Great Artesian Basin Protection Group Inc.
[redacted]

Great Artesian Basin Secretariat
Water Division
Department of Agriculture and Water Resources
GPO BOX 858
Canberra ACT 2601
gabsecretariat@agriculture.gov.au

The Great Artesian Basin Protection Group Inc. (GABPG) would like to provide our submission regarding the Draft Great Artesian Basin Strategic Management Plan. Our organisation (GABPG) is focused on the protection of the Great Artesian Basin now and into the future for all generations to come. We are strongly supportive of measures that aim to protect and preserve this vital and finite resource.

As outlined in the forward of the SMP Draft "the estimated consumptive use of Basin water supports at least $12.8 billion of production annually" and "is used in more than 120 towns and settlements". "The wellbeing of present and future generations of Australia depends on the sound use of information in the management of our natural resources" with there being a very good scientific argument to suggest that the Great Artesian Basin is one of the last remaining natural groundwater reservoirs in the world – not something to manage lightly nor put at risk unnecessarily.

Under 'Context' the Draft mentions "the plan aims to deliver outcomes for the Basin through an adaptive evidence-based risk management approach". We would ask that this be considered carefully in both wording and action – 'risk management' in regards to the greatest natural resource that Australia relies upon, is not acceptable.

When the risk involves permanent and irreversible damage you cannot attribute "management". Underlying the principle of risk management is the assumption that risks are reversible and can in fact be managed. This is simply not the case with many of the current pressures and issues facing the Great Artesian Basin – in particular from the increased use by the mining sector.

Where risks are unknown due to lack of baseline monitoring and through lack of knowledge sharing amongst stakeholders across the Great Artesian Basin – across industries,

Governments and those reliant on the GAB for their sole source of water (Page 27: "More than 180,000 people live in the area underlain by the Basin and 7,600 domestic, industrial and commercial enterprises depend on it as the sole reliable water resource for settlement, development and economic activity"), risk management must not be relied upon.

GABPG have serious concerns that using "risk management" practises will not provide an adequate level of care for the Great Artesian Basin and we would ask that the Precautionary Principle be utilised instead.

Sadly, the application of the Precautionary Principle in environmental assessments has been weakened by the use of 'adaptive management' which is essentially a trial-and-error approach that allows projects to proceed on the basis that they will be varied or have remedial measures put in place when environmental damage occurs. For a resource as vitally important as the Great Artesian Basin, this 'adaptive management' is not appropriate, as the damage will be irreversible. We would like the decision-makers to tell us what is their plan for the future of this country, and the people who rely solely on the GAB, when the GAB is destroyed? (Which all the insurance companies have realised is inevitable, hence the CSG industry is uninsurable). What is the government's plan for the hundreds of thousands of people who will have no water? And who will put their name to this decision, and be held accountable?

The Precautionary Principle [online] available at: http://www.precautionaryprinciple.eu/ [accessed 27 September 2018]

"The Precautionary Principle is defined as follows:
When human activities may lead to morally unacceptable harm that is scientifically plausible but uncertain, actions shall be taken to avoid or diminish that harm. Morally unacceptable harm refers to harm to humans or the environment that is

- *threatening to human life or health, or*
- *serious and effectively irreversible, or*
- *inequitable to present or future generations, or*
- *Imposed without adequate consideration of the human rights of those affected.*

The judgement of plausibility should be grounded in scientific analysis. Analysis should be ongoing so that chosen actions are subject to review. Uncertainty may apply to, but need not be limited to, causality or the bounds of the possible harm.
Actions are interventions that are undertaken before harm occurs that seek to avoid or diminish the harm. Actions should be chosen that are proportional to the seriousness of the potential harm, with consideration of their positive and negative consequences, and with an assessment of the moral implications of both action and inaction. The choice of action should be the result of a participatory process."

We strongly believe that using the Precautionary principle when addressing ongoing considerations surrounding the Great Artesian Basin will ensure better protection of this finite, precious and irreplaceable water resource.

