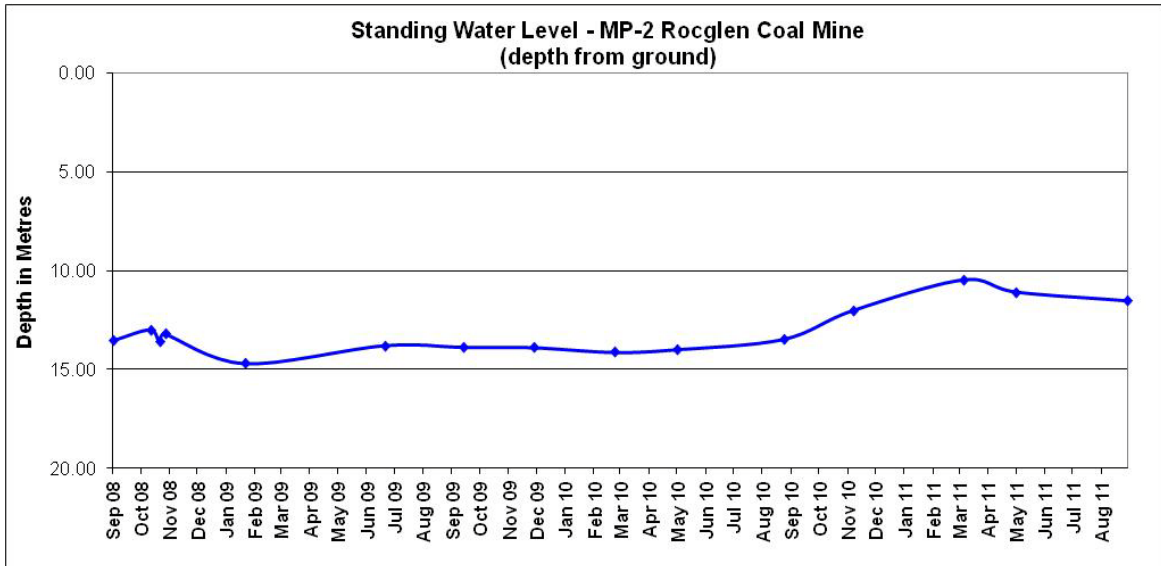
	8 November 10	8.98	8.02	2360
	2 March 11	17.63	7.44	3770
	3 May 11	9.07	7.7	3790
	1 September 11	9.14	8.32	4860
WB4	Casing Sealed	No Access		
	26 August 10	Unable to dip	7.83	3650
	2 March 11	Unable to dip	7.03	3320
	3 May 11	Unable to dip	7.1	3160
	1 September 11	Unable to dip	7.15	3650
WB5	September 08	4.23		
	13 October 08	12.92		
	28 October 08	12.85	7.2	8400
	23 January 09	13.1		
	22 June 09	No Access	6.6	7930
	15 September 09	No Access		
	30 November 09	22.93	7.06	4880
	25 February 10	13.14		
	3 May 10	12.97	7.43	6720
	26 August 10	13.01	7.47	7480
	8 November 10	14.06	7.86	5810
	2 March 11	20.99	6.45	5590
	3 May 11	12.7	6.8	5760
	30 August 11	12.7	7.85	7780
WB6	September 08	23.18		
	13 October 08	23.05		
	29 October 08	No Access		
	23 January 09	23.81		
	22 June 09	23.74	Unable to sample	
	15 September 09	23.83		
	30 November 09	24.02	No sample – bore equipped	
	25 February 10	25.05		
	3 May 10	23.71		
	26 August 10	23.47	Bore equipped	
	8 November 10	23.31	Bore equipped	
	7 March 11	22.74	Bore equipped	
	3 May 11	22.02	Bore equipped	
	30 August 11	22.55	Bore equipped	
WB7	September 08	41.75		
	13 October 08	19.11		
	28 October 08	18.90	7.2	2730
	23 January 09	21.35		
	22 June 09		7.4	2690
	15 September 09	Bore equipped		
	30 November 09	Unable to dip	7.3	2260
	25 February 10	Unable to dip		
	3 May 10	15	7.45	2470
	26 August 10	25.91	Unable to sample – bore equipped	
	8 November 10	31.53	7.24	2240
	7 March 11	25.13	7.24	2230
	3 May 11	14.78	7.45	2130
	30 August 11	17.66	7.91	2750
WB8	September 08	No Access		
	13 October 08	No Access		
	29 October 08	No Access		
	23 January 09	46.4		

