

Narrabri Mine Community Consultative Committee Meeting #48

Date: Tuesday 04th March 2020
Time: 5:00pm
Location: Narrabri Mine office

Present: Russel Stewart (RS)
 Peter Webb (PW)
 James Steiger (JS)
 Allan Grumley (AG)
 Ian Duffy (ID)
 Charlie Melbourne (CM)
 Steve Bow (SB) – Narrabri Coal – General Manager
 David Ellwood (DE) – Narrabri Coal – Director Stage 3 Project
 Brent Baker (BB) – Narrabri Coal - Environmental Superintendent
 Gerald Linde (GL)- Narrabri Coal- General Manager

Apologies: Mark Foster
 Cameron Staines

1. DECLARATION OF PECUNIARY INTEREST

- AG advised he leases properties from Narrabri Coal Operations (NCO)

2. PREVIOUS MINUTES

RS moved that previous minutes are accepted as an accurate record.

Moved: JS Seconded: PW

2.1 BUSINESS ARISING FROM PREVIOUS MINUTES

Nil

3. OPERATIONS PROGRESS REPORT AND SAFETY UPDATE

Presented by GL

Mine Progress Report (01 December 2019 – 29 February 2020)

Coal produced (t):	February 2020	638,836
	FY-to-date	3,587,576
Coal Railed (t):	February 2020	767,541
	FY-to-date	3,723,728

Workforce

Average workforce numbers (February 2020):

NCO	Waged – 152
	Salary – 125
	Total – 277
Contractors	Total – 191

Since January 2019 we have transitioned the following from contractor firms to Whitehaven;

- 7 Fitters
- 3 Electricians
- 30 Operators (3 indigenous workers)

Latest clean-skin recruitment program;

- December 2019 – Inexperienced Operator advertisement attracted 1257 applicants Australia wide
- January 2020 – 27 people shortlisted for assessment
- February 2020 – 21 persons invited to interview. Decision pending.

Safety Update (FY to 28 February 2020):

Lost Time Injury (LTI)	5
Days LTI Free:	109
Total Recordable Injuries:	8
Planned Task Observations:	7602
Take 5 Assessments:	124,360
Work Hours	1,150,000

- GL commented February was a good month for production and railed tonnes.
- Not a lot changed in workplace since last CCC;
 - another round of cleanskin recruitment, looking for 7 x operators from local area. General discussion around selecting people from local area, selection criteria and process for application.
 - continuing to transition contractors to permanent employees.
- Safety- discussed recent LTI where worker cut finger.

No further questions/comments from members.

4. ENVIRONMENTAL MONITORING REPORT

See Appendix A

Presented by BB

- DEPOSITIONAL DUST- 2019 annual average for all monitoring locations did not exceed limit of 4 g/m²/month. February 2020 results indicate a dusty month and NCO will continue to monitor Annual Average going forward.

- PM10 AIR QUALITY- NCO recorded exceedances at monitoring locations Claremont (on 09/01/20) and Turrabaa (09/01/20). Results attributed to poor regional air quality. Both exceedances have been reported to the Department of Planning (DPI&E).
- QUARTERLY NOISE MONITORING- Attended noise monitoring was undertaken on the 18th, 19th and 20th of December 2019 in accordance with mine approvals. Compliance was achieved at all locations during all time periods.
- SURFACE WATER MONITORING: No discharges. Creek flow events as a result of rainfall were sampled as required.
- WATER LICENSING: Namoi River General Security water orders placed due to recent river flow event. Discussed Mine Dewatering and water treatment usage processes and figures. JS mentioned it would be a good idea to include more detail on this graph for future meetings.

ACTION: BB to include more detail on Mine Dewatering licence usage chart for next meeting.

- GROUNDWATER MONITORING: Groundwater monitoring results are reviewed at the end of each year by a suitably qualified hydrogeologist and reported on in the Annual Review, which is currently under preparation and will be reported at next CCC.
- SUBSIDENCE MONITORING: No revised subsidence monitoring results since previous meeting.
- COMPLAINTS: Provided 2019 summary. Discussed noise complaints and likely main source of noise (main vent fan) and various studies and actions the mine has been working on in response.
- No reportable incidents.

No further questions/comments from members.

5. STAGE 3 UPDATE

DE provided update

- Discussed various EIS Studies and current status;
 - Bore Census completed, will be used for Groundwater Impact Assessment.
 - Aboriginal Heritage Assessment- all the surface surveys completed by Narrabri Aboriginal Groups. Some heritage sites located. Report being prepared and will be provided to Aboriginal groups for feedback. NCO working through changes to proposed surface disturbance to avoid identified heritage sites.
 - Historic Heritage Assessment- nothing identified in mine plan area.
 - Air Quality Assessment- work currently underway.
 - Road Transport Assessment- report completed. Summary is that no additional changes required.
 - Social Impact Assessment: still ongoing. When completed consultants will present findings to CCC.
 - Soil Surveys- field work completed.
 - Land Contamination: field survey completed. Identified typical waste from small farming operations.
 - Environmental Risk Assessment: Completed. Currently risks ranked as low to moderate.
- COMMUNITY CONSULTATION: Once the impact assessments have been completed another round of social impact assessment interviews with landholders will be held. Additionally any landholders that are identified to be impacted will also be contacted to discuss the outcomes of the assessments. Once discussions have been undertaken with the individual landholders we will hold some form of community information session such as a drop in session.

No further questions/comments from members.

6. GENERAL BUSINESS

- AG raised the topic of Fire Management on Offset properties. In particular firebreak on Rosevale property which borders his property. BB/DE outlined limits on what could be cleared under Biodiversity legislation and commitments made when securing the Offset properties. General discussion on prescribed burning and bushfire response.

ACTION: BB to follow up on Rosevale Offset property firebreak and provide feedback at next meeting.

- Arrange underground visit for new members. RS mentioned some Chamber of Commerce members would also be interested. DE said we are generally restricted to around 6-8 visitors in a group. RS would compile a list of names and provide to BB to schedule visit.

ACTION: RS to provide BB with a list of names for underground visit.

NEXT MEETING

- Wednesday the 03rd of June 2020 at NCO offices.

Narrabri Mine Community Consultative Committee Meeting #48

Environmental Monitoring Report: 01 December 2019 – 29 February 2020

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	ND13 Darjeelang
January 2020	5.3	3.9	4.5	5.6	5	3.7	3.6	3.6	12.9	3.8	2.9
February 2020	-	5.7	9.7	6.5	6.9	6	6.7	6.7	7.2	7.9	5.3

Results are assessed during the end of year Annual Review process, and if it is determined that mine related activities have caused an exceedance above the annual average limit of 4 g/m²/month appropriate notifications will be prepared.

2019 annual average for all monitoring locations did not exceed limit of 4 g/m²/month.

PM₁₀ High Volume Air Sampling (HVAS)

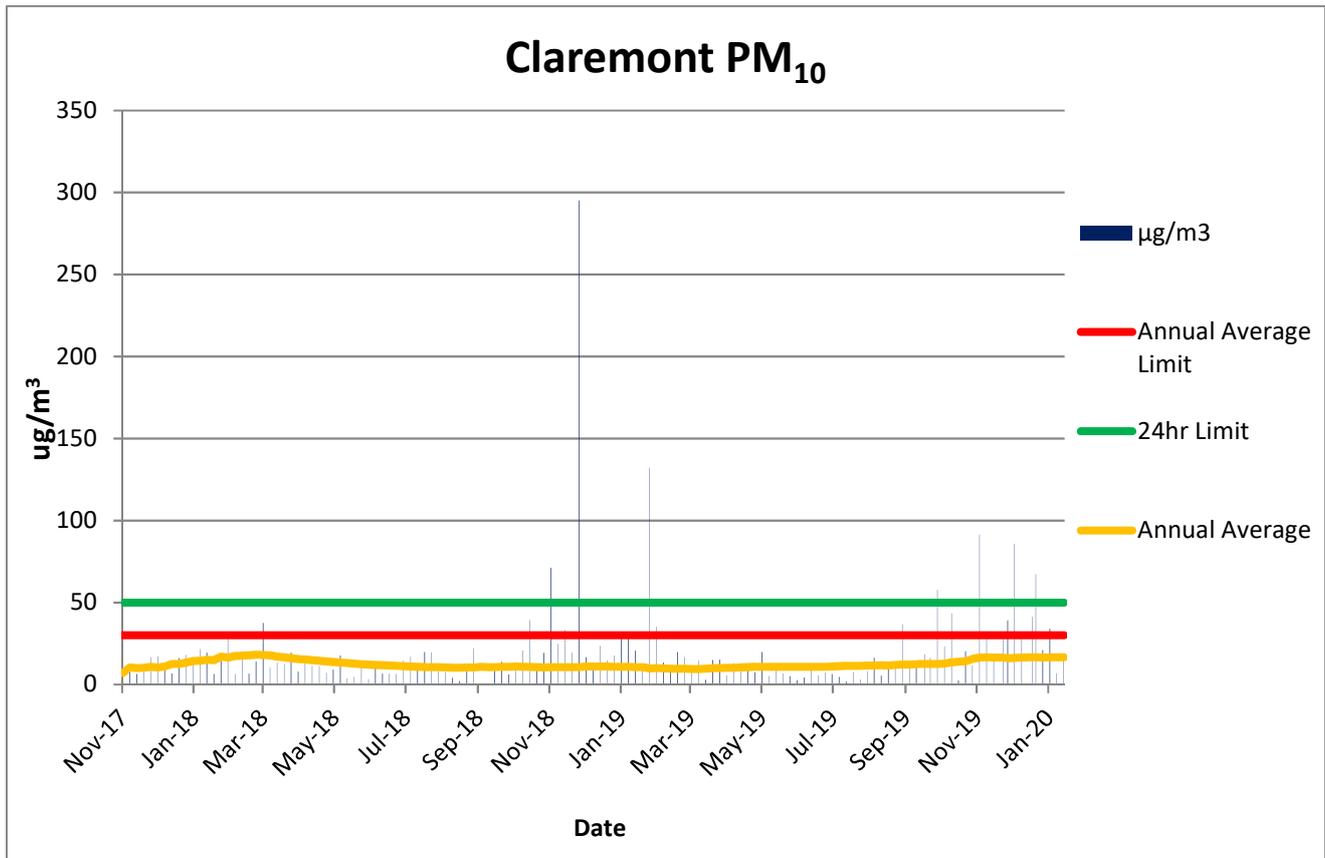


Figure 1: Claremont PM₁₀ HVAS results. Samples are collected over a 24 hour period once every week, with a (24hr) compliance limit of 50.0µg/m³.

The Claremont HVAS is returning an annual average of 16.65 µg/m³, which is below the annual average limit of 30 µg/m³.

Since the previous CCC meeting there has been an exceedance of the 24 hour limit of 50.0 µg/m³ on the 9th of January 2020 (result of 67.3 µg/m³) due to poor regional air quality across NSW. The exceedance was reported to the regulator.

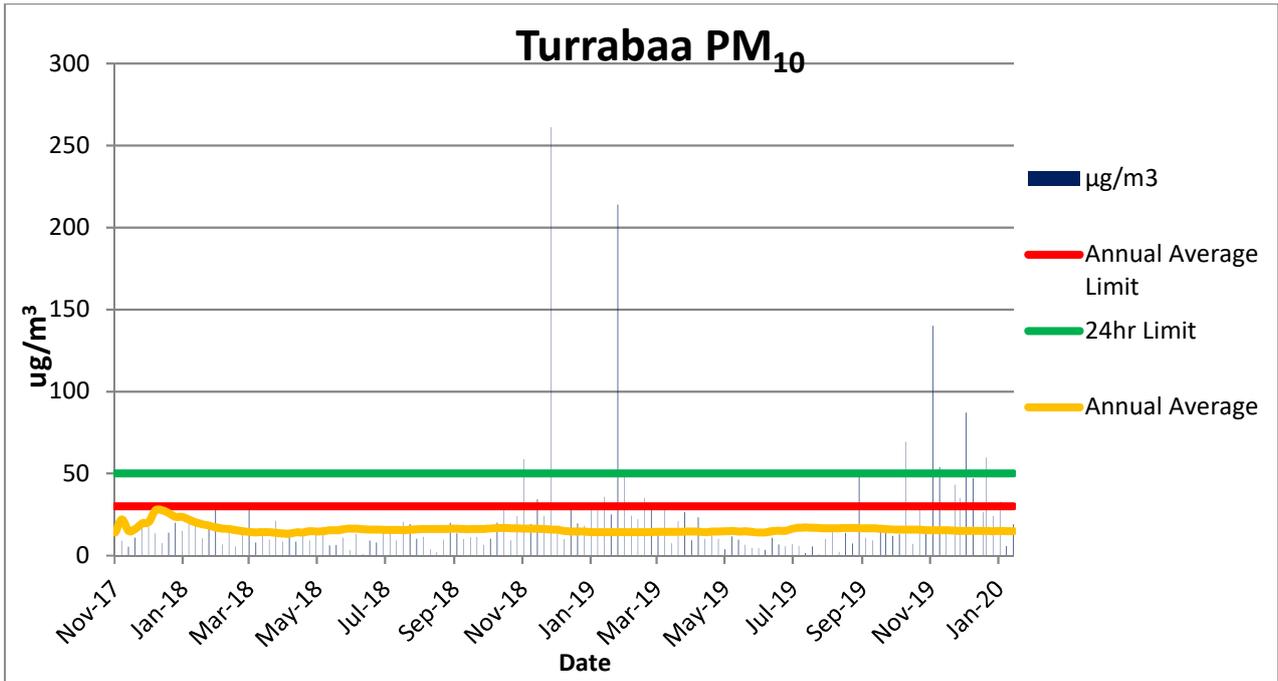


Figure 2: Turrabaa PM10 High Volume Air Sampler results. Samples are collected over a 24 hour period once every week, with a (24hr) compliance limit of 50.0 $\mu\text{g}/\text{m}^3$.

The Turrabaa HVAS is returning an annual average of 14.88 $\mu\text{g}/\text{m}^3$, which is below the annual average limit of 30 $\mu\text{g}/\text{m}^3$.

Since the previous CCC meeting there has been exceedance of the 24 hour limit of 50 $\mu\text{g}/\text{m}^3$ on the 9th of January 2020 (result of 59.7 $\mu\text{g}/\text{m}^3$) due to poor regional air quality across NSW. The exceedances were reported to the regulator.

Noise Monitoring

Attended noise monitoring was undertaken on the 18th, 19th and 20th of December 2019 in accordance with mine approvals.

Compliance was achieved at all locations during all time periods. Refer Figure 3.

Table 1 Performance Assessment – Operations

EPL ID	Location	Date	Narrabri Mine Contribution dBA				Noise Criteria ²	Measurement Periods	Weather Compliant			Compliant
			LAeq 15 min Day	LAeq 15 min Evening	LAeq 15 min Night	LA1 (1 min) Night			Day	Evening	Night	
N5	Oakleigh	18/11/2019	29	I/A	I/A	I/A	Day, Evening and Night – LAeq(15minute) 35 dBA Night LA1(1minute) – 45 dBA	Day - 1.5 hrs Evening - 0.5 hrs Night – 1hrs	Y	Y	Y	Y
		19/11/2019	I/A	I/A	N/M	N/M			Y	Y	Y	Y
		20/11/2019	I/A	I/A	I/A	I/A			Y	Y	Y	Y
N6	Newhaven	18/11/2019	I/A	24	26	29			Y	Y	Y	Y
		19/11/2019	25	29	25	28			Y	Y	N	Y
		20/11/2019	I/A	<30	N/M	N/M			N	N	Y	Y
N8	Haylin View	18/11/2019	I/A	I/A	I/A	I/A			Y	Y	Y	Y
		19/11/2019	N/M	I/A	N/M	N/M			Y	Y	N	Y
		20/11/2019	24	I/A	I/A	I/A			Y	N	Y	Y
N9	High Range	18/11/2019	I/A	N/M	30	38	Y	Y	Y	Y		
		19/11/2019	25	26	N/M	N/M	Y	Y	Y	Y		
		20/11/2019	N/M	N/M	N/M	N/M	N	N	Y	Y		
N1	Bow Hills ¹	18/11/2019	I/A	34	32	38	Day 15 min Evening 15 min Night 15 min	N	Y	N	Y	
N3	Ardmona	18/11/2019	I/A	<25	28	35		Y	Y	Y	Y	
N7	Merriman	19/11/2019	I/A	I/A	27	28		Y	Y	N	Y	
N8	Matilda	18/11/2019	I/A	I/A	I/A	I/A		Y	Y	Y	Y	

I/A = Inaudible, N/M = Not Measurable

Note 1: A private agreement between NCOPL and the residents of N1 Bow Hills of 50 dBA LAeq(15minute) is in place. This new level of 50 dBA LAeq(15minute) replaces the levels identified in Conditions 1-3, Schedule 4 of PA 08_0144 Mod 2 and the identical limits contained in condition L3 of Environment Protection Licence No 12789

Figure 3: Summary of results taken from Noise Monitoring Report for Quarter ending December 2019

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Surface Water Monitoring

No wet weather discharges have occurred from licensed discharge points during December 2019 to February 2020. Creek flow events were monitored on 3 occasions: 17th January 2020, 24th of January and 10th of February.

NSW Water- Licenced Usage (financial year-to-date)

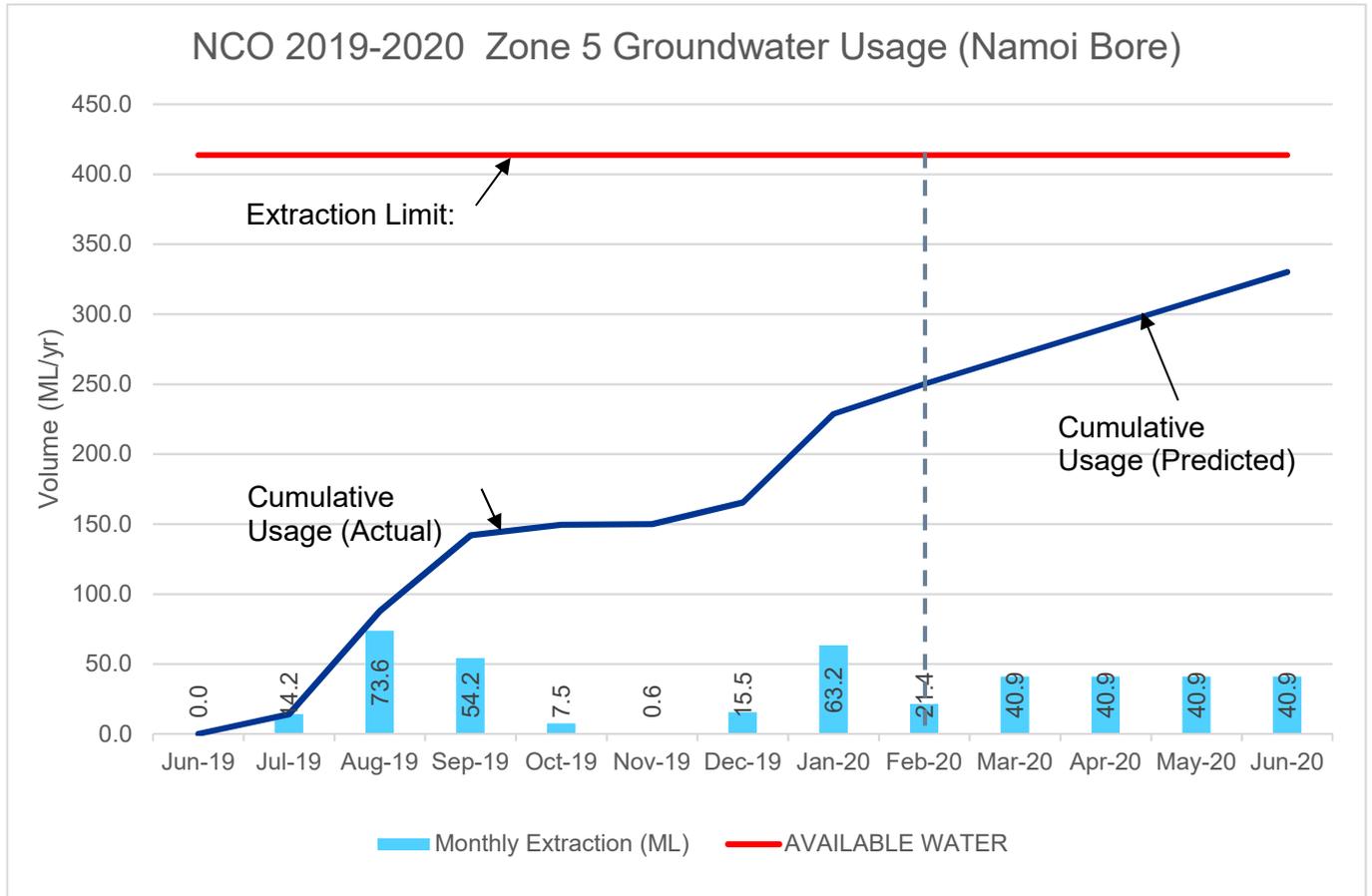


Figure 4: Zone 5 licensed groundwater usage from the Namoi Bore over the Financial Year.

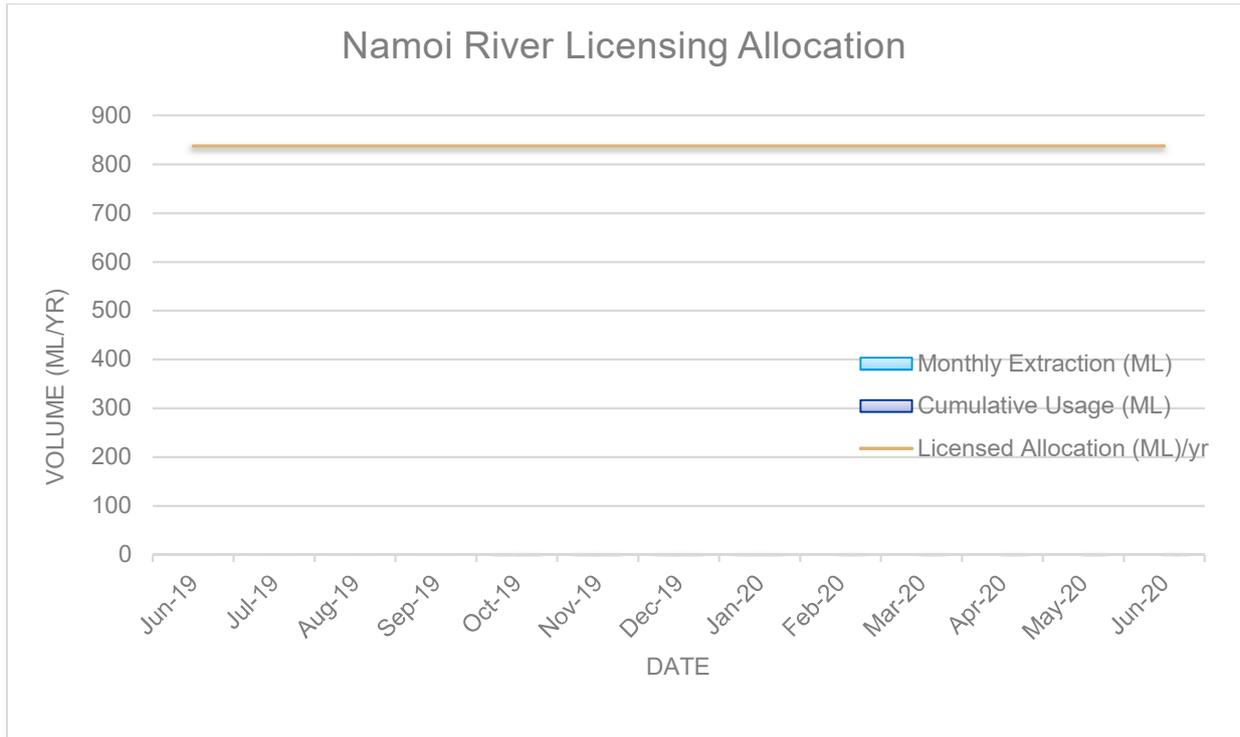


Figure 5: Namoi River usage over the Financial Year.

- 15ML High Security accessed 11-15 February
- 42ML General Security order approved 28 February

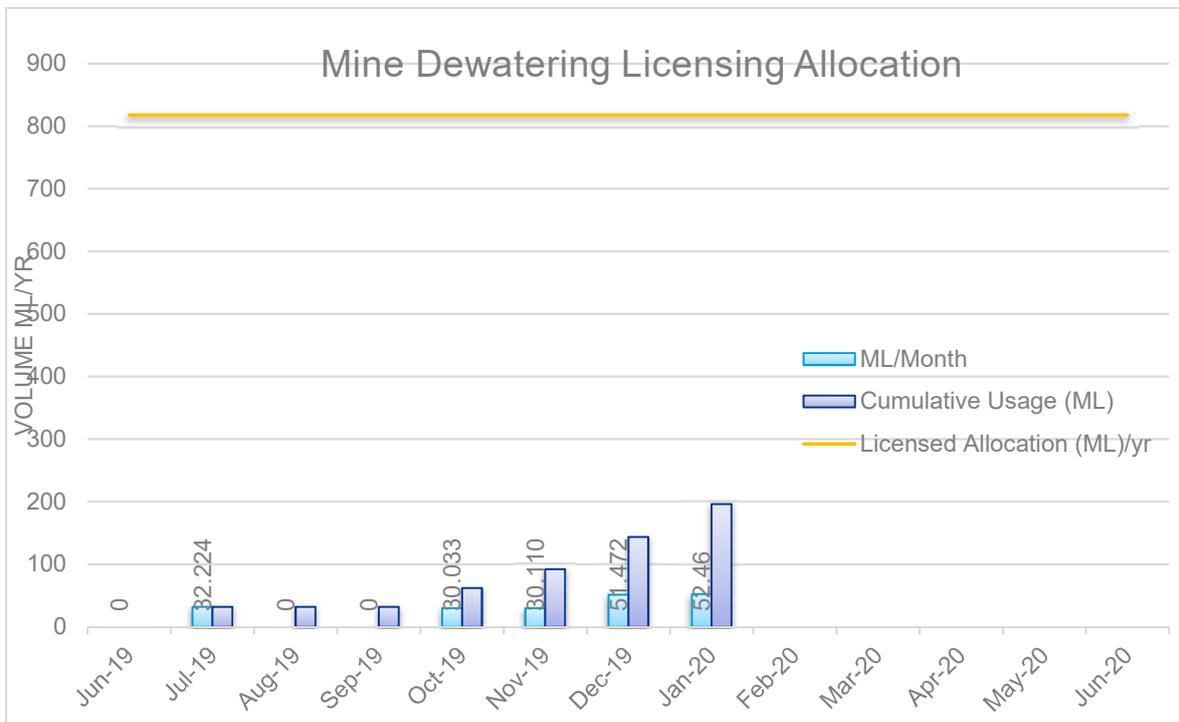


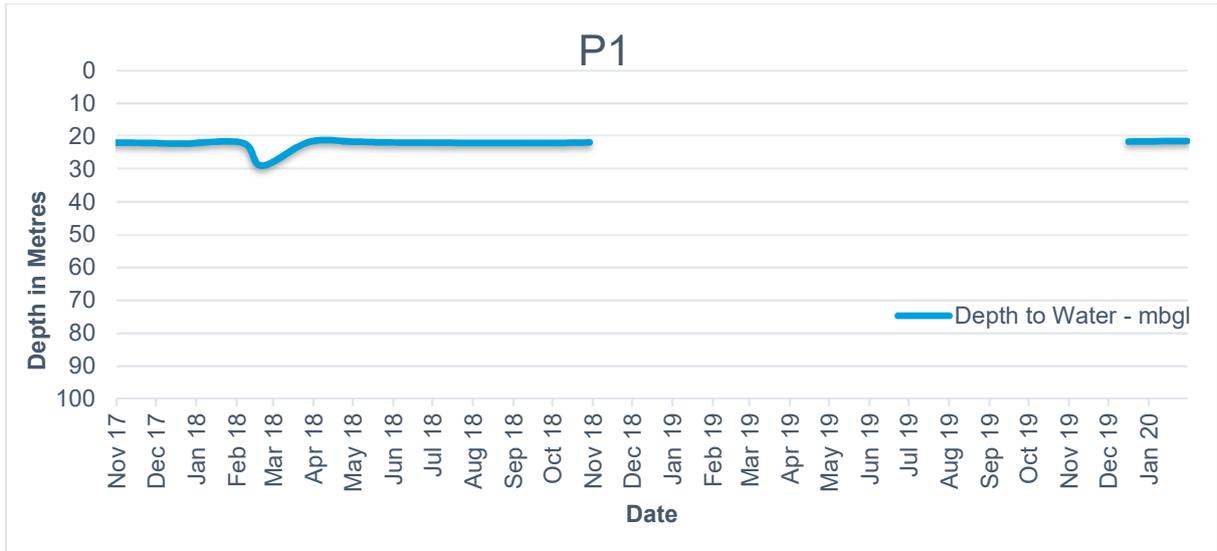
Figure 6: Mine dewatering licensed usage over the Financial Year.

Groundwater Monitoring

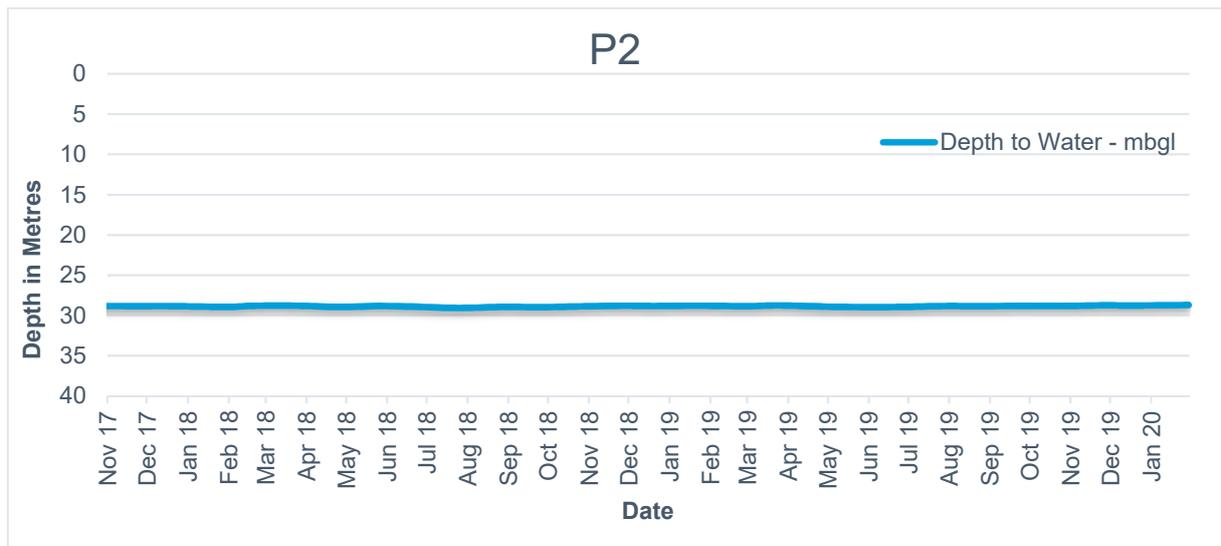
Groundwater monitoring results are reviewed at the end of each year by a suitably qualified hydrogeologist and reported on in the Annual Review, which is currently under preparation and will be reported at next CCC.



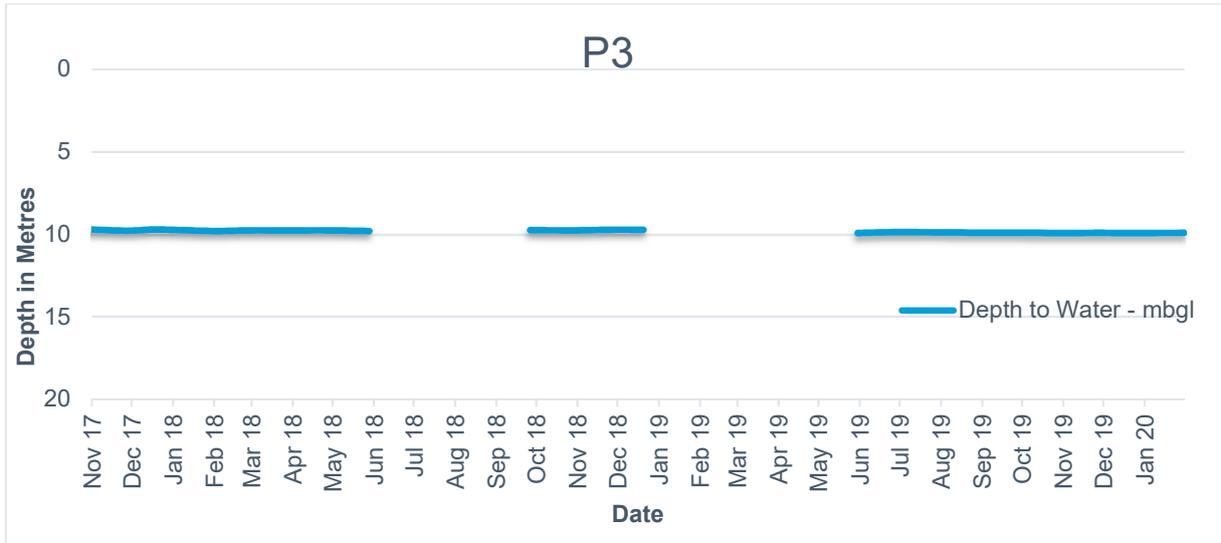
Figure 7: Ground water monitoring locations. Red shape is mining lease.



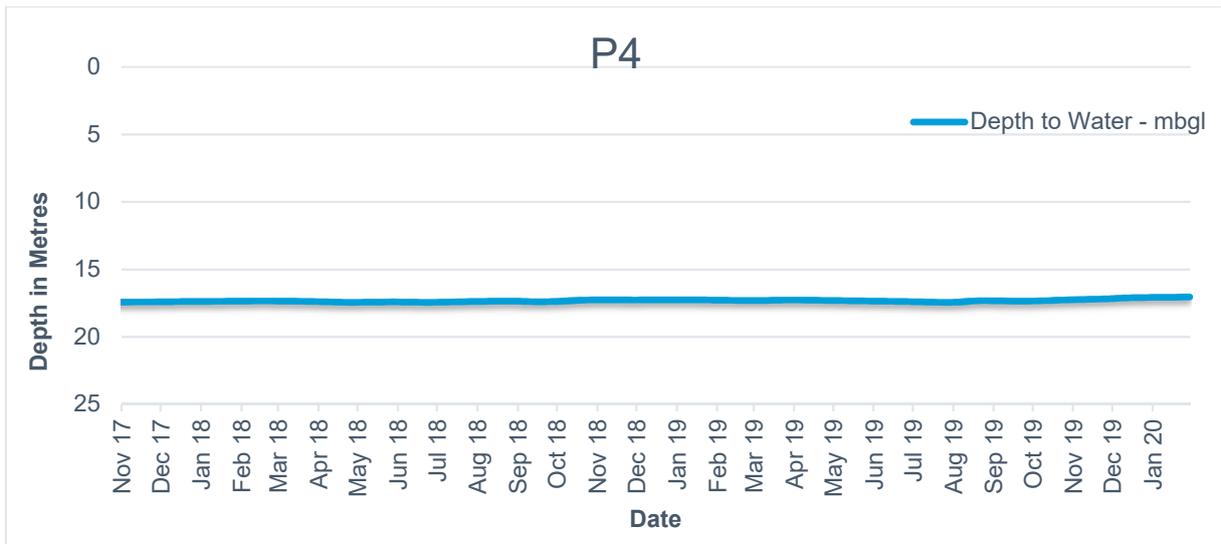
NCO Monitoring bore ID: P1
Location: Yarrabee
Geological unit: Garrawilla Volcanics
Bore depth: 50m
Explanation: Gap in data is due to land access issues.



