

Australian Coal Alliance Inc.



Submission:

Wallarah 2 Coal Project – SSD4974

Planning Assessment Commission Hearing 3rd November 2017

The Australian Coal Alliance Inc objects to the proposed underground coal mine, the subject of this Public Hearing, for the reasons outlined below.

Background

The previous two PAC Hearings found that the proponent had not sufficiently dealt with various matters, in particular being able to protect the water and provide a supplementary town water supply in all climatic conditions.

Yet the DPE has again recommended to the PAC that the Wallarah 2 mine could be approved and claims that it is in the public interest. This is despite overwhelming public opposition to the project and that at the previous two PAC hearings it was accepted that the mining company's economic claims did not stack up and the mining company had not been able to guarantee to meet the water supply criteria in all climatic conditions.

Curiously, the DPE acknowledges in its own documentation on Wallarah 2 that the Central Coast's water catchment is only a small catchment area and that it will need to service the increasing population of the Region. DPE also acknowledges many of the matters raised, which will have a direct and adverse impact on the community, have not been resolved by the proponent. So the question is, why is the DPE recommending to the PAC approval of this coalmine project?

A number of matters that the 2014 PAC required the proponent to deal with, DPE have apparently ignored when putting forward their current approval

recommendation.

Residual Matters, Groundwater

The PAC said that "Before submission of the project determination" a review report on 'Potential Losses of Baseflow, and Stream Morphology' was required. This, it would seem, from current documentation has not been provided.

It also seems quite clear that no additional groundwater studies have been done since those done for the first submission. The reports were by Mackie in appendices to the original EIS.

The 2014 PAC Review Report identified, at Section 3.2.2.2 a lot of impacts on the surface water and groundwater systems, which was summarised as "The project presents an array of water supply risks to landowners in the Project Area."

Yet the DPE letter to Wallarah 2 of 30 June 2017, requested a response only in respect to the *Compensatory Water Supply System*. And then page 16 of the DPE report of September 2017 states that "*repatriated water would only be for Central Coast Water Supply purposes and that water should be returned as close as possible to the Central Coast's water supply off take in Wyong River.*" What this means is that all the other impacts and associated damage expected by PAC on the groundwater systems, groundwater ecology, base flows to the creeks, creek ecology, etc., within the catchments (i.e. upstream of Woodbury's Bridge) have been accepted and nothing is to be done about it.

In simple words, the outcome seems to be that it is accepted that the groundwater systems, and stream baseflow recharges, within the Dooralong and Yarramalong Valley, and the adjacent forested hills, with all that this means to vegetation, farming, groundwater resources etc., will be totally compromised.

The NSW Office of Water also claimed that the Wallarah 2 EIS failed to address the potential impacts to groundwater within the alluvial blanket associated with Jilliby

Jiliby Creek and the Wyong River, and the surface water sources they sustain in a robust or verifiable manner. Although the mine proponent refutes this, there has never been comprehensive water borehole monitoring as needed. Wallarah 2's consultant (MER) said, "To confidently predict this would require drilling and testing at intervals as small as 20 metres across the region".

Except for borehole testing of thirty-seven out of all the original core sample bores by the previous proponent, Coal Operations Australia Limited, which was found to be problematic, no further water borehole testing has been carried out over the mine area. Instead, Wallarah 2 purchased a 60-acre block of land, near the Jiliby School, and drilled, sometime after 2012, between five and ten test-bores in a line on this property. An additional borehole was drilled approximately one kilometre away, after consent from a private landowner. Although, we have not seen the evidence of this monitoring, and doesn't appear to have been referred to by the Department, it would not be sufficient to merely extrapolate this data as being representative of the water regimes over the entire catchment area below which the proposed mine is to be situated.

It is also noted that the 2014 PAC, in its letter to Wallarah 2, on 14 April 2014, said, "The second issue is the deeper groundwater impact associated with voids in the goaf, at least some of which manifests itself as mine-water (i.e. water predicted to be pumped from the mine daily). This amounts to 2.5ML/d plus possibly another 0.5ML/d from the fractured zone. This is a large volume of water (2.5 ML is the size of one Olympic swimming pool) being lost to the mine each year and almost four times than that – 300ML per year – being claimed by the proponent. It's a minimum of 438 Olympic swimming pools of water each year. Loss of water from the catchment will continue after mining ceases. We have not seen this mentioned in any department documents and it would appear to have been ignored.

The loss of water from river system will also impact on the Council's ability to pump water from Mardi Dam to Mangrove Creek dam for future storage. That scheme cost some \$120,000,000 and was meant to drought proof the Central Coast. The experts

claim the subsidence won't damage the infrastructure, but if the stream flow in Wyong Creek/River is lost there will no water to pump to Mangrove Creek Dam and return it back down the creek system as needed.

The matter of treating mine water and if it is feasible has not been resolved. There are no plans in respect of a reverse osmosis treatment system provided and evidence if there would be sufficient repatriated water to compensate for the water that is lost. Recently, it was seen on the news that the cost to the Springvale mine, which has been polluting the Warragamba water catchment, for a Reverse Osmosis plant would cost at least \$150 million to build. This did not include those additional costs of transferring the water.

