Narrabri Mine Community Consultative Committee Meeting Minutes

Meeting No: 41

Date: Wednesday 13th June 2018

Time: 5:00pm

Location: Narrabri Mine Site Office

Present: Russell Stewart (RS) – Independent Chair
Peter Webb (PW)
James Stieger (JS)
Mark Foster (MF)
Geoff Hunter (GH)
Rodney Dunlop (RD) (Arrived late)
Ron Campbell (RC) – Narrabri Shire Council Representative
Dave Ellwood (DE) – Narrabri Mine Technical Services Superintendent
Steve Farrar (SF) – Narrabri Mine Environmental Superintendent

1. APOLOGIES

Steve Bow.

2. DECLARATION OF PECUNIARY OR OTHER INTERESTS

RC contracts to the mine and MF leases land from the mine.

3. PREVIOUS MINUTES

Moved: JS Seconded: PW

3.1 BUSINESS ARISING FROM PREVIOUS MINUTES

GH asked about inversions and that some noise results didn't count due to inversions and the mine would follow up on that. SF explained how the monitoring is undertaken and GH asked how we set the dates for the monitoring to avoid inversions which SF explained. SF went through the latest results with 1 out of 12 measurements affecting by inversions. RS asked if GH's question was answered which it was not. RS asked if we changed anything to address the inversions and DE explained that in the last meeting DE wasn't sure what 'IA' meant thinking it was inversions, but it means 'inaudible' and SF explained that they are not related to inversions. GH requested the mine to summarise the previous 12 months monitoring for the next meeting.

RD arrived.

GH asked about the rubbish and JS said they did a good job but more rubbish is there already. DE explained the current program. SF said the mine might do more out the front if it is full again after only 2½ weeks which DE agreed. MF said one of the drums was runover a while ago and DE said he wasn't sure who put them there.

DE went through some numbers for the cleanskin program including 43 operators from within 100km of the mine. GH asked how we know where they are from and DE explained the process. RS said the traffic to Tamworth has increased a lot. RS went through some census data and the location of the employees. DE said some that work at Werris Creek would probably be from Tamworth. RS said the figures didn't seem to correlate to the traffic. RS said you can't control where people shop and DE explained that it was a 50/50 split between Narrabri and Gunnedah. JS stated that flights from Tamworth might have something to do with it. RS said the Narrabri air service wont grow if people don't fly from Narrabri. RS explained why he fly's from Tamworth sometimes and RC said you need Government intervention in terms of flying times as this pushes people away from Narrabri as Council subsidises flights. JS said the traffic has increased a lot since 2000 when he moved to the farm. RS said Government workers get Qantas points so they will always fly to get there points for their own travel. RS said they should credit the points back to the organisation and not the individual. DE said they are planning on another 8-10 operators. GH asked DE to confirm the numbers which he did. GH asked if we are losing older workers as he has heard the more experienced workers are leaving to work out of Brisbane and DE explained that we are losing people to Qld as they offer large

money and better rosters. DE said this is why the mine targets locals as they are less likely to leave once trained. RS went through some trades numbers for immigrants in the north-west area for the last year and the in to the future. GH asked if the roster is the problem and DE explained the mines roster which is a residential roster. SF explained how the roster rotates and that the fly-in/fly-out roster is better suited to the even time roster. JS asked if the mine is losing people and DE said that they were as the mine can't compete with the Qld money/roster.

Exploration and approvals update given by DE. GH asked if the timing has slipped by a year which DE confirmed. GH asked if they could see the plan and DE said he would see if we can have it for the next meeting. GH stated that there would be no more vent fans etc expected down there then here and DE confirmed this. GH asked what the plan with the landholders down there was and DE explained where the acquisition process is up to. GH said that the feedback he has is that things have slowed down and DE said he has had that feedback as well and those directly on the mine footprint would be progressed. RS said they have been in limbo for a while and GH said that there was also talk of what will happen with a new mine and what's involved and DE explained that we will try and have a plan for the next meeting. RD asked if this was a new project which DE confirmed and will incorporate the existing mine.

4. GENERAL BUSINESS

4.1 OPERATIONS PROGRESS REPORT

The operations update was provided as follows:

Mine Progress Report (to 31 May 2018)

Coal produced (t):	May 2018	553,238
	FY-to-date	5,829,212
Coal Railed (t):	May 2018	297,358
	FY-to-date	5,590,865
Average workforce numbers (May 2018):		
	NCO	Waged – 128
		Salary – 119
		Total – 247
	Contractors	Total – 212
Safety Update (FY to May 2018):		
	Lost Time Injury (LTI)	3
	Days LTI Free:	14
	Total Recordable Injuries:	16
	Planned Task Observations:	10,168
	Take 5 Assessments:	150,720
	Work Hours (May-18):	142,149

DE went through the operations report. JS asked about the contractor numbers increasing and DE said the cut-flit project has resulted in increased numbers. JS asked about the project and DE explained the cut-flit process of underground roadway development and if the trial works the mine might use it into the future. RD asked about the safety aspects of the 15m plunges and DE explained the process. GH asked about the longwall collapses and DE explained that we are currently down but the mine thinks it is a different issue and people will be happy when the current longwall panel is finished. RD asked about the next block and DE explained that it should be better as we have a better understanding of the issues now.

4.2 ENVIRONMENTAL OVERVIEW

SF went through the environmental report. GH asked what VTG stands for which SF explained. GH asked what the limit is for dust which SF explained. GH asked about the trends in a few of the bores as some are going down. SF explained the different bores and their locations and what is likely affecting them. GH asked about the vibrating wire piezometers which SF explained. SF stated that the annual report hasn't been finalised but when it is the mine would provide a copy to the CCC.

5. NEW BUSINESS

GH asked about the trees out the front which SF explained.

DE gave an update on the exploration program with drilling for this FY complete and a new program planned of a similar size for the next FY. GH asked about the holes and DE explained the plan showing the locations and different drilling methods, e.g. cored holes or chip holes. SF said the approvals is being prepared now. SF explained the different boundaries on the plan including the different properties. RS asked if there were 5 people involved which DE explained including having the bottom two properties on hold as they may not be in the mining area leaving 3 main properties.

6. NEXT MEETING

Wednesday 12th September 2018 at 5:00pm at the Narrabri Mine Site Office.

7. CLOSURE OF MEETING

Meeting closed at 6:00pm.

Narrabri Mine Community Consultative Committee Meeting #41

Environmental Monitoring Report: March – May 2018

Noise Monitoring

Attended noise monitoring was undertaken between Monday 12th to Wednesday 14th March 2018 (Tables 1 and 2) to verify if noise levels were within compliance limits. The draft results from this monitoring are detailed in the tables below.

Table 1: EPL Monitoring Location Results

EPL ID	Monitoring Date	Daytime Measured L_{Aeq} dB	Evening Measured Levels L_{Aeq} dB	Night Measured Levels L_{Aeq} dB	Night Measured Level $L_{A1,1minute}$ dB	Noise Limit(s)	Compliance
N5 Oakleigh	12/03/2018	<25	IA	NA	NA	Day/Evening/Night LAeq,15minute: 35 dB Night LA1,1minute: 45 dB	Yes
N5 Oakleigh	13/03/2018	<30	<30	NM	NM		Yes
N5 Oakleigh	14/03/2018	IA	<20	<20	<20		Yes
N6 Newhaven	12/03/2018	IA	<30	<30	34	Day/Evening/Night LAeq,15minute: 35 dB Night LA1,1minute: 45 dB	Yes
N6 Newhaven	13/03/2018	IA	IA	<30	36		Yes
N6 Newhaven	14/03/2018	IA	NM	IA	IA		Yes

Notes:

1. *Noise levels provided in these columns are highest NAR only contributions, where criteria were applicable, during each period;*
2. *Bolded results indicate exceedance of criteria;*
3. *As detailed in the EPL, noise emission limits apply under all meteorological conditions except:*
   - *Wind speeds greater than 3 m/s at 10 metres above ground level; or*
   - *Stability class F temperature inversion conditions, and wind speeds greater than 2 m/s at 10 metres above ground level; or*
   - *Stability class G temperature inversions;*
4. *'NA' denotes criteria were not applicable due to meteorological conditions for all measurements at this location during this period;*

Table 2: Noise Management Plan Monitoring Locations

Location	Monitoring Date/Time	Wind Speed m/s	Stability Class	VTG ˚C per 100m	Criterion dB	Criterion Applies	NAR $L_{Aeq,15min}$ dB	Exceedance
N1 Bow Hills	13/03/2018 12:31	2.3	A	-2.6	35	Yes	IA	Nil
N1 Bow Hills	13/03/2018 20:06	1.3	F	1.6	35	Yes	IA	Nil
N1 Bow Hills	13/03/2018 23:25	1.5	F	2.2	35	Yes	<20	Nil
N3 Ardmona	13/03/2018 11:57	1.2	A	-2.4	35	Yes	<25	Nil
N3 Ardmona	13/03/2018 19:38	1.4	E	1.4	35	Yes	<20	Nil
N3 Ardmona	13/03/2018 23:52	1.0	F	3.4	35	Yes	**40**	**5**
N7 Merriman	14/03/2018 12:46	2.0	A	-2.2	35	Yes	IA	Nil
N7 Merriman	14/03/2018 20:25	0.6	F	3.0	35	Yes	<25	Nil
N7 Merriman	15/03/2018 00:05	2.1	G	4.2	35	No	<30	NA
N8 Matilda	14/03/2018 12:01	0.5	B	-1.8	35	Yes	IA	Nil
N8 Matilda	14/03/2018 19:47	2.3	F	2.4	35	No	IA	NA
N8 Matilda	14/03/2018 23:22	2.0	F	3.6	35	Yes	NM	Nil

