Appendix C Community Consultation Meetings

Report addressing the comments and questions raised

at the

Community Information Sessions

for the

Bickham Coal Company Water Resource Assessment and Draft Water Management Plan

Prepared by
Urban Concepts
In conjunction with:
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The technical information presented in this document has been prepared in conjunction Bickham Coal Company, the Water Consultants, Aquaterra and Evans & Peck. The document has been approved by Bickham Coal Company Pty Limited ABN 94087270899. Urban Concepts is the trading name for Ambaska Holdings Pty Ltd, Level 8, 15 Blue Street, North Sydney NSW 2060 Tel: 02 9964 9655 Fax: 02 9964 9055 ABN 96 074 171 065

1.0 INTRODUCTION

The report presents the response by the Bickham Coal Company to the comments and questions raised by the community at the information sessions held by the Bickham Coal Company to coincide with the public exhibition by the NSW Department of Planning of the Water Resource Assessment and Draft Water Management Plan for the proposed open cut coal mine.

The information sessions were part of a voluntary community information process that was implemented by the proponent to assist community understanding of the water study documents and their key findings.

This report has been issued to attendees of the information sessions, the Upper Hunter Shire Council and the NSW Department of Planning.

Should the project proceed to full assessment under Part 3A of the Environmental Planning and Assessment Act 1979, then a further consultation plan would be prepared and implemented to address the consultation requirements specified by the Director General of the NSW Department of Planning.

This report has been prepared by Urban Concepts in conjunction with Repute Communications, Aquaterra and Evans & Peck on behalf of the Bickham Coal Company.

1.1 Consultation Aims and Objectives

The community information process implemented by the Bickham Coal Company was underpinned by the following consultation aims and objectives:

- To explain the findings and the methodology behind the Water Resource Assessment and the Draft Water Management Plan to interested residents and stakeholders prior to the closing of the public exhibition. This was to ensure that all stakeholders were in the best position to make informed comment to the NSW Department of Planning while the water study documents were on public exhibition.

- To explain the revised mine plan focusing on the changes that have been made to the original proposal to minimise the risk and perceptions of impact to the groundwater and surface water systems on the Pages River.

- To provide interested stakeholders with a forum for addressing their questions and concerns directly to Bickham's water consultants in a timeframe that will coincide with the public exhibition of the documents by the NSW Department of Planning.

- To communicate the economic benefits of the mining proposal to the Hunter Valley community so that full regard can be given to all aspects of the mine proposal.

- To maintain an open dialogue with interested residents and integral stakeholders that will remain in place while the WRA is on exhibition and, pending NSW Department of Planning approval, during the forthcoming environmental assessment process.

- To ensure all material produced for public circulation is presented in a clear and concise 'Plain English' manner.

- To encourage community involvement by ensuring consultation initiatives are accessible reflecting the proponent's genuine concern for the local community.

- To ensure community and stakeholder involvement is meaningful through reporting of community events to the NSW Department of Planning.

- To ensure a regular flow of project information is provided to all key media outlets in a timeframe that reflects the critical path of the project and the regulatory process being administered by the NSW Department of Planning.

1.2. Consultation Methodology

The voluntary community information process implemented for this project reflected the following methodology.

1.2.1 THE CONSULTATION PLAN

A Consultation Plan was prepared and forwarded to the NSW Department of Planning and Upper Hunter Shire Council for information and comment. The plan acted as the blue print for the consultation process and explained how all activities would be delivered in a timely and efficient manner to coincide with the exhibition of the Water Study by the NSW Department of Planning.

The plan comprised three key components:

- Provided for the establishment of key information lines to disseminate information about the project and proposed consultation events.
- The staging of consultation events to enable interested community members and integral stakeholders to obtain further information and details about the water study documents.
- The reporting of key community concerns raised during the information process.

1.2.2 INFORMATION LINES

ESTABLISHMENT OF FREECALL 1800 NUMBER, PROJECT PO BOX AND EMAIL ADDRESS
The following information lines have been established and will remain in place for future consultation initiatives:

- The 'Bickham Coal Information Line' using a 1800 freecall number. The information line was serviced during business hours by the offices of Urban Concepts. The free call number is 1800 031 506.

  The 1800 number serviced 52 calls during this process. The majority of these phone calls were registrations to the community information sessions.

- The project mailing address:
  Bickham Coal Mine Project
  PO Box 1554
  NORTH SYDNEY NSW 2059

  We advise that 2 letters were received through the postal address. One letter was advising that the participant was unable to attend the sessions and the second letter was a revision to the draft record of comments that has been included into the final record for the 6.30-8.30pm Scone Information Session.

- The project email address is bickhamcoal@urbanconcepts.net.au

  We advise that 36 emails were received. The majority of these emails were registrations to the community information sessions.

STAKEHOLDER DATABASE
To assist with the management and implementation of the Consultation Plan, a stakeholder database was prepared using Microsoft Access.

A PROJECT WEBSITE
Bickham Coal Company has established a project website at www.bickhamcoal.com.au. The website includes information about the proposed consultation events and was structured to enable community members to register for their attendance at the consultation events on line. The website also included a community feedback form. We advise that 1 feedback form was completed during the consultation process.

PREPARATION OF A COMMUNITY CONSULTATION NEWSLETTER
The community newsletter incorporated information about the project, invited participation in forthcoming information events and established Urban Concepts as the public point of contact for the consultation. The newsletter was prepared and circulated to coincide with the public exhibition of the Water Study document by the NSW Department of Planning.

The newsletter was circulated to the notification catchment identified by the Upper Hunter Shire Council using addressed mail. A total of 1200 newsletters were distributed to households within the notification catchment.

MEDIA DISPLAY ADVERTISEMENT
Half page display advertisements were placed in the Scone Advocate on the 29th October and the 5th November, 2009 and in the November edition of The Link Community Newsletter to promote broader community coverage of the community information sessions and the revised mine proposal.

1.2.3. CONSULTATION EVENTS

COMMUNITY MEET AND GREET
Urban Concepts undertook a meet and greet with local businesses in the main street of Murrurundi on Friday 6th November prior to the Community Information Sessions. The purpose of this initiative was to ensure that the business community was informed about the forthcoming community information sessions and to gauge community attitudes to the proposal from the perspective of local businesses.

COMMUNITY INFORMATION SESSIONS

Four community information sessions (each 2 hours in duration) were held on Wednesday 11th and Thursday 12th November 2009 providing community members with a range of times to attend. In total 167 community members attended the information sessions. The program for the community information sessions and the level of attendance at each session is listed below.

The Final Record of Comments arising from the community information sessions are detailed in Section 2. The responses to the comments and questions raised are detailed in Section 3.