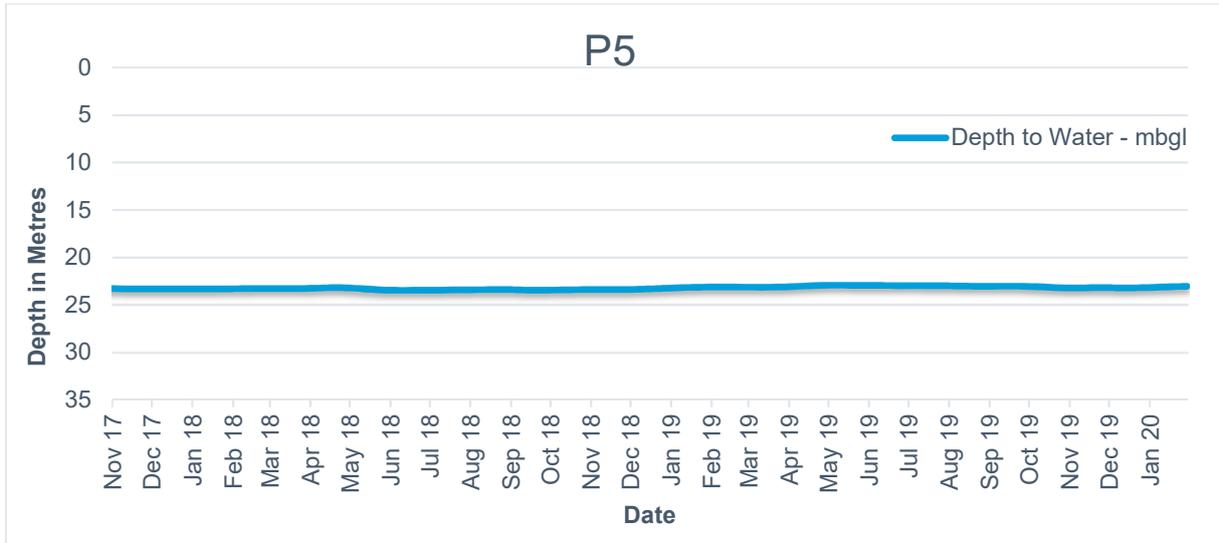
NCO Monitoring bore ID: P2
Location: Matilda
Geological unit: Napperby Formation
Bore depth: 50m



NCO Monitoring bore ID: P3
Location: Bow Hills
Geological unit: Pamboola Fromation
Bore depth: 45m
Explanation: land access issues



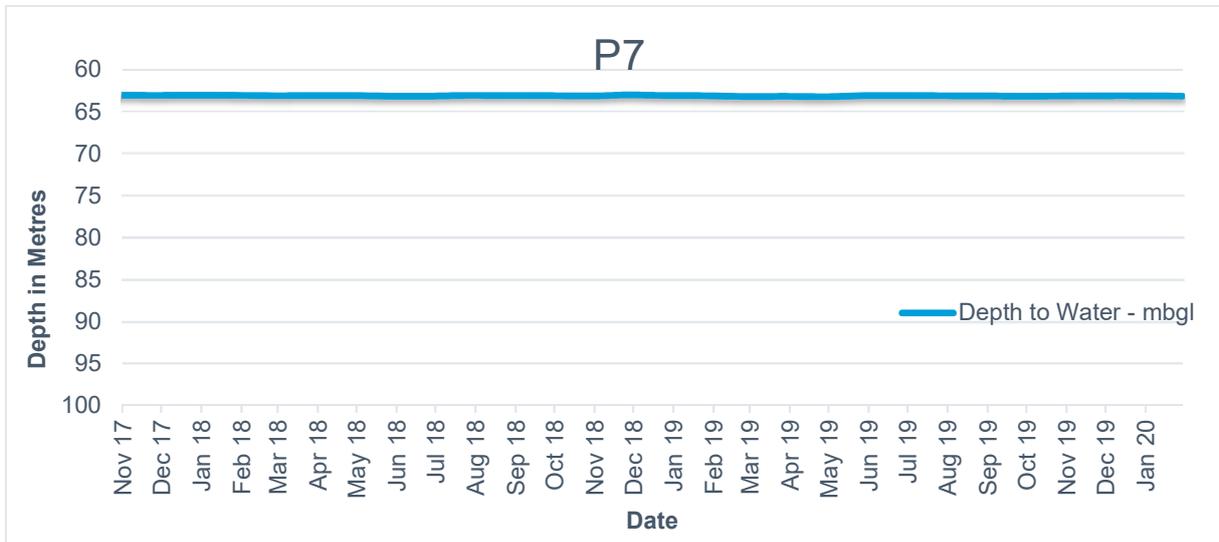
NCO Monitoring bore ID: P4
Location: North of Newhaven on Kamilaroi highway
Geological unit: Napperby Formation
Bore depth: 30m



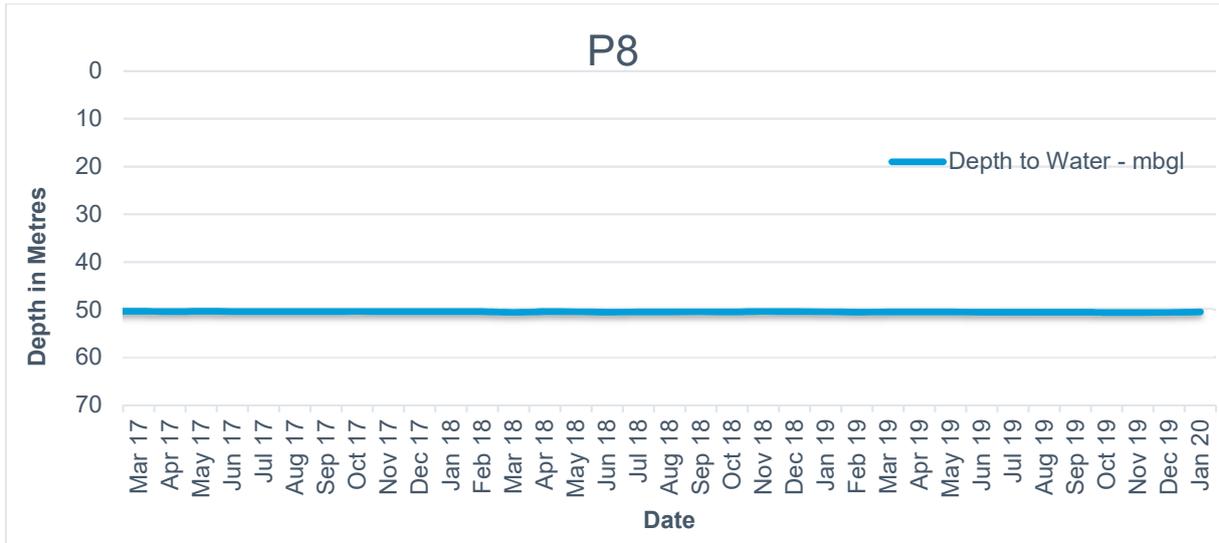
NCO Monitoring bore ID: P5
Location: Unknown - shown on Figure 6
Geological unit: Pamboola Formation
Bore depth: 30m

No Graph

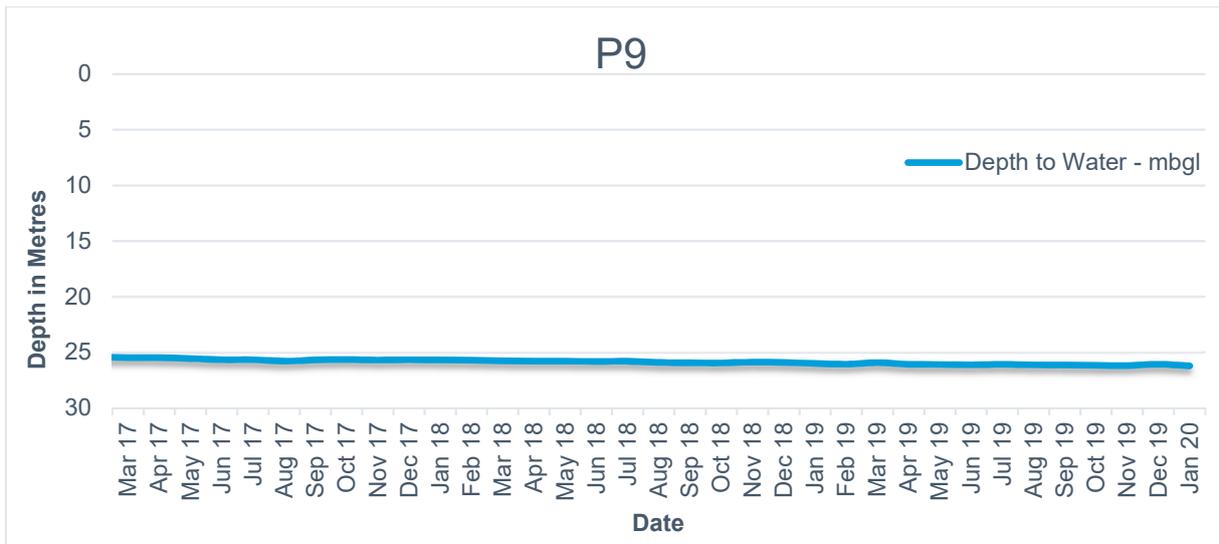
NCO Monitoring bore ID: P6
Location: Unknown - shown on Figure 6
Geological unit: Pilliga sandstone
Bore depth: 90m
Explanation: Dry since 2012



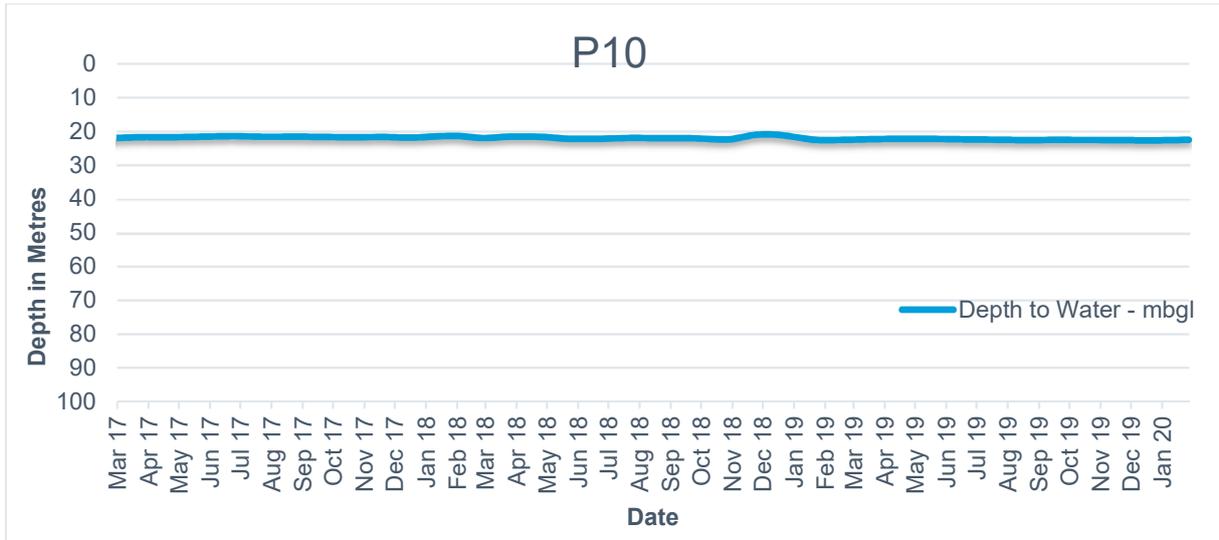
NCO Monitoring bore ID: P7
Location: Unknown – shown on figure 6
Geological unit: Pilliga sandstone
Bore depth: 90m



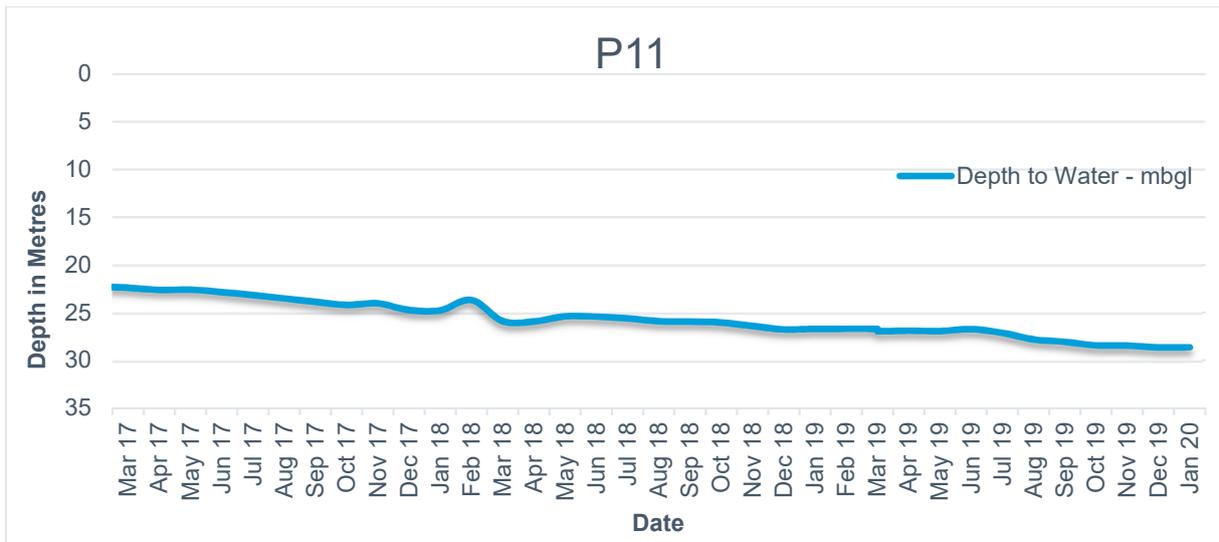
NCO Monitoring bore ID: P8
Location: Kurrajong
Geological unit: Purlawaugh Formation
Bore depth: 65m



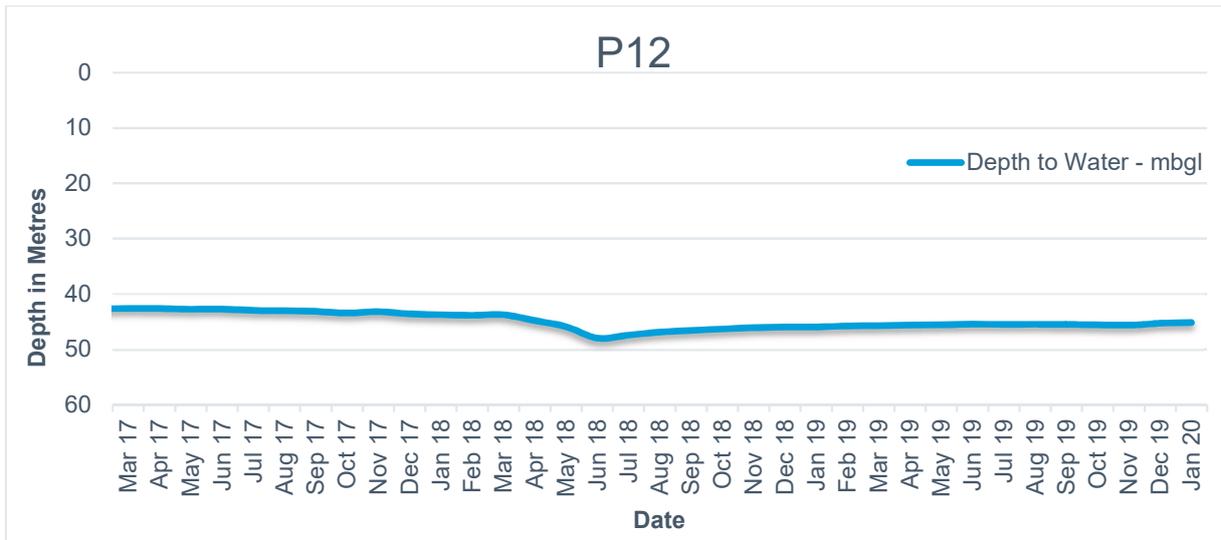
NCO Monitoring bore ID: P9
Location: NCO – Figure 6
Geological unit: Purlawaugh Formation
Bore depth: 30m



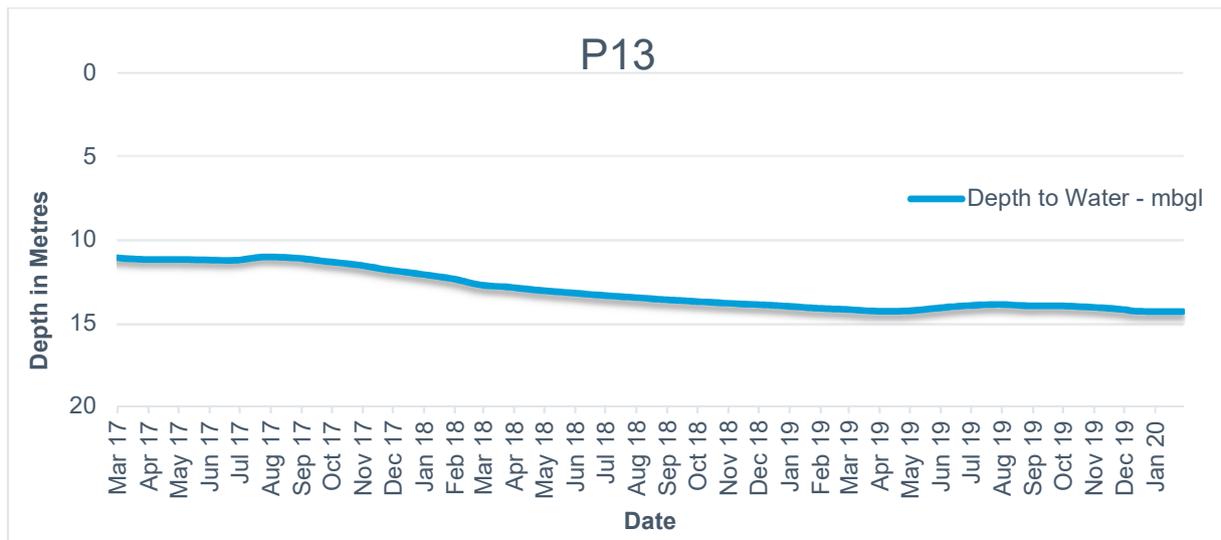
NCO Monitoring bore ID: P10
Location: NCO – see figure 6
Geological unit: Napperby Formation
Bore depth: 130m



NCO Monitoring bore ID: P11
Location: NCO – see figure 6
Geological unit: Napperby Formation
Bore depth: 50m



NCO Monitoring bore ID: P12
Location: NCO – see figure 6
Geological unit: Napperby Formation
Bore depth: 90m



NCO Monitoring bore ID: P13
Location: NCO – see figure 6
Geological unit: Garrawilla Volcanics/Napperby
Bore depth: 30m

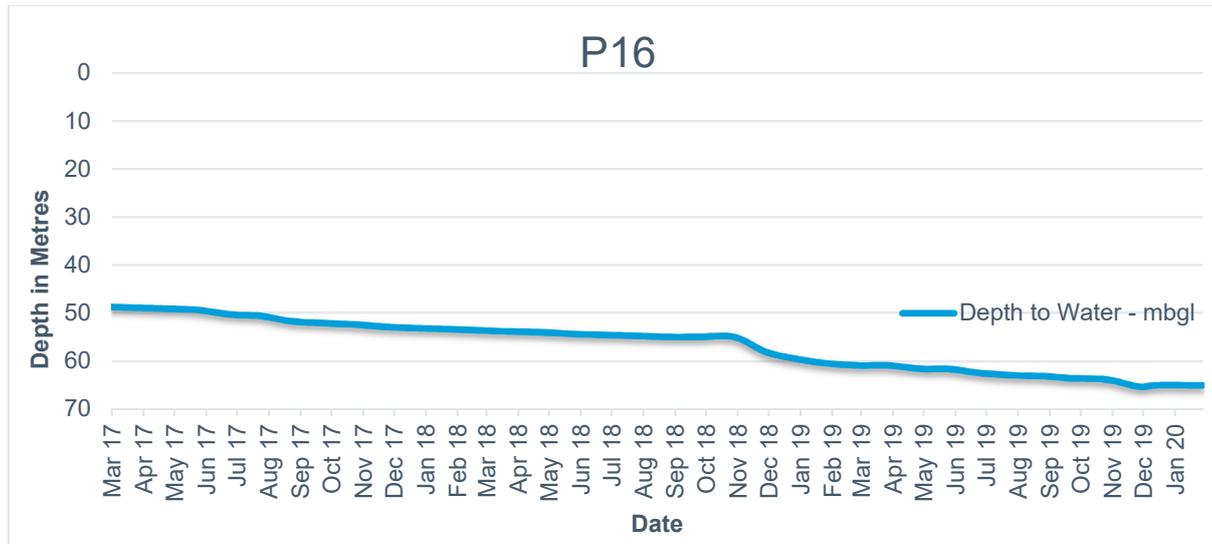
No Graph

NCO Monitoring bore ID: P14
Location: See Figure 6
Geological unit: Napperby Formation (no sill)
Bore depth: 78m
Explanation: Dry and blocked at 10.2m since 2012

No Graph

NCO Monitoring bore ID: P15
Location: See Figure 6
Geological unit: Garrawilla Volcanics
Bore depth: 30m

Explanation: Dry and blocked at 19m since 2016



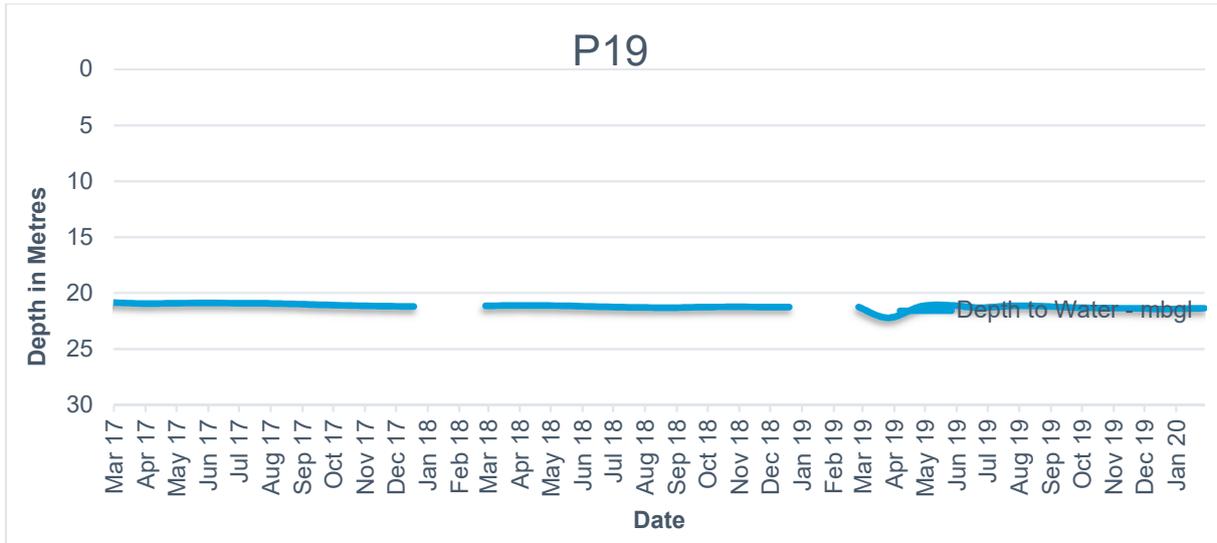
NCO Monitoring bore ID: P16
Location: NCO (Western Boundary) – see figure 6
Geological unit: Garrawilla Volcanics
Bore depth: 146m

No Graph

NCO Monitoring bore ID: P17
Location: See figure 6
Geological unit: Purlawaugh Formation
Bore depth: 56m
Explanation: Dry since 2009

No Graph

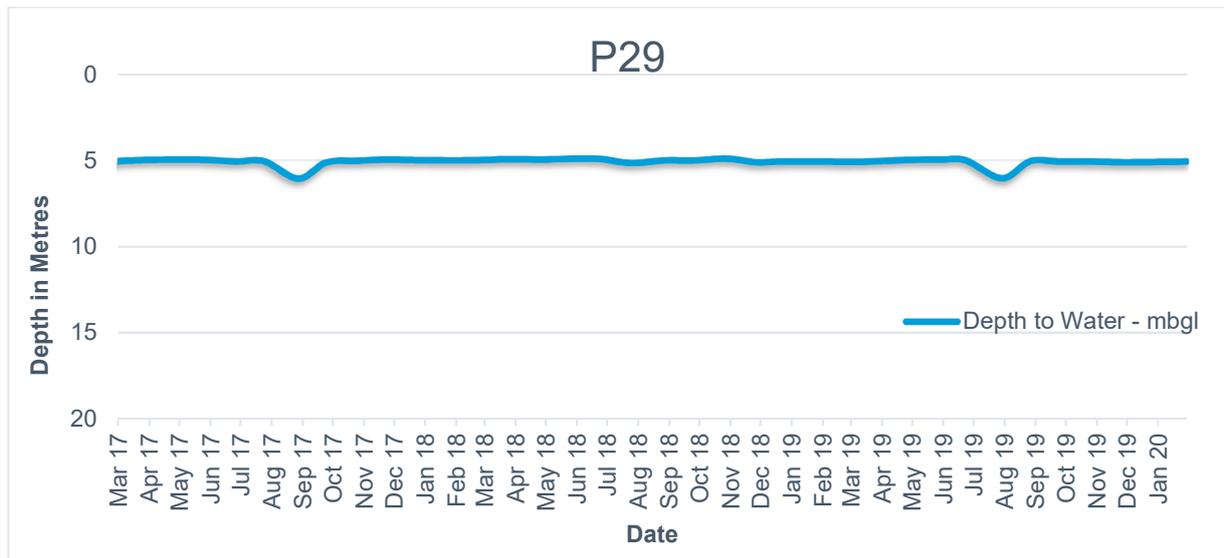
NCO Monitoring bore ID: P18
Location: See figure 6
Geological unit: Hoskissons seam
Bore depth: 146m
Explanation: Dry since 2011



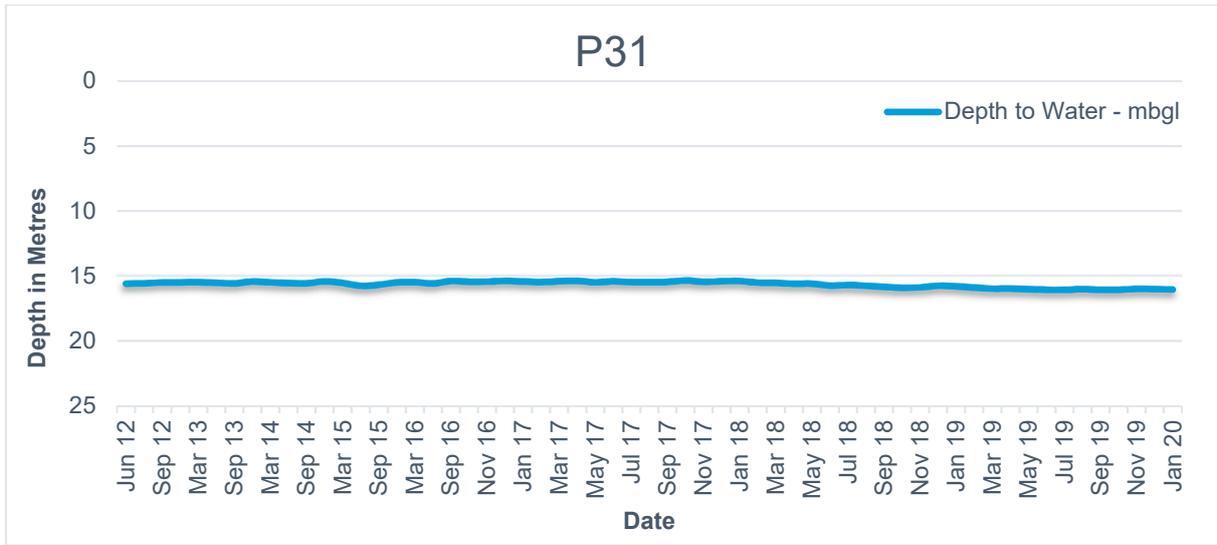
NCO Monitoring bore ID: P19
Location: NCO – see graph
Geological unit: Pamboola Formation
Bore depth: 187m

No Graph
NCO Monitoring bore ID: P20
Explanation: Cemented up – no longer monitoring

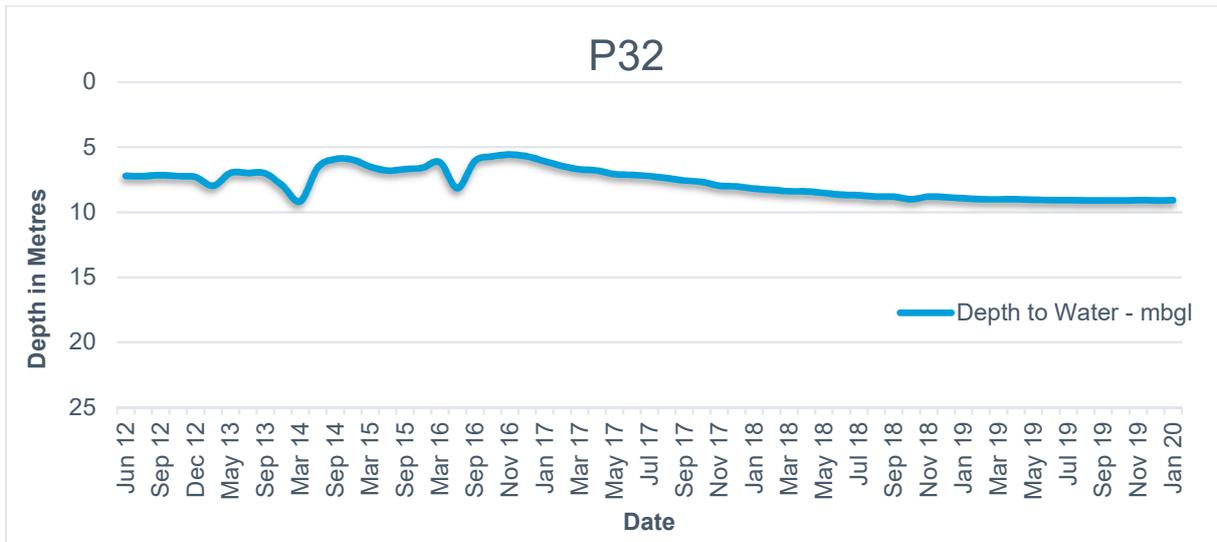
No Graph
NCO Monitoring bore ID: P28
Location: See figure 6
Geological unit: Napperby Formation (above sill)
Bore depth: 25m
Explanation: Dry since 2012



NCO Monitoring bore ID: P29
Location: NCO (Near site dams) – see figure 6
Geological unit: Napperby Formation (above sill).
Bore depth: 25m



NCO Monitoring bore ID: P31
Location: NCO (Near site dams) – see figure 6
Geological unit: Napperby formation (above sill)
Bore depth: 15m



NCO Monitoring bore ID: P32
Location: NCO (Near site dams) – see figure 6
Geological unit: Napperby Formation (above sill)
Bore depth: 15m

No Graph

NCO Monitoring bore ID: P33
Location: See figure 6
Geological unit: Napperby Formation (above sill)
Bore depth: 15m
Explanation: Dry since 2012

No Graph

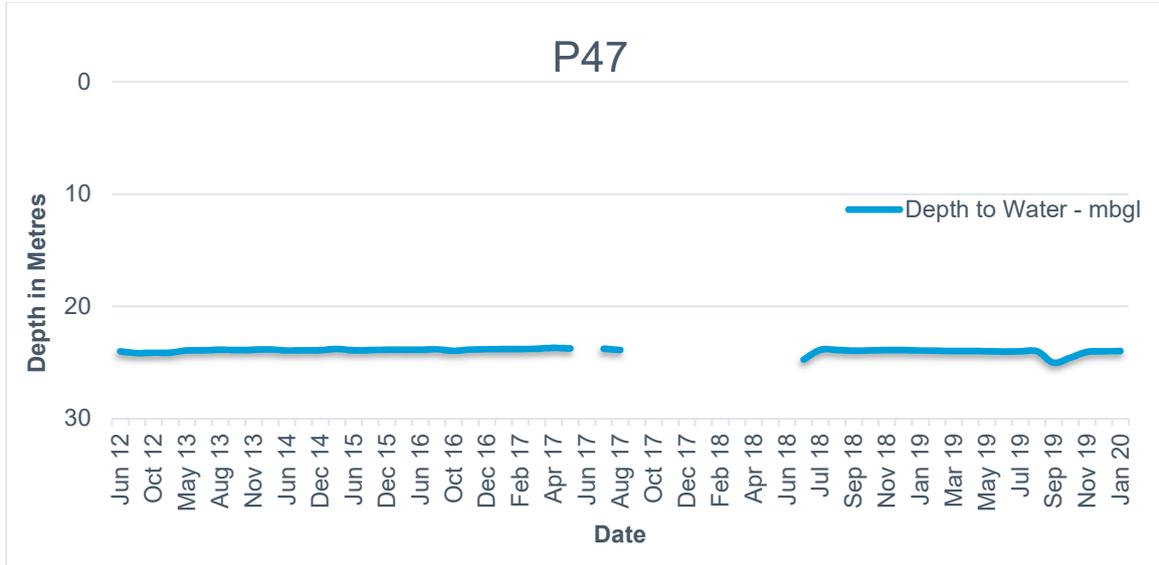
NCO Monitoring bore ID: P24

Location: See figure 6

Geological unit: Napperby Formation (above sill)

Bore depth: 15m

Explanation: Dry since 2012

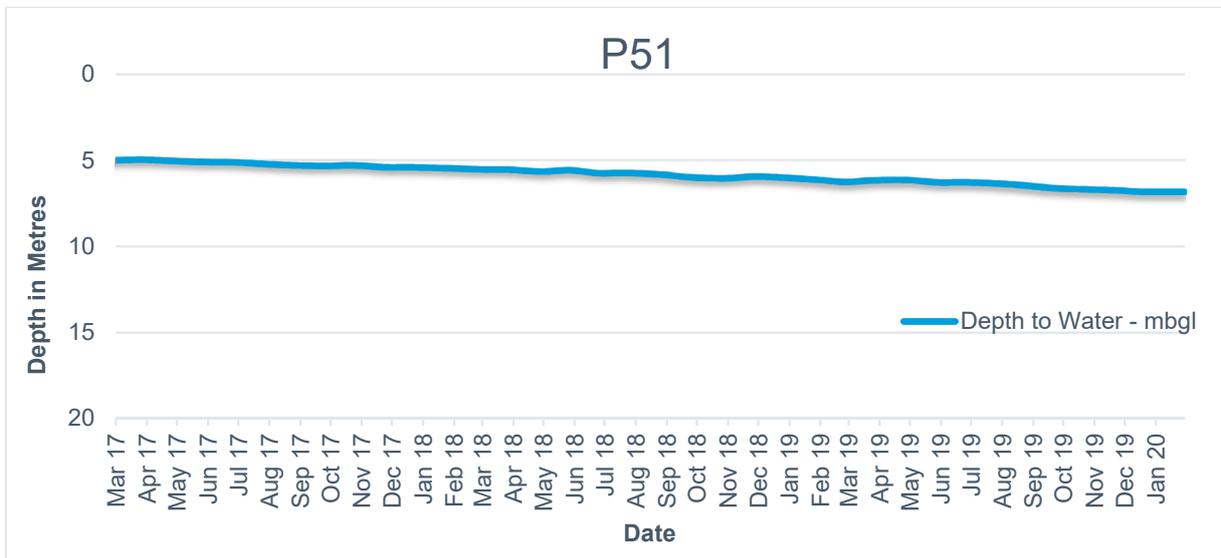


NCO Monitoring bore ID: P47

Location: NCO – see figure 6

Geological unit: Garrawilla Volcanics

Bore Depth (m): 31m



NCO Monitoring bore ID: P51

Location: NCO

Geological unit: Garrawilla Volcanics

Bore Depth (m): 17m

Subsidence Monitoring

No revised subsidence monitoring results since previous meeting.

Complaints

A total of 60 complaints were received at the end of the 2019 calendar year.

Since the beginning of 2020 a total of one complaint has been received in relation to noise. Narrabri Coal engage with the complainant. Attended noise monitoring will be conducted during March 2020.

Incident(s)

No reportable incidents.

Regulator Interaction

- Independent Environmental Audit conducted early December for period 2016-2019. The Audit Report and an Action Plan to address all findings of the audit has been submitted and accepted by the Department of Planning, Industry and Environment.

Review	Non-compliances (NC)	Administrative non-compliance (ANC)	Observations (Obs NC)	Observations (Obs C)
Statutory Instruments	6	5	-	-
Implementation of Plans	-	-	-	6

Figure 8: Summary of Audit findings

- Mining Operations Plan (MOP) Amendment B approved by Resources Regulator on the 19th of February 2020. The amendment was made to provide flexibility for underground development.
- EPA issued Penalty Infringement Notice (PIN) on 20th February, resulting from Noise Exceedance recorded at High Range property during Quarter 3 2019 noise monitoring.
- Resources Regulator visited site on the 25th February. Focus of inspection on progressive rehabilitation of surface disturbance. Positive feedback received from Inspectors.