Notes:

1. *Atmospheric data is sourced from the NAR weather station and inversion tower;*
2. *In accordance with EPL and project approval, the noise criteria are to apply under all meteorological conditions except the following:*
   - *Wind speeds greater than 3 m/s at 10 metres above ground level; or*
   - *Stability class F temperature inversion conditions, and wind speeds greater than 2 m/s at 10 metres above ground level; or*
   - *Stability class G temperature inversion conditions.*
3. *Criterion may or may not apply due to rounding of meteorological data values;*
4. *Estimated or measured LAeq,15minute attributed to NAR;*
5. *Bolded results indicate exceedance of criteria (if applicable);*

6. *'NA' in exceedance column means atmospheric conditions outside conditions specified in development consent and so criterion is not applicable; and*
7. *'IA' denotes inaudible.*

During the March 2018 monitoring, under the operating and meteorological conditions at the time, for the worst-case 15-minute compliance measurement periods, the mine noise was compliant at all locations with the exception of the night time measurement taken at N3. Notifications were made to the landholder and relevant agencies at the time.

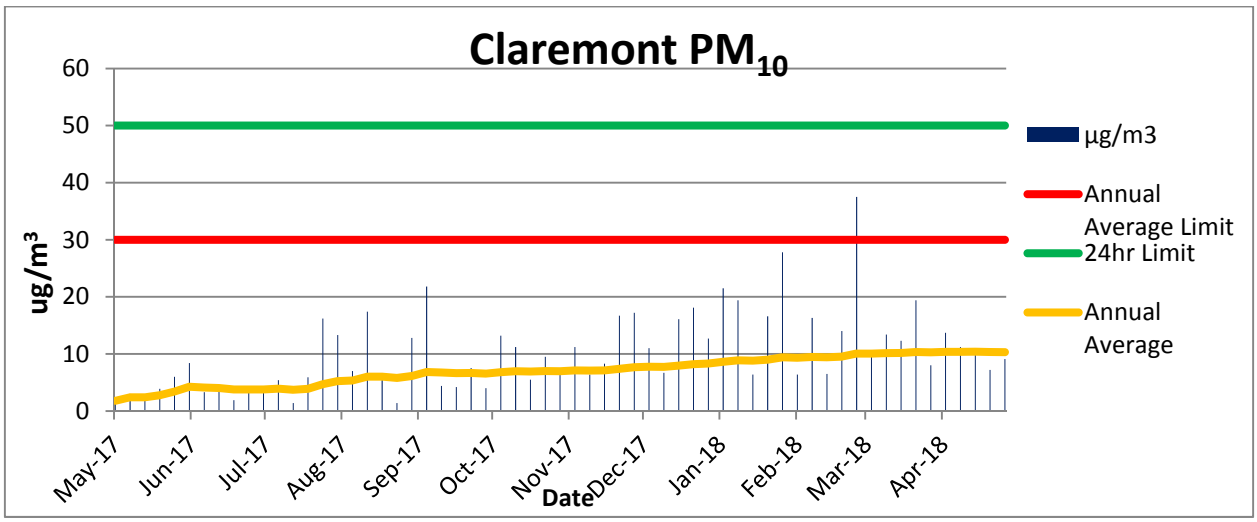
Deposited Dust Monitoring

Month	ND1 Turrabaa	ND2 Claremont	ND3 Bow Hills	ND4a New Matoppo	ND5 Claremont	ND6 Willarah	ND7 Claremont	ND8 Claremont	ND11 Oakleigh	ND12 Merriman
Jun-17	2.5	3.6	1.5	2.0	2.4	0.7	2.2	2.9	0.6	4.4
Jul-17	2.4	0.7	2.3	0.4	1.4	0.4	1.7	0.6	0.4	1.6
Aug-17	2.6	2.1	1.9	0.9	3.1	3.8	0.8	1.1	0.3	1.1
Sep-17	1.7	1.2	1.2	1.1	3.2	1.5	2.1	3.6	0.9	1.0
Oct-17	4.0	1.8	2.0	2.2	4.0	2.2	2.5	2.5	3.2	1.1
Nov-17	0.9	6.1	1.0	3.2	3.8	1.6	0.8	3.1	0.7	1.2
Dec-17	3.9	1.0	7.3	2.7	3.2	0.9	1.5	3.1	1.0	1.0
Jan-18	3.0	2.9	0.6	6.9	2.9	54.7	1.3	1.3	1.0	1.4
Feb-18	2.5	0.9	2.8	5.2	2.7	0.9	7.5	1.6	2.4	1.0
Mar-18	3.2	1.5	2.9	5.4	3.0	1.1	1.2	2.5	3.1	2.1
Apr-18	3.6	4.0	0.9	3.1	2.1	1.2	0.8	2.5	9.0	0.7
May-18	2.8	2.0	3.0	0.4	0.5	0.4	0.4	1.1	1.0	0.6
Annual Average	**2.8**	**2.3**	**2.3**	**2.8**	**2.7**	**5.8**	**1.9**	**2.2**	**2.0**	**1.4**

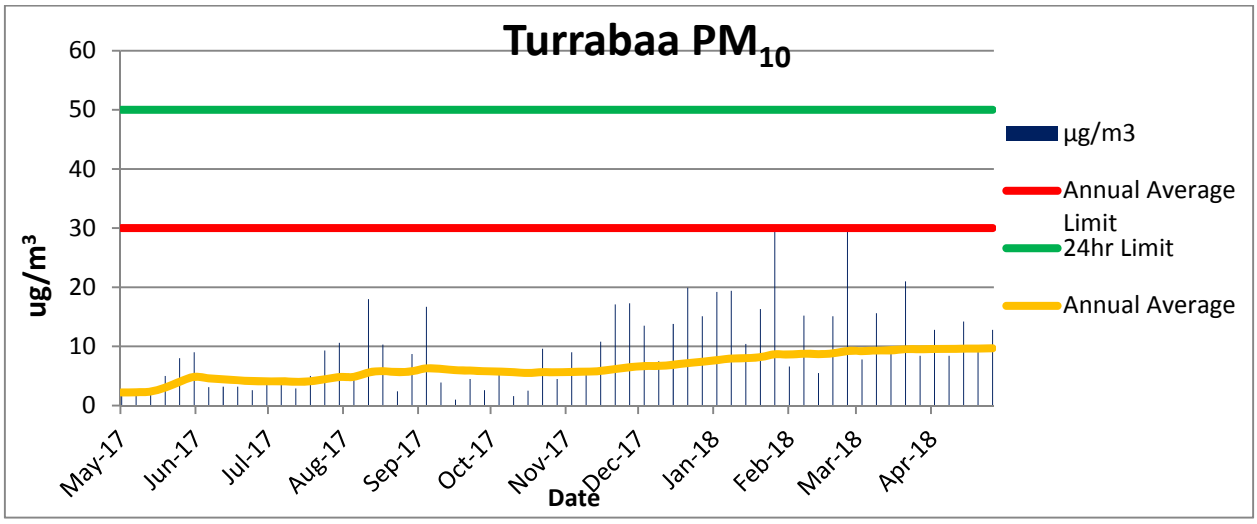
All deposited dust levels are within the compliance limit of 4 g/m2/mth with the exception of ND6 following a high result recorded in January 2018. This result was affected by significant contamination from organic matter (i.e. 98% of the deposited material), which is not attributable to site operations.

High Volume Air Sampling (PM10)

PM10 measurements taken to 19 May 2018 for the "Claremont" High Volume Air Sampler (HVAS) are returning a running annual average of 10.31 µg/m^3, which is well below the annual average limit of 30 µg/m^3.



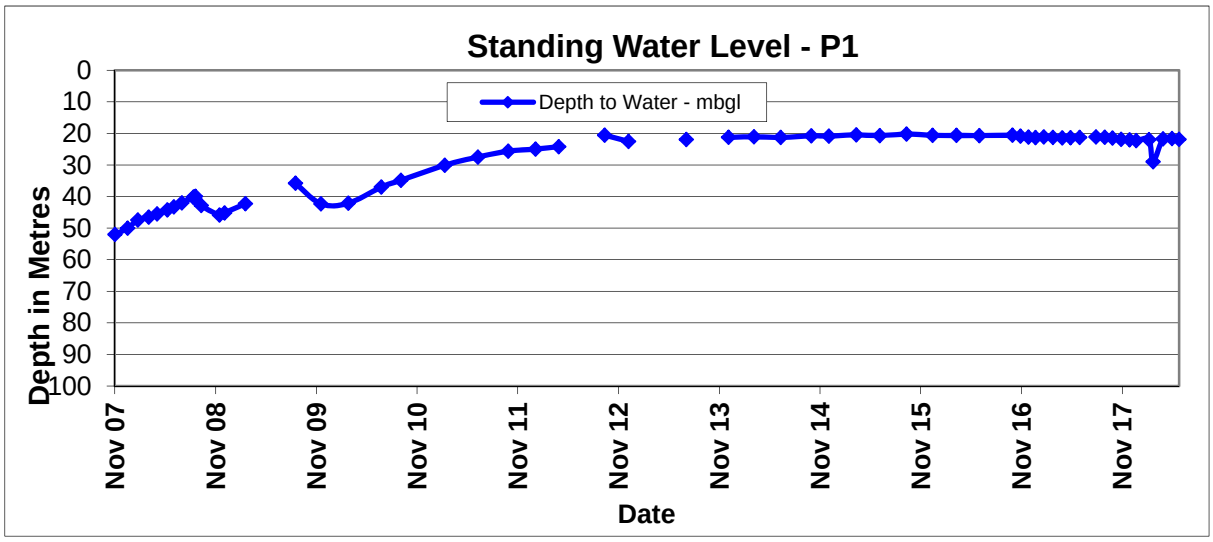
PM10 measurements taken to 19 May 2018 for the "Turrabaa" High Volume Air Sampler are returning a running annual average of 9.68 µg/m^3, which is also well below the annual average limit of 30 µg/m^3.

