Submission on Draft Great Artesian Basin Strategic Management Plan 2018

The Great Artesian Basin (the GAB) is one of the largest underground freshwater resources in the world. It underlies approximately 22% of Australia – an area of over 1.7 million square kilometres beneath arid and semi-arid parts of Queensland, New South Wales, South Australia and the Northern Territory. Approximately 70% of the Basin lies within Queensland.

Despite the Great Artesian Basin being a highly valued water resource which provides diverse benefits and opportunities, we do not believe that its value is being responsibly administered by Australian Governments.

We wish to bring particular attention to the threats to the GAB from coal mining and unconventional gas, including but not restricted to fracking. The risks are not being adequately identified, quantified or mitigated.

This is our Submission on the Draft Great Artesian Basin Strategic Management Plan (the SMP).

ABOUT NORTH WEST PROTECTION ADVOCACY

NWPA is a not-for-profit voluntary group whose aim is to provide advocacy and assist with community engagement and community monitoring services to help landowners and community members who are already or will soon be impacted by invasive mining and gas pipeline activities.
We aim to protect and preserve our natural assets such as groundwater including the Great Artesian Basin, food security, forests, farms, Indigenous cultural heritage and values, flora and fauna.

We seek environmental justice, aiming to uphold and improve our existing environmental laws and preserve intergenerational equity.

KEY POINTS

* Recent research by CSIRO determined that the GAB is a declining resource and not in a 'steady state' as had apparently been previously assumed.

* The stress to the GAB from increased mining approvals - particularly around or on recharge zones of the GAB - should not be ignored or downplayed as it appears to be the case in the assessment of coal mining, shale and coal seam gas approvals.

* The number of uncontrolled bores and open bore drains - funding should be made available to continue with the Cap and Pipe initiatives.

* Maintenance of bores and infrastructure should be a priority for the future of the GAB - funding needs to be made available as above, to not only continue with the Cap & Pipe Scheme but to maintain those already done so they continue to improve water take and wastage.

* Regulations and compliance on water take and use are not regulated under one body - each state has their own governance - it would be much simpler, more transparent and better for the management of the GAB if one body independently elected could monitor and regulate the GAB moving into the future.

* Have independent (not industry funded) monitoring and evidence, before any further mining is approved.

* We believe we should adopt and adhere to the Precautionary Principle regarding the further use of the GAB into the future - if an industry cannot prove they will not adversely damage or destroy the GAB then it must simply not be allowed to proceed - protection of the GAB must be the top priority of any management strategy - we cannot sustain continued agriculture (food production as a priority) nor life without the GAB - it must be protected at all costs.

* We reject “adaptive management” in the form currently espoused by Australian regulators, as it provides free reign to resources industry to override its approval conditions and does so without providing stakeholders access to “management
MINING AND GAS RISKS TO THE GAB

Based on recent experience in the Hunter Valley and Namoi Valley, where coal mining is implicated in reduction of groundwater and the collapse of river flows, evidence suggests mining anywhere near the GAB should not be allowed. (Ref: https://www.theherald.com.au/story/5453540/sucking-it-dry-report-warns-of-minings-water-impacts/)

Mining and unconventional gas represents a serious risk to the GAB across four states – NSW, Queensland, South Australia and the Northern Territory.

The risks to the GAB arising from mining and unconventional gas development comes from:

1. Increased water demand from resource extraction
2. Aquifer depressurisation and drawdown
3. Fugitive migration of gas
4. Surface water pollution
5. Contamination risk

Despite these risks, the SMP is silent about the totally inequitable and unsustainable arrangement that allows the mining and gas resources sectors virtually unlimited access to GAB water in states like Queensland while other users have to purchase their entitlements.

Capping and piping uncontrolled bores was a key element of the original SMP, that it was a highly successful program and that artesian pressure losses were reversed in some parts of the GAB.