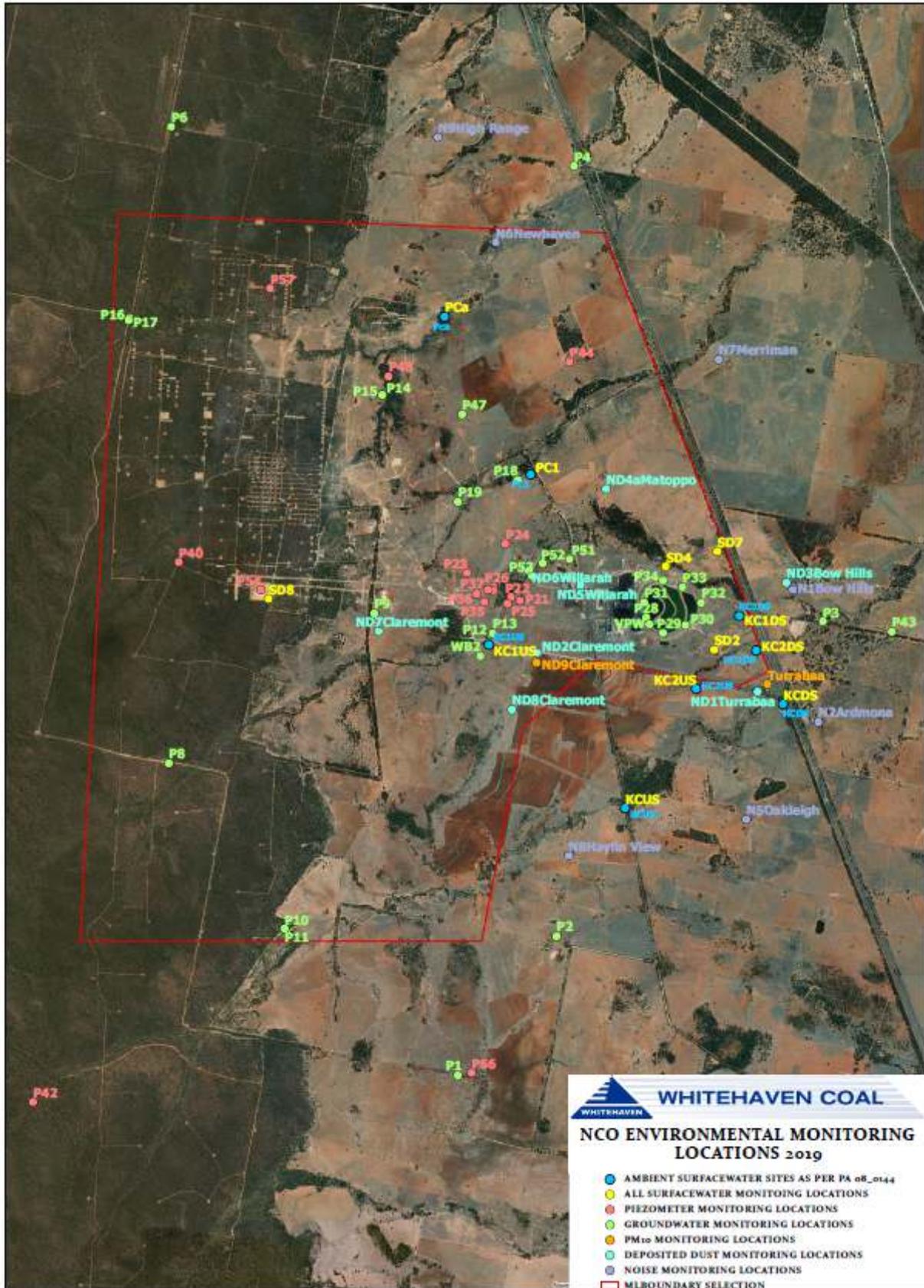


Figure 9: Narrabri Mine Environmental Monitoring locations

Narrabri Mine Community Consultative Committee Meeting #48

Date: Wednesday 12th August 2020
Time: 5:00pm
Location: Narrabri Mine office

Present: Russel Stewart (RS)
Peter Webb (PW)
Geoff Hunter (GH)
James Steiger (JS)
Allan Grumley (AG)
Ian Duffy (ID)
Charlie Melbourne (CM)
Peter Webb (PW)
Mark Foster (MF)
David Ellwood (DE) – Narrabri Coal – Director Stage 3 Project
Brent Baker (BB) – Narrabri Coal - Environmental Superintendent
Gerald Linde (GL)- Narrabri Coal- General Manager
Mitch Gregory (MG) – Narrabri Coal – Environmental Compliance Officer
Andrew Garrat (APG) – Whitehaven Coal – General Manager Community Engagement

Apologies: Cameron Staines

1. DECLARATION OF PECUNIARY INTEREST

- AG advised he leases properties from Narrabri Coal Operations (NCO)
- JS advised has a private agreement with NCO relating to access and noise
- RD advised he is employed part-time as a consultant for NCO

2. PREVIOUS MINUTES

RS moved that previous minutes are accepted as an accurate record.

Moved: JS Seconded: PW

2.1 BUSINESS ARISING FROM PREVIOUS MINUTES

BB provided update on Actions outstanding from previous meeting:

- Additional detail in relation to groundwater usage- has been included in mine dewatering graph and will be discussed in Environmental Monitoring section.
- Rosevale property fire-break update:
 - Threatened species (*Bertya opposens*) has been identified in several locations along the edges of the Western and Northern boundary existing fire-break. Management options are being examined to determine how to widen existing firebreak without impacting threatened species.
 - Southern boundary – wide, well maintained earthen track on ML boundary. No action required.

- Eastern boundary – Existing earth track. Minimal trees, mostly pasture. Adjoins AG property. Will be slashed and/or graded prior to Summer months to improve capacity as a fire-break.
- Discussed potential for controlled burns on State Forest to West of ML which would act as a buffer. Requires further discussion with Forestry NSW.

AG – happy with this approach and supportive of back burning.

3. OPERATIONS PROGRESS REPORT AND SAFETY UPDATE

Presented by GL

Mine Progress Report

Coal produced (t):	FY20	6,062,000
	FY-to-date	422,000
Coal Railed (t):	FY20	6,257,000
	FY-to-date	626,000

Workforce

Average workforce numbers (August 2020):

NCO	Waged – 166
	Salary – 121
	Total – 287
Contractors	Total – 257

Safety Update (FY21-to-date):

Lost Time Injury (LTI)	1
Days LTI Free:	23
Total Recordable Injuries (TRI):	9
Planned Task Observations:	1,439
Take 5 Assessments:	14,120
Work Hours	127,881

- GL commented on engineering challenges faced this financial year impacting production.
- Changes since last meeting
 - Terminated major contract, resulting in reduction of 60 contract employees. Potential to reinstate contractor following Stage 3 project approval.
- Safety discussions: one TRI this FY which was a dislocated finger.
- Covid19 query in relation to employees arriving from other regions. GL provided NCO protocol - Mine requires declaration of hotspot presence. Tracks employees locations and where they are in the mine (i.e. contract tracing). Temperature testing occurs before entry to site, and camp employees required to make statutory declaration. CCC satisfied with this approach.

4. ENVIRONMENTAL MONITORING REPORT

See Appendix A

Presented by BB

- **DEPOSITIONAL DUST-**

2019 annual average for all monitoring locations below limit of 4 g/m²/month Insoluble Solids.

Annual average for calendar year 2020 is currently below limit of 4 g/m²/month at all monitoring locations.

Monthly results above the annual average from ND4a Matoppo in April (5g/m²) and ND8 Claremont in March (7.9g/m²), and was discussed that dust sources can be a contribution of dust from mining operations and/or agricultural activities

PM10 AIR QUALITY- Monitoring locations Claremont and Turrabaa are recording annual averages below the limit of 30 µg/m³. Since the previous CCC meeting there was one exceedance of the 24 hour limit of 50.0 µg/m³ recorded at ND9 Claremont on 03 March. BB noted the report was submitted to DPI&E noting that the Claremont HVAS monitoring location is situated to the Southwest of the mine pit-top area, and that weather records for 03 March 2020 indicate dominant wind direction was from the South East. Therefore it is considered unlikely that the air quality recorded at ND9 is attributed to mining related impacts, and is likely related to agricultural activities being undertaken on properties south of the mine site.

Discussion with relation to how air quality results are interpreted. Annual average used as opposed to monthly totals to account for regional air conditions. 24 hour limit exceedances trigger review of regional meteorological conditions and regional land activity at time of exceedance. Dust Trigger Action Response Plan is implemented on windy days, triggers reduction in action on stockpiles to reduce NCO contribution to the regional dust impacts. Pit top dust management assessment has been undertaken by external auditor. Auditor satisfied with site pit-top dust management. Report submitted to EPA.

- **QUARTERLY NOISE MONITORING-**

Attended noise monitoring was undertaken over 3 days in March 2020 (Q1) with compliance was achieved at all locations during all time periods.

Attending monitoring undertaken over 3 days in June 2020. Exceedance recorded on 23 June at Newhaven. Investigation indicated drill rig operating at night potential contributor. Activity was ceased, to continue day time only. Exceedance reported to regulator and property owner.

Discussions that noise criteria exceedances indicate noise is higher than what was originally modelled. DE explained complex noise modelling process. BB advised agreements in place on some properties allowing mine to generate increased noise levels.

- **SURFACE WATER MONITORING:** Creek flow events were monitored on 3 occasions: 17th January 2020, 24th of January and 10th of February. No wet weather discharges have occurred from licensed discharge points during March 2020 to August 2020.

- **WATER LICENSING:** Presented graphs showing NCO water allocation usage, to date below allowable limit from Namoi Bore and Namoi River.

As requested during previous CCC meetings an additional chart was presented for groundwater removal from mine dewatering, showing Inputs and Outputs. CCC satisfied with level of detail

- **GROUNDWATER MONITORING:** Groundwater monitoring results are reviewed at the end of each year by a suitably qualified hydrogeologist and reported on in the Annual Review, copies to be made available to CCC on request. Results (levels, pressure) consistent with predictions. No adverse groundwater quality recorded. Rail loop salinity increase, additional well installed and monitoring program to investigate.

- **SUBSIDENCE MONITORING:** Predicted subsidence has been reviewed by geotechnical consultant. No increase in subsidence beyond predicted.

- **COMPLAINTS:** Since the beginning of 2020 a total of five complaints have been received in relation to noise.

- **INCIDENTS:**
Noise exceedance in June 2020 as discussed.
Administrative error in relation to recording of an Aboriginal Cultural Heritage Site. Reported to DPIE.

No further questions/comments from members.

5. STAGE 3 UPDATE

DE presentation

- General background of proposal and update of how the proposed mine will operate:
 - Extension of current mining area but plan to use existing mine infrastructure (already constructed).
 - Additional ventilation shafts (additional fans). Noise modelling and attenuation being applied to minimise noise impacts to surrounding area.
 - EIS submission occurring and public display likely to be in October.
 - Draft findings of GW assessment included. No alluvium planned to be undermined. Minor impacts to alluvial aquifers, but related to less than 5% of Stage 3 water use. All water licences will be in place.
 - Noise modelling discussed – worst case scenario (includes full operation) modelled. Predicted exceedances discussed and management measures discussed (eg. Agreements, attenuation, acquisition). All impacted landholders have agreements in place.
 - BSAL – all surface area disturbance will be rehabilitated.
 - Methane content of coal does increase above current Stage 2 levels and opportunity for flaring will be assessed during Stage 3 project.

Action: Greenhouse Gas Assessment presented by DE at next CCC meeting for discussion.

- **COMMUNITY CONSULTATION:** Once the impact assessments have been completed another round of social impact assessment interviews with landholders will be held. Additionally any landholders that are identified to be impacted will also be contacted to discuss the outcomes of the assessments. Once discussions have been undertaken with the individual landholders we will hold some form of community information session such as a drop in session.
- CCC satisfied with level of detail.

No further questions/comments from members.

6. EL SUSPENSION

GL – EL suspension has been lifted by Resources Regulator, this follows completion of an extensive review of NCO compliance management systems and addressing recommendations from external auditors, all of which was reviewed to the satisfaction of the regulator. All disturbed areas within EL have been rehabilitated, with monitoring ongoing. Court proceedings discussed. GL explained that implication of number of offences (16) reported in media releases does not detail that it is the same 8 offences being charged against two separate entities, Narrabri Coal Pty Ltd, and Narrabri Coal (Operations) Pty Ltd). Court proceedings will be ongoing.

7. GENERAL BUSINESS

- GH inquired as to use of bicarbonate on stockpile. GL discussed the pit top dust investigation (report submitted to EPA) included the use of chemical veneer and this found to be of no benefit.
- Mine will begin moving into southern longwall panels 2022-2023 (existing Stage 2 mine).

NEXT MEETING

- Wednesday the 7 October 2020 at NCO offices.

Narrabri Mine Community Consultative Committee Meeting #49

Environmental Monitoring Report: 01 March 2020 – 1 August 2020

Deposited Dust Monitoring

Month	Total Insoluble Matter results (g/m ² /month)										
	ND1 Turrabaa	ND2 Claremont	ND3 Bow Hills	ND4a New Matoppo	ND5 Claremont	ND6 Willarah	ND7 Claremont	ND8 Claremont	ND11 Oakleigh	ND12 Merriman	ND13 Darjeeling
March 2020	1.8	1.3	1.3	1.5	2.1	1.5	1.4	7.9	3.6	1.2	1.0
April 2020	1.0	1.3	1.8	5.8	2.2	0.7	1.3	1.1	2.4	0.7	0.9
May 2020	1.1	1.0	1.3	1.1	2.7	1.3	2.7	2.3	3.3	0.9	0.9
June 2020	0.7	0.6	0.8	0.7	1.5	0.6	0.8	0.6	0.9	0.4	0.4
July 2020	1.3	0.7	1.4	1	2.1	0.5	1	1.2	1.1	0.6	1.8

Results are assessed during the end of year Annual Review process, and if it is determined that mine related activities have caused a contribution above the annual average limit of 4 g/m²/month appropriate notifications will be prepared.

2019 annual average for all monitoring locations were below the licence limits of 4 g/m²/month.

PM₁₀ High Volume Air Sampling (HVAS)

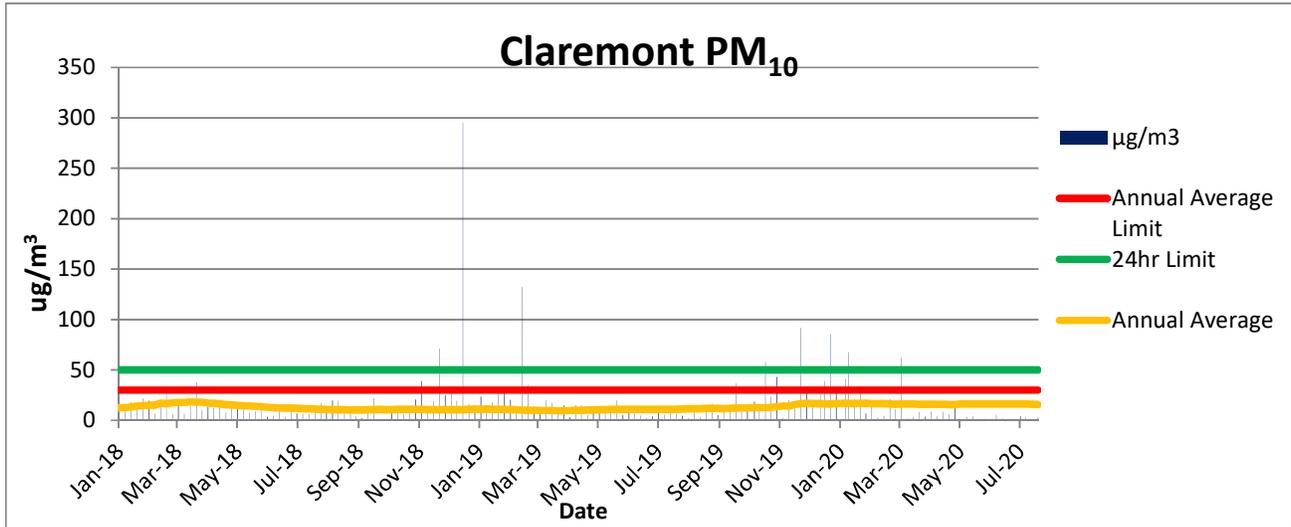


Figure 1: Claremont PM₁₀ High Volume Air Sampler results. Samples are collected over a 24 hour period once every week, with a (24hr) compliance limit of 50.0µg/m³.

The Claremont HVAS is returning an annual average of 15.72 µg/m³, which is below the annual average limit of 30 µg/m³. Results for the 24 hour sample period of 03 March 2020 were reported as 62 µg/m³, above the 24 hour average criteria of 50µg/m³. Report was submitted to DPI&E noting that the Claremont HVAS monitoring location is situated to the Southwest of the mine pit-top area, and that weather records for 03 March 2020 indicate dominant wind direction was from the South East. Therefore it is considered unlikely that the air quality recorded at ND9 is attributed to mining related impacts, and is likely related to agricultural activities being undertaken on properties south of the mine site.

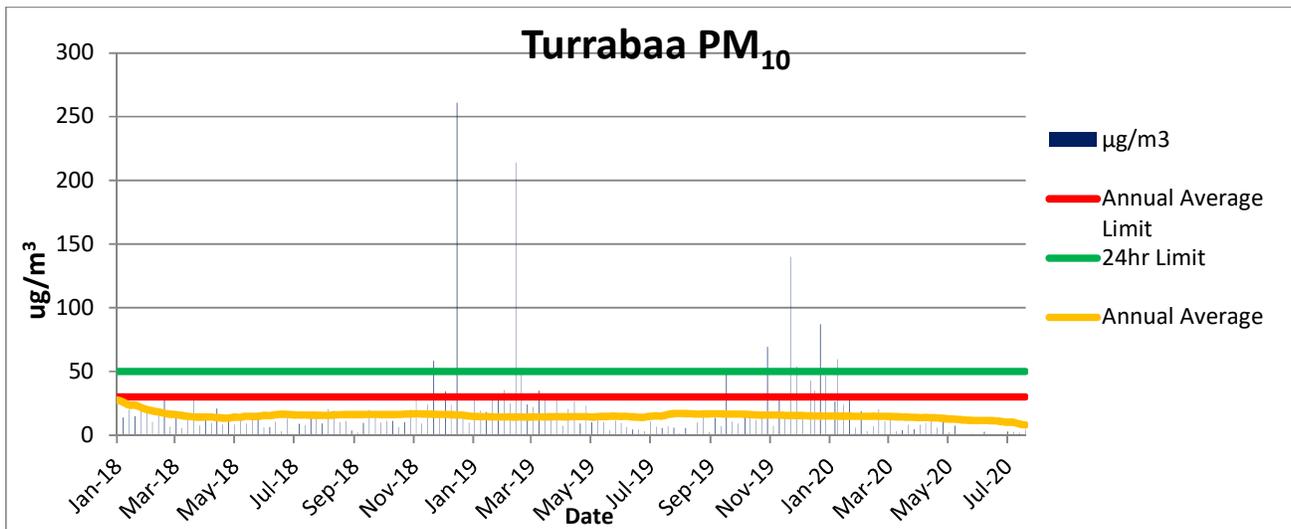


Figure 2: Turrabaa PM₁₀ High Volume Air Sampler results. Samples are collected over a 24 hour period once every week, with a (24hr) compliance limit of 50.0µg/m³.

The Turrabaa HVAS is returning an annual average of 8.04 µg/m³, which is below the annual average limit of 30 µg/m³. Since the previous CCC meeting there has been no new exceedances of the 24 hour limit of 50 µg/m³.

Noise Monitoring

Quarterly attended noise monitoring was undertaken in accordance with mine approvals on the following dates:

- Q1: 24-26 March 2020 (Figure 3)
 - Compliance was achieved at all locations during all time periods.
- Q2: 23-25 June 2020 (Figure 4)
 - Noise levels of 40dB were recorded during the night time period on 23 June at the Newhaven property. Initial investigations have determined a drill-rig operating during night shift may have contributed to the recorded noise levels. Night-time drilling activities have been temporarily suspended. NCO have notified the landholder and relevant regulatory agencies. The matter is ongoing.
 - Compliance was achieved at all remaining locations during all time periods.

Table 1 Performance Assessment – Operations

EPL ID	Location	Date	Narrabri Mine Contribution dBA				Noise Criteria ²	Measurement Periods	Weather Compliant			Compliant		
			L _{Aeq} 15 min Day	L _{Aeq} 15 min Evening	L _{Aeq} 15 min Night	LA1 (1 min) Night			Day	Evening	Night			
N5	Oakleigh ³	24/03/2020	I/A	25	25	27	Day, Evening and Night – LAeq(15minute) 35 dBA Night LA1(1minute) – 45 dBA	Day - 1.5 hrs	Y	Y	Y	Y		
		25/03/2020	31	I/A	N/M	N/M			Y	Y	Y	Y		
		26/03/2020	I/A	I/A	I/A	I/A			Y	N	N	Y		
N6	Newhaven	24/03/2020	27	N/M	I/A	I/A		Night LA1(1minute) – 45 dBA	Evening - 0.5 hrs	N	Y	Y	Y	
		25/03/2020	N/M	N/M	26	30				Y	Y	N	Y	
		26/03/2020	25	N/M	N/M	N/M				Y	N	N	Y	
N8	Haylin View ³	24/03/2020	26	<25	27	28			Night LA1(1minute) – 45 dBA	Night – 1hrs	Y	Y	Y	Y
		25/03/2020	27	34 ¹	30	33					Y	Y	Y	Y
		26/03/2020	<25	I/A	I/A	I/A					N	N	N	Y
N9	High Range	24/03/2020	<25	I/A	N/M	N/M	Night LA1(1minute) – 45 dBA			Night – 1hrs	N	Y	Y	Y
		25/03/2020	I/A	27	27	29					Y	Y	N	Y
		26/03/2020	27	25	<25	26					N	N	N	Y
N1	Bow Hills ²	24/03/2020	I/A	25	28	30		Day 15 min		N	Y	Y	Y	
N3	Ardmona	24/03/2020	I/A	25	26	30				Evening 15 min	N	Y	Y	Y
N7	Merriman ³	24/03/2020	I/A	I/A	I/A	I/A				Night 15 min	N	Y	Y	Y
N8	Matilda ³	24/03/2020	28	<25	<25	25			N	Y	Y	Y		

I/A = Inaudible, N/M = Not Measurable

Note 1: 2dB modifying factor correction for low frequency noise has been applied in accordance with the NPfl.

Note 2: A private agreement between NCOPL and the residents of N1 Bow Hills of 50 dBA LAeq(15minute) is in place. This new level of 50 dBA LAeq(15minute) replaces the levels identified in Conditions 1-3, Schedule 4 of PA 08_0144 Mod 2 and the identical limits contained in condition L3 of Environment Protection Licence No 12789

Note 3: Property is owned by Narrabri Coal Operations.

Figure 3: Summary of results taken from Noise Monitoring Report for Quarter ending March 2020

Table 1 Performance Assessment – Operations

EPL ID	Location	Date	Narrabri Mine Contribution dBA				Noise Criteria ²	Measurement Periods	Weather Compliant			Compliant
			LAeq 15 min Day	LAeq 15 min Evening	LAeq 15 min Night	LA1 (1 min) Night			Day	Evening	Night	
N5	Oakleigh ⁴	23/06/2020	26	32	30	43	Day, Evening and Night – LAeq(15minute) 35 dBA Night LA1(1minute) – 45 dBA	Day - 1.5 hrs	Y	Y	Y	Y
		24/06/2020	26	<25	I/A	I/A		Evening - 0.5 hrs	Y	Y	Y	Y
		25/06/2020	N/M	28	I/A	I/A		Night – 1hrs	Y	Y	Y	Y
N6	Newhaven	23/06/2020	I/A	26	40 ¹	40		Y	Y	Y	N	
		24/06/2020	25	32	30	32		Y	Y	Y	Y	
		25/06/2020	27	30	29	31		Y	Y	Y	Y	
N9	High Range ³	23/06/2020	I/A	25	42 ¹	45	Y	Y	Y	Y ⁵		
		24/06/2020	23	34	26	28	Y	Y	Y	Y		
		25/06/2020	N/M	33	26	33	Y	Y	Y	Y		
-	Bow Hills ²	24/06/2020	30	40	35	49	Day 15 min	Y	Y	Y	Y	
-	Ardmona	23/06/2020	30	34	25	28	Evening 15 min	Y	Y	Y	Y	
-	Merriman ⁴	24/06/2020	I/A	33	34	40	Night 15 min	Y	Y	Y	Y	
-	Matilda ⁴	23/06/2020	24	28	25	27		Y	Y	Y	Y	

I/A = Inaudible, N/M = Not Measurable

Note 1: 2dB modifying factor correction for low frequency noise has been applied in accordance with the NPfl.

Note 2: A private agreement between NCOPL and the residents of N1 Bow Hills of 50 dBA LAeq(15minute) is in place. This new level of 50 dBA LAeq(15minute) replaces the levels identified in Conditions 1-3, Schedule 4 of PA 08_0144 Mod 2 and the identical limits contained in condition L3 of Environment Protection Licence No 12789

Note 3: A private agreement between NCOPL and the residents of N9 High Range of 40 dBA LAeq(15minute) and 50 dBA LA1(1minute) is in place. These new levels of 40 dBA LAeq(15minute) and 50 dBA LA1(1minute) replace the levels identified in Conditions 1-3, Schedule 4 of PA 08_0144 Mod 2 and the identical limits contained in condition L3 of Environment Protection Licence No 12789

Note 4: Property is owned by Narrabri Coal Operations.

Note 5: Within 2 dB tolerance as per section 11.1.3 of the NSW Industrial Noise Policy, A development will be deemed to be in non-compliance with a noise consent or license if the monitored noise level is more than 2 dB above the statutory noise limit specified in the consent or licence condition.

Figure 4: Summary of results taken from Noise Monitoring Report for Quarter ending June 2020

Surface Water Monitoring

Creek flow events were monitored on 3 occasions: 17th January 2020, 24th of January and 10th of February. No wet weather discharges have occurred from licensed discharge points during March 2020 to August 2020.

NSW Water- Licenced Usage

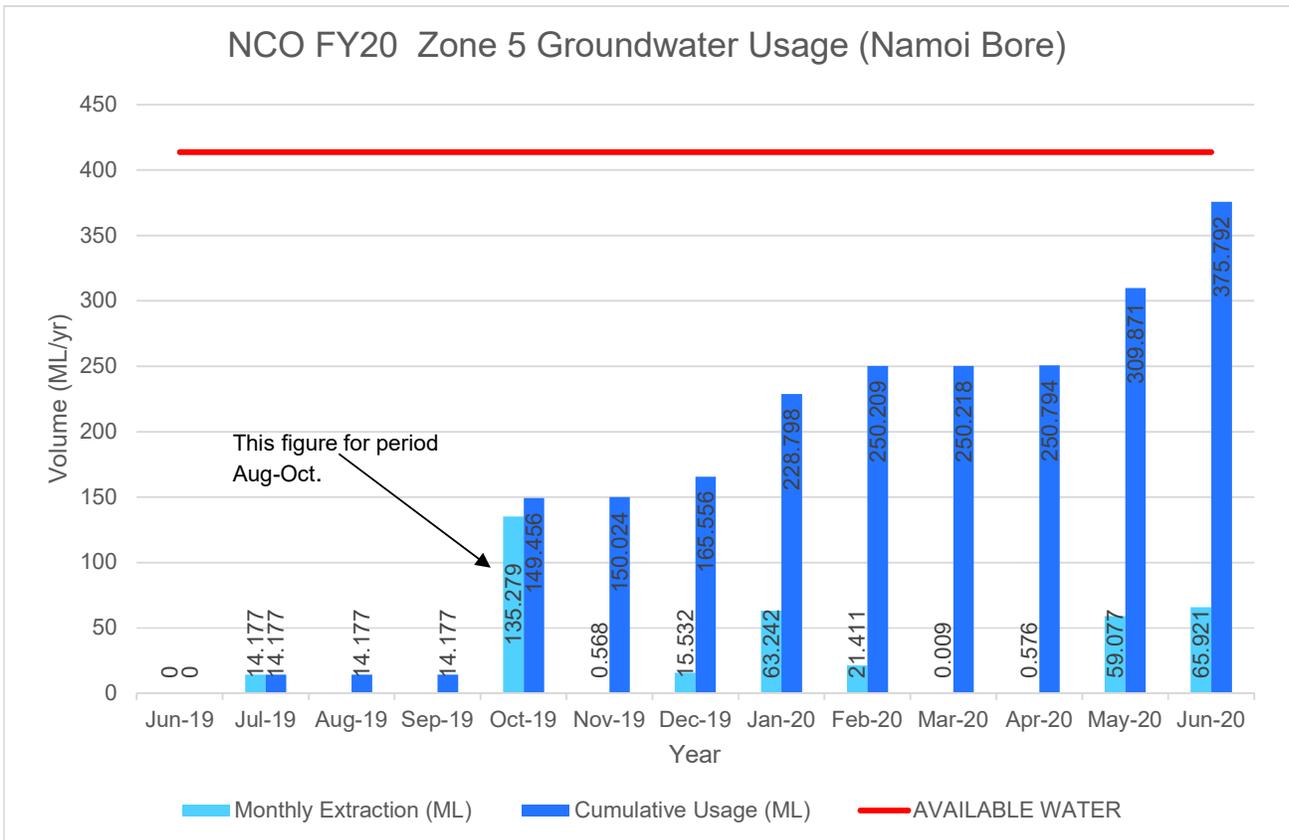


Figure 5: Zone 5 licenced groundwater usage from the Namoi Bore over the previous Financial (Water) Year.

- Approximately 14ML accessed from Namoi Bore during July 2020.

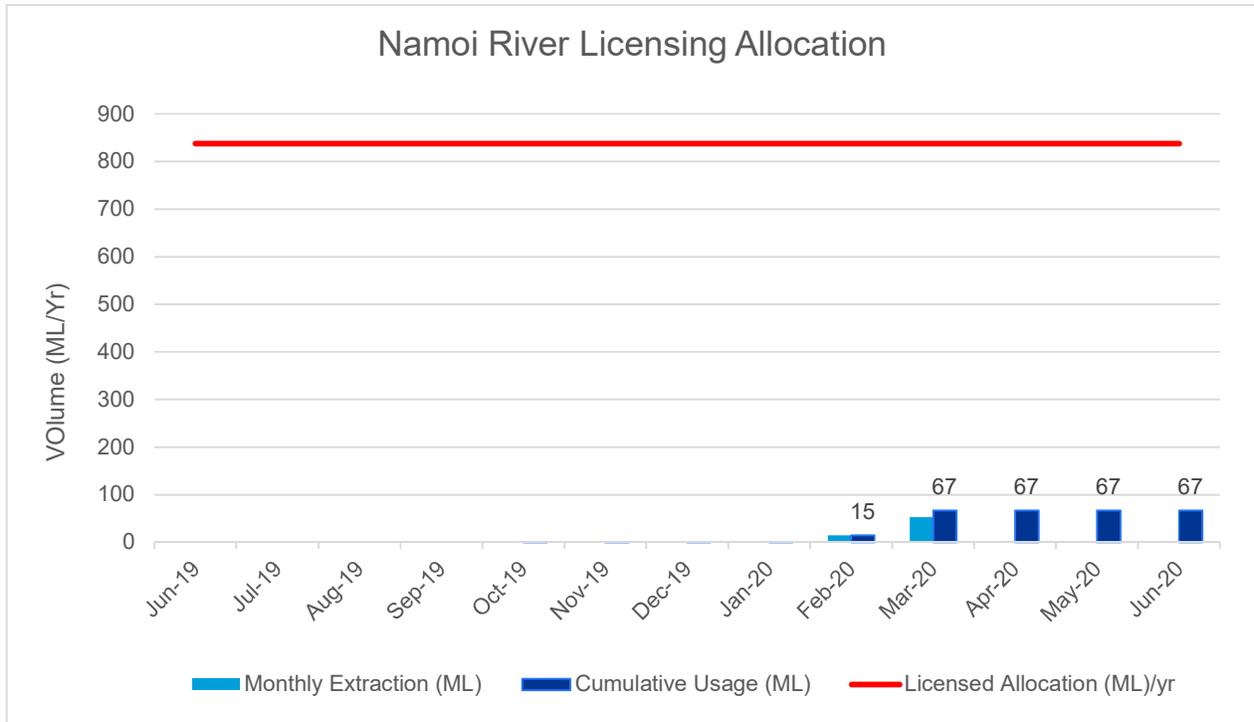


Figure 6: Namoi River usage over the previous Financial (Water) Year.

- Approximately 30ML accessed from Namoi River General Security licence during August 2020.

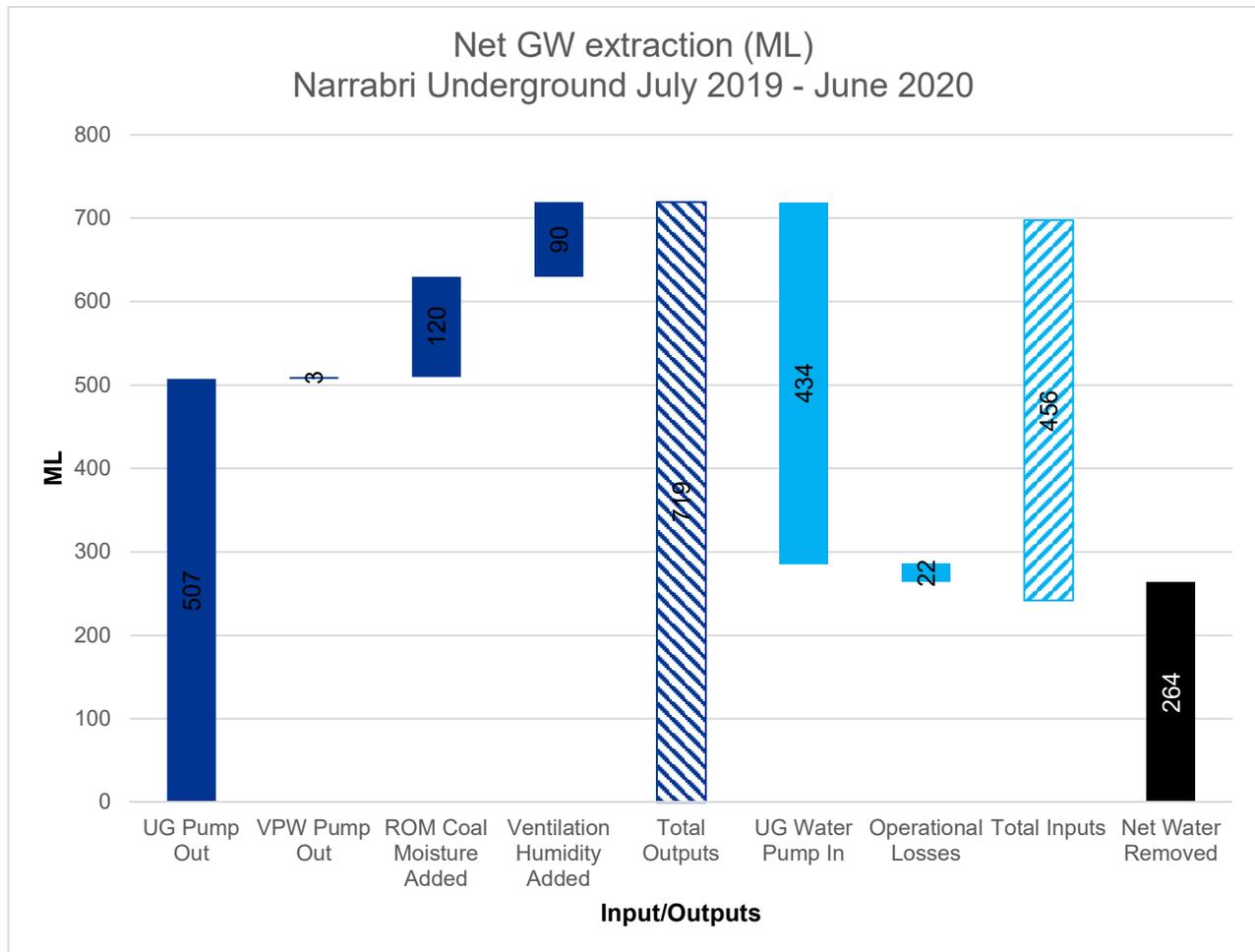


Figure 7: 'Waterfall chart' showing detail for net groundwater removal from the mine for previous Financial (Water) Year.

Groundwater Monitoring

Groundwater monitoring results are reviewed at the end of each year by a suitably qualified hydrogeologist and reported on in the Annual Review. A copy of the Annual Groundwater Review for 2019 is available upon request.

Summary of 2019 Annual Groundwater Review is provided below:

- Groundwater Levels
 - Water levels monitored during the 2019 reporting period generally did not exhibit any notable rise or fall in groundwater levels associated with strata subsidence effects from longwall mining activities and associated subsidence in excess of what has previously been predicted.
 - Significant depressurisation of the Hoskissons Coal Seam and the Arkarula Formation has been observed during and after extraction of longwall panels LW101 – LW108. This notable depressurisation was observed in numerous groundwater monitoring records and the pressure reductions observed are consistent with predictions that have been made.
 - The most notable groundwater level changes which have occurred as a result of mining activities have been recorded within standpipe piezometers monitoring the Garrawilla Volcanics. The groundwater model report (Hydrosimulations 2018) does not show drawdowns specifically within the Garrawilla Volcanics but does for the overlying Purlawaugh and underlying Napperby formations. From this, it can be inferred that the impacts seen in this area for the Garrawilla are in line with those predictions and therefore these results are not unexpected.

is also clear that a component of this groundwater pressure reduction is the result of the below average rainfall trends which have been experienced over the past three years. The scale of this component is unknown.

- Groundwater Quality
 - No adverse changes to groundwater quality within the mining area associated with underground mining activities have been observed or reported, with no distinctive increase in salinity, no distinctive lowering of pH and no reduction in water quality with regards to dissolved metals or nutrients have been reported during the 2019 reporting period.
- Rail Loop Dams
 - A notable change has been detected within the water monitoring network surrounding the evaporation / storage ponds. Most notable the rise in water level, although slight, and the significantly elevated salinity that has been recorded in P30. As P30 is adjacent to Storage Pond C (which stores brine concentrate) it can be inferred that a potential leak from Pond C may be contributing to the elevated salinity recorded in P30. Given the low rainfall trends that have been experienced in the past three years, there is a potential that the clay within the pond embankments may be experiencing cracking and increased hydraulic conductivity.



