The Basin Sustainability Alliance's Submission to the Senate Inquiry into *the Adequacy of the Regulatory Framework Governing Water Use by the Extractive Industry.*

1. What is the Basin Sustainability Alliance :

The Basin Sustainability Alliance (BSA) was established in 2010, to represent the interests and concerns of landholders and rural communities who were being subjected to the unprecedented scale and pace of Coal Seam Gas development in South-West Queensland.

BSA's charter is to advocate for the sustainable use and management of land and water resources in the Condamine Basin for future generations – in particular highlighting the risk that the Coal Seam Gas development poses to the Great Artesian Basin.

The BSA which has over 100 members, is comprised of farmers, graziers, business people and townspeople in south- western Queensland's Condamine Basin, as well as scientists who have a strong interest in supporting the BSA's "key focus".

The BSA has a long-standing track record in monitoring the impacts of all CSG companies in the Surat Basin. The BSA has emerging evidence that Queensland Government's hydrological model significantly underestimates local cumulative impacts where tenure holders have operated for a decade or more. Of particular concern are QGC and Arrow Energy's tenures south west of Dalby.

Given the impacts of the Coal Seam Gas Industry on the groundwater resources of the Surat Basin and the Great Artesian basin, the BSA is grateful for the opportunity to lodge a Submission to the Senate Inquiry into ***the Adequacy of the Regulatory Framework Governing Water Use by the Extractive Industry.***

Our Submission addresses the following Terms of Reference of the Inquiry:

1) existing safeguards in place to prevent the damage, contamination or draining of Australia's aquifers and water systems;

2) any gaps in the regulatory framework which may lead to adverse social, economic or environmental outcomes, as a result of the take and use of water by extractive projects;

3) any difference in the regulatory regime surrounding the extractive industry's water use, and that of other industries;

4) the effectiveness of the 'water trigger' under the *Environment Protection and Biodiversity Conservation Act 1999* , and the value in expanding the 'trigger' to include other projects, such as shale and tight gas.

2. Executive Summary:

The rapid development of the CSG Industry in the Surat Basin of Queensland since 2008 has resulted in some 5,900 gas production wells being brought into production. This development of the CSG Industry into the Surat Basin has precipitated a number of impacts on the underground water resources of the Surat Basin & Great Artesian Basin, as well as the security and reliability of supply from existing landholder's water bores.

The rapid expansion of the CSG Industry in Queensland engulfed the Queensland Government like a tsunami. It was totally unprepared with legislation or policy to deal with Unconventional Gas development. Since 2008 it has been playing a desperate game of legislative & policy "catch up" through the use of an adaptive management approach – this has been a totally reactive framework for dealing with CSG generated issues after they emerged.

The Basin Sustainability Alliance (BSA) has included in this Submission a catalogue of the legislative pathways taken by the Queensland Government in attempting to manage the CSG Industry. This catalogue is not a pretty picture and it clearly demonstrates the significant errors made in the development of Queensland's Unconventional Gas legislation and policy. In Queensland we now have the situation where:

- The extractive industry (P&G operators and Miners) have been granted "underground water rights" which enables them to secure "associated water licences" to extract unlimited volumes of groundwater as part of their day to day operations. These rights are unique to Queensland; they are both inequitable and are unsustainable for the future management of Queensland's groundwater resources. They should be repealed immediately.

- P&G operators are dewatering the aquifers to extract CSG and Miners are dewatering mine pits to allow for safe mining operations. In the Surat Basin - the CSG industry is currently allowed to extract in excess of a projected 65,000ML/annum. This has resulted in the depressurisation of the Huttons and Springbok/Walloon Sandstone aquifers - the agricultural sector is not permitted to construct any new bores into these two aquifers for intensive animal production or irrigation uses.

- The Great Artesian Basin and Other Regional Aquifers (GABORA) Water Plan and GABORA Water Management Protocol which were released in September, 2017. These instruments have significantly altered the separation distances between water bores and reduced the protection from bore interference. These new separation distances do not apply to CSG wells and the take of "associated water" from CSG wells by the P&G Industry. The BSA does not support this inequitable approach to the management of "potential interference with existing water bores". The Queensland Government has given no explanation for this reduction in separation distances or protection of landholder's water bores.

- The Queensland Minister's Statement of Proposals (SOP) for the new GABORA Water Plan contained numerous statements about the issues that the new Plan would consider in the monitoring and reporting context. However the SOP also stated that "due to priority constraints, routine monitoring on a triennial basis as required by the Great Artesian Basin (GAB) - Resource Operations Plan, has not been undertaken for all bores in these networks". This clearly indicates a lack of resources and a lack of commitment by the Queensland Government to effectively undertake the necessary monitoring to establish whether the first iteration of the GAB Water Plans were delivering on the sustainable management of the Basin. This is totally unacceptable to the BSA.

- The new GABORA Water Plan and Water Management Protocol contain rules for the protection of environmental assets. The BSA does not believe that the spring protection rules in the GABORA Water Plan and the GABORA Water Management Protocol will adequately protect GAB fed springs. The BSA has noted the predicted impacts of petroleum & gas operations on the GAB springs vents and springs complexes in the Surat Cumulative Management Area (CMA) – reference the Surat UWIR 2012. After more than 4 years of investigation into these springs and potentially another 4 years of investigation to be undertaken - the BSA questions whether the Queensland Government is really committed to spring protection and would intervene to halt adjacent CSG production, if that what was required to protect spring complexes from destruction. The BSA has also noted that the Surat UWIR 2016 is silent on the potential impacts of mining operations on GAB fed springs and that the GABORA Water Plan and the GABORA Water Management Protocol, is also silent on managing the impacts of the Resources Sector on GAB fed springs. This is an appalling and inequitable application of policy and in the BSA's view, it will lead to substandard outcomes – in other words a significant number of GAB fed springs will be compromised.

- The BSA is also concerned at the current lack of protection of water quality in the GAB. Contamination of the GAB can occur through the construction of unlined bore-holes, a catastrophic well failure during oil and gas production, longer-term well failures linked to corrosion of lined bore-holes, migration of polluted material through faults, or through surface water pollution migrating into aquifers and the escape of toxic chemicals used in the fracking of unconventional gas wells. The BSA submitted to the Queensland Government that the new GABORA Water Plan must protect the water quality of the GAB by regulating a number of activities and actions. The Queensland Government ignored these matters in preparing and finalising the new GABORA Water Plan and GABORA Water Management Protocol. The BSA considers that this is a major gap in the regulatory framework in Queensland which may lead to adverse social, economic or environmental outcomes.