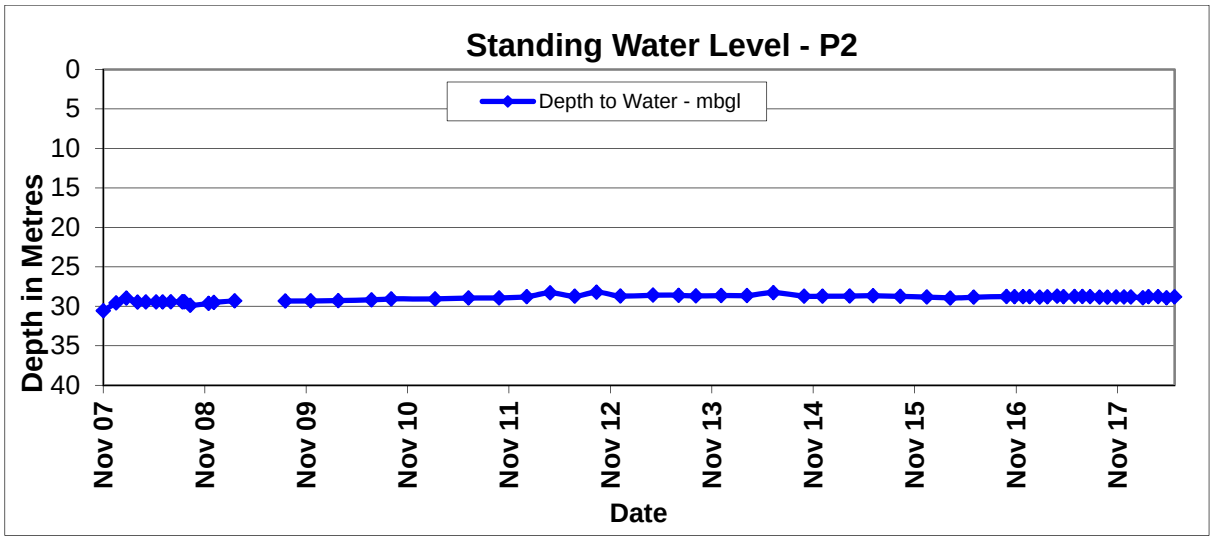


PM10 levels have remained compliant since the last meeting.

Groundwater Monitoring

Groundwater monitoring was completed in May 2018. Monitoring results are included below.




Standing Water Level - P2
Depth to Water - mbgl
Depth in Metres
0
5
10
15
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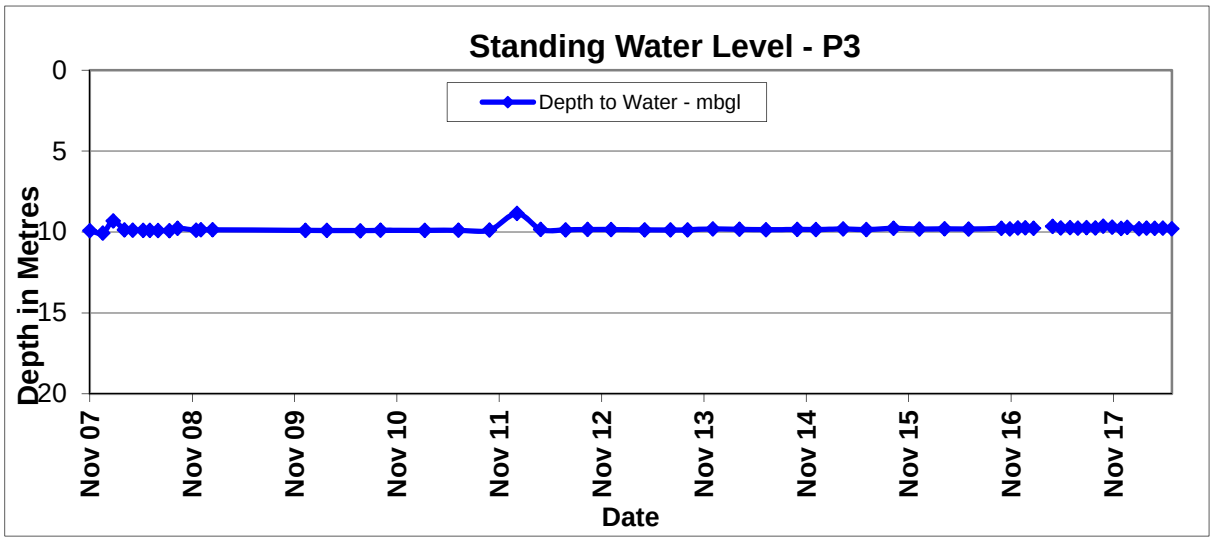
Date