Figure 8: Ground water monitoring locations

Subsidence Monitoring

Longwall Panels (LW) 107 - 108		
	Maximum Predicted Extraction Plan	Maximum Measured
LW107 North		
Subsidence (m)	2.75	2.74
Tilt (mm/m)	44	28
Tensile Strain (mm/m)	13	10.3
Compressive Strain (mm/m)	16	12.4
Angle of Draw	32.1	24.1
LW108 North		
Subsidence (m)	2.75	2.68
Tilt (mm/m)	44	36.3
Tensile Strain (mm/m)	15	16.2
Compressive Strain (mm/m)	20	38.9
Angle of Draw	32.1	27.1

- LW108 North maximum measurements for Tensile Strain and Compressive Strain are above the predicted values as it was originally thought that the spanning behaviour of the Garrawilla Volcanics and Basalt Sill in the Napperby Formation would reduce subsidence. The maximum subsidence is also considered closer to 63% of the average mining height of 4.3m
- All other values for LW107 North and LW08 North are within the predicted limits.

Complaints

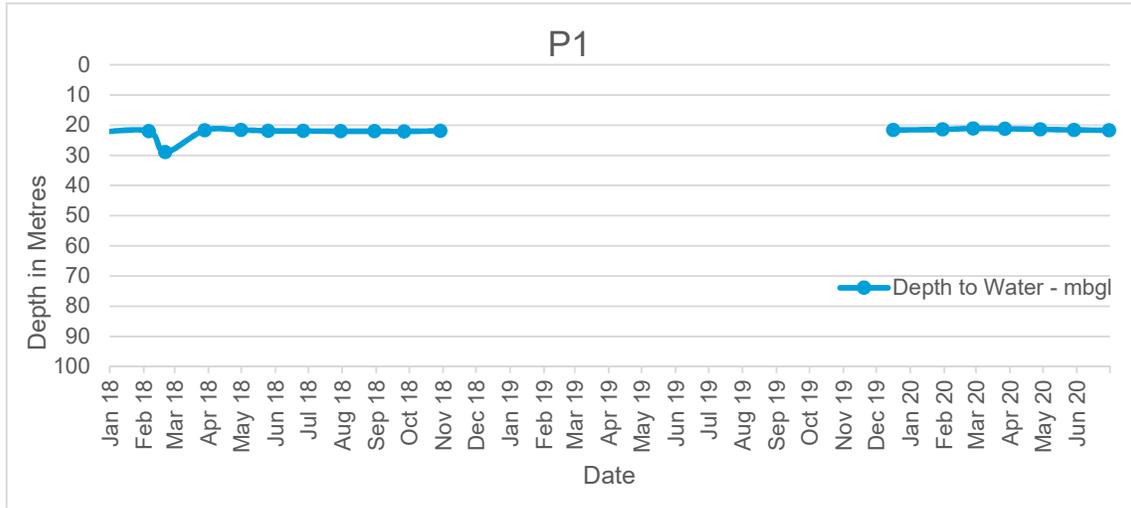
Since the beginning of 2020 a total of five complaints have been received in relation to noise.

Incident(s)

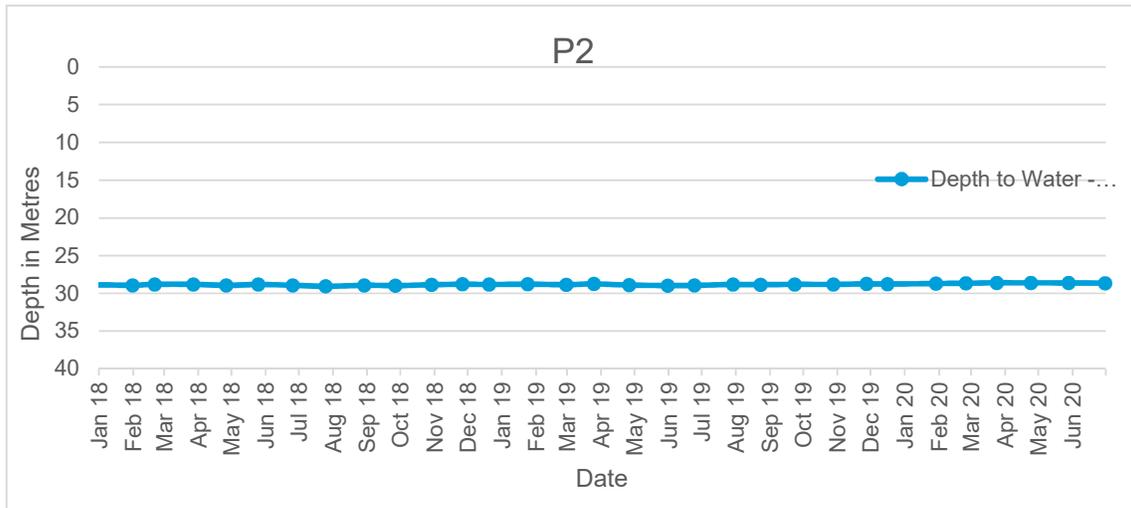
NCO have reported the following incidents:

- Noise monitoring undertaken during June 2020 recorded noise levels at one location above the 35dB limit.
- Discrepancy with Aboriginal Cultural Heritage Management Plan (ACHMP) relating to a cultural heritage site that was identified during 2017, but not properly reported and fenced as required by the ACHMP. The site has not been damaged.

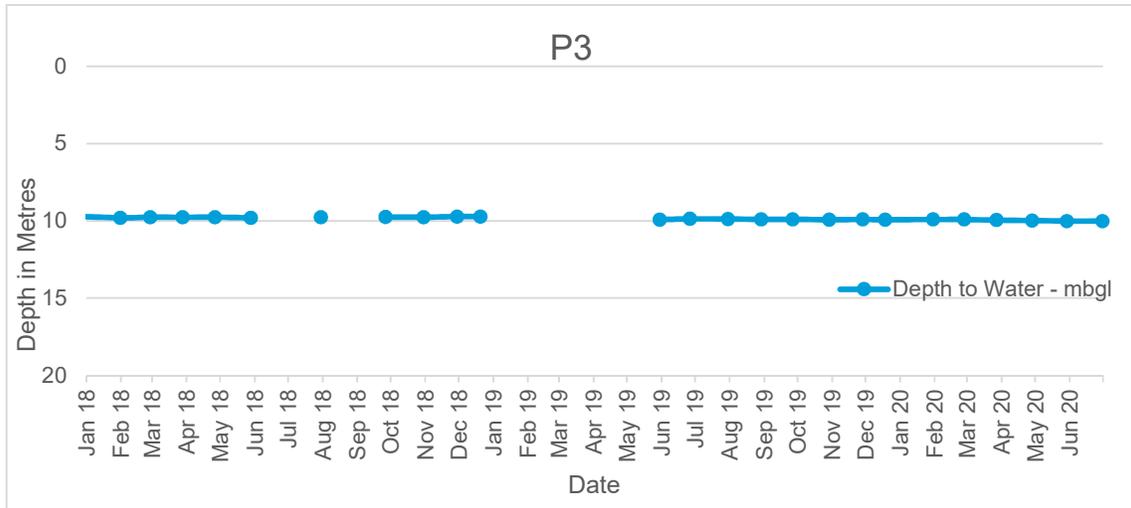
Hydrographs for Groundwater Monitoring Wells



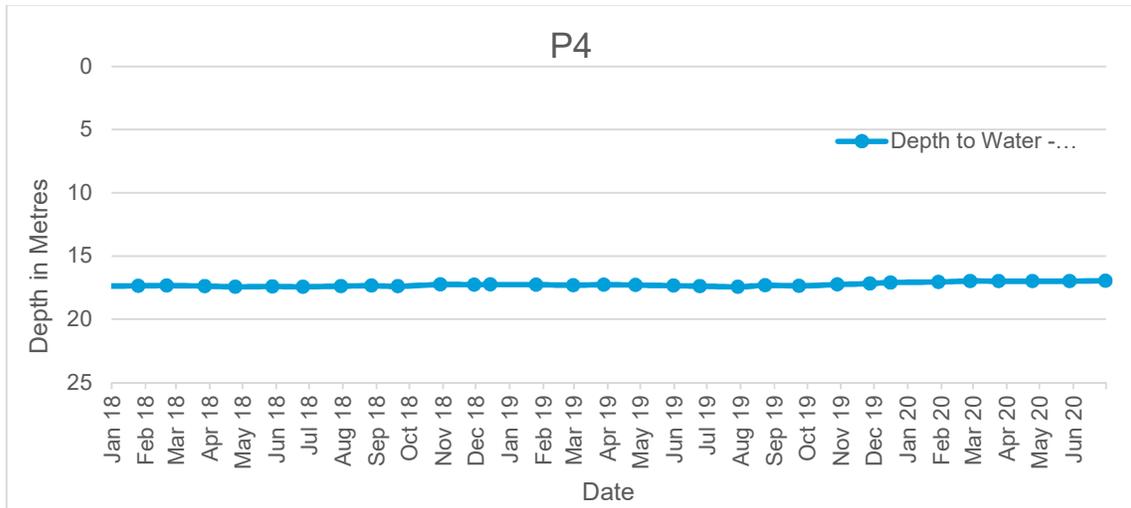
NCO Monitoring bore ID: P1
Location: Yarrabee
Geological unit: Garrawilla Volcanics
Bore depth: 50m
Explanation: Gap in data is due to land access issues.



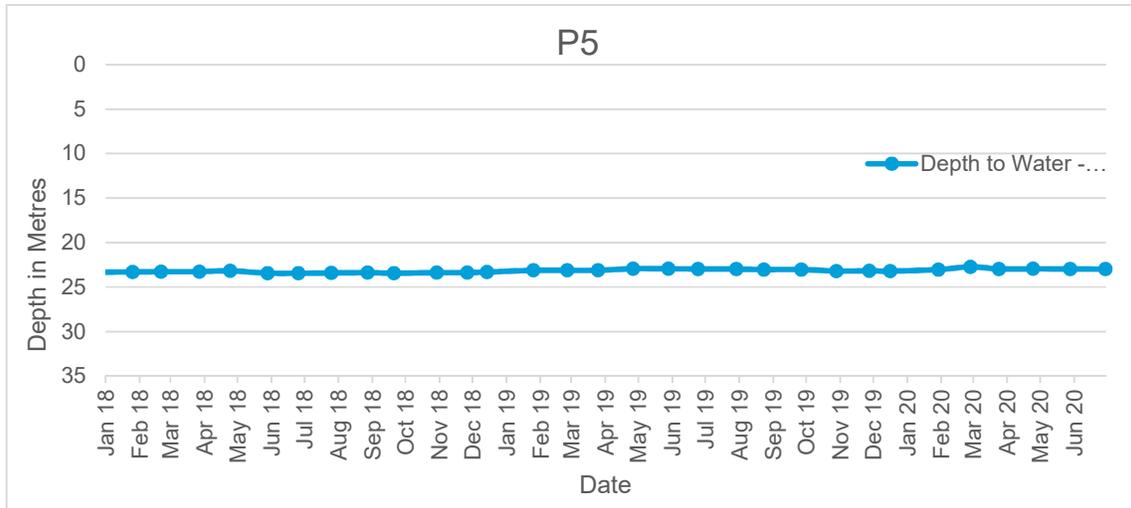
NCO Monitoring bore ID: P2
Location: Matilda
Geological unit: Napperby Formation
Bore depth: 50m



NCO Monitoring bore ID: P3
Location: Bow Hills
Geological unit: Pamboola Fromation
Bore depth: 45m
Explanation: land access issues



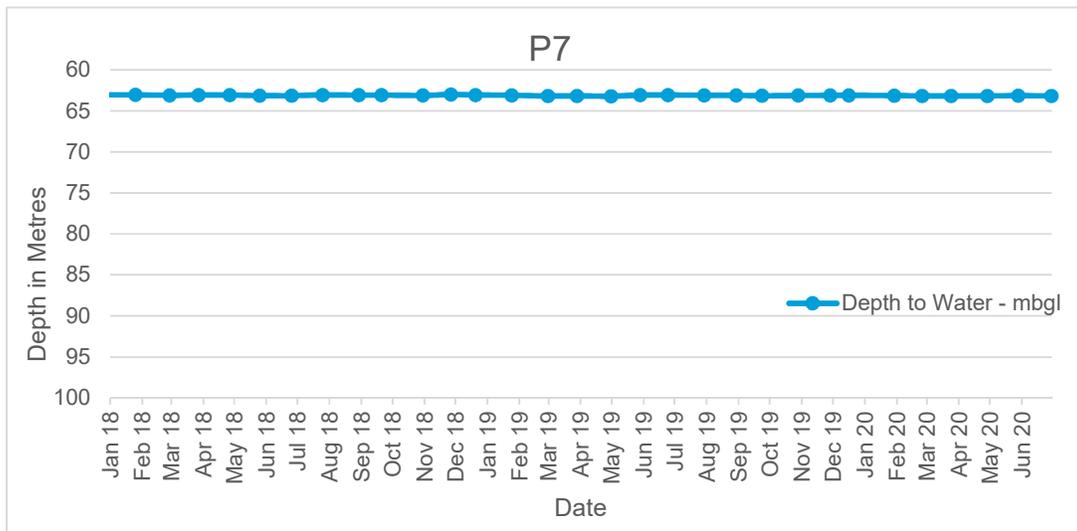
NCO Monitoring bore ID: P4
Location: North of Newhaven on Kamilaroi highway
Geological unit: Napperby Formation
Bore depth: 30m



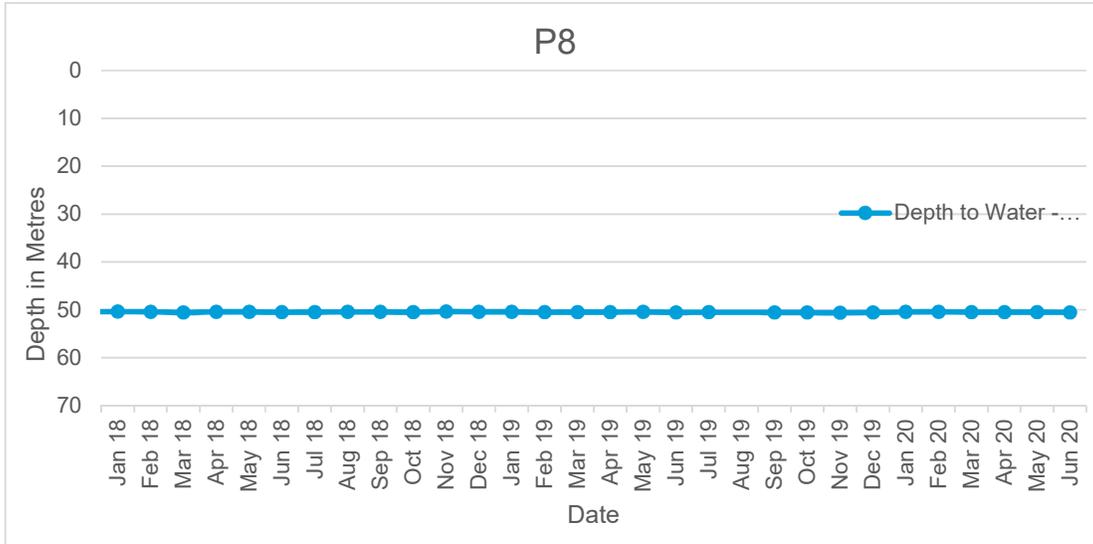
NCO Monitoring bore ID: P5
Location: Unknown - shown on Figure 10
Geological unit: Pamboola Formation
Bore depth: 30m

No Graph

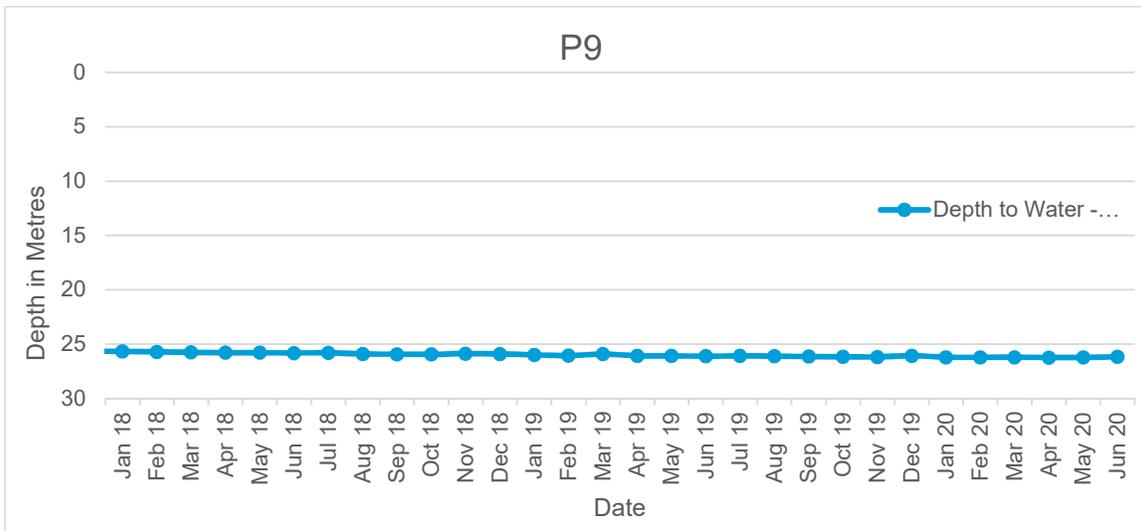
NCO Monitoring bore ID: P6
Location: shown on Figure 10
Geological unit: Pilliga sandstone
Bore depth: 90m
Explanation: Dry since 2012



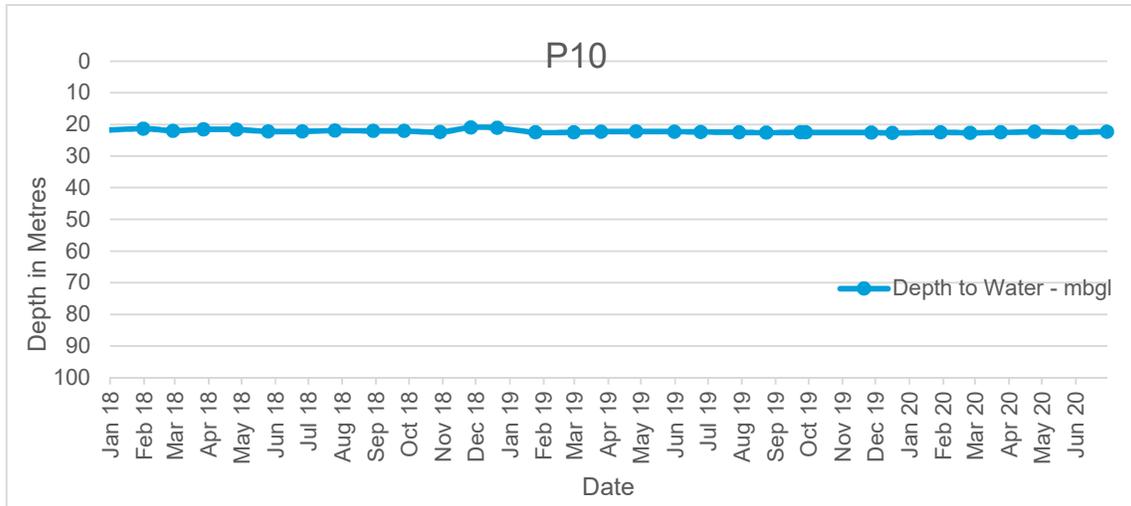
NCO Monitoring bore ID: P7
Location: shown on figure10
Geological unit: Pilliga sandstone
Bore depth: 90m



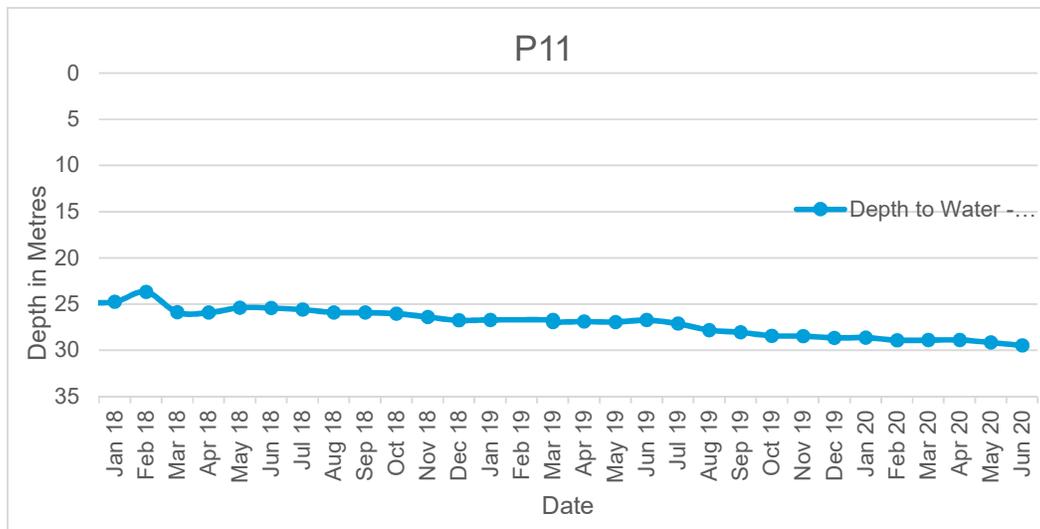
NCO Monitoring bore ID: P8
Location: Kurrajong
Geological unit: Purlawaugh Formation
Bore depth: 65m



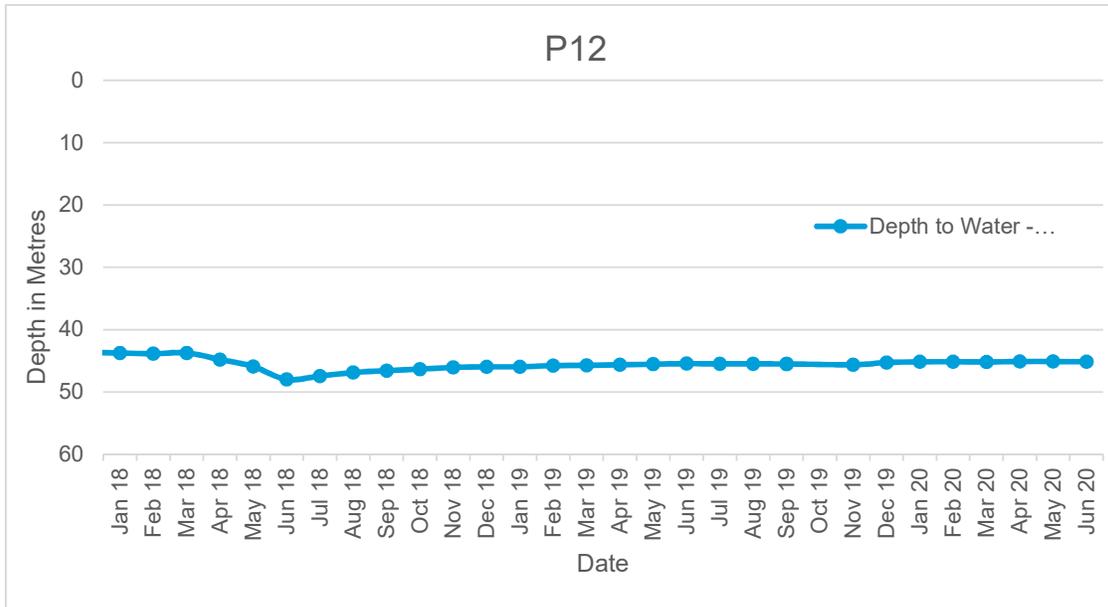
NCO Monitoring bore ID: P9
Location: NCO – Figure 10
Geological unit: Purlawaugh Formation
Bore depth: 30m



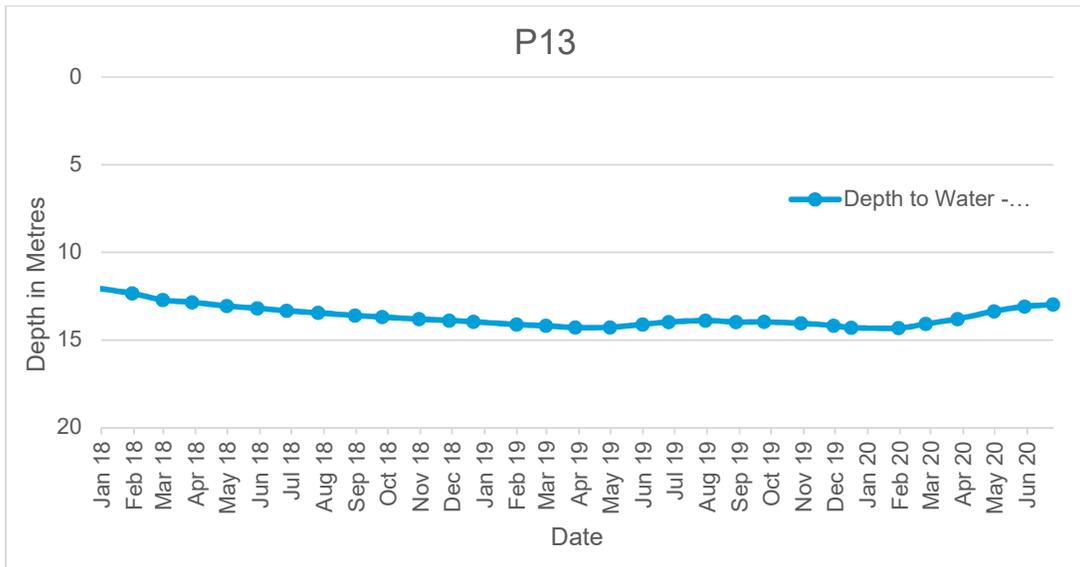
NCO Monitoring bore ID: P10
Location: NCO – see figure 10
Geological unit: Napperby Formation
Bore depth: 130m



NCO Monitoring bore ID: P11
Location: NCO – see figure 10
Geological unit: Napperby Formation
Bore depth: 50m



NCO Monitoring bore ID: P12
Location: NCO – see figure 10
Geological unit: Napperby Formation
Bore depth: 90m



NCO Monitoring bore ID: P13
Location: NCO – see figure 10
Geological unit: Garrawilla Volcanics/Napperby
Bore depth: 30m

No Graph

NCO Monitoring bore ID: P14
Location: See Figure 10
Geological unit: Napperby Formation (no sill)
Bore depth: 78m

Explanation: Dry and blocked at 10.2m since 2012

No Graph

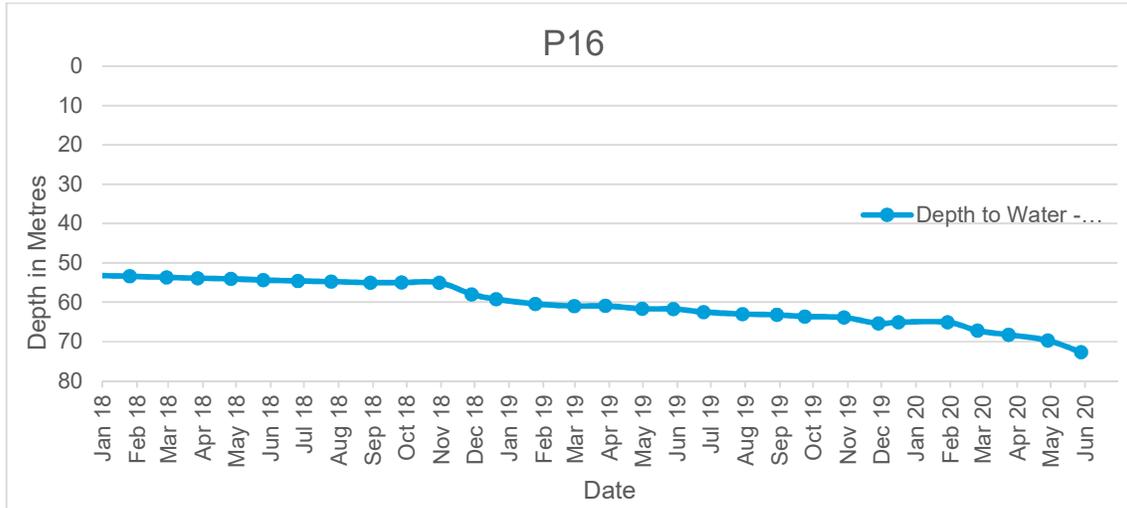
NCO Monitoring bore ID: P15

Location: See Figure 10

Geological unit: Garrawilla Volcanics

Bore depth: 30m

Explanation: Dry and blocked at 19m since 2016



NCO Monitoring bore ID: P16

Location: NCO (Western Boundary) – see figure 10

Geological unit: Garrawilla Volcanics

Bore depth: 146m

No Graph

NCO Monitoring bore ID: P17

Location: See figure 10

Geological unit: Purlawaugh Formation

Bore depth: 56m

Explanation: Dry since 2009

No Graph

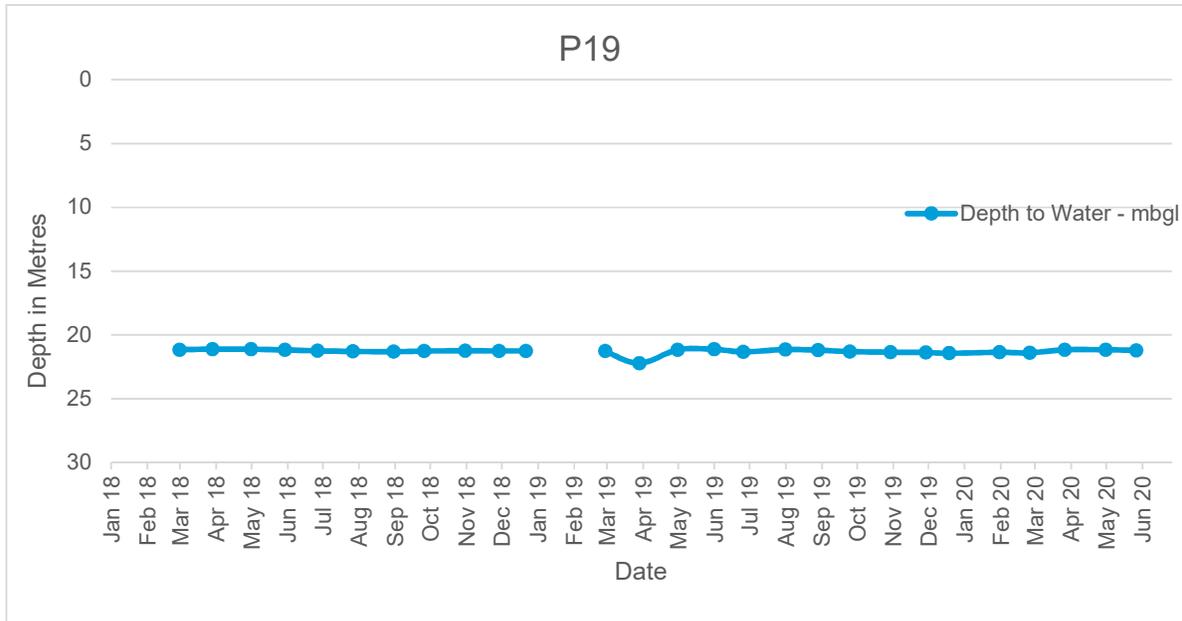
NCO Monitoring bore ID: P18

Location: See figure 10

Geological unit: Hoskissons seam

Bore depth: 146m

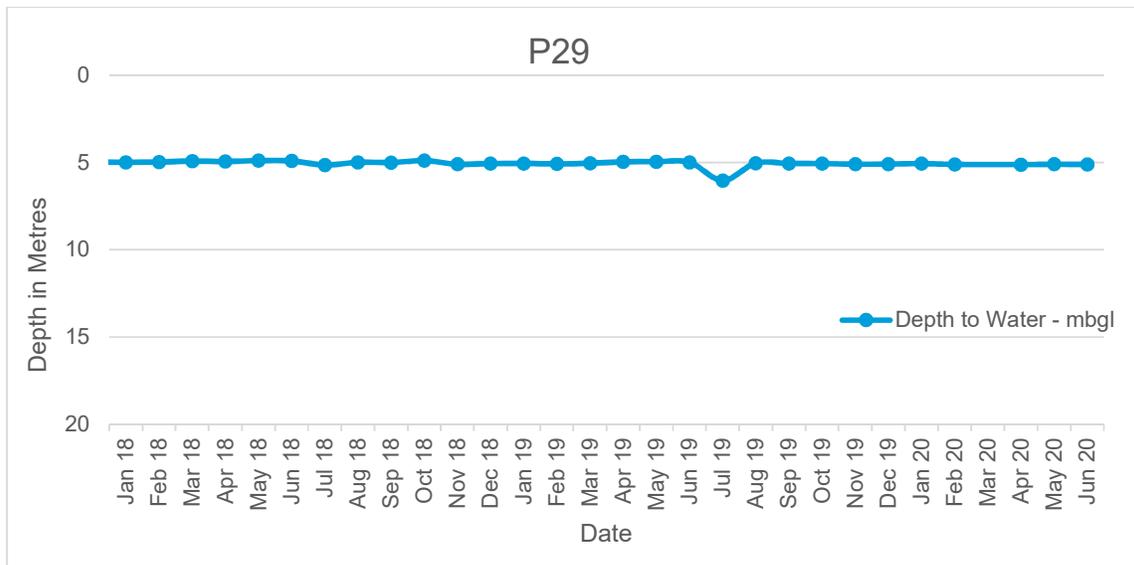
Explanation: Dry since 2011



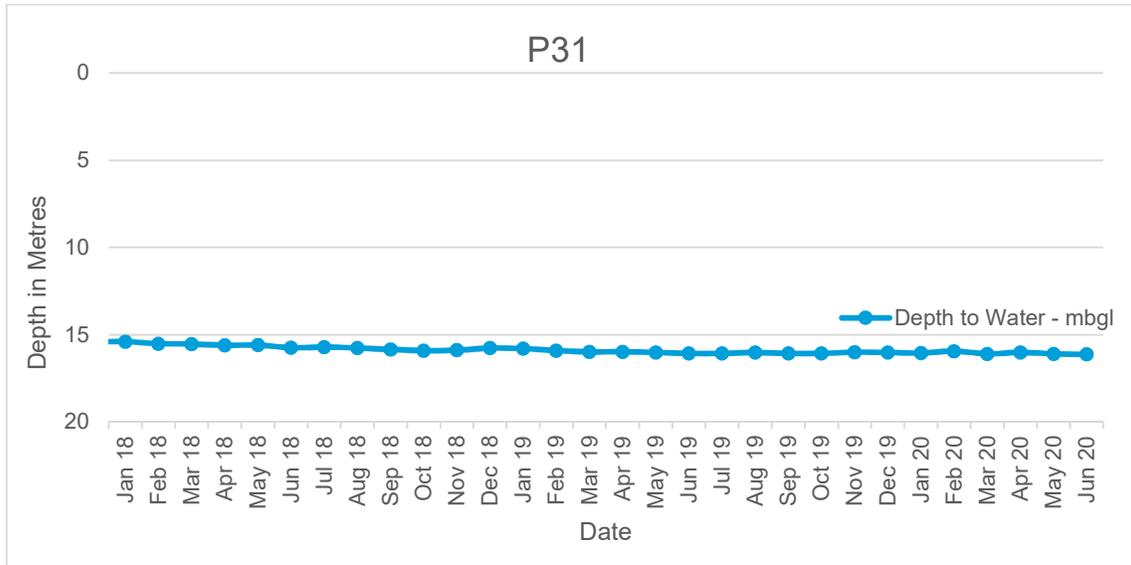
NCO Monitoring bore ID: P19
Location: NCO
Geological unit: Pamboola Formation
Bore depth: 187m

No Graph
NCO Monitoring bore ID: P20
Explanation: Cemented up – no longer monitoring

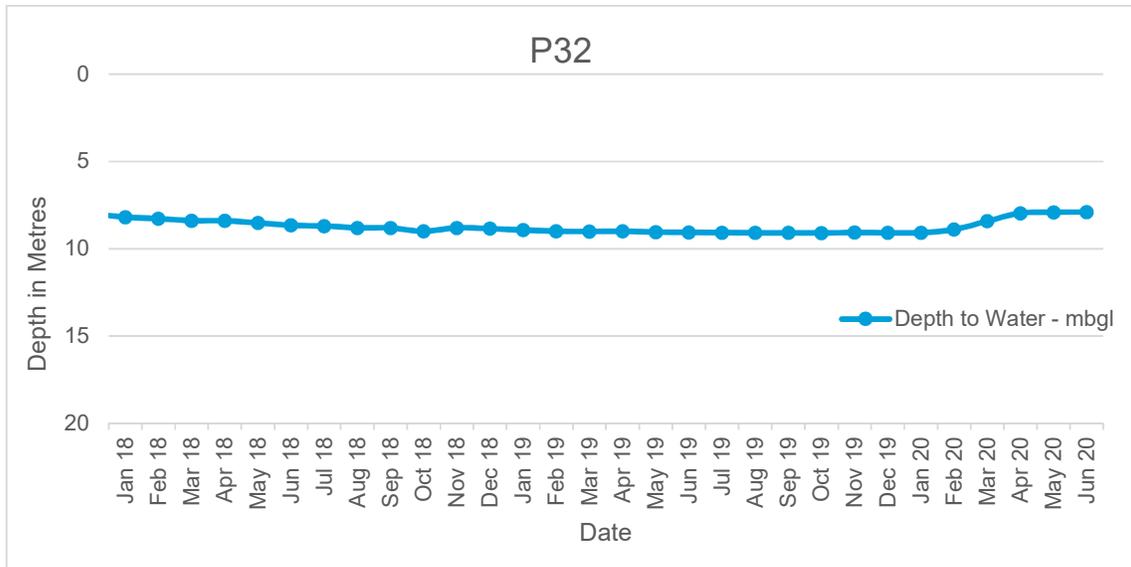
No Graph
NCO Monitoring bore ID: P28
Location: See figure10
Geological unit: Napperby Formation (above sill)
Bore depth: 25m
Explanation: Dry since 2012



