

Re: “South Australia's Copper Strategy”

Have your say on how South Australia can realise the full potential of its vast copper resources to support the global green energy transition.

To: The Department of Energy and Mining

c/o DEM.engagement@sa.gov.au

Public Submission:

“SA’s Copper Strategy lacks ‘social license’ and fails contemporary public interest expectations and environmental and legislative standards”

By: Mr David Noonan B.Sc., M.Env.St.

Independent Environment Campaigner and Consultant

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“SA’s Copper Strategy lacks ‘social license’ and fails contemporary public interest expectations and environmental and legislative standards”

Introduction: The SA Copper Strategy is potentially an important way forward for the SA Gov to instigate and require needed reform in the copper – uranium mining sector in our State.

I provide this public input and 8 x **Public Interest Recommendations** (see p.11) toward required reform in the sector *‘as part of the development of the refreshed SA Copper Strategy’* due in 2025.

This input addresses the [Copper Strategy Consultation Paper](#) and SA Gov’s primary proposal *‘to triple production of copper to 1 million tonnes per annum’* in the 2030’s.

As input on requested *‘key themes, targets, projects and actions’* to provide public interest legitimacy, rather than to just *‘create the most value’* from the state’s copper resources.

To focus on two of the stated Aims and having regard to set SA’s ambition for *‘shared benefits’*:

- *‘to establish performance success targets for the sector across a range of outcomes including production, investment, and environment, social and governance (ESG) objectives’.*
- *‘to integrate the copper strategy into broader state priorities and major projects such as the State Prosperity Project and Northern Water Project’.*

BHP is the operator of Olympic Dam mine, has purchased Oz Minerals mines, intends to set up Olympic Dam mine as a regional processing hub for copper – uranium ores, and intends to bring on the deep underground [Oak Dam mine](#) project with processing of Oak Dam ore at Olympic Dam.

BHP is the world’s largest miner and holds undue influence in SA over their mining vested interests.

The SA Gov also has a degree of real and apparent *‘conflict of interest’* in both *regulating* BHP and in seeking to incentivise BHP to make investments to bring on major expansions of copper mining.

The Consultation Paper Part 1: Setting our copper ambitions, first asks:

Q: What is most important to you for the future of copper in SA?

At this stage, the SA Copper Strategy lacks *‘social licence’* and the BHP run copper sector continues to fail contemporary public interest expectations and proper environmental and legislative standards.

Further, the core related Northern Water Project lacks needed *‘social license’* as the SA Gov has to date failed to set clear public commitments to *‘shared benefits’* in protection for the GAB Springs.

It is most important for SA’s Copper Strategy and Northern Water Project realise priority protection for unique and fragile Mound Springs of the Great Artesian Basin (GAB) with a clear commitment to replace BHP extraction of GAB waters across *both* Wellfields A and B (see Rec.1 & 5. at p.11).

And it is axiomatic the SA Premier can-not credibly look to spend billions of dollars of public monies on water supply and not respect, save and protect the Mound Springs of GAB – as gems of our State.

Social license, the Gov’s political credibility and public interest standing depend on this outcome.

The Department of Energy and Mining (DEM) should provide a Public Forum on SA’s Copper Strategy before finalisation. I request to attend and participate and offer to be a Member of a Panel Discussion. I raise part of my relevant Background at p.12.

Northern Water could protect the Mound Springs by replacing *both* Wellfields A and B:

"I agree with you that the real opportunity to achieve significant beneficial environmental and cultural outcomes is to replace, or at least significantly reduce, Olympic Dam's current extractions from the GAB with a new, sustainable water supply."

Minister for Environment and Water the Hon Susan Close MP, Letter to David Noonan, 18 July 2022 .

BHP has started to re-position: with an initial [commitment](#) to close its untenable Wellfield A by end of FY2030, once Northern Water provides a new marine de-salination water supply to Olympic Dam.

The [Northern Water Project](#) is configured to provide BHP with whatever extent of water supply they may want, ample to supply all expansion and new mining options AND to close both Wellfields A & B.

Realisation of '*significant beneficial environmental and cultural outcomes*' to protect the unique and fragile [Mound Springs](#) and [integrity of GAB waters](#) has been left dependent on Gov & BHP decisions.