It is further noted that the proponent's EIS states that they will use the mine water for their own operations, and will not be drawing on the town water supply. Added to this is the loss of water that occurs through reverse osmosis and adverse climatic-conditions, it is doubtful that there would be sufficient replacement of the water volume available lost from the town's water supply. Yet the 2014 PAC said that there should not be a Net-loss of water from the Gosford-Wyong water supply.

In its 2017 review, the PAC observed that DPE Water had not provided comments on Wallarah 2s response to the Planning Commission's 2014 Review recommendations 5(d) and (e), which required estimates of potential losses to baseflow from any changes to catchment flows and other potential sources of loss of water from subsidence-induced changes. The Department notes that in January 2017, Wallarah 2 provided revised estimates regarding only temporary potential losses to the Central Coast Water Supply.

The PAC in its 2017 review went on to say, in regards to this, "that the Department accepts what comes from Wallarah 2."

EPBC Act Assessment

The Commonwealth Department of Sustainability, Environment, Water, Population and Communities assessed the proposed Wallarah 2 project in accordance with the provisions of the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act). The Commonwealth Department decided that the Project must be approved for the purposes of the controlling actions contained within ss 24D and 24E before it can proceed. These controlling provisions in the EPBC Act relate to protection of water resources from large coal mining development.

As part of the Environment Impact Assessment carried out by the Commonwealth Department, the Independent Expert Scientific Committee were engaged to provide final advice on the impact of the Project on water resources and whether sufficient information had been provided by the proponent to address these impacts (IESC Final Report)

A copy of the IESC Final Document will be handed up with this submission, however, the key findings were that relevant data and information has not been provided on the following:

- * the risks associated with potential reduction of surface runoff caused by subsidence and the adverse affects on the Gosford - Wyong Water Supply Scheme;
- * the fracture potential of the strata between the targeted coal seam and the surface;
- * changes to the regional water balance;
- * the potential impacts of the project on aquatic ecology ; and
- * cumulative impacts associated with current and future mines within the area.

Other key conclusions from the IESC Final Report were:

The key methodologies and assessments needed to fully assess the proposed project

that have not been provided and include:

- * a regional water balance, that gives particular consideration to both surface and groundwater impacts to the Gosford - Wyong Water Supply Scheme;
- * assessment of subsidence issues associated with longwall mining relating to the changing of catchment characteristics, variation in groundwater aquifers and potential increased surface water and aquifer interconnectivity;
- * a comprehensive risk assessment of the impacts of the proposed project on surface water and groundwater dependent ecosystems; and
- * a cumulative impact assessment associated with creek systems flowing from the Mandalong Southern Extension Project directly through the proposed extraction site.

Water Treatment

There are no plans or information to confirm that the mine water can be adequately treated to a potable and acceptable standard. Nor is there any information as to the volume of water to be returned to the catchment – the proponent states that it will be discharged to Wallarah Creek. Is the amount of water to be returned no more than the assumed loss of 300ML each year? So far the issue of water loss and treatment of mine water to a potable supply has been based on nothing more than conjecture.

When the Community stood against Coal Seam Gas mining in the water catchment valleys it was able to obtain samples of the water emanating from the coal seam, the same water that Wallarah 2 would seek to treat and return to catchment pump pool. An analysis of this water was carried out by the University of NSW, including analysis of various surface water samples, and then compared with certified data of the water coming from the coal seam in the Powder River Basin in Wyoming, USA and the Australian Drinking Water Guideline. It has been well documented that the water

drawn from the Wyoming coal seam, during the process of Coal seam Gas mining, caused massive environmental degradation. The water analysis comparison clearly showed that the water from our local coal seams was ten times more contaminated than the Wyoming samples. A copy of the analysis document is attached to this submission. It was also confirmed that the mining company (Sydney Gas) was unable to have the water effectively treated, using the process of reverse osmosis by a Sydney water treatment plant, to bring it to a potable standard. The treated water was deemed only fit for agricultural purposes.

Subsidence

The PAC also said about Subsidence Related Damage, "... before granting any consent, the consent authority satisfy itself that the proposed compensation measures for subsidence-related damage to privately-owned built features will deliver a fair and reasonable outcome for affected property owners. If the consent authority cannot be satisfied that the outcomes will be fair and reasonable then the consent authority will have to consider whether the residual impacts make the project unacceptable within the terms of s79C of the Act." The PAC went on to say that the draft consent - compensation measures are non-existent for "First Workings" and yet to be determined for "Second Workings" - cannot be satisfied that outcomes would be fair and reasonable as there is no basis for that assessment.

Except for an introduction meeting at the Dooralong Valley Hall Progress Association meeting in 1997 by Coal Operations Australia, never has the Wallarah 2 coal project attempted to hold a public meeting and discuss the impact of subsidence damage on those people living in the water catchment valleys! In fact they have not approached those affected property owners at all. The Director General's Requirement was explicit – you must consult with community groups and affected landowners. It went on to say that "The EIS must ... describe the consultation process used and demonstrate that effective consultation has occurred; describe the issues raised ... by community groups and landowners; identify where the design and development has been amended in response to issues raised; and otherwise demonstrate that issues raised have been appropriately addressed in the assessment."

