

Minutes: Minutes of the 18th Meeting of the Maules Creek Coal Community Consultative Committee
Held at the Boggabri Golf Club, Gunnedah Road, Boggabri NSW 2382

Wednesday 16 August 2017

Members Present: Darren Swain (DS) – WHC, Steve Eather (SE), Cr Robert Kneale (RK) - Narrabri Council, Peter Wilkinson (PWi) – WHC, Scott Mitchell (SM) – WHC, Jack Warnock (JW) – Community, Carolyn Nancarrow (CN) – Community, Simone Moodie (SM) – Community – Aboriginal Representative, Cath Collyer (CC) – Community, Libby Laird (LL) – Community, Anna Christie (AC) – Environmental Representative (alternate)

Apologies: Kerrie Clarke (KC) – Environmental Representative

Independent Chair: David Ross (DR)

Independent Secretary: Debbie Corlet (DC)

Agenda Items	Who to Present
1. Apologies	DR
2. Declaration of pecuniary or other interests	DR
3. Confirmation of the minutes of the previous meetings a. Discussion on minutes for 25 May 2017	DR
4. Business arising from the previous minutes a. Action list distributed	DR
5. Correspondence	ALL
6. Overview of Activities: a. Progress at the mine b. Monitoring and environmental performance c. Community complaints and response to complaints d. Information provided to the community and any feedback e. Water Management Presentation	PWi, DS, SM
7. General Business	ALL
8. Next Meeting – 1 November 2017	ALL

Agenda Item	Discussion	Action/By Whom
	Welcome by David Ross – DR welcomed everyone to the meeting.	
1.	Apologies – Kerri Clarke (KC) – Environmental Rep.	
2.	Declaration of pecuniary or other interests DR advised he is paid a fee to chair these meetings as is DC for typing the Minutes.	
3.	Confirmation of the minutes of the previous meetings (25 May 2017) SM moved that the minutes be approved; seconded by CC.	
4.	Business arising from the previous minutes – Action List Distributed DR thanked DS for the turnaround of actions from the last meeting. Slides from the February meeting were made available to CCC members. RK - confused by the DRAFT on the minutes as he needs to report back to Council and provide copies of the minutes and wondered why they still had DRAFT on them. DR - DR and DC provide a draft to the CCC within 1 week of meeting. CCC members then have 1 week to provide comments. DR and DC then have 3-4 days to incorporate all the comments. A “Final Draft” is then sent out to the CCC. The Final Draft can go out to the community and to Council. Once the minutes have been approved and seconded at the next meeting – the watermark is removed.	
5.	Correspondence DS tabled a letter from landholder Lochie Leitch, which was taken by Whitehaven on notice. LL – Questioned the last paragraph of Lochie’s letter which read ... “As a case in point, I understand from the EPA that there are real time noise monitoring results that show sustained noise exceedances at my mother’s residence. I further understand that these measurements are above the noise criteria set out in the EPL condition L3.1. What s WHC’s response to this matter?” PW i – In terms of the information we’ve been given from the EPA – we are doing a good job. They are unattended monitors. There was 1 measurement above 35 but if you put in the penalty it goes under the limit. LL – So did it measure below and can you find out? PW i – Confirmed he would find out and report back.	ACTION 1 – PW i to

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	<p>AC – Some stuff should be addressed with the EPA and not here with the CCC. There is an Industrial Noise Policy which is due to be reviewed because it pre-dates the large open cut mines. The Policy has been under review for a long time with many different methods put forward. What they are planning to replace it with they have cherry picked from European data and none of this refers to large mines. There data has been modelled and they have added a formula to see how it works out in Australian conditions.</p> <p>PWi – EPA and DPE have said it is a better system and so we are trialling it at our place. AC – This should be a topic for the next meeting. We want to see the results for the area on Harparary Road etc.</p> <p>DR – Need to get a timeline? AC – The timeline closed in September 2015. Then in Sept 2016 the community were invited to write submissions. 2 full years have gone by and they cannot pass it as “new policy” as it is still so controversial.</p> <p>LL – I heard on the news this morning something about “infra sound” as an attack in certain countries. All these people are getting sick with similar illnesses. Needs to be a concern.</p> <p>CC – Regarding the email from Lochie Leitch – did the EPA do noise monitoring around the mine itself? Was it just dust or did it include noise? Think it was maybe a month ago? PWi – Various things have happened – there was a noise audit from the EPA and the results have been published. A dust review has also been published. Overall, we operate within best practice – some areas to be improved and we are happy to look at those recommendations. In terms of monitoring – think that’s happening at Lochie’s mother’s house. I think Lochie has requested that from the EPA.</p> <p>AC – What do you understand to be “sustained”? Is it an hour? PWi – You should talk to the EPA – my understanding is there was only one 1 x 15-minute reading above the 35dB and this was with the 5dB penalty.</p> <p>DR – The Industrial Noise Policy – isn’t it a bit difficult to question how WHC is going to comply in the future if it hasn’t even come out? Very happy to approach the EPA and find out where the guidelines are at.</p> <p>AC – Maules Creek is undergoing validation? PWi – If a new policy is coming in – that has a different measurement – we will need to look at that. We have asked our monitoring experts and that is what we are looking at and how to measure this trial.</p>	<p>find out if it measured below and report back.</p> <p>ACTION 2 – DR to write to EPA re the finalisation of Industrial Noise Policy / Guidelines and applicability to local conditions</p>
6.	Company reports and overview of activities by DS	

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	<p>Company Report & Overview of Activities</p> <p>DS presented a slide presentation which discussed the following areas:</p> <ul style="list-style-type: none"> • Company report & overview of activities. • Employment. • Approvals & regulatory agency update. • Monitoring and environmental performance. • Environmental management including feral animal management and feral weed management. • Health and safety • Community complaint summary. • Local buying strategy and financial contributions to the community. <p>Questions for the Company Report & Overview of Activities slide</p> <p>JW – How does new access work – what I see there are barriers. PW – It’s to stop all traffic crossing the road. You never turn across the road – so it is a safety system. Boggabri Coal started it and it was a requirement by RMS as well.</p> <p>Questions for the Employment slide</p> <p>CC – What are the actual numbers from the Boggabri area employed at Maules Creek Coal Mine? Particularly interested in a radius of around 15 -20 km from Boggabri.</p> <p>AC – So regarding the number of people trained on trucks, which was 65 who have been trained. Does that reflect the turnaround of trainees – is that quite low?</p> <p>PWi – Yes, regarding the intake over the last few months – 3 of those trained have left because the job didn’t suit them. So, turnover from outside the area is quite high. Many reasons why – there was a downturn within the industry which brought people to us and as the industry has picked up around the country – they are getting jobs back home WA, QLD etc. So, we are replacing them from the local area.</p> <p>Questions for the Monitoring & Environmental Performance slide</p> <p>JW – I spoke to DS during the week – re the process of reporting. Most of those tables and graphs represent water quality are generally within the 12-month period. It would be great if we could see reports over a much longer period –</p>	<p>ACTION 3 – DS to provide numbers of those employed from the Boggabri area.</p>

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	<p>so we can see the changes. This could be reported in the Annual Review.</p> <p>JW – Land and Water Commission document – May 2017. I went to see if there was a more up-to-date version and there wasn't one. AC – There were a lot of mistakes in that land and water document.</p> <p>AC – What I noticed was the land owner's information was very outdated regarding Maules Creek. JW – I can't comment if it was accurate or not. Dept are responsible for monitoring but not keeping the reporting up-to-date.</p> <p>CN – Question to SM regarding properties and view of ownership. SM – I know you wanted property names but the map becomes too busy.</p> <p>CC – Why can't you just put the numbers on the map and then a legend / key to the right with the names? That will save the clutter on the actual map. SM – I take your point.</p> <p>LL – Quality of your noise monitoring equipment or the consultant? Sometimes there is someone sitting there. Why are there people on the road? PWi – Occasionally people are making noise and it isn't us. So, we aren't always going to shut down. A spiking noise at one location could be a localised noise event like a tractor starting. We need to make sure what noise we are creating. This is feedback to us and how we could improve the noise performance.</p> <p>PWi – The EPA has given us no readings above 35dB without the 5dB. LL – The mandatory noise audit – I agree with the language and their processes and guidelines but from the community's perspective and from my perspective – it is still noisy.</p> <p>PWi – We are constantly trying to reduce noise – we are working with our equipment manufacturers to see what else we can do. Hoping at the next meeting we can announce what we have done to improve the noise.</p> <p>LL – Requesting independent measurement of the Primary and sizers / crushers and the CPP (coal processing plant). This was not done in the EMM noise audit – now is the time to get an independent audit.</p> <p>PWi – That was part of the mandatory audit. They did that. SM – They did an onsite and an extensive audit. That is a question for the EPA. LL – This is not reported in the EMM audit. Did they do an independent sound power test of these items? My belief is</p>	<p>ACTION 4 – SM to consider where longer term monitoring can be presented</p> <p>ACTION 5 – DR to talk to JW about how to provide feedback on Land and Water Commission Report</p> <p>ACTION 6 – SM to edit maps to include property names, where possible</p>

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	<p>EMM relied on the data presented to them by WHC.</p> <p>SM – It was an independent audit including offsite and onsite locations. LL – But did they actually test these things? SM – Yes. PW i – You need to refer to the EPA.</p> <p>LL – PW i is correct. We need to refer to the EPA. I move that the CCC write a letter asking them to commission an independent sound power testing of the primary and secondary sizers / crushers and the CPP (coal processing plant) as I don't believe they have done it. Then it would be clear. Everyone is unsure.</p> <p>PW i – We get advice from noise experts on how we can make a difference. Their advice was to focus on the trucks and that instantaneous noise. We are focusing on improving noise at our receptors here. You can focus on individual items or listen to the noise experts – on how to have the most impact.</p> <p>DR – Different views here – wouldn't it be easier to bring in the EPA? CC – For them to then respond.</p> <p>AC – A lot of this information is already in the independent mandatory noise audit.</p> <p>LL – Mandatory monitoring audit – is on dust only. I've already talked to the EPA.</p> <p>LL – It's about trying to work out how to make it more liveable without us suffering. Prior to WHC gaining approval – our community was very concerned about sound levels of the sizers and the CPP. Primary and secondary sizers sound power are openly questioned. It has come back that they still haven't been independently assessed. PW i – I'd have to look at the primary and secondary crushers – you won't even hear anything – you'll be hearing trucks etc. We're focused on what you are hearing and that's why he's wandering around.</p> <p>DR – just a reminder that we need to allocate as much time as possible today to talk about water management.</p> <p>AC – Validation of the noise monitoring on Harparary Road – it's not for these guys to answer as it is the EPA. Why are you sending the auditors over to the west – state conservation area – there is no issue over to the west when the complaints are coming from the north. PW i – The request is from a neighbour from the north-west. AC – I've never heard of complaints coming from over the north-west. New managerial noise being set up. The point is not being validated.</p>	