The SA Gov priority has been to give certainty to BHP in Northern Water capacity to deliver on a required level of sustainable reliable water supply, to lever an array of BHP investments in north SA.

The State has committed to pay for a massive marine de-salination facility on Eyre Peninsula, with half the water to go to mining, AND to pay for the pipelines to deliver that water to Olympic Dam.

Over half the public \$5 billion investment is to go to mining interests in BHP as world's largest miner.

At stake are the GAB Springs fundamental ongoing cultural and spiritual value to Indigenous People.

The State intends to '*negotiate*' outcomes with BHP, especially to negotiate water pricing with BHP, to try to recoup some of the sunk public investment in the desalination facility and pipeline costs.

So far, the State has not sought to direct BHP but rather to '*incentivise*' BHP toward negotiated outcomes. The State has not exhibited a priority to maximise public interest outcomes from Northern Water, rather a goal is to give certainty to industry interests and max industry outcomes.

If left to the direction Northern Water is on, the State Gov may not deliver more than a long overdue belated closure of Wellfield A and wrongly claim that is a sufficient benefit to Mound Springs of GAB.

The Northern Water Project can have no real 'social license' and the SA Premier's over \$5 billion investment in the project is not publicly defensible (see **Rec.5** at p.11) until and unless the Mound Springs are properly protected through this opportunity to replace all BHP extractions from the GAB.

BHP's reputation in an array of mine expansion options and the new [Oak Dam mine](#) are also at stake.

There has long been a national public interest campaign to protect the integrity of GAB waters and the cultural and environmental values of the Springs, through closure of both BHP Wellfields A and B.

For instance, see "[Olympic Dam busters: BHP fight over outback water rights](#)" Weekend Australian (Business p.1) and "[Why BHP is facing a minefield](#)" The Advertiser (Sat p.30) on 5th March 2022, both citing "*Mr Noonan wants to hear a formal commitment about alternative water sources*".

Further, see "[Mining giant sucking life out of SA's vanishing Springs](#)" The Advertiser (30 June 2021), and "[SA's disappearing mound springs raise questions for miner BHP](#)" The Age & SMH (23 Nov 2020).

However, the SA Gov and BHP apparently want to leave public interest decisions on GAB Springs till after and separate to the Northern Water EIS, to come down to a late stage in negotiations on 'water pricing' as to how much BHP agrees to pay for the new water supply to be delivered to Olympic Dam.

For instance, for BHP to agree to phase out Wellfield B they may expect the State to grant a heavy discount on water pricing, or free provision to BHP of a corresponding new 32 ML/d supply. To 'hold over' an outcome for GAB Springs as part of negotiations on costs to BHP is unacceptable.

BHP may also try to keep claimed 'rights to operate' Wellfield B as an untenable vested interest under the outdated 1982 Indenture Act and its privileged "Special Water Licenses".

As a Conservationist I made a 'Call to Protect our GAB Springs' on ABC TV 7 PM News coverage on the Northern Water Project on 22nd Feb and on morning ABC 891 Radio News on hour on 23rd:

'when the first marine de-sal water turns up at Roxby Downs town and at Olympic Dam mine, BHP should have to turn off the taps on GAB water extraction'

Noting BHP extraction from Wellfield A is less in volume than BHP's provision of GAB water to Roxby Downs township, once Northern Water is delivered to Roxby Downs, Wellfield A should close ASAP.

The "[Summary Business Case, Northern Water](#)" (Feb 2024) recognises ongoing risks to GAB Springs:

2.2.1 ENVIRONMENTAL *Currently, mining and other industry in the region are reliant upon extracting water from the River Murray, Great Artesian Basin and other deep saline groundwater resources. SA Water supplies to the region are also heavily reliant on the River Murray. Reliance on these unsustainable water sources will result in ongoing environmental degradation. ... The NW will provide a sustainable source of water and reduce the need for supplies to be taken from either the Great Artesian Basin or the River Murray. ...*

2.2.2 CULTURAL *The 2021 Juukan Gorge Inquiry made the following observations: "These springs (Mound Springs) are of great significance to the Arabana people and they are an important part of their cultural heritage. There are fears that continued extraction from the Great Artesian Basin will result in a significant reduction to the 'vitality and the ecological viability of the springs', and that there is a high likelihood that more springs will go extinct." The NW will play a significant role in reducing reliance on the use of water supplies that hold significant cultural importance to Traditional Owners. Providing the opportunity for reduced water withdrawals from the Great Artesian Basin may play a role in preserving mound springs. As virtual oases in the desert, the springs were, and still are, of vital importance to Indigenous people.*

Be aware civil society and National & State Environment Group's will formally engage the Northern Water EIS in 2025. Note a relevant Joint Env Groups Brief "[Preconditions to Protect Mound Springs in Olympic Dam Expansion EIS Guidelines](#)" (ACF, FOEA and CCSA, 2019, lead author David Noonan).