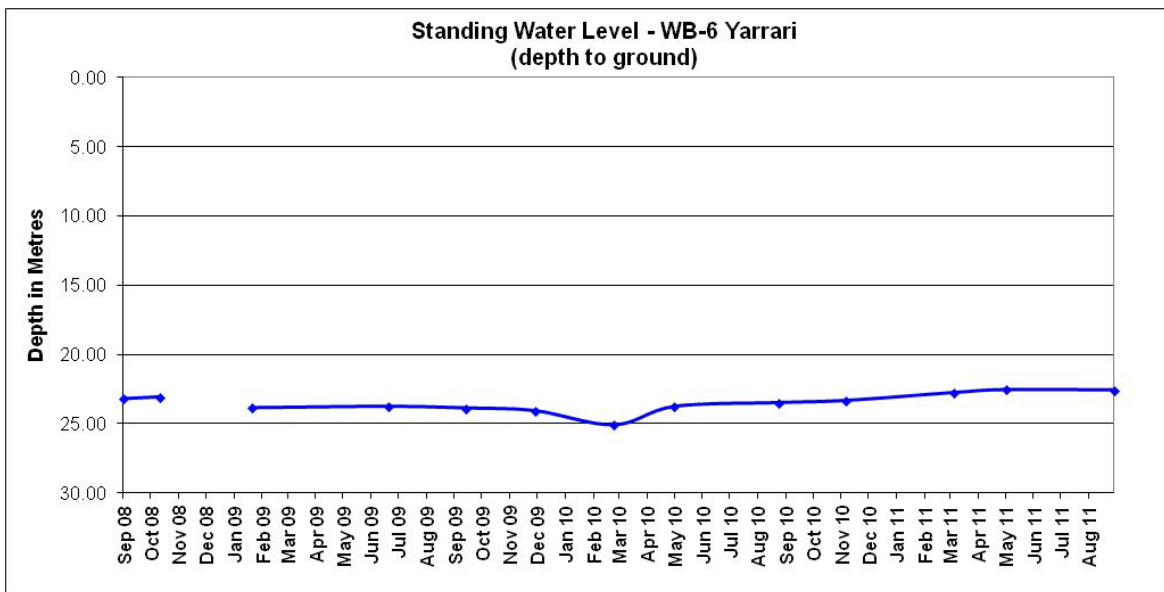
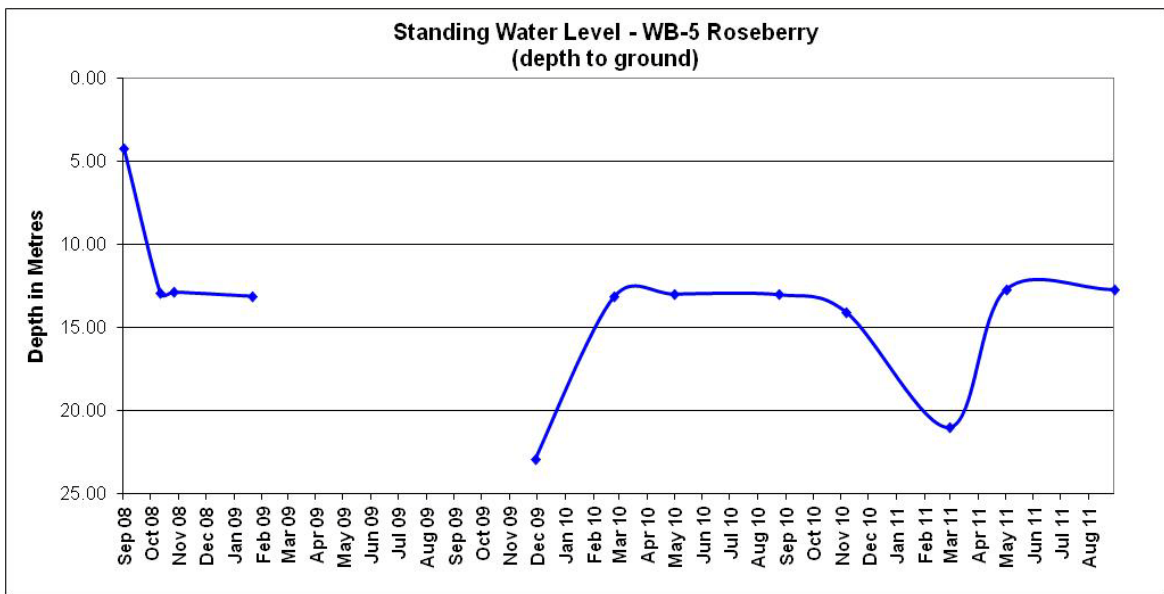
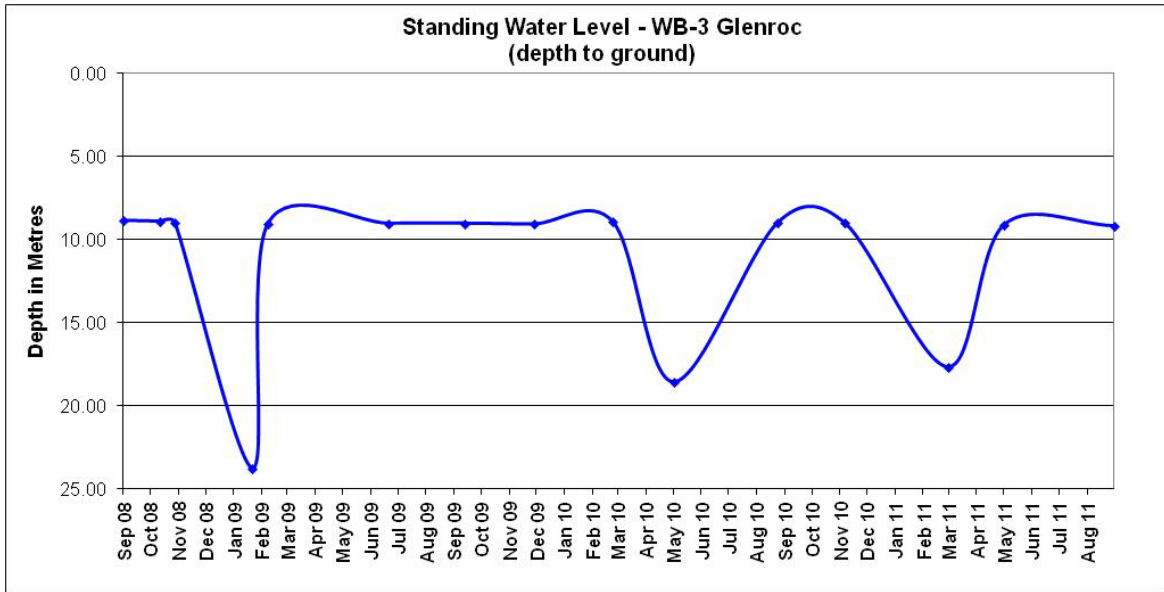
	22 June 09	32.75	8.2	2240
	15 September 09	43.38		
	30 November 09	Dry		
	25 February 10	49.32		
	3 May 10	32.59	Unable to Sample – pump over bore	
	26 August 10	32.23	Unable to Sample – pump over bore	
	9 November 10	32.14	Unable to Sample – pump over bore	
	7 March 11		Unable to Sample – gate locked	
	3 May 11		Unable to Sample – gate locked	
	1 September 11	31.77	Unable to Sample – pump over bore	
WB9	September 08	23.88		
	13 October 08	24.09		
	28 October 08	24.50	7.5	931
	23 January 09	24.27		
	22 June 09	23.99	7.9	1080
	15 September 09	23.94		
	30 November 09	24.05	7.14	1020
	25 February 10	25.58		
	3 May 10	24.26	Unable to Sample	
	26 August 10	24.59	7.72	1057
	9 November 10	24.34	Windmill over bore	
	7 March 11	26.7	7.44	1143