- The introduction in 2010 of the Queensland Government policy of discontinuing the use of evaporation dams as a primary method of CSG water disposal, generated an expectation with landholders that the CSG Industry would process their "produced water" through a Reverse Osmosis treatment plant and make it available for

beneficial use – through either meeting their Make Good obligations for impaired bores, or for sale for agricultural production purposes. The BSA contend that the complexity of the statutory provisions of the Water Supply (Safety & Reliability) Act 2008 to control the distribution of "produced water" has been a deterrent to the CSG Industry making treated water available for municipal drinking water supplies, for sale to landholders for beneficial use or for CSG operators meeting "Make Good" obligations for impaired bores. While some parties have certainly experienced "beneficial use" outcomes from being able to access treated CSG produced water, the great majority of "interested stakeholders" have been left out in the cold – a totally inequitable situation.

- Currently the preferred approach for meeting "make good obligations" for dealing with impaired water bores is determined by the resource tenure holder who caused the impairment. This is an inequitable situation - if a landholder's preference is for the resource tenure holder to provide an alternative water supply, then this should be the priority obligation for the tenure holder to meet. Efforts by the BSA and others to have this anomaly addressed by amendments to Queensland legislation have been spectacularly unsuccessful.

- In the Surat Basin in South West Queensland, "statutory underground water rights" are still allowing CSG operators to secure new tenures with unlimited volumes of associated water extraction. However, other water users are required to purchase some of the scant remaining 840ML of available unallocated water reserved in the new GABORA Water Plan for General Purpose use. Once this 840ML of General Purpose water is all sold, there is no more water for agricultural enterprises between Roma and Toowoomba. The BSA contends that this is a totally unacceptable situation and is un-Australian. The BSA also contends that the "statutory underground water rights" should be repealed immediately by the Queensland Government and resource tenure holders should comply with the same water access rules as everyone else – that is they have to secure their water entitlements through the same process as everyone else.

- The Unconventional Gas Industry is still being encouraged to expand into the Surat, Bowen, Galilee, Eromanga and Cooper geological Basins of Queensland. The BSA submits that the high potential for over-use of water from the GAB by an expansion of the Unconventional Gas Industry in Inland Queensland, as well as the potential contamination of the GAB through fracking operations, are issues that have to be addressed by an independent jurisdiction to the Queensland Government. Accordingly, the BSA contends that the "water trigger" provisions of the EPBC Act must be expanded to include other projects such as shale and tight gas. The threat to the pastoral industry as well as western Queensland communities from inappropriate development of shale and tight gas resources in the Galilee, Cooper and Eromanga geological Basins, is far too great to be left to the whims of the Queensland Government and its bureaucrats.

3. Introduction:

Since 2008, there has been a rapid development of the CSG Industry with 6,900 production wells existing at 30th June, 2017. Some 5,900 of these production wells are located within the Surat Basin. This rapid expansion in the Surat Basin has resulted in a number of impacts on the underground water resources of the Basin as well as the security and reliability of supply from existing landholder's water bores. In an attempt to manage the impacts of this rapid expansion of the CSG "footprint" on the Surat Basin landscape, the Queensland Government has been playing a game of legislative "catch up" through the use of an adaptive management approach – this is a reactive framework of dealing with issues after they emerge. In response to increased tensions between landholders and CSG Companies over the impacts of CSG operations, the Queensland Government has been promoting a policy of mutual coexistence between the respective stakeholders.

Notwithstanding these policy positions by the Queensland Government, the reality is that CSG operations have compromised the performance of a number of landholder's water bores in the Surat Basin and the Queensland legislation has been defective in appropriately dealing with these impacts. This Submission will present some examples of how defective Queensland's legislation is for the sustainable management of its groundwater resources.

4. Existing safeguards in place to prevent the damage, contamination or draining of Australia's aquifers and water systems:

The BSA's response to this TOR includes a snapshot of the evolution of Queensland's water legislation and water policy instruments which have been utilised for the management of underground water, and in particular "production water" which is produced by CSG operations in the Surat Basin of South West Queensland.

- In 2000, in response to the 1994 COAG Water Reform Framework, the Queensland Government replaced the Water Resources Act 1989 with the Water Act 2000. This new Act was the foundation stone for much of Queensland's water associated legislation that we are currently dealing with. It is worth noting that the initial Water Act did not contain any reference to the management of impacts of mining and petroleum & gas activities on the State's water resources.

- In 2002, the Queensland Government introduced the Water Regulation 2002. This Regulation contained provisions that supported the implementation of Queensland's statutory water plans. These, amongst other provisions, included the process for releasing unallocated water, the "roll out" of the water metering program and fees and charges for various water dealings.

- In March 2006, the Queensland Government approved the Water Resource (Great Artesian Basin) Plan 2006. This Plan applied a statutory framework to sustainably manage artesian water, sub-artesian water connected to artesian water and water is springs connected to artesian water or sub-artesian water connected to artesian

water, in or from the Management Areas or Management Units of the Basin. This Plan included management provisions to sustainably manage the groundwater resources of the Surat & Bowen Basin.

- In February, 2007, the Queensland Government approved the Great Artesian Basin Resource Operations Plan 2007. This Plan set out the day to day operational rules for the implementation of the Water Resource (Great Artesian Basin) Plan 2006.

- In 2008, the Queensland Government started to encourage the development of a Coal Seam Gas Industry in the Surat & Bowen Basins. To deal with the management of this expanding industry, in 2008, the Queensland Government introduced the Chapter 3 (underground Water Management) amendments to the *Water Act 2000.* The government's preferred approach to the absence of a rigorous legislative framework to manage the rapid expansion of the CSG Industry, was to adopt an "adaptive management framework", where issues were dealt with as they arose. This resulted in the Chapter 3 of the *Water Act 2000* being amended in 2010 to include the Cumulative Management Area provisions and Office of Groundwater Impact Assessment (OGIA) provisions. This Act was further amended in 2012 to clarify the functions and operations of the OGIA.

- In 2010, the Queensland Government amended the *Petroleum & Gas (Production & Safety) Act 2004* and the *Water Act 2000*, through the introduction of provisions which dealt with Underground Water Management. In particular, the amendments granted "underground water rights" to petroleum tenures holders to take and/or interfere with unlimited volumes of underground water. The amendments to the *Water Act 2000* also introduced a framework which obligated petroleum tenure holders, when they impaired a landholder's water bore through exercising their "underground water rights", to meet "make good obligations".

- In response to growing disquiet from landholders, Regional communities and environmentalists at the CSG Companies practice of storing CSG waste water in evaporation dams in the Surat Region, particularly in the middle of the Federation drought, the Queensland Government introduced the 2010 CSG Water Management Policy. This Policy was introduced to manage salt produced by CSG operations and encouraged the beneficial use of treated CSG water. In doing so – it discontinued the use of evaporation dams as a primary method for dealing with CSG water disposal and introduced a 3 year timeline for all existing evaporation dams to be remediated.