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	<p>LL – Write a letter to the EPA to have an independent assessment conducted to work out what the sound power of these items is for the benefit of nearby neighbours. They can say no of course, but I feel as a representative group they should answer questions once and for all.</p> <p>PWi – We’ve had an auditor come in and he’s done that and he can present what’s he’s done. They would need a noise expert to come in and have a look. If you want to write to them that’s fine.</p> <p>SM – It was an extensive audit and very thorough and broad scope which was applied and included a range of things outlined in the licence.</p> <p>LL – It might be adequate to you – it might isolate the noise – it might rule out some things.</p> <p>Questions for the Environmental Management slides</p> <p>JW – Can we get a copy please for the CCC members.</p> <p>Questions for the Feral Animal Management slide</p> <p>JW – Not everyone receives that Green flyer – could it be added to the Courier? DS - Local Land Services may have put it in.</p> <p>AC – What about the goats – there are large herds. People are wanting a better understanding of where these feral animals are going. What observations are you making – is the goat problem increasing. CC – Kashmir property up in the mountains. Certainly, a lot up there and has been for a long time. They do transverse – they are on our property. They are coming from people who have had goats. It is a problem all over the area. SE – Forestry – goats have been around for a long time. National Parks and local areas.</p> <p>Questions for the Health slide</p> <p>CN – Do you test every day? PWi – We do random drug and alcohol – not every day.</p> <p>Questions for the Financial Contributions slide</p> <p>LL – Questioned DS about sponsorships and donations (listed in Appendix 2) and if they are all listed on Page 60 of the Annual Review Audit. Is there anyone else that must be added to that list? DS – The ones listed on the screen are the ones that have come on since our last meeting.</p>	<p>ACTION 7 – DR to talk to the EPA re the primary and secondary crushers and invite them to the next meeting.</p> <p>ACTION 8 – DS to provide a copy of the graphs and water presentation to CCC members.</p>

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	<p>LL – Are there community, national or international businesses that need to go on this list so community is aware? SM – We’ll look at the list for this year when we start preparing next annual report.</p> <p>Water Management Presentation by PWi</p> <p>PWi presented a slide presentation which discussed the following areas:</p> <ul style="list-style-type: none"> • Water usage • Water management for CY2016 – graph • Dam capacities • Water licences • Groundwater inflows • Industry comparison • Surface water and groundwater monitoring • Monitoring – trends • Water management ongoing • Groundwater monitoring locations <p>PWi – Only used 1,000ML and sold the rest (2,000) to the cotton industry. We go to the agent and they’ll on-sell. Re Groundwater inflows - now we see very little ground water coming into the mine at around 60 metres. Maybe as we go deeper into the mine.</p> <p>CC – Question of MCC – how are you going with the dry times. PWi – We are fine for the moment. We try and keep the raw water down at a reasonable level. Last year 947 megalitres was used, whilst in the previous year 1,300ML was used. If it was a dry year we used a little more. In full production, we might use the full 3,000. The river is still running. The river has now run for over 12 months (15-16 months). Haven’t seen that before. So, a lot of water released for the cotton industry.</p> <p>CC – I’m referring more to your own dams onsite. Future dry conditions, you’d have to use your licences more? PWi – In dry years more water will be pumped from the river CC – That is a regulated licence. PWi – High security licence.</p> <p>LL – Looking at map page 53 of the 2016 MCCM Annual Review as directed by DS – slides had a graph of groundwater monitoring 1, 3, 4, 5, 6, 7, 8, 9, 10 but where is regional bore 2 (Reg 2) on the map? This is the one that should be on Maules Creek close to Green Gully.</p>	

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	<p>JW – It is at Thorn Field Crossing. It is a Government bore GW041. PWi – We have one beside it.</p> <p>JW – On that map that corresponds with Red 2. This bore is located at or alongside Government Monitoring Bore GW041027 in the upper reaches of Maules Creek. LL – That’s a government bore. Are you saying there is a Whitehaven one? DS – These are the Maules Creek regional bores – LL – Maules Creek Mine. SM – Will have to come back to you about this.</p> <p>JW – Management of runoff from the over burden mounds that you have. PWi – 2 sorts of runoff – dirty water runoff – either contaminated and we collect that and clean runoff and that generally goes straight into a creek.</p> <p>JW – You manage that ongoing. PWi – We have all the contours in place.</p> <p>PWi – We are planning an Open Day. Late October / early November. Did one last year late October. Saturday 28 Oct or Saturday 4 Nov for the Open Day. DR – Note that a site visit was raised at the last CCC meeting by WHC. Would be available for all CCC members.</p> <p>JW – How do you get access to Zone 4? DS – We don’t pump any water out of these bores.</p> <p>JW – It’s only a tiny one. How do you get access from your precinct? DS – Its water we must account for, because it’s been modelled. We haven’t had that happen yet, but not to say it may not happen.</p> <p>JW– Zone 5 – is that from one of the properties. DS – Anyone can own a water licence.</p> <p>LL – So to summarise what you have just said – your only source of water you use is the Namoi River and this is 3,000ML and last year you used 947ML but in a dry year you might use 1,300ML, and you can then on-sell what is left? PWi – Once we get to full production and if in a really dry year, that’s when we can use that full amount.</p>	<p>ACTION 9 – WHC to confirm locations and provide graph of groundwater monitoring data</p>

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	<p>LL – But, you don't need to on-sell the water? We have the perception that MCC is "running out of water", but this is not true. You actually have 2,000ML spare. So over summer, and it will be very hot and dusty you have more than enough water to water down in your mine area and make it less dusty for the locals?</p> <p>PWi – We have had some recommendations to look at. We are now using dust suppressants because it is cheaper – it binds the particles together – so you end up using half the amount of water for the same result.</p> <p>LL – What is the chemical? PWi – A molasses – a natural compound.</p> <p>LL – When do you decide to sell the water- when do you know how much you will use? PWi – We start to look at selling at the end of May (maybe the middle of June). It's allocated every financial year – so you use it or lose it. You can't keep adding it on. You can't on-sell as high security water.</p> <p>CC– It is common practice to on-sell in many industries. The council have done it in the past.</p> <p>LL – Referring to briefing note sent through by DS, replying to question from AC 6 July 2017, the answer provided to the question referring to the mis-description of Elfin Crossing as ephemeral – who signed off on the status of Elfin Crossing. The answer, by its own admission does not clarify who WHC took the advice from and why Maules Creek at points A and C in the 2016 Biodiversity Management Plan. The response simply says that "from the approved BMP, Maules Creek (Fig 10A-10C)" – ephemeral creek (with permanent / semi-permanent pools around Elfin Crossing).</p> <p>LL – The community put significant time into a submission to the BMP – discussing this very point. It is important because it signifies the health of the environment. First, I note that from your audit that Stygofauna along parts of MC and Back Creek were assessed in 2015 and determined that Stygofauna were present. We would like to see more than one off monitoring of the Stygofauna health. They are a sign of the health of our local environment and must be monitored. Stygofauna are dependent on this permanent water supply and this healthy fragile ecosystem. We would like ongoing monitoring of Stygofauna at Maules Creek.</p> <p>LL – Secondly, also the description of water around Elfin Crossing must be maintained as permanent – not semi-permanent.</p> <p>CC – Who made the decision? (To PWi) – that is the information you were given? Was that information given from the Dept. PWi – We're not certain on that one. We're not sure if it was a consultant or the Dept.</p>	<p>ACTION 10 – SM to consider stygofauna monitoring.</p>

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	<p>LL – A consultant wrote the draft document and various people added to it – it’s not semi-permanent it is permanent – it is a softening of the wording but it is an incorrect fact and we need to have it corrected. I propose that the Chair of the CCC write to Connected Water High conservation area. People have been studying it for years.</p> <p>DR – Whitehaven to have a look to see if it was one of your consultants. Otherwise, go to government. Where did all this start.</p> <p>AC – Companion issue with the crossing – the Oakley – ephemeral – has never been known to run dry – Oakley Crossing is bone dry. This is not a perennial creek and it was listed in there as a perennial.</p> <p>PWi – We can table it.</p> <p>SM – I think that was addressed and the description was rectified. The perennial one.</p> <p>SE – the Crossing did stop running in the 90s. Where I used to live further down the creek, the water didn’t run all the time.</p> <p>LL – Yes, Steve you used to live at Harparary. That is not what this is about. This is about certain points (A and C) – you are referring to when a farmer pumped out of the creek. You are right. It will stop running if someone pumps it out. You know this. It was also rectified and now there is a rule where farmers / water users are not allowed to pump out of Zone 11.</p> <p>JW – At Elfin Crossing there are two monitoring sites – surface water depth and groundwater standing water levels.</p> <p>PWi – Ephemeral stream but there are ponds that are more permanent. The streams stop running but the ponds are still there.</p> <p>SE – it didn’t run unless it rained where I used to live near Maules Creek.</p> <p>CN – Tabled correspondence from Lochie Leitch regarding a number of issues. Everyone to get a copy and CN would like WHC to respond.</p> <p>AC – Discussion relating to questions put by Anna Christie in February 2017 and again my email dated 4 July 2017:</p> <ol style="list-style-type: none"> a. Maules Creek Mine “unregulated Zone 11 entitlement”. Zone 11 refers ONLY to groundwater entitlement. According to the Namoi Valley Unregulated Water Sharing Plan, there are 1,413ML of unregulated entitlement held by 7 licences. Maules Creek Coal has not indicated that they hold any of these Licences. b. The 32,259ML per annum entitlement represents the entitlement for all Namoi Unregulated Water Sources (see page 13 of the Maules Creek Mine Water Management Plan). 	<p>ACTION 11 – DR and DS to resolve descriptions of Elfins Crossing / Oakley Crossing</p> <p>ACTION 12 – WHC to respond to tabled letters from Lochie Leitch.</p>

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	<p>c. Unregulated water is that water pumped directly from a water source such as Maules Creek.</p> <p>PWi – We have some answers.</p> <p>CN – Mine are about ground water. AC – Hers were about surface water.</p> <p>JW – Zone 11 is strictly ground water. Needs clarification and is misleading. AC – What is the unregulated Zone 11 entitlement and instead put in Maules Creek not Zone 11.</p> <p>JW – that is water pumped directly out. PWi – The only place we pump water is the river. The water we have in the pit now has come from rainfall. We’ve seen very little ground water in the pit – we do predict we will as we go further down. The topography comes down – so it looks like 100 metres but from the bottom it is less than 60 metres.</p> <p>JW – Interested from an ongoing basis the long-term monitoring results – what is predicted and what is modelled. We would like to know. PWi – Rio Tinto drilled extensively in the 80s – geologically – Boggabri volcanic – underlay the Maules Creek.</p> <p>JW – If it’s not right we’ll need to know. AC – Now that I’ve heard from JW – this is complex stuff. I’ve put in the questions and I’m now finding out more information and will have to take it back. PWi – Very complex area.</p> <p>DS – Asked AC why she has been taking photos of Committee Members during the meeting? DR – If you take photos you must get permission first. Similarly, permission is required to take audio recordings. Besides, I don’t believe that there is any value in taking recordings due to the quality of minutes Debbie takes.</p> <p>LL – I just want to ask JW one more question – 3, in Zone 11 – if that gets pumped – will that cause the creek to run dry. JW – Lochie has been unable to pump for quite a few years – WHC or me or anyone else they would be restricted as well. Restraints are applied to Lochie and other irrigators applied by the Government. Those figures are under review presently and up for consultation. Not sure about Zone 11.</p> <p>LL – So can’t touch it? SM – Can’t be pumped.</p>	

