

6th August, 2009



SA Division Inc.
711 South Road
Black Forest SA 5035

Minister for Urban Development and Planning
ATTENTION: Manager, Assessment Branch
Department of Planning and Local Government
Re: Proposed Olympic Dam Expansion
GPO Box 1815
Adelaide SA 5001

Dear Minister,

Please find enclosed the submission of the Australian Democrats (SA Division Inc.) in response to the Draft Environmental Impact Statement on the proposed Olympic Dam Expansion.

The enormity of this project and its environmental footprint raises many concerns. On its own, the new pit, the rock storage facility, tailings storage facility and industrial area will cover an area roughly 22km x 12 km – which, from a size perspective would engulf a large proportion of metropolitan Adelaide.

The habitat loss and resultant displacement of fauna would make this one of the single most environmentally destructive actions ever considered by the South Australian government, if not the most destructive.

In addition we are not satisfied in regard to the addressing of concerns of all the Aboriginal people of this region. Negotiations have taken place with the Kokatha, Barngala and Kuyani groups, while the Arabunna, Dieri, Adnyamathanha, Nukunu and Yandruwandha/Yawarrawarrka and peoples appear to have not been consulted, and there is dispute within the Kokatha as to whether the correct people have been involved in negotiations.

We are concerned that the figures given in the draft EIS for destruction of vegetation and the size of the rock storage facility have been badly underestimated, and we look forward to these matters being addressed in the Supplement to the draft EIS.

Yours sincerely

A handwritten signature in blue ink that reads "Sandra M Kanck".

HON. SANDRA KANCK
SA Division Publicity Officer
Australian Democrats

A handwritten signature in blue ink that reads "David Winders".

HON. DAVID WINDERS
State Parliamentary Leader
Australian Democrats

Submission from the Australian Democrats (SA Division Inc.) in response to the Draft Environmental Impact Statement prepared by BHP Billiton for the proposed expansion of the Olympic Dam mine and minerals processing operation

1. Aboriginal people

BHP Billiton (BHPB) asserts that they have reached amicable agreements with the traditional owners of the land. The evidence does not support this.

The DEIS (p.546) says that in 2005 an agreement was reached with Kokatha, Barnjala and Kuyani groups to discuss the implications of the project. Questions arise as to why BHPB apparently chose to work only with these three groups, and how BHPB established the legitimacy of those who represented the Kokatha people. There is certainly dispute about this in relation to Kokatha.

The "Coober Pedy Times" of 19th January 2009 published a letter/media release signed by Kokatha elder Isabel Dingaman. It was headed "Kokatha refuse BHP expansion and denounce Native Title 'mining company agents'" and began with the words "Kokatha Elders have denied their signatures to BHP Billiton for both an open cut and an expansion". The article went on to state "Native Title (sic) are working with self appointed spokespersons, young elders, a variety of 'traditional owners' and 'lawmakers' with vague geneologies (sic)".

Of particular concern is Ms Dingaman's statement that "Kokatha's geneology (sic) follows our great, great grand-father's ancestral (sic) line in Aboriginal culture. A deceased Aranda grandmother has been introduced into Kokatha lineage which cheats our culture in favour of BHP Billiton. This is not our custom and it is not acceptable (sic)".

This group prefers to describe themselves as Maduwonga and Kokatha is their language. It appears there has not been any consultation with these people who claim to be traditional custodians of this land.

Further to this, although the DEIS acknowledges the existence of Native Title claims of the Arabunna, Dieri, Adnyamathanha, Yandruwandha/Yawarrawarrka and the Nukunu peoples on land through which infrastructure corridors might run, no mention is made of negotiations with these peoples.

It is imperative that both State and Federal Governments investigate and ensure that negotiations have been conducted and agreements reached with the right people.

The DEIS contemplates that the potential post closure use of land "would be determined by consulting with the relevant stakeholders, including the local government authority, the Roxby Downs and Andamooka communities and the South Australian government". It speaks volumes that the traditional owners of the land are not mentioned in this list as stakeholders!

Just as happened at Maralinga they will probably be left to pick up the pieces.

2. Application of this EIS

BHPB has publicly stated that the mine will have a 70-100 year life, so it is not acceptable that the proponents provide only a conceptual strategy for closure of the site at the end of the mine's life.

There are no plans for filling in the pit at the end of its life: the DEIS states "The void created by the new open pit mine would remain as a permanent land feature". The use of the word "feature" is revealing, and a clever way of making a scar on the landscape appear to be a positive.