- On 18th March, 2011, the Queensland Government gazetted the Surat Cumulative Management Area (CMA) which introduced a new and different level of management of the underground water resources within the Area. This action precipitated the establishment of the Office of Groundwater Impact Assessment (OGIA) to monitor and manage the groundwater resources in the Surat CMA.

- In 2012, with the election of the Newman LNP Government, the CSG Water Management Policy 2012 was adopted. This Policy, which suspended the CSG Water Management Policy 2010, dealt with the management and use of CSG water under

the *Environmental Protection Act 1994.* In particular, it encouraged the beneficial use of CSG water in a way that protected the environment and maximised its productive use.

- In 2012, the Office of Groundwater Impact Assessment (OGIA) released its first report on the assessment of the impacts of the take of or interference with groundwater by the CSG Industry on the groundwater resources of the Surat Basin CMA.

- In response to increasing levels of disquiet over the Queensland Government's "coexistence" policy for landholders, Regional communities and CSG Companies to cooperate – the Queensland Government introduced & passed the *Gasfields Commission Act 2013.* The express purpose of this Act was to establish a Gasfields Commission to manage and improve the sustainable co-existence of landholders, Regional communities and the onshore gas industry in Queensland.

- In 2014, the Queensland Government introduced the *Water Reform and Other Legislation Amendment Act 2014* (WROLA Act). This Act introduced some major changes to the management of Queensland's underground water resources, including the grant of "underground water rights" to the mining industry to take and/or interfere with unlimited volumes of underground water.

However, this Act failed to address major issues with the "make good provisions" of Chapter 3 of the *Water Act 2000* or the "identification of impairment" to landholder's water bores impacted by either P&G operators or miners exercising their "underground water rights".

- On the election of the Palaszczuk Labour Government in January 2015, one of their first

actions was to defer the proclamation of a number of the *WROLA Act 2014* provisions which had not come into effect. These included:

- Part 4 Amendment of *Mineral Resources Act 1989*.
- Part 5 Amendment of *Petroleum and Gas (Production and Safety) Act 2004*.
- Part 8 Amendment of the *Water Act 2000*, other than those commenced by proclamation on 17 February 2015.

- In response to the deferment of the proclamation of parts of the *WROLA Act 2014*, in November 2015, the Queensland Government introduced the Water Legislation Amendment Bill 2015 to deal with some of the excesses of the *WROLA Act 2014*.

Primarily - this Bill sought to: reinstate the term "sustainable management" into the Purpose of the *Water Act 2000*; reinstate the principles of "Ecologically Sustainable Development" into the *Water Act 2000* by amending the *WROLA Act 2014*; provide clarity to the taking of or interfering with underground water by holders of particular mineral development licences or mining leases and removed the Water Development Option from the *WROLA Act 2014*. This Bill was passed on 10th November, 2016 and was assented to on 22nd November, 2016.

- The Water Legislation Amendment Bill 2015 was referred to the Queensland Parliamentary Committee for Infrastructure, Planning and Natural Resources (IP&NR), for review, stakeholder submissions and recommendations. A number of submissions received on the Bill, highlighted that it did not address the serious flaws in the Chapter 3 – *Water Act 2000* provisions for "make good" for landholder bores impaired by CSG Companies exercising their "statutory underground water rights". Issues such as:
  - The Onus of Proof of impairment;
  - The specific Obligations of CSG Companies and landholders;
  - The procedures for Baseline Testing and Assessment;
  - Bore Trigger Values;
  - Bore & Groundwater Monitoring provisions;
  - Bore Investigations;
  - Bore Owner's Trigger levels;
  - A Make Good Commissioner;
  - Dealing with Costs for negotiating a Make Good Agreement;
  - Landholder's Compensation rights;
  - The Timeline for negotiating Make Good Agreements; d
  - Dealing with Cumulative Impact Assessment; and
  - Counselling and Support Services for landholders dealing with CSG Companies.

were all raised in a number of stakeholder submissions. The IP&NR Committee Report acknowledged these issues were of significant concern to stakeholders, but chose not to make any recommendations as they were outside of the Terms of Reference for the Committee's inquiry.

Subsequent representations to the Palaszczuk Government, the Cross Benchers and the Speaker's Office were the catalyst for the introduction of the Environmental Protection (Underground Water Management) and Other Legislation Amendment Bill 2016 in September 2016.

- The Environmental Protection (Underground Water Management) & Other Legislation Amendment Bill 2016 (EPOLA 2016) was passed on 10th November, 2016 and assented to on 22nd November, 2016. This legislation contained some substantive measures to address a number of deficiencies in the *Water Act 2000* Chapter 3 provisions for underground water management and "make good" obligations.

- With the amendments to the *WROLA Act 2014* affected by the *Water Legislation Amendment Act 2016* and the *Environmental Protection (Underground Water Management) & Other Legislation Amendment Act 2016*, all outstanding Parts of the *WROLA Act 2014* came into effect on 6th December, 2016.

- In collaboration with the three Acts which came into effect on 22nd November & 6th December, 2016 – the Queensland Government also introduced a Water Regulation 2016. This Regulation, which replaced the Water Regulation 2002, contains a number of processes and procedures that were previously contained in the statutory water plans such as the

Water Resource (Great Artesian Basin) Plan 2006 and the Great Artesian Basin Resource Operations Plan 2007.

Through all of these legislative and policy instruments, Queensland now has a situation where:

- The extractive industry (P&G operators and Miners) are able to secure "associated water licences" to extract unlimited volumes of groundwater as part of their day to day operations; P&G operators are dewatering the aquifers to extract CSG and Miners are dewatering mine pits to allow for safe mining operations. In the Surat Basin - the CSG industry is currently allowed to extract in excess of 55,000ML/annum (projected to exceed 65,000ML/annum) and this has already resulted in a depressurisation of the Huttons and the Springbok/Walloon Sandstone aquifers - to the extent that the agricultural sector is not permitted to construct any new bores into these two aquifers for intensive animal production or irrigation uses.

- The management of the groundwater resources in the Surat Cumulative Management Area (Surat CMA) is notionally under the auspices of the Office of Groundwater Impact Assessment (OGIA) within the Department of Natural Resources & Mines (DNRM). However – the Surat CMA does not cover the entire Surat Basin and so we are left with a situation where OGIA manages some of the Surat Basin and DNR&M manages the remainder. We also have the situation where the allocation of water from the Great Artesian Basin for Agriculture and Town Water Supplies, comes within the province of the DNR&M, while the allocation and management of "associated water extraction" by P&G operators and Miners, comes within the province of the Department of Environment & Heritage Protection (DEHP). This multi sharing of responsibility for the management of Queensland's underground water resources (including the Great Artesian basin) is both confusing to water users and is subject to competing bureaucratic interests.