Emissions from rail transport

The PAC 2014 Review also recommend DPI and the EPA consider the broader implications for potential emissions from rail transport of coal before a final assessment report is submitted to the consent authority. The PAC said, "The Commission also notes the Chief Scientist's report indicates further studies will be carried out to better understand the various components of the issue - dust generated by coal wagons along rail corridors. These will be relevant to the consent authority's consideration at the time of determination.

There is not a word about this in the Residual Matters Report and it would appear that again nothing has been done.

Economic Assessment

In respect of the alleged economic benefits claimed by the proponent, the NSW State Government's own economist found that their claims were unrealistic and condemned them.

The PAC response was, "In the Commissions view, this is a matter that should be brought to the attention of the consent authority so that it can make an informed determination of the application as the economic benefits of the project could be as low as \$32 million.

"The Department in consultation with the applicant should provide greater clarity in its conclusion on the net economic benefits of the project to the consent authority, having regard to the conclusion of its consultant that the economic benefits of the project are likely to be less than those claimed by the applicant." There is no evidence of this having been done.

Conclusion

There are a number of residual matters considered by the PAC to be of critical significance to the assessment of the proposal that have not been dealt with or

APPENDIX A

Advice to decision maker on coal mining project

Proposed action: Wallarah 2 Coal Project (EPBC 2012/6388) – New Development

Requesting agency	Department of Sustainability, Environment, Water, Population and Communities
Date of request	18 April 2013
Date request accepted	18 April 2013
Advice stage	Environment Impact Assessment (draft)
Summary of request from the regulator	<p>The Department of Sustainability, Environment, Water, Population and Communities (the Department) is currently assessing the proposed project in accordance with the provisions of the <i>Environment Protection and Biodiversity Conservation Act 1999</i> (EPBC Act).</p> <p>The Department notifies the Independent Expert Scientific Committee on Coal Seam Gas and Large Coal Mining Development (the Committee) of an opportunity to comment on the Draft Environmental Impact Assessment. Specifically, the Department poses the following questions to the Committee:</p> <ol style="list-style-type: none"> 1. Does the Committee consider that the proponent has provided sufficient information on water resources and its management to assess the likely significant impacts from its proposed action? – If the information is considered insufficient, what advice regarding areas of inadequacy can the Committee provide? 2. What are the likely impacts of the proposed mine on surface and ground water resources, in particular, changes to surface and/or ground water dynamics and resources that may support surface habitat for threatened species and communities? 3. Does the Committee find the water balance and conclusions relating to water management provided by the proponent and attached to this brief to be reasonable?

Advice

The Committee was requested to provide advice on the Wallarah 2 Coal Project in New South Wales to the Commonwealth regulator at the Environmental Impact Assessment (Draft) stage. This advice draws upon aspects of the information in the draft Environmental Impact Assessment provided by the proponent, together with the expert deliberations of the Committee. The draft Environmental Impact Assessment and information assessed by the Committee are listed in the source documentation at the end of this advice.

The proposed project is for a new underground coal mine development, producing up to 5 million tonnes per annum of coal for a period of 28 years. The proposed project is located on the central coast of New South Wales in the northeast of the Sydney Basin and in the southern part of the Newcastle Coalfield. The Project

area lies 4.7 km to the southeast of the township of Wyong. Mining will take place between 350 m and 690 m below the surface targeting the Wallarah and Great Northern Coal Seams by means of 46 underground longwalls in an area of 37 km².

The Committee, in line with its Information Guidelines¹, has considered whether the proposed project assessment has used the following:

Relevant data and information: key conclusions

Information provided addresses many of the key areas in the Information Guidelines¹ however, relevant data and information has not been provided on the following:

- the risks associated with potential reduction of surface runoff caused by subsidence and the adverse affects on the Gosford-Wyong Water Supply Scheme;
- the fracture potential of the strata between the targeted coal seam and the surface;
- changes to the regional water balance;
- the potential impacts of the project on aquatic ecology; and
- cumulative impacts associated with current and future mines within the area.

Appropriate methodologies which have been applied correctly: key conclusions

The key methodologies and assessments needed to fully assess the proposed project that have not been provided include:

- a regional water balance, that gives particular consideration to both surface and groundwater impacts to the Gosford-Wyong Water Supply Scheme;
- assessment of subsidence issues associated with longwall mining, relating to the changing of catchment characteristics, variation in groundwater aquifers and potential increased surface water and aquifer interconnectivity;
- a comprehensive risk assessment of the impacts of the proposed project on surface water and groundwater dependent ecosystems; and
- a cumulative impact assessment associated with creek systems flowing from the Mandalong Southern Extension Project directly through the proposed extraction site.

Reasonable values and parameters in calculations: key conclusions

The draft Environmental Impact Assessment generally uses reasonable values and parameters in calculations, with the exception of the use of data from Wallarah Creek in the water balance and the discussion on water quality. The monitoring point located outside the proposed main extraction site may not be an appropriate calibration tool for the site water balance. A lack of supporting information on flood events and impacts on aquatic ecology has also limited the onsite assessments. The proponent has relied heavily on literature reviews to provide analysis and assessments.