MURRURUNDI INFORMATION SESSIONS

Date	Time	Venue	Number of Attendees
Wednesday 11th November, 2009	Evening 6.30pm – 8.30pm	Murrurundi RSL Hall Mayne Street, Murrurundi	56
Thursday 12th November, 2009	Breakfast 7.30am – 9.30am	Murrurundi RSL Hall Mayne Street, Murrurundi	21

SCONE INFORMATION SESSIONS

Date	Time	Venue	Number of Attendees
Thursday 12th November, 2009	Lunch 12.30pm – 2.30pm	Scone Council Chambers 135 Liverpool Street, Scone	45
Thursday 12th November, 2009	Evening 6.30pm – 8.30pm	Scone Council Chambers 135 Liverpool Street, Scone	45

UPPER HUNTER SHIRE COUNCIL BRIEFING

Representatives of the Bickham Coal Company, Aquaterra and Evans & Peck participated in a briefing session for the Councillors of the Upper Hunter Shire Council on the 23rd November. This briefing included a site inspection.

1.2.4 REPORTING

The comments raised during the consultation process and the Bickham Coal Company responses as documented in this report will be forwarded to all participants, the Upper Hunter Shire Council and the NSW Department of Planning. A copy of the report will also be posted on the Bickham Coal Company website.

2. FINAL RECORD OF COMMENTS

This section details the final record of comments for each of the information sessions. It had been Urban Concepts' intention to digitally record each of the sessions and equipment had been hired from Sydney for this purpose. Due to a technical failure of the equipment it was not possible to download the information recorded and as such the Records were prepared using the comments and questions written down on the flip chart by the Facilitator. This record was issued to all participants in draft and participants were given one week to advise Urban Concepts if the comments had been recorded correctly. During this time Urban Concepts received one submission requesting a change to the Record of Comments for the 6.30-8.30pm Information Session held in Scone on the 12th November. The requested change has been made.

Section 3 of this report provides the responses by the Bickham Coal Company and their water consultants to the issues raised.

2.1. Record of Comments in Murrurundi 11th November, 2009 6.30-8.30pm

The following comments were recorded during the facilitated question and answer time.

COMMENT/QUESTION

- What will be the impact of the mine on the town water supply? Murrurundi sources its water from the Pages River.
- What is the projected gross income from the mine per year?
- Who will police the mine and its operations? Who or what body is responsible for making sure you do what you say you are going to do?
- What is the level of accountability that Bickham must meet? Where is this prescribed and by which agency?
- Did the authorities stipulate that the bulk sample hole must be closed? Why hasn't it been filled in?
- On page 5 of the Part A Executive Summary – it indicates that it will take to Year 107 for the flows of Pages River to return to normal. Why will it take so long?
- In your investigations have you taken into account that we may be in a period of reduced rainfall? Have you considered Climate Change and its implication in your forecasting?
- If Kingdon Ponds is alluvial, then why does it have the same recovery rate as the Pages River?
- What sensitivity analysis has been done? What parameters or assumptions did you adopt when undertaking this analysis?
- Can you please explain the cross sections?
- What happens with the final void if it is not filled in, does it become a big dam?

- What happens if the river is captured?
- The 'catch cry' is always jobs when it comes to mines. We live on the Paradice property which you have identified will be impacted. There will be impact – where does it stop? We live here – why are we catering for people who come into this area? What about us, we are already here and you are indicating that our property will be impacted?
- What happens to the cavity underground when you extract the water? Can the ground above sink in? I have heard from geologists that this can happen.
- Of the jobs beings offered how many are full time and what percentage will be contractual?
- The Bickham Water Licence will be used to replace potential water losses. How do you replace the loss ultimately?
- I'm the next property to Paradice and you say you will replace their water – what happens to our place – how does our water get replaced?
- Question relating to the conditions that underpin the Bickham Licence and how it can be surrendered.
- If my bore at Blandford goes dry, how will Bickham replace my water?
- Where else do you run a Coal Mine in Australia? Are you just looking to get this mine developed and sell it off for the profits?
- Can you explain the sensitivity analysis and the options that you have run? Have you run your analysis to include the installation of a washer facility?
- Will blasting be used? Will it result in fracturing of the rock strata and what happens to groundwater seepage if fracturing occurs?
- Is the Water Licence high or low security?
- Is there connectivity between the mine and the Pages River?
- I am concerned about dust. How will you suppress the dust? What impact will dust have on the water quality of the Pages River?
- Weather monitoring – will you set up a weather monitoring station to advise on wind direction and its impact on dust?
- Will the Water Licence be surrendered to the Department or will it be sold?
- Will you have dewatering dams? What happens if you need to add a coal washing facility at a later date? How will this impact on water supply and quality?
- Is there a separate groundwater licence?
- Is there a model of the mine site? It is difficult to conceptualise the mine plan. Couldn't you build a model to help the community understand the proposal?
- What is below the G seam?

- The dust impact will be cumulative on the Muswellbrook situation. Will you have regard to this cumulative impact in your investigations?

2.2 Record of Comments in Murrurundi 12th November, 2009 7.30-9.30am

The following comments were recorded during the facilitated question and answer time.

COMMENT/QUESTION

- Will you provide a guarantee that there will be no underground mining of the G seam?
- Can you clarify the buffer zone that is now being provided in the new mine plan to the Pages River?
- Why is there a massive gap between the two pits? Is this because of a geological fault? I can only assume it must be something serious because it must be more expensive to mine two pits rather than extending one pit. Why can't they be connected does it have something to with the River?
- If you can't interpret the geological data in the gap, why can you interpret the other areas with confidence?
- What percent of the water licence will be relinquished – relinquishing it will not increase baseflow of Pages River?
- What you are actually saying is that you are relinquishing a 'right' to take water – not actual water. You should make this clear .
- What will be the impact on operations to the east of the Pages River? Take on notice – provide further documentation re: basalt geology.
- What percent of your Water Licence will you use on full production?
- During dry periods the Pages River is reduced to ponds – what will you use as a water supply for your operations then?
- How much base water will you draw? How much water will you use in a month – in a year?
- If you are not going to use the licence why not relinquish it immediately?
- What happens if the impact from your mine is not an individual property but a whole community? What will you do then? We have already been on Level 5 water restrictions in the last 3 years. This is a fragile ecosystem. What will you do?
- What happens with the process after these sessions?
- Why haven't you considered a tunnel mine instead of open cut given the extent of over burden that is predicted?
- I would like to see a graphic of the overburden from street level from the highway – I am concerned about visual impact. Why haven't you provided any visuals of what it will look like?