Joint ACF, FOEA and Conservation SA [input to Federal Gov on Olympic Dam](#) (Dec 2019) states:

"The protection of Mound Springs as a Matter of National Environmental Significance encompasses a range of Environmental Impact Assessment, science and ecology, GAB, Aboriginal cultural heritage and public interest considerations. These occur across federal and state responsibilities ...

As a listed "Endangered Ecological Community" under the EPBC Act the Mound Springs are categorised as: "facing a very high risk of extinction in the wild in the near future (indicative timeframe being the next 20 years)". These unique and fragile Mound Springs are under significant pressure from BHP's ongoing extraction of GAB waters ...

ACF, FoEA and Conservation SA have long maintained that Wellfield A must close as soon as possible and extraction at Wellfield B must be capped and phased out to protect the unique and fragile Mound Springs. Such action is needed to protect the fundamentally important ongoing Aboriginal cultural heritage associated with the Mound Springs."

BHP seek to withhold Springs monitoring info until 2026 – after the Northern Water EIS:

Recent BHP [commitments](#) set Targets and Actions to: “Contribute to conservation of the ecosystem function of the Great Artesian Basin (GAB) mound springs”, are expressed as **BHP Milestones**:

“FY2024 – implement a permanent daily abstraction limit on Wellfield A at 5ML/d.

FY2026 – increase public knowledge of GAB by contributing BHP data to a South Australian centralised public GAB springs database.

FY2030 – cease abstraction from Wellfield A through switching to coastal desalination supply in partnership with the SA Government on the Northern Water Supply Project.”

Question 1: Why does the SA Gov allow BHP to *withhold* GAB Springs monitoring data until *after* the Northern Water EIS assessment and public consultation process is over? (see **Rec.2** at p.11)

DEM and SA’s Copper Strategy must rectify this unacceptable situation as a public interest priority.

Q 2: Why was BHP allowed to withhold Springs data from the recent [Goyder Institute Springs Study](#):

Title: “Potential Impacts of Reducing Groundwater Abstraction from the Southwestern Great Artesian Basin: Modelled Aquifer Pressure and Spring Flow Response.”

*“...Unfortunately, there is no long-term, reliable spring monitoring network recorded by DEW. DEW records indicate that occasional spring flow monitoring data has been collected but this has occurred typically on a piecemeal basis. **BHP conducts routine spring flow monitoring in the southwest spring zone, however these data were not available to the project team.**”*

(p.7-8) “Importantly, a review of the relationship between aquifer pressure head and spring flow rate has not been completed for this report.” (p.39)

“5 Conclusions and Recommendations: ...

*This project originally planned to review the relationship between observed hydraulic head and spring flow. Notwithstanding many uncertainties related to how representative individual spring flow observations are for entire spring groups, as well as the potential magnitude of hydraulic head measurement error; a review of the relationship between observed hydraulic head and spring flow would have better informed the appropriateness of the model for predicting head and spring flow under the six (6) scenarios. **However, data limitations prevented this review from occurring.** (p.40)*

In 2023 the SA State Gov deemed BHP to be the *only* non-Gov stakeholder appointed to an advisory group on the Goyder Institute Springs Study (instigated and funded by the Northern Water Project).

The SA State Gov then allowed BHP to *withhold* needed GAB Springs monitoring data from the study!

Q 3: Why has DEM allowed BHP to continue to operate the adversely impacting Wellfield A, located in the midst of an arc of GAB Springs south of Kati Thanda Lake Eyre, over the last near 20 yrs? (see **Rec.3** at p.11)

DEM should have directed OR at least *incentivised* BHP to invest in Olympic Dam water efficiencies and re-use sufficient that Wellfield A could have been closed soon after BHP took over in mid-2005.