	3 May 11	25.26	7.6	1014
	30 August 11	24.36	7.92	1260
WB10	July 08	13.75		
	September 08	13.80		
	13 October 08	13.77		
	28 October 08	13.9	7.4	2235
	27 January 09	14.23		
	22 June 09	14.01	7	2220
	11 September 09	14.65		
	30 November 09	14.62	6.89	1690
	25 February 10	14.23		
	3 May 10	14.47	7.93	2010
	24 September 10	14.05	6.7	1833
	10 November 10	14.1	6.72	1905
	7 March 11	14.34	6.75	1910
	3 May 11	14.07	6.8	1685
	1 September 11	16.47	6.95	1745
WB11	July 08	18.11		
	September 08	18.61		
	13 October 08	18.13		
	28 October 08	18.4	7.5	1086
	27 January 09	18.73		
	22 June 09	18.1	8	880
	11 September 09	18.63		
	30 November 09	18.6	6.65	929
	25 February 10	18.47		
	3 May 10	18.24	8.37	921
	24 September 10	17.65	7.59	865
	10 November 10	17.49	7.49	867
	7 March 11	18.57	7.05	944
	3 May 11	17.34	7.25	867
	1 September 11	17.57	8.13	1200
WB12	July 08	12.73		
	September 08	12.80		