- Can you provide details of how high the overburden will be?
- Can Bickham guarantee that the Pages River will never be captured?
- Could an earthquake break down the geological barrier that you say keeps water from running between the Pages River and the mine pit?
- How do the water investigations and assessment process for the proposed mine compare to other mines?
- How will you access the Pit 1 overburden?
- Will studies be undertaken regarding dust and its impact on the Pages River?
- If you are going to replace water by drilling deep bores wouldn't this require Government approval?
- What guarantee is there that the bores will be approved?
- Why is it necessary to have the Bickham Mine at all?
- Page 6 of Executive Summary – 'post mining water levels do not recover completely in some parts of the immediate mine area'. How can you say there will be no impact?

ADDITIONAL COMMENT RE CEIVED BEFORE SESSION

"For the Bickham Coal Information Sessions. Apologies from Deborah Miller that I am unable to attend the meeting.

My concerns re: the proposal will be lodged.

Thank you".

2.3 Record of Comments ñScone 12 th November, 2009 12.30-2.30pm

The following comments were recorded during the facilitated question and answer time.

COMMENT/QUESTION

- Toxic and heavy metals – how are they dealt with and managed in the mine plan?
- What toxic metals are in the coal measures - that is what I mean – not the water?
- You are showing us Stage 1 - what about the other stages?
- What methodology did you use?
- What testing has been done on composition?
- Will the mine impact on Burning Mountain?

- ‘A lot of people have moved up here to get away from the Coal Mines of Muswellbrook’.
- We have 2 properties that have different water supplies some of these are very saline. Can you guarantee that mining blasting won’t fracture the saline supplies and increase our saline water supply.
- The reduction in rate flow of 2% - will this remain through the entire project?
- You have to offset this reduction – how will you address this? Getting approval for the replacement of water will this be lengthy or troublesome?
- You say that the coal is of such quality that you don’t need a washery – will this change during the project?
- You have a 100ML licence to replace the 2% flow. Can you confirm the amount of water you will be taking?
- So we have no cause for concern that Bickham will “turn the taps off” in Scone, are there any plans to put aside funding in case the unthinkable happens?
- Cross-section BB – coal seams go directly from the Pages River - is there any potential for the Pages River to empty into your mine?
- How do we know that your predictions are correct? This wasn’t the case with the Dartbrook mine.
- This coal will be sold to Japan. Why should we be willing to gamble our pristine environment to sell to Japan? Japan as a country values its pristine environment – why are we gambling ours?
- Bickham has tested our bores. Has the water been aged and have there been investigations of pressure and rising of water?
- You have coal leases in the lower Hunter - why not stay in the lower Hunter?
- Is your Water Licence currently being used?
- If Bickham proceeds will Bickham work with the RTA to get rid of the rail crossings?
- Toxic metals – I want to know what is present in the coal. Taken on notice.
- Have your water models looked at using water for dust mitigation?

ADDITIONAL QUESTIONS RECEIVED AFTER MEETING

- Insurance to cover accidents.
- Insurance to cover loss by downstream/ponds.
- Does the DoP monitor all of the project for the 25 years?
- What part does the Upper Hunter Council monitor?
- Stage 1 is what you are showing today, what is Stage 2, 3, 4 etc?

2.4 Record of Comments ñ Scone 12th November, 2009 6.30-8.30pm

The following comments were recorded during the facilitated question and answer time.

COMMENT/QUESTION

- Can you provide details about how you will deal with surface flows?
- Is there potential to increase the size of the mine at a later date? Will you be seeking approval for further stages of the mine? Are you just showing us Stage 1?
- When you model seepage, how do you predict where fractures will be in the profile?
- Have you taken samples down river? If so, where?
- If something happens to the water supply of other properties that pump from the Pages River, will you replace this water?
- Will coal be transported by rail?
- Is the value of washed coal and unwashed coal the same?
- What tests have you done to make sure there is no acid mine drainage?
- Have you tested for other mineral deposits besides coal?
- If you fill the mine in as you go along, that water will never make it to the Pages River. How do you make this up?
- Question concerning silica results.
- If the Planning Commission gives this proposal approval do they continue to monitor it and what happens if things don't occur as indicated by the Study?
- Once the mine is up and running would you drink the river water?
- You have so much faith in this water study – in the event that it goes 'pear shaped' will you provide a guarantee to provide the necessary infrastructure to provide this town with a water supply?
- What is your contingency if the River gets polluted?
- I am sure you understand our concerns. We are dependent on the Pages River for our livelihood. If anything happens to this water supply there goes our livelihood and environment. This River is our life.
- Are the results of monitoring publicly available and how often?
- What have you expended to date to get this far.
- How do you calculate the cumulative impacts of seepages/fractures that could occur to other properties and how do you compensate for these?

- Will you listen to parties that come to you who say they are being impacted if they are outside your study area?
- You have an exploration licence. Do you make a commitment that you won't amend the mine plan?
- How close is Burning Mountain to the mine site and what impact will the mine have?
- Have you taken into consideration the impact of blasting on rock platforms and how you would remediate these problems? Have you assessed the potential impact on significant aboriginal sites and aboriginal archaeology?
- You have dropped a bombshell that potentially more mining can occur in the Bickham area.
- Surprised to see overburden dump extend so close to the river alluvial bed.
- How long have you been doing the drilling for?
- Will there be more drilling? If there is, will it adversely affect the water?
- Can you advise the closing date for making submissions to the NSW Department of Planning?

ADDITIONAL QUESTIONS RECEIVED AFTER MEETING

- Is this part of the Greta Coal Measure?
- What happened to the water pumped out in the 6 month dewatering time?
- Where does the aquifer end up? i.e. who will be disadvantaged further 'down' the aquifer?
- Why revegetate the overburden dump when you are supposed to be backfilling the big hole left from mining coal with the overburden?
- Why will the topography of the mine pit be different when the mine is finished, compared to what it is at present?

REVISION TO RECORD OF COMMENTS RECEIVED AS FOLLOWS:

Question – Have you taken into consideration the impact of blasting on the Pages River environment and how would you remediate these problems if they occurred?
I did not mention anything about the impacts on Aboriginal sites and archaeology in that question – the person responding to me brought up that issue, and as I remember, we were told that Aboriginal archaeology issues will be addressed in later studies. (I did however, introduce myself as the Cultural Heritage Officer from the Wanaruah LALC). It was interesting to note that my original question was not answered but I was "fobbed off": with the explanation that 'this wil be addressed in a future Aboriginal archaeology report'.

I am quite aware that further archaeology will have to be undertaken in the future considering the known nearby sites recorded, (eg axe grinding grooves within the Pages River) however I was asking an environmental question which was relevant to the Water Resource Assessment and the Draft Water Management Plan.