BHP projects Wellfield A is to be run at an average of 3.9 ML/d over next few years toward 2030.

It is unacceptable that BHP ‘hold over’ closure of the adversely impacting Wellfield A until FY2030.

Threats to cultural & ecological values of Kati Thanda springs remain real and significant:

Threats to GAB Springs feature in a recent international peer reviewed science [book](#): ***“Threats to Springs in a Changing World. Science and Politics for Protection. Geophysical Monograph Series.”*** (Wiley/AGU, USA, 2023), Part 1 Threats to Springs and their Values, Chapter 6, Titled:

“Springs of the South-Western Great Artesian Basin, Australia: Balancing Sustainable Use and Cultural and Environmental Values” by Assoc Prof Gavin M. Mudd and Prof Matthew J. Currell, Environmental Engineering, RMIT University.

A [Preview](#) of the book provides a brief summary of the main contribution of Ch.6, in presenting:

“... an analysis of the effects of artesian groundwater extraction for Australia’s largest mining operation on the culturally and ecologically significant Mound Springs of the south-western GAB (Australia’s largest interconnected aquifer system). They combine spring-flow and artesian bore water level measurements to illustrate the effect of mine water extraction on different springs in the unique Kati-Thanda complex.”

Abstract: *The Great Artesian Basin (GAB) is one of the world’s largest groundwater systems and supports a wide variety of springs, associated ecosystems and cultural values. ...*

In particular, the Olympic Dam mining project in South Australia has been extracting groundwater since 1983 from a wellfield located on the south-western margins of the GAB – an area containing a vast array of culturally significant, ecologically unique and sensitive springs, including iconic mound springs. The extraction rate has increased over time, leading to concerns about impacts on the springs and their associated values. There are plans to expand the mine that would potentially increase the extraction rate further. This chapter reviews the hydrogeological setting of the springs of the south-western GAB, their cultural and environmental values and synthesizes and analyses the available groundwater monitoring data associated with the wellfield. The case highlights the critical importance of detailed spatial and temporal hydrogeological monitoring, including both spring flow rates and groundwater level/pressure data, and the need to link monitoring and management of such sites to key cultural and environmental values.”

Summary and Conclusions: *“This chapter has presented the case of Wellfield A, which supplies water to the Olympic Dam mining project in central South Australia, and the impacts and risks to Kati Thanda springs. The springs are unique and irreplaceable cultural and ecological heritage but those in the vicinity of Wellfield A have clearly experienced significant impacts and some have gone extinct (Priscilla, Venables). This has been demonstrated through a detailed synthesis and assessment of monitoring data for Wellfield A, especially the lack of full recovery in levels or flows in many bores or springs following the reduction in extraction in the mid-1990s after the development of Wellfield B. The monitoring frequency has been substantially reduced since February 1999 for bores and 2002 for springs, whilst from 2015 reporting has reduced individual spring and bore monitoring data, making it impossible to assess in detail the state of individual springs or bores. A key finding of this chapter is the unique relationships between nearby artesian pressure levels and spring flows, arguably the first time such an analysis has been synthesized for the Kati Thanda springs and confirming the intuitive expectation that small reductions in pressure can lead to significant reductions in spring flows. The special case study highlights the critical importance of aligning monitoring closely with the science and determining compliance criteria accordingly – something which clearly needs to be improved in this case. Given the ever-present potential for a third GAB wellfield for Olympic Dam, as well as an expansion of extraction from Wellfield B and even potentially Wellfield A, it is clear that threats to the cultural and ecological values of the Kati Thanda springs remain real and significant.”*

Plan SA set token Environmental Requirements on Northern Water EIS re GAB Springs:

The "[Summary Business Case, Northern Water](#)", at 9. Preferred Option (p.23, Feb 2024) says:

"The Project has been designed in two 130 ML per day stages to enable flexibility for the Project to be scaled commensurate with demand. The completion of Stage 1 is targeted for 2028, while Stage 2 is proposed to be constructed dependent on future demand, expected to be five to ten years later. ...

The Project has also been designed to meet the specific requirements across a broad range of water users including hydrogen, mining, pastoralist, Department of Defence and SA Water. Preliminary capital costs are likely to be in excess of \$5 billion."