Given the amounts of overburden and tailings on the surface, there should be a requirement of the proponents (and/or their successors) to fill the pit. Alternatively, the proponents, over the life of the pit, should be required to contribute to a fund where the monies are not accessed until the mining is completed and government can then undertake the activity.

This draft environmental impact statement with its appendices (DEIS) is built around a 40 year time frame. Is there to be another EIS to consider the remaining 30-60 years after that?

3. Desalination plant

We have followed closely the work done by Flinders University researchers, Jochen Kaempf, James Harris and Paul Malthouse, on the impact of the proposed desalination plant on Spencer Gulf. We support their recommendation that the outfall site not be located in the upper Spencer Gulf.

We argue that a baseline monitoring program should be run over 2-3 years before the desalination plant begins operation. Additionally we seek reassurance of independent monitoring of the seabed in the vicinity of the desalination plant once it begins operation.

4. Economic subsidies

Diesel fuel rebates from the Federal Government over the time period involved in digging the pit could reach close to \$400 million. The scheme was intended for farmers, and should be investigated and amended to prevent the application of what would be taxpayer-funded welfare for the mining industry.

If this rebate was to be removed at some future time, what impact would that have on mining operations? Operating costs would increase over-all. **BHPB must advise whether this would result in any changes to the types of fuel they would then use (and any difference in greenhouse gas emissions as a consequence).**

5. Energy use and associated climate change impact

The climate change impact of this expansion will be immense. We are aware of the comments being made by the Australian Conservation Foundation and support their position. We do so because our own calculations (shown later in this document) reveal that BHPB has underestimated the amount of native vegetation to be destroyed.

As a consequence we believe that by 2020 the mine and its associated infrastructure will be responsible for increasing South Australia's CO₂ emissions by probably 14%, not the 9.8% claimed by BHPB. In turn this will account for 1% of the nation's CO₂ emissions. All this will be occurring after the December 2009 Copenhagen UNFCCC talks, when international agreements will have been put in place for all nations to further reduce their emissions.

From this perspective we are pleased that BHPB will construct a spur line between Olympic Dam and Pimba resulting in more of the material going into and out of the project to be more efficiently transported by rail.

5a) Transport fuel

According to the DEIS (vol 1, p. 112) more than 2 megalitres of hydraulic oil, 2 megalitres of engine oil and 350 megalitres of diesel fuel will be used on site each year. Obviously the total use of diesel will be much higher with construction envisaged at Port Adelaide, Darwin, Port Augusta and Whyalla as well as road and rail construction off-site.

The Executive Summary says diesel fuel usage will be 430 megalitres per annum, an increase from the current 25 megalitres per annum. This will result in an enormous increase also in greenhouse gas emissions. Appendix L gives a figure of usage for on-site diesel beginning in the early stages of development with 330,00 kilolitres per annum progressively rising in parallel with mining tonnage increases to 454,000 kilolitres after 40 years. Additionally, over the same time period, the use of "material transport diesel" increases from 16,000 to 36,500 kilolitres.

At some point we were told that BHPB is claiming that ½ litre of diesel fuel will be used for every tonne of material removed from the pit. A farmer with experience of using diesel fuel has disputed this figure and suggests the consumption will be much higher than that.

The impact of peak oil does not appear to be accounted for in the diesel usage figures. We note the DEIS alternative proposal of converting the haul trucks to run on LNG, and related to this the follow-on requirement of an LNG conversion facility to be built on site. Given that peak oil impacts will occur early on in the expansion project, it seems a given that the LNG conversion facility will need to be fast-forwarded. **LNG conversion of itself is a process which adds to greenhouse gas impacts and this does not appear to be included in the calculations for dealing with climate change responsibilities.**

5b) Electricity

BHPB has indicated it will be sourcing its electricity needs from

- (i) the current national grid, or
- (ii) an on-site combined cycle gas power plant, or
- (iii) a combination of both of these

and is seeking approval for all three of these options.

All of these options use fossil fuel. Option 2 is slightly better in that it is using natural gas, which does not have quite the same greenhouse gas impact as coal. Its construction as a combined cycle plant is welcomed given its greater efficiencies.

But for options 1 and 3 this effectively means using coal-fired electricity. Given that the Playford and Northern Power Stations at Port Augusta are the closest generators, for the most part the power generated will come from relatively inefficient and

polluting coal from Leigh Creek, with associated greenhouse gas emissions (including the release of methane).