- Successive Queensland Governments have made public claims that Queensland's groundwater resources are being managed sustainably and there is nothing to worry about from allowing P&G operators and Miners to have "statutory groundwater rights". While P&G operators have been required to measure and report on their "associated water use" since the commencement of the CSG Industry in Queensland, it wasn't until December 2016 when the full extent of the *WROLA 2014* legislation was proclaimed that all Miners were required to measure or estimate their "associated groundwater use" and report it to the Queensland Government. The BSA does acknowledge that the Queensland Government does utilise its ambient groundwater bore network to monitor groundwater levels, however the BSA contends that the Queensland Government cannot claim with any credibility that it is sustainably managing Queensland's groundwater resources when it doesn't even know how much water is being extracted by the Mining industry.

5. Any gaps in the regulatory framework which may lead to adverse social, economic or environmental outcomes, as a result of the take and use of water by extractive projects:

In 2014 the Newman LNP Government undertook extensive changes to the *Water Act 2000* through the *WROLA Act 2014*. The *WROLA Act 2014* introduced a new water planning framework for Queensland. It replaced the old 2 plan framework of a Water Resource Plan (which detailed the strategic management of water resources in a catchment or river basin) and a Resource Operations Plans (which detailed the day to day requirements for managing a catchment's or a basin's water resources) with five (5) new and different instruments. According to the Minister for Natural Resources and Mines at the time of their introduction - these changes were ostensibly made to reduce "regulatory burden" and to also reduce "red tape". The BSA categorically rejects these claims and suggests they have introduced a new element of "red tape" which will lead to the confusion of stakeholders.

The *WROLA Act 2014* framework provided for:
1) **a Water Plan** for defining the allocation and management of a basin's or catchment's water resources,
2) **a Water Management Protocol** for outlining operational matters such as water sharing rules,
3) **a Water Regulation** for dealing with the release of unallocated water,
4) **a Water Entitlement Notice** for the issuing of a water allocation, and
5) **an Operations Manual** for the management of regulated water resources released from a State or Council owned water storage.

These instruments provide all the details on what was concisely presented in the previous two (2) plan framework.

5.1 Minimum Bore Separation Distances:

In 2016 the Queensland Government released for stakeholder comment a "draft" GABORA Water Plan and a "draft" GABORA Water Management Protocol to replace the existing Water Resource (Great Artesian Basin) Plan 2006 and the Great Artesian Basin Resource Operations Plan 2007.

One of the management provisions of the "draft" GABORA Water Management Protocol released for stakeholder review and comment, was minimum bore separation distances for the protection of existing water bores from interference through the construction of new bores. Attachment 5 of the Draft GABORA Water Management Protocol outlined proposed new minimum bore separation distances for listed Groundwater Units and Sub-Areas in the Attachment.

The BSA noted in its Submission to the Queensland Government on the "draft" GABORA Water Plan & Water Management Protocol - that only 30 of the 55 Groundwater Units and Sub-Areas within the GABORA Plan Area were listed in Attachment 5, and that the Gubberamunda, Springbok/Walloons, Surat Huttons and Precipice Groundwater Units/Sub-Areas were the ones listed for the Surat Basin area.

The BSA also noted in its Submission, that the minimum separation distance shown in the "draft" Attachment 5 for a Surat Huttons or Springbok Walloons bore extracting 10ML/annum, is proposed at 4.2kms and this increases to 16.9kms for an extraction of 100ML/annum. The BSA noted that the separation or set back distances included in Attachment 5 are dependent on and determined by aquifer transmissivity – the BSA supported the principle of this approach. In its Submission - the BSA requested clarification from the DNR&M as to why only 30 of the 55 Groundwater Units and Sub-Areas were listed in Attachment 5. This clarification was never provided by the DNR&M but the BSA noted that 3 additional Groundwater Units and Sub-Areas were added to Attachment 5 in the final GABORA Water Management Protocol.

However, the BSA was undecided on the overall relative effectiveness of the proposed minimum separation distances to protect existing water bores from interference – particularly as there appears to be two rules operating – one rule for private landholder's water bores and another rule for the Resources Sector. There are documented examples in the Surat CMA where new "make good" bores have not complied with existing separation distances in the GAB Water Plans. Furthermore – the "draft" GABORA Water Management Protocol did not make it clear if these separation distances were to also apply to CSG wells and CSG "make good" bores or whether these separation distances could also be used for bore impairment negotiations.

At the DNR&M's Toowoomba GABORA Water Plan consultation meeting (27th February, 2017), it was indicated that these separation distances will not apply to CSG wells and the take of "associated water" from CSG wells by the P&G Industry. The BSA does not support this inequitable approach to the management of "potential interference with existing water bores" and in its Submission on the "draft" GABORA Water Plan & Water Management Protocol, requested that this matter be equitably and appropriately resolved in the final GABORA Water Management Protocol.

The final GABORA Water Plan and GABORA Water Management Protocol were released in September, 2017. The BSA were disappointed to see that only 33 of the 55 Groundwater Units & Sub-Areas had been listed in the final Protocol and that the bore separation distances in Attachment 5 of the final GABORA Water Management Protocol had been significantly altered from the separation distances shown in the "draft" Protocol. For example the minimum separation distance for a Surat Huttons or a Springbok Walloons bore extracting 10ML/annum had been reduced from the 4.2kms in the "draft" Protocol to 300metres in the final Protocol. Similarly for a Surat Huttons or a Surat Walloons bore extracting 100ML/annum – the minimum separation distance had been reduced from 16.9kms to 900metres in the final Protocol. The BSA notes that CSG wells taking 10 ML/year plus can be placed 350 metres apart.

To add insult to injury – the BSA reviewed the GABORA Plan Consultation Report (now rebadged as the Minister's Consideration's Report) to try and ascertain how issues raised in its Submission on the "draft" GABORA Water Plan and Water management Protocol were dealt with in the final GASBORA Water Plan and Water Management Protocol. On page 6 of the Minister's Considerations Report it states - **Note - A number of submissions raised**

issues in relation to the draft Water Management Protocol (WMP) and Water Entitlement Notice (WEN) which were provided for public feedback alongside the draft GABORA water plan. These issues were forwarded to the chief executive for consideration in finalising the WMP and WEN.

Further in the Minister's Considerations Report it has a section - 3.8 Bore separation distances. Within this section 3.8 it states:
Bore separation criteria protect existing entitlements by setting minimum separation distances for new licences and bores. These provisions apply to new authorisations only, and not to existing bores.

Draft plan provisions
The bore separation criteria are included in the draft water plan and the draft water management protocol. Some changes were made to these, including a reduction in the number of tables in the plan.