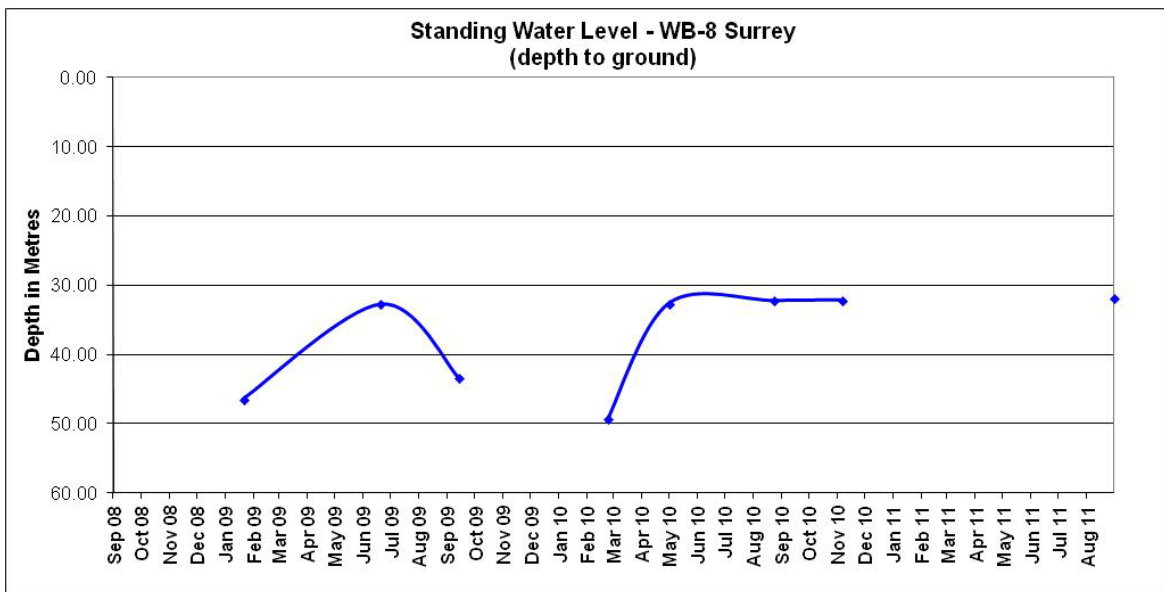
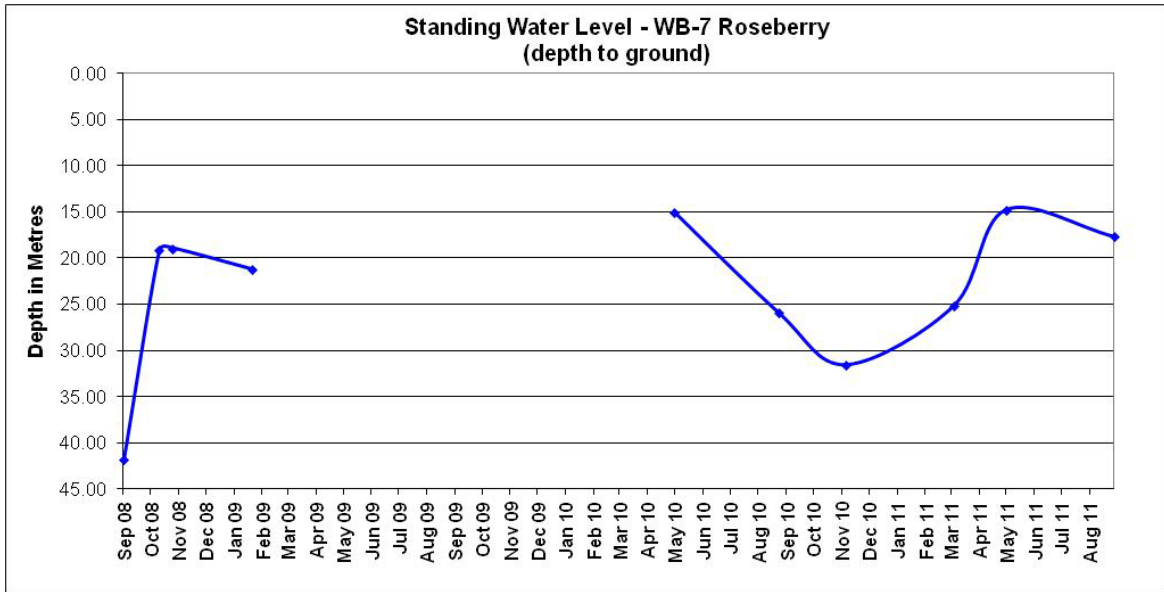
	13 October 08	12.83		
	28 October 08	12.95	8.1	2152
	27 January 09	13.16		
	22 June 09	12.99	8	2070
	11 September 09	13.05		
	30 November 09	12.99	8.34	1640
	25 February 10	13.19		
	3 May 10	13.15	8.27	1390
	24 September 10	13.22	8.71	873
	10 November 10	13.13	7.07	891
	7 March 11	13.18	7.37	1867
	3 May 11	13.15	7.45	1657
	1 September 11	13.23	8.57	2130
Production Bore	September 08	55.24		
	13 October 08	50.18		
	28 October 08	49.90	7.3	4030
	27 January 09	49.90		
	22 June 09	>50	7.1	3580
	27 August 09		7.3	3330
	30 November 09		7.2	3160
	25 February 10		Bore equipped	
	3 May 10		7.52	3310
	26 August 10	Bore Equipped	7.42	3340
	8 November 10	Bore Equipped	Pump not working	
	7 March 11	Bore Equipped	6.97	2880
	3 May 11	Bore Equipped	7	2930
	30 August 11	Bore Equipped	7.25	3800