Scientific analysis must be transparent, independently collected and publicly available. Organisations funded by stakeholders are not impartial enough to deliver accurate information related to the risks posed to the GAB from activities such as mining. Independence and transparency are mentioned several times throughout the Draft Plan and in order to comply with these identified issues there must be truly independent baseline monitoring conducted to provide all stakeholders with the information required to make informed and adequately considered decisions moving forward. It is unacceptable to conduct monitoring during or post activities that pose a risk to the Great Artesian Basin – information on pressure, temperature, ecology and most importantly water quality, must be collected and monitored prior to commencement of any disruptive industries so that the 'real' risks can be assessed and used in decision making, to not allow any further disruption and damage to the GAB. Again, adopting the Precautionary Principle would indicate that the strategy of 'risk management' be to not allow any unknown or irreversible damage to occur in the first place.

Challenges outlined in the Draft highlight that there are "more than 535 uncontrolled bores and 6,700 km of open bore drains that are still to be replaced by closed delivery systems" such as the cap and pipe system. Pg. 2 "Basin governments first met in 1912 to discuss the implications of water lost through uncontrolled bores and open bore drains". This is further highlighted as an area of potential improvement for the GAB on Page 3: Finding 6 - "Monitoring of artesian pressure and flow where bores have been capped and piped in the last 20 years show that previously declining artesian pressure appears to be stabilising and/or improving in those areas". Finding 10: "The removal and reduction of bore drains (such as through the GABSI program) has been an effective management tool to address water wastage, seepage and evaporation and reduce the adverse impacts associated with bore drains such as weed and pest incursions".

With overwhelming evidence proving that capping and piping of bores not only improves artesian pressure but also reduces water wastage, GABPG would like to urge Government to provide funding (as previously provided through GABSI) to in effect 'finish what they started' - as 106 years from those first discussions is an unacceptable length of time to finalise something that has been proven so effective. An injection of funds to cap and pipe and rehabilitate remaining bores would provide immediate relief to the GAB and make huge inroads towards the protection and preservation of this finite resource that so many rely on as their sole source of freshwater, and for future generations of Australians.

Issues documented in the Review of the Strategic Management Plan 2015 make special mention of "emerging issues including risks to groundwater that may arise from mining and unconventional gas development." It noted (3.1): "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". Again, we urge the Department to consider the Precautionary Principle in dealing with disruptive industries – independent scientific evidence must be collected prior to commencement to give adequate baseline data. Industry funded research should be scrutinised i.e. the Commonwealth Scientific and Industrial Research Organisation (CSIRO) and Gas Industry Social and Environmental Research Alliance (GISERA); and the evidence of pollution, damage, and loss of pressure already appearing in other areas where CSG mining has been conducted (such as QLD) must be considered. Only then can further water extractions be fully understood. Long term sustainability and eroding the water rights of other users must be at the forefront of management of the GAB – without these considerations management will be reactive and not precautionary, which is the only way forward with a finite resource such as the GAB.

Coordinated Governance

On Pg. 8 it states "All jurisdictions and stakeholders have a shared obligation to enable the Basin to provide benefits for as long as possible". We urge the Department to consider its use of the term "for as long as possible" – as this implies there is some end to the life of the GAB – while the focus of any management strategies surrounding the GAB should be focused on the future generations of Australians, in essence with the desired outcome being "forever" – not "as long as possible". We can protect and preserve the GAB indefinitely if we carefully consider extractions and use at all times. The finite nature of the GAB means we cannot simply "hope" to preserve it, we clearly *must* preserve it.

GABPG would like to see a coordinated Board of Directors oversee the GAB management moving forward – elected by an independent body. This would see transparent public reporting – an issue outlined on pg. 9: "Actions by one jurisdiction cannot be allowed to produce skewed outcomes detrimental to current or improved water use in other jurisdictions". Stakeholders can not fund baseline monitoring or ongoing monitoring – and they cannot continue to allow unlimited draw from the GAB nor self-monitoring by industries that can and do produce "skewed outcomes". A co-ordinated board would be a step in the right direction of considered and transparent management of the GAB and we sincerely hope it is carefully considered. It would also remove the issues associated with different states having their own regulations surrounding compliance and water take. There should be one governing body (independently elected) solely focused on the preservation and protection of this critical and finite resource.