Standing Water Level - P3
Depth to Water - mbgl
Depth in Metres
0
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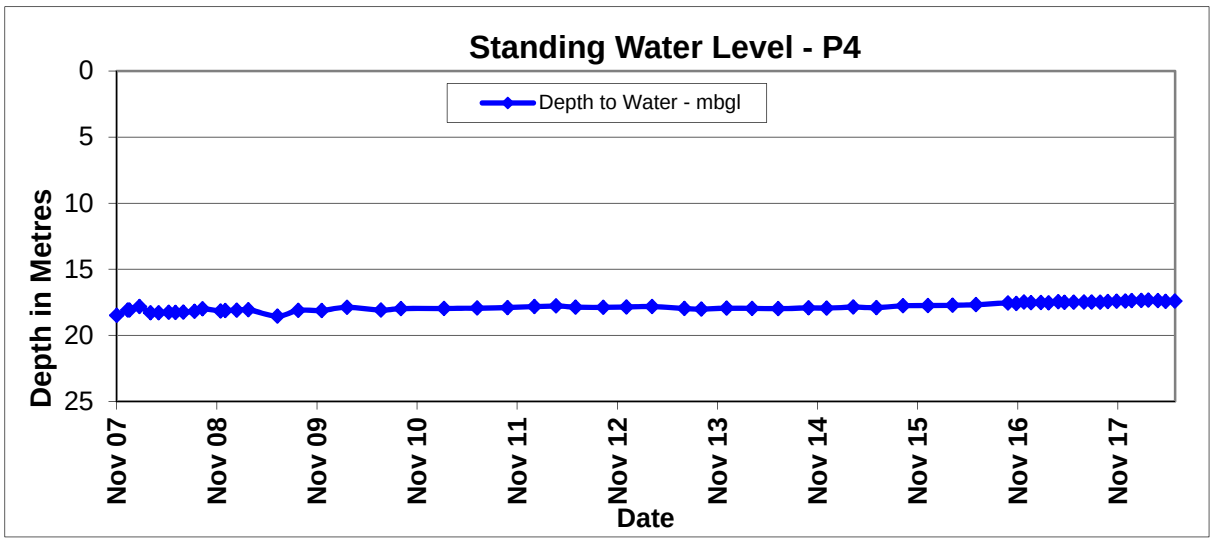
Standing Water Level - P4
Depth to Water - mbgl
Depth in Metres
0
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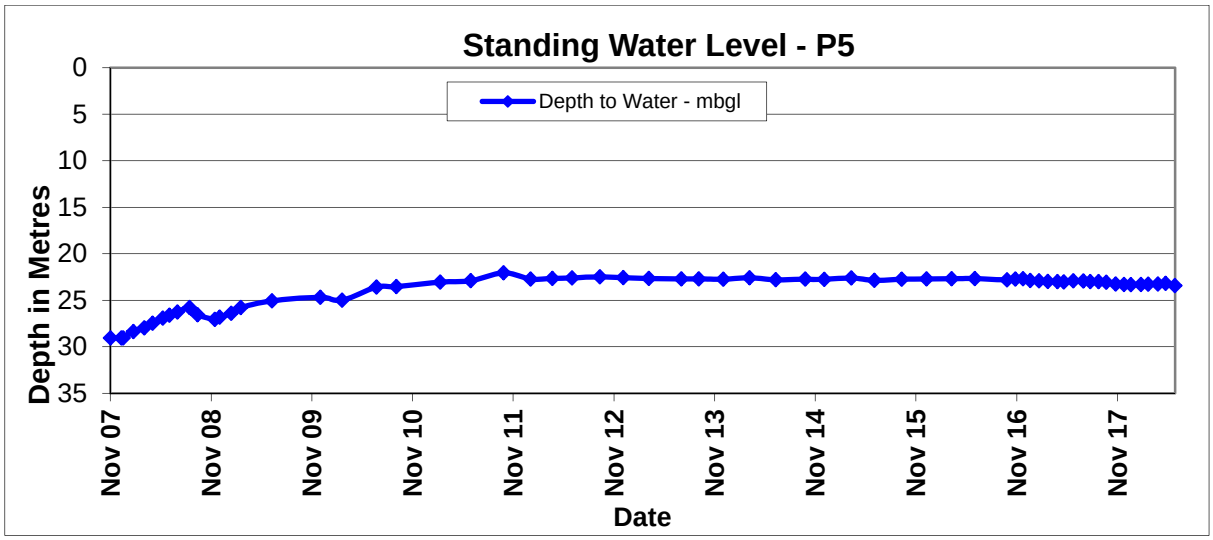
Standing Water Level - P5
Depth to Water - mbgl
Depth in Metres
0
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10
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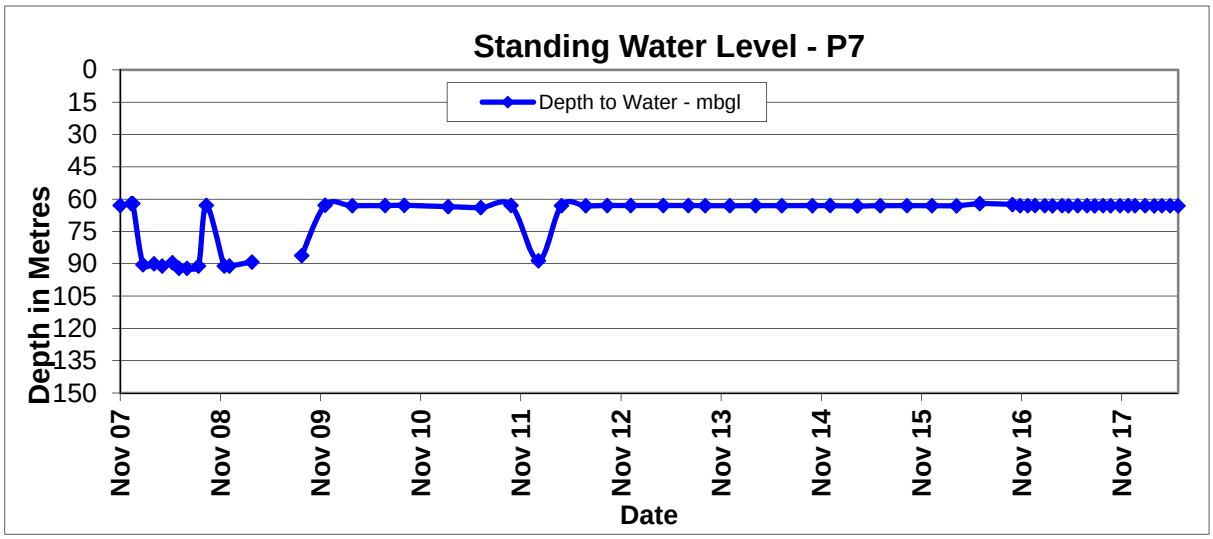
Standing Water Level - P7
Depth to Water - mbgl
Depth in Metres
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15
30
45
60
75
90
105
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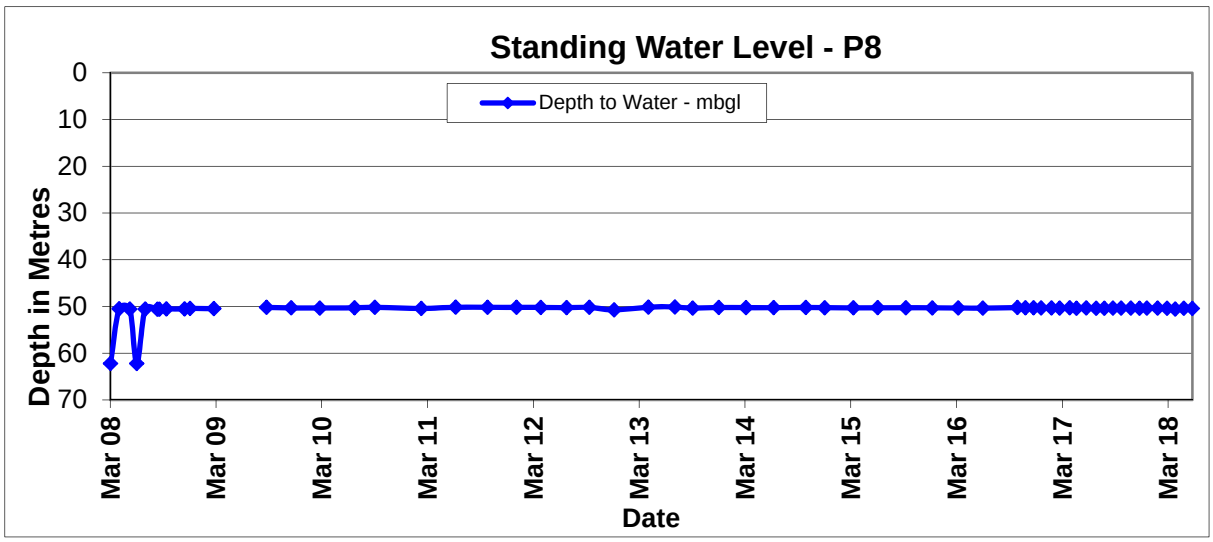
Standing Water Level - P8
Depth to Water - mbgl
Depth in Metres
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10
20
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50