The draft plan did not propose minimum separation distance requirements from existing bores for stock, domestic or low volume take bores.

Issues raised
13 submissions commented on bore separation criteria.
Some expressed general support for the bore setback distances outlined in the draft plan.
Two submitters indicated that it was not clear what bore separation distances apply to stock, domestic or low volume bores.

Considerations and Finalised provisions
No changes to the draft plan have been made as a result of consultation.

So we now have a situation where the references to bore separation distances in the Minister's Considerations Report are very deceptively written. The Report states **that no changes have been made to the "draft" Water Plan** and this is technically correct. Furthermore - the Report also refers to "bore separation criteria" and that the "draft" Water Plan did not propose minimum separation distances – again this is technically correct as the minimum separation distances were actually included in the "draft" Water Management Protocol.

However, as has already been pointed out - there have been some huge changes made to the minimum bore separation distances between the "draft" Water Management Protocol and the "final" Water Management Protocol (WMP). As the WMP is made under the Chief Executive's authority and he/she has no requirement to develop a Consultation Report about how they dealt with stakeholder submissions - they are able to make any changes they like without being publicly accountable or providing any explanation as to why the changes were made to the minimum separation distances in the final Protocol. This is just another one of the appalling outcomes of the Newman LNP Government's *Water Act 2000* changes in 2014.

With the Queensland Government behaving like this, the BSA has lost all respect for the integrity or transparency of Queensland's water planning framework or consultation processes. This is a prime reason why the BSA holds the strong view that the Queensland Government cannot be trusted to "do the right thing" in respect to the sustainable management of the State's groundwater and surface water resources and hence the 2013 EPBC Act's "Water Trigger" provisions for Coal Seam Gas and Large Coal Mining Development MUST be retained. For the same reasons - the BSA is also totally opposed to any devolution of the EPBC Act's responsibilities from the Commonwealth to the States – in particular the Queensland Government. The protection of Queensland's water resources is far too important to become the "political playtoys of politicians and subservient public servants".

5.2 Protection of Environmental Assets:

An integral part of the preparation of the new GABORA Water Plan and GABORA Water Management Protocol was the release of the Minister's Statement of Proposals (SOP). This document was released by the Queensland Government in September 2015. On page 13 of the Minister's SOP, it outlines that the DNR&M's Great Artesian Basin (GAB) Ambient Network and the Groundwater Level Network deliver a regional scale pressure monitoring network. However the SOP also states that "due to priority constraints, routine monitoring on a triennial basis as required by the GAB - Resource Operations Plan, has not been undertaken for all bores in these networks". This clearly indicates a lack of resources and a lack of commitment by the Queensland Government to effectively undertake the necessary monitoring to establish whether the first iteration of the GAB Water Plans were delivering on the sustainable management of the Basin.

The BSA acknowledges that the DNR&M and OGIA has indeed applied a more intense monitoring and reporting regime for assessing and reporting on the impacts of CSG operations in the Surat Basin CMA. However, this monitoring and reporting framework needs to be applied across the entire GAB to give a more complete picture of the Resources Sector impacts on the GAB.

The BSA also acknowledges that the DNR&M has rolled out a landholder bore monitoring network within the Surat CMA to provide landholders with the necessary skills to "self-monitor" their bores. The data from this landholder monitoring program is being recorded on the DNR&M's groundwater monitoring database. While this program should not provide an excuse for the Queensland Government to step back from its groundwater monitoring responsibilities, the BSA supports its expansion across all Region's that are experiencing unprecedented pressures on their groundwater systems, and in particular to those GAB Management Units who are under pressure from the Resources Sector.

The Minister's SOP also contained numerous statements about the issues that the new GABORA Water Plan would consider in the monitoring and reporting context. The BSA firmly contends that - if the Queensland Government is not prepared to direct the necessary resources to effectively monitor the GAB's Ambient Network and the Groundwater Level Network, then there is little sense in politicians continuing with "political spin" on "Improved Monitoring and Reporting Requirements" for the new GABORA Water Plan & GABORA Water Management Protocol. An effective and properly funded monitoring and

reporting program is an essential cornerstone for securing the public's confidence that the Queensland Government is applying effective strategies in its management of the GAB for future generations. Anything less is a total sham.

The BSA notes that Section 24 of the GABORA Water Plan allows the Chief Executive of DNR&M to require an applicant for a water licence from a General, State or Indigenous Reserve, to investigate the impacts of the proposed take may have on:

- Flows to Groundwater Dependent Ecosystems (GDE's)
- Groundwater pressure, and
- Existing entitlements and other authorisations.

While the BSA is supportive of this provision – the BSA also notes that Section 21 has a discretionary application in that the Chief Executive MAY require this investigation. The BSA takes the view that Section 24 is highly inconsistent with the "statutory underground water rights" afforded to the Resources Sector, where the grant of a petroleum or mining tenure allows unlimited volumes of underground water to be taken, regardless of the impacts on GDE's, Groundwater Pressure or Existing GAB Entitlements.

Division 5/Sections 41 & 42 of the GABORA Water Plan outlines protective measures for Groundwater Dependent Ecosystems (GDEs) and existing water entitlements from the grant of:

- Unallocated water entitlements.
- Stock & Domestic entitlements.
- Seasonal Water Assignments (temporary transfers) if > 100ML, and
- The amendment or relocation of a Water Licence.

For additional provisions for the protection of Groundwater Dependent Ecosystems it is necessary to refer to the Water Management Protocol for the GABORA Water Plan**.**

Section 17 of the GABORA Water Management Protocol outlines there is to be no new Water Licences issued for Stock take from a Groundwater Unit connected to a Groundwater Dependent Ecosystem (GDE) - if the increase in take is within 5 kms of a GDE or the cumulative drawdown that would result from the additional take of water is > 0.4m at all GDE's connected to that Groundwater Unit. While the BSA is supportive of measures to protect GDE's, it would like to point out what appears to be a policy inconsistency where a landholder is not allowed to construct a new Stock bore within 5 kms of a GDE, however a CSG operator may be allowed to drill a CSG well within this distance without regard to the impact on the GDE. The BSA considers this apparent policy anomaly needs to be clarified because it is not clearly articulated in the GABORA Water Management Protocol.

Section 19 outlines that an existing bore taking water from a Groundwater Unit which is connected to a GDE, and within 5 kms of a GDE, is not allowed to be relocated any closer to the GDE. The DNR&M can apply additional conditions to better define the bore's location, but there is to be no limit on a person's capacity to take water from an existing water bore.