A multi-billion \$ public infrastructure project must credibly assess relevant impacts, including *indirect* environment and cultural benefits AND *indirect impacts* of the project on GAB Springs and waters.

However, the [Plan SA set Environmental Requirements](#) on the Northern Water EIS provide only a single reference to the GAB Springs (at p.69) as a Descriptor under 'Aboriginal Cultural Heritage':

- ***'Positive impact on mound springs from reduced reliance on groundwater.'***

The listed 'Nature of Impacts' to Aboriginal Cultural Heritage does set out the following impacts:

- *Direct: impact to cultural heritage sites / places, connection to country, intangible cultural values.*
- *Indirect: loss of trust in government, wellbeing of Aboriginal communities.*
- *Cumulative: degradation of cultural values and heritage places.*

The **wellbeing** of Aboriginal communities is absolutely at stake over whether GAB Springs are well protected or not, and there will be a loss of public trust in the SA State Labor Gov if the GAB Springs are not protected.

The Environmental Requirements set a useful Objective on groundwater (at p.53) and a 'Method of Investigation' (at a last dot point entry under this Objective at p.55) that refers to GAB waters:

Objective: *To ensure the quality of groundwater and surface water is protected so that environmental values including ecological health, cultural heritage values, land uses and the welfare and amenity of people are maintained.*

Method: *Describe the indirect environmental benefits to existing groundwater resources in the region (ie Great Artesian Basin and local groundwater sources) of proceeding (or not proceeding) with the development.*

As a 'Method of Assessment', Plan SA makes one further useful reference to the Great Artesian Basin / GAB, under 'Sustainable use of Resources' (at p.48), to:

Describe *how the development may impact reliance on existing climate-dependent water resources in the region (River Murray, GAB and local groundwater sources).*

The Northern Water Project has potential to either protect the integrity of the GAB system OR to condemn the GAB system to further decades of degradation and loss of pressure due to Wellfield B.

The EIS process must respond to public expectations and not be limited by initial set Requirements.

DEM, Plan SA and Northern Water are on notice to properly use this EIS assessment process to prioritise protection for the unique and fragile Mound Springs of the GAB (see Rec.4 at p.11).

BHP legal privileges in 1982 Indenture Act override SA laws, standards & due process:

If BHP are unwilling to relinquish outdated legal privileges in the 1982 Indenture Act the SA Gov should put BHP on notice and instigate repeal & reform in this area (see **Rec.6** at p.11).

see Brief **“BHP LEGAL PRIVILEGES IN THE OLYMPIC DAM INDENTURE ACT 1982 OVERRIDE SA LAWS”**

[Briefing](#) written by David Noonan for the Australian Conservation Foundation, Friends of the Earth and Conservation SA (June 2019).

There is a special priority case for repeal & reform of the “Special Water Licenses” that authorise BHP Wellfield A & B operations to extract GAB waters and allow adverse impact on GAB Springs.

Joint ACF, FOEA and Conservation SA [input to Federal Gov on Olympic Dam](#) (Dec 2019) states:

Olympic Dam mine is governed in SA by an outdated Roxby Downs (Indenture Ratification) Act 1982 and Indenture. This archaic arrangement grants extensive legal privileges to BHP for the entire Olympic Dam operation and “takes precedence over” and allows exemptions from a wide range of contemporary relevant SA laws, standards and due process.

Our organisations, ACF, FoEA and Conservation SA have long called for the repeal of the outdated 1982 Act and Indenture that applies to the Stuart Shelf Area of over 12,000 km² in SA.

There is a strong public interest priority to repeal the existing 1982 Indenture Act overrides of the Aboriginal Heritage Act 1988, the Environment Protection Act 1993, the Mining Act 1971 and contemporary legislation, regulation and licensing governing groundwater issues.

BHP’s Indenture based legal privileges take precedence over the Aboriginal Heritage Act 1988, applying a modified 1979 Act to suit the miner’s vested interests, with “the consent” of BHP required for any change to this situation. This is a striking example of unacceptable corporate self-interest overriding the public interest, a deplorable situation which successive SA State governments have failed to remedy.

For instance, it is unacceptable for applications from BHP to ‘damage, disturb or interfere with’ Aboriginal cultural heritage sites across the Indenture area to be decided by the Mines Minister. ...