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	<p>JW – Land water entitlements for regulation. It is such an unreliable stream. SM – All the rules are publicly available. Of when you can and can't pump. JW – I can't speak for Maules Creek – especially if they purchased properties with those. LL – But they would be restricted. JW – Everyone else would be asked.</p>	
7.	<p>General Business</p> <p>DR – The Environment Trust is about to have another round available to community groups. Information will go on the Narrabri Shire Council website today or tomorrow and Gunnedah website as well. If there is anyone you think who might benefit like schools, groups, community – there is a window of opportunity between now and middle of October (15th). Any questions only too happy to discuss later.</p> <p>JW – We've had some reports today about feral animal control and can that be included at each of the CCC meetings? CC – Working with all the mines – national parks and getting everyone together working together has been great.</p> <p>CC and CN have a question re the child care and a traineeship of employee at a Boggabri child care. As of today, I was informed by the Mayor that Paul Flynn stated that is not correct – clarification would be good. PW_i – I think it is correct. DS and I would like to keep reviewing and would love to hear more about it.</p> <p>JW – At the last CCC meeting – there was mention of a Telstra 4G tower going up at Maules Creek – no one at WHC knows about it? DS – The only thing I've heard is that Telstra would put up a tower somewhere near Boggabri Coal – nothing to do with WHC.</p> <p>PW_i – We were going to put up our own tower. The communication might have been did Telstra want to piggy back off ours. The answer came back no.</p> <p>LL – Any plans re driverless vehicles as I know you are going to expand your fleet. PW_i – Long term – automation is coming across the world. It's a long way off.</p> <p>LL – So no plans to purchase driverless vehicles. PW_i – I didn't say that but we would look at if that technology was viable. LL – You won't be going to automation in the next round of purchasing equipment. PW_i – Unlikely.</p> <p>CC – I know you stated unlikely. Is there a period that they are bringing that in. Advancement of that technology. What</p>	<p>ACTION 13 – WHC to include feral animal control report to each CCC meeting and send to all members.</p> <p>ACTION 14 – DS and PW_i to further discuss child care centre with CC & CN.</p>

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	<p>is the percentage of unlikely? PWi – Certainly we have looked at it. I went on a visit to WA in January and I talked to the workforce – iron ore mine. They have 230 tonne trucks and we operate 300 tonne trucks. My view at the moment is that they are not competitive with our operation at the moment.</p> <p>CN – I know people have applied for work at WHC recently but they haven't been notified. PWi – Please send me a list of names and I'll follow it up. Did they apply through Prospect – otherwise they may be through a Program. Our business is not suited to everyone. We put people through a lot of testing and some people don't qualify and sometimes that's in their best interest.</p> <p>AC – Regarding noise filters – one of the recommendations from the mandatory noise audit was for Global Acoustics to disclose what noise filters are used during the monthly monitoring. When will that take place? PWi – I don't know about that. Will take it on notice.</p> <p>DR – Apologised; declared a pecuniary interest as is paid a fee for chairing and associated work.</p>	
8.	<p>Next meeting date to be agreed</p> <p>Next meeting Wednesday 1 November 2017.</p>	

Meeting Closed: 5:13pm

Page No	Action No	Description	Date Raised
3	1	PWi to find out if it measured below and report back.	16 Aug 2017
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7	7	DR to talk to the EPA re the primary and secondary crusher areas and invite them to the next meeting	16 Aug 2017
7	8	DS to provide a copy of the graphs and water presentation to CCC members.	16 Aug 2017
9	9	WHC to confirm locations.	16 Aug 2017
11	10	SM to consider fauna monitoring.	16 Aug 2017
11	11	ACTION 11 – DR and DS to resolve descriptions of Elfins Crossing / Oakley Crossing	16 Aug 2017
12	12	WHC to respond to tabled letters from Lochie Leitch.	16 Aug 2017
13	13	WHC to include feral animal control report to each CCC meeting and send to all members.	16 Aug 2017
14	14	DS and PWi to further discuss child care centre with CC & CN	16 Aug 2017

Appendix 2: WHC Sponsorships

Boggabri Progress Association	Killarney Bike Classic 2016 - Narrabri Hospital Palliative Care
Australian Contaninter	Lions Club of Boggabri
Australian Junior Rodeo Association	Maules Creek Campdraft Club
WE WAA Community Hospital	NSW Minerals Council - Sponsorship HSEC Awards Dinner
Narrabri Nandewar Rugby League	Narrabri Local Aboriginal Land Council - Dinner Dance
Academy Publishing - Children Safety Homework Books	NSW Mining Forum – Sponsorship
Australian - Korea Business Council	Narrabri Lioness Club - Garden & Craft Expo
Boggabri Sacred Heart PTF Association - Boggabri Community Calendar	Narrabri Education Fund - Tertiary Scholarship
Boggabri Business & Community Association - 2016 Small Business & Community Awards	Narrabri & District Chamber of Commerce - 2016 Business Awards
Boggabri Community Church - 2016 Carols in the Park	Narrabri High School - 2016 Presentation Night
Boggabri Fishing Club	Paul Vowels - Kids for Charity Ride
Camp Quality - Camp Quality 1000K's for Kids	Rotary Club of Boggabri
Children's Charity Network - Young Indigenous Art & Literacy Program	Rotary Clubs of Gunnedah
Gunnedah and Quirindi Shows	Wean Picnic Race Club
Gunnedah Volunteer Support Group	Westpac Rescue x Kamilaroi Aging & Disability – Elders Olympics Helicopter Service
Gunnedah Mine Suppliers Group	Winanga-Li Aboriginal Child & Family Centre - Bus Sponsorship
Kamilaroi Aging & Disability – Elders Olympics	

Maules Creek Coal Mine Community Consultative Committee Meeting #18

Environmental Monitoring Report For the Q2 period, April – June 2017

Noise Monitoring

Attended noise monitoring was undertaken at six locations, as per the approved Noise Management Plan, on the 18th & 19th April, 1st & 2nd May and the 26th & 27th June 2017 by an independent acoustic consultant. The measured noise level (LA_{eq,15 minute}) attributed to Maules Creek Coal Mine (MCCM) and applicable criteria for each location are shown in the tables below. The results show that mine operations did not exceed the applicable LA_{eq,15 minute} criteria during attended noise monitoring in Q2 2017.

LA_{eq,15minute} GENERATED BY MCC AGAINST OPERATIONAL EVENING AND NIGHT NOISE CRITERIA – APRIL TO JUNE 2017.

Table 1 - April Noise Monitoring – Evening & Night Period

		Time	Wind Speed	Rainfall	Criterion	Criterion	MCC LA _{eq}	Exceedance
			m/s	mm	dB ³	Applies ¹	dB ²	dB ⁵
NM1	19/04/2017	19:23	2.2	0	35	Yes	IA	Nil
NM1	19/04/2017	19:40	2	0	35	Yes	IA	Nil
NM1	18/04/2017	22:41	1.8	0	35	Yes	IA	Nil
NM1	18/04/2017	22:57	1.7	0	35	Yes	IA	Nil
NM2	18/04/2017	19:39	2.7	0	39	Yes	<35	Nil
NM2	18/04/2017	19:54	2.1	0	39	Yes	35	Nil
NM2	19/04/2017	22:24	3	0	39	Yes	28	Nil
NM2	19/04/2017	22:39	2.4	0	39	Yes	31	Nil
NM3	18/04/2017	18:03	1	0	35	Yes	IA	Nil
NM3	18/04/2017	18:21	0.4	0	35	Yes	IA	Nil
NM3	19/04/2017	23:50	2.4	0	35	Yes	IA	Nil
NM3	20/04/2017	0:05	2.4	0	35	Yes	IA	Nil
NM4	19/04/2017	20:10	0.5	0	NA	Yes	22	NA
NM4	19/04/2017	20:26	0.4	0	NA	Yes	<20	NA
NM4	18/04/2017	23:25	2.1	0	NA	Yes	IA	NA
NM4	18/04/2017	23:41	1.6	0	NA	Yes	IA	NA
NM5	19/04/2017	18:41	1.8	0	35	Yes	IA	Nil
NM5	19/04/2017	18:58	1.9	0	35	Yes	IA	Nil
NM5	18/04/2017	22:00	1.9	0	35	Yes	IA	Nil
NM5	18/04/2017	22:17	2.3	0	35	Yes	IA	Nil
NM6	18/04/2017	18:50	2.2	0	35	Yes	<20	Nil
NM6	18/04/2017	19:11	2.6	0	35	Yes	IA	Nil
NM6	19/04/2017	23:06	2.8	0	35	Yes	IA	Nil
NM6	19/04/2017	23:22	2.9	0	35	Yes	IA	Nil

Table 2 - May Noise Monitoring – Evening & Night Period

		Time	Wind Speed m/s	Rainfall mm	Criterion dB ³	Criterion Applies ¹	MCC LAeq dB ²	Exceedance dB ⁵
NM1	2/05/2017	19:58	0.3	0	35	Yes	24	Nil
NM1	2/05/2017	20:16	0.3	0	35	Yes	30	Nil
NM1	1/05/2017	22:39	0.3	0	35	Yes	IA	Nil
NM1	1/05/2017	22:55	0.8	0	35	Yes	IA	Nil
NM2	1/05/2017	20:06	0.4	0	39	Yes	IA	Nil
NM2	1/05/2017	20:21	0.5	0	39	Yes	IA	Nil
NM2	2/05/2017	22:23	1.8	0	39	Yes	25	Nil
NM2	2/05/2017	22:39	0.8	0	39	Yes	32	Nil
NM3	1/05/2017	18:32	0.3	0	35	Yes	IA	Nil
NM3	1/05/2017	18:53	1	0	35	Yes	IA	Nil
NM3	2/05/2017	23:53	0.9	0	35	Yes	IA	Nil
NM3	3/05/2017	0:08	1	0	35	Yes	IA	Nil
NM4	2/05/2017	20:45	0.4	0	NA	Yes	22	NA
NM4	2/05/2017	21:02	0.5	0	NA	Yes	24	NA
NM4	1/05/2017	23:50	0.3	0	NA	Yes	IA	NA
NM4	2/05/2017	0:06	0.4	0	NA	Yes	IA	NA
NM5	2/05/2017	19:10	1.4	0	35	Yes	25	Nil
NM5	2/05/2017	19:28	0.7	0	35	Yes	27	Nil
NM5	1/05/2017	22:00	0.4	0	35	Yes	IA	Nil
NM5	1/05/2017	22:15	0.3	0	35	Yes	IA	Nil
NM6	1/05/2017	19:22	1.1	0	35	Yes	IA	Nil
NM6	1/05/2017	19:38	0.8	0	35	Yes	IA	Nil
NM6	2/05/2017	23:09	1.1	0	35	Yes	24	Nil
NM6	2/05/2017	23:25	0.8	0	35	Yes	21	Nil