Since the proliferation of the unconventional gas industry in Queensland, pressures and water levels have begun to decline in those areas. We hold great concerns for the integrity of the GAB and those landholders reliant on is water as the gas industry extends its operations and as the coal sector plans massive mines that will effectively facilitate its draining via a significant part of the GAB’s recharge area.

SPECIFIC IMPACTS FROM CURRENT AND PROPOSED MINING AND GAS

Queensland Impacts
The CSG mining industry has unfettered access to unlimited volumes of GAB water in Queensland, fatally undermining water planning and sharing strategies.

Farmers and graziers are losing bores permanently due to CSG across large areas. The Office of Groundwater Assessment estimates 469 water bores will be drawn down as a result of current Qld CSG projects and that 65,000 ML of water is already being extracted each year by the industry, mostly from GAB aquifers.

The underground water take of CSG companies is virtually unregulated and they are allowed unlimited take that impinges severely on third parties without requiring water licences.

There are also major risks to the GAB from disposal of produced water and toxic salt waste from CSG in the Surat Basin, and from the reinjection of wastewater underground.

In late 2016, the Queensland Government also gave the mining industry a statutory right to take unlimited associated groundwater, removing the need for water licences to be obtained.

The massive coal mines proposed for the Surat Basin, including the Wandoan mine, pose a major direct risk to the GAB.

Furthermore, the true impacts of the proposed Galilee Basin mines on the GAB are poorly understood. Adani has not done the seismic surveys that would be required to assess the impacts on the Doongmabulla Springs, which are GAB discharge springs. The Bioregional Assessment has identified major uncertainty about the threat Adani poses to the springs.

The Queensland Coordinator General identified that groundwater could drain from the GAB via geological fault structures from the Clematis Sandstone GAB aquifer into the coal seams being targeted by Adani.

The Independent Expert Scientific Committee also highlighted that subsidence from the Adani longwall mine could cause fracturing that could also create risks of connectivity to the GAB.

Opening up the Galilee basin's coal reserves in and/or adjacent to a recharge area represents a serious risk for graziers as well as GAB-fed springs with significant cultural values.

Other risks include a serious threat of acidification of groundwater if a proposal to pump CO2 into the Precipice Sandstones in the Wandoan area proceeds, and major risks from proposed shale gas fracking in the Channel Country.
Other states

CSG: In NSW, the proposed Narrabri gas project threatens the Pilliga Sandstone Southern Recharge area of the GAB. The 850 well gas project puts at risk the reliability, quality and pressure of GAB water. The Environment Impact Statement for the project was vastly inadequate, and experts have identified major weaknesses with water modelling, monitoring and assessment.

Shale Gas fracking: In South Australia, proposed shale gas fracking near Coober Pedy has raised major community concerns about impacts on the GAB. The Environmental Impact Report for the SAPEX Arckaringa project is weak and overlooks interconnectivity between various aquifers and underestimates risks.

Underground coal gasification (UCG): In the south eastern corner of the Northern Territory, a coal gasification scoping study has been completed by Ebony Energy, right through the Great Artesian Basin water resource. Very little information is publicly available.

UCG in QLD has already proven highly polluting, creating an environmental disaster zone that negatively impacted land, water and people's health at risk. Coal gasification is now banned in QLD. Any further developments on coal gasification in SA or the NT must be carefully scrutinised for the potential impacts to the GAB. Based on the experience of QLD, we recommend the practice is banned outright across Australia.

Image: The purple shade area is the UCG contamination zone at Chinchilla (Courtesy Mrs Shay Dougall, CSG & Public Health Conference, Narrabri, 15th August 2018)
IMPLEMENTATION

The plan has little to no detail about governance and implementation, roles, responsibilities and accountability mechanisms.

The plan must put GAB communities into the decision making and implementation process.

INDIGENOUS INCLUSION

We welcome the inclusion of a principle in the draft plan that states that "Springs and other cultural sites must be protected as an integral, intricate component of Aboriginal and Torres Strait Islander culture and society and as an essential part of Australia’s cultural heritage."