NCO Monitoring bore ID: P29
Location: NCO (Near site dams) – see figure 10
Geological unit: Napperby Formation (above sill).
Bore depth: 25m



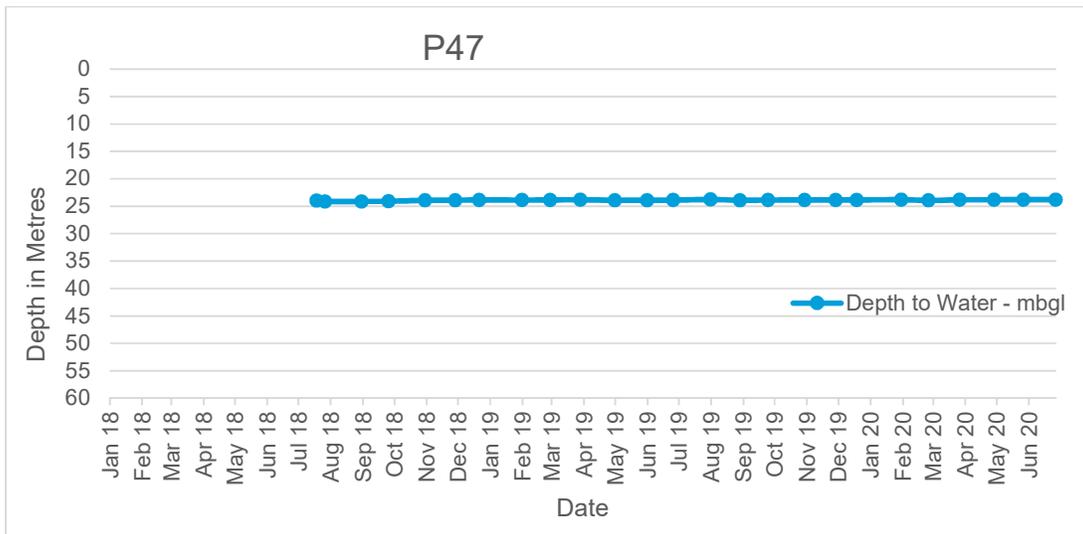
NCO Monitoring bore ID: P31
Location: NCO (Near site dams) – see figure 10
Geological unit: Napperby formation (above sill)
Bore depth: 15m



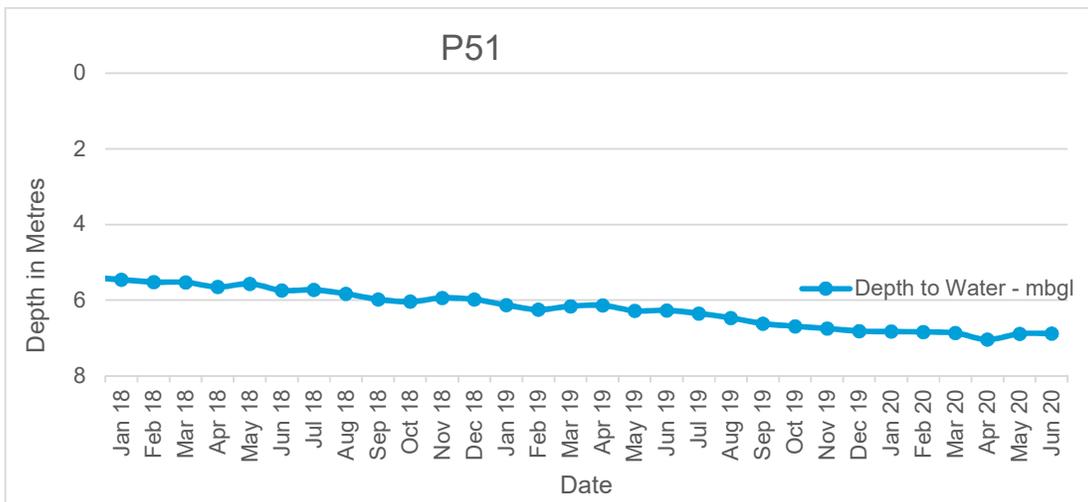
NCO Monitoring bore ID: P32
Location: NCO (Near site dams) – see figure 10
Geological unit: Napperby Formation (above sill)
Bore depth: 15m

NCO Monitoring bore ID: P33
Location: See figure 6
Geological unit: Napperby Formation (above sill)
Bore depth: 15m
Explanation: Dry since 2012

NCO Monitoring bore ID: P24
Location: See figure 6
Geological unit: Napperby Formation (above sill)
Bore depth: 15m
Explanation: Dry since 2012



NCO Monitoring bore ID: P47
Location: NCO – see figure 10
Geological unit: Garrawilla Volcanics
Bore Depth (m): 31m



NCO Monitoring bore ID: P51
Location: NCO
Geological unit: Garrawilla Volcanics
Bore Depth (m): 17m

Narrabri Mine Community Consultative Committee Meeting #50

Date: Wednesday 14 October 2020
Time: 5:00pm
Location: Narrabri Mine office

Present: Russel Stewart (RS)
Peter Webb (PW)
Geoff Hunter (GH)
Allan Grumley (AG)
Ian Duffy (ID)
David Ellwood (DE) – Narrabri Coal – Director Stage 3 Project
Brent Baker (BB) – Narrabri Coal - Environmental Superintendent
Gerald Linde (GL) - Narrabri Coal- General Manager
Andrew Garratt – Whitehaven Coal – General Manager Community Engagement

Apologies: Cathy Redding
James Steiger
Mark Foster
Rodney Dunlop
Charlie Melbourne

1. DECLARATION OF PECUNIARY INTEREST

None

2. PREVIOUS MINUTES

RS moved that previous minutes are accepted as an accurate record.

Moved: PW Seconded: GH

2.1 BUSINESS ARISING FROM PREVIOUS MINUTES

None

3. OPERATIONS PROGRESS REPORT AND SAFETY UPDATE

Presented by GL

- GL commented on FY21 first quarter performance.
- Discussion around planned mining schedule for next few years and site factors that impact on mine plans.
- Discussion around coal price and global markets.

4. ENVIRONMENTAL MONITORING REPORT

See Appendix A

Presented by BB

- **DEPOSITIONAL DUST-** 2020 annual average for all monitoring locations below licence limit of 4 g/m²/month, with the exception of Oakleigh at 4.4 g/m²/month.
- **PM10 AIR QUALITY-** Monitoring locations Claremont and Turrabaa are recording annual averages below the limit of 30 µg/m³ (16.11 µg/m³ and 16.42 µg/m³ respectively). No exceedances of the 24 hour limit since previous CCC meeting.

- **QUARTERLY NOISE MONITORING**

Attended noise monitoring was undertaken over 3 days in September 2020 (Q3) with compliance achieved at all locations during all time periods, with some exceptions under non-standard weather conditions. Results >35dBA (LA_{EQ} 15min) were recorded at Ardmona during temperature inversion conditions, NCO have arranged for follow-up monitoring event as per Noise Management Plan requirements. PW commented on train loading activities can sometimes be noisy, but doesn't worry him and that highway traffic probably noisier. GL mentioned the highway upgrade construction works have been triggering NCO noise alarms.

GH commented on Oakleigh noise results >35dBA (LA_{EQ} 15min) and as this property is owned by Narrabri Coal what actions are we taking to ensure that neighbouring landholders at Pineview are not impacted. BB explained that a real-time noise monitoring trailer is located on the boundary of Oakleigh and Pineview which is intended to act as a noise pollution control measure whereby NCO will receive 'noise alarms' from the trailer which in turn will trigger progressive reduction in mine surface operations. GH commented the Deposited Dust result at Oakleigh which is above annual average limit and asked if there had been consultation with Pineview landholders to determine if they are being impacted. BB advised that Pineview landholders have not been consulted regarding recent dust results and explained that NCO first need to understand why the results at Oakleigh are currently exceeding the annual average limit and determine if the results are solely attributed to mining activity or other local impacts. PW commented on the highway upgrade construction works. BB mentioned council have been carrying out quarry operations at Bow Hills quarry over the last month which has been producing visible dust.

ACTION: BB to review Oakleigh dust and noise results; if results continue to trend upwards undertake consultation with Pineview landholders. BB to provide update at next CCC meeting.

- **SURFACE WATER MONITORING:**
No wet weather discharges have occurred from licensed discharge points during August-September 2020.
- **WATER LICENSING:** Presented graphs showing NCO water allocation usage. Namoi bore allocation has not been utilised since last CCC meeting and instead have been utilising Namoi River entitlements during flow events. Mine dewatering volume pumped from box-cut provided. BB explained chart showing mine dewatering 'Inputs and Outputs' has not been updated for FY to date, and this will be updated for next CCC meeting.
- **GROUNDWATER MONITORING:** Groundwater monitoring results are reviewed at the end of each year by a suitably qualified hydrogeologist and reported on in the 2020 Annual Review. Update will be provided to CCC when results are available.
- **SUBSIDENCE MONITORING:** Monitoring undertaken at six monthly intervals, with no monitoring required since previous CCC meeting.
- **COMPLAINTS:** No complaints were received since previous CCC meeting.
- **INCIDENTS:** No reportable incidents since previous CCC meeting.

No further questions/comments from members.

5. STAGE 3 UPDATE

DE provided update.

Since the last CCC meeting held in August the Stage 3 project has:

- Continued to develop and refine the project EIS.
- Submitted the EIS to DPIE for an adequacy review to ensure that it complied with the project SEAR's.
- Received comments back from DPIE on the EIS; only minor changes requested.
- Began the process of addressing comments and finalising the report.
- Presented a project brief to the Gunnedah Shire Councillors. Planning to present to Narrabri Council soon, some delays due to consultant availability due to QLD border restrictions.

Based upon the work completed to date the mine is planning to submit the EIS for public exhibition in the near future. Once the EIS is submitted for exhibition the advertisement below must be run in papers circulating within the area. DPIE will advise what papers they want the advertisement run in once submission is completed. Exhibition period is six weeks and NCO hoping to run this prior to Christmas period.

GH asked if any changes to plans.

DE advised no major changes, but some additional work has been done to allow inclusion of some contingency mine plan options to provide flexibility to operations, DE stressed that this won't result in any changes to identified surface impacts.

GH enquired about Biodiversity Offset requirements.

DE explained that Biodiversity Offsets will be required. DE provided outline of Biodiversity Conservation Act requirements concerning Species Credits and Vegetation Credits and the survey methodology that is applied to determine credit requirements for the Project and how NCO is managing this.

No further questions/comments from members.

6. GENERAL BUSINESS

- BB mentioned Rural Fire Service visited site to discuss Bushfire Prevention.
- GL mentioned expenditure focused on noise abatement projects, including:
 - Upgraded 2 new D11 dozers that are quieter than previous models
 - Noise attenuation units on main fans are being refurbished which should see a noise reduction.
- BB mentioned that underground tour for new CCC members is possible now that COVID restrictions have eased. Russell to provide list of names to BB. Date and details TBA.
- Andrew Garratt provided overview of Whitehaven Coal Annual Sustainability Report which was provided to CCC members.

NEXT MEETING

- Wednesday the 16 December 2020 at Bann Baa pub.

Environmental Monitoring Report: August 2020 – September 2020

Deposited Dust Monitoring

Month	Total Insoluble Matter results (g/m ² /month)										
	ND1 Turrabaa	ND2 Claremont	ND3 Bow Hills	ND4a New Matoppo	ND5 Claremont	ND6 Willarah	ND7 Claremont	ND8 Claremont	ND11 Oakleigh	ND12 Merriman	ND13 Darjeelang
August 2020	3.1	2.0	6.9	0.6	3.1	0.5	0.6	0.7	3.9	1.2	0.6
September 2020	3.1	2.5	1.9	0.5	0.7	1.6	1.9	0.6	5.1	0.9	0.3

Results are assessed during the end of year Annual Review process, and if it is determined that mine related activities have caused a contribution above the annual average limit of 4 g/m²/month appropriate notifications will be prepared.

2020 annual average for all monitoring locations are below the licence limit of 4 g/m²/month, with the exception of Oakleigh (4.4 g/m²/month).

PM₁₀ High Volume Air Sampling (HVAS)

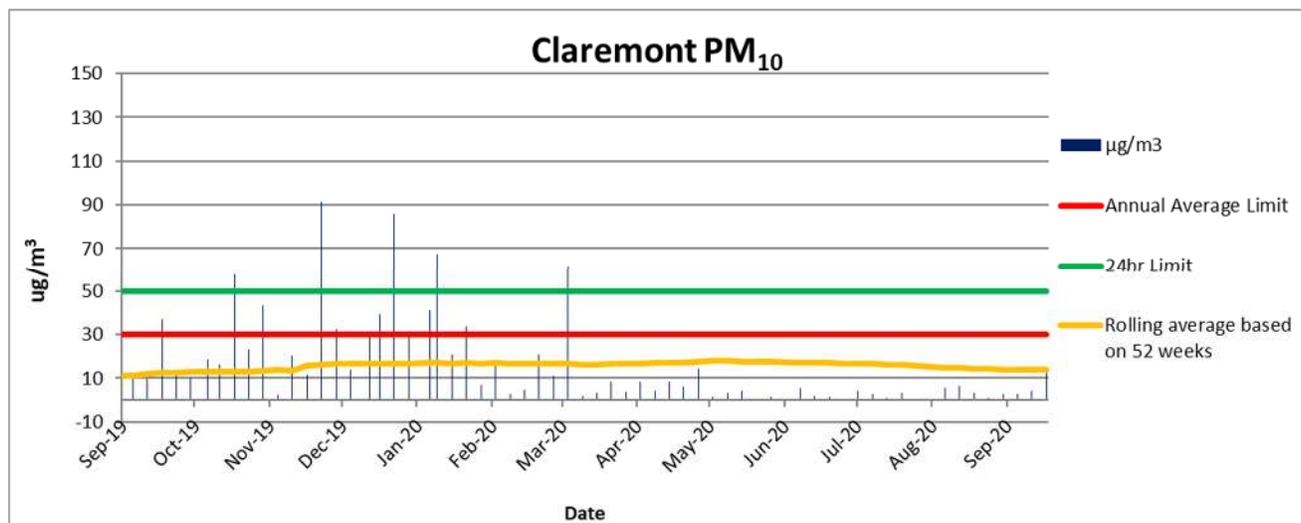


Figure 1: Claremont PM₁₀ High Volume Air Sampler results. Samples are collected over a 24 hour period once every week, with a (24hr) compliance limit of 50.0µg/m³.

The Claremont HVAS is returning an annual average of 16.11 µg/m³, which is below the annual average limit of 30 µg/m³. Since the previous CCC meeting there has been no exceedances of the 24 hour limit of 50 µg/m³.

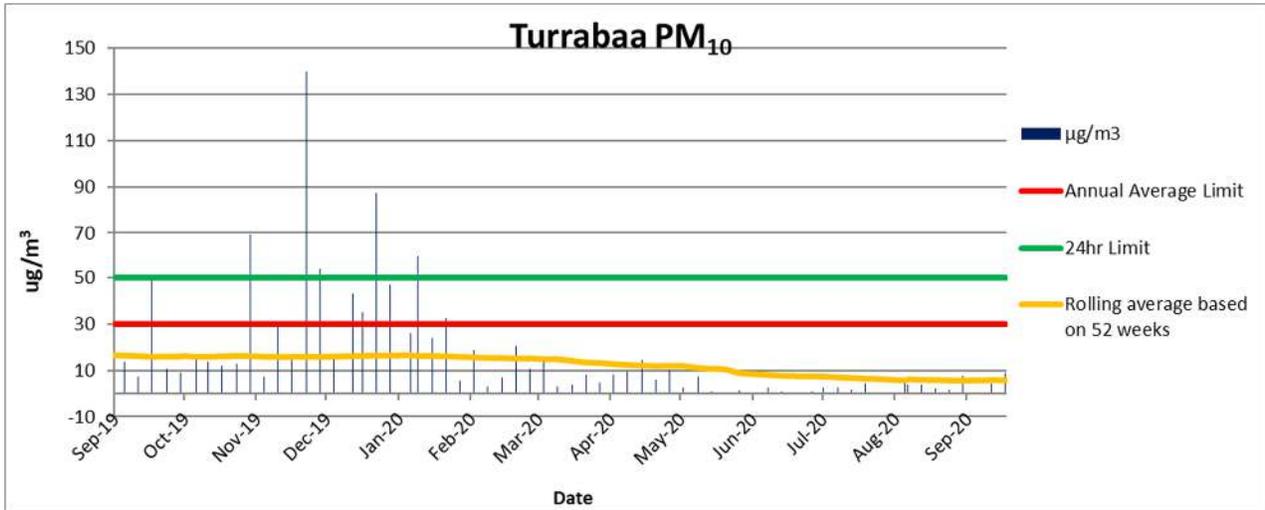


Figure 2: Turrabaa PM10 High Volume Air Sampler results. Samples are collected over a 24 hour period once every week, with a (24hr) compliance limit of 50.0µg/m³.

The Turrabaa HVAS is returning an annual average of 16.42 µg/m³, which is below the annual average limit of 30 µg/m³. Since the previous CCC meeting there has been no exceedances of the 24 hour limit of 50 µg/m³.

Noise Monitoring

Quarterly attended noise monitoring was undertaken in accordance with mine approvals on the following dates:

- Q3: 8-10 September 2020 (Figure 3)
 - Compliance was achieved at all locations under applicable meteorological conditions during all time periods.

Table 1 Performance Assessment – Operations

EPL ID	Location	Date	Narrabri Mine Contribution dBA				Noise Criteria ²	Measurement Periods	Weather Compliant			Compliant ¹
			LAeq 15 min Day	LAeq 15 min Evening	LAeq 15 min Night	LA1 (1 min) Night			Day	Evening	Night	
N5	Oakleigh ⁴	08/09/2020	I/A	<25	33	41	Day, Evening and Night – LAeq(15minute) 35 dBA	Day - 1.5 hrs Evening - 0.5 hrs Night – 1hrs	Y	Y	Y	Y
		09/09/2020	40	I/A	I/A	I/A			Y	Y	N	Y ⁵
		10/09/2020	I/A	N/M	I/A	I/A			N	N	N	Y
N6	Newhaven	08/09/2020	<25	N/M	30	31	Night LA1(1minute) – 45 dBA	Day - 1.5 hrs Evening - 0.5 hrs Night – 1hrs	Y	Y	Y	Y
		09/09/2020	26	<30	N/M	N/M			Y	N	N	Y
		10/09/2020	<30	30	N/M	N/M			N	N	N	Y
N9	High Range ³	08/09/2020	N/M	I/A	29	32	Night LA1(1minute) – 45 dBA	Day - 1.5 hrs Evening - 0.5 hrs Night – 1hrs	Y	Y	Y	Y
		09/09/2020	N/M	<30	N/M	N/M			Y	N	N	Y
		10/09/2020	N/M	N/M	N/M	N/M			N	N	N	Y
-	Bow Hills ²	08/09/2020	I/A	I/A	40	45	Day 15 min Evening 15 min Night 15 min	Y	Y	N	Y	
-	Ardmona	08/09/2020	N/M	I/A	39	44		Y	N	N	Y	
-	Merriman ⁴	08/09/2020	I/A	N/M	29	30		Y	Y	N	Y	
-	Matilda ⁴	08/09/2020	22	I/A	26	27		Y	Y	N	Y	

I/A = Inaudible, N/M = Not Measurable

Note 1: Compliant during applicable meteorological conditions.

Note 2: A private agreement between NCOPL and the residents of N1 Bow Hills of 50 dBA LAeq(15minute) is in place. This new level of 50 dBA LAeq(15minute) replaces the levels identified in Conditions 1-3, Schedule 4 of PA 08_0144 Mod 2 and the identical limits contained in condition L3 of Environment Protection Licence No 12789

Note 3: A private agreement between NCOPL and the residents of N9 High Range of 40 dBA LAeq(15minute) and 50 dBA LA1(1minute) is in place. These new levels of 40 dBA LAeq(15minute) and 50 dBA LA1(1minute) replace the levels identified in Conditions 1-3, Schedule 4 of PA 08_0144 Mod 2 and the identical limits contained in condition L3 of Environment Protection Licence No 12789

Note 4: Property is owned by Narrabri Coal Operations.

Note 5: The Noise Criteria for EPL Monitoring Location N5 (Oakleigh) does not apply as the property is not a privately owned residence (owned by Narrabri Coal).

Figure 3: Summary of results taken from Noise Monitoring Report for Quarter ending September 2020

Surface Water Monitoring

No wet weather discharges have occurred from licensed discharge points during August-September 2020.

NSW Water- Licenced Usage

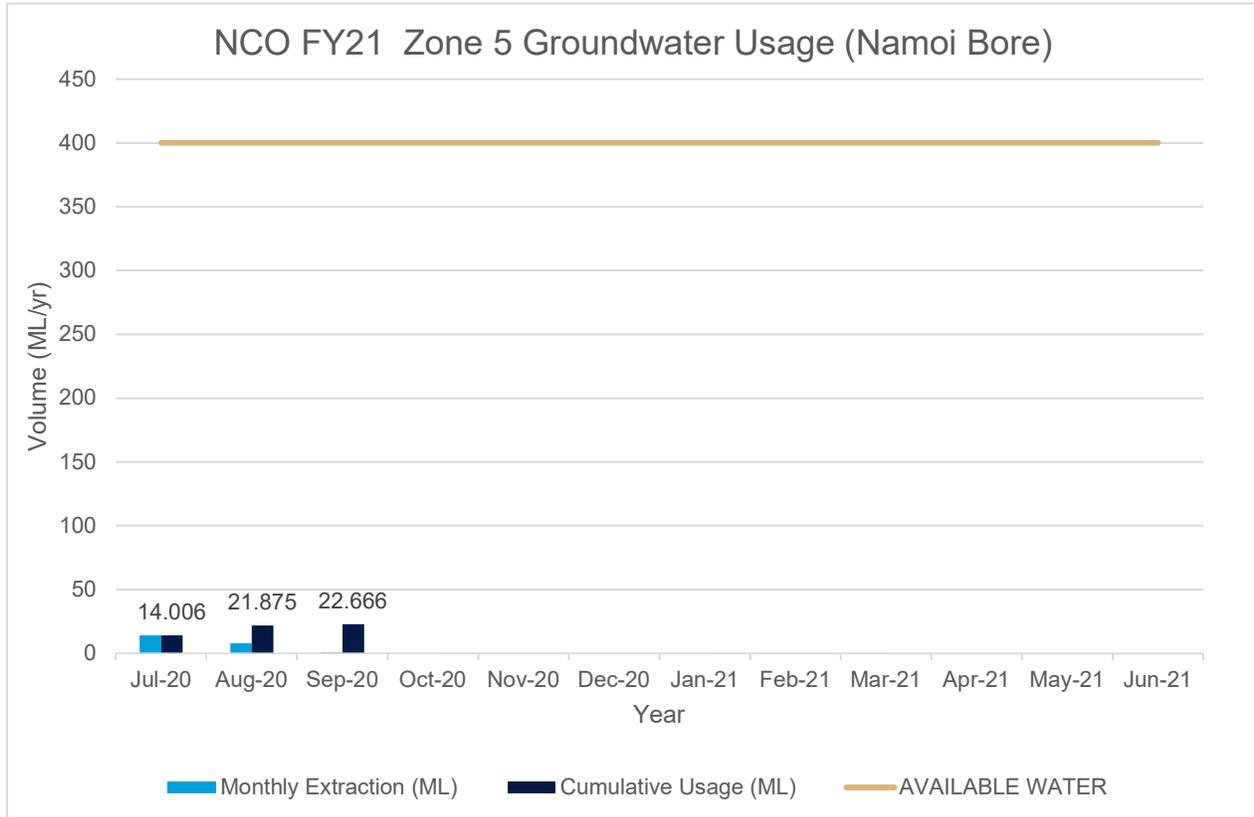


Figure 4: Zone 5 licensed groundwater usage from the Namoi Bore over the current Financial (Water) Year.

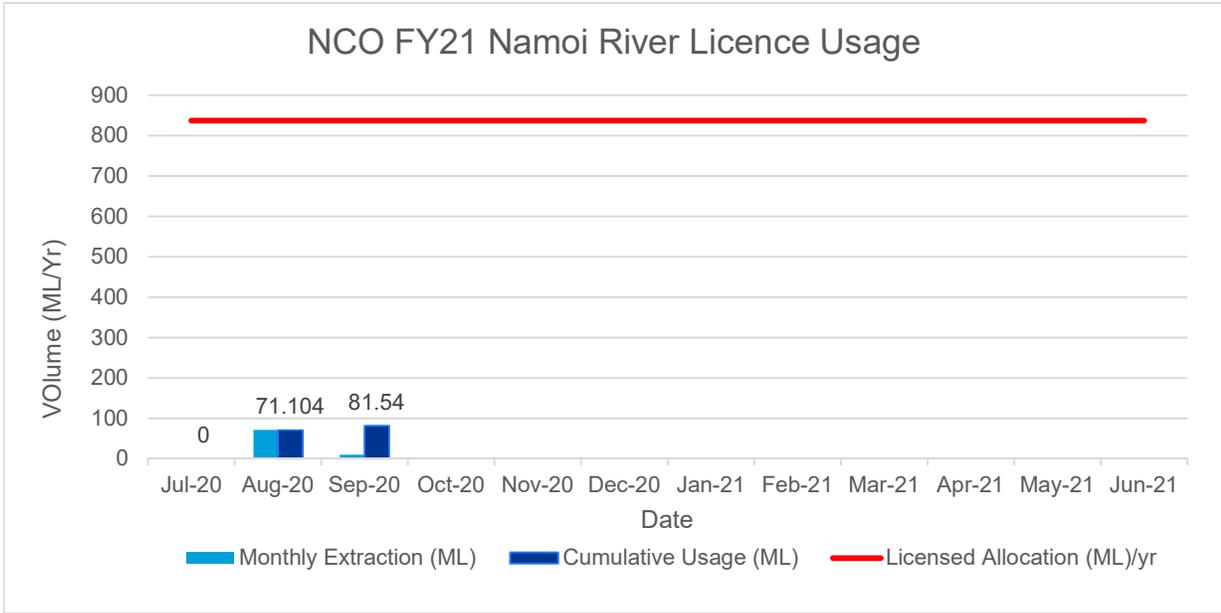


Figure 5: Namoi River usage over the current Financial (Water) year.

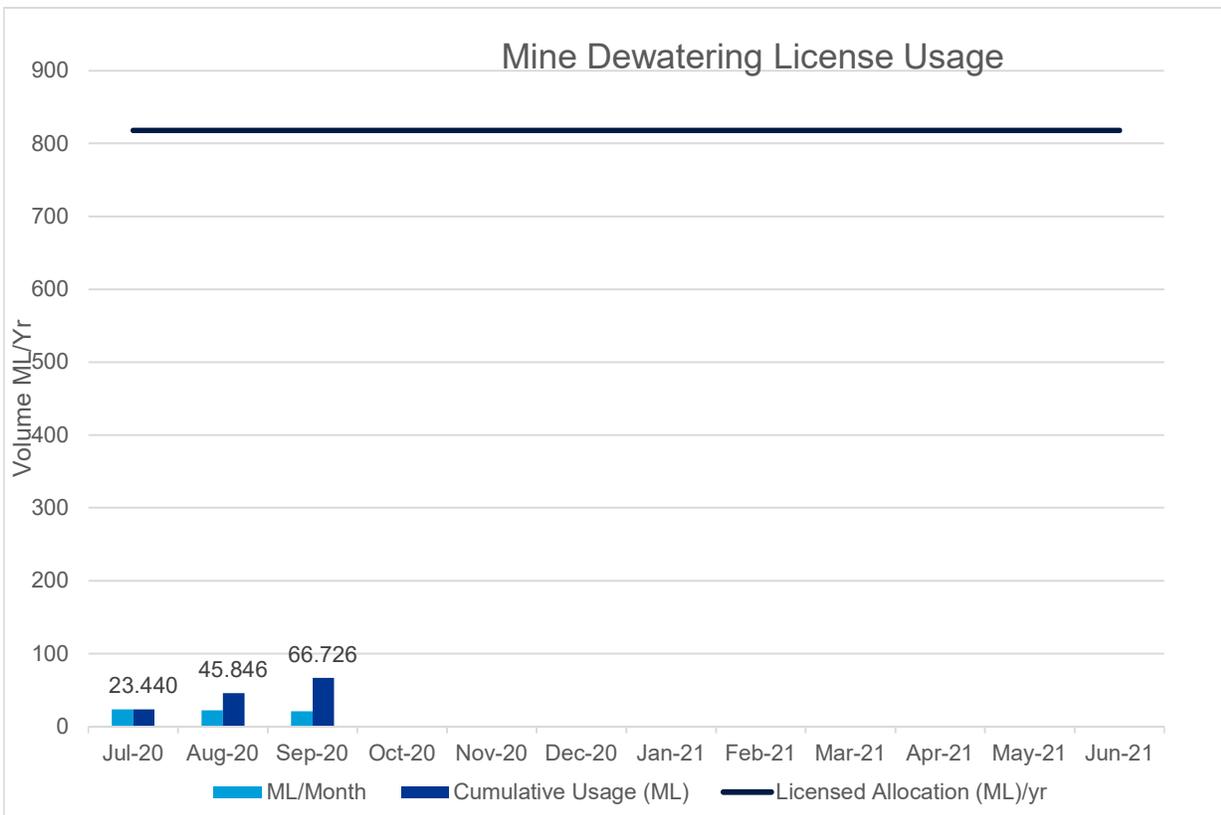


Figure 8: Box-cut pump usage over the current Financial (Water) year.

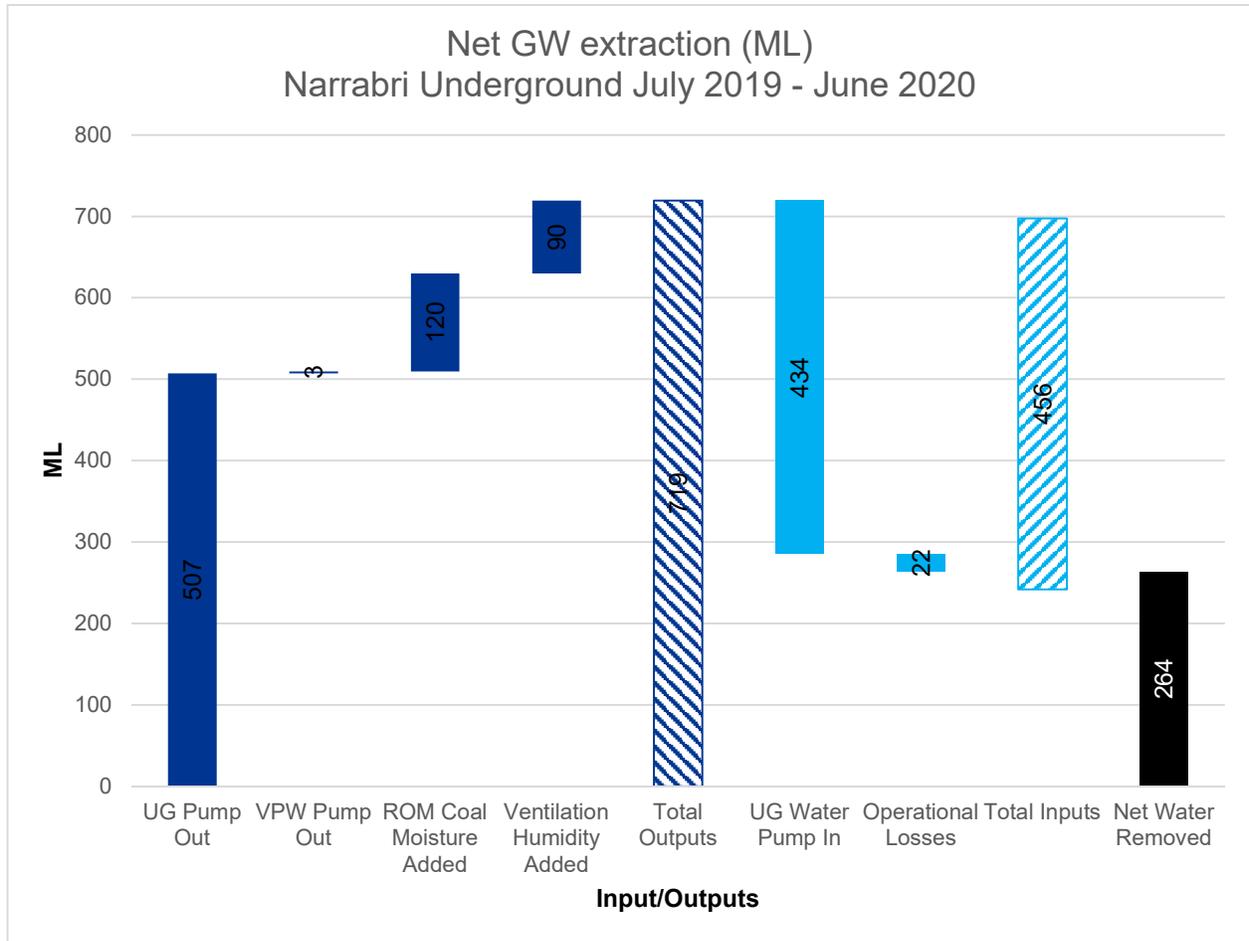


Figure 9: 'Waterfall chart' showing detail for net groundwater removal from the mine for previous Financial (Water) Year.

Groundwater Monitoring

Groundwater monitoring results are reviewed at the end of each year by a suitably qualified hydrogeologist and reported on in the Annual Review. When the 2020 report is available a summary will be provided to CCC.

Subsidence Monitoring

Nil updates from previous meeting. Subsidence monitoring is completed on a six monthly basis with next monitoring to be completed prior to next CCC meeting.

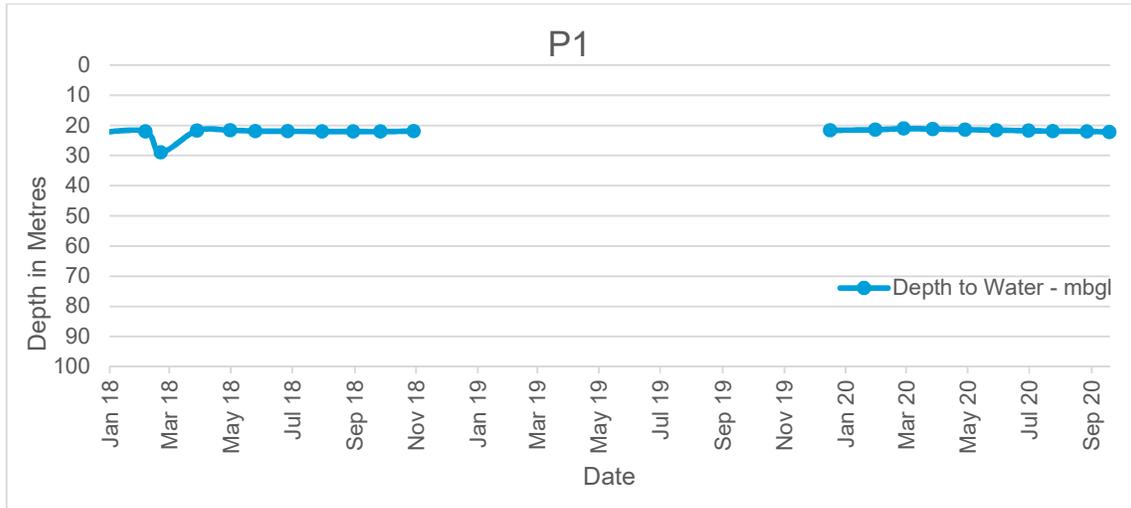
Complaints

Since the beginning of 2020 a total of five complaints have been received (in relation to noise).

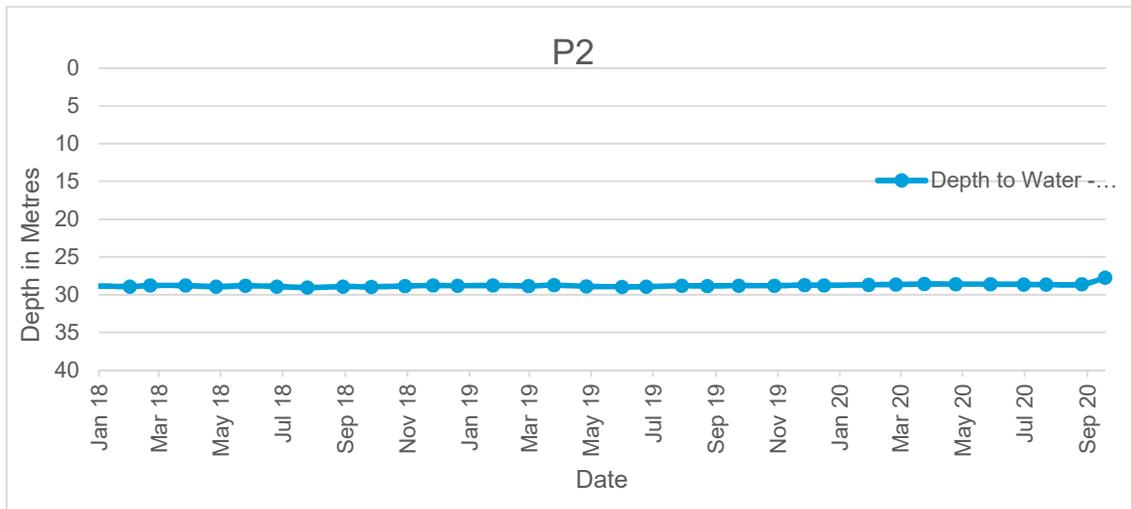
Incident(s)

Nil since previous CCC meeting.