Table 3 - June Noise Monitoring – Evening & Night Period

		Time	Wind Speed m/s	Rainfall mm	Criterion dB ³	Criterion Applies ¹	MCC LAeq dB ²	Exceedance dB ⁵
NM1	27/06/2017	20:14	0.7	0	35	Yes	27	Nil
NM1	27/06/2017	20:30	0.4	0	35	Yes	26	Nil
NM1	26/06/2017	22:45	0.4	0	35	Yes	30	Nil
NM1	26/06/2017	23:12	0.4	0	35	Yes	30	Nil
NM2	26/06/2017	21:15	0.9	0	39	Yes	28	Nil
NM2	26/06/2017	21:30	1.5	0	39	Yes	30	Nil
NM2	27/06/2017	22:00	0.2	0	39	Yes	29	Nil
NM2	27/06/2017	22:15	0.4	0	39	Yes	29	Nil
NM3	26/06/2017	19:45	0.1	0	35	Yes	<20	Nil
NM3	26/06/2017	20:00	0.2	0	35	Yes	<20	Nil
NM3	28/06/2017	0:03	0.9	0	35	Yes	<25	Nil
NM3	28/06/2017	0:28	0.8	0	35	Yes	<20	Nil
NM4	27/06/2017	21:00	0.4	0	NA	NA	30	NA
NM4	27/06/2017	21:16	0.2	0	NA	NA	31	NA
NM4	26/06/2017	22:00	0.3	0	NA	NA	30	NA
NM4	26/06/2017	22:16	0.3	0	NA	NA	35	NA
NM5	27/06/2017	19:30	1	0	35	Yes	24	Nil
NM5	27/06/2017	19:45	0.6	0	35	Yes	<25	Nil
NM5	26/06/2017	23:45	0.4	0	35	Yes	<20	Nil
NM5	27/06/2017	0:01	0.5	0	35	Yes	<20	Nil
NM6	26/06/2017	20:25	0.3	0	35	Yes	<25	Nil
NM6	26/06/2017	20:41	0.7	0	35	Yes	25	Nil
NM6	27/06/2017	22:44	0.5	0	35	Yes	<25	Nil
NM6	27/06/2017	23:00	0.4	0	35	Yes	<25	Nil

In addition to the 15 minute average for Day, Evening and Night, the Maules Creek Coal (MCC) EPL 20221 also has a '1 Minute - Night' criteria (LA1) that applies from 10pm to 7am Monday to Saturday & 10pm to 8am Sundays and Public Holidays. The results for the LA1 monitoring are shown below. The results show that mine operations did not exceed the applicable LA1 criteria during attended noise monitoring in Q2 2017.

LA1, 1minute GENERATED BY MCC AGAINST OPERATIONAL EVENING NOISE CRITERIA – APRIL TO JUNE 2017.

Table 4 - April Noise Monitoring – Night

L _{A1} (1min)		April						
		Time	Wind Speed m/s	Rainfall mm	Criterion dB ³	Criterion Applies ¹	MCC L _{A1} (1min) dB ⁴	Exceedance dB ⁵
NM1	18/04/2017	22:41	1.8	0	45	Yes	IA	Nil
NM1	18/04/2017	22:57	1.7	0	45	Yes	IA	Nil
NM2	19/04/2017	22:24	3	0	45	Yes	30	Nil
NM2	19/04/2017	22:39	2.4	0	45	Yes	40	Nil
NM3	19/04/2017	23:50	2.4	0	45	Yes	IA	Nil
NM3	20/04/2017	0:05	2.4	0	45	Yes	IA	Nil
NM4	18/04/2017	23:25	2.1	0	NA	Yes	IA	NA
NM4	18/04/2017	23:41	1.6	0	NA	Yes	IA	NA
NM5	18/04/2017	22:00	1.9	0	45	Yes	IA	Nil
NM5	18/04/2017	22:17	2.3	0	45	Yes	IA	Nil
NM6	19/04/2017	23:06	2.8	0	45	Yes	IA	Nil
NM6	19/04/2017	23:22	2.9	0	45	Yes	IA	Nil

Table 5 - May Noise Monitoring – Night

L _{A1} (1min)		May						
		Time	Wind Speed m/s	Rainfall mm	Criterion dB ³	Criterion Applies ¹	MCC L _{A1} (1min) dB ⁴	Exceedance dB ⁵
NM1	1/05/2017	22:39	0.3	0	45	Yes	IA	Nil
NM1	1/05/2017	22:55	0.8	0	45	Yes	IA	Nil
NM2	2/05/2017	22:23	1.8	0	45	Yes	40	Nil
NM2	2/05/2017	22:39	0.8	0	45	Yes	41	Nil
NM3	2/05/2017	23:53	0.9	0	45	Yes	IA	Nil
NM3	3/05/2017	0:08	1	0	45	Yes	IA	Nil
NM4	1/05/2017	23:50	0.3	0	NA	Yes	IA	NA
NM4	2/05/2017	0:06	0.4	0	NA	Yes	IA	NA
NM5	1/05/2017	22:00	0.4	0	45	Yes	IA	Nil
NM5	1/05/2017	22:15	0.3	0	45	Yes	IA	Nil
NM6	2/05/2017	23:09	1.1	0	45	Yes	32	Nil
NM6	2/05/2017	23:25	0.8	0	45	Yes	30	Nil

Table 6 - June Noise Monitoring – Night

L _{A1} (1min)		June						
		Time	Wind Speed m/s	Rainfall mm	Criterion dB ³	Criterion Applies ¹	MCC L _{A1} (1min) dB ⁴	Exceedance dB ⁵
NM1	26/06/2017	22:45	0.4	0	45	Yes	38	Nil
NM1	26/06/2017	23:12	0.4	0	45	Yes	40	Nil
NM2	27/06/2017	22:00	0.2	0	45	Yes	36	Nil
NM2	27/06/2017	22:15	0.4	0	45	Yes	39	Nil
NM3	28/06/2017	0:03	0.9	0	45	Yes	<25	Nil
NM3	28/06/2017	0:28	0.8	0	45	Yes	<25	Nil
NM4	26/06/2017	22:00	0.3	0	NA	NA	38	NA
NM4	26/06/2017	22:16	0.3	0	NA	NA	35	NA
NM5	26/06/2017	23:45	0.4	0	45	Yes	<25	Nil
NM5	27/06/2017	0:01	0.5	0	45	Yes	35	Nil
NM6	27/06/2017	22:44	0.5	0	45	Yes	31	Nil
NM6	27/06/2017	23:00	0.4	0	45	Yes	<25	Nil

Evening LAeq15min Night LAeq15min, Night LA1min

Notes:

1. Noise emission limits do not apply during periods of rainfall or wind speeds greater than 3 metres per second (at 10 metres);
2. Estimated or measured LAeq,15minute attributed to MCCM;
3. NMA was acquired by MCCP, therefore criteria are no longer applicable as per the EPL and project approval. The NMP requires monitoring at this location and results have been provided for information purposes;
4. Estimated or measured LA1,1minute attributed to MCCM;
5. NA in exceedance column means atmospheric conditions outside those specified in Project Approval and criterion is not applicable.
IA – Inaudible
NM – Not measurable

Wind Direction during Attended Monitoring

Wind direction data is collected from the MCCM Automated Weather Station (AWS). Wind data for the duration of the attended monitoring assessment, recorded at the MCCM AWS is presented in the table below.

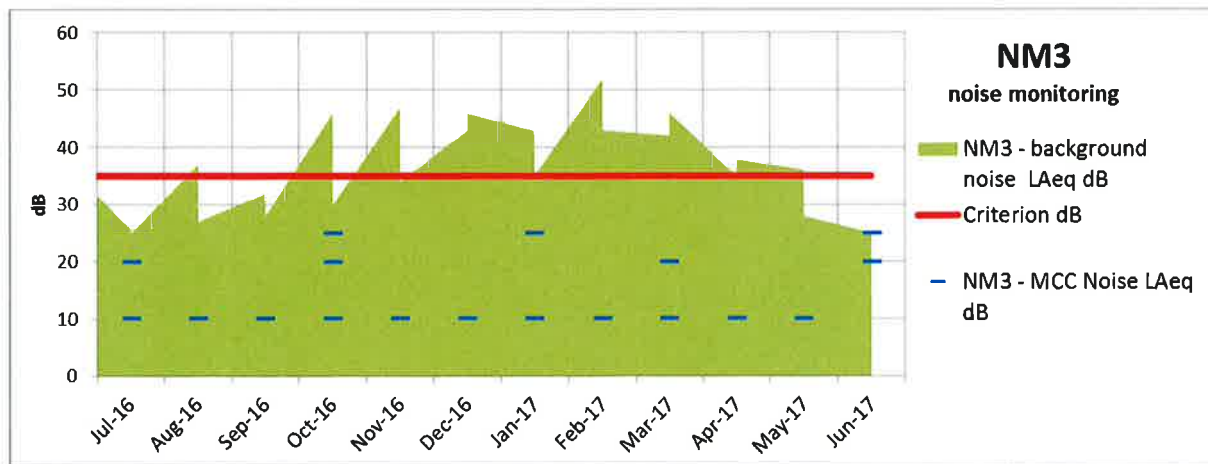
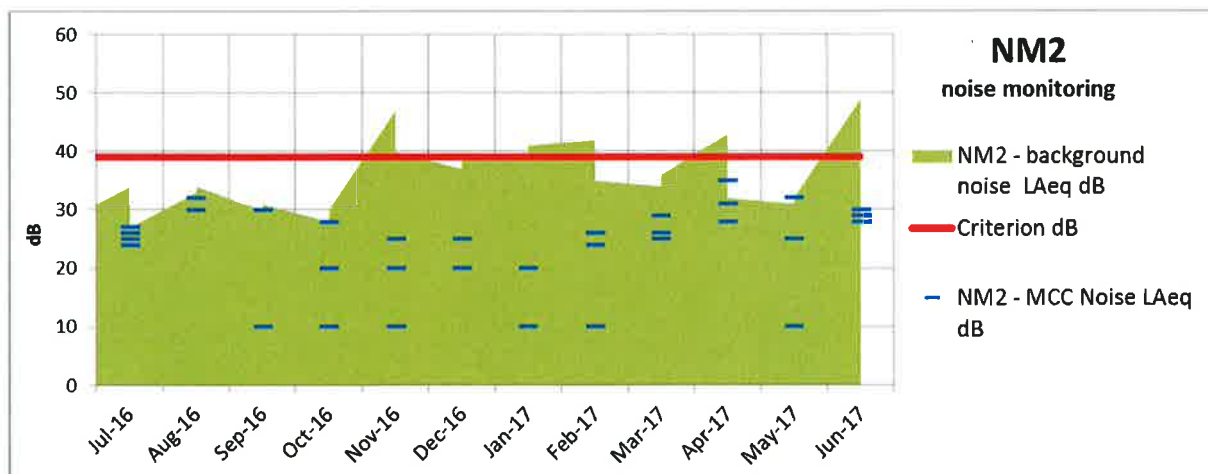
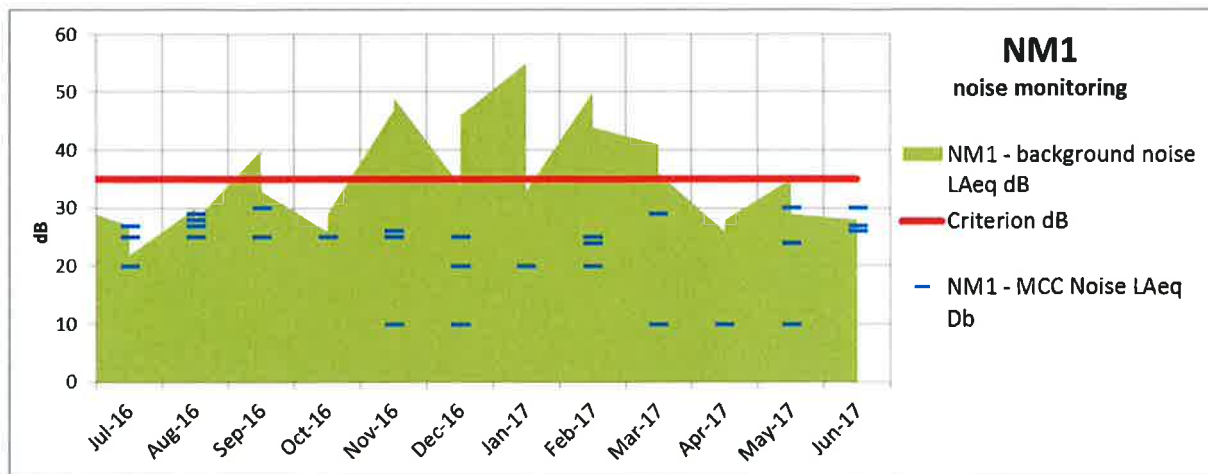
Table 7 - Prevailing Wind Direction