The BSA does not believe that the spring protection rules in the GABORA Water Plan and the GABORA Water Management Protocol will adequately protect GAB fed springs. The BSA has

noted the predicted impacts of petroleum & gas operations on the GAB springs vents and springs complexes in the Surat CMA – reference the Surat UWIR 2012. The UWIR 2012 outlines that 71 springs complexes comprising of 330 individual springs vents have been identified in the Surat CMA. There are also 43 "watercourse springs" contributing to the base flows of watercourses in the CMA. The OGIA 2016 indicates that monitoring data collected to date, outlines "no impacts from P&G water extraction have been observed" – so there isn't an issue according to OGIA!!! However, the OGIA UWIR 2016 indicates that OGIA will continue to monitor 11 springs complexes and 3 watercourse springs which have been identified as "high or moderate risk springs" (page 107 - OGIA 2016).

The 2012 UWIR identified 5 springs complexes where pressure impacts were predicted at > 0.2metres. At two (2) of these sites - a relocation of stock & domestic bores has mitigated the risk. For the other three (3) sites (Lucky Last, Springrock Creek & Yebna) more investigations were needed. The BSA noted that petroleum & gas tenure holders are required to assess mitigation options at these 5 sites and report these outcomes to the Queensland Government. The outcomes of these investigations has resulted in Lucky Last spring no longer being considered to be at risk and SANTOS are doing further work on the impacts on Springrock Creek and Yebna springs. OGIA 2016 report the "need for targeted action by tenure holders" will be reassessed in the next update of the UWIR (page 110).

With more than 4 years of investigation into these springs already elapsed and potentially another 4 years of investigation to be undertaken - the BSA questions whether the Queensland Government is really committed to spring protection and would intervene to halt adjacent CSG production, if that what was required to protect spring complexes. The BSA has also noted that the Surat UWIR 2016 is silent on the potential impacts of mining operations on GAB fed springs.

The BSA has also noted that the GABORA Water Plan and the Water Management Protocol for the GABORA Water Plan, is also silent on managing the impacts of the Resources Sector on GAB fed springs. It is apparent that the GABORA Water Plan and its supporting Water Management Protocol will only apply controls to the impacts of new non-Resource Sector's water bores on GAB springs. This is an appalling and inequitable application of policy and in the BSA's view, it will lead to substandard outcomes – in other words a significant number of GAB fed springs will be compromised. This position is borne out by the recently approved Adani Carmichael Mine in the Galilee Basin which is projected to have significant impacts on the Nationally Listed Mellaluka and Doongmabulla GAB springs, as well as the base flows of the Carmichael River.

The BSA contends that protection of GAB-fed springs means exactly that, and if any springs are compromised by mining or petroleum & gas projects, then the proponent MUST be required to provide for offset arrangements, such as a significant financial contribution to the GABSI Program or some other arrangement.

5.3 Protection of Water Quality:

Another area of concern to the BSA is the protection of the water quality in the GAB. Contamination of the GAB can occur through a number of causes. The construction of unlined bore-holes is a major threat, as is a catastrophic well failure during oil and gas

production, longer-term well failures linked to corrosion of lined bore-holes, migration of polluted material through faults, or through surface water pollution migrating into aquifers. An oil or gas well failure during critical points of production also has the potential to do permanent, possibly irreversible damage to aquifers in the GAB. The BSA also understands that the quality of water extracted from the fracking of unconventional gas wells, is very toxic and presents a significant risk to surface and groundwater resources if it is not appropriately constrained and managed.

The BSA submitted to the Queensland Government that the new GABORA Water Plan must protect the water quality of the GAB by requiring that all wells - bores that interact with the GAB, are fully lined with approved casings, and that all wells at the end of their working life are properly rehabilitated by filling with concrete from the bottom up to avoid inter-bed leakage over time.

The BSA also contends that the full disclosure of the chemical composition of all chemicals used in fracking and the composition of fracked waters extracted from Unconventional gas wells that could or will interact with the GAB, is provided to the government by the CSG Industry and is also made available to the public. The BSA also requests that a rigorous and transparent water quality program be implemented to monitor the potential impacts of CSG operations on Queensland's groundwater resources. The Queensland Government has ignored these matters in preparing and finalising the new GABORA Water Plan and GABORA Water Management Protocol. The BSA considers that this is a major gap in the regulatory framework in Queensland which may lead to adverse social, economic or environmental outcomes.

It must also be recognised that pressure and temperature are both important water quality attributes in the GAB. Measures to protect these attributes should have also been reflected in the new GABORA Water Plan, but they were ignored.

5.4 Management of CSG Produced Water:

As already outlined in this Submission, the CSG Industry is already extracting in excess of 55,000ML/annum (projected to exceed 65,000ML/annum) of groundwater in the Surat Basin. This water is termed as "produced water". Initially, this "produced water" was stored in evaporation dams which generated a significant public backlash, especially during the millennial drought.

In response to this public backlash, in October 2008, the Queensland Government adopted a policy position to discontinue the use of evaporation dams as a primary method of CSG water disposal. The policy also included the remediation of existing evaporation dams within 3 years (by 1 October, 2011).

To deal with the outcome of this decision, the Queensland Government introduced the 2010 CSG Water Management Policy which dealt with:

a) management of salt produced from CSG operations, and

b) encouraged the beneficial use of treated CSG water.

This policy listed preferred and non-preferred management options for dealing with CSG water. It also outlined "beneficial use" as a change in use from a waste to a resource that can be used for benefit, with a focus on minimising environmental harm. Additionally - the policy outlined "general beneficial use" with approval for use of a resource from which everyone can benefit. Water from this source can be used for aquaculture, coal washing, dust suppression, industrial use, irrigation and livestock watering – subject to being cleaned to standards set by the Department of Environment & Resource Management (DERM).

This policy also allowed for brine dams and dams for the aggregation of CSG water. It also contained measures for the management of brine and solid wastes. While the policy made no specific direction for the use of treated CSG water for "make good provisions", there was an expectation amongst landholders and Regional communities, that it could be utilised for this purpose.

The election of the Newman LNP Government in 2012 resulted in the release of the 2012 CSG Water Management Policy which deals with the management and use of CSG water under the Environmental Protection Act 1994, and superseded the 2010 CSG Water Management Policy.

In summary the 2012 Policy:

- Continued the 2010 Policy of banning the use of CSG evaporation dams.
- Introduced the use of "Temporary Emission Licences" for dealing with the emergency releases of CSG water into watercourses.
- Encouraged the beneficial use of CSG water in a way that protects the environment and maximises its productive use.
- Introduced a "prioritisation hierarchy" for the management and use of CSG water. This hierarchy included:

- Priority 1 water – CSG water which is used for one or more of the following – the environment, existing or new water users and existing or new water dependent industries.
- Priority 2 water – if no beneficial use options exist – treating and disposing of CSG water in a way that avoids, and then minimises & mitigates impacts on environmental values.