An array of Indenture exemptions, overrides and legal privileges raise further public interest concerns over the integrity and independence of the environmental impact assessment process and on real or perceived conflicts of interest in government decision making.

The entire Olympic Dam operation, both existing and any proposed expansion, should to be assessed and regulated under the objects and provisions, standards and procedures and other due process requirements of relevant SA legislation and fully subject to conditions under the federal EPBC Act.

ACF, FoEA and Conservation SA call on BHP to agree to surrender and forego the outdated 1982 Indenture Act legal privileges across the entire Olympic Dam mine operation. BHP should agree to be governed by contemporary public interest laws and standards and due process in SA.

A responsible modern company should act in a manner consistent with contemporary community expectation and best of sector practice – this is not the case at BHP Olympic Dam.

BHP must lodge a Bond to cover 100% of rehabilitation liabilities at Olympic Dam:

Australia has a poor track record on mine rehabilitation, particularly in the uranium sector. It is imperative that the Olympic Dam project does not build on this history of under-performance and cost shifting (see **Rec.7** at p.11). The continuing allocation of public funds to address inadequate earlier rehabilitation at Rum Jungle and underestimates at Ranger in NT are salient cases.

A mandate a statutory 100% unconditional bond must be secured to cover estimated rehabilitation liabilities to ensure that the full costs of remediation and decommissioning at Olympic Dam. Given that this bond has not been secured by the SA State Gov in the first instance, it must alternatively be secured directly by the Federal Gov under the EPBC Act.

The SA Gov must now require BHP to conduct relevant studies and release full contemporary cost estimates of mine rehabilitation, decommissioning and remediation work with respect to full rehabilitation liabilities across Olympic Dam operations for public consultation.

A comprehensive Safety Risk Assessment is required to determine the long-term (in the order of 10,000 year) risk to the public & the environment from all radioactive tailings stored at Olympic Dam. This approach is consistent with [EPBC 2005/2270 Approval Conditions](#) '32 Mine Closure' (Oct 2011).

Federal Gov standards for disposal of radioactive ore tailings at the Ranger uranium mine need to be applied to Olympic Dam to ensure consistency with current best of sector approaches. In particular, re the "Environmental Requirements, Management of Tailings" (1999) requirement "to ensure that:

- i) The tailings are physically isolated from the environment for at least 10,000 years;*
- ii) Any contaminants arising from the tailings will not result in any detrimental environmental impact for at least 10,000 years."*

Joint ACF, FOEA and Conservation SA [input to Federal Gov on Olympic Dam](#) (Dec 2019) states:

BHP has avoided paying a mine rehabilitation bond at Olympic Dam, by far the largest and most influential mining operation in South Australia, and now faces a significant long-term liability.

BHP must ensure this long-term rehabilitation liability is not left as a legacy cost to the public.

The SA State government has failed in its responsibility to secure and impose a "non-negotiable" unconditional advance bond on BHP for 100% of the rehabilitation liabilities at Olympic Dam.

The federal government can require BHP to provide a bond to meet the full cost of rehabilitation liabilities at Olympic Dam, irrespective of whether or not SA acts on its responsibilities in this regard.

The Guidelines to the EIS Assessment need to require a statutory 100% unconditional bond on BHP to address the estimated rehabilitation liabilities across the entire Olympic Dam operations.

This would require BHP to present a costed Mine Closure Plan including a Tailings Disposal Plan based on the pre-requisites required by a comprehensive Safety Risk Assessment of all Olympic Dam mine tailings.

The required bond and needed rehabilitation studies must now fully address coverage of the three existing "extreme risk" tailings waste storage facilities declared by BHP in June 2019.

These studies and the proposed bond arrangement must be subject to public scrutiny in the EIS process prior to the approval or advance of any new Tailings Storage Facilities or expansion of radioactive tailings output.

The need to assess a feasible alternative to not process uranium oxide at Olympic Dam:

A [peer reviewed report](#) by Dr. Gavin M Mudd “**The Olympic Dam Mega-Expansion Without Uranium Recovery**” (Dec 2010) raised two Primary Questions that apply equally today to SA’s Copper Strategy and to BHP’s proposed Oak Dam copper-uranium mine (see **Rec.8** at p.11):

- 1) Can the next Olympic Dam expansion be developed without uranium recovery?
- 2) Will this scenario lead to net lower environmental impacts?