Question 1: Does the Committee consider that the proponent has provided sufficient information on water resources and its management to assess the likely significant impacts from its proposed action? – If the information is considered insufficient, what advice regarding areas of inadequacy can the Committee provide?

1. The Committee considers that while the proponent has provided water resources and management information, there is limited information on the full suite of groundwater impacts; risks to the regional water balance; subsidence-related impacts; impacts on aquatic ecology; and the project's risk to the Gosford-Wyong Water Supply Scheme.

Question 2: What are the likely impacts of the proposed mine on surface and ground water resources, in particular, changes to surface and/or ground water dynamics and resources that may support surface habitat

for threatened species and communities?

2. The Committee advises that there are significant risks associated with the proposed project having a detrimental and long-lasting effect on an already stressed water supply catchment. The proposal is located within the Jilliby Jilliby Creek Catchment, a major water source for the Gosford-Wyong Water Supply Scheme, which provides water to 285,000 people within the central coast of New South Wales. The proposal has the potential to significantly reduce surface runoff, with the project area covering 5% of the entire scheme's catchment area.
3. The proposal has the potential to change surface and groundwater dynamics within the Jilliby Jilliby Creek Catchment through subsidence-related impacts. This includes the following:
 - a. Subsidence can lead to increased drainage between aquifers, altering water table heights, flow rates and water quality. Groundwater dependent ecosystems, which rely on shallow water tables, have been identified along surface drainage channels within the project boundary. Regular monitoring of the water table in these areas is needed to ensure that any variation in level can be resolved by remediation measures;
 - b. The predicted subsidence has the potential to alter flooding regimes, causing localised ponding/damming of catchment runoff waters. This has the potential to cause change in depth of water bodies leading to inundation or water logging of emergent or marginal/riparian vegetation, and causing aquatic habitat alteration due to draining or additional deepening of existing ponds, wetlands or dams;
 - c. The proponent has indicated that fracturing as a result of subsidence will extend upwards to a maximum of 200 m from the coal seam. The potential impact caused by fracturing through the entire strata would have detrimental effects, including the reduction of surface flow and draining of shallow aquifers, on which groundwater dependant ecosystems depend. Findings need to be based on both localised modelling, and within a regional context through robust analysis of similar projects in the area, and;
 - d. The forested hill areas of the proposed project are susceptible to surface deformation and cracking due to subsidence. This has the potential to destabilise soils and sediments and mobilise these into creeks and streams increasing sediment loads and nutrient loads. It is noted that the proponent will prepare an Erosion and Sediment Control Plan. It is recommended that this plan address these issues, with specific attention given to the potential impact on the Gosford-Wyong Water Supply Scheme.
4. The proposal indicates that brine and salt concentrate could potentially be stored below ground within the extracted coal seam. Monitoring of groundwater quality, particularly in relation to the storage of salt concentrate, along with mitigation measures, would be required to ensure water quality is not degraded. Contamination of the regional groundwater supply could have severe ramifications for the water quality of the Gosford-Wyong Water Supply Scheme. Due to the potential risk involved, a rigorous groundwater monitoring system is needed to identify and then mitigate any impacts.
5. It is recommended that the proponent develop a post-mine management plan to reduce the impacts on water resources from continued depressurisation after mining. The predicted continued depressurisation 500 years after cessation is likely to impact the surrounding water extraction sources by creating a groundwater sink, having the potential to impact on existing groundwater bores and to contribute to cumulative impacts with surrounding mines.
6. There is insufficient evidence to support the proponent's conclusion of negligible cumulative impacts. In particular, the potential cumulative impacts brought about by the potential Mandalong Southern Extension Project are likely to have impacts within the Jilliby Jilliby Creek Catchment. It is recommended that an assessment of cumulative groundwater and surface water impacts be undertaken, incorporating where possible current and future mining and other extractive industries.
7. The proponent's assessments regarding the extent of aquifer connectivity are not justified by the data

provided in the project assessment documentation. To increase confidence in the proponent's assessment of aquifer connectivity, further data collection or validation is needed, both from within the extraction area and at a regional level.

8. The proposed project area includes both threatened and vulnerable flora and fauna species listed under the EPBC Act. The proposal could directly impact populations of EPBC Act listed water dependent species present or potentially present within the proposed project boundary, specifically:
- two fish species – Australian Grayling (*Prototroctes maraena*) and the Macquarie perch (*Macquaria australasica*);
 - four frog species – Littlejohn's Tree Frog (*Litoria littlejohni*), the Stuttering Frog (*Mixophyes balbus*), the Giant Barred Frog (*Dasyurus maculatus maculatus*) and the Green and Golden Bell Frog (*Litoria aurea*), and;
 - one groundwater dependent ecosystem – Biconvex Paperbark [paperbark swamp] (*Melaleuca biconvex*).