In my present position as Cultural Heritage Officer at the Wanaruah Local Aboriginal Land Council (Wanaruah LALC), the major brief for my job is to protect sites within the existing environment for future generations of Aboriginal people within the Land Councils' boundary. I have university qualifications in Aboriginal archaeology (yes!) but I also have environmental knowledge and can relate the two sciences. I have been studying documents to assist in the assessment of another project (The Impacts of mining on Bowmans Creek near Singleton) and a report of importance has been reviewed entitled "Impacts of Longwall Coal Mining on the Environment in NSW" by the Total Environment Centre, Sydney South (www.tec.og.au). Although the Bickham Coal project is proposed as an Open Cut mine, the effect of blasting to within 150m of the banks of the Pages River and on the aquifer will have to have an affect on the river's geological confines. We were told that the blasts will only impact a distance of 20m! and that the Kingdon Ponds associated with the aquifer and the river environment will not be breached. However, I believe there is no way that (considering the stratified layers of the geology of the Murrurundi/Blandford area) shock waves will not travel further than 20m impacting on the stability of the rock outcrops within the river, the water quality and stream flow as well as having potentially devastating consequences for Burning Mount and Cameron's Gorge as well the permanent disappearance of surface aquifer ponds. Please ensure that this matter is addressed in the response to the Department of Planning and in future studies should this proposed project continue past the concept stage .

3. RESPONSES TO COMMUNITY COMMENTS

This section provides responses that have been prepared by representatives of the Bickham Coal Company and their Water Consultants Aquaterra and Evans & Peck.

The comments have been compiled from the question and answer sessions arising from the four community information sessions held by the Bickham Coal Company on the 11th and 12th November in Murrurundi and Scone.

The comments have been grouped under key headings that relate to the specific areas of concern. These are:

- Mine operation
- Legislation that controls open cut coal mining operations
- Accountability and reporting requirements
- Pages River and impact on flows and rate of recovery
- Surface flows
- Kingdon Ponds impact
- Groundwater seepage
- Bickham Water Licence
- Impact on adjoining land owners
- Impact on town water supply
- Sensitivity analysis modelling and underlying assumptions
- Consideration of other potential environmental impacts
- The geology of the mine
- The impact of blasting
- The impact on Burning Mountain.

3.1 MINE OPERATION

The comments and the subsequent response from the Bickham Coal Company are set out below:

QUESTION	BICKHAM COAL COMPANY (BCC) RESPONSE
Cost of Water Stud y Investigations What have you expended to date to get this far.?	Total exploration costs to date exceed $10 million with several millions of this amount being expended directly on Water Study investigations.
Turnover What is the projected gross income from the mine per year?	When the mine reaches full production it is projected that the annual turnover will exceed $180 million
Employment Of the jobs being offered what percentage will be full time positions and what percentage would be contractual positions	Total full time mine employees should reach 100 by the end of year 5. Contract and indirect employee numbers would exceed 200 by this time
Management Where else do you run a coal mine in Australia? Are you just looking to get this mine developed and sell it off for the profits?	Bickham Coal is owned jointly by the Cant and Foster families, both of whom have been involved in coal mining in the Hunter for three generations. The Cant family own and operate two open cut coal mines in the Hunter, namely Bloomfield at Maitland and Rix's Creek near Singleton and these mines have had the same owner since they commenced. The Foster family co-owned and operated a contract coal mining company, Hunter Valley Earthmoving, which has over the past 35 years

QUESTION	BICKHAM COAL COMPANY (BCC) RESPONSE
	carried out contract open cut coal mining at 8 different mines throughout the Hunter region. Both owners therefore are long term coal miners in the Hunter Valley.
Why is it necessary to have the Bickham Mine at all? You have coal leases in the lower Hunter ñwhy not stay in the lower Hunter.	With the coal reserves becoming depleted at the Cant family's Bloomfield operation, and indeed with an increasing number of lower Hunter coal mines, economically viable replacement resources such as Bickham need to be developed to meet the ongoing needs of existing export customers
Exportation This coal will be sold to Japan. Why should we be willing to gamble our pristine environment too sell to Japan? Japan as a country values its pristine environment ñwhy are we gambling ours?	The Bickham Coal Company supports trade between countries and understands that both agriculture and mining are dependant on foreign customers. It is our understanding that our environmental values are the equal of other countries with whom we trade.
Process Will you have dewatering dams? What happens if you need to add a coal washing facility at a later date? How will this impact on water supply and quality?	A sequence of mine water storage dams will be constructed during the life of the mine. Details are provided in Appendix 25 of the Water Report.
During dry periods the Pages River is reduced to ponds ñwhat will you use as a water supply for your operations then?	There is no intention to use water from the Pages River for mine requirements at any time during the life of the project.
How much base water will you draw? How much water will you use in a month ñin a year?	Water requirements during the life of the mine vary depending on the amount of coal being mined and the amount of rainfall in the month or year. Water requirements are fully detailed in Appendix 19 of the Water Report.
How long have you been doing the drilling for?	Exploration drilling within EL's 5306 and 5888 commenced in 1999.
Will there be more drilling? If there is, will it adversely affect the water?	No further drilling is planned in the near future and none of the drilling to date has had any measurable adverse impact on groundwater or surface water.
What happened to the water pumped out in the 6 month dewatering time?	The licensed groundwater pumped during the Bulk Sample excavation period was held in a purpose built dam and then used as required for dust suppression etc. No water was released.
Water Quality Once the mine is up and running would you drink the river water?	Water quality in the Pages River will not be adversely affected by the proposed mine and in fact it is quite likely that an improvement in water salinity may occur as some saline groundwater may flow into the pit rather than the river.
Underground Mining Will you provide a guarantee that there will be no underground mining of the G seam?	The generally complex regional geology and considerable dip in the coal seams do not encourage any type of underground mining. Highwall underground mining in the project area is excluded by the immediate backfilling of open cut voids as soon as possible after the basal coal seam is extracted.
Why haven't you considered a tunnel mine instead of open cut given the extent of over burden that is predicted?	See above comments.