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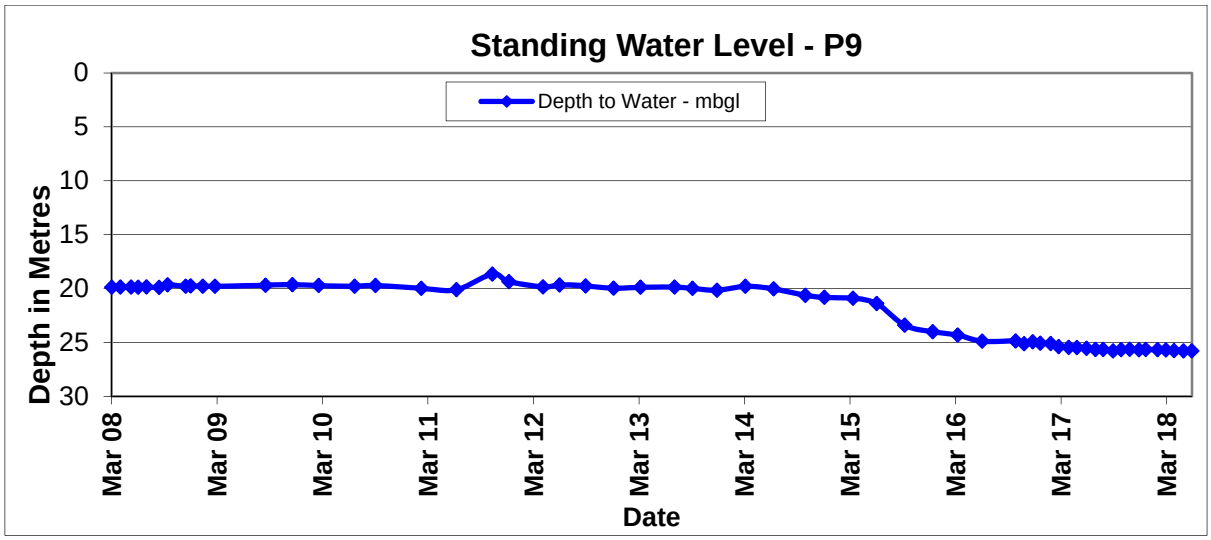
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Depth to Water - mbgl
Depth in Metres
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5
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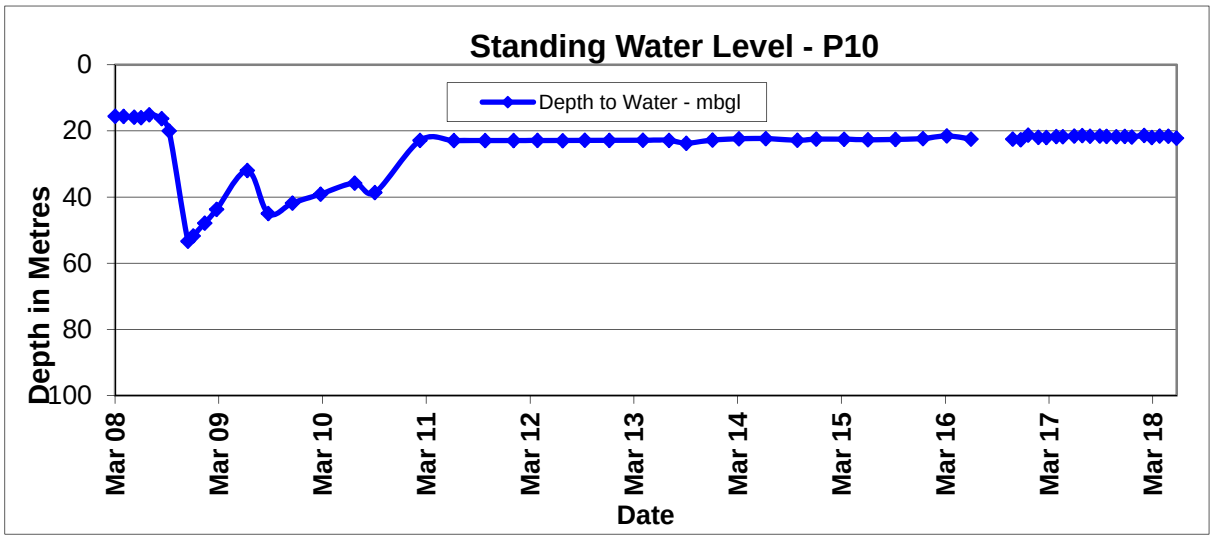
Mar 18
Date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Depth to Water - mbgl
Depth in Metres
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Mar 17
Mar 18
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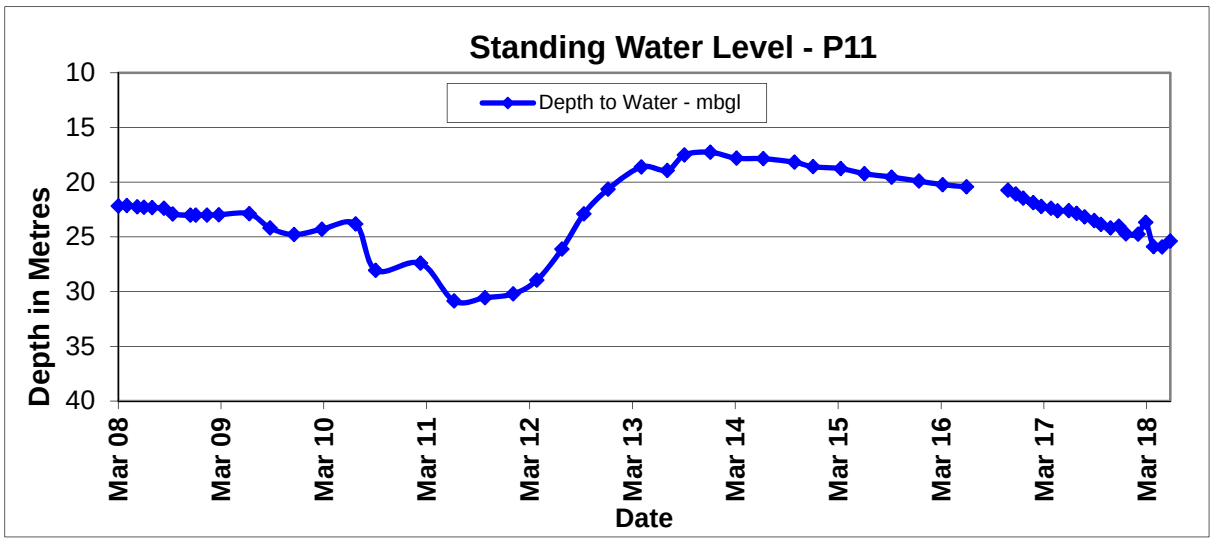
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Depth to Water - mbgl
Depth in Metres
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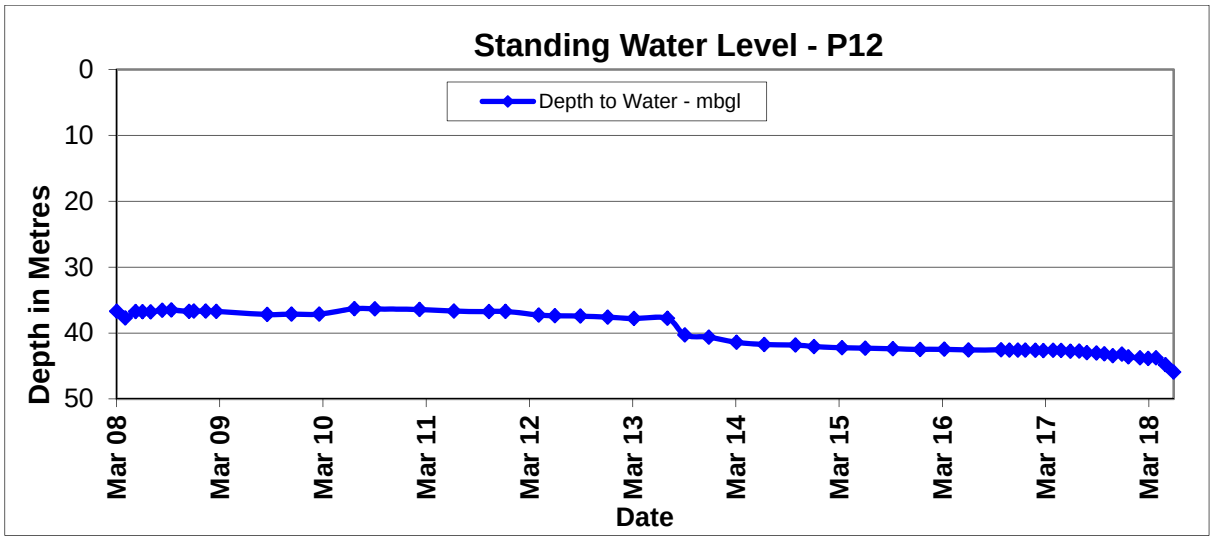
Mar 18
Date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Depth to Water - mbgl
Depth in Metres