Given the GAB-fed Doongmabulla Springs are currently under threat from Adani’s Carmichael mine there is a clear need to turn this statement of principle into an implementation plan that gives First Nations the power to ensure these sites are protected.

To date there appears to be no evidence that governance and decision-making about preserving and protecting culturally important sites is democratically inclusive, appearing to give voice to pro-mining interests only.

Doongmabulla Springs are GAB-fed and of enormous cultural significance to Wangan and Jagalingou people.

RISK ASSESSMENT

The risks to the GAB arising from mining and unconventional gas development in Queensland and NSW is obviously a major concern. The risks of “Conventional gas” are also deserving of more attention.

The SMP fails to provide any genuine assessment of the risks posed by mining to the GAB. Mining and gas are major new water users who pose a massive threat to existing water users and to the sustainability and health of the GAB, across four states – Queensland, NSW, South Australia and the Northern Territory.

In relation to the existing impacts of CSG, the Underground Water Impact Report for the Surat Cumulative Management Area indicates that 469 water bores will be drawn down as a result of current CSG projects and that 65,000 ML of water is
already being extracted each year by the industry, mostly from GAB aquifers. CSG companies are not required to obtain water licences for that take – it is an unregulated, unlimited take that impinges severely on third parties.

In NSW, the Narrabri CSG gas project threatens a vital southern recharge area of the GAB. In Queensland, shale gas development and fracking in the Channel Country also poses a risk to the Basin. The Environment Impact Statement for the project was vastly inadequate, and experts have identified major weaknesses with water modelling, monitoring and assessment.

Mines proposed for the Surat Basin, including the Wandoan mine, pose a major direct risk to the GAB.

Furthermore, the true impacts of the proposed Galilee Basin mines on the GAB are poorly understood. Adani has not done the seismic surveys that would be required to assess the impacts on the Doongmabulla Springs, which are GAB discharge springs. The Bioregional Assessment has identified major uncertainty about the threat Adani poses to the springs.

The Queensland Coordinator General identified that groundwater could drain from the GAB via geological fault structures from the Clematis Sandstone into the coal seams being targeted by Adani. The Independent Expert Scientific Committee also highlighted that subsidence from the Adani longwall mine could cause fracturing that could also create risks of connectivity to the GAB. However, the research required to thoroughly assess these risks has not been conducted.

RISKS OUTLINED

The provision of drinking water through domestic bores and town water supply has been essential to the development of regions within the Basin and is used in more than 120 towns and settlements.

In March 2018, NWPA conducted a guided tour of the Surat Region and met with members of the Basin Sustainability Alliance. We are aware of Queensland Surat Basin who are already experiencing impacts on their groundwater supplies as a result of CSG extraction.

The Narrabri CSG gas project puts at risk an important southern recharge area of the GAB.

Opening up of the Galilee Basin’s coal reserves in and/or adjacent to a recharge area puts at risks water supply for some graziers as well as GAB-fed springs with significant cultural values.
We note that there is no cumulative groundwater model for the Galilee Basin section of the GAB to underpin robust decisions in relation to Galilee coal basins.

We note that the draft SMP identifies the potential growth in extraction of GAB water and new industries developing within the Basin. The draft fails to address real concerns regarding third party impacts from new water users beyond noting that third party impacts need to be addressed in state/territory water plans. The Queensland GABORA Water Plan provides a general reserve of only 840ML of unallocated GAB water, yet the unconventional gas industry has unfettered access to unlimited volumes of GAB water in Queensland. Accordingly, we have no confidence at all in the Queensland government’s commitment to “a healthy resource.”

There is little detail on this matter as, in our opinion, the expansion of the coal and unconventional gas industries within the GAB footprint presents clear risks to the integrity of the GAB in addition to impacts on third parties. A clear process or pathway is required to address third party impacts and to ensure “secure and managed access” for existing GAB water users.