QUESTION	BICKHAM COAL COMPANY (BCC) RESPONSE
Overburden Can you provide details of how high the overburden will be?	The overburden will be placed against existing hills and will not be higher than the original hills.
How will you access the Pit 1 overburden?	The pit will be developed with a series of low wall access roads and benches. The initial overburden is taken to the out of pit overburden dump. Once working room is developed and coal is removed, overburden dumping back in pit commences. These dumps are progressively rehabilitated as the mine develops.
Why revegetate the overburden dump when you are supposed to be backfilling the big hole left from mining coal with the overburden?	The initial overburden from the pit will be placed in an out of pit dump. As soon as enough room has been developed within the pit the overburden will be dumped in pit The out of pit dump and in pit dump will be rehabilitated in stages as the dump reaches its final design shape. Rehabilitating the dump as quickly as possible does not adversely affect the rate of backfilling within the pit.
Why will the topography of the mine pit be different when the mine is finished, compared to what it is at present?	When rock is mined the material swells therefore requiring more room when deposited back in the void
Surprised to see overburden dump extend so close to the river alluvial bed.	The overburden dump on the floodplain is set back between 250 and 300 metres from the Pages River. At this distance there are only minimal increases in flood level and velocity, particularly as Bickham Gorge downstream of the overburden dump provides the control on upstream flood levels and velocities.
Expansion Plans Is there potential to increase the size of the mine at a later date? Will you be seeking approval for further stages of the mine? Are you just showing us Stage 1?	We have no intentions of expanding the mine.
You have an exploration licence. Do you make a commitment that you wont amend the mine plan?	See above.
You have dropped a bombshell that potentially more mining can occur in the Bickham area.	Neighbouring property owners have reported clear evidence of outcropping coal on their land as well as striking coal when drilling water bores. Whether these coal deposits are of acceptable quality and quantity to support a future mining proposal is at this time unknown.
You are showing us Stage 1 what about the other stages. Stage 1 is what you are showing today, what is Stage 2,3,4, etc?	The entire mining proposal is detailed in the Water Report.
Transportation of Coal. Will coal be transported by rail?	All coal will be transported by rail and a rail loop to allow on site coal loading is shown on Figures B3.1- B3.7 of the Part A report.
If Bickham proceeds will Bickham work with the RTA to get rid of rail crossings?	Bickham Coal Company supports the idea of an overpass on the highway through Scone and would cooperate with local groups to achieve that aim.

QUESTION	BICKHAM COAL COMPANY (BCC) RESPONSE
The difference between washed and unwashed Coal Is the value of washed coal and unwashed coal the same?	The Bickham coal does not need to be washed to meet thermal export coal specifications. Whether coal is washed or not washed has no bearing on coal value.
You say that the coal is of such quality that you donít need a washery ñwill this change during the project?	No.

3.2 LEGISLATION THAT CONTROLS OPEN CUT COAL MINING OPERATIONS

QUESTION	BICKHAM COAL COMPANY (BCC) RESPONSE
What happens with the process after these sessions?	After the public exhibition period for the Water Report has closed, a Planning Assessment Commission (PAC) will receive submissions and undertake an independent review of the Water Study and then report its findings to the Director General of the NSW Department of Planning.
How do the water investigations and assessment process for the proposed mine compare to other mines?	The investigations have been far more extensive and detailed than for other coal mining projects. The water study has had to meet with requirements specified by the Department of Planning and take account of the issues and recommendations of Coal Mining Potential in the Upper Hunter Valley ñ Strategic Assessment (DoP, 2005). No other coal project has been required to follow this process.
If the Planning Commission gives this proposal approval do they continue to monitor it and what happens if things dont occur as indicated by the Study?	The role of the Planning Assessment Commission (PAC) is to advise the Minister for Planning in relation to specific projects when requested by the Minister to do so. The Minister has directed that the PAC appoint an independent panel to advise in relation to the Bickham water study. Details of the Bickham PAC panel can be viewed on the Planning Assessment Commission website. If the Minister agrees to allow Bickham Coal Company to lodge a project application and prepare an Environmental Assessment for the proposed project, at the completion of the Part 3A assessment process, approval of the project will be decided by the Minister for Planning. With regard to ongoing monitoring and management of impacts, a draft Water Management Plan has been prepared (Part C of the water study report) that includes a Monitoring Plan (for on-going monitoring); Reporting and Review; and Mitigation and Contingency Plans (describing the proposed monitoring regime and what is to be done if things do not occur as planned). The draft plan will be updated for approval by the Department before mining commences.
Can you provide the closing date for making	Friday 4th December, 2009

submissions to the NSW Department of Planning?	

3.3 ACCOUNTABILITY AND REPORTING REQUIREMENTS

QUESTION	BICKHAM COAL COMPANY (BCC) RESPONSE
Who will police the mine and its operations? Who/or what body is responsible for making sure you do what you say you are going to do?	The NSW Department of Industry and Investment, Department of Planning; Department Environment, Climate Change and Water (Environmental Protection Licence, Water Licences); Independent External Audits; Community Consultative Committee
What is the level of accountability that Bickham must meet? Where is this prescribed and by which agency?	All mines operate under a variety of permits and licenses issued by different agencies that are responsible for different aspects of the operations. All mines are required to monitor and report at least annually.
Did the authorities stipulate that the sample hole must be closed? Why hasn't it been filled in?	Bickham has committed to rehabilitating the Bulk Sample pit in accordance with the agreed plan. If the project is approved, Bickham will backfill the pit in the first year of mining.
What happens if the impact from your mine is not an individual property but a whole community? What will you do then? We have already been on Level 5 water restrictions in the last 3 years. This is a fragile ecosystem. What will you do?	The Murrurundi water supply is a considerable distance upstream of the Project area and will not be affected.
If my bore at Blandford goes dry how will Bickham replace my water?	The predicted area of impact is restricted to the immediate vicinity of the Project but any person who believes their water supply has been affected can apply to have an independent assessment of their claim and claims which are shown to be justified will be provided compensating water supply or similar by the proponent.
If something happens to the water supply of other properties that pump from the Pages River, will you replace this water?	As above
You have so much faith in this water study – in the event that it goes "pear shaped" will you provide a guarantee to provide the necessary infrastructure to provide this town with a water supply.	As above, the Murrurundi water supply is a considerable distance upstream and there are no predicted impacts on flow or quality.
What is your contingency if the River gets polluted?	Risk assessment and contingency measures for various impacts on water supplies and pollution events are described in Appendix 3 Surface Water and Groundwater Risk Assessment.
Are the results of monitoring publicly available and how often?	The results of monitoring to date are publicly available in the water study (Appendices 9 and 10). Once mining commences, BCC will be required to report annually on the conditions of its licence, including the results of monitoring. These reports will be available through government departmental websites.