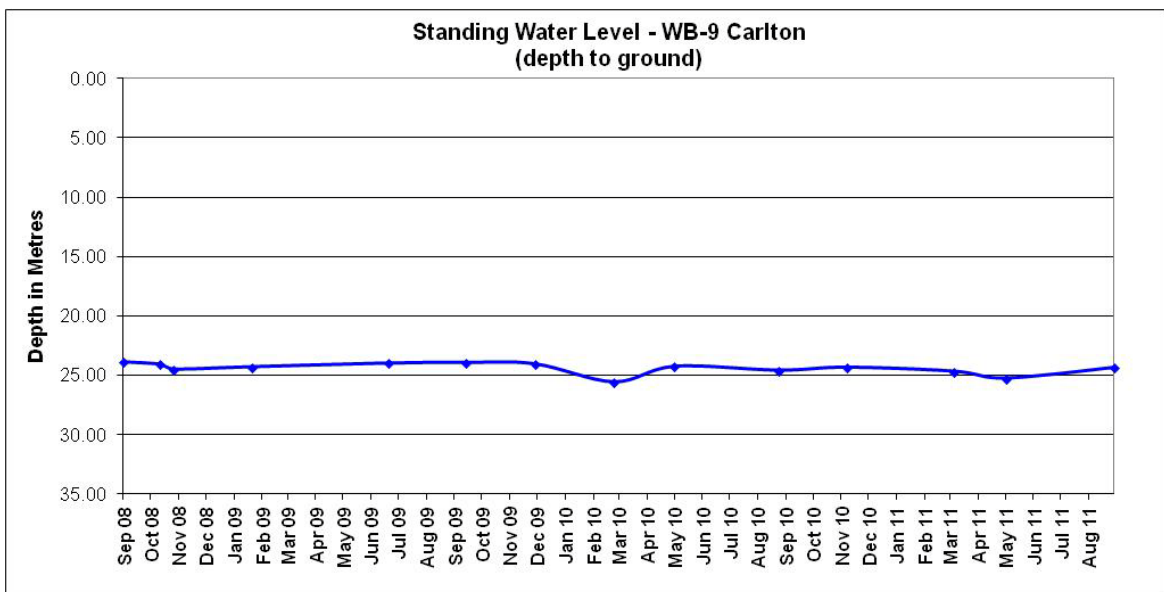
*Bore covered by production area

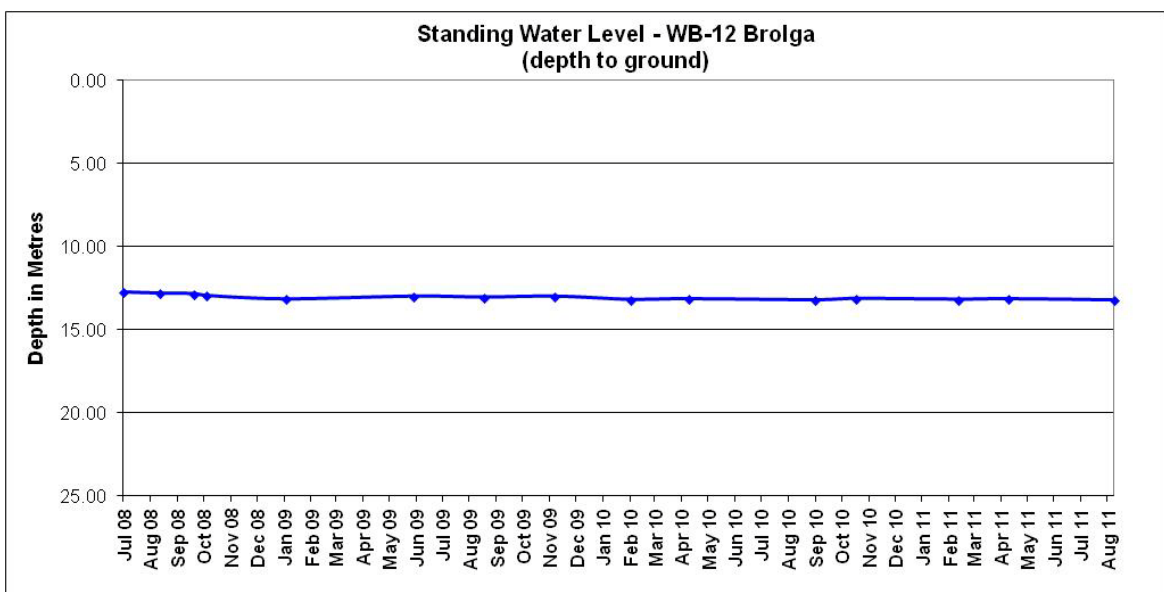