GOVERNANCE

The 2015 review of the previous SMP noted that ‘It is crucial that water extractions for mining and unconventional gas related activities is transparent and accountable, does not compromise the long-term sustainability of the resource, does not erode the water rights of other users and minimises any potential third party impacts.’

However, this current draft SMP does not provide any analysis of the risks posed by mining and does nothing to address these major issues.

Therefore, we would like to see major additions to the SMP to:

- Require full transparency and accountability of all mining and gas water take
- Ensure that mining and gas activities are subject to the same water management rules, caps and licensing regimes as other industries
- Prevent impacts from mining and gas water take on existing businesses and industries
- Implement special measures to strictly protect recharge areas from any proposed mining and gas impacts
- Provide full protection for GAB springs from any proposed mining and gas activities that are known or likely to have any impact on them
• Setting strict standards for environmental assessments and an independent body to advise on any mining and gas projects which may threaten the GAB

The draft SMP makes several references to “governments, communities and industries working together” suggesting stakeholder support and commitment is sought.

However, there is no evidence of a true partnership model nor collaborative approaches to GAB management involving GAB communities, industries and/or water users. It is also unclear how the implementation of the final SMP will be resourced.

We are concerned by the absence of detail on governance and implementation of the SMP, particularly mechanisms that assign roles, responsibilities and accountabilities for its implementation. One interpretation that could be drawn from this is that governments lack commitment to achieving the outcomes of the draft SMP. Another is that “the community” will be afforded only a very limited role in SMP implementation.

The draft indicates that these governance and implementation details will be developed by governments, with other stakeholders to be advised later. An opaque approach such as this will totally undermine the stated desire for collaborative partnerships and will likely erode what little trust in government processes remains in the wider community. This is especially so for many of our supporters who are well informed about the challenges facing the GAB and who are deeply cynical of government decisions involving the combination of water resources and fossil fuel extraction.

“A HEALTHY RESOURCE”

Beyond groundwater dependent ecosystems, the draft SMP does not appropriately recognise biodiversity and broader environmental values within the GAB area. References to “a healthy resource” are vague and general, with most confined to spring communities.

It is essential that pressure be maintained to ensure the long term health of GAB springs and we contend that measures such as set-back distances are likely to be insufficient to protect high conservation value springs. The draft SMP fails to address the potential risks that arise where GAB groundwater comes to the surface, whether from bores or springs.

The draft mentions the issues of biodiversity in water remote areas and weeds but
not the impacts of feral animals. There are no actions or strategies provided to address or mitigate the impacts of invasive species on biodiversity.

There are potentially significant risks to the environment as a result of the disposal of associated / co-produced / formation water brought to the surface by the mining and petroleum and gas industries. Given the potential expansion of these industries in the GAB area we regard this as a very significant omission.

Recent research by CSIRO (Smerdon et al 2012) determined that the GAB is a declining resource and not in a “steady state” as had apparently been previously assumed. NWPA also understands that the GAB is rich in hydrocarbons, the extraction of which has implications for water and pressure and hence existing users of GAB water. We are well aware of (and gravely concerned about) the increasing demand for greater access to GAB water from the resources sector.

“SECURE AND MANAGED ACCESS”

Security of access appears to be available only to the mining industry. The mining sector is largely self-regulated so it is hard to understand how compliance will operate and how “secure and managed access” will actually be delivered.

In contrast, agriculture and town water supplies are not secure in the face of coal mining and gas industries.

The draft SMP is silent on these important issues. Together with the lack of detail on coordinated governance, We believe these omissions undermine the credibility of the entire SMP. In our opinion, there are real questions as to whether the draft SMP can

- protect existing access arrangements/entitlements and ensure equity between user groups
- offer existing users some protection against new and emerging users who have a higher risk impact on the GAB than current users
- afford current users opportunities to access funding to enhance their resource and explore new opportunities
- encourage new and more efficient, higher value industries that are complementary to existing users and which -as far as possible - maintain what is now known to be a declining resource
“JUDICIOUS USE”

There is no evident basis in the SMP for the claim that it supports “judicious use” and as such we believe that it is a useless device.