A Healthy Resource

On Pg. 10: "Groundwater in the Basin, although substantial, is finite. In most parts of the

Basin recharge rates have declined over geological time, so the resource is in natural decline (Smerdon et al. 2012)."
"The Basin will be affected by disruption or modification of recharge and natural discharge areas"

Again, we would like to see the Precautionary Principle applied to the approval processes for new "take" industries – we cannot afford to damage or destroy this finite resource to the detriment of future generations of Australians.

At present the NSW State Government is currently assessing the Narrabri Gas Project, a project in which 850 gas wells are to be drilled through the Pilliga Sandstone, a significant recharge zone of the GAB. Recharge zones throughout the GAB should be deemed no-go zones for both mining and mining exploration. Challenges already identified in the Draft are noted: "The need to better understand and account for the effects of changing land use and other activities on recharge areas" – we cannot estimate nor account for the effects of destructive industries on these areas, and the potential for serious and irreversible consequences for the GAB must take precedence above all else. We cannot afford to contaminate nor affect this finite resource – a vital resource solely relied on by so many Australians.

Figures on the extraction rates of the mining industry as noted in 2016 have dramatically increased from "a decade ago" – and we must ask if the current figures for extraction rates from this industry are available? What is the projected extraction moving forward? Who observes and records this extraction and does it comply with transparency and "non skewed" collection? In making decisions on new projects these issues must be carefully considered and again, implementing the Precautionary Principle in order to assess and approve is critical in preserving the GAB for future generations.

On Pg. 11: "The health of the Basin will be impacted by current and emerging demand for water. If take is from areas of current stress, any opportunities to avoid additional take and maximise savings through improved efficiency or innovation need to be explored by all water users".

Recharge and discharge zones of the GAB are highlighted as particularly important and as already noted, there is a natural decline of the overall volume of the GAB; so as a result we should pay particular attention to certain areas of the GAB that are under added pressure from the CSG industry. Water extracted from the GAB by the CSG industry should be referred to as GAB water and not co-produced water, the dewatering of coal seams and fracking of coal seams has allowed adjoining aquifers to draw down into these coal seams, therefore removing GAB water. The potential damage from the CSG industries and with terms like "make good" and "onus of proof", both normal principles used by the CSG industry in relation to water, means we must act in a precautionary manner; reactionary

management or adaptive management are not appropriate when dealing with this finite resource – one which so many Australians rely on as their only source of fresh water.

Pg. 12 states: "Basin state and territory water resource plans: are evidence-based and set out scientifically defensible extraction limits and management measures".

GABPG agree that evidence-based and scientifically defensible management should form part of an effective management plan. We however strongly reject that stakeholder funded science and evidence is admissible in decision making – it is not transparent nor independent and therefore cannot be used in making decisions on extractive industry seeking approval to utilise the GAB. As highlighted above, 'skewed outcomes' are not acceptable when dealing with the protection of the GAB for future generations. We cannot allow industry to drive scientific study (as noted in the draft) – this type of "evidence" creates 'science with an outcome' paid for by stakeholders and cannot be permitted to mould policy nor management of a resource as critical to life and the future of this country.

<u>Aboriginal and Torres Strait islander values, cultural heritage and other community values.</u>
Pg. 14: "Basin governments include provisions in water resource management plans to enable access to the groundwater required to support sites that are important for sustaining Aboriginal and Torres Strait Islander values and interest, cultural heritage values and other identified community values".

The continued capping and piping of bores as well as the upkeep of current bores categorically enhances cultural outcomes on water management of the GAB. Natural springs and mounds for cultural value and interest would benefit and with the continued reduction in water wastage and improvements in artesian pressure, increasing the number of capped and piped bores can only serve to support and encourage cultural value within the Indigenous populations so heavily reliant on the GAB.

GABPG again respectfully requests that Governments actively fund a continuation of the GABSI program to encourage and promote GAB health through reduced water wastage and increasing artesian water pressures.

<u>Secure and managed access</u>

Pg. 15: "Engagement between water users and regulators regarding water access entitlements needs to be open and evidence-based. Conditions on licenses and approvals need to be stated clearly. To protect security of access for water users, it is important to maintain compliance and education, with communities, industries and governments playing a critical role."