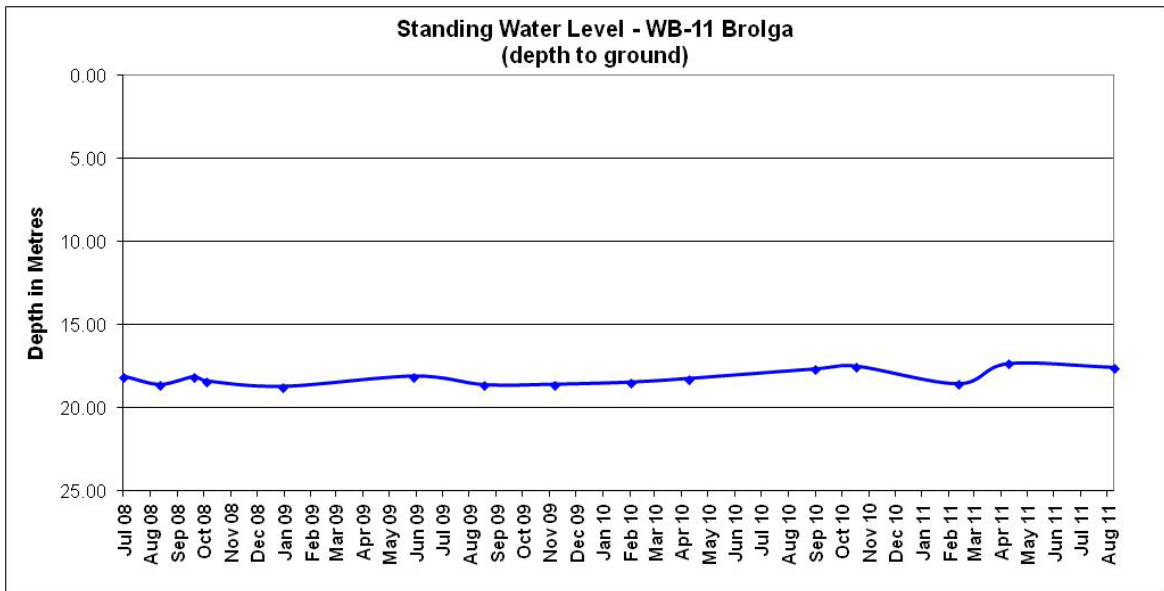
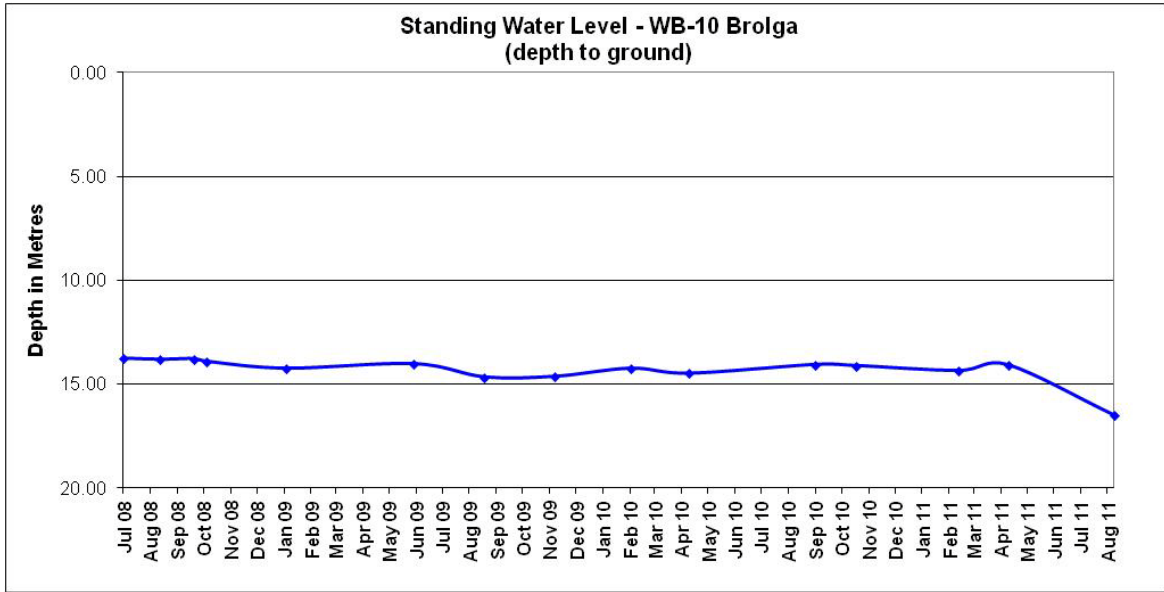