While the 2012 CSG Water Management Policy did not directly deal with Water Act requirements, such as the "make good" of any relevant impacts that may result from CSG operations on bores, it did suggest that CSG operators should consider the feasibility of using CSG water to meet these obligations.

The introduction in 2010 of the Queensland Government policy of discontinuing the use of evaporation dams as a primary method of CSG water disposal, generated an expectation with landholders that the CSG Industry would process their "produced water" through a Reverse Osmosis treatment plant and make it available for beneficial use – through either meeting their Make Good obligations for impaired bores, or for sale for agricultural production purposes.

However, the disposal of treated CSG water to third parties (including municipal drinking water supplies) invokes the provisions of the *Water Supply (Safety & Reliability) Act 2008.*

The purpose of the *Water Supply (Safety & Reliability) Act 2008* is to provide for the safety and reliability of water supply by a water provider. In respect to petroleum activities, it provides a regulatory framework for providing recycled water and drinking water quality – primarily for protecting public health (Section 2 (a) (ii).

Section 20 of the Act sets out who must apply for registration as a service provider – this includes an entity who is the owner of 1 or more elements of infrastructure for supplying a water service, which could include a CSG operator.

Section 196 of the Act outlines it is an offence to supply recycled water without an approved recycled water plan management plan. This applies to recycled water supplied by a recycled water provider (this could be an authorised CSG Company) for use in irrigating minimally processed food crops or recycled water supplied for a prescribed use under a regulation. Section 201 of the Act sets out all the requirements for a recycled water management plan. However, without a beneficial re-use approval, the CSG water that falls outside of the above quality parameters is subject to the tracking, transport and disposal requirements in the Environmental Protection Regulation.

Monkton et al in their paper "Use of coal seam water for Agriculture in Queensland, Australia" have stated *"The average annual groundwater extraction in the Surat CMA by agricultural producers is approximately double that of CSG producers. However, the extraction of groundwater for agricultural production has been deemed to be in excess of sustainable extraction limits (Office of Groundwater Impact Assessment, 2012). On this basis, it is necessary to determine if CSW (Coal Seam Water) extraction improves or exacerbates this situation. If CSW is 'new water' (from underutilized aquifers) it could potentially take pressure off agricultural groundwater extraction limits (from over-utilized aquifers). However, early indications are concerning because CSW extraction from the WCM (Walloon Coal Measures) is expected to reduce the levels of approximately 2500 agricultural and domestic bores in that aquifer (Office of Groundwater Impact Assessment, 2012)."*

Monckton et al also outline that current treatment volumes of "produced water" being made available by the CSG Industry for irrigated agriculture are in the order of 37.7 GL/year (approximately 50% of the CSG "produced water" per annum) and that some 26 agricultural producers in the Chinchilla District are beneficial users of treated CSG water. So the expectations of widespread "beneficial use" by Surat Basin landholders have yet to be realised. The remaining 50% of CSG water is accounted for by holding pond evaporation, the RO brine stream, the proponents own irrigation schemes and a small amount of reinjection where local geology is favourable.

The BSA contend that the complexity of the statutory provisions of the *Water Supply (Safety & Reliability) Act 2008* has been a deterrent to the CSG Industry making treated water available for municipal drinking water supplies, for sale to landholders for beneficial use or for CSG operators meeting "Make Good" obligations for impaired bores. While some parties have certainly experienced "beneficial use" outcomes from being able to access treated CSG

produced water, the great majority of “interested stakeholders” have been left out in the cold – a totally inequitable situation.

5.5 Protection of Landholder’s Stock & Domestic Water Supplies:

Chapter 3 of the *Water Act 2000* provides a framework for CSG operators and Miners to “make good” for landholder’s water bores that are impaired through their exercising their “underground water rights”. These “make good” provisions include:

- the deepening of an existing water bore into another deeper aquifer.
- the drilling of a new water bore into another deeper aquifer.
- the provision of an alternative water supply from CSG produced water or another source. and
- the payment of compensation to the landholder for the loss of a water supply.

Currently the preferred approach for dealing with impaired water bores is determined by the resource tenure holder who caused the impairment. This is an inequitable situation as if a landholder’s preference is for an alternative water supply, then this should be the priority obligation for the tenure holder to meet. Efforts by the BSA and others to have this anomaly addressed by amendments to Queensland legislation have been spectacularly unsuccessful.

6. Differences in the regulatory regime surrounding the extractive industry’s water use, and that of other industries:

All rights to the use, flow and control of water in Queensland are vested in the State. The *Water Act 2000* is the primary piece of legislation that controls and manages these State rights.

Chapter 2 of the *Water Act 2000* deals with the management and allocation of water in Queensland. Persons may be authorised to **take water** through legislation and statutory instruments (such as Water Plans) or through authorisations such as Water Allocations, Water Licences, Water Permits, Resource Operations Licences, Distribution Operation Licences or Operations Licences. Persons may be authorised **to interfere** with water through legislation and statutory instruments or through Water Licences, Resource Operations Licences and Distribution Operations Licences.

Chapter 2 provides the details of the specific water planning processes for each of these authorisations for the take or interference with water – both surface water and groundwater.

Landholders, Local Authorities, Industry and Corporations who require access to water, require one of these authorisations before they can either take or interfere with surface water or underground water. In some cases they will be required to purchase a volume of water from the Queensland Government for this entitlement. (Stock & Domestic water supplies are exempt from these requirements).

However, as outlined in Section 3.1 of this Submission, the regulatory regime for the extractive industry's access to water is quite different to the regulatory regime applied to other water users.

The extractive industry in Queensland has a "statutory underground water right" to take or interfere with underground water through Section 334ZP of the *Mineral Resources Act 1989* for mining tenements, and through Sections 185 & 186 of the *Petroleum & Gas (Production & Safety) Act 2004* for petroleum & gas tenements. The BSA understands that Queensland is the only jurisdiction in Australia that has extended this statutory right to resource tenure holders.

Chapter 3 of the *Water Act 2000* specifically manages the impacts on underground water caused by resource tenure holders exercising their "statutory underground water rights".

The statutory underground water rights under the Petroleum & Gas (Production & Safety) Act, still allows for CSG operations to take unlimited volumes of "associated water" from underground aquifers. This right may be activated by those who hold a petroleum tenure and who have submitted an Underground Water Impact Report and Baseline Assessment Plan under the *Water Act 2000*, Chapter 3 provisions (unless there is an agreement with the Chief Executive that they can exercise the rights prior to submitting the UWIR and BAP). P&G operations now need a Water Act licence to take "non-associated water" from an underground aquifer.