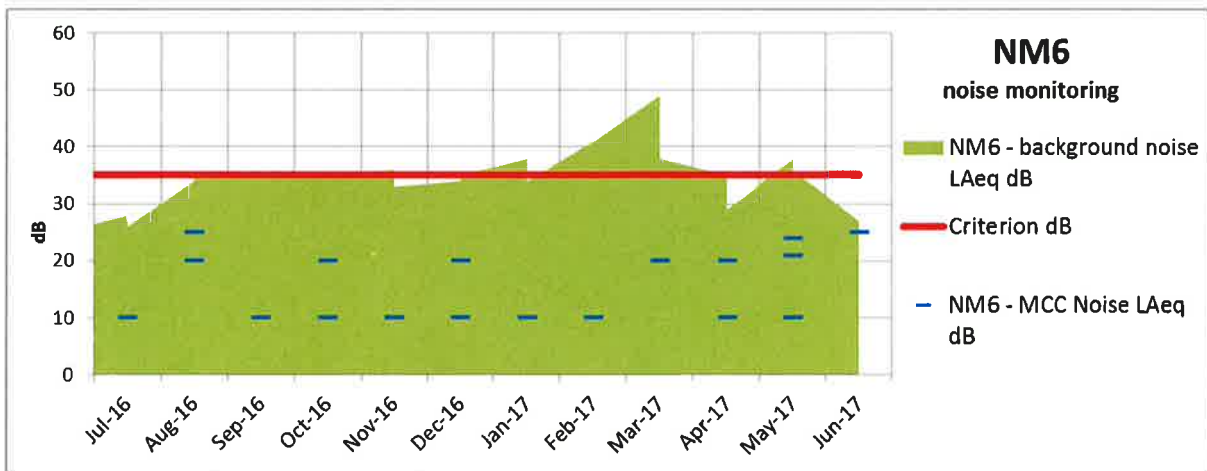
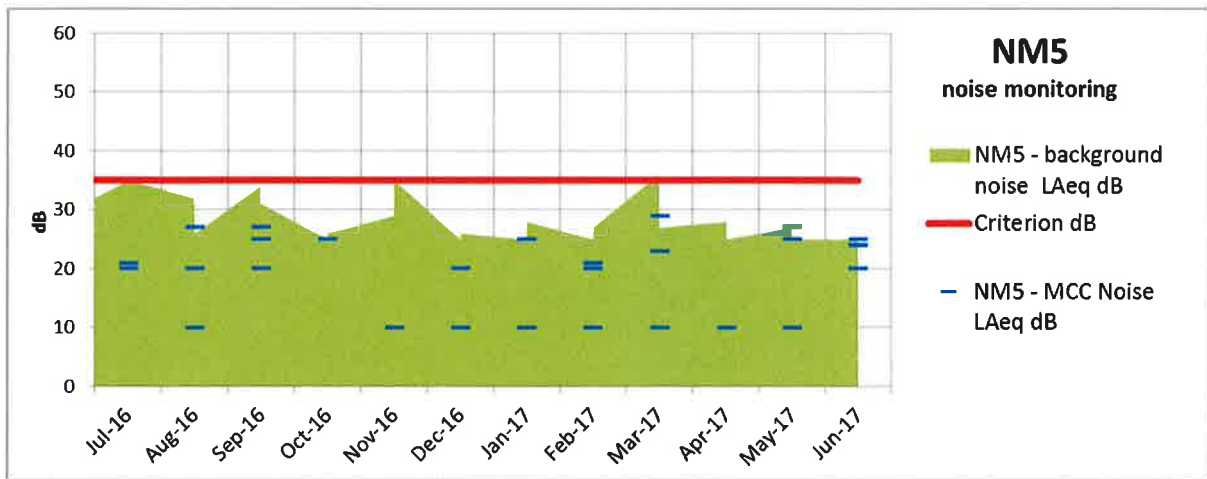
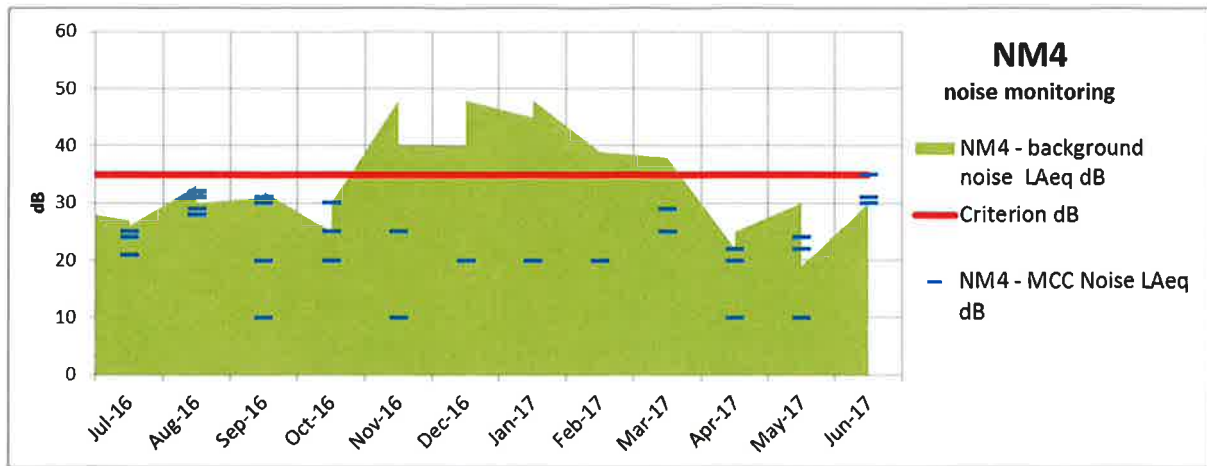
Monitoring Date	Prevailing Wind Direction
18 th April	SE
19 th and 20 th April	E, SE
1 st and 2 nd May	SE, S
2 nd and 3 rd May	E, SSW
26 th and 27 th June	SE, SW
27 th and 28 th June	SW

Attended Noise Monitoring

The following six (6) figures show the 'attended' noise monitoring results recorded over the last twelve (12) months.

Green shading shows the LAeq 15 minute background noise, the blue dash is the portion of the LAeq 15 minute considered likely attributable to MCCM according to the acoustic engineer and the red line is the Project Approval criteria.





Blast Monitoring

There have been 24 blasts at MCCM during Q2 2017.

All blast monitoring results recorded within the reporting period have been within the applicable overpressure and ground vibration limits specified in the respective approvals.

Table 8 - Blast Results Summary Quarter 2 2017

Parameter	Units	Frequency	Number	Average	Max	100% Limit	Exceedance (Yes / No)
Noise	dB (Lin Peak)	All	24	99.8	116.6	120	No
Vibration	mm/s		24	0.21	0.922	10	No

Air Quality

Total Depositional Dust

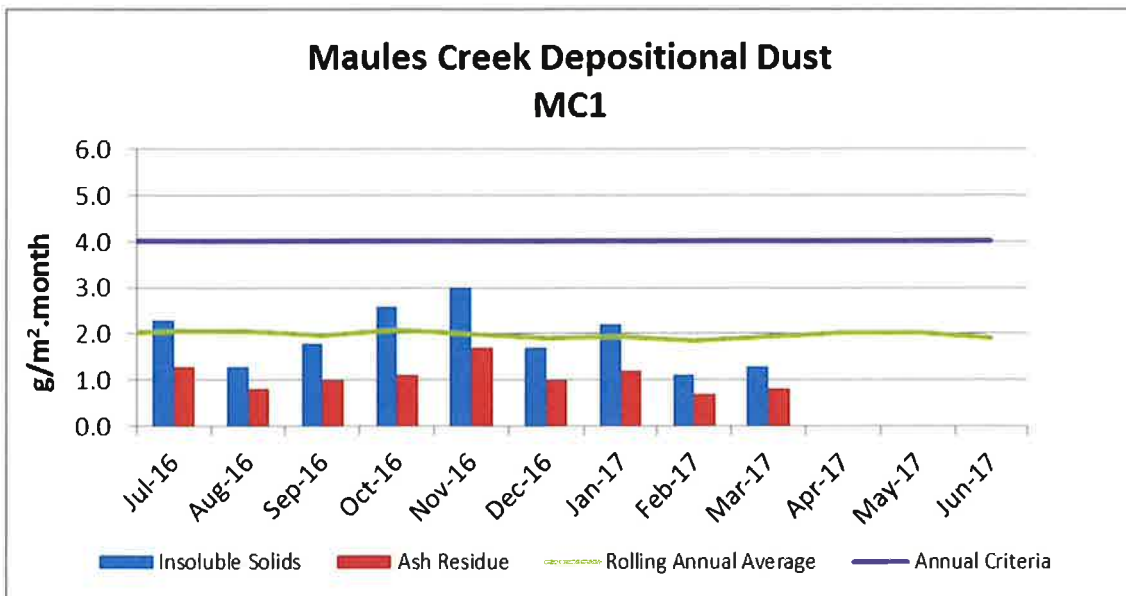
Table 9 - Deposited Dust Monitoring Results*