QUESTION	BICKHAM COAL COMPANY (BCC) RESPONSE
Will you listen to parties that come to you who say they are being impacted if they are outside your study area?	All approaches from other landholders concerning possible water impacts will be considered by BCC. They will be referred to an independent hydrogeologist and/or hydrologist who will assess whether impacts are caused by the project, and if so the mitigation and response measures outlined in the Water Management Plans will be followed.
Insurance to cover accidents.	The Mine operator will be fully insured.
Insurance to cover loss by downstream/ponds.	The loss by downstream/ponds is addressed in the water study in terms of the potential likely impact of the project. Measures to compensate and mitigate against potential adverse effects are outlined in the study.
Does the DoP monitor all of the project for the 25 years?	The Project is monitored by the DoP and the DII (formerly the DPI). See the response to question 1 in this section
What part does the Upper Hunter council monitor?	The Upper Hunter Council is not directly involved in the monitoring of the Operation.but is involved with the Community Consultation Committee

3.4 PAGES RIVER AND IMPACT ON FLOWS AND RATE OF RECOVERY

QUESTION	BICKHAM COAL COMPANY (BCC) RESPONSE
On page 5 of the Part A Executive Summary ñit indicates that it will take to Year 107 for the flows of Pages River to return to normal. Why will it take so long?	The impacts on river baseflows will continue after completion of mining until such time as the in-pit backfill has reached its final design levels and groundwater levels have recovered accordingly.
What happens with the final void if it is not filled in, does it become a big dam?	The final void will gradually fill with water and a lake will form, recharged by groundwater seepage inflows, direct rainfall, and runoff from the small catchment area draining into the void. It will eventually fill to a level similar to the present groundwater levels in the mine area.
What happens if the river is captured?	The river will not be captured by the mine. The mine plan provides for a barrier of at least 300m between the Pages River and any point in the pit below river level.
Can Bickham guarantee that the Pages River will never be captured?	
Can you clarify the buffer zone that is now being provided in the new mine plan to the Pages River.	
Is there connectivity between the mine and the Pages River?	Connectivity exists by virtue of small groundwater seepages that cause a small increase in streamflow in Pages River as the river flows past the Bickham property. The degree of connectivity between Pages River and the coal measures groundwater is poor. This has been extensively investigated and the results are detailed in the water study report.
Cross Section BB ñcoal seams go directly from the Pages River ñis there any potential for the Pages River to empty into your mine?	This has been intensively studied in the water study with a number of different factors leading to the conclusion that there is no time in the life of the

QUESTION	BICKHAM COAL COMPANY (BCC) RESPONSE
	project where water will flow from the river to the mine.
Page 6 of Executive Summary ñpost mining water levels do not recover completely in some parts of the immediate mine areaí How can you say there will be no impact?	After mining, the overburden backfilling the pit will have a much higher permeability than the rock that occupied that space prior to mining. As a result, there will be a uniform water table within the pit area from north-east to south-west. Pre-mining, the groundwater levels vary along the length of the pit. The uniform post-mining water table level will be higher than pre-mining groundwater levels in some parts of the pit, and lower than pre-mining levels in other parts of the pit.
Have you taken samples down river? If so, where?	Samples have been collected monthly since 2002 from 7 locations along Pages River, including one site downstream of the project.
The reduction in rate flow of 2% - will this remain through the entire project?	The WRA found that the impact on baseflow contribution to the Pages River will gradually increase over time, to a maximum predicted reduction of 225 kL/d, representing just 0.2% (not 2%) of the average Pages River streamflow. For Kingdon Ponds, baseflow impacts will commence in year 7 of the mine, gradually rising to a maximum of 15 kL/d in year 40 (just 0.25% of Kingdon Ponds streamflow at the junction with Stony Creek). For both river systems, at all stages of mining and recovery there will continue to be positive baseflow contributions to the streams. Baseflows to the Pages River are predicted to be fully restored 75 years after completion of mining. A very small baseflow shortfall is predicted for Kingdon Ponds.

QUESTION	BICKHAM COAL COMPANY (BCC) RESPONSE
You have to offset this reduction ñhow will you address this? Getting approval for the replacement of water will this be lengthy or troublesome?	Any reduction of groundwater flow to the Pages River or Kingdon Ponds will be met by using one or more options to provide offsetting flows. During the period of mining and until completion of post-mining rehabilitation works, clean groundwater supplies from an external dewatering bore will be provided to replace any baseflow reductions. After completion of rehabilitation, baseflow reductions can be restored as an offset against South Bickham's existing surface water licence and/or purchase of an additional water allocation licence. Getting approval for the replacement of water will not be lengthy or troublesome. This has already been discussed with the NSW Office of Water within the Department of Environment, Climate Change and Water.
You have a 100ML licence to replace the 2% flow. Can you confirm the amount of water you will be taking?	South Bickham holds a stock and domestic licence and a 100ML/annum general unregulated river licence. There is no intention to use these licences to extract water from the Pages River for mine requirements at any time during the life of the project.
How do we know your predictions are correct? This wasnt the case with Dartbrook mine.	Each case is individually assessed and the model is accurate to within the limits of current best practice as determined by the Murray Darling Basin Commission.

3.5 SURFACE FLOWS

QUESTION	BICKHAM COAL COMPANY (BCC) RESPONSE
Can you provide details about how you will deal with surface flows?	The proposed management of surface flows within the mine site will involve three separate systems. "Clean" water sources from areas unaffected by mining will be allowed to discharge along the existing natural drainage system. "Dirty" water sources from recently constructed overburden dumps will be directed to a series of sediment basins that will be designed and operated in accordance with the requirements of Managing Urban Stormwater: Soils and Construction (Landcom, 2004). "Mine" water sources from the pit, including groundwater inflow, and runoff from haul roads and mine facilities, will be directed into a separate mine water system that will be isolated from other sources.
What tests have you done to make sure there is no acid mine drainage?	Coal and overburden sampling and leachate testing prior to the bulk sample program showed that both had a low acid-generating potential.

3.6 KINGDON PONDS IMPACT

QUESTION	BICKHAM COAL COMPANY (BCC) RESPONSE
If Kingdon Ponds is alluvial then why does it have the same recovery rate as the Pages River?	The alluvial aquifer associated with Kingdon Ponds is well downstream of the project and will not be impacted by the mining project.

3.7 GROUND WATER AND SEEPAGE

QUESTION	BICKHAM COAL COMPANY (BCC) RESPONSE
Can you please explain the cross sections?	An explanation of the cross-sections was provided at the meeting by reference to the screen projection.
What happens with the final void if it is not filled in, does it become a big dam?	The final void will gradually fill with water and a lake will form, recharged by groundwater seepage inflows, direct rainfall, and runoff from the small catchment area draining into the void. It will eventually fill to a level similar to the present groundwater levels in the mine area.
What happens to the cavity underground when you extract the water? Can the ground above sink in? I have heard from geologists that this can happen.	No cavity will remain underground as a result of groundwater extraction. The water will come from minor fractures within the hard rock coal measures, which are rigid and non-compressible. Ground subsidence due to dewatering can only occur in soils or unconsolidated aquifers which are highly compressible.
Is there a separate groundwater licence?	A groundwater licence was held by BCC for the bulk sample dewatering. Groundwater licences will be required for pit inflows and any groundwater pumped from dewatering or water supply bores. These licences will be applied for prior to mining, and will be assessed by the NSW Office of Water in the normal way.
If you are going to replace water by drilling deep bores wouldnt this require Government approval?	
What guarantee is there that the bores will be approved?	
When you model seepage, how do you predict where fractures will be in the profile?	The seepages that are the avenues for seepage into the mine are not numerous, but are distributed throughout the rock in such a way that when assessing the rock properties, the rock within any hydrogeological unit can be considered to have relatively uniform permeability and storage properties. No major zones of fracturing that could constitute preferred pathways for higher rates of groundwater flow have been observed, and all rock units are only moderately to poorly fractured. Therefore it is not necessary to know precisely where individual fractures occur in the rock, and in modelling, it is assumed that the rock is uniformly fractured.
If you fill the mine in as you go along, that water will never make it to the Pages River. How do you make this up?	The mine will be progressively backfilled with overburden as mining proceeds. The overburden will generally be more permeable than the rock removed by mining. During mining, groundwater