*pump over bore





Standing water levels have remained relatively consistent since the last CCC. This is with the exception of WB10 (water level dropped by 2.4m since the last event). WB10 is located on the property “Brolga” around 5km south of the mine. The water level in this bore has been relatively consistent over the last few years, with last measurement the first indication of any change. Standing water level will be reviewed on this bore at the next monitoring round scheduled this month to confirm if this remains a trend or if water levels return to expected levels.

WB3, WB5 and WB7 have remained at a higher water level for the last two rounds of monitoring. These bores often fluctuate with water levels suddenly dropping as displayed in previous monitoring events. This is thought to be associated with water being drawn from the bore to fill water storage points for stock/domestic purposes at WB3 and WB5, and a connected windmill actively drawing water during monitoring events at WB7. The next round of monitoring in November 2011 will continue to observe ongoing trends.

Surface Water

Since the last CCC meeting there has been one wet weather discharge event:

Wet Weather Discharge SD3, 4th October 2011: Discharge occurred after 50mm of rain fell within the 5 day period leading up to the event. The Total Suspended Solids (TSS) recorded 62 mg/L. This is slightly higher than the EPL threshold of 50 mg/L. However as stated in section L3.4 of the EPL, this level may be exceeded if the discharge occurred solely as a result of rainfall above 38.4mm over any consecutive 5 day period immediately prior to the discharge. Therefore for this discharge event no exceedance of EPL criteria occurred. The sample taken from UNDC south of Rocglen during the time of the discharge recorded a TSS of 26 mg/L. This shows that the sediment levels in SD3 have settled substantially before reaching the downstream monitoring location.

Routine surface water sampling was undertaken at selected sites on the 4th August 2011 to obtain background water quality data. The results indicated that the northern discharge point SB 18 had a TSS reading of 428 mg/L. The southern discharge point SD3 had a TSS reading of 124 mg/L. All other results were indicative of no change in water quality since mine commencement.

SB 18 no longer exists as it has been covered by the expanding northern dump in accordance with the Rocglen Extension Approval received from DoPI on the 27th September 2011. New water management systems have been under construction since the start of November 2011 in accordance with the Extension approval. These consist of a clean water drainage system that diverts water from Vickery State Forest away from the mine, and a dirty water drainage system that will replace SB18 as the northern discharge point. The new dirty water system currently consists of a 5 megalitre and 3 megalitre sediment basin. More sediment basins are to be installed over the coming weeks. Sediment levels in SD3 have recently been reduced via actively flocking the dam with Magnafloc LT425. Efforts occurred from the 10th October 2011 to the 7th November 2011, with the most recent results received indicating a low TSS of 31 mg/L. This gives Whitehaven the option of pumping the water off-site in a controlled discharge before heavy rainfall or to pump the water to SB19 if rainfall is not prominent so it can be utilised for dust suppression over the hotter months.