Month	MC1	MC2	MC3	MC4
Jul-16	2.3	0.8	0.6	0.4
Aug-16	1.3	2.7	1.0	0.9
Sep-16	1.8	5.5	1.0	0.9
Oct-16	2.6	1.2	0.8	0.5
Nov-16	3.0	1.5		1.0
Dec-16	1.7		2.7	2.2
Jan-17	2.2	2.1	0.7	0.8
Feb-17	1.1	1.4	1.2	1.5
Mar-17	1.3	1.8	2.8	2.0
Apr-17			1.9	1.4
May-17		3.7	1.5	1.1
Jun-17		1.1	1.3	1.3
Annual Avg	1.92	2.18	1.41	1.17
Project Avg 2010 - 2017	2.14	2.18	1.52	1.31

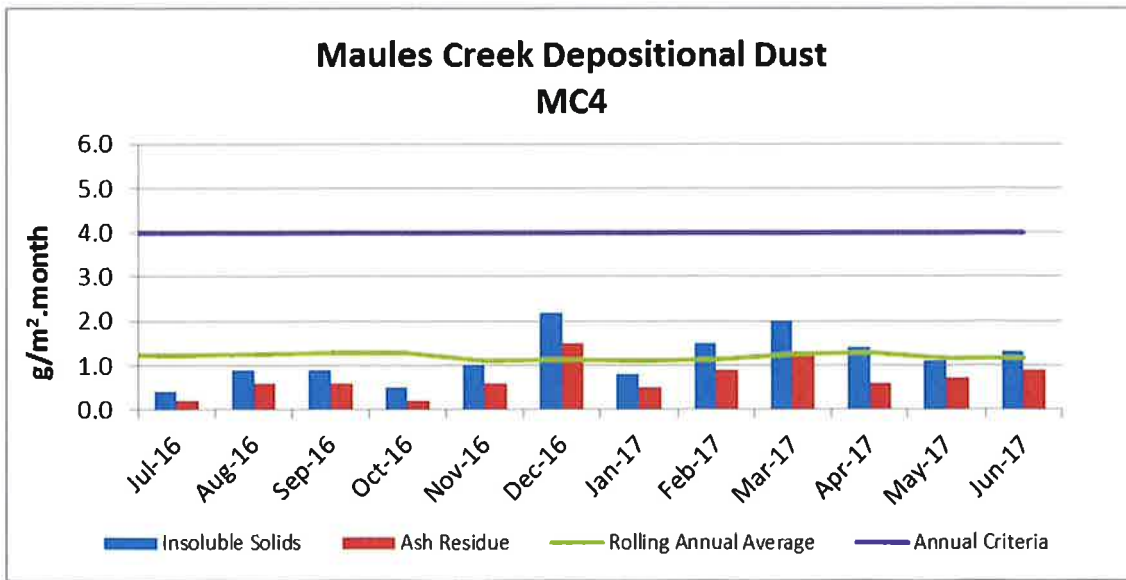
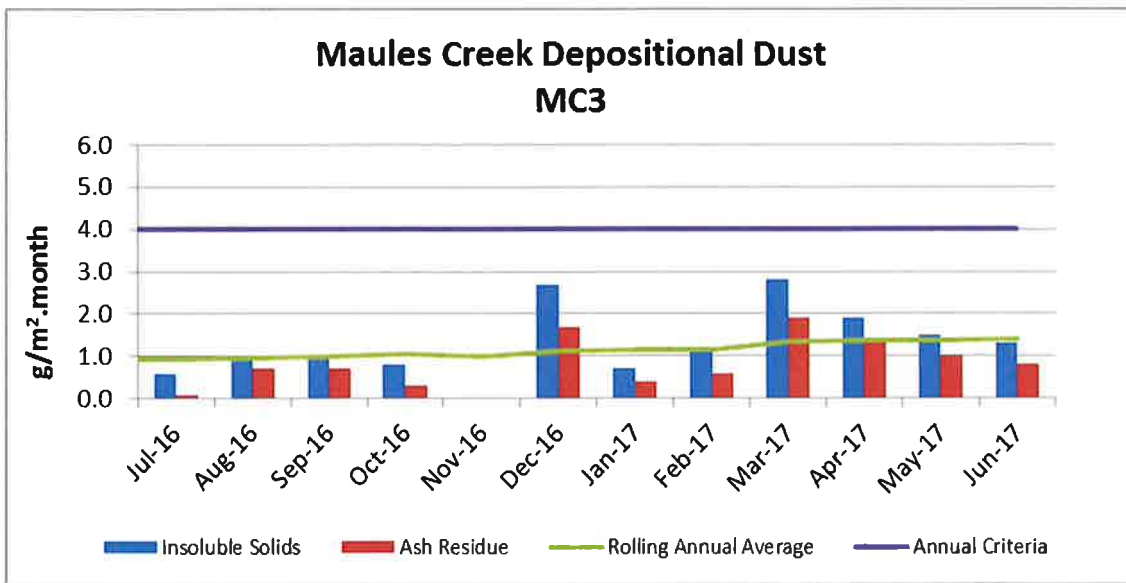
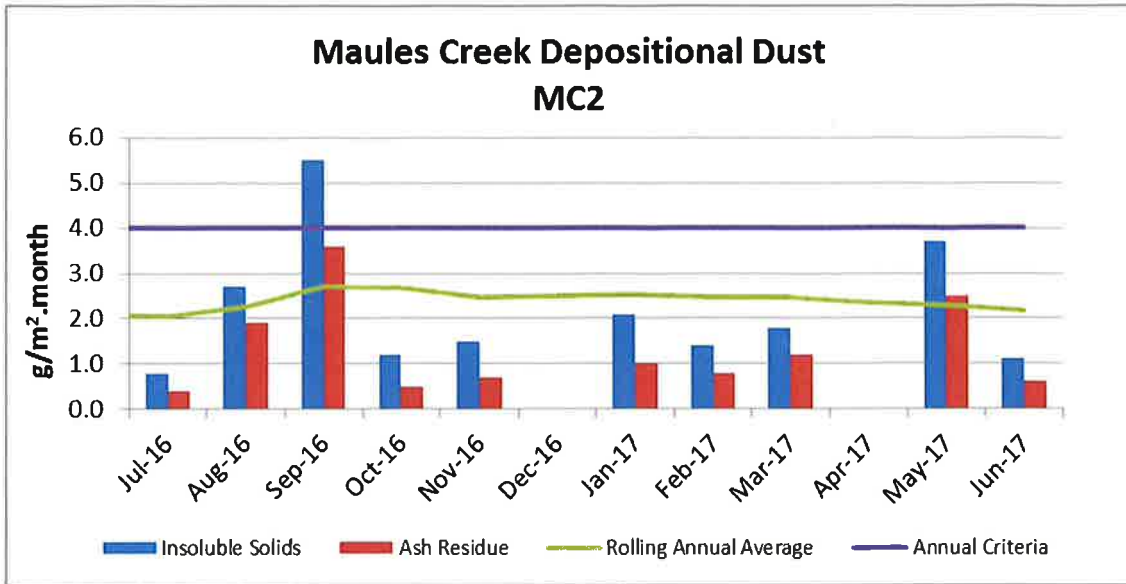
*Blank cells indicate sample periods where the sample has been contaminated and excluded from the results tables due to contaminated material (insect larvae, bird droppings, vegetation etc.).

The monthly rolling annual average remains below the relevant Project Approval criteria of 4gm/m²/month, as shown on the graphs below.

Deposited Dust Monitoring Figures (MC1 – MC4)



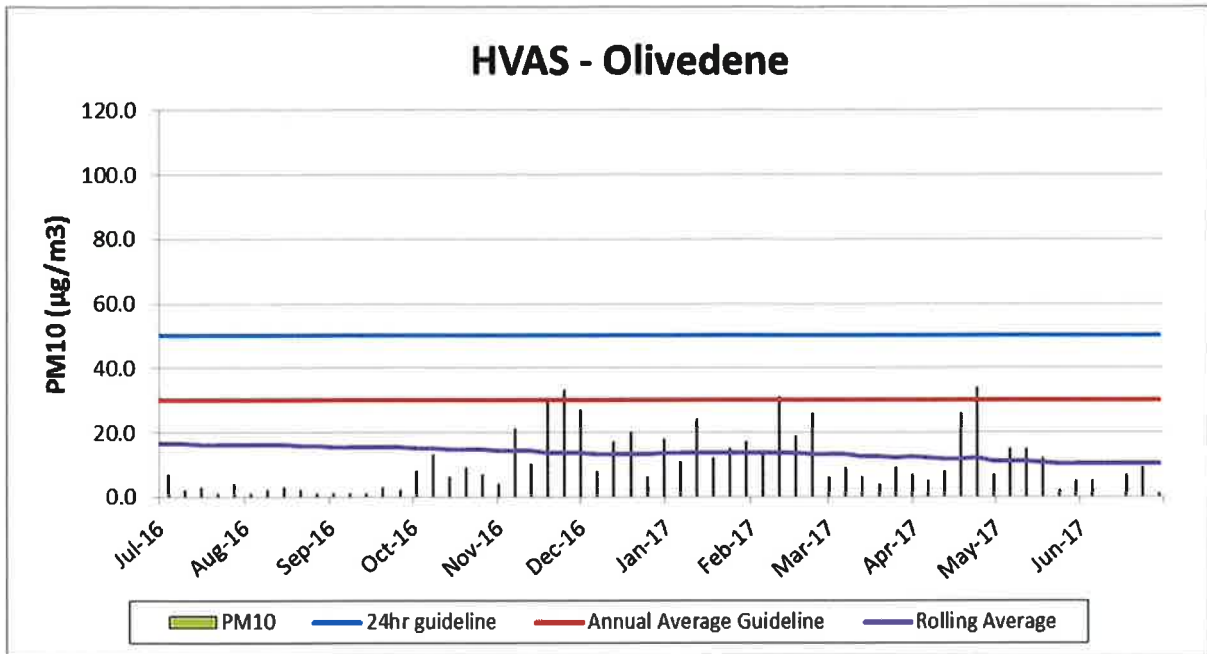
Note: The MC1 depositional dust gauge was contaminated with insect larvae and bird droppings during all monitoring periods of Q2 2017.



High Volume Air Sampling (HVAS)

The HVAS monitor is located on the property 'Olivedene,' a mine owned property on Therribri Road.

HVAS PM₁₀ Rolling Annual Average results during Q2 2017 remained well below the Annual Average Guideline 30 µg/m³.