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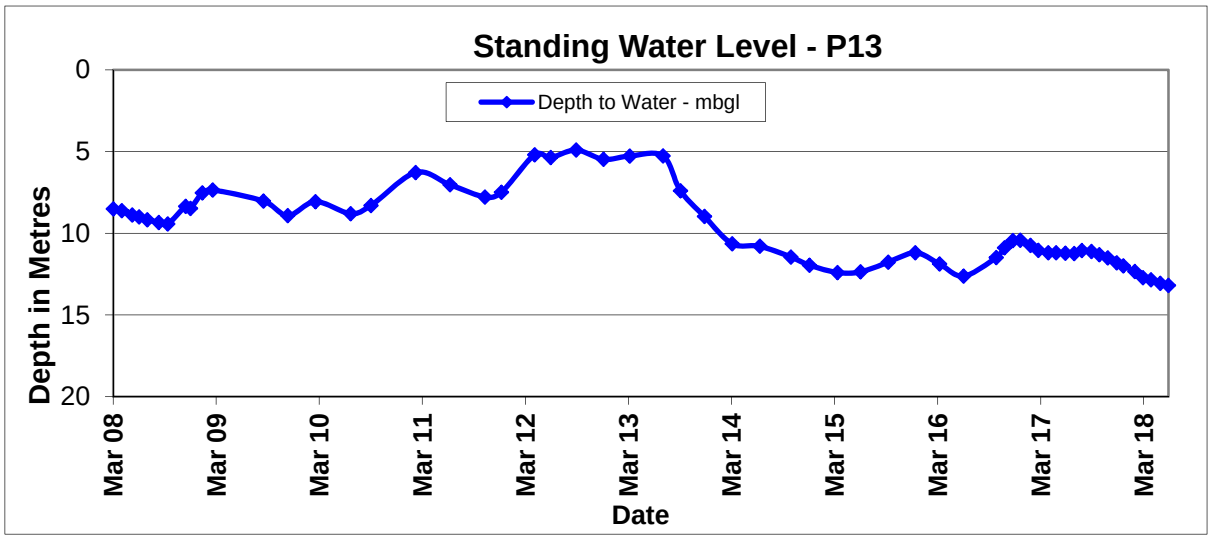
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Depth to Water - mbgl
Depth in Metres
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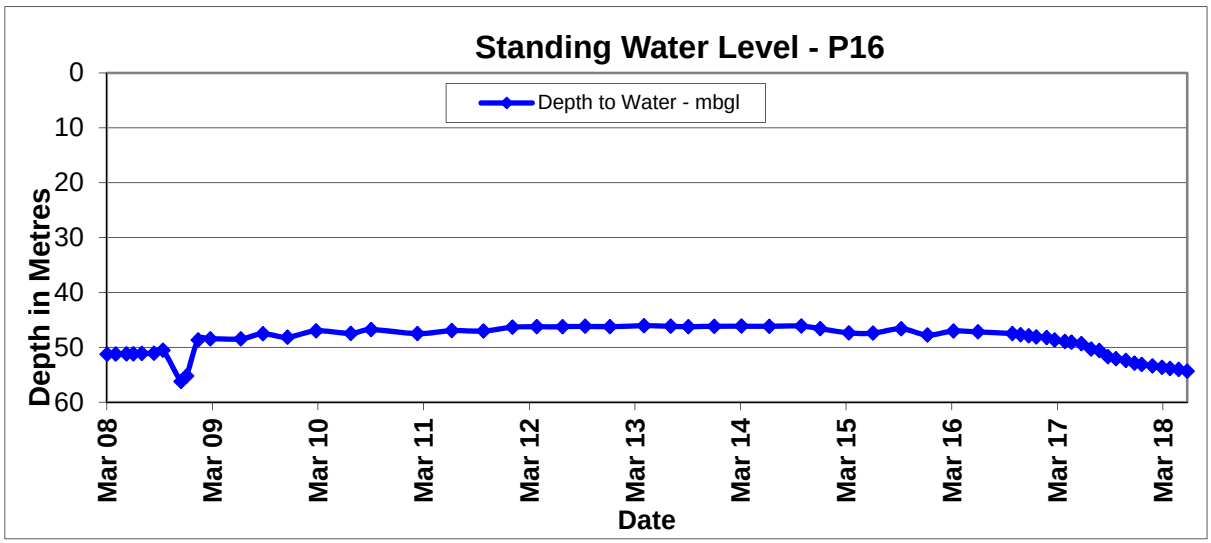
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Depth to Water - mbgl
Depth in Metres
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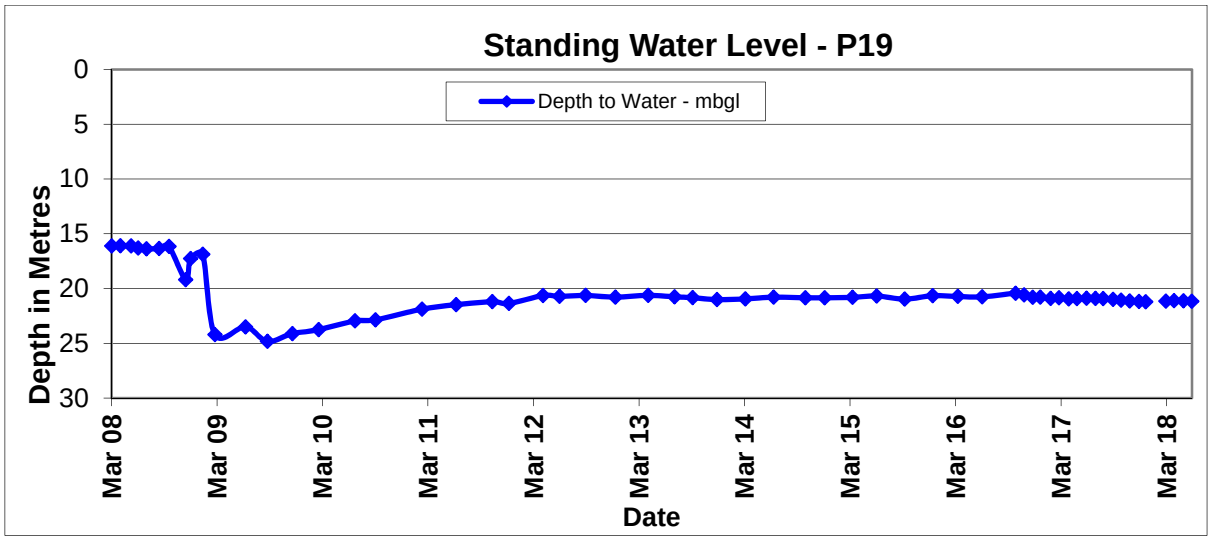
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Depth to Water - mbgl
Depth in Metres
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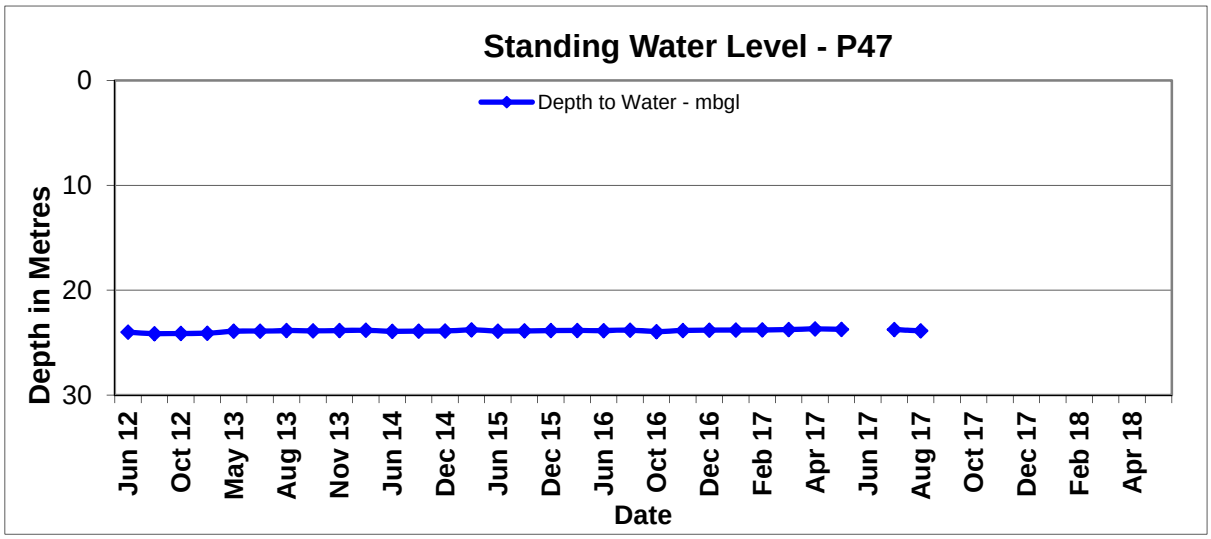
Standing Water Level - P47
Depth to Water - mbgl
Depth in Metres
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10
20
30
Jun 12
Oct 12
May 13
Aug 13
Nov 13
Jun 14
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Feb 18
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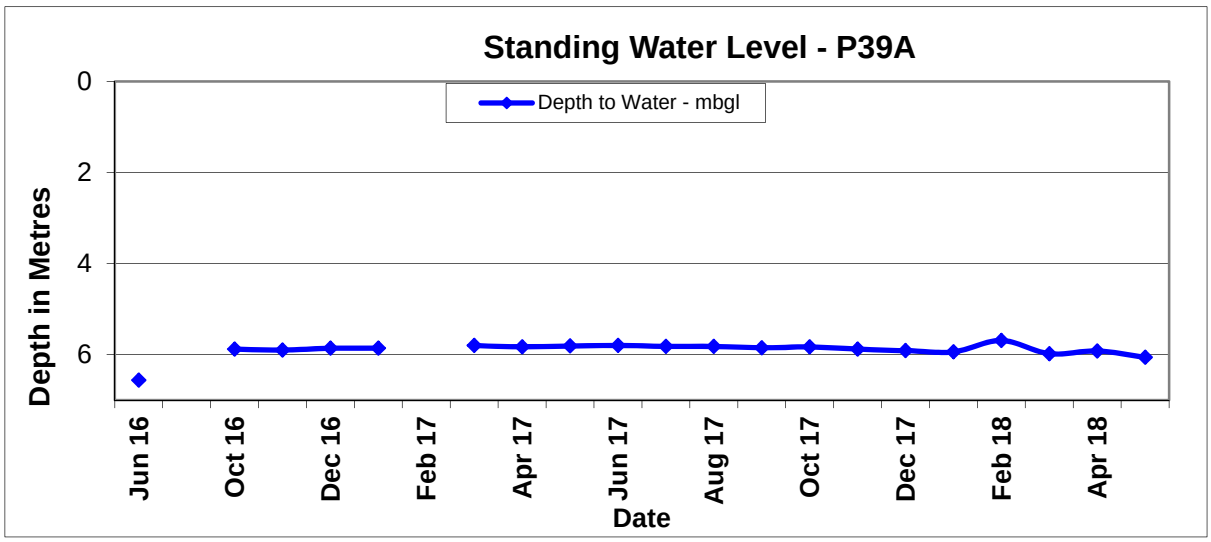
Date