The proposal may also directly impact the existing populations of New South Wales *Threatened Species Conservation Act 1995* listed water dependent species present or potentially present within the proposed project boundary, specifically:

- the Wallum Froglet (*Crinia tinnula*), and;
- two dragonfly species – the Adams emerald dragonfly (*Archaeophya adamsi*) and the Giant dragonfly (*Petalura gigantea*).

It is noted that an ecological monitoring program will be established as a component of the Biodiversity Management Plan. This plan is designed to monitor the ongoing status and health of flora and fauna communities that will be retained within the project boundary. It is recommended that the Biodiversity Management Plan specify what mitigation measures are in place for the protection of EPBC Act listed species.

Question 3: Does the Committee find the water balance and conclusions relating to water management provided by the proponent and attached to this brief to be reasonable?

9. A regional water balance, which is considered essential to appropriately assess the regional cumulative impacts and risks to the Gosford-Wyong Water Supply Scheme, has not been provided.
10. The proponent has not considered the potential impacts on the surrounding creeks and water quality as a result of uncontrolled discharge from the mine operations dams. The mine operation dams are currently designed to contain a 100 year average recurrence interval 72 hour storm event. Consideration should be given to mine operation dams being redesigned to contain a larger storm event (1 in 1000 year average recurrence interval) to minimise the potential for downstream water quality and ecological impacts.
11. Further assessment is recommended to gauge the extent of water interaction within the extraction boundary. The proponent has assessed the calibration of the runoff model using a gauging station on the Wallarah Creek. It is noted that the station only operated from 1965 to 1976 and is not located within the main project area. This dataset provides limited confidence in the calibration of the surface water balance.
12. The proponent has stated that a water treatment plant will treat mine water to a quality that is similar to the existing Wallarah Creek water quality values, before being discharged into the creek system. Further clarification is needed on what the proponent specifies as 'existing water quality values' proposed for treated water released into the Wallarah Creek. All site and surface water plans should be constructed in accordance with the National Water Quality Management Strategy².
13. The release of controlled treated mine water is likely to occur when there is no natural flow in Wallarah Creek, and these releases have the potential to change flow regimes of the creek. The proponent has stated that Wallarah Creek will remain ephemeral in nature, after water releases have been made. It is

recommended that mitigation measures are put in place to conserve the natural flow characteristics of the Wallarah Creek.

14. The proponent has entitlements to extract water from both surface and groundwater sources within the proposed extraction area. The proposed project requires external water to make up the deficit. The proponent has advised that this will be done through town water supplies with relevant licences still to be obtained. It is suggested that an assessment be made on the potential impacts of extracting water from town sources during extreme weather periods including drought conditions.
15. The Northern Sydney Basin has been identified as a Bioregional Assessment priority region. Data and relevant information from the proposed project should be made accessible for this Bioregional Assessment to assist the knowledge base for regional scale assessments.

Date of advice	24 May 2013
Source documentation available to the Committee in the formulation of this advice	Hansen Bailey 2013. Wallarah 2 Coal Project, Environmental Impact Statement. Prepared for Wyong Areas Coal Joint Venture. February 2013
References cited within the Committee's advice	<p>¹ Information Guidelines for Proposals Relating to the Development of Coal Seam Gas and Large Coal Mines where there is a Significant Impact on Water Resources available at: http://www.environment.gov.au/coal-seam-gas-mining/project-advice/pubs/resc-information-guidelines.pdf</p> <p>² Australian and New Zealand Guidelines for Fresh and Marine Water Quality. National Water Quality Management Strategy (NWQMS). Volume 4. Australian and New Zealand Environment and Conservation Council & Agriculture and Resource Management Council for Australia and New Zealand. Canberra.</p>

APPENDIX B

AUSTRALIAN COAL ALLIANCE Inc.

Typical groundwater analysis of coal seam water in the proposed Wallarah 2 Coal Project. The following water analysis was conducted by the University of New South Wales on behalf of the Dooralong Valley Community during the fight to stop methane gas mining in the Wyong Water Catchment Valleys.

Sample water was taken from the two Methane Gas test wells, situated on the valley floor at Jilliby, and compared with Australian Drinking Water Guidelines and the Powder River Basin in the USA. Mine water from the latter has caused unprecedented environmental destruction. **It should be noted that the analysis of the coal seam water drawn from Jilliby would be of far greater concern than that of the USA, and potentially more destructive to the environment and local riverine systems.**