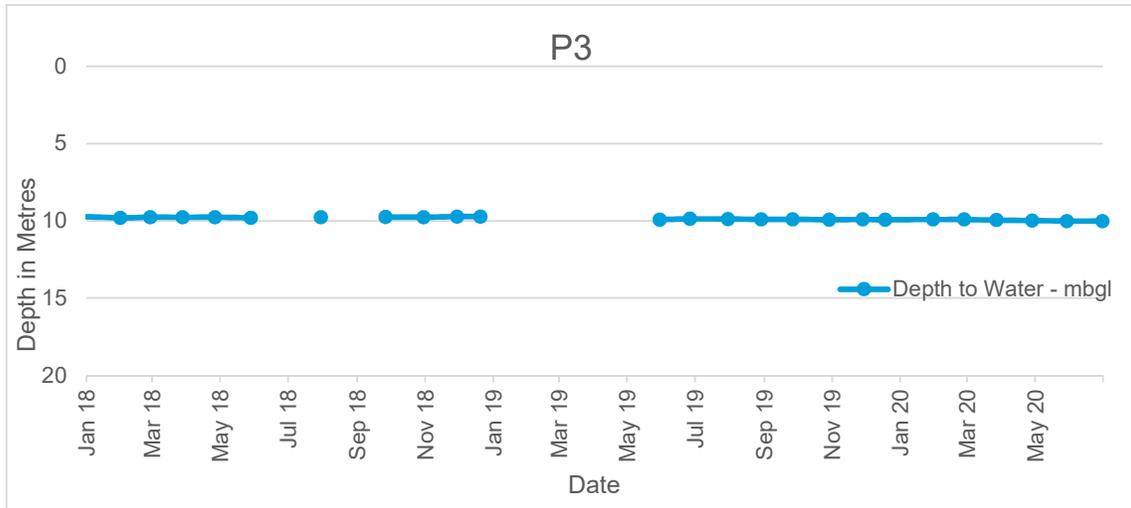
Hydrographs for Groundwater Monitoring Wells



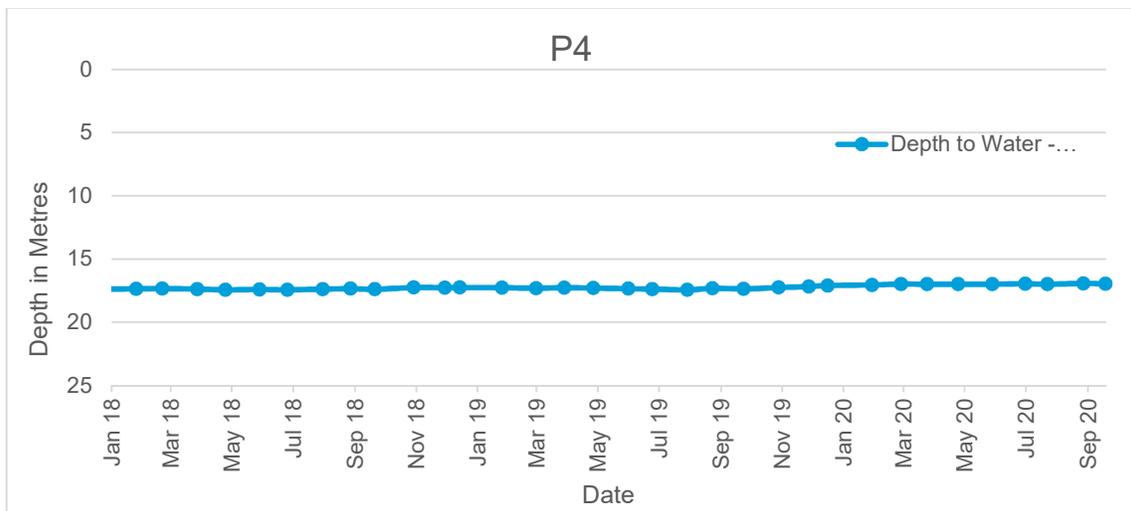
NCO Monitoring bore ID: P1
Location: Yarrabee
Geological unit: Garrawilla Volcanics
Bore depth: 50m
Explanation: Gap in data is due to land access issues.



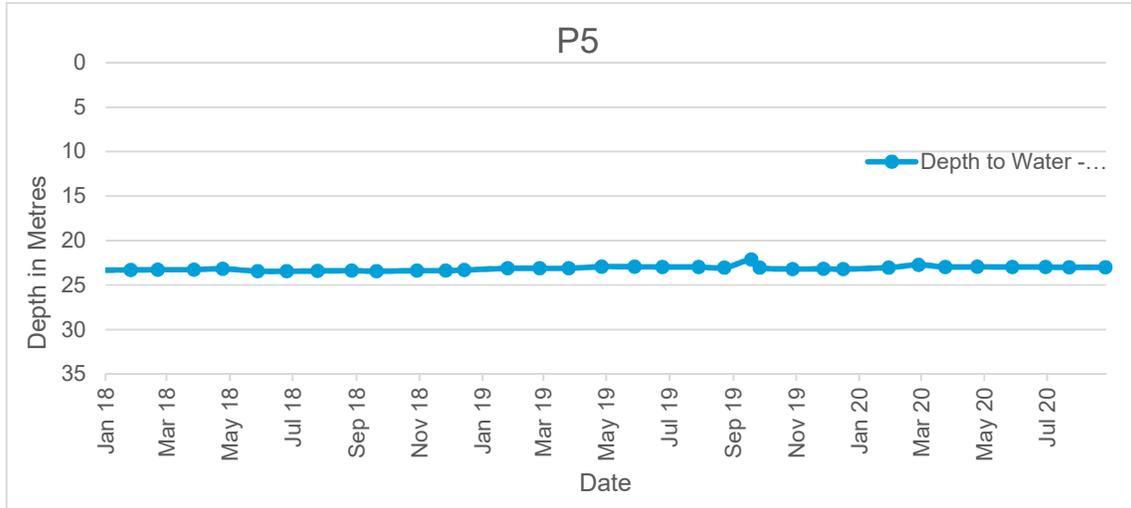
NCO Monitoring bore ID: P2
Location: Matilda
Geological unit: Napperby Formation
Bore depth: 50m



NCO Monitoring bore ID: P3
Location: Bow Hills
Geological unit: Pamboola Fromation
Bore depth: 45m
Explanation: land access issues



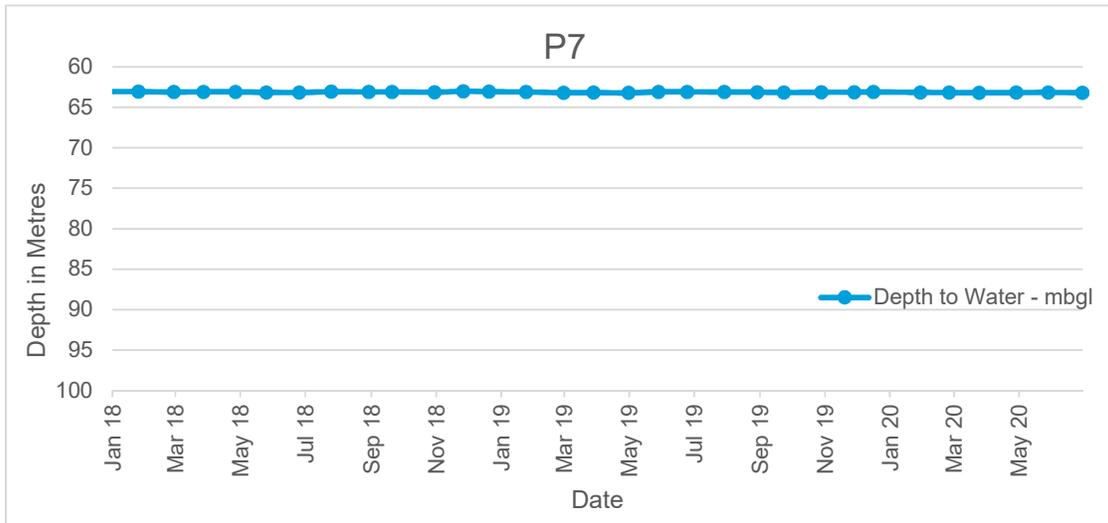
NCO Monitoring bore ID: P4
Location: North of Newhaven on Kamilaroi highway
Geological unit: Napperby Formation
Bore depth: 30m



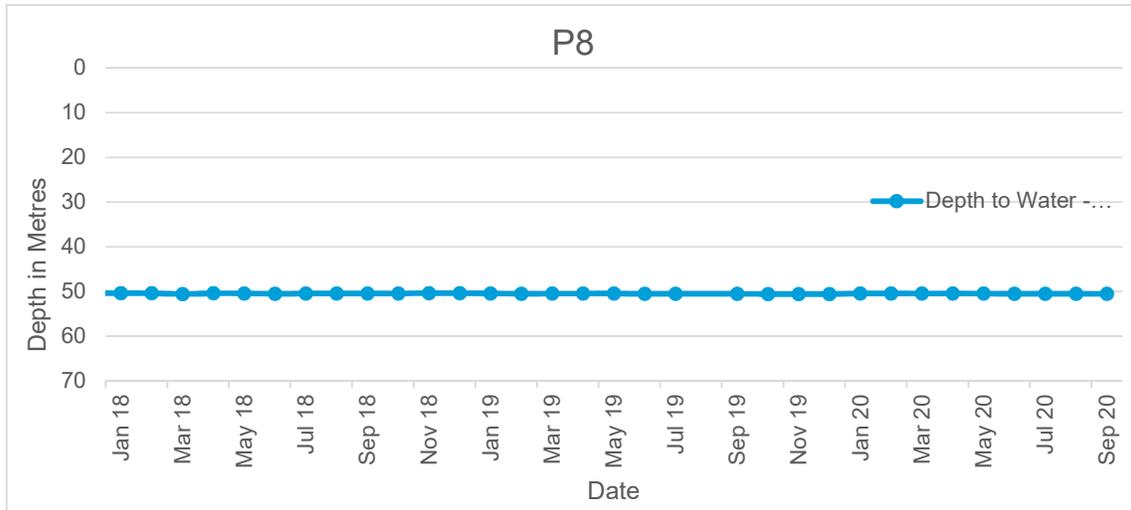
NCO Monitoring bore ID: P5
Location: Unknown - shown on Figure 10
Geological unit: Pamboola Formation
Bore depth: 30m

No Graph

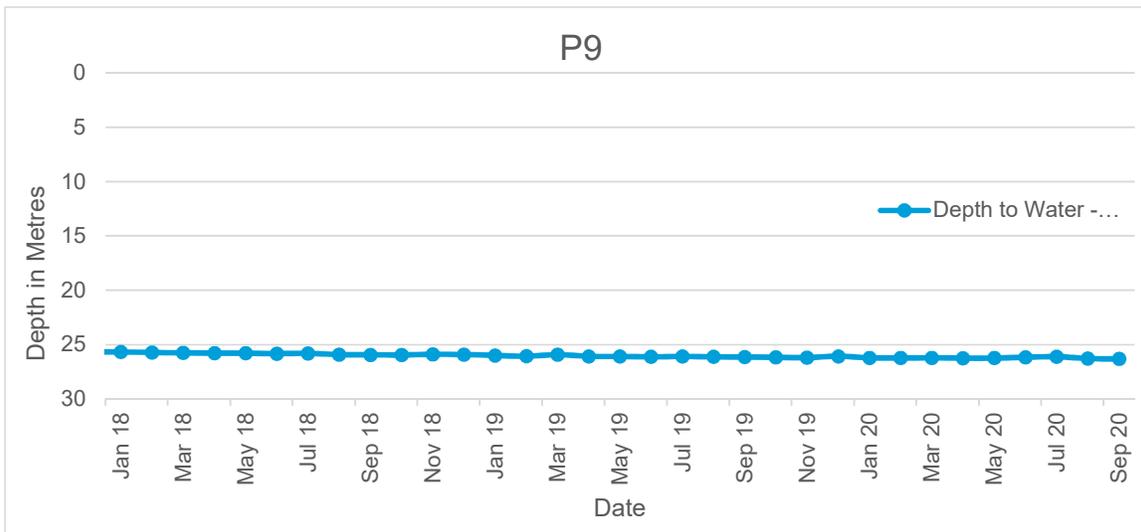
NCO Monitoring bore ID: P6
Location: shown on Figure 10
Geological unit: Pilliga sandstone
Bore depth: 90m
Explanation: Dry since 2012



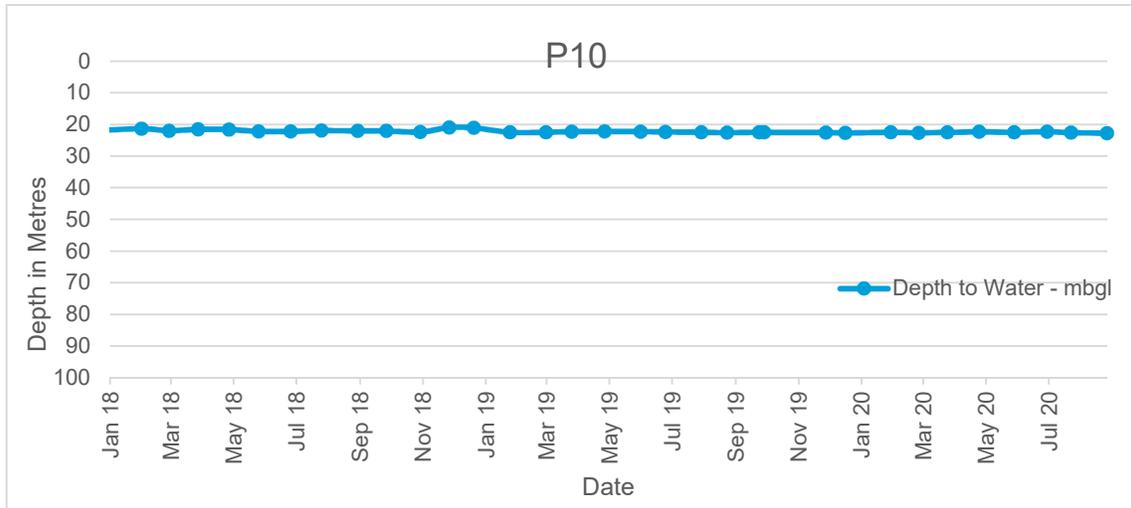
NCO Monitoring bore ID: P7
Location: shown on figure10
Geological unit: Pilliga sandstone
Bore depth: 90m



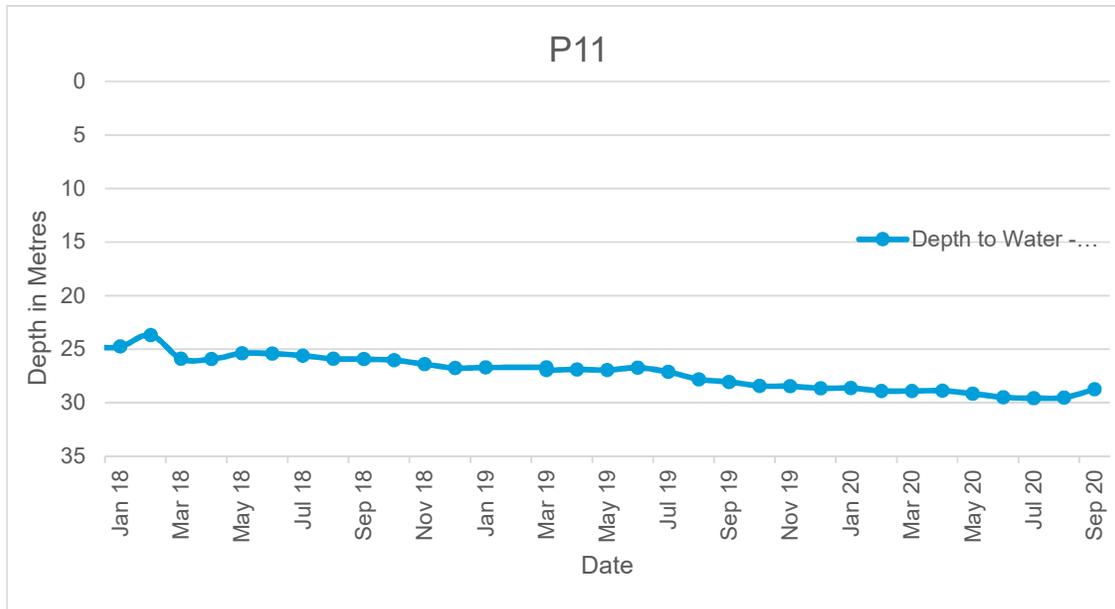
NCO Monitoring bore ID: P8
Location: Kurrajong
Geological unit: Purlawaugh Formation
Bore depth: 65m



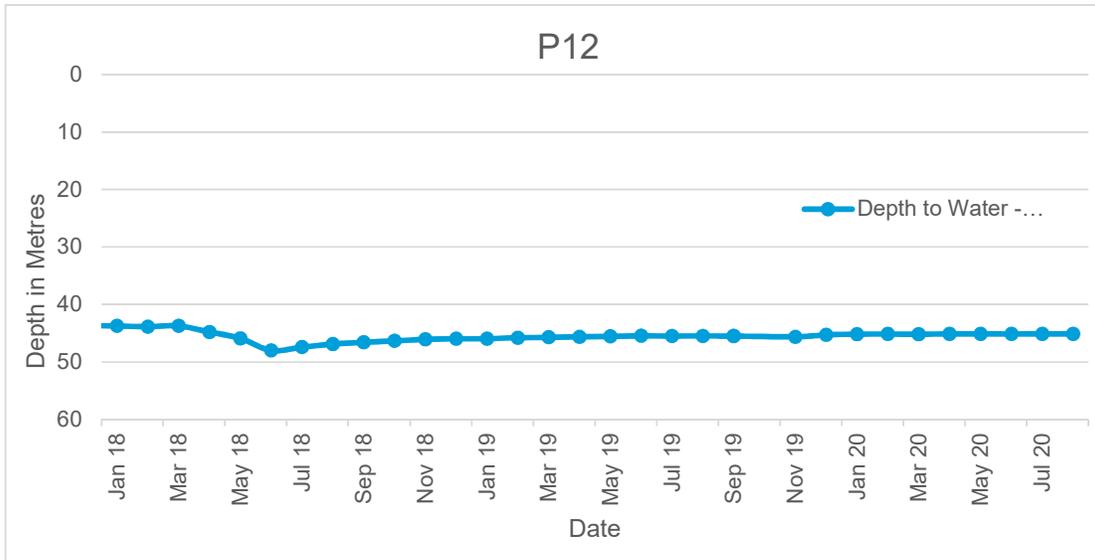
NCO Monitoring bore ID: P9
Location: NCO – Figure 10
Geological unit: Purlawaugh Formation
Bore depth: 30m



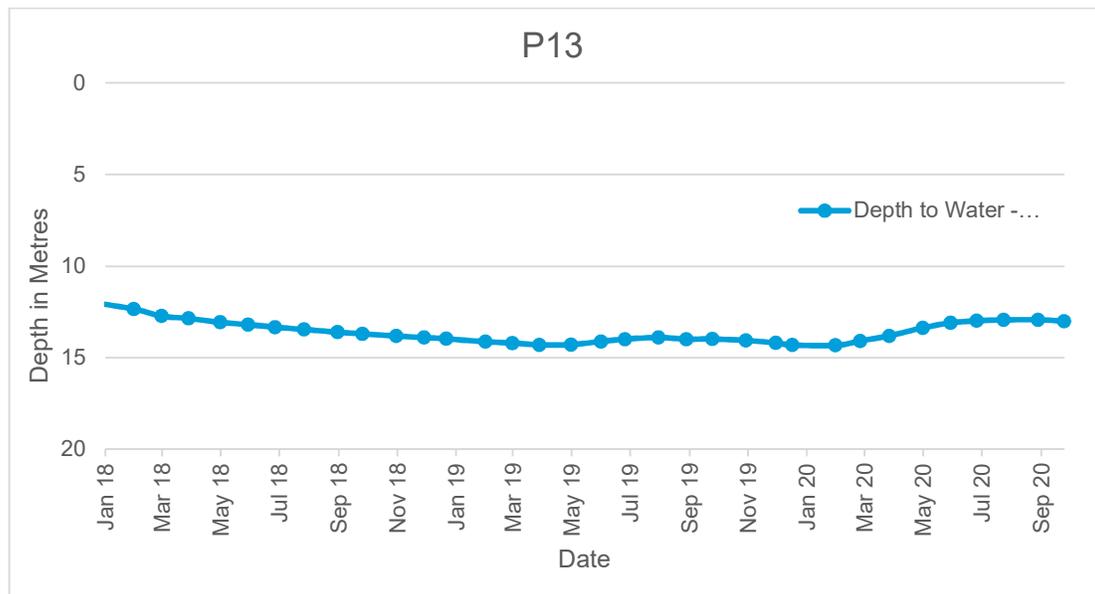
NCO Monitoring bore ID: P10
Location: NCO – see figure 10
Geological unit: Napperby Formation
Bore depth: 130m



NCO Monitoring bore ID: P11
Location: NCO – see figure 10
Geological unit: Napperby Formation
Bore depth: 50m



NCO Monitoring bore ID: P12
Location: NCO – see figure 10
Geological unit: Napperby Formation
Bore depth: 90m



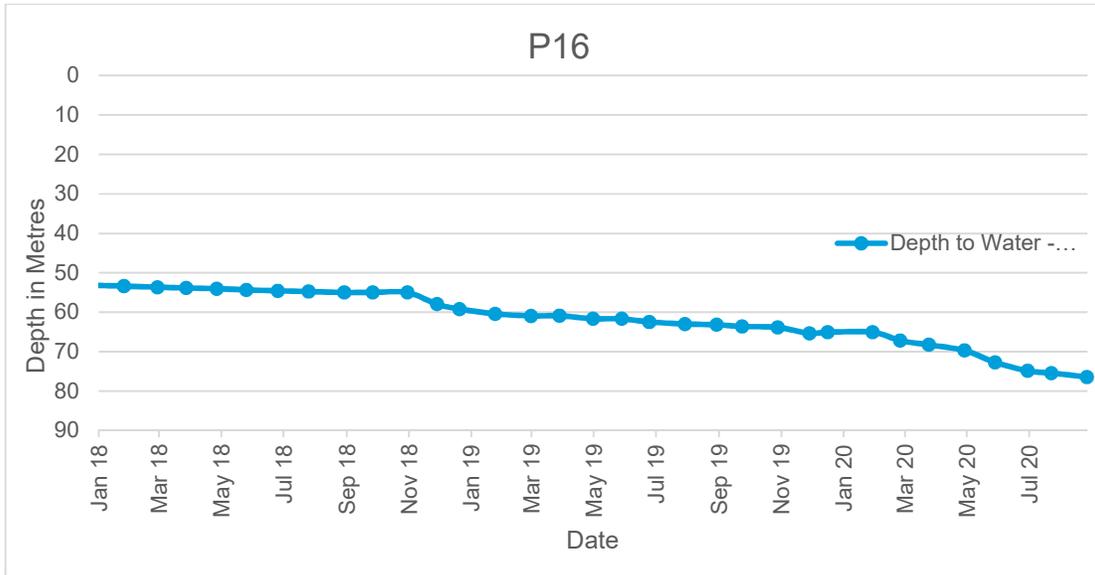
NCO Monitoring bore ID: P13
Location: NCO – see figure 10
Geological unit: Garrawilla Volcanics/Napperby
Bore depth: 30m

No Graph

NCO Monitoring bore ID: P14
Location: See Figure 10
Geological unit: Napperby Formation (no sill)
Bore depth: 78m
Explanation: Dry and blocked at 10.2m since 2012

No Graph

NCO Monitoring bore ID: P15
Location: See Figure 10
Geological unit: Garrawilla Volcanics
Bore depth: 30m
Explanation: Dry and blocked at 19m since 2016



NCO Monitoring bore ID: P16
Location: NCO (Western Boundary) – see figure 10
Geological unit: Garrawilla Volcanics
Bore depth: 146m

No Graph

NCO Monitoring bore ID: P17
Location: See figure 10
Geological unit: Purlawaugh Formation
Bore depth: 56m
Explanation: Dry since 2009

No Graph

NCO Monitoring bore ID: P18
Location: See figure 10
Geological unit: Hoskissons seam
Bore depth: 146m
Explanation: Dry since 2011

No Graph

NCO Monitoring bore ID: P20

Explanation: Cemented up – no longer monitoring

No Graph

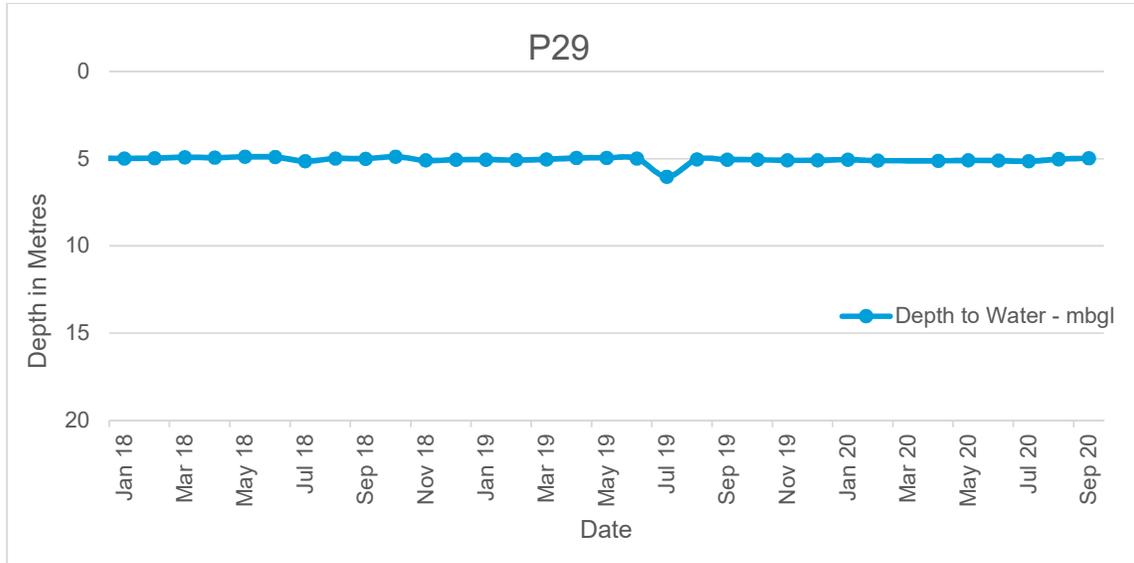
NCO Monitoring bore ID: P28

Location: See figure10

Geological unit: Napperby Formation (above sill)

Bore depth: 25m

Explanation: Dry since 2012

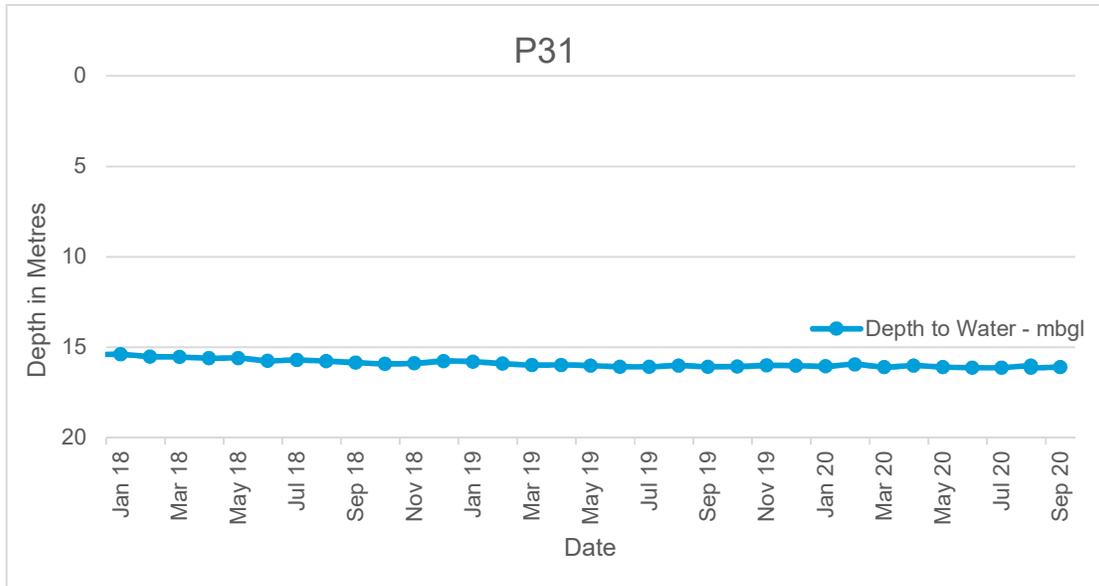


NCO Monitoring bore ID: P29

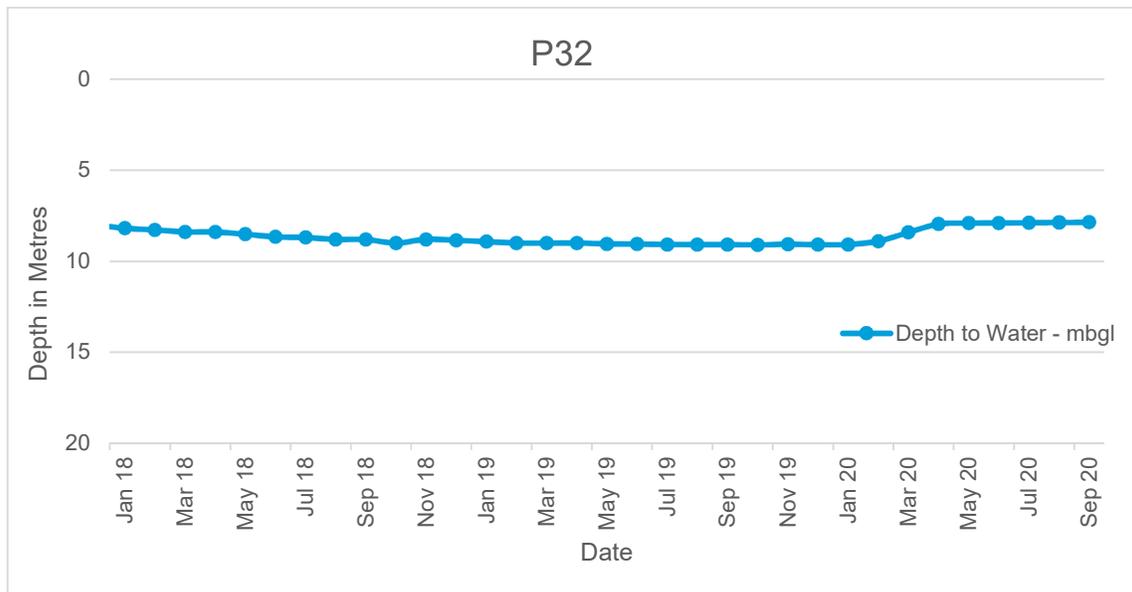
Location: NCO (Near site dams) – see figure 10

Geological unit: Napperby Formation (above sill).

Bore depth: 25m



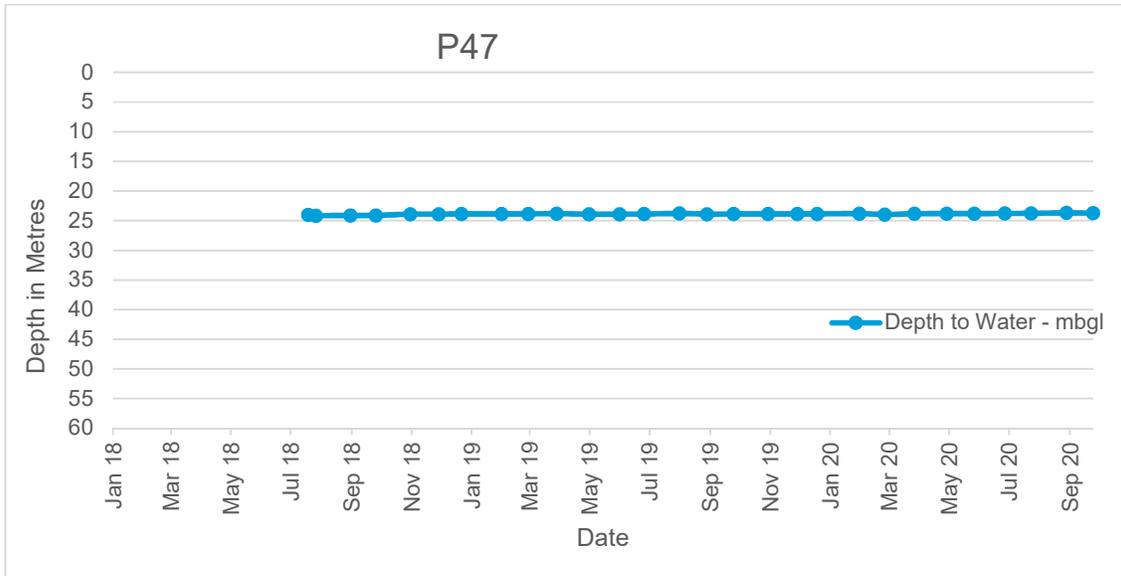
NCO Monitoring bore ID: P31
Location: NCO (Near site dams) – see figure 10
Geological unit: Napperby formation (above sill)
Bore depth: 15m



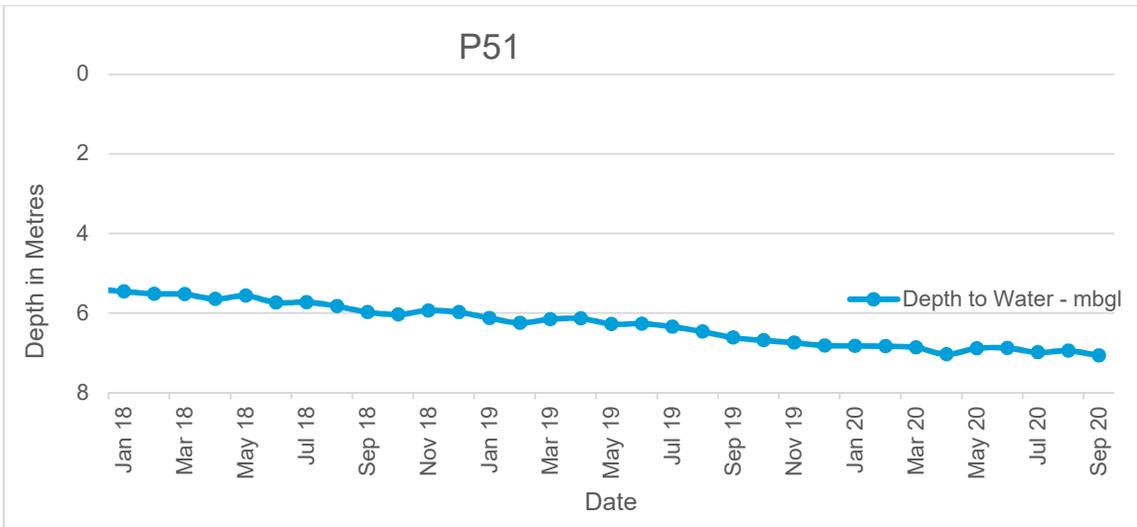
NCO Monitoring bore ID: P32
Location: NCO (Near site dams) – see figure 10
Geological unit: Napperby Formation (above sill)
Bore depth: 15m

NCO Monitoring bore ID: P33
Location: See figure 6
Geological unit: Napperby Formation (above sill)
Bore depth: 15m
Explanation: Dry since 2012

NCO Monitoring bore ID: P24
Location: See figure 6
Geological unit: Napperby Formation (above sill)
Bore depth: 15m
Explanation: Dry since 2012



NCO Monitoring bore ID: P47
Location: NCO – see figure 10
Geological unit: Garrawilla Volcanics
Bore Depth (m): 31m



NCO Monitoring bore ID: P51
Location: NCO
Geological unit: Garrawilla Volcanics
Bore Depth (m): 17m

Narrabri Mine Community Consultative Committee Meeting #51

Date: Wednesday 16 December 2020
Time: 5:00pm
Location: Baan Baa Hotel

Present: Russel Stewart (RS)
Peter Webb (PW)
Geoff Hunter (GH)
Mark Foster (MF)
James Stieger (JS)
Ian Duffy (ID)
Rodney Dunlop (RD)
David Ellwood (DE) – Narrabri Coal – Director Stage 3 Project
Brent Baker (BB) – Narrabri Coal - Environmental Superintendent
Mitchum Gregory (MG)- Narrabri Coal- Environmental Compliance Officer
Gerald Linde (GL) - Narrabri Coal- General Manager
Andrew Garratt (AG) – Whitehaven Coal – General Manager Community Engagement

Apologies: Cathy Redding
Charlie Melbourne

1. DECLARATION OF PECUNIARY INTEREST

None

2. PREVIOUS MINUTES

RS asked that previous minutes are accepted as an accurate record.