Standing Water Level - P39A
Depth to Water - mbgl
Depth in Metres
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Oct 17
Dec 17
Feb 18
Apr 18
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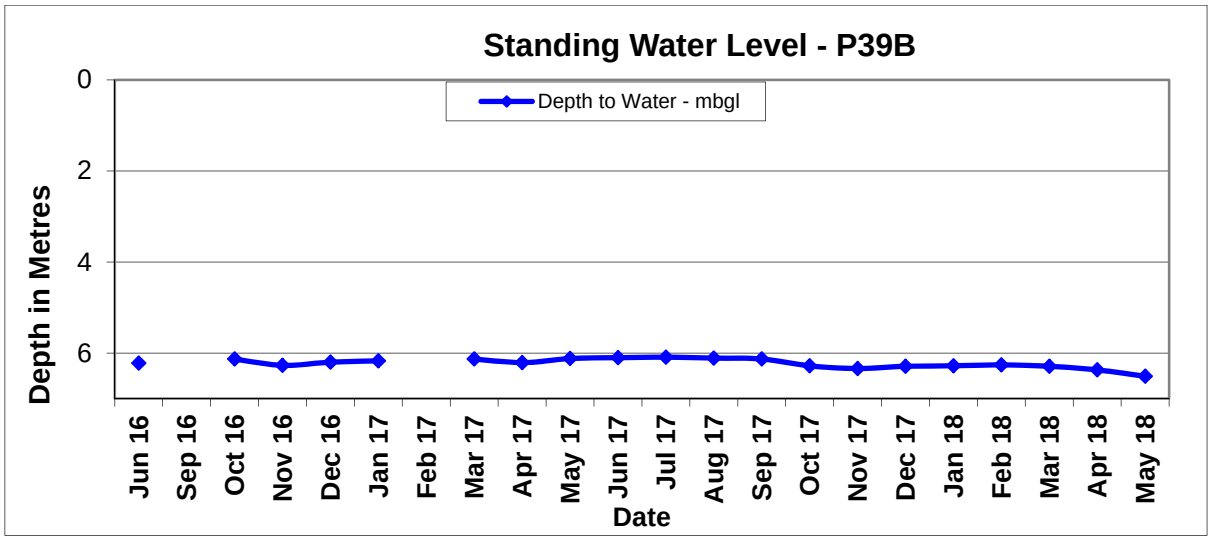
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Depth to Water - mbgl
Depth in Metres
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Oct 16
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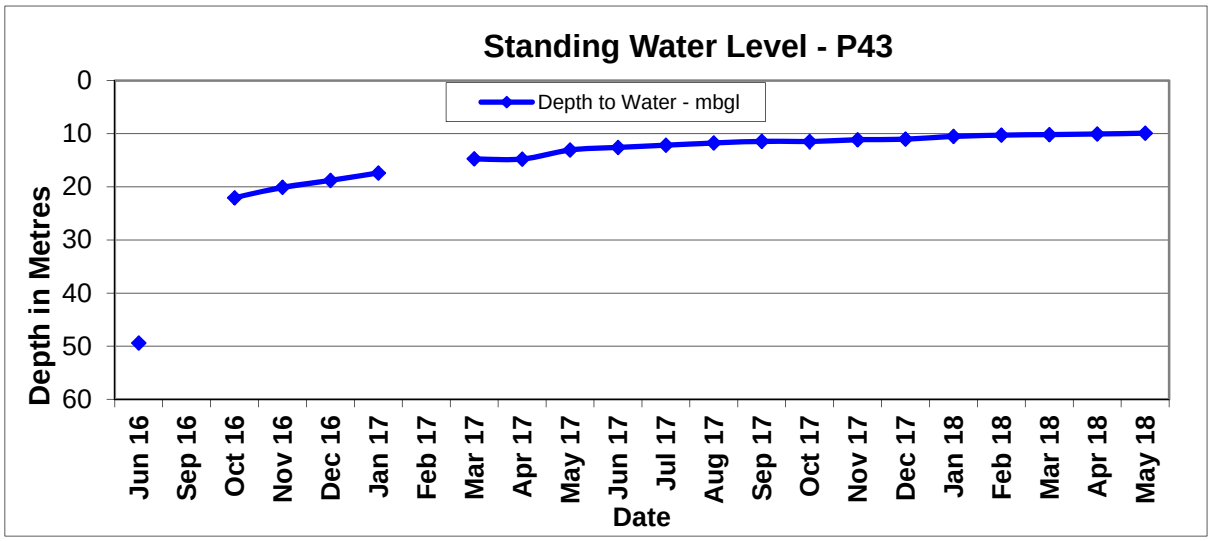
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Depth to Water - mbgl
Depth in Metres
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Jun 16
Sep 16
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Jan 17
Feb 17
Mar 17
Apr 17
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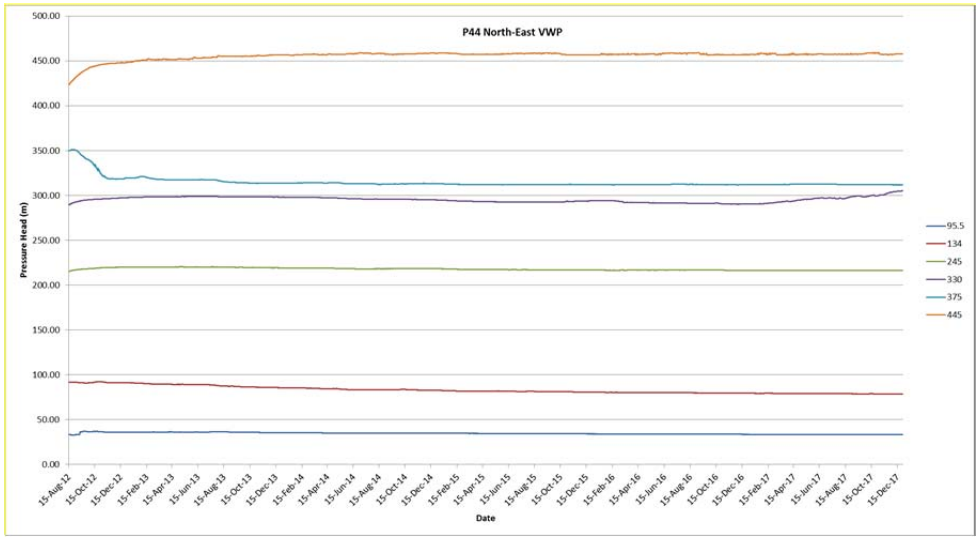
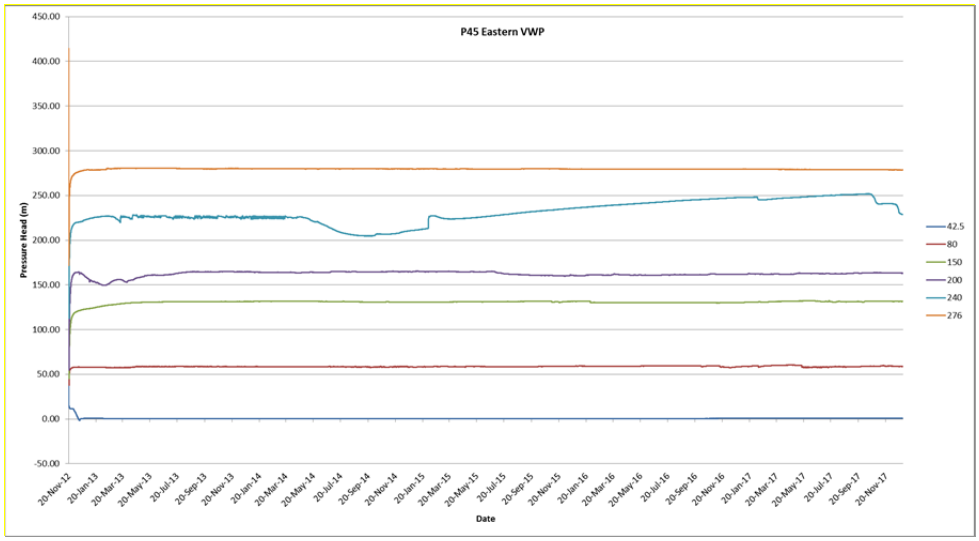
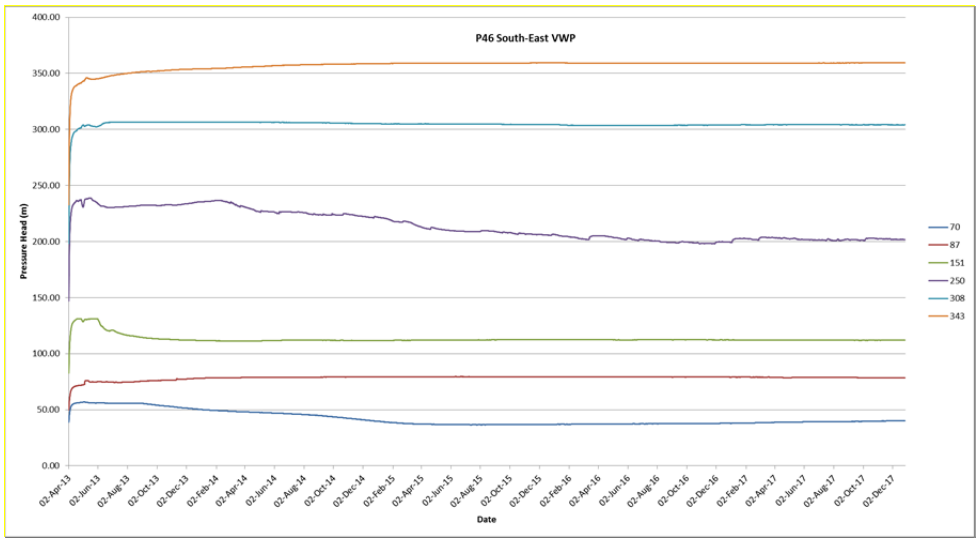
Sep 17
Oct 17
Nov 17
Dec 17
Jan 18
Feb 18
Mar 18
Apr 18
May 18
Date