It appears from the DEIS that BHPB's calculations for greenhouse gas emissions are based on a generic formula. **If based on a generic formula, as it appears to have been, BHPB must be made to recalculate emissions based on the use of Leigh Creek coal being burnt at the two Port Augusta power stations, at least one of which uses old and outdated technology.**

5c) Energy in construction

An immense amount of energy will be used in construction. A few examples will suffice (although there are many):

- (i) to allow for the very large equipment that will be moved, passing bays 30m wide and 250 m long will be built between Port Augusta and Olympic Dam at roughly 17 km intervals, with consequent greenhouse gas impacts;
- (ii) to cope with the large amounts of sulphur coming in to the port at Outer Harbor a new bulk offloading and storage facility will need to be constructed, along with a rail loop;
- (iii) the construction of a desalination plant at Point Lowly; and
- (iv) new facilities in the port of Darwin.

All such activities will result in increased use of fossil fuels and add to a blow out of South Australia's climate change targets.

The terminology in the DEIS appears take into account the on-site use of diesel, and diesel fuel for transport of materials to and from Olympic Dam. However it does not appear to take into account the diesel fuel used in other construction at other sites. We ask that the Supplement take this into account.

6. Native vegetation destruction and habitat loss

At the June 2009 UNFCCC meeting in Bonn one NGO presentation argued that biodiversity was the only way to keep carbon in the environment rather than escaping to the atmosphere. We therefore note with great concern the greenhouse gas impact resulting from the enormous amounts of native vegetation that will be cleared as part of the expansion.

It has been stated, and indeed boasted, by both the proponents and the South Australian Government that this expansion will result in the construction of an open cut pit that will ultimately be the largest in the world.

An enormous amount of land will be alienated as a consequence of this expansion. The Draft EIS advises that the open cut pit will ultimately be 4.1 km long by 3.5 km wide. To put this in perspective, this is larger than the whole of the City of Adelaide, including North Adelaide. The draft EIS states that the rock storage facility (RSF) will cover 6,720 hectares to a height of 150m.

It is unfortunate that there is inconsistency in the document in regard to measurement scales. Most urban dwelling people, who in the main will be those responding to the DEIS, are familiar with kilometres but not with hectares.

Ultimately, the DEIS claims that the total area of vegetation clearance would be between 16,926 and 17,269 hectares (or between 169 and 173 sq km) depending on

the gas pipeline route chosen. This is an aggregated total area of more than 13 km by 13 km. Purportedly, this includes the land for the new operations, new residential areas, new airport, land for the desalination plant, and clearance for pipe and transmission lines.

Yet manual measurement of the new project based on the scale of the overview drawing on p.100 of the main report shows that the footprint of the new pit, RSF, TSF and industrial area alone (without any roads connecting any of them) take up 153 sq km.

It is inconceivable then that only another 16-20 sq km of vegetation will be destroyed throughout the rest of the project, including the new airport, Hiltaba village, expansion of the existing Roxby Downs township, the desalination plant and infrastructure corridors.

The discrepancy is best demonstrated by calculating the alienated land illustrated on p.100. It is not unreasonable to assume that roads will be constructed in the new mining area between the various installations, storage areas which will be set aside for vehicles, diesel fuel which will be stockpiled etc. This leads one to the conclusion that most, if not all of the land – from the western end of the tailings storage facility to the eastern end of the rock storage facility, and from the northern edge of the TSF to the southern site of the intake electrical substation – will be cleared. This alone is an area of approximately 22x12 km, a total of 264 square km which is much more than the 16,926 and 17,269 hectares claimed by BHPB to be the total vegetation clearance for all of the new developments in this project.

Page 117 of the DEIS observes that there will be stockpiles of assorted sands, limestone etc which clearly will enlarge the footprint of the area in which native vegetation is to be destroyed. If the RSF increases in size, and we note that the DEIS leaves that option open, then still more vegetation would be destroyed.

There is obviously a considerably larger area of vegetation to be destroyed than what BHPB tells us. The figures provided by the proponent do not add up!

The claim made by BHPB of the amount of vegetation to be cleared appears to have been quiet severely underestimated, and they must be made to justify their figures.

The habitat loss and resultant displacement of fauna would make this one of the single most environmentally destructive actions ever considered by the South Australian government, if not the most destructive.

The arguments presented in relation to BHPB's Significant Environmental Benefit proposal (SEB) require examination. They are offering a combination of a payout and like-for-like land to be set aside elsewhere.