Moved: GH Seconded: PW

2.1 BUSINESS ARISING FROM PREVIOUS MINUTES

BB outlined consultation undertaken with PineView landholders with respect to noise and dust monitoring results.

3. OPERATIONS PROGRESS REPORT AND SAFETY UPDATE

Presented by GL

- GL provided overview of current financial year production and safety performance.
- GL commented on recent challenges encountered longwall mining through fault structures.
- General discussion around coal price and global markets.

4. ENVIRONMENTAL MONITORING REPORT

See Appendix A

Presented by BB

- **DEPOSITIONAL DUST-** 2020 annual average for all monitoring locations below licence limit of 4 g/m²/month. Additional information provided regarding dust characterisation.
- **PM10 AIR QUALITY-** Monitoring locations Claremont and Turrabaa are recording annual averages below the limit of 30 µg/m³ (14.07 µg/m³ and 15.08 µg/m³ respectively). No exceedances of the 24 hour limit since previous CCC meeting.
- **QUARTERLY NOISE MONITORING**
Attended noise monitoring was undertaken over 3 days in November 2020 (Q4) with compliance achieved at all locations during all time periods.
JS commented that not much happening at pit-top operations during monitoring period. BB/GL explained that only change was that CHPP wasn't operating normally due to extensive fault structure encountered by longwall miner, however remainder operations were as per normal operating conditions (eg. ventilation fans still operating, drilling above longwall panels, stockpile dozer activity, trains being loaded and general site activity). BB explained that monitoring is planned and scheduled to be undertaken under normal operating conditions, however significant events such as the fault encountered by longwall can't be planned for.
- **SURFACE WATER MONITORING:**
No wet weather discharges have occurred from licensed discharge points during October-November 2020.
- **WATER LICENSING:** Presented graphs showing NCO water licence allocation usage. Namoi bore usage has been minimal and instead have been utilising Namoi River entitlements during recent flow events.
Mine dewatering volume pumped from box-cut provided.

BB/GL explained network of dams on site and general operation of water management at pit-top.
- **GROUNDWATER MONITORING:** Groundwater monitoring results are reviewed at the end of each year by a suitably qualified hydrogeologist and reported on in the 2020 Annual Review. Update will be provided to CCC when results are available.
- **SUBSIDENCE MONITORING:** Monitoring undertaken at six monthly intervals, with survey work completed during November. Results provided and discussion around minor exceedances of subsidence predictions. DE/GL discussed how subsidence develops and presents at the surface. JS expressed concerns around subsidence ponding and what would happen downstream following an extraordinary rainfall event.
- **GROUNDWATER MONITORING:** Discussed hydrographs. BB explained water levels reviewed annually by hydrogeologist in Annual Groundwater Monitoring Report.
- **COMPLAINTS:** No complaints were received since previous CCC meeting.
- **INCIDENTS:** No reportable incidents since previous CCC meeting.

No further questions/comments from members.

5. STAGE 3 UPDATE

DE provided update.

Since the last CCC meeting the Stage 3 project has:

- Submitted EIS. Has been on public exhibition for 6 weeks and submission window closed today.
- Delivered presentation to Narrabri Shire Council and Narrabri Chamber of Commerce.
- Community Drop-in Session held at Bann Baa on 28 November.
- Stage 3 advertisements in papers circulated over the last 6 weeks, by NCO and DPI&E.
- Stage 3 flyers posted at various local centres and dropped in mailboxes.

DE explained next steps for EIS approvals. DE explained DPI&E will prepare a summary of the public and government agency submissions that were received during the 6 week exhibition period. NCO will then need to prepare a "Response to Submissions" report and provide this back to DPI&E for assessment. Based on the submissions received there may be further studies required to support the EIS.

GH commented based on his review of EIS there seem to be extra impacts, for example the identified impact on a number of stock and domestic bores.

DE provided an overview of the groundwater study undertaken for the EIS which included a Bore Census to identify all bores that would be impacted and modelling on the predicted impacts. DE explained that following this work NCO considered it necessary to carry out a second Bore Census program at an increased distance from the mine to ensure that potential impacts were appropriately assessed.

GH expressed concern about identified drawdown in some private bores and how that impacts on future land use. GH commented EIS identified up to 2m drawdown in Zone 5 and this concerns him and would like to understand these modelled impacts further. GH commented EIS identified 12-20m drawdown in stock and domestic in Gunnedah-Oxley Basin and finds this modelled impact hard to accept.

JS commented that the total water licence extractions from the mine are still low compared to what irrigator pumps take from the river.

DE outlined that any impacts to private bores are subject to 'make-good arrangements' which become a legal obligation should the Project Approval be granted. GL explained the various legal mechanisms that ensure that our obligations continue to be met post-mining, and discussed other benefits that the mine contributes to the local environment such as establishment of Biodiversity Offset areas.

DE explained that the groundwater modelling has adopted a very conservative approach with respect to potential impacts. GL commented that the current Stage 2 model is an example, where the model forecast that at the current point in time the operation should be a net water exporter, but in reality the actual water extractions from the mine are significantly lower than what was modelled.

GH asked if mine required more licences for Stage 3. DE commented that he would have to review EIS to confirm, but that majority of water take comes from Gunnedah Oxley Basin for which the mine has existing water licences.

DE commented that groundwater modelling is a very technical area. DE asked if CCC would like an expert to attend the next meeting to explain Stage 3 modelling results. Not requested from CCC members.

General discussion around mine development timeframes and development of ventilation surface infrastructure. DE outlined proposed design and controls for new vent fans which will result in reduced noise impacts.

No further questions/comments from members.

6. GENERAL BUSINESS

- GH queried progression of proceedings re. EL6243 breaches of Mining Act. GL explained the breaches that occurred, the charges that the Resources Regulator has brought against the Narrabri Mine entities, and the current processes that the mine is working through in coordination with the Regulator.

No further questions/comments from members.

NEXT MEETING

- Wednesday the 10 March 2020 at Narrabri Mine.

Narrabri Mine Community Consultative Committee Meeting #51

Environmental Monitoring Report: October 2020 – December 2020

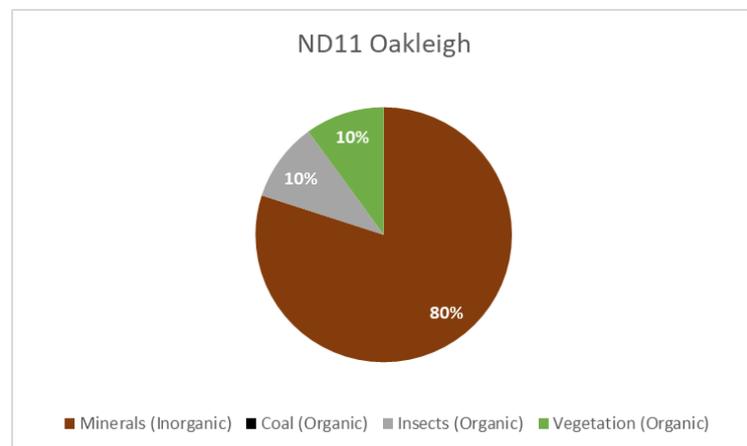
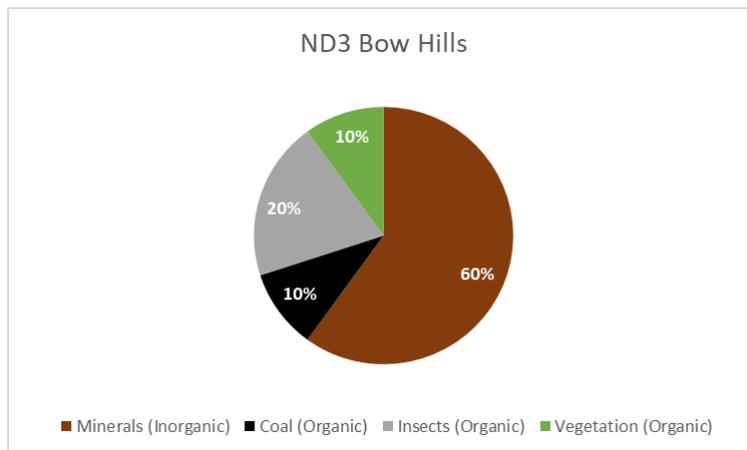
Deposited Dust Monitoring

Month	Total Insoluble Matter results (g/m ² /month)										
	ND1 Turrabaa	ND2 Claremont	ND3 Bow Hills	ND4a New Matoppo	ND5 Claremont	ND6 Willarah	ND7 Claremont	ND8 Claremont	ND11 Oakleigh	ND12 Merriman	ND13 Darjeeling
October 2020	2.8	1.5	4.4	2.5	2.0	2	3.9	2.6	2.1	0.9	0.6
November 2020	1.1	0.7	1.5	1.1	2.2	1.1	1.6	2.5	1.4	1	1.2

Results are assessed during the end of year Annual Review process, and if it is determined that mine related activities have caused a contribution above the annual average limit of 4 g/m²/month appropriate notifications will be prepared.

2020 annual average for all monitoring locations are below the licence limit of 4 g/m²/month (Insoluble Matter).

Below figures provide example of dust characterisation for November results at two locations.



PM₁₀ High Volume Air Sampling (HVAS)

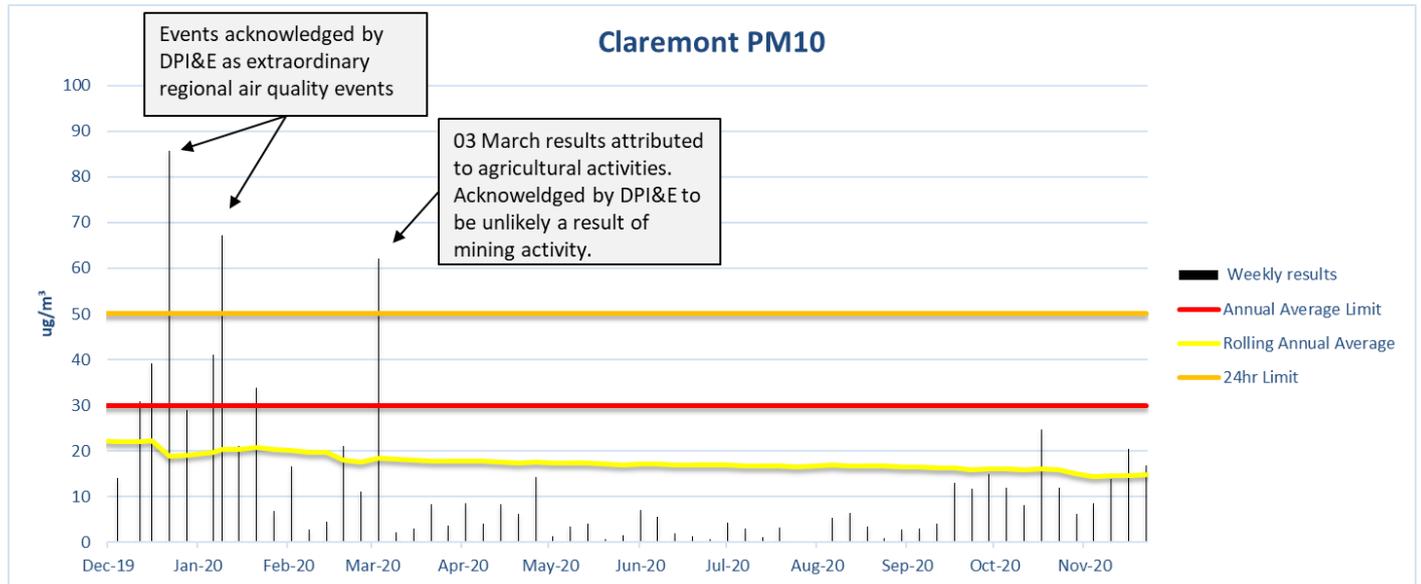


Figure 1: Claremont PM₁₀ High Volume Air Sampler results. Samples are collected over a 24 hour period once every week, with a (24hr) compliance limit of 50 µg/m³.

The Claremont HVAS is returning an annual average of 14.70 µg/m³, which is below the annual average limit of 30 µg/m³.

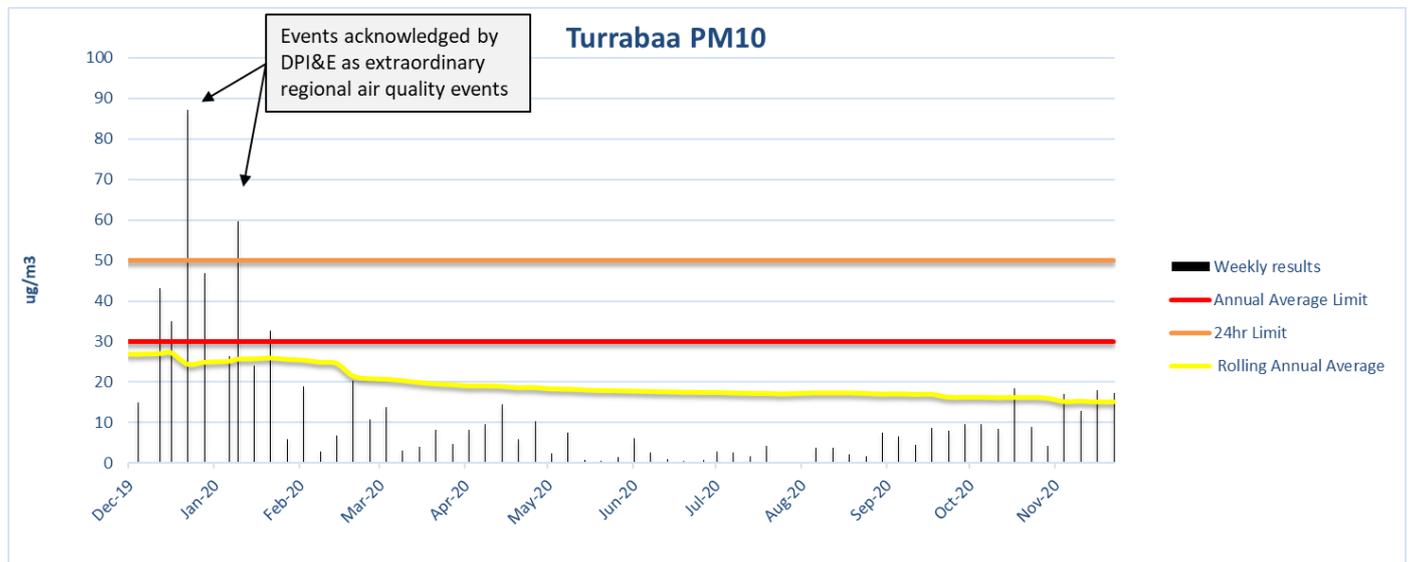


Figure 2: Turrabaa PM₁₀ High Volume Air Sampler results. Samples are collected over a 24 hour period once every week, with a (24hr) compliance limit of 50.0µg/m³.

The Turrabaa HVAS is returning an annual average of 15.08 µg/m³, which is below the annual average limit of 30 µg/m³.

Noise Monitoring

Quarterly attended noise monitoring was completed in accordance with approval conditions during the 03rd to 05th November 2020 (summary of results provided below).

Compliance was achieved at all locations during all time periods.

EPL ID	Location	Date	Narrabri Mine Contribution dBA			Noise Criteria ²	Measurement Periods	Weather Compliant		Compliant ¹
			LAeq 15 min Day	LAeq 15 min Evening	LAeq 15 min Night			Day	Evening	
N5	Oakleigh ⁴	03/11/2020	I/A	I/A	I/A	Day, Evening and Night – LAeq(15minute) 35 dBA	Day - 1.5 hrs Evening - 0.5 hrs Night – 1hrs	N	Y	Y
		04/11/2020	26	I/A	30			Y	Y	N
		05/11/2020	<25 ⁵	I/A	I/A			Y ⁵	N	N
N6	Newhaven	03/11/2020	I/A	N/M ⁵	31	Night LA1(1minute) – 45 dBA	Day - 1.5 hrs Evening - 0.5 hrs Night – 1hrs	N	Y ⁵	N
		04/11/2020	I/A	I/A	27			Y	Y	N
		05/11/2020	N/M ⁵	26	27			Y ⁵	N	N
N9	High Range ³	03/11/2020	26	<25	28	Night LA1(1minute) – 45 dBA	Day - 1.5 hrs Evening - 0.5 hrs Night – 1hrs	N	Y	N
		04/11/2020	I/A ⁵	I/A	I/A			Y ⁵	Y	N
		05/11/2020	I/A	25	26			N	N	Y
-	Bow Hills ²	04/11/2020	<30	30	26	Day 15 min Evening 15 min Night 15 min	N	Y	N	
-	Ardmona	04/11/2020	I/A	I/A	I/A		N	Y	N	
-	Merriman ⁴	04/11/2020	I/A	I/A	<25		N	Y	N	
-	Matilda ⁴	04/11/2020	I/A	I/A	26		N	Y	N	

I/A = Inaudible, N/M = Not Measurable
 Note 1: Compliant during applicable meteorological conditions.
 Note 2: A private agreement between NCOPL and the residents of M1 Bow Hills of 50 dBA LAeq(15minute) is in place. This new level of 50 dBA LAeq(15minute) replaces the levels identified in Conditions 1-3, Schedule 4 of PA 08_0144 Mod 2 and the identical limits contained in condition L3 of Environment Protection Licence No 12789
 Note 3: A private agreement between NCOPL and the residents of N9 High Range of 40 dBA LAeq(15minute) and 50 dBA LA1(1minute) is in place. These new levels of 40 dBA LAeq(15minute) and 50 dBA LA1(1minute) replace the levels identified in Conditions 1-3, Schedule 4 of PA 08_0144 Mod 2 and the identical limits contained in condition L3 of Environment Protection Licence No 12789
 Note 4: Property is owned by Narrabri Coal Operations
 Note 5: Weather not compliant for all individual 15 minute measurements at this location. Noise levels presented are the highest measured noise level under compliant weather conditions over the monitoring period.

Surface Water Monitoring

No wet weather discharges have occurred from licensed discharge points during September – December 2020.

NSW Water- Licenced Usage

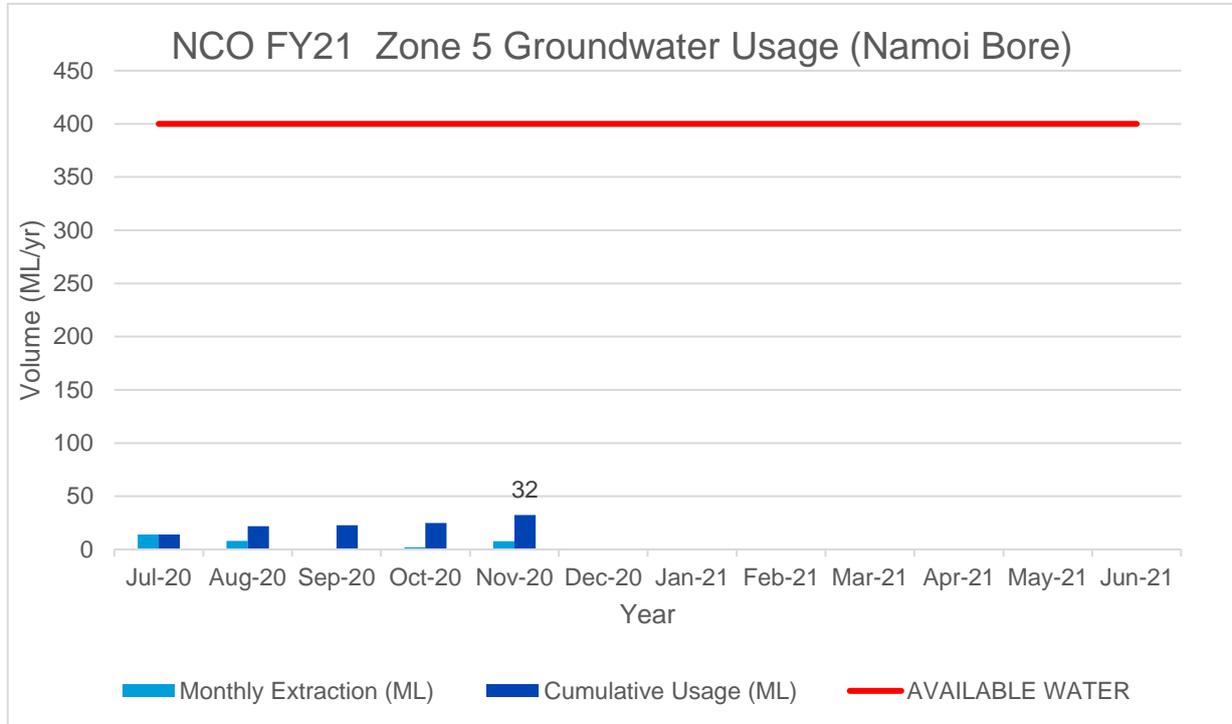


Figure 3: Zone 5 licensed groundwater usage from the Namoi Bore over the current Financial (Water) Year.

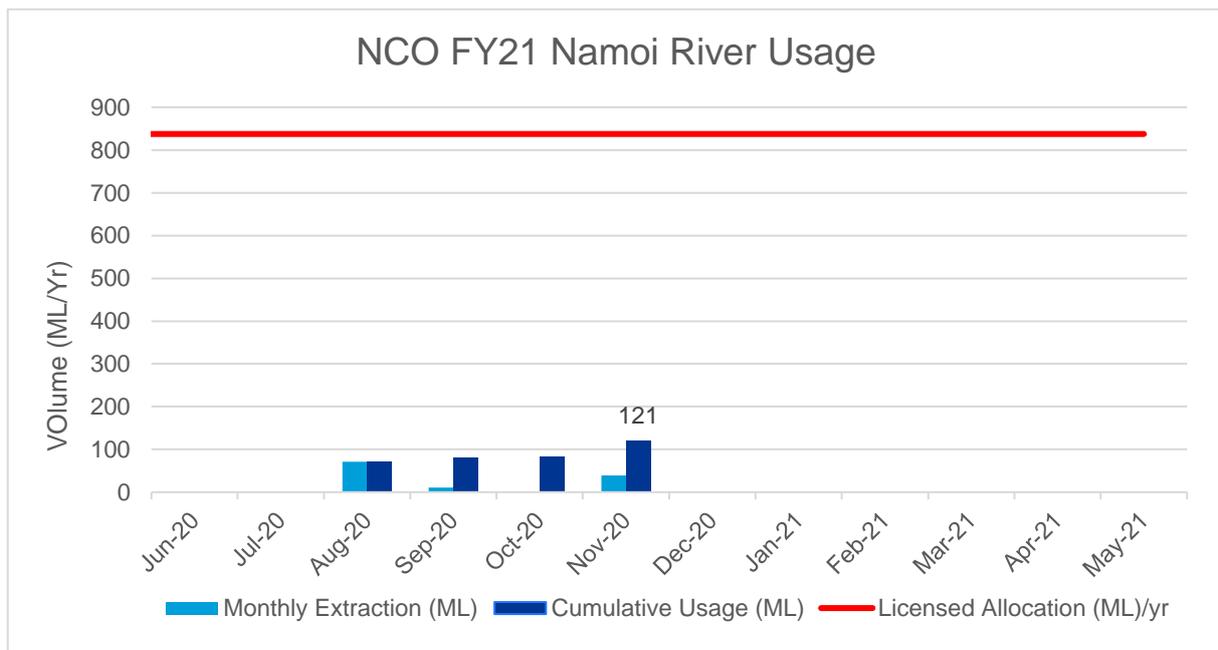


Figure 4: Namoi River usage over the current Financial (Water) year.

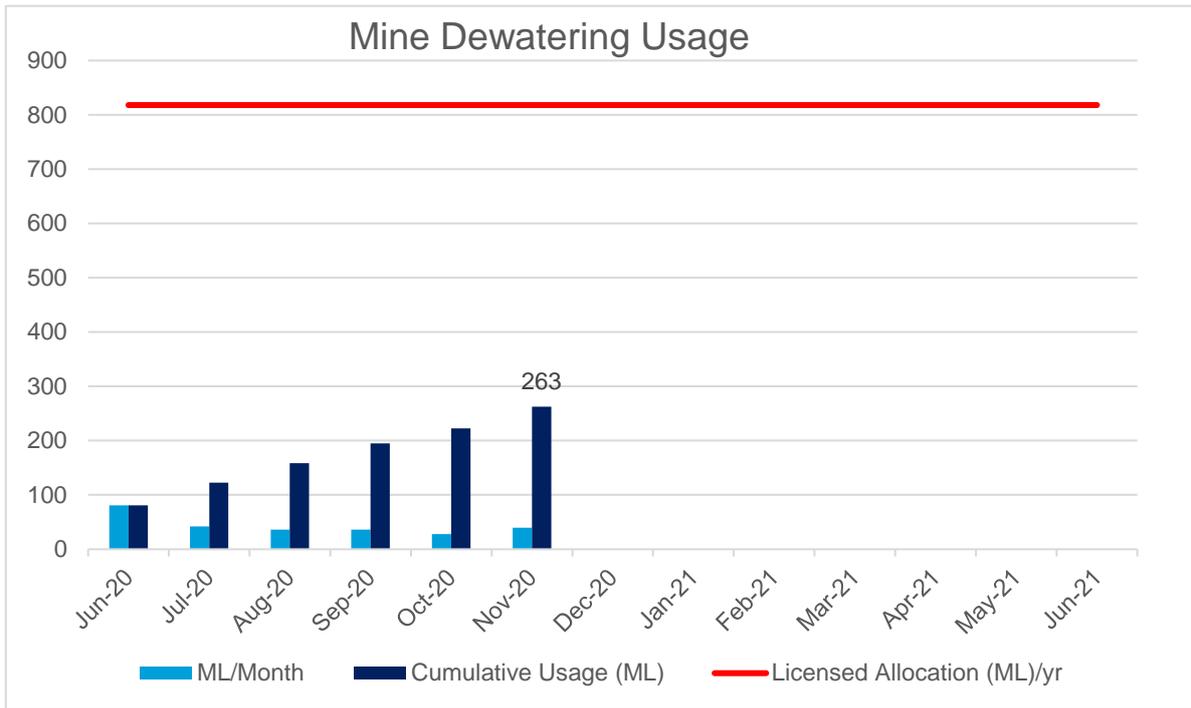


Figure 8: Dewatering from Box Cut over the current Financial (Water) year.

Groundwater Monitoring

Groundwater monitoring results are reviewed at the end of each year by a suitably qualified hydrogeologist and reported on in the Annual Review. When the 2020 report is available a summary will be provided to CCC.

Subsidence Monitoring

Narrabri Mine has monitored the subsidence movement across the surface of LW 107, 108 & Line H in accordance with the approved Extraction Plans. 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) 107 – 108		
	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 – Monitoring has ceased		
Line 103 – Centre of LW103 – Southern – Monitoring has ceased		
Line 104 – Centre of LW104 – Northern – Monitoring has ceased		
Line 104 – Centre of LW104 – Southern – Monitoring has ceased		
Line 105 – Centre of LW105 – Northern – Monitoring has ceased		
Line 105 – Centre of LW105 – Southern – Monitoring has ceased		
Line 106 – Centre of LW106 – Northern – Being closed out		
Line 107 – Centre of LW107 – Northern (measured 04/11/20)		
Subsidence (m)	2.75	2.74
Tilt (mm/m)	44	28.0
Tensile Strain (mm/m)	13	10.3
Compressive Strain (mm/m)	16	12.4
Angle of Draw (°, Degrees)	26.5	24.1
Line 108 (measured 13/11/20)		
Subsidence (m)	2.75	2.68
Tilt (mm/m)	38	36.3
Tensile Strain (mm/m)	10	16.2
Compressive Strain (mm/m)	13	38.9
Angle of Draw (°, Degrees)	na	24.7
Line 108 – Southern		
Line A – Cross Panel Survey Line – Being closed out		
Line B – Pine Creek Tributary 1 – Monitoring has ceased		
Line D – Pine Creek – Monitoring has ceased		
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 (measured 06/11/20)		
Subsidence (m)	2.75	2.86
Tilt (mm/m)	53	31.8
Tensile Strain (mm/m)	13 – 20^	16.6
Compressive Strain (mm/m)	16 – 24^	18.3

Summary of results for the most recently completed survey measurements indicate:

- The maximum subsidence measurement of Line H (2.86m) exceeds predicted value of 2.75m. LW 107 and 108 measurements are within predicted values.

- The maximum tilt measurements recorded were within the predicted values.
- The maximum tensile and compressive strain measurements for LW108 exceeds predicted values. LW107 and Line H measurements were within predicted values.

Complaints

Since the beginning of 2020 a total of six complaints have been received (in relation to noise).

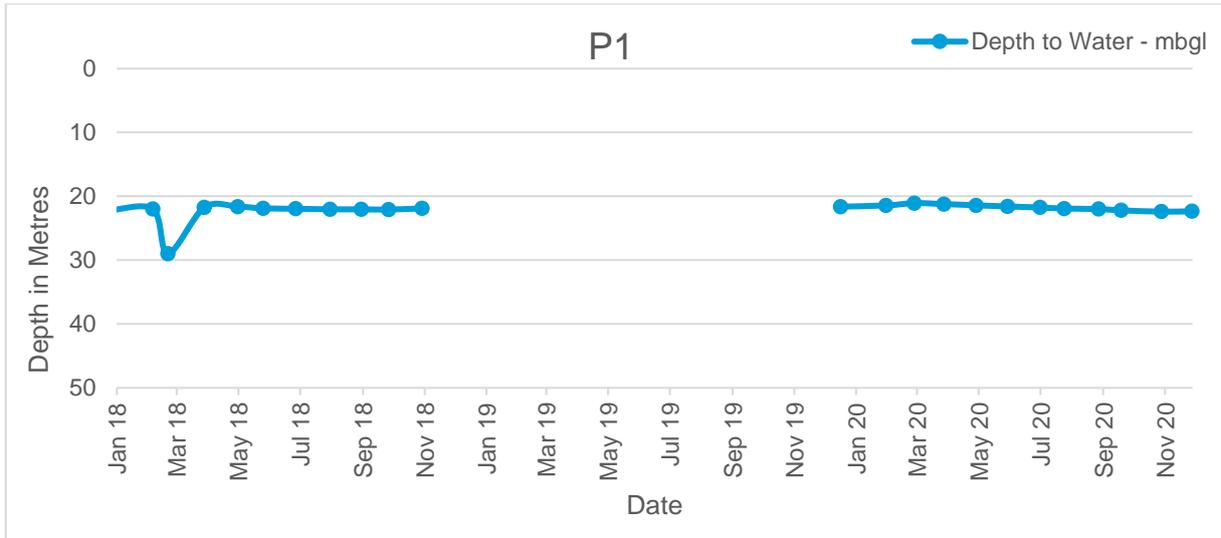
Reportable Incidents

Nil since previous CCC meeting.

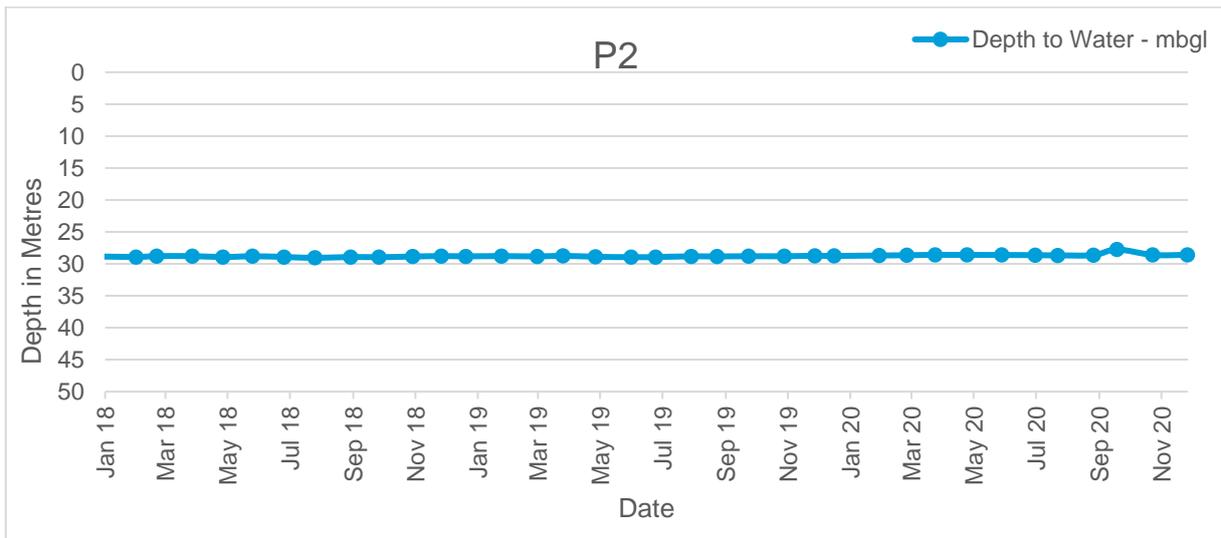
Hydrographs for Groundwater Monitoring Wells



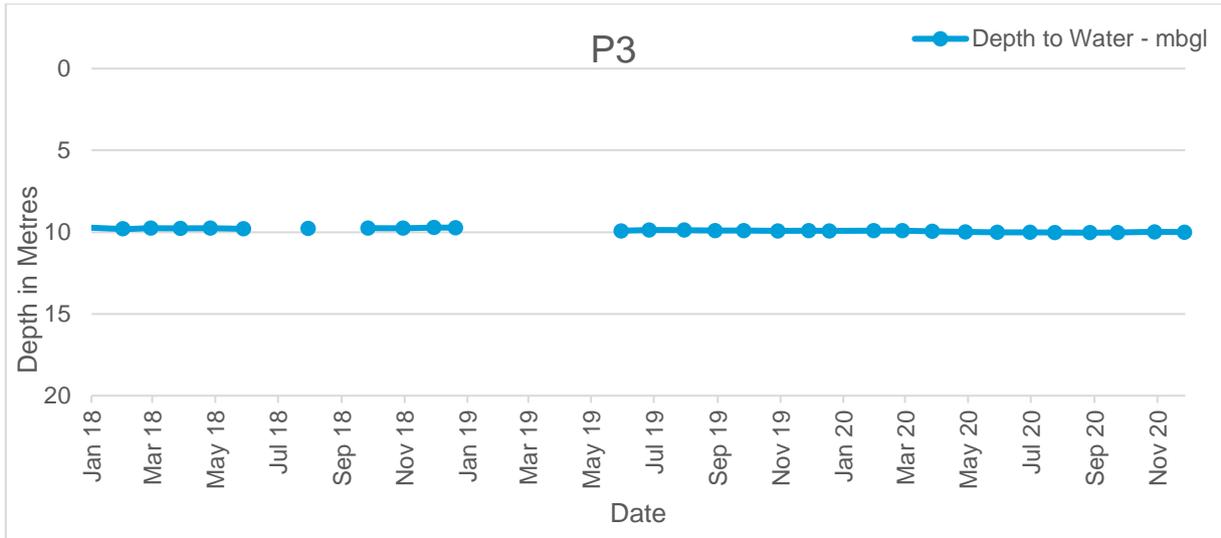
Figure 9: Location of groundwater monitoring wells



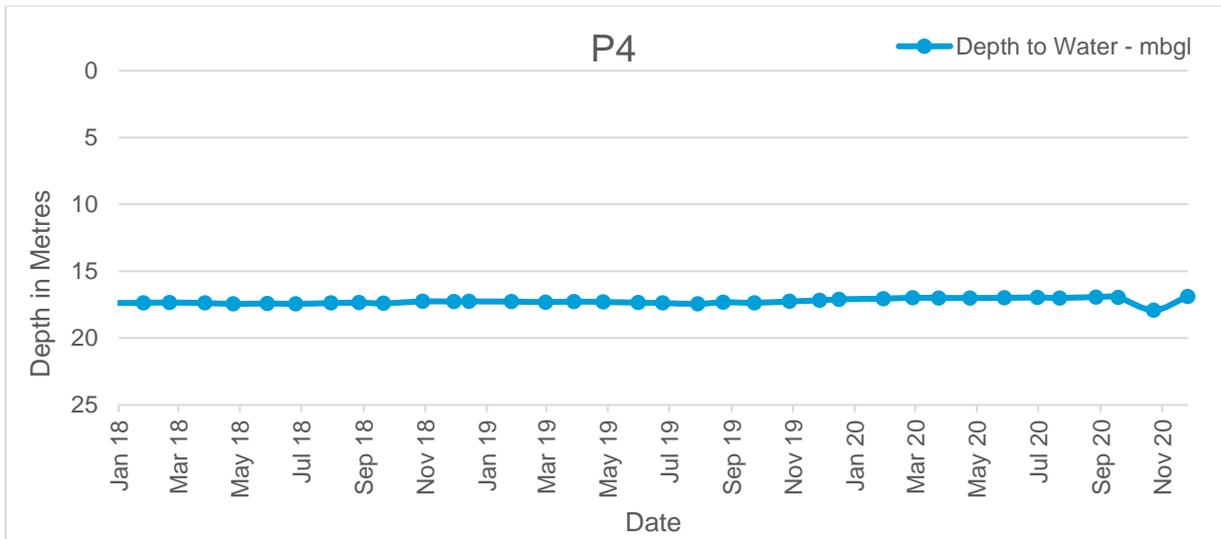
NCO Monitoring bore ID: P1
Location: Longsight
Geological unit: Garrawilla Volcanics
Bore depth: 50m
Explanation: Gap in data is due to land access issues.