Table 1. Selected Chemical Analysis of Groundwater

	Australian Drinking Water Guideline	Powder River USA	JILLIBY 1	JILLABY 2A
pH	6.5 - 8.5	7.3	9.1	8.7
Total Dissolved Solids (TDS)	500mg/l	850	3,976	5,452
Total iron	0.30mg/l	0.8	<0.30	<0.30
Sodium	180 mg/l	300	1,646	2,232
Magnesium	150 mg/l	16	2.95	4.63
Chloride	250 mg/l	13	590	590
Barium	0.70 mg/l	0.62	1.58	3.3
Aluminium	0.20 mg/l	<0.05	0.218	0.044
Iodide	0.10 mg/l		0.689	1.27
Boron	0.30 mg/l		0.242	0.301
Calcium	80 mg/l	32	4.91	8.08
Ammonia	0.50 mg/l	2.4	<0.50	<0.50
Nitrate	1.50 mg/l		<5.00	<5.00
Fluoride	1.50 mg/l	0.92	2.98	2.91
Silver	0.10 mg/l		0.002	0.003
Chromium	0.05 mg/l	<0.001	0.005	0.009
Copper	2.0 mg/l	0.0076	0.017	0.084
Lead	0.01 mg/l	<0.0001	0.0005	0.0002
Nickel	0.02 mg/l	0.005	0.001	0.003
Zinc	3.0 mg/l		0.147	0.013
Mercury	0.001 mg/l	<0.0001	0.0003	0.0001
Manganese	0.50 mg/l	0.032	<0.50	<0.50
Arsenic	0.007 mg/l		0.005	0.004
Cadmium	0.002 mg/l	<0.0001	0.0001	0.0002
Selenium	0.01 mg/l	<0.002	0.005	<0.001
Molybdenum	0.05 mg/l		0.009	0.01

Powder River data from Rice *et al.* 2000; Jilliby data from Jones 2005

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APPENDIX C

OUTSTANDING MATTERS Wallarrah 2 Coal Project – SSD4974

The Proponent, the Department of Planning and Environment (the Department) and other authorities persistently fail to address issues raised by the Commission in the Review Reports of June 2014 and May 2017. These issues concern

WATER

SUBSIDENCE RELATED DAMAGE

WATER RESOURCES

COAL TRANSPORT

GREENHOUSE GAS EMISSIONS

ECONOMIC BENEFITS

These issues were considered by the Commission to be of critical significance to the assessment of the proposal. As such they could not be dealt with by way of conditions. Details of the continuing deficiencies in the materials provided in support of the proposal are set out below.

MATTERS RAISED BY THE COMMISSION

Examination of the Review Reports of June 2014 and May 2017 discloses a number of instances where the Commission identified matters of concern that called for further information, investigation or consideration. In some cases the Commission called for the material to be provided **"Before submission of the project for determination (by) the consent authority"** (emphasis added). In other cases the Commission said **"If the consent authority cannot be satisfied ...the consent authority will have to consider whether the residual impacts make the project unacceptable in terms of s79C of the Act "** (emphasis added).

Examples of the matters of concern to the Commission, in the order in which they occur in the Review Reports, which does not necessarily reflect the significance or importance of a particular matter, are:

REVIEW REPORT 6/2014

1. WATER

A. At page 77 the report states-

" Potential Losses of Baseflow from Impacts on Groundwater

Before submission of the project for determination the consent authority be provided with revised estimates by year for: "

(There is then specified the data considered necessary by the Commission that in the interests of some brevity is not repeated here.)

The report then states-

"These estimates must indicate whether the losses are expected to be temporary or extend beyond the life of the mine. The estimates should also have been reviewed by NOW."

These obviously are matters of extremely critical significance to the Central Coast Water Supply and those of us who are permitted to draw water from the rivers or from bores.

What has happened, or rather, not happened is explained below under the heading Water Resources.

B. At page 78 the Report states-

"Potential Impacts on Stream Morphology

Before significant rainfall event(s) and the interface between subsided and unsubsidised sections of a stream be assessed with a view to properly describing the risk (and quantifying if possible), and providing a detailed assessment of the options available to deal with any such eventuality and an assessment of the capacity to implement any such options on the Project Area streams'."

Again, these obviously are matters of extremely critical significance to the Central Coast Water Supply and those of us who are permitted to draw water from the rivers or from bores.

What has happened, or rather, not happened is explained below under the heading Water Resources.

2. SUBSIDENCE RELATED DAMAGE

At page 79 the Report states-

"Infrastructure and Improvements Impacted by Subsidence

"...before granting any consent, the consent authority satisfy itself that the proposed compensation measures for subsidence-related damage to privately-owned built features will deliver a fair and reasonable outcome for affected property owners. **If the consent authority cannot be satisfied that the outcomes will be fair and reasonable then the consent authority will have to consider whether the residual impacts make the project unacceptable within the terms of s79C of the Act.**"
(emphasis added)

The response to this recommendation appears to be draft Conditions 5 and 6(g)(ii) on page 10 of the Draft Development Consent proposed by the Department.

As to the First Workings, there are **no proposals whatsoever for compensation measures** for subsidence-related damage to privately-owned built features- see Condition 5. This may be the result of a view that there will be no subsidence caused by First Workings. Such a view cannot stand as the condition itself contemplates the possibility of subsidence by reason of the proviso it contains.

As to Second Workings, all that draft Condition 6(g)(ii) does is propose a mechanism to recommend - **"....appropriate remedial measures and include(s) commitments to**

mitigate ,repair, replace or compensate predicted impacts on potentially affected built features..."

The Commission has said the consent authority must be satisfied that the compensation measures will deliver a fair and reasonable outcome for affected property owners. The Department's response falls far short of this. As to first workings there is no proposal for compensation, whatsoever, and for Second Workings all the Commission has before it a scheme in Condition 6(g)(ii) that should lead to a Built Features Management Plan that contains presently unknown compensation measures.