P40 Western VWP
Pressure Head (m)
600.00
500.00
400.00
300.00
200.00
100.00
0.00
-100.00
95
135
307
321.75
346
357
Date







Monitoring results show the recent rounds have been relatively stable. As covered in previous reports, 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 and as such the drop in water level in P13 is likely associated with production from WB2.

Surface Water Monitoring

No wet weather discharges from licensed discharge points occurred during the March to May 2018 period.

Subsidence

Narrabri Mine has monitored the subsidence movement across the surface of LW103 to LW107 in accordance with the approved Extraction Plans (LW101 and LW102 are no longer monitored). 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.

Longwall Panels (LW) 103 to LW107		
	Maximum Predicted Extraction Plan	Maximum Measured
Line 101 – Centre of LW101 – Monitoring has ceased		
Line 102 – Centre of LW102 – Monitoring has ceased		
Line 103 – Centre of LW103 – Northern		
Subsidence (m)	2.75	2.729
Tilt (mm/m)	62	40.2
Tensile Strain (mm/m)	20 – 30^	18.8
Compressive Strain (mm/m)	26 – 39^	32.0
Angle of Draw (°, Degrees)	22.5 – 26.5	15.2
Line 103 – Centre of LW103 – Southern		
Subsidence (m)	2.75	2.583
Tilt (mm/m)	62	30.3
Tensile Strain (mm/m)	20 – 30^	9.3
Compressive Strain (mm/m)	26 – 39^	10.2
Angle of Draw (°, Degrees)	22.5 – 26.5	20.2
Line 104 – Centre of LW104 – Northern		
Subsidence (m)	2.75	2.802
Tilt (mm/m)	65	48.4
Tensile Strain (mm/m)	22 – 33^	42.6
Compressive Strain (mm/m)	28 – 42^	42.3
Angle of Draw (°, Degrees)	22.5 – 26.5	15.8
Line 104 – Centre of LW104 – Southern		
Subsidence (m)	2.75	2.713
Tilt (mm/m)	65	31.3
Tensile Strain (mm/m)	22 – 33^	8.1
Compressive Strain (mm/m)	28 – 42^	6.7
Angle of Draw (°, Degrees)	22.5 – 26.5	13.2
Line 105 – Centre of LW105 – Northern		
Subsidence (m)	2.75	2.674
Tilt (mm/m)	57	46.5
Tensile Strain (mm/m)	18 – 27^	18.1
Compressive Strain (mm/m)	23 – 35^	44.6
Angle of Draw (°, Degrees)	22.5 – 26.5	17.9
Line 105 – Centre of LW105 – Southern		
Subsidence (m)	2.75	2.626

Longwall Panels (LW) 103 to LW107		
	Maximum Predicted Extraction Plan	Maximum Measured
Tilt (mm/m)	57	25.2
Tensile Strain (mm/m)	18 – 27^	7.1
Compressive Strain (mm/m)	23 – 35^	9.9
Angle of Draw (°, Degrees)	22.5 – 26.5	16.6
Line 106 – Centre of LW106 – Northern		
Subsidence (m)	2.75	2.584
Tilt (mm/m)	47	41
Tensile Strain (mm/m)	14 – 21^	11.8
Compressive Strain (mm/m)	18 – 27^	17.1
Angle of Draw (°, Degrees)	22.5 – 26.5	25.5
Line 107 – Centre of LW107 – Northern		
Subsidence (m)	2.75	2.738*
Tilt (mm/m)	53	28.0*
Tensile Strain (mm/m)	20	10.2*
Compressive Strain (mm/m)	24	12.4*
Angle of Draw (°, Degrees)	26.5	24.7*
Line A – Cross Panel Survey Line		
Subsidence (m)	2.75	2.680*
Tilt (mm/m)	65	56.3*
Tensile Strain (mm/m)	22 – 33^	39.0*
Compressive Strain (mm/m)	28 – 42^	33.0*
Angle of Draw (°, Degrees)	22.5 – 26.5	24.2*
Line B – Pine Creek Tributary 1 – Monitoring has ceased		
Line D – Pine Creek		
Subsidence (m)	2.75	2.842*
Tilt (mm/m)	65	45.5*
Tensile Strain (mm/m)	22 – 33^	10.7*
Compressive Strain (mm/m)	28 – 42^	15.2*
Gradient Change (%)	Up to 6	4.54*
Line E – Pine Creek Tributary 1 Crossline 1 – Monitoring has ceased		
Line F – Pine Creek Tributary 1 Crossline 2 – Monitoring has ceased		
Line G – Pine Creek Tributary 1 Crossline 3 – Monitoring has ceased		
Line H – Cross Panel Survey Line		
Subsidence (m)	2.75	2.410*
Tilt (mm/m)	53	29.9*
Tensile Strain (mm/m)	13 – 20^	7.4*
Compressive Strain (mm/m)	16 – 24^	5.6*

* - subsidence development incomplete.

^ - values for ‘smooth’ and ‘discontinuous’ (i.e. crack affected) subsidence profiles.

Based on the above table the subsidence predictions for the most recently completed survey, i.e. LW107 northern line, indicate:

- The maximum subsidence measurements were within the predicted value of 2.75 m with a maximum measured value of 2.738 m.
- The maximum tilt measurements recorded were within the predicted value of 44 mm/m with a maximum measured value of 28 mm/m.
- The maximum tensile strain measurements were within the predicted value of 20 mm/m with a maximum measured value of 10.2 mm/m.
- The maximum compressive strain measurements were within the predicted value of 24 mm/m with a maximum measured value of 12.4 mm/m.

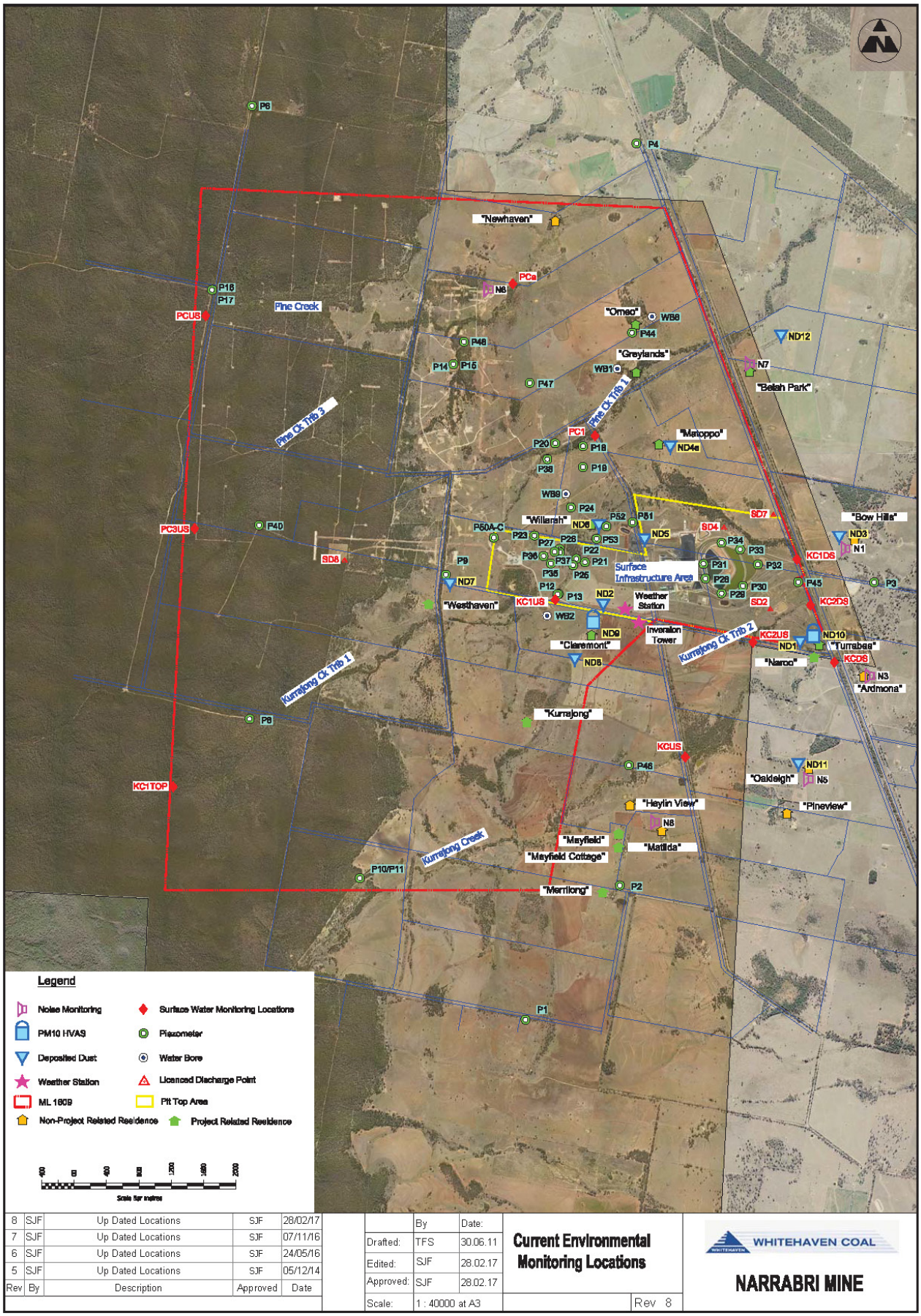
The centreline subsidence results for LW101 to LW107 indicate that the Garrawilla Volcanics and Basalt Sill have not reduced subsidence through spanning behaviour and that the maximum subsidence is also considered closer to 63% of the average mining height of 4.3m.

Complaints

One formal complaint was received during the period March to May 2018. The complaint was in relation to noise. A mobile noise unit is located at the property but no alarms were triggered at the time of the complaint.

Environmental Incident(s)

No environmental incidents occurred during the March to May 2018 period.



Rev	By	Description	Approved	Date
8	SJF	Up Dated Locations	SJF	28/02/17
7	SJF	Up Dated Locations	SJF	07/11/16
6	SJF	Up Dated Locations	SJF	24/05/16
5	SJF	Up Dated Locations	SJF	05/12/14

	By	Date:
Drafted:	TFS	30.06.11
Edited:	SJF	28.02.17
Approved:	SJF	28.02.17
Scale:	1 : 40000 at A3	

Current Environmental Monitoring Locations

Rev 8

WHITEHAVEN COAL

NARRABRI MINE