Complaints

Three complaints have been received since the last CCC meeting:

9th August 2011:

A complaint was made anonymously via the Department of Planning and Infrastructure (DoPI) in regards to the extent of rubbish being deposited on Wean Road, empty coal trucks travelling to the mine for loading on Wean Road and excessive speed by mine related vehicles on Wean Road.

It was explained to the Department that Rocglen toolbox talks have included the issue of rubbish being thrown from vehicles and also, in consultation with Council, “Do Not Litter” signage has been installed along the road to discourage littering. A Whitehaven field officer also regularly undertakes inspections of the roadsides to determine if additional rubbish collection is necessary.

With regard to speeding vehicles, this is also toolboxed but is really a matter for the Police to patrol as the mine cannot enforce any additional speed restrictions. The claims of empty coal trucks using Wean Road were rejected on the basis that the trucking depot for Toll is located in close proximity to the haul road off Bluevale Road and it would make no sense for coal haul trucks to be travelling to Rocglen via Wean Road.

13th September 2011:

A Complaint was made as a phone call to the Environmental Manager from OEH on behalf of a complainant in relation to smoke, dust and noise from around the Rocglen Mine.

The issue relating to smoke was not associated with Rocglen, but from woody weed control works on the Vickery site. The details of this work were provided to OEH including confirmation of approvals from Council and the RFS as well as notifications to surrounding landholders. In terms of dust and noise, it was explained to OEH that our dust monitoring results confirm compliance at all monitoring locations, in closer proximity to site as compared to the complainant’s property. It was also explained that recent noise monitoring had confirmed compliance at monitoring locations in closer proximity to site as compared to the complainant’s property. Copies of current air quality and noise monitoring results were referred to OEH for their records.

14th September 2011:

A phone call was made to the Environmental Manager in relation to noise from the Rocglen Mine over the last few mornings. Complainant described the noise as the worst it has been in a long time and was dissatisfied that the noise was getting worse.

The complainant was advised that the matter of noise would be raised with the Project Manager to confirm the activities occurring that may be contributing to the noise issue and verify what measures may be able to be taken to reduce noise impacts. The Project Manager confirmed activities were occurring as normal, with no additional equipment or unusual surface works occurring. On review of the weather station data for the 14th it was identified that a significant temperature

inversion was present during the morning up until after 9am which would have exacerbated noise levels.

As part of the Rocglen extension approval, it is now a requirement for the Rocglen site to maintain a real time noise monitor and real time weather station information to ensure the site manages potential noise impacts. This will include establishment of an alert system whereby the site receives early warnings of elevated noise levels which provides opportunity for operations to modify activities in order to maintain compliance. This equipment is now on order and is expected to be installed early in the new year.

Rehabilitation

Over September 2011 rehabilitation activities were planned to cover a further 22.4 hectare area of the western emplacement. This was divided into a 7.4 hectare area on the northern section of the western emplacement and a 15 hectare area on the southern section of the western emplacement. These areas are a priority for rehabilitation due to visibility to the south of the mine via Wean Road and from the west via Bluevale Road. The 7.4 hectare area was shaped, topsoiled and seeded by the 28th September 2011. The seed consisted of a summer grass mix of Japanese Millet, Premier Digit, Bambatsi Panic and Green Panic, and was sown with Supreme Z extra fertiliser. This fertiliser was selected as it provides starter Zinc and therefore should aid faster establishment. This is due to soils in the area being low in zinc (as identified after testing) which severely stunts early growth. Recent inspections show good establishment and with continued rain the cover crop should mature well.

Shaping of the 15 hectare section began over September 2011 and was completed in the first week of November 2011. At present, topsoil is being replaced in this section via dozer pushing the soil downslope from stockpiles at the top of the dump.

On completion of topsoiling, contour banks will be installed as per a design engineered by Global Soil Solutions (GSS). The banks will drain water off the slope and into the southern dirty water catchment. Whitehaven has also organised for 50 tonne of gypsum to be spread on the slope. Soil tests identified high sodium levels being the biggest constraint to cover crop establishment for the southern section of the western emplacement. The gypsum will be applied to the area at a rate of 3.33 tonnes per hectare. This should reduce the amount of dispersion that occurs in the topsoil, hence reducing the amount of crusting and thereby increasing water infiltration and moisture holding capacity.

Mounding also remains an option for this section and will be discussed over the coming months. An effective trial took place with a mounding implement attached to a G&B Ward dozer at Sunnyside Coal Mine over October 2011. Mounding would further aid pasture establishment, infiltration and tubestock development, whilst also significantly reducing runoff and improving sediment control.