This matter was raised in the Review Report of June 2014 following the public hearing in April ²⁰¹⁴~~2004~~. The material presently before the Commission is not relevantly different to that before the Commission at the time of the public hearing in May 2017.

The 3 November 2017 hearing is the fourth conducted by the Commission and the fifth public hearing concerned with this proposal. The first public hearing was in 2007 and the first Commission hearing, chaired by Gabriel Kibble, was in 2010. There has to be some finality to this matter. After all this time, the proponent and the Department are unable to put forward any compensation measures for subsidence-related damage to privately-owned built features, let alone measures that are fair and reasonable. Accordingly, the Commission, acting as consent authority under the delegated authority, has no alternative but to determine that the residual impacts are unacceptable as foreshadowed in the Review report of June 2014.

The Commission cannot be satisfied that the outcomes for affected property owners will be fair and reasonable as presently there is absolutely no basis for that assessment.

Clearly, the residual impacts make the project unacceptable in terms of s79C of the Act and the Commission has no option but to REFUSE consent under its delegated authority.

REVIEW REPORT 5/2017

A. WATER RESOURCES

This material relates back to the recommendations at page 77 and 78 of the June 2014 report referred to above.

At page 17 the May 2017 Report states-

"In addition to the above, the Commission also notes DPI Water has yet to provide its comments on the applicant's response to the Commission's 2014 Review recommendations 5(d) and 5(e), which require estimates of potential losses to baseflow from any changes to catchment flows and other potential sources of loss of water from subsidence induced changes. **This should be resolved and assessed before the application is determined by the consent authority**" (emphasis added).

Clearly, the Commission, through two completely differently constituted panels, sees this issue as being of critical significance, as does the Central Coast Council and the community. The community, east of the M1, is historically dependent on Wyong Creek/River as the major water supply for some 300,000 people.

DPI Water has now had three years to respond to the Commission's 2014 recommendations. Clearly the absence of any such response is a matter of no concern to the Department, albeit that the Department is the government body charged with responsibility for providing an impartial and unbiased assessment of the proposal to the consent authority.

In the Department's Residual Matters Report at page 12 it is stated-

DPI Water

"In its 2017 review, the Commission observed that DPI Water had not provided comments on WACJV's response to the Commission's 2014 Review recommendations 5(d) and (e) which required estimates of potential losses to baseflow from any changes to catchment flows and other potential sources of loss of water from subsidence-induced changes. The Department notes that in January 2017, WACJV provided revised estimates regarding temporary potential losses to the CCWS."

As in the case of Economic Benefits, as noted below, the Department appears content to accept, almost unquestioningly, material provided by the proponent. Coupled with the Department's acceptance of the proponent's Economic Benefits, notwithstanding the Department's own consultant's contrary views, questions must arise as to the impartiality of the advice tendered by the Department.

B. COAL TRANSPORT

At page 30 it is stated-

"The commission's 2014 Review recommends the Department and EPA consider the broader implications for potential emissions from rail transport of coal before a final assessment report is submitted to the consent authority."

"The Commission also notes the Chief Scientist's report indicates further studies will be carried out to better understanding(sic)the various components of the issue."

Later at page 55 at 7.4 the Commission states in its findings and recommendations-

"Additional studies are currently being carried out by the Chief Scientist and Engineer and the NSW EPA to address the issue of dust generated by coal wagons along rail corridors. **These will be relevant to the consent authority's consideration at the time of determination (emphasis added).**"

No reference can be found to these studies in the Department's Residual Matters Report.

Again, there is no information, about matters identified in 2014 and 2017 as significant, to assist the Commission. Another reason to conclude that the residual impacts are unacceptable and refuse consent.

C. GREENHOUSE GAS EMISSIONS

At page 31 it is stated-

"The departure from the Commission's 2014 Review report has not been fully justified. This should be clarified before the application is determined by the consent authority."

Again, this does not appear to have been done. Another reason to conclude that the residual impacts are unacceptable and refuse consent.

D. ECONOMIC BENEFITS

The May 2017 Review Report states at page 42

"In the Commissions view, this is a matter that should be brought to the attention of the consent authority so that it can make an informed determination of the application as the economic benefits of the project could be as low as \$32 million. The applicant may wish to provide clarification on this issue prior to determination."

and then at page 43

"The Department **in consultation with the applicant** (emphasis added) should provide greater clarity in its conclusion on the net economic benefits of the project to the consent authority, having regard to the conclusion of its consultant that the

economic benefits of the project are likely to be less than those claimed by the applicant."

and then at page 53

"The Commission recommends that the economic assessment be updated prior to consideration by the consent authority to inter alia reflect any potential impacts on the CIV as a result of the stringent conditions that are recommended to protect catchment health, management of water resources, other changes in the operating environment and the variance in estimated greenhouse gas cost."

In the Department's Residual Matters Report at page 22 it is stated-

"...in general, the CIE estimates are considered to be conservative, whereas the Gillespie estimates are considered to be theoretical maxima. In the Departments' view, the most likely outcome lies somewhere between the two (emphasis added)."