There is nothing “judicious” in the resources sector's use of the resource, rather it is flagrant and dismissive of the needs of other users including agriculture and townships.

Significant risks remain from uncontrolled or poorly-maintained infrastructure. Some extinct springs – and even some uncapped bores – have begun to flow again or at high flow rates as pressure is recovered. We are therefore surprised that the SMP fails to stress the importance of completing capping and piping programs.

Furthermore, the issue of on-going long term maintenance of bores and associated infrastructure seems to be regarded as a thing of the past. In addition to those currently uncapped bores and those that are deteriorating, tens of thousands of new gas wells are planned for the GAB. Every single one of these will eventually fail so on-going maintenance is a significant - and increasing - risk. In our view, it is essential for the new SMP to deal with this legacy, including how this substantial body of work will be funded. We are disappointed to find the draft SMP does not address this significant and growing issue.

“INFORMATION, KNOWLEDGE AND UNDERSTANDING FOR GOOD MANAGEMENT”

This section of the draft SMP states “[...] that the outcomes be achieved through an adaptive, evidence-based risk management approach. In order to succeed, such an approach must be driven by accurate and timely information. Readily accessible, relevant, high-quality information can ensure risks are identified and inform the development of effective policy.”

The reference to ‘adaptive management” is extremely concerning, as it provides free rein to resources industries to change their practices with little or no regulatory oversight, behind the veil of “commercial in confidence” management information.

This has been the Queensland government’s approach to the unconventional gas industry and many of the existing GAB water users among our supporters would argue that in some areas, water use has been unsustainable.
The draft SMP fails to provide parameters or guidance over how much information should be made public by resources proponents.

It does not give sufficient emphasis to information gathering, and data collection to improve our understanding of how the GAB functions. We agree that GAB management needs to be based on evidence and best available science so it is essential that this be improved.

This is the bore audit information in the fact sheet provided on the GABCC website (http://www.gabcc.gov.au/publications/gab-bore-data-factsheet) does not appear to have been used in preparing the draft SMP. The SMP needs to provide clear, explicit linkages to risks based on evidence, i.e. those identified in the bore data document. The nature and scale of risks, and potential measures to address these risks must be included.

Similarly, the SMP fails to identify regulatory measures that would be appropriate to minimise the risks to groundwater from bore failure. The development of comprehensive construction and decommissioning standards for all bores seems an obvious strategy.

We note the recurring themes of building trust, understanding and confidence in this section and under the “Coordinated Governance” principle. However, we are concerned that these themes are not reflected in the outcomes or practicalities of the draft plan. Furthermore, the draft SMP fails to provide any indication of how the stated outcomes for this principle will be achieved.
CONCLUSION

There is a lack of detail as to the mechanisms to achieve the stated goals and specific outcomes for many of the Principles contained in the draft SMP.

Considerably more work needs to be done to make the draft SMP able to support the Principles and achieve the goals.

We support the Lock the Gate Alliance in calling for additional Principles to be added which relate specifically to the mining and gas industries. This should include a commitment for all governments to work towards:

1. Full transparency and accountability of all mining and gas water take

2. Ensuring that mining and gas activities are subject to the same water management rules, caps and licensing regimes as other industries

3. Preventing impacts from mining and gas water take on existing businesses and industries

4. Special measures to protect recharge areas from any proposed mining and gas impacts

5. Full protection for GAB springs from any proposed mining and gas activities

6. Setting strict standards for environmental assessments and an independent body to advise on any mining and gas projects which may threaten the GAB

5th October, 2018
North West Protection Advocacy