Again the Draft refers to transparent and evidence-based processes as being essential in GAB management, and again GABPG support this ideal. However current policing of extractive industries on the GAB is majority self-regulated and policed by those organisations often funded by stakeholders. We reject wholeheartedly that this practice can continue if the management of the GAB is to have public confidence and be wholly transparent and aimed at full protection of this finite and critical resource.

We again urge the Department to consider the Precautionary Principle, as reactionary management is not suitable; and where industries cannot offer certainty surrounding potential damage to the GAB through any of their activities, the management principle must be, to not allow these types of industries to proceed. With the future generations of Australians at the forefront of our considerations, GABPG would urge Government to consider "make good" options as unsuitable for a resource so critical to life. Freshwater from the GAB is finite and critical to the livelihoods of much of regional Australia, and the flow-on effects of disruption and damage would be felt by the entire country – through loss to the "$12.8 billion of production annually" as a start.

Water security and management is incredibly important for Australia and the world – we must not gamble with it through continued use by industries that cannot provide independent evidence-based science to prove their extraction is safe for current users - and for users into the future.

<u>Judicious Use</u>

Pg. 17 - "Judicious means responsible, productive and efficient use of Basin water that minimises the impacts of extraction on groundwater flows and water pressures while meeting requirements for existing users, water dependant ecosystems, and for development where appropriate".

"Involves authorised users extracting sufficient water to meet their needs and implementing practises that improve water use efficiency and reduce wastage".

GABPG would like to see the management of the GAB include more emphasis on water quality and not only water efficiency, pressure and wastage. As community members solely reliant on GAB for our water needs, we wholeheartedly agree that judicious use of the GAB is paramount to the preservation of it for future generations. However, we also feel that along with minimising impacts on flow, pressure and wastage, there should be suitable wording to note that where water quality is in doubt or may be potentially affected by developments and/or users – that this will be rejected. Water quality is paramount to continued use of the Basin and is therefore in our opinion a non-negotiable criterion for its management. We are already aware of mismanagement and lack of proper monitoring above recharge zones of the GAB - as a coal seam gas project currently operated by energy company Santos in north-western NSW contaminated a nearby aquifer, with uranium at

levels 20 times higher than safe drinking water guidelines, as found by an official investigation. They were fined an insignificant amount of $1500 and continue to self-monitor this project, much to the consternation of the general public.

In order to focus on reduced usage and wastage and protection of artesian pressures, GABPG again would like to reiterate a continuation of funding for the GABSI Cap and Pipe Bore scheme which will in effect tick all those boxes. A completion of what was already started (in effect with discussions 106 years ago) and as already noted has in fact greatly improved pressures and reduced wastage, and therefore continuation of GABSI would be a certain step in the right direction for management of the GAB moving into the future.

Again, as water quality is rarely identified throughout – GABPG would urge the Department to address that and include water quality (and minimisation of pollution by industry) as a parameter of utmost importance in the management plan. Protecting the quality of the GAB is as important, if not more so, than making certain we are managing use and wastage.

Of enormous concern to all who rely on the GAB, is the fact of well integrity, especially with unconventional gas wells. Groundwater engineers have confirmed that all wells leak; industry figures are that 7% of wells leak immediately, and 30% of wells leak within 20 years. Concrete quickly loses integrity, steel corrodes, and no company will guarantee their wells longer than three years. "Life of the well" they refer to, is only the *productive* life of a gas well – i.e. 7 or 10 or maybe 20 years – but the fact is that wells continue to age and crumble forever. So there will be a massive web of thousands of corroding, crumbling old gas wells underground forever, polluting our groundwater with toxic drilling chemicals - and communities and taxpayers will have to bear the cost. Has the govt. calculated what this will cost in the future, to inspect, maintain and repair these gas wells, for the ensuing hundreds of years - when the gas companies will have long gone? Our approach to the GAB, like most natural resources, should be primarily about stewardship; this generation has a moral and ethical responsibility to look after it for future generations.

Responsible, productive and efficient use is all tied together in policy and legislation and again all stakeholders from Governments, industry, and through to stock-and-domestic users, need transparency and evidence-based science to make informed decisions about this vital resource. Baseline data is critical moving forward along with a coordinated, independent and transparent management group – GABPG would again take this opportunity to request a co-ordinated Board of Directors for GAB management to give some confidence to the public that management of the GAB is not underpinned by 'purchased' science or stakeholder funded evidence. Adopting the Precautionary Principle would again serve the GAB management Plan – in that all water takers would be held to the same standard, and expectations around water quality would in particular be highlighted as of critical importance.