QUESTION	BICKHAM COAL COMPANY (BCC) RESPONSE
	will flow into the pit, and will be pumped out to keep the pit dry enough for mining to occur. This water will come almost entirely from storage in the hard rocks. One result will be that some of the small seepages that currently flow to Pages River will dry up or diminish. However, other seepages will continue to flow to the river. The difference is the baseflow reduction discussed above.
Silica results.	The silica results were displayed in the presentation as an example of the large contrast between the river and groundwater quality. If there was a large influx of groundwater to the river as it flows through the Bickham area, this would have shown up as a steady change in the quality of the river water to become closer to groundwater quality. However, monitoring has shown a consistent river water quality as the river flows past, indicating that groundwater inflows are small.
How do you calculate the cumulative impacts of seepages/fractures that could occur to other properties and how do you compensate for these?	The groundwater model has been used to predict the regional extent of impacts. Monitoring will be used during the project operation to verify the model predictions. There is already a large network of monitoring bores in place which have been monitored since 2002 and continue to be monitored. Additional monitoring bores will be installed in some locations to ensure the network is sufficient to detect all potential impacts on other users.
Where does the aquifer end up? i.e. who will be disadvantaged further "down" the aquifer?	The impacts from the project will be almost entirely within the hard rock coal measures, which are currently not used by anyone in the project area. The impacts will be limited to areas close to the mine. The aquifers currently used by landowners and others downstream within both Pages River and Kingdon Ponds are not hydraulically connected to the Bickham coal measures, and will not be affected by the mine. No downstream users will be impacted.

3.8 BICKHAM WATER LICENCE

QUESTION	BICKHAM COAL COMPANY (BCC) RESPONSE
The Bickham Water Licence will be used to replace potential water losses. How do you replace the loss ultimately?	Under the Hunter Unregulated and Alluvial Water Sources Water Sharing Plan, South Bickham holds a stock and domestic licence, and a 100ML per annum general unregulated river licence. Any assessed residual impact on Pages River baseflow post-mining will be compensated by surrendering part of South Bickham's licence. The water associated with this water right would previously have been extracted from the river and used for irrigation or other uses. Its surrender replaces the reduced groundwater baseflow contribution to the river.
Question relating to the conditions that underpin the Bickham Licence and how it can be surrendered.	That part of the water licence to provide the offset would be surrendered to the Department of Environment, Climate Change and Water's Office of Water
Is the Water Licence high or low security?	The100ML per annum licence is a general unregulated river licence
Will the Water Licence be surrendered to the Department or will it be sold?	That part of the water licence to provide the offset would be surrendered to the Department of Environment, Climate Change and Water's Office of Water
What percent of the Water Licence will be relinquished ñ relinquishing it will not increase baseflow of Pages River.	The amount to be surrendered will depend on the amount of baseflow reduction to be offset. As described above, it will restore the flows in the Pages River.
What you are actually saying is that you are relinquishing a éghtí to take water ñnot actual water. You should make this clear.	See above
What percent of your Water Licence will you use on full production?	There is no intention to use water from the Pages River (and hence from the water licence) for mine requirements at any time during the life of the project.
If you are not going to use the licence why not relinquish it immediately.	If in the future the licence is not required to offset flows, it could be sold to another water user such as an irrigator.

3.9 IMPACT ON ADJOINING LAND OWNERS

QUESTION	BICKHAM COAL COMPANY (BCC) RESPONSE
The ëatch cryí is always jobs when it comes to mines. We live on the Paradice property which you have identified will be impacted. There will be impact ñwhere does it stop. We live here ñwhy are we catering for people who come into this area? What about us, we are already here and you are indicating that our property will be impacted. Iím the next property to Paradice and you say you will replace their water ñwhat happens to our place ñhow does our water get replaced?	Any existing water supply confirmed to be affected by the project, to the satisfaction of the relevant government agencies, will be replaced by BCC. The predicted impacts of the Project are restricted to the immediate vicinity of the Project. If people believe that they have been impacted by the Project but have not been identified, they will be able to have an independent assessment of their claim. If the claim is justified, the company will provide appropriate compensatory flows or supply.
Bickham has tested our bores. Has the water been aged and have there been investigations of pressure and rising of water.	The water has not been aged. Water levels (hence pressures) have been extensively monitored and these levels are recorded in Appendix 9 and 10 of the study.

3.10 IMPACT ON TOWN WATER SUPPLY

QUESTION	BICKHAM COAL COMPANY (BCC) RESPONSE
What will be the impact of the mine on the town water supply? Murrurundi sources its water from the Pages River.	There are no impacts on Pages River surface waters upstream of the mine. Hence there will be no impact on the water supply for Murrurundi. There are no predicted impacts on Murrurundi and the town is a considerable distance upstream of Bickham.
So we have no cause for concern that Bickham will turn the taps off in Scone, are there any plans to put aside funding in case the unthinkable happens?	There is no suggestion that Bickham will impact on the water supply for Scone as the predicted impact on water levels is restricted to within several kilometers of the site. The Department of Industry and Investment will hold a significant bank guarantee to ensure the company meets its environmental obligations.
I am sure you understand our concerns we are dependent on the Pages River for our livelihood. If anything happens to this water supply there goes our livelihood and environment. This River is our life.	Community concerns about flow in the Pages River are well understood. This is why significant effort has been put into the water studies. As above.