Amazingly, in light of the differences of opinion between the consultants and the Department's own comment at page 22 the Department at page 37 still quotes the economic benefits claimed by the proponent as the likely benefits.

Has any thing been resolved or changed? The economic benefits could still be as low as \$32 million.

Equally significantly, questions must be raised again as to the Department's impartiality. The material in the Department's Residual Matters Report raises the perception of bias, even if it does demonstrate not actual bias.

CONCLUSION

The totality of the material before this Commission satisfies the Australian Coal Alliance (representing the wider community) that this long wall coal mine will cause a loss of groundwater and stream flow in Wyong Creek. That this will occur is

confirmed by Commission's prior comments, the Departments comments and the inclusion of the conditions in the draft consent providing for compensatory water supply for private landowners and a compensatory arrangement for the Central Coast Water Supply.

Any loss of water from Wyong Creek will not only impact Landowners living in the water catchment valleys, but also upon the fauna that is dependent on the creek. Along the boundaries to the creeks there are waterholes that are the habitat of platypus colonies. These colonies were the subject of a study when the Mardi-Mangrove pipeline was under investigation.

Should the subsidence from the long wall coal mine, which it appears agreed will occur, crack the bed of the two main creek systems the flow of water will be lost. This is not fanciful scaremongering, as it occurred in Diega Creek in Lake Macquarie where the mining company acknowledged responsibility.

Clearly the Department anticipates the loss of water from the streams and the groundwater. This is demonstrated by the inclusion of draft Conditions 16 and 17. In the event the water in Wyong Creek is lost we will have permanently the disastrous situation we experienced in the 2007 drought. The proponent and the Department and other authorities have ruled out the transfer of appropriately treated mine water to the upper reaches of Wyong Creek.

The loss of water from Wyong Creek/River will also impact on the Council's ability to pump water from Mardi Dam to Mangrove Creek dam. That scheme cost some \$120,000,000 and was meant to drought proof the Central Coast. The experts claim the subsidence won't damage the infrastructure, but if the stream flow in Wyong Creek/River is lost there will no water to pump to Mangrove Creek Dam.

The weekly water usage on the Central Coast varies between 500 and nearly 800 Megalitres a week. The compensatory arrangement, as proposed, would return

annually about half of one week's consumption of water by those east of the M1 motorway.

It is noted that the current capacity of Mangrove Creek Dam, the Central Coast's main storage is 137,719 Megalitres or 72%. This would not be of any real assistance in the drought proofing of the Central Coast. The storage in Mangrove Dam has gone from 10% to 70% since the completion of the Mardi to Mangrove pipeline mainly as a result of pumping from Wyong River in times of higher flows. The loss of the water source would devastate the Central Coast. There is no alternative supply available of the necessary capacity. The Hunter cannot make up any shortfall.

The Commission is asked to refuse consent to this application given the unsatisfactory state of the assessment by the Department and the irreversible impacts on the local community and the environment that will flow from a long wall coal mine.

Australian Coal Alliance Inc.



APPENDIX D

WALLARAH 2 BACKGROUND

Wallarrah 2 Coal Project – SSD4974

Wallarah 2 Background

The mine proponents Wyong Coal Pty Ltd, who trade as Wyong Areas Coal Joint Venture, hold the exploration lease for the Wallarah 2 Coal Product and the same proponent would likewise hold any licence to mine. It should also be noted that the major shareholder (82.25%) is Kores Australia Pty Ltd, a wholly owned subsidiary of South Korean Government-owned Korea Resources Corporation.

The Korean Times published in June 2016 that the project's parent company, South Korean Government-owned Korean Resource Corporation (KORES), would quit its overseas resources development operations. KORES became actively engaged in overseas resources development during the former President Lee Myung-bak administration, but a price plunge for global resources has dealt it a deathly blow. KORES's debt ratio stands at a staggering 6,905%. According to the Korean Board of Audit and Inspection, a total of 35.8 trillion won was invested in overseas resources development, with little gains so far. KORES will also be slashing 118 international jobs.

The announcement came as part of a government-led plan to rationalize and reorganize its bloated state-run energy businesses. According to the plan the South Korean government will now open its power supply market in phases to the Korean private sector and allow the listing of power-generating subsidiaries on the stock exchange. The South Korean government hopes that the new business model will be able to invest in new energy businesses, on top of paying off their debts and enhancing transparency. This is a major strategic shift by the South Korean Government and a puts in doubt the ability of the proponents of the Wyong Coal Project to sufficiently carry out any remedial work or rehabilitation, in particular in the water catchment area where a high degree of subsidence is forecast.

This problem of remedial work and rehabilitation could well be unrealized because the proponents, Wyong Coal Pty Ltd, only have a paid-up capital of \$400. Therefore,

the total liability of this company is limited to the total amount of its paid-up capital. They could simply walk away and leave the Central Coast community and the State Government having to bear the burden of cost.

However, given the reported financial woes of the parent Company and their move to withdraw from overseas resource development, it is highly unlikely that the current proponent would want to develop this mine, but merely on sell an approved licence.