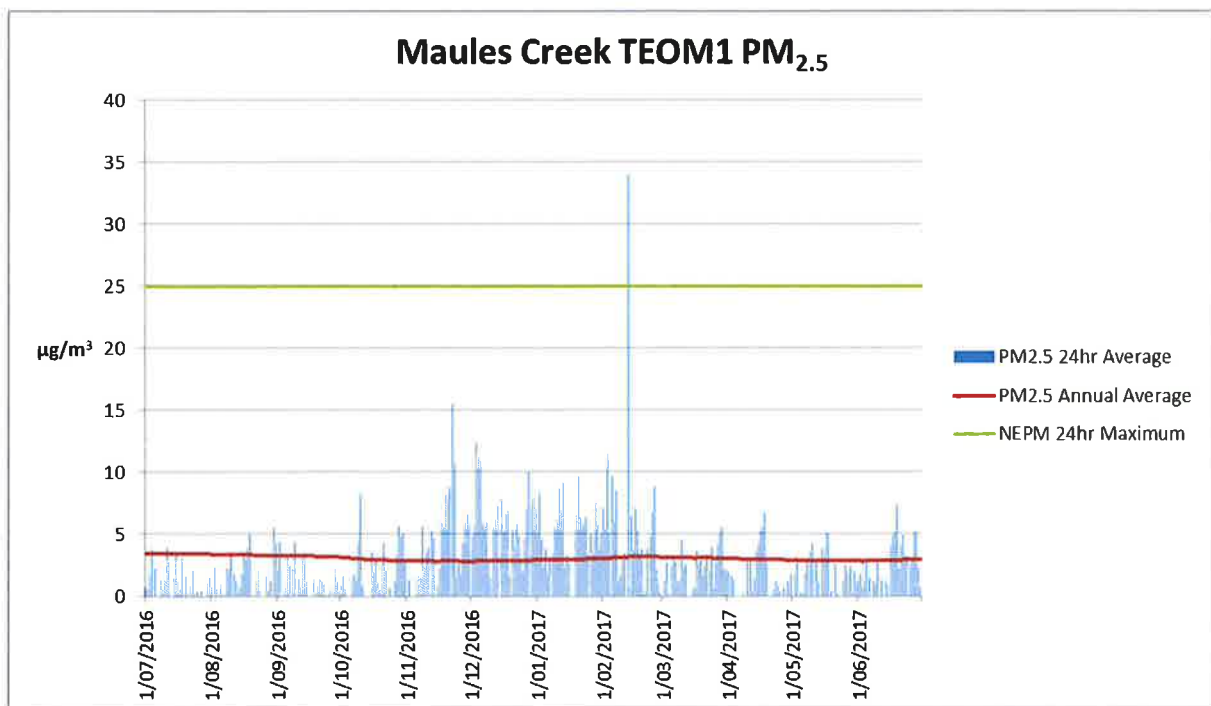
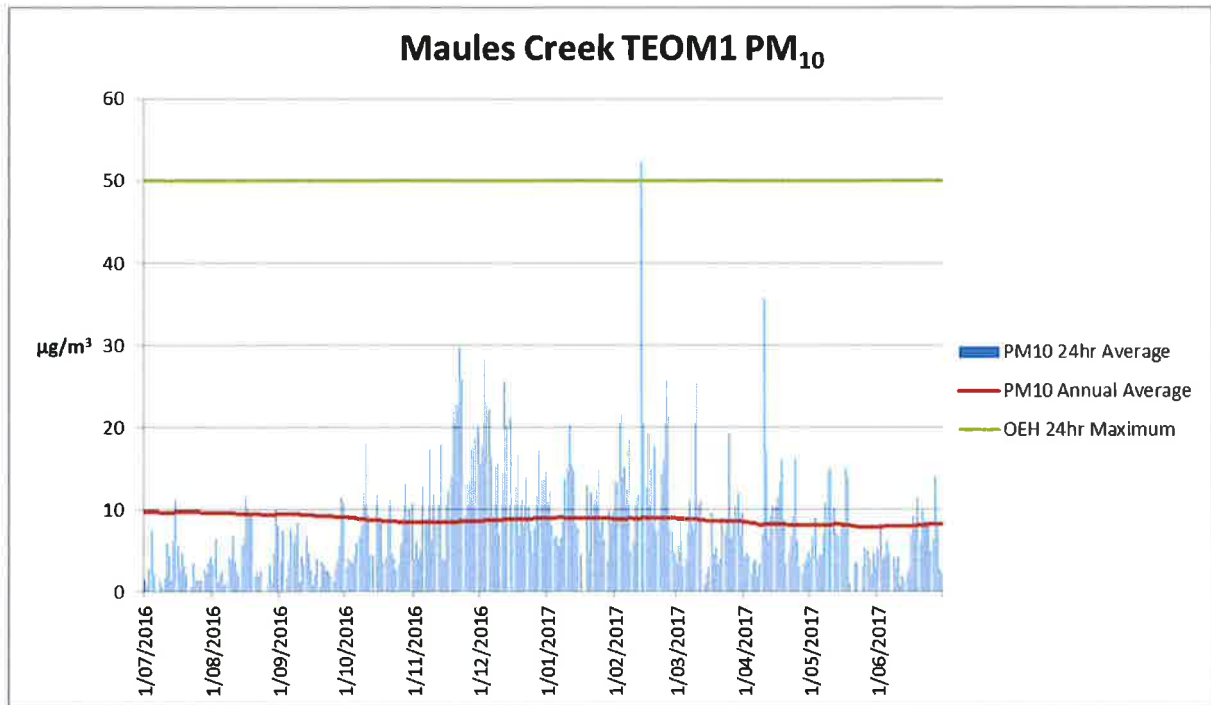


TEOM - PM₁₀ Results

The annual average for PM₁₀ results at the Maules Creek Coal TEOM remain significantly below the Project Approval annual average criteria of 30.0µg/m³ (at 30 June 2017) as shown in the following figure. The PM₁₀ average results have remained below this criteria since the TEOM was commissioned in November 2011.

Elevated PM₁₀ and PM_{2.5} results recorded by the TEOM on the 12th February 2017 were caused by a bushfire event in the local area. The elevated PM₁₀ result on the 10th April 2017 was caused by an interstate dust storm event.

TEOM Result Figures – Particulate Matter PM₁₀µg/m³ and PM_{2.5}µg/m³



Water Monitoring

Groundwater

Groundwater monitoring results in open / standpipe piezometers show levels to be currently stable. 'RB' and 'Reg' series bores were installed between Q4 2013 and Q1 2014. BCM01, BCM03, Reg10 are shallow bores which have remained dry since construction in 2013.

Table 10 - Groundwater Level

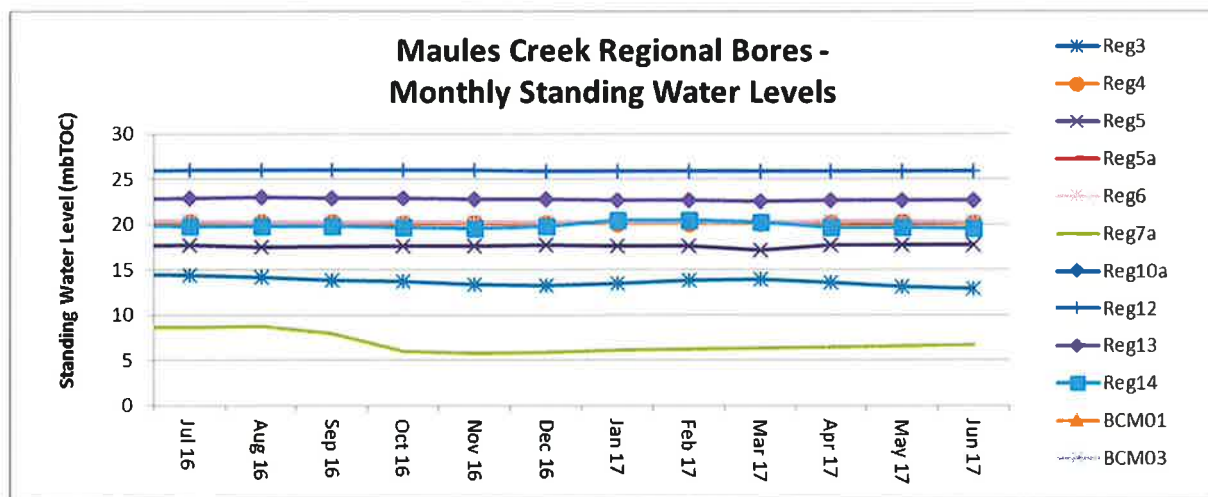
SWL	RB01a	RB02a	RB05a	Reg3	Reg4	Reg5	Reg5a	Reg6	Reg7a	Reg10a	Reg12	Reg13	Reg14	BCM01	BCM03
Jul-16	167.35	142.51	58.41	14.37	20.19	17.7		20.33	8.62		25.97	22.92	19.79		
Aug-16	167.59	142.72	58.5	14.18	20.2	17.52		20.29	8.7		25.99	22.95	19.75		
Sep-16	167.64	141.85	58.62	13.77	20.2	**	**	20.27	7.96		26.02	22.93	19.75		
Oct-16	167.53	140.47	58.66	13.69	20.17	17.6		20.24	6.03		25.98	22.87	19.65		
Nov-16	167.31	139.47	58.67	13.39	20.13	17.64		20.24	5.76		25.96	22.75	19.6		
Dec-16	167.37	***	58.65	13.25	20.09	17.7		20.27	5.94		25.9	22.72	19.76		
Jan-17	166.82	138.7	58.07	13.43	20.1	17.65		20.24	6.06		25.9	22.64	20.53		
Feb-17	166.36	138.38	58.59	13.82	20.1	17.64		20.27	6.25		25.88	22.62	20.43		
Mar-17	*	*	59.05	13.91	20.14	17.14		20.3	6.34		25.91	22.6	20.23		
Apr-17	*	*	58.69	13.58	20.16	17.71		20.32	6.45		25.92	22.64	19.7		
May-17	*	*	59.24	13.11	20.19	17.76		20.32	6.61		25.93	22.66	19.72		
Jun-17	*	*	56.86	12.87	20.17	17.68		20.23	6.66		25.89	22.61	19.56		

Blank cells indicate sample periods where bores were dry.

*Bore decommissioned due to progression of mining area

**Inaccessible

***Unable to sample



Acidity / Alkalinity (pH)

Baseline groundwater conditions are still being established, however, 2 bores (Reg4 and Reg13) show elevated pH levels (above pH 8.5) this has been determined to be as a result of low recharge volumes within these bores since installation.