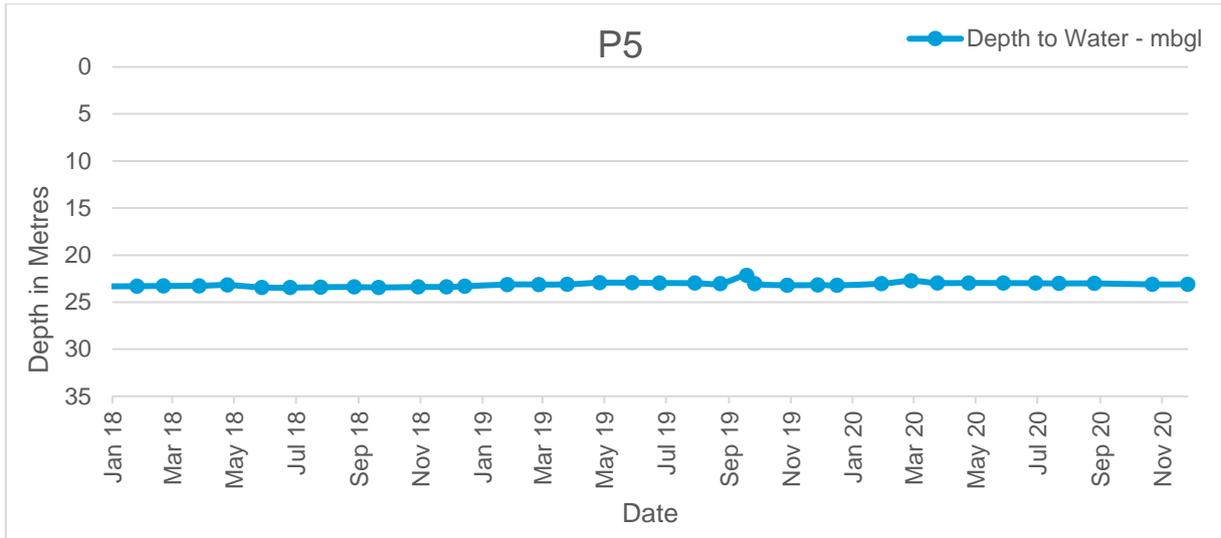
NCO Monitoring bore ID: P2
Location: Matilda
Geological unit: Napperby Formation
Bore depth: 50m



NCO Monitoring bore ID: P3
Location: Bow Hills
Geological unit: Pamboola Formation
Bore depth: 45m



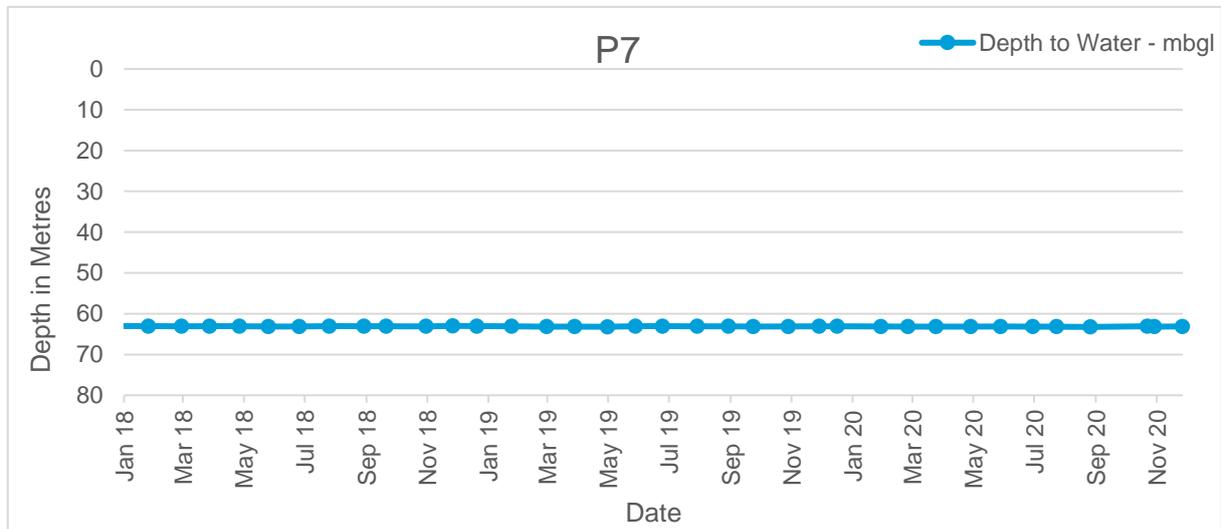
NCO Monitoring bore ID: P4
Location: North of Newhaven on Kamilaroi highway
Geological unit: Napperby Formation
Bore depth: 30m



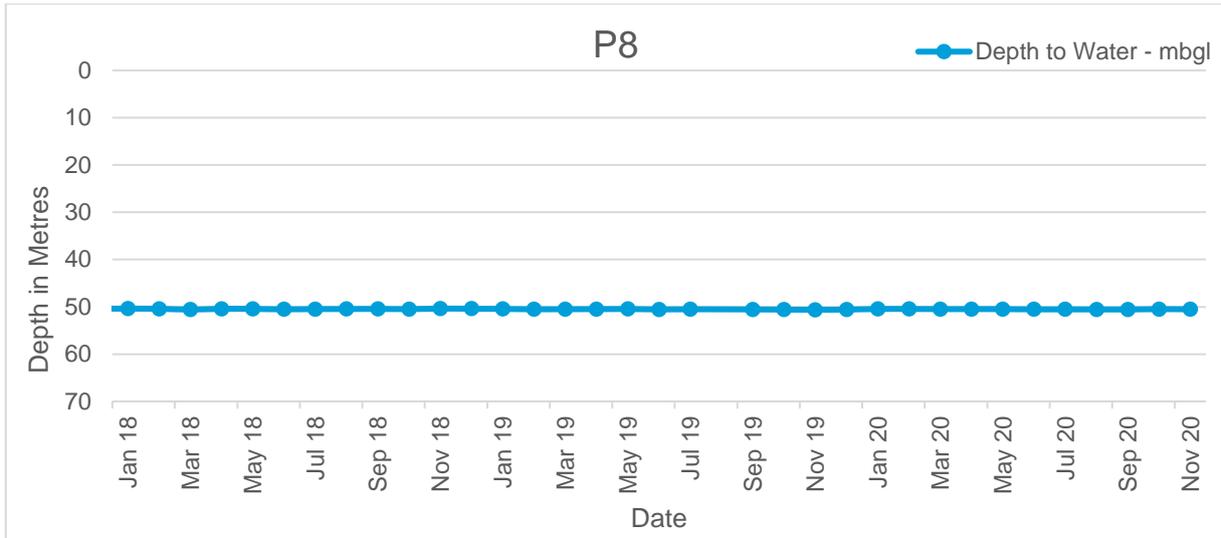
NCO Monitoring bore ID: P5
Location: Unknown - shown on Figure 10
Geological unit: Pamboola Formation
Bore depth: 30m

No Graph

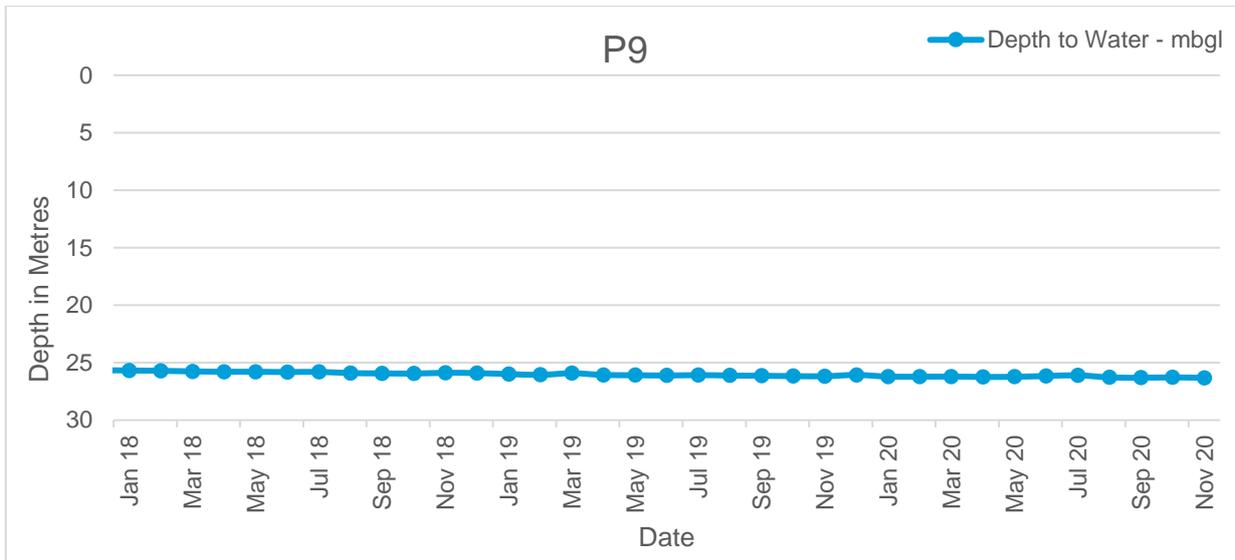
NCO Monitoring bore ID: P6
Location: shown on Figure 10
Geological unit: Pilliga sandstone
Bore depth: 90m
Explanation: Dry since 2012



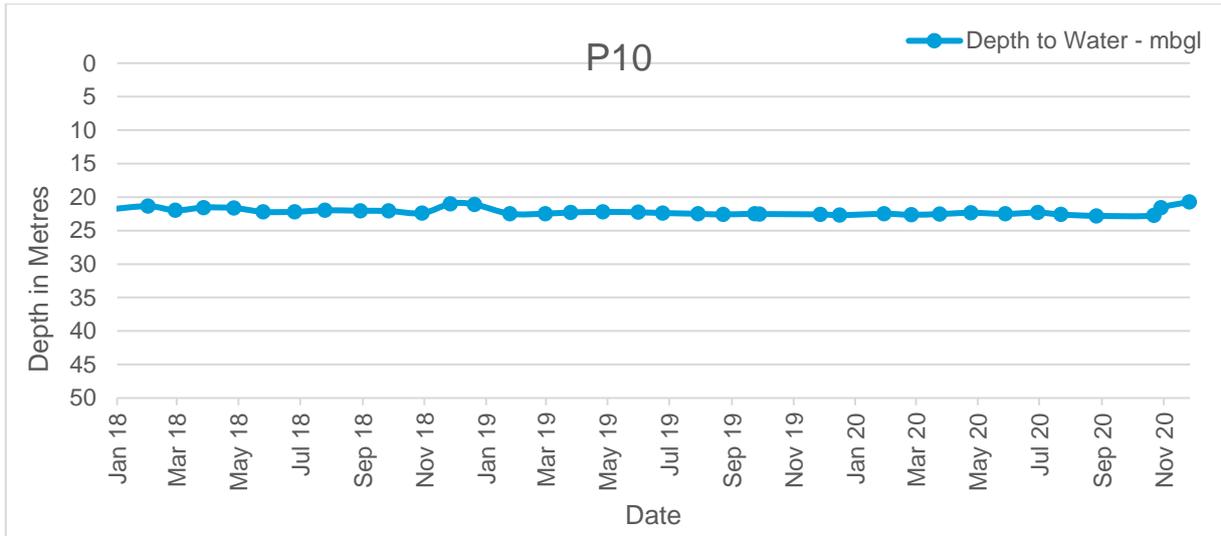
NCO Monitoring bore ID: P7
Location: State forest
Geological unit: Pilliga sandstone
Bore depth: 90m



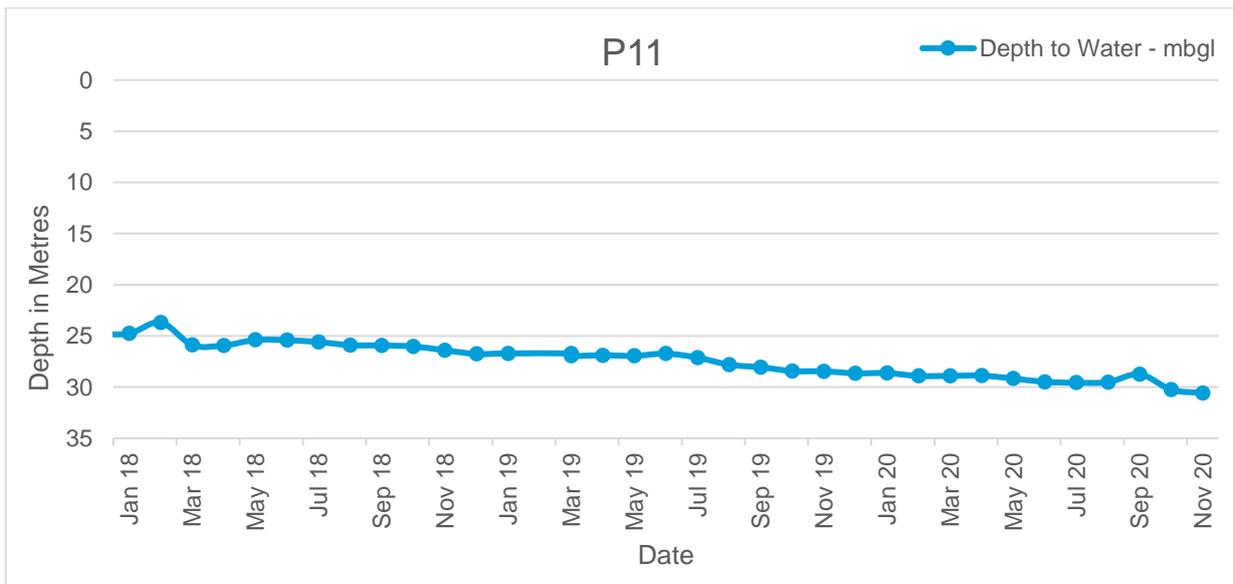
NCO Monitoring bore ID: P8
Location: Kurrajong
Geological unit: Purlawaugh Formation
Bore depth: 65m



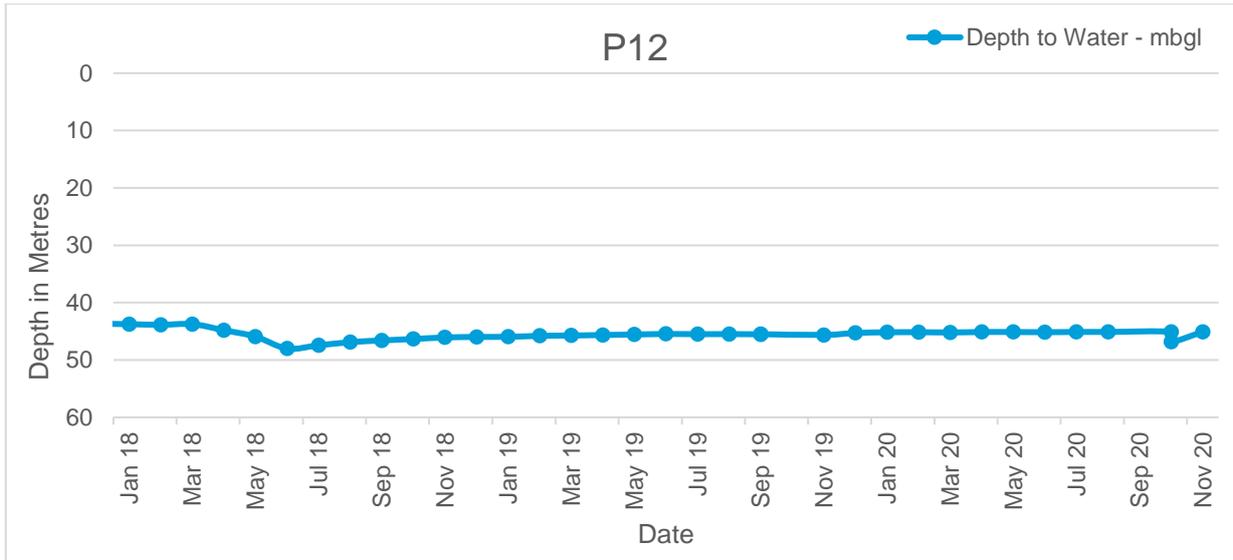
NCO Monitoring bore ID: P9
Location: NCO – Figure 10
Geological unit: Purlawaugh Formation
Bore depth: 30m



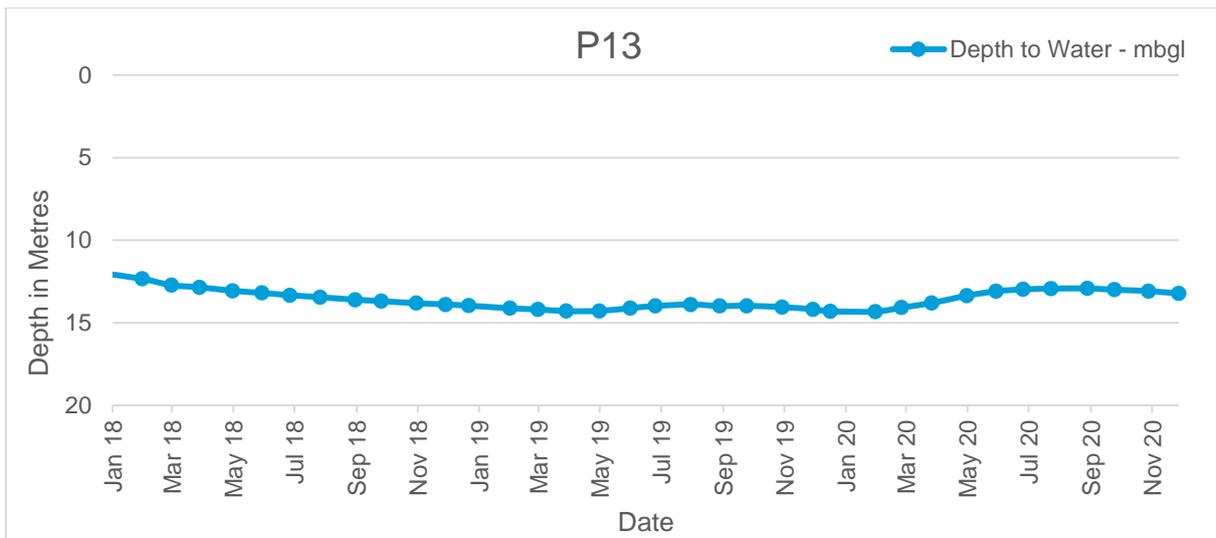
NCO Monitoring bore ID: P10
Location: NCO – see figure 10
Geological unit: Napperby Formation
Bore depth: 130m



NCO Monitoring bore ID: P11
Location: NCO – see figure 10
Geological unit: Napperby Formation
Bore depth: 50m



NCO Monitoring bore ID: P12
Location: NCO – see figure 10
Geological unit: Napperby Formation
Bore depth: 90m



NCO Monitoring bore ID: P13
Location: NCO – see figure 10
Geological unit: Garrawilla Volcanics/Napperby
Bore depth: 30m

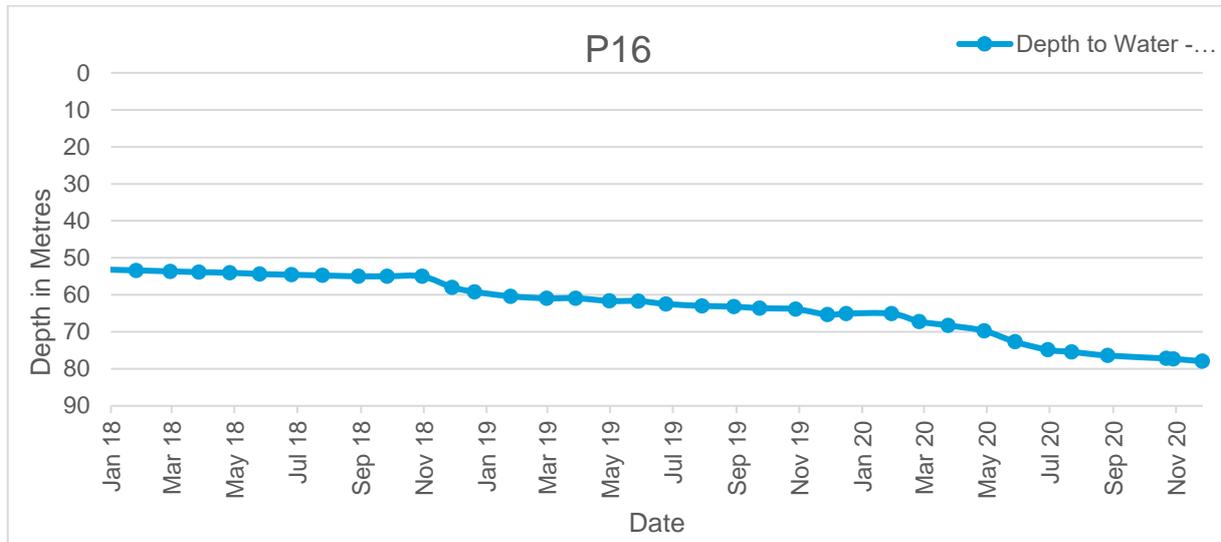
No Graph

NCO Monitoring bore ID: P14
Location: See Figure 10
Geological unit: Napperby Formation (no sill)
Bore depth: 78m
Explanation: Dry

No Graph

NCO Monitoring bore ID: P15
Location: See Figure 10
Geological unit: Garrawilla Volcanics

Bore depth: 30m
Explanation: Dry



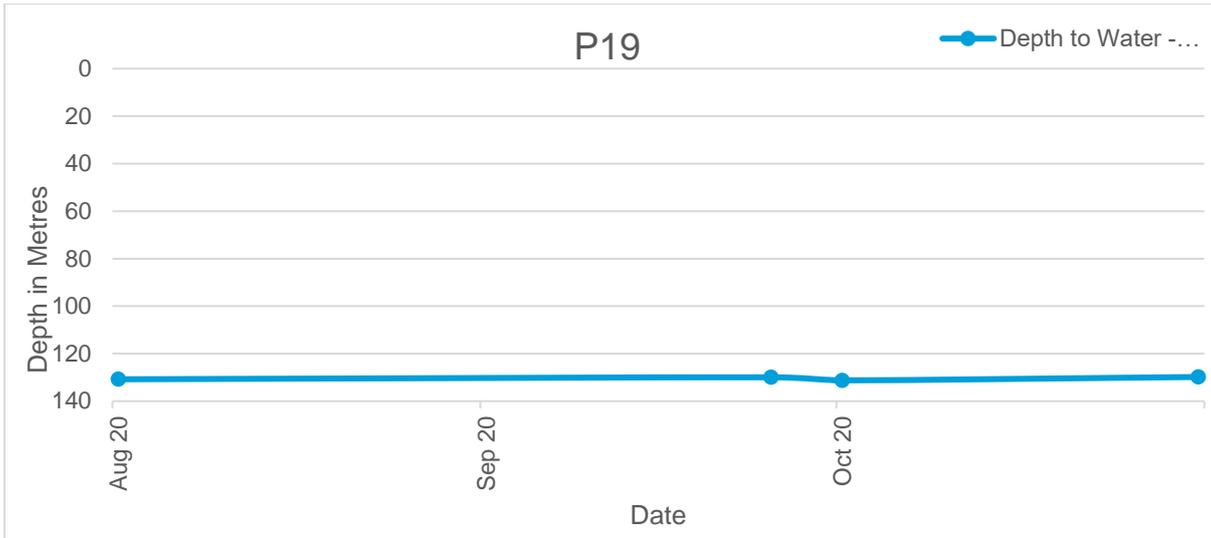
NCO Monitoring bore ID: P16
Location: State forest (Western Boundary) – see figure 10
Geological unit: Garrawilla Volcanics
Bore depth: 146m

No Graph

NCO Monitoring bore ID: P17
Location: See figure 10
Geological unit: Purlawaugh Formation
Bore depth: 56m
Explanation: Dry since 2009

No Graph

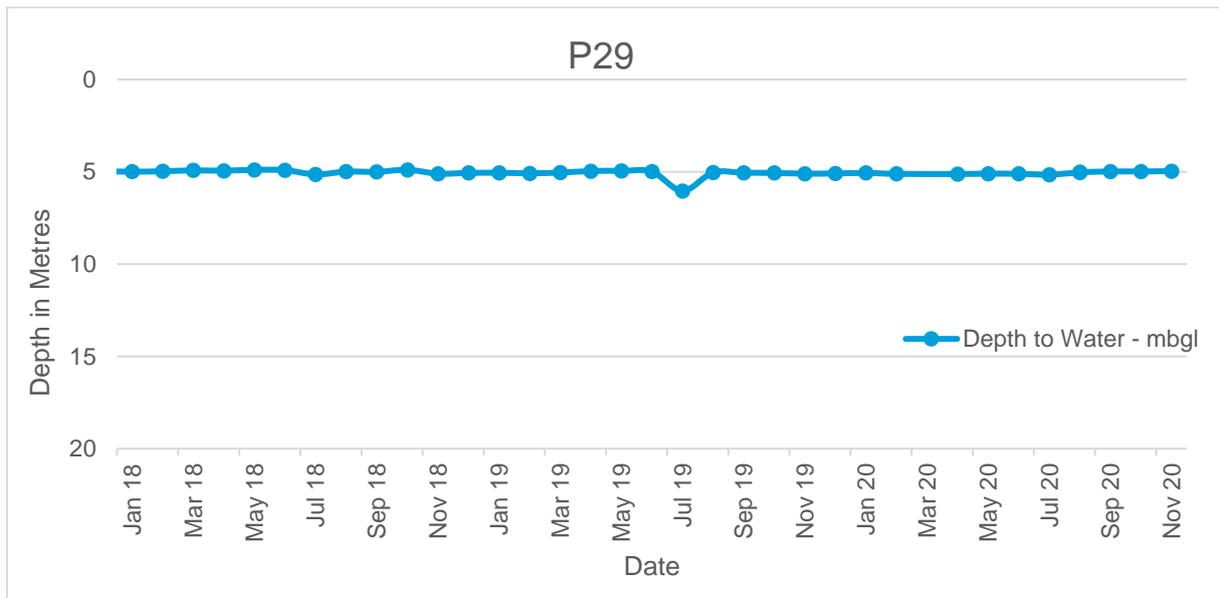
NCO Monitoring bore ID: P18
Location: See figure 10
Geological unit: Hoskissons seam
Bore depth: 146m
Explanation: Dry since 2011



NCO Monitoring bore ID: P19
Location: NCO
Geological unit: Pamboola
Bore depth: 187m
Explanation: Wrong bore previously monitored, true location monitored since August 2020

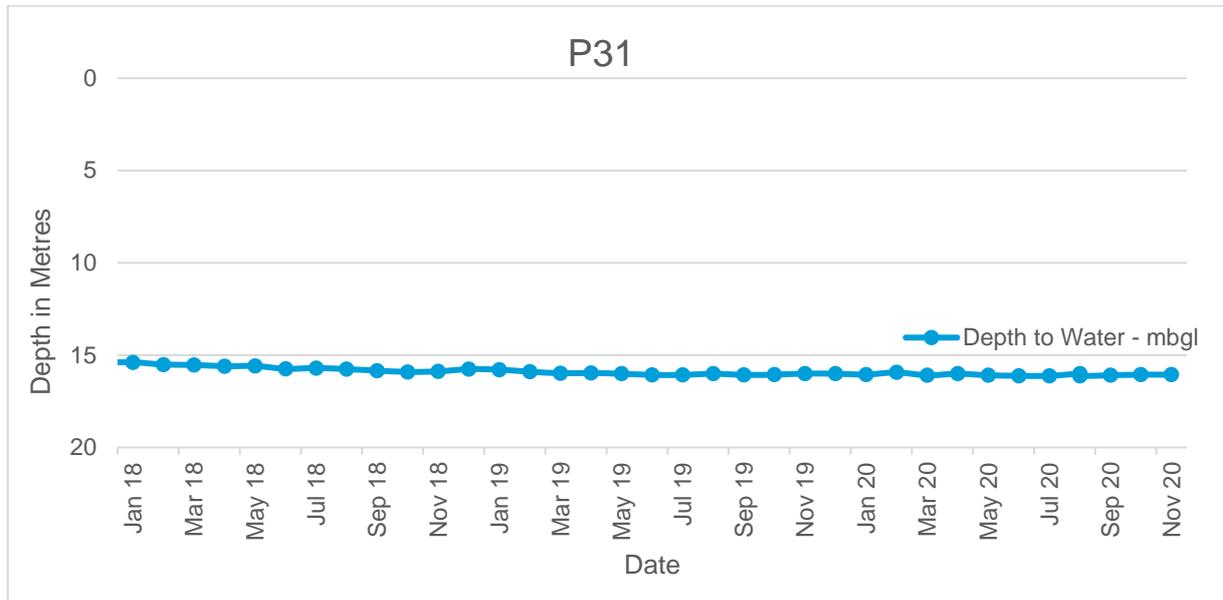
No Graph
NCO Monitoring bore ID: P20
Explanation: Cemented up – no longer monitoring

No Graph
NCO Monitoring bore ID: P28
Location: See figure10
Geological unit: Napperby Formation (above sill)
Bore depth: 25m
Explanation: Dry since 2012

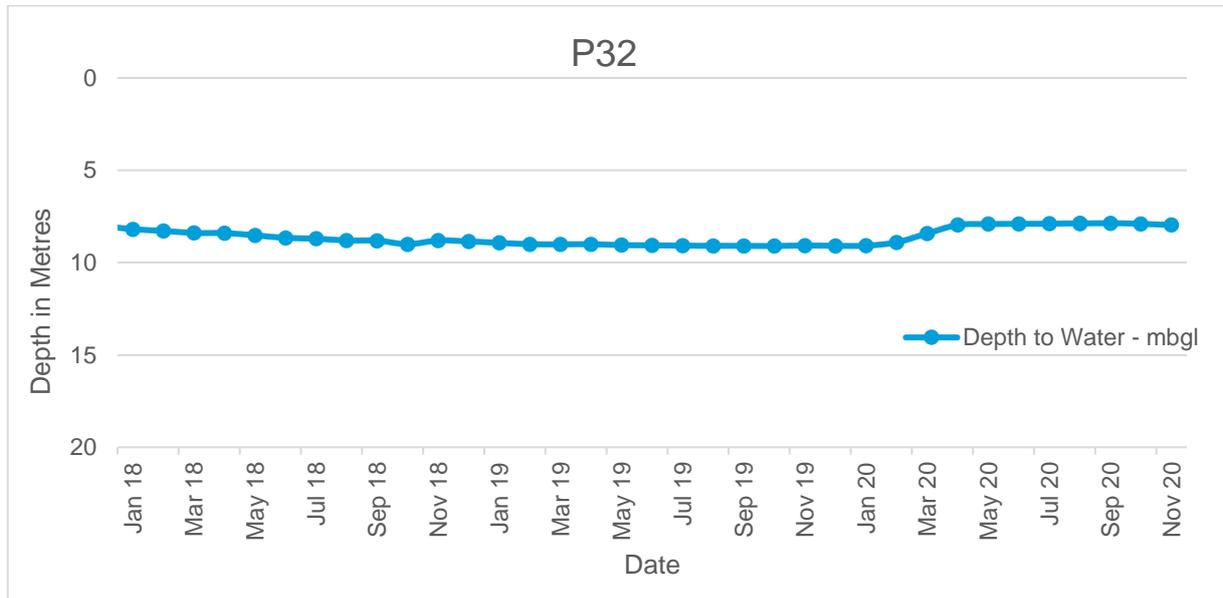


NCO Monitoring bore ID: P29
Location: NCO (Near site dams) – see figure 10

Geological unit: Napperby Formation (above sill).
Bore depth: 25m



NCO Monitoring bore ID: P31
Location: NCO (Near site dams) – see figure 10
Geological unit: Napperby formation (above sill)
Bore depth: 15m

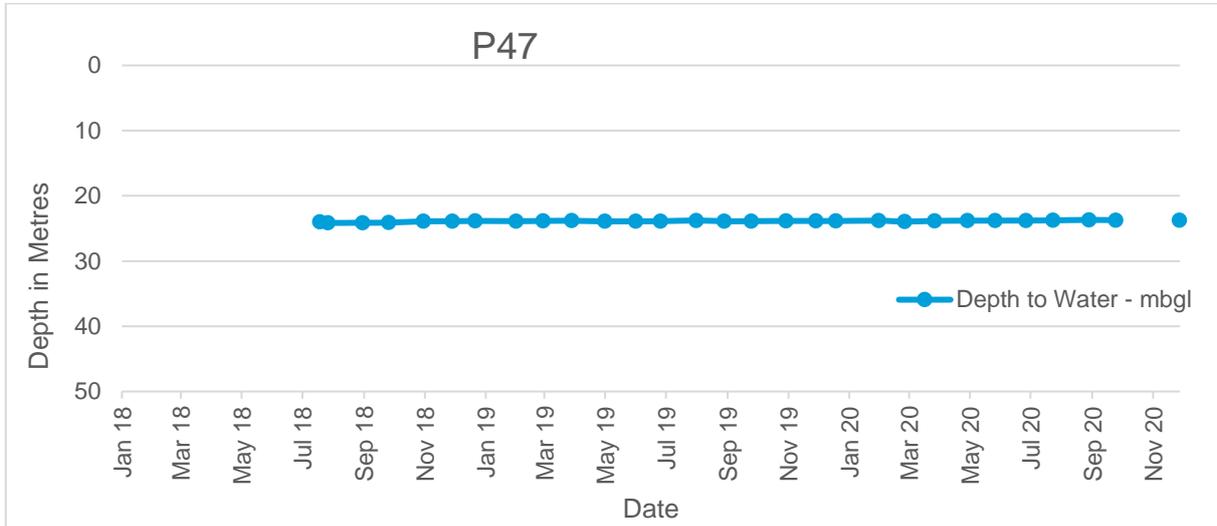


NCO Monitoring bore ID: P32
Location: NCO (Near site dams) – see figure 10
Geological unit: Napperby Formation (above sill)
Bore depth: 15m

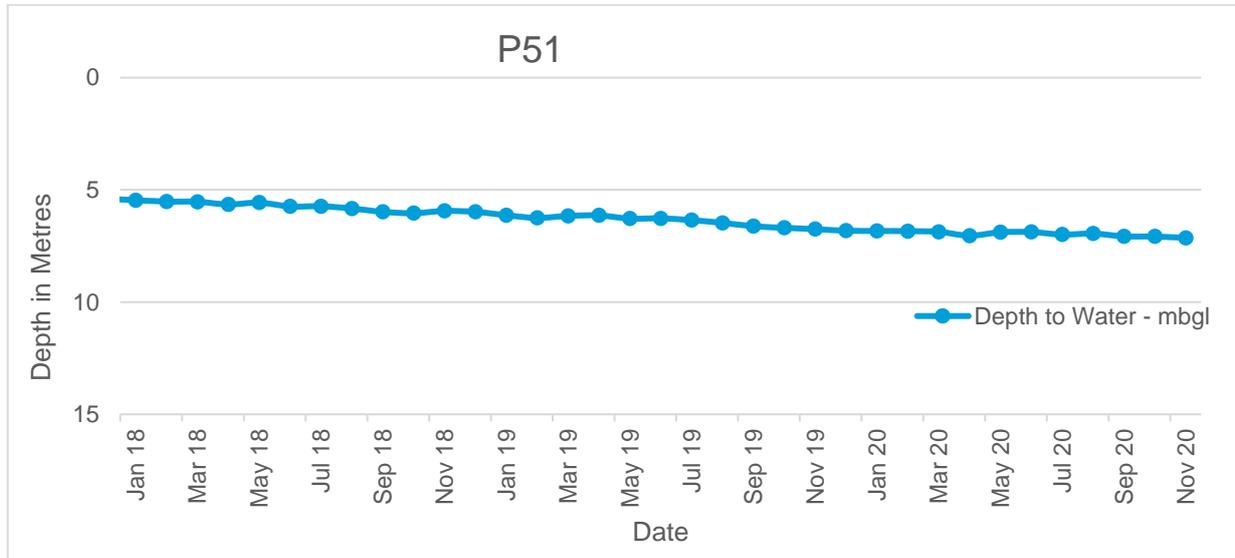
NCO Monitoring bore ID: P33
Location: See figure 6
Geological unit: Napperby Formation (above sill)
Bore depth: 15m
Explanation: Dry since 2012

Narrabri Coal Operations Pty Ltd ABN 76 107 813 963

NCO Monitoring bore ID: P24
Location: See figure 6
Geological unit: Napperby Formation (above sill)
Bore depth: 15m
Explanation: Dry since 2012



NCO Monitoring bore ID: P47
Location: NCO – see figure 10
Geological unit: Garrawilla Volcanics
Bore Depth (m): 31m



NCO Monitoring bore ID: P51
Location: NCO
Geological unit: Garrawilla Volcanics
Bore Depth (m): 17m