The SEB ratio for payment or land offset varies from 2:1 for poor quality weed-infested land to 10:1 for intact vegetation. Even for high quality vegetation the ratio can be reduced, for instance, to take into account undertakings to restore the land to original condition.

BHPB advise that their SEB should be set at 8:1 because they claim that "ecological surveys of the disturbance footprints suggest that the vegetation in the study area is generally in a good condition", but fails to present evidence as to why it ought not to

be 9:1 or 10:1. **Their claims about the condition needs to be independently verified.**

BHPB also claims that the SEB for the infrastructure corridors should be discounted to 4:1 on the basis that these vegetation corridors "would revegetate reasonably quickly". **This claim of quick revegetation also needs to be independently verified.**

The Australian Democrats note with concern that there will be tens of thousands of trees and bushes destroyed in those areas where total clearance is contemplated. **The SEB should have regard to the age of the vegetation and not only state and national status. A tree that is decades or even centuries old will not be easily replaced, regardless of whether it is common or not. The SEB should incorporate recognition of the fauna that is dependent on those trees and bushes. Whether or not they are common species, they are part of an ecosystem, and the DEIS does not appear to recognise this relationship.**

7. Noise pollution

The airport will be constructed to allow large planes such as B737s and A320s to land and take off. The DEIS states that there will be three scheduled flights on weekdays with no flights to occur between 10 p.m. and 7.00 a.m. and further observes that "no acoustic attenuation" will be required in the residential accommodation.

Implicit in the above is that all residents will be sleeping in the 10-7 overnight period. Yet the Olympic Dam mine is a round-the-clock operation, and some workers will therefore be sleeping during the day. This raises a question for those workers as to whether appropriate sound insulation should be installed in the Hiltaba village at the time of building.

8. Nuclear safeguards

Over decades, the Australian Democrats have repeatedly expressed concern about the export of nuclear material to countries which have not signed the nuclear non-proliferation treaty, or those which, having signed on, continue to manufacture nuclear weapons. Nuclear safeguards do not give Australia any control over Australian uranium once it has left our shores.

Although our preferred position remains as it has been for more than 30 years – leave it in the ground - **the Federal Government must ensure that the radioactive material exported from the Olympic Dam mine is allowed only to those countries that have signed the treaty and which are not manufacturers of nuclear weapons.**

9. Rock storage facility

Approximately 300-350 metres of overburden weighing 44 billion tonnes will first need to be removed from the pit to expose the ore. Additionally, once the ore body has been exposed, the DEIS says that somewhere between 350-390 megatonnes of rock will be removed per annum. Most of this material would be dumped to the side of the pit in what will be known as a rock storage facility. The DEIS says that it will

be visible from a 30km distance, and "would be the most prominent feature in the local and regional landscape".

The height of the RSF appears to be a moveable feast. Initial figures in 2005 for the RSF indicated it would cover an area of 1,600 ha if 160m height, or 4,400 ha if 60 m (20 storey buildings) height. In the DEIS it has increased to 6720 ha (i.e. 67 sq km) at a height of 150m.

The DEIS says that the 150 metre height is for the purposes of the document only, proving, as we assert, that it will indeed be a moveable feast: "... the final height would be determined through an economic assessment of the costs associated with hauling mine rock material either vertically or horizontally" (vol 1, p 114).

It is interesting to note elsewhere in the DEIS that BHPB is exploring the option of using the RSF for disposal of the extraordinary amount of 8,090 tonnes per annum of vehicle tyres! That alone will surely ensure that the size of the RSF will increase.

The DEIS envisages that 40 years after digging has begun, the pit will be one kilometre deep. However, it is our understanding that ore has been found at a depth of 2.5 km, which begs the question of what happens after 40 years. If mining continues at the site then obviously there will be still more rock to add to the RSF. **This appears not to have been taken into account in figures about the area and height of the RSF in the longer term and the supplement to the DEIS should address this.**

When below-surface rock is removed there is an expansion associated with both the removal of pressure and the extra space taken up as the rock mass is broken up into boulders, stones and fragments that arise as a consequence of digging/blasting. This can be given a mathematical value and is known as the expansion factor.

We have not been able to find in the fine print of the DEIS any recognition of an expansion factor in the removal of the overburden and other rock associated with the removal of the ore – indeed it appears it may not have been taken into account at all.