Table 11 - Groundwater Results pH

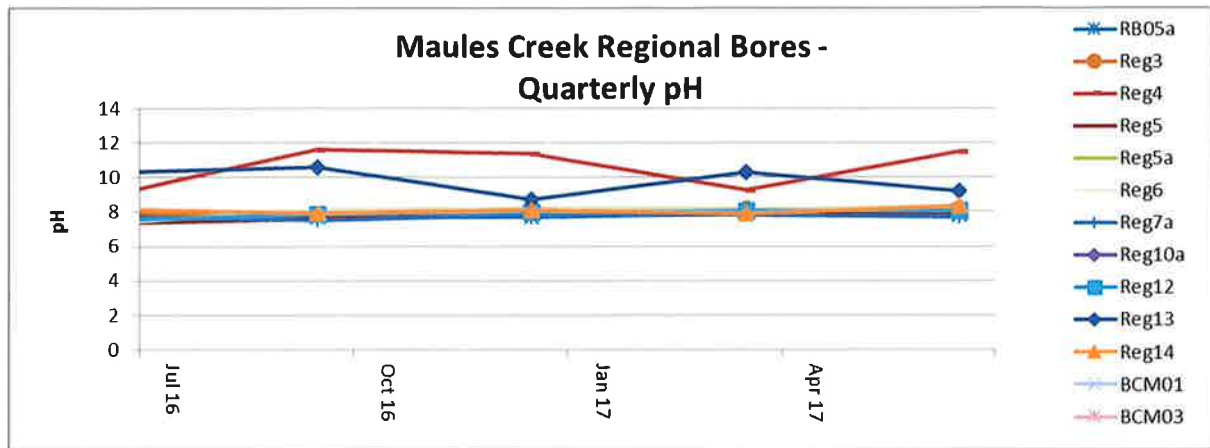
pH	RB01a	RB02a	RB05a	Reg3	Reg4	Reg5	Reg5a	Reg6	Reg7a	Reg10a	Reg12	Reg13	Reg14	BCM01	BCM03
Sep-16	9.17	11.9	7.68	7.9	11.6	**	**	8.16	7.49		7.89	10.6	7.96		
Dec-16	8.96	***	7.68	8.25	11.4	7.85		8.26	7.8		7.97	8.71	8.12		
Mar-17	*	*	7.89	8.17	9.26	7.97		8.23	7.81		8.05	10.3	7.88		
Jun-17	*	*	7.83	8.18	11.5	7.88		8.32	7.67		8.08	9.21	8.34		

Blank cells indicate sample periods where bores were dry.

*Bore decommissioned due to progression of mining area

**Inaccessible

***Unable to sample



Electrical Conductivity

Laboratory Electrical Conductivity (EC) levels are all within historic groundwater EC range of 500 μ s/cm to 2,500 μ s/cm, with the exception of monitoring bore Reg13 which has a historic groundwater EC range of 2,000 μ s/cm to 4,700 μ s/cm.

Table 12 – Groundwater Results EC

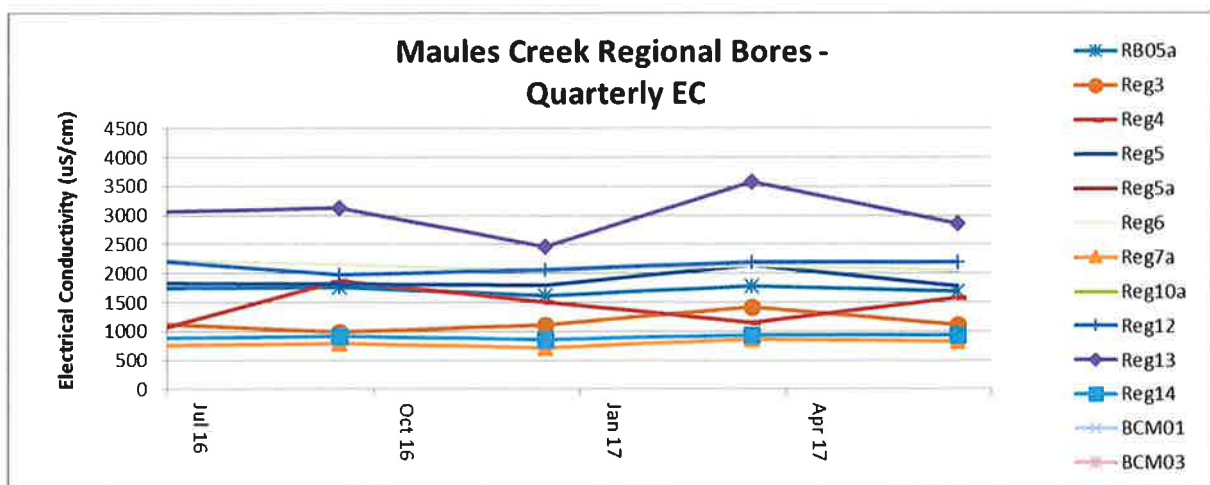
EC	RB01a	RB02a	RB05a	Reg3	Reg4	Reg5	Reg5a	Reg6	Reg7a	Reg10a	Reg12	Reg13	Reg14	BCM01	BCM03
Sep-16	1040	2240	1760	986	1860	**	**	2160	790		1980	3130	921		
Dec-16	1200	***	1620	1120	1500	1800		2050	714		2060	2460	856		
Mar-17	*	*	1780	1420	1140	2130		2140	860		2190	3570	938		
Jun-17	*	*	1690	1120	1580	1780		2050	833		2190	2850	935		

Blank cells indicate sample periods where bores were dry.

*Bore decommissioned due to progression of mining area

**Inaccessible

***Unable to sample



Wet Weather Discharge Sampling

Between 1st April and 30th June 2017, Maules Creek Coal AWS recorded 151.4mm of rainfall. Rainfall levels exceeded the 38.4mm over a consecutive 5 day period on three occasions during this period.

Note: As per wording of condition L2.5 of EPL20221, 38.4mm equates to the 5 day 90 percentile rainfall for the Gunnedah region.

All results were within the criteria prescribed by L2.4 and L2.5 as detailed in the result tables below.

Table 13 – Wet Weather Discharge Monitoring Results

EPL ID	Date	Parameter	Units	Criteria	Min Value	Max Value
9 (SD9)	22/05/17	TSS	mg/L	n/a*	48	128
	24/05/17	Oil & Grease	mg/L	10	<5	<5
	29/06/17	pH	pH	6.5-8.5	7.76	8.18

* In accordance with EPL 20221 L2.5 TSS concentration limits may be exceeded for water discharged as a result of rainfall exceeding 38.4mm in a consecutive 5 day period

Surface Water – Creeks and Rivers

Routine surface water monitoring is conducted in surrounding creeks and rivers on a monthly basis. Results for parameters including pH, EC and Total Suspended Solids (TSS) are shown in the tables and figures below.

Acidity / Alkalinity (pH)

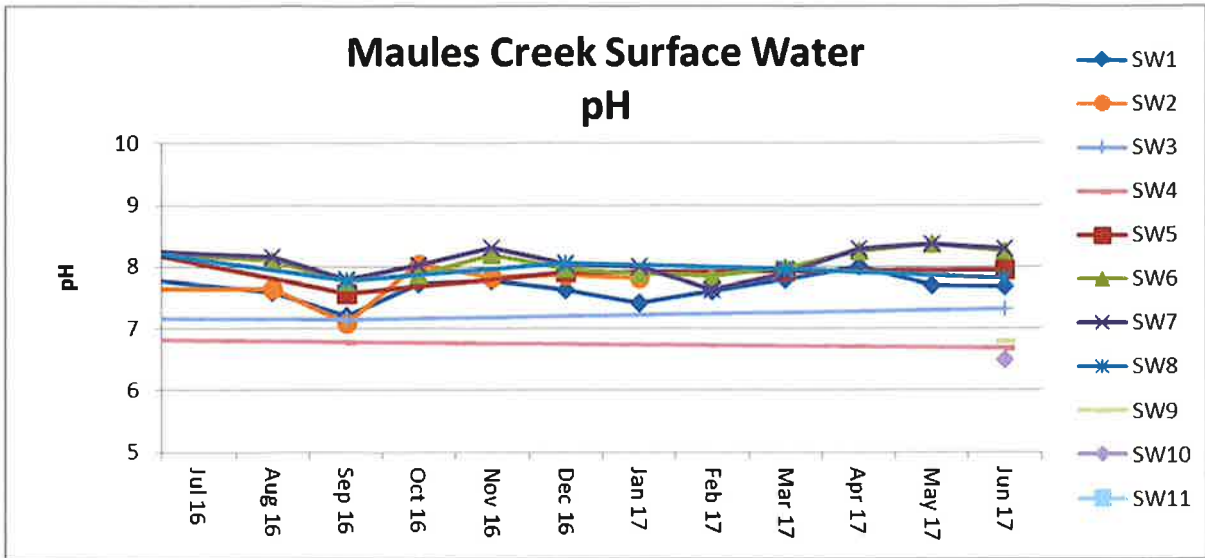
Monitoring results for pH in creeks and rivers surrounding MCCM are all trending within the ANZECC acceptable range for Irrigation, Ecosystem Health and Recreation. Back Creek and upper Maules Creek are ephemeral systems.

Table 14 – Surface Water Results pH

Lab pH	SW1	SW2	SW3	SW4	SW5	SW6	SW7	SW8	SW9	SW10	SW11
15/08/2016	7.58	7.64				8.1	8.16				
22/08/2016	7.66					8.1	8.19				
14/09/2016	7.2	7.09	7.15	6.78	7.57	7.75	7.8	7.77	*	*	*
13/10/2016	7.71	8.05				7.88	8.03				
7/11/2016	7.77	7.83				8.19	8.31				
12/12/2016	7.62	7.88			7.91	7.96	8.04	8.06			
10/01/2017	7.41	7.82				7.89	8				
10/02/2017	7.6					7.86	7.62				
14/03/2017	7.79				7.93	7.99	7.9	7.96			
12/04/2017	8.01					8.26	8.3				
12/05/2017	7.7					8.36	8.37				
13/06/2017	7.69		7.31	6.69	7.95	8.26	8.3	7.81	6.81	6.49	

Blank cells indicate sample periods where waterways were dry.

*Too wet to access monitoring locations



Electrical Conductivity

Surface water EC trends have remained consistent with SW5, SW6, SW7 and SW8 all historically variable. SW5, SW6, SW7 and SW8 are points along the Namoi River which is subject to regulated and variable flow regimes.

Table 15 – Surface Water Results EC

Lab EC	SW1	SW2	SW3	SW4	SW5	SW6	SW7	SW8	SW9	SW10	SW11
15/08/2016	367	284				320	325				
22/08/2016	451					378	376				
14/09/2016	190	216	175	69	323	326	338	327	*	*	*
13/10/2016	416	373				387	385				
7/11/2016	388	370				447	461				
12/12/2016	394	428			285	274	292	352			
10/01/2017	351	472				233	143				
10/02/2017	357					218	222				
14/03/2017	343				325	322	324	328			
12/04/2017	297					503	511				
12/05/2017	345					618	611				
13/06/2017	337		232	89	534	639	649	554	40	46	

Blank cells indicate sample periods where waterways were dry.

*Too wet to access monitoring locations