3.11 SENSITIVITY ANALYSIS MODELLING AND UNDERLYING ASSUMPTIONS

QUESTION	BICKHAM COAL COMPANY (BCC) RESPONSE
In your investigations have you taken into account that we may be in a period of reduced rainfall. Have you considered Climate Change and its implication in your forecasting?	As set out in Appendix 19, the water balance modelling using 129 years of rainfall record from Wingen has been undertaken to examine the effect of all climate sequences contained in the historic record on the operation of the mine water system. This includes the drought sequence of years in the 1930's and 40's. The modeling has also taken account of extreme storm events and has also examined the sensitivity of the water management

	system to reduced groundwater inflow and reduced runoff as a result of climate change.
What sensitivity analysis has been done? What parameters or assumptions did you adopt when undertaking this analysis?	Groundwater sensitivity analysis has included increasing and decreasing each hydraulic parameter used in the model to determine the sensitivity of the model to that parameter. For the parameters found to be most sensitive, uncertainty analysis modelling has been carried out to determine the impact of that parameter on predicted inflows, groundwater levels and river baseflows. The surface water sensitivity analysis includes taking account of the effects of the wettest and driest years on record occurring at any stage in the life of the mine. In addition the sensitivity analysis has examined the effects of changing the key parameters in the hydrologic model by 20% up and down from the adopted parameters which were based on local flow data and research into the runoff characteristics of mines in Queensland and the Hunter Valley.
Can you explain the sensitivity analysis and the options that you have run? Have you run your analysis to include the installation of a washer facility?	
What methodology did you use?	See above
What testing has been done on composition?	Groundwater and surface water samples have been collected on a regular sampling program since 2002, and this program is ongoing. Samples have been analysed in a NATA-registered laboratory for major ionic constituents, trace metals, nutrients, and physical parameters.

3.12 CONSIDERATION OF OTHER POTENTIAL ENVIRONMENTAL IMPACTS

QUESTION	BICKHAM COAL COMPANY (BCC) RESPONSE
The dust impact will be cumulative on the Muswellbrook situation. Will you have regard to this cumulative impact on your investigations?	This study has concentrated on the water issues associated with the project, as directed by the Department of Planning. The issue of dust will be addressed by the proponent if the Project goes to a full environmental assessment
Is there a model of the Mine site? It is difficult to conceptualise the mine plan? Couldnt you build a model to help the community understand the proposal?	If the Project proceeds to the next step, a full environmental assessment, Bickham Coal Company is happy to provide some on site tours of the site as part of the community consultation process.
I am concerned about dust. How will you suppress dust? What impact will dust have on the water quality of the Pages River?	This study has concentrated on the water issues associated with the project, as directed by the Department of Planning. The issue of dust will be addressed by the proponent if the Project goes to a full environmental assessment
Weather monitoring-will you set up a weather	A full weather station was installed on the South

monitoring station to advise on wind direction and its impact on dust?	Bickham property some seven years ago with all local weather data being automatically recorded since its commissioning. Regular dust sampling around the property has also been carried out during this time.
I would like to see a graphic of the overburden from street level from the highway ñI am concerned about visual impact. Why haven't you provided any visuals of what it will look like?	This study has concentrated on the water issues associated with the project. The issue of visual impact will be addressed by the proponent if the Project goes to a full environmental assessment
Will studies be undertaken regarding dust and its impact on the Pages River?	Yes, upon the Project being allowed to progress to a full environmental assessment
"A lot of people have moved up here to get away from the Coal Mines of Muswellbrook"	Noted.

3.13 THE GEOLOGY OF THE MINE

QUESTION	BICKHAM COAL COMPANY (BCC) RESPONSE
What is below the G Seam?	There is at 20-50m or so of coal measures sediments, mainly siltstones and shales, beneath the G Seam. Underlying that is the Werrie Basalt.
What will be the impact on operations to the east of the Pages River. Take on notice ñprovide further documentation re: basalt geology.	The underlying basalt formation generally crops to the east of the Pages River, as the operations are within the overlying sedimentary measures that generally crop to the west of the river there will be minimal impact from the mining operations on the eastern side of the Pages River.
Why is there a massive gap between the two pits? Is this because of a geological fault? I can only assume it must be something serious because it must be more expensive to mine two pits rather than extending one pit. Why can't they be connected does it have something to with the River?	The mine is divided into 2 pits because the low wall of the mine is determined by the passage of 'Burning Mountain' through the area some time ago. The coal in this area between the pits has been adversely heat affected and will not be mined resulting in 2 separate pits.
If you can't interpret the geological data in the gap, why can you interpret the other areas with confidence.	The area in the gap has been affected by the passage of the coal burning front of Burning Mountain. Borehole drilling and magnetic surveying gives us confidence in the areas away from the heat affected strata.
Could an earthquake break down the geological barrier that you say keeps water from running between the Pages River and the mine pit?	This is considered a highly unlikely occurrence. The mine is designed with a barrier at river level of equal to or greater than 300m of hard rock.
Have you tested for other mineral deposits besides coal?	No.
Is this part of the Greta Coal Measure?	The coal seams are not considered to be the Greta Coal Measures, however, they are considered to be of similar age and stratigraphic setting.
Toxic and heavy metals ñhow are they dealt with	This study has concentrated on the water issues

and managed in the mine plan.	associated with the project. The issue of coal trace elements will be addressed by the proponent if the Project goes to a full environmental assessment. Copies of the analysis of Groundwater cation (including metals) are included in Appendix 9.
What toxic metals are in the coal measures that is what I mean ñnot the water.	Traces elements in the coal will be analysed in future studies if the Project goes to full assessment.

3.14 THE IMPACT OF BLASTING

QUESTION	BICKHAM COAL COMPANY (BCC) RESPONSE
Have you taken into consideration the impact of blasting on the Pages River environment and how you would remediate these problems if they occurred?	A specialist consulting report, The Impact of Blasting on Rock Mass Permeability by Scott Andrew is included as Appendix 16 of the water study report. Potential adverse impacts from blasting are included in the contingency plans outlined in Part C Water Management Plan, section C4.3.
We have 2 properties that have different water supplies some of these are very saline. Can you guarantee that mining blasting wont fracture the saline supplies and increase our saline water supply.	Our census of existing groundwater use identified no current use of groundwater from the coal measures within the area of potential impact of the project. Cracking of the surrounding rock is limited to a close proximity of the blast area (see Appendix 16).
Will blasting be used? Will it result in fracturing of the rock strata and what happens to ground water seepage if fracture occurs?	Yes blasting will be used on the overburden. The specialist study of blasting impacts indicated that blasting effects will be limited to only 20m or so from the pit face. Groundwater seepage impacts from blasting are not expected to occur.

3.15 IMPACT ON BURNING MOUNTAIN

QUESTION	BICKHAM COAL COMPANY (BCC) RESPONSE
How close is Burning Mountain to the mine site and what impact will the mine have?	Burning Mountain is approximately 2km from the southern boundary of the Bickham property. The seam fire is moving very slowly in a southerly direction away from the mine, and will not be affected by the mining operation.
Will the mine impact on Burning Mountain?	