In 2006, Mr Richard Yeeles of BHP Billiton informed the Natural Resources Committee of the South Australian Parliament that the expansion factor would be 1.7. This information is important in calculating the size of the RSF.

The pit will be 4.1 x 3.5 km x 1 km deep, i.e. 14.35 cubic kilometres. Even though the ore concentration will be roughly 2%, let us generously assume that this, along with some soil, sand, lime etc that will be stockpiled, account for 10% of what will be taken out of the pit. Therefore only 90% of that 14.35 cubic kilometres will go into the RSF i.e 12.915 cubic kilometres.

But with an expansion factor of 1.7 this becomes 21.9555 (or roughly 22) cubic kilometres). So the RSF, if one km high, would take up 22 sq km. In turn, if the RSF was to have a base three times that (66 sq km) the height could be reduced to 1/3 of a kilometre, i.e. 333 metres height.

Yet the DEIS says the rock storage facility will cover 6,720 hectares (i.e 67 sq km) to a height of only 150m, a figure which strongly suggests the proponents have not included an expansion factor in their calculations. With an expansion factor of 1.7 taken into account, the RSF would have to be more than twice the ground size

stated in the DEIS to obtain a height of no more than 150 m. But if the intention is to maintain the stated 6270 ha base, then the height of the rock storage facility will be at least doubled. **The associated visual impact needs to be acknowledged in the Supplement to the EIS.**

We ask that, in the forthcoming Supplement, details be given of the expansion factor which has been used by BHP Billiton to calculate the size of the rock storage facility, so that it becomes possible for outsiders to check on the accuracy of the predictions. This will be particularly important in enabling the Native Vegetation Council to accurately determine the amount of vegetation to be cleared and the SEB and/or financial outlay that will be required of BHP Billiton.

10. Tailings storage facility

As would be expected for the creation of the world's largest open cut mine, this will in turn result in the construction the world's largest tailings dam.

The DEIS advises of the number of annual fauna mortalities associated with the existing and much smaller tailings dam: 895 in 2005-06, 311 in 2006-07 and 282 in 2007-08. The DEIS informs that, as well as birds, there have been seven species of mammal and eight species of reptiles killed as a consequence of exposure to the acid liquor. Additionally it recognises these figures underplay the impact because of either the removal of carcasses by scavengers or the sinking of dead birds before detection.

The DEIS acknowledges that "If the habitat is modified or increases in area, the number and diversity of species increases accordingly". It is saying that the new tailings dam will attract waterbirds because it will be such a large waterbody in the region. Given the mortality figures, one can only speculate on what increases will occur as a consequence of the world's largest tailings dam.

We recognise the undertakings given in the DEIS to put netting in place to deter birds, and for further research to be undertaken into methodologies to reduce the number of fauna deaths. However, the DEIS itself acknowledges that the methodologies used to date with the current tailings dams have had varied success. The deaths recorded are an indication that the success has been limited, and the DEIS appears to be leading the public to accept such an increase in deaths as being an inevitable cost we will have to bear.

We request that the supplement provide greater detail and certainty about the undertakings for further research into this issue.

We also record our discontent with the design of a facility such as this which appears to be deliberately designed to leak 3 megalitres of radioactive waste each year.

11. Water

Radon gas is heavier than air and therefore can attach itself to water molecules which, from time to time, will be on the surface, either from rainfall, dew or frost. Although radon has a short half-life of only 3.8 days, during that time it could be ingested by fauna drinking such water. This does not appear to be accounted for in the DEIS.

This mine is located in what is already a desert and its expansion will be occurring in a drying climate. What is already desert will be drier still.

We remain concerned, as we have for more than 25 years, about the increasing amounts of water being taken from the Great Artesian Basin, particularly as there is geological evidence that this is 'fossil' water and the GAB does not recharge from the surface. It is known that the water from the GAB reaching this area has taken hundreds if not thousands of years to reach that point.

Unfortunately, the indenture agreement already in place allows the proponents to use up to 42 megalitres daily of water from the Great Artesian Basin at no cost. In a drying climate that water will be even more precious, and **governments must give consideration to charging the proponents for use of that water.**

Conclusion

Having opposed the original indenture agreement in 1982, the Australian Democrats are only too well aware that this development cannot be stopped, particularly with Government and Opposition parties supporting it.

However, given the number of unanswered questions and downside costs, we request that the planning authorities 'hasten slowly' in giving the approvals to this expansion. The ore under consideration will not go away if progress is slowed even a little, and the markets described in the draft Environmental Impact Statement will still exist.