Joint ACF, FOEA and Conservation SA [input to Federal Gov on Olympic Dam](#) (Dec 2019) states:

The need to assess a feasible no-uranium sales alternative for Olympic Dam. This is a required assessment of BHP’s social license to operate and BHP’s primary duty of care to demonstrably assess the benefits in lower ionizing radiation exposures to workers. A further benefit of this approach is the potential for significant water savings.

The Olympic Dam expansion involves a highly contested and publicly controversial industrial nuclear activity in uranium mining. ACF, FoEA and Conservation SA have long maintained that existing Olympic Dam operations and any proposed mine expansion should not sell uranium.

A [peer reviewed report](#) by Dr. Gavin Mudd (Dec 2010) investigated the viable key project alternative to not process uranium oxide at Olympic Dam and concluded that it is technically possible to:

- “process Olympic Dam ore without uranium recovery by removing the acid leach step for tailings and not purifying the uranium during the hydrometallurgical processing of Cu concentrate liquors (ie. only recovering Cu from this step). ...
- This leaves all uranium and its associated radioactive decay products to deport to the tailings. In reality, this will only mean a very minor change to the radioactivity of the tailings – which must be managed as low-level radioactive waste in any case.”

The feasible alternative mining configuration to not process uranium oxide at Olympic Dam exhibits a range of potentially significant environmental benefits in water and energy savings and means lower radiation exposures.

BHP has a primary duty of care to demonstrably assess the benefits in lower ionizing radiation exposures to workers.

Our organisations strongly recommend the EIS Guidelines require an assessment of the key feasible project alternative for no uranium processing at Olympic Dam and direct the proponent BHP to properly assess the lead duty of care benefits in reduced worker radiation exposures.

see Joint NGO Rec.10 The need to assess a feasible no-uranium sales alternative for Olympic Dam:

The EIS Guidelines set by or required by the Federal government should direct the proponent BHP to properly assess:

- A [No Uranium Sales approach](#) as a feasible alternative project configuration. This would see no uranium removed from the mine site, with all uranium retained on-site and discharged to the tailings waste system. This assessment would explore potential savings in water, electricity and chemicals, economic costs and benefits, radiation exposures, nuclear safety and related issues.

BHP has a primary duty of care to properly assess the benefits in potentially significant lower ionizing radiation exposures to workers by not processing uranium oxide at Olympic Dam.

Public Interest Recommendations to SA's Copper Strategy:

1. SA's Copper Strategy and the Northern Water Project must deliver priority protection for the unique and fragile Mound Springs of the Great Artesian Basin (GAB) in a clear commitment to replace BHP extraction of GAB waters across *both* Wellfields A and B.

Social license, the Gov's political credibility and public interest standing depend on this outcome.

2. The SA Gov must require BHP to contribute GAB Springs monitoring data to an SA centralised public GAB springs database ahead of the Northern Water Project EIS public consultation period.

It is not acceptable for BHP to withhold GAB Springs data until 2026 after the Northern Water EIS.

3. DEM should direct / or incentivise BHP to invest in Olympic Dam water efficiencies and re-use sufficient that Wellfield A (projected to run at an average extraction rate of 3.9 ML/d over next few years) can be closed ASAP and not be unnecessarily 'held over' in operation until the end of FY2030.

DEM & BHP have had since 2005 to do so but allowed Wellfield A to continue to impact GAB Springs.

4. As proponent and as assessor of Northern Water the SA State Gov must undertake the project's EIS process to maximise 'shared benefits' in outcomes for the unique and fragile Mound Springs as gems of our State: through the project's potential to lead to closure of *both* BHP Wellfields A & B.

BHP Wellfield B is an untenable long term insidious threat to the viability of Mound Spring flows.

5. The Premier & SA's Copper Strategy must not delay & hold over public interest decisions to protect GAB Springs until after the Northern Water EIS and into fraught BHP negotiations over water pricing.

The Premier must accept he can't spend billions \$'s on water supply and not save the GAB Springs.

6. SA's Copper Strategy must require repeal of the outdated *Roxby Downs (Indenture Ratification) Act 1982* and Indenture with its mining privileged precedence over-ride of an array of SA Legislation and bring BHP's Olympic Dam copper-uranium mine under governance of the reformed *Mining Act 1971*.