Information, knowledge and understanding for good management

Pg. 19: “Hindsight demonstrates that previous policies and water management practises based on inadequate information have contributed to unacceptable impacts, including declining water pressure and loss of flows to ecosystems. These changes occurred, and were allowed to continue, because the resource was not adequately understood or because evidence was not available and or used by decision makers and water users”.

“Understanding the changes caused by human activity on both the water stored and the ecosystems affected requires data about the nature of the basin. This must be supported by monitoring of information about the activities that cause the changes, leading to changes in policy regarding on-ground activity to improve the health of the resource”.

As stated above hindsight has demonstrated that there are definite gaps in how the GAB management has been both handled and policed. Pg: 9 “There are still knowledge gaps that affect our ability to understand and manage the Basin”. Underpinning this information is the simple fact that currently there is very little baseline monitoring being conducted in an independent and transparent fashion. Monitoring of on-ground activities are self-regulated in many cases and where evidence is being provided it is often stakeholder funded and compromised to provide a ‘desired outcome’ for the industry financing the research.

This cannot continue into the future, and GABPG strongly dispute that current research into the effects by extractive industries on the GAB is either independent or transparent. So we ask that in the interest of public trust the Management Plan indicate who will be conducting the research obviously needed in baseline measurements and for current industries extracting from the GAB. Where is the indicator of water quality and why is it not given the same importance as pressure and wastage?

A bore audit was conducted by GABCC (see GABCC bore audit - http://www.gabcc.gov.au/publications/gab-bore-data-factsheet) and this information was not taken into account for recent management nor in this draft plan. If hindsight has proven certain evidence was not used by decision makers – why is the bore audit information now not being addressed? Where is this information noted in the SMP – and in the interest of transparency should this not be considered in this draft?
Continued maintenance of bores and infrastructure is an ongoing issue for GAB management and the reluctance by Governments to fund further capping and piping of current bores (along with essential maintenance to current infrastructure) is an ever increasing risk to the GAB and we believe one that should be immediately addressed.

There must be significant investment in the current infrastructure for maintenance, and for further capping and piping to “finish what was started” and has been proven to reduce wastage and to increase Basin pressure. This is a huge priority for GAB management and one we hope to see implemented as soon as possible.

Information management, communication and education

Pg. 21: “Using information and dialogue appropriately during policy development, planning and implementation helps to build trust, transparency, accountability and acceptance between managers, industry and water users”.

Currently there is very little trust, transparency, accountability or acceptance where management of the GAB is concerned. There is a severe lack of accountability within extractive industries, little to no trust or acceptance as noted by communities across the GAB – and most importantly information is not reliable nor shared widely with the general public.

As the sole reliable water source for so many Australians, the GAB must be protected from all current and future practices with no exception. Water quality information is not forthcoming and information and data collected is driven by industry and is not independent by any means.

In conclusion, GABPG urges the Government to consider appointing a coordinated Board of Directors to oversee the management of the GAB, a truly independent Board that answers to water users and to the public who rely so heavily on this finite resource. We also stand by our assertion that the Precautionary Principle be adopted when considering new extractive industries – with a no tolerance policy on users who have the potential to irreversibly damage the GAB through any means – wastage, pressure or quality.

As has been pointed out by the Dept., this Strategic Management Plan, if adopted, will be in place for fifteen years. It is therefore absolutely critical that the measures we suggest be adopted now, or else within fifteen years it will be too late for the GAB. The irreversible damage will have already occurred, and there will be no going back – or rectifying the situation. The Precautionary Principle must be enacted now.

Our recommendations:
1. Adopt the Precautionary Principle, as clarified above – especially before any mining industry is continued above the GAB - and remove “adaptive management”

2. Immediately continue (and increase) GABSI funding, and maintain and cap all bores

3. Appoint an independent Board of Directors, to oversee GAB management

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

Yours Faithfully,

[redacted]
[redacted] GABPG Inc