It's farcical to propose a massive SA copper expansion based on over 40-year-old *vested interest* laws.

7. The SA Gov must mandate a statutory 100% unconditional Bond be secured from BHP covering a full public costing of rehabilitation liabilities in remediation and decommissioning at Olympic Dam.

Further, the Bond must be consistent with current best of sector approaches and apply Federal Gov standards for disposal of radioactive ore tailings at the Ranger uranium mine to Olympic Dam mine.

8. SA's Copper Strategy, premised on copper-uranium ores from Olympic Dam and Oak Dam mines, must assess a feasible alternative project configuration to not process uranium oxide for export sale.

This would see no uranium removed from the Olympic Dam mine site / regional ore processing hub, with all uranium retained on-site and discharged to the tailings waste system. This assessment would explore potential savings in water usage, electricity and chemicals, economic costs and benefits, reduced ionizing radiation exposures to workers, nuclear safety and related issues.

BHP has a primary duty of care to properly assess the benefits in potentially significant lower ionizing radiation exposures to workers by not processing uranium oxide at Olympic Dam.

As to my relevant Background: I worked as a campaigner for Australian Conservation Foundation (ACF) from 1996-2011 based in Adelaide and retain an ACF advisory role on public interest issues re Olympic Dam mining and integrity of the Great Artesian Basin and viability of Mound Springs.

This has included as lead author and consultant to Joint National & State Environment Group's [Input](#) and [Recommendations](#), along with a set of Olympic Dam [Briefing Papers](#), provided to the Federal Environment Minister (Dec 2019) on BHP's then proposed expansion of Olympic Dam (EPBC Act Referral 2019/8570). For further information see: <https://nuclear.foe.org.au/olympic-dam/>

Please note a relevant Joint National & State Environment Group's [Brief](#) (ACF, FOEA and CCSA, 2019): *"Preconditions to Protect Mound Springs in Olympic Dam Expansion EIS Guidelines"*.

I made submissions, gave Hearing evidence, and am quoted in the Federal Juukan Gorge Inquiry into Aboriginal Heritage ("[A Way Forward](#)" Report, Oct 2021, p.124-125), see: **"Box 5.3 Case study: The sacred mound springs of the Arabana people"**.

I've had input to, gave Hearing evidence, and am quoted on GAB Springs issues in the "[Aboriginal Heritage Inquiry Report](#)" (June 2023) by the SA Aboriginal Lands Parliamentary Standing Committee.

Joint National & State Environment Group's have repeatedly declared: To protect GAB waters and the cultural and ecological values of Springs requires clear and urgent public interest commitments to:

- Close BHP Wellfield A water extraction operations - inappropriately located for max adverse impact within the geographic arc of GAB Mound Springs, as soon as possible.
- Phase out the larger scale BHP Wellfield B water extraction operations, as a priority.

BHP took over Olympic Dam in 2005. Successive SA State Governments and BHP have had decades to protect GAB waters and Springs but failed to do so. NW may be a final belated opportunity to do so.

I provided formal [input](#) (March 2024, endorsed by Conservation SA) to the DCCEEW EPBC Act Referrals Gateway Team on the Northern Water Project, including earlier on in Jan-Feb Titled:

"Re Civil society alarm over SA Gov failure to Refer a Listed MNES, the Mound Springs of the GAB, impacted by the proposed Northern Water Supply Project".

Raising concerns the SA Gov Referral documentation was not 'fit for purpose' regards failure to refer indirect impacts on listed Springs of GAB, an important matter that must still be taken into account.

As a Conservationist I've earlier this year made a 'Call to Protect our Springs' on ABC TV 7 PM News (SA) coverage on the NW Project (22nd Feb) and morning ABC 891 Radio News on hour on 23rd:

'when the first marine de-sal water turns up at Roxby Downs town and at Olympic Dam mine, BHP should have to turn off the taps on GAB water extraction'

Please feel free to contact on any aspect of these issues, contacts provided in E-Mail cover note.

Yours sincerely

David Noonan B.Sc., M.Env.St.

Independent Environment Campaigner and Consultant

Conservation SA Representative on the Northern Water Project 'Stakeholder Reference Group'

Seaview Downs, South Australia