The statutory underground water rights for Mining operations require operators that had already applied for their mining authorities as at 6 December 2016, to obtain an "Associated Water Licence" to take associated water during a mining operation. Otherwise, new mining proponents have a statutory right to take unlimited volumes of "associated water" from underground aquifers. This right may be activated by holders of a mining lease or a mineral development licence, who have submitted an Underground Water Impact Report and Baseline Assessment Plan under the *Water Act 2000*, Chapter 3 provisions (unless there is an agreement with the Chief Executive that they can exercise the rights prior to submitting the UWIR and BAP). Like P&G operations - miners who require "non-associated water" are also required to secure a Water Act licence for this take.

However, Adani's Carmichael Mine was exempted from needing to subject the grant of their "associated water licence application" to public notification, which therefore also took away community internal review and appeal rights.

While these "statutory underground water rights" are administered by the Department of Environment & Heritage Protection through the granting of an Environmental Authority for a mining or petroleum & gas tenement, the framing of these underground water rights for extractive industry is subject to the grant of a tenure, rather than the approval of an Environmental Authority which is a precursor to the grant of a tenure.

The volume of water used by the extractive industry across Queensland is unknown. In stakeholder consultation sessions associated with the development of the new GABORA Water Plan, the DNR&M indicated that approximately 65,000ML/annum was being

extracted by the CSG Industry. While the CSG Industry has been required to measure and report on their underground water use since the inception of the industry, it wasn't until 6th December, 2016, that the Mining Industry was required to measure (or estimate in the case of evaporation from mine voids) and report to the Queensland Government on its underground water use. So – in reality the Queensland Government has no idea of the overall water use by the extractive industry operations across Queensland. It relies on water level trend data secured from its Groundwater Level Network and data from the CSG Net and Groundwater Net programs which is collected & inputted by landholders.

In the Surat Basin in South West Queensland, we now have the situation where these statutory underground water rights are allowing CSG operators to still secure new tenures with associated water extraction, while other water users are required to purchase some of the scant remaining 840ML of available unallocated water reserved in the new GABORA Water Plan for General Purpose use. Once this 840ML of General Purpose unallocated water is all sold, there is no more water for agricultural enterprises between Roma and Toowoomba. The BSA contends that this is a totally unacceptable situation and is un-Australian. The BSA contends that the "statutory underground water rights" should be repealed immediately by the Queensland Government and resource tenure holders should comply with the same water access rules as everyone else.

7. The effectiveness of the 'water trigger' under the *Environment Protection and Biodiversity Conservation Act 1999* , and the value in expanding the 'trigger' to include other projects, such as shale and tight gas.

The Significant impact guidelines 1.3, Commonwealth of Australia 2013, outline that the *Environment Protection and Biodiversity Conservation Act 1999* (the EPBC Act) is the Australian Government's central piece of environmental legislation. It provides a legal framework to protect and manage nationally and internationally important flora, fauna, ecological communities and heritage places — defined in the EPBC Act as matters of national environmental significance (MNES).

These MNES are:

- world heritage properties
- national heritage places
- wetlands of international importance
- nationally threatened species and ecological communities
- migratory species
- Commonwealth marine areas
- the Great Barrier Reef Marine Park
- nuclear actions (including uranium mining)
- a water resource in relation to coal seam gas (CSG) and large coal mining (the water trigger).

The amendment made by the *Environment Protection and Biodiversity Conservation Amendment Act 2013* provided for water resources that are impacted by coal seam gas and

large coal mining development to be a matter MNES. The amendment passed the Parliament on 19th June, 2013 and came into effect on 22nd June, 2013.

Under this amendment to the EPBC Act, an action which involves a CSG development or a large coal mining development now requires approval from the Federal Environment Minister (the Minister) if the action has, will have, or is likely to have a significant impact on a water resource.

The core purpose of the Significant impact guidelines 1.3, is to assist any person who proposes to take an action which involves a CSG development or a large coal mining development, to decide whether the action has or is likely to have a significant impact on a water resource.

If the action is likely to have such an impact, the proponent should submit a referral to the Federal Department of the Environment for a decision by the Minister on whether assessment and approval is required under the EPBC Act.

The Significant impact guidelines 1.3 also outline a 'self-assessment' process, including detailed criteria, to assist any development proponent in deciding whether or not an EPBC Act referral may be required. These guidelines may also assist members of the public or interest groups who wish to comment on actions which have been referred under the EPBC Act.

If a development proponent plans to undertake an action which involves a CSG development or large coal mining development which has, will have, or is likely to have, a significant impact on a water resource they must refer the proposal to the Minister before starting. The Minister (or the Minister's delegate) will then decide within 20 business days whether an assessment is required under the EPBC Act. The potential significance of each action is judged on a case-by-case basis. Reference - Significant impact guidelines 1.3, Commonwealth of Australia 2013.

Within our Submission - we have highlighted a number of examples where the statutory framework utilised by the Queensland Government is not sufficiently robust to deliver either sustainable management of Queensland's groundwater resources or equitable outcomes for water users. It is for this reason, the BSA strongly supports the "water trigger" provisions of the Environmental Protection and Biodiversity Act 1999.

However, the BSA would like to highlight some actions and anomalies which in its view should be addressed in the application of the EPBC's "water trigger" provisions.

The BSA has recently been advised of a Joint Venture (JV) proposal by Arrow Energy and QGC. Arrow is a 50/50 partnership between Petro China and Shell. QGC is wholly owned by Shell. This allows Arrow Energy to significantly expand production across Arrow's Surat Gas Project through mutually beneficial use of both related company's adjacent infrastructure with associated environmental and economic benefits. Arrow's Surat Gas Project was approved in late 2013 under the EPBC Act's Water Trigger Amendment. Arrow contends that their current expansion will involve less wells and less water extraction than nominated in their Environmental Authority. However, the BSA has concerns arising from Arrow's

intention to locate most of these new wells in the Taroom zone of the Walloon Coal Measures which closely overlies the widely used Hutton's aquifer. Evidence is emerging that the connectivity between the Taroom zone and the Huttons has been significantly underestimated in some localities of the JV's adjacent tenures. If this is confirmed by future monitoring, some of the assumptions facilitating approval of the SGP may be incorrect. In such a scenario it is not clear to BSA on reading the EPBC Act that Arrow would be required to make a new referral to the Commonwealth Environment Department. If such a provision does not exist, then the BSA believes that the EPBC "water trigger" should be amended accordingly.

The BSA is relieved that Arrow has restated their intention not to frack as required under their EA. Fortunately for Arrow, they do not have to frack because their tenures contain highly permeable CSG zones unlike other proponents "tight "zones. The BSA believes that if increased connectivity between the Taroom CM zone and the Huttons Sandstones is confirmed, then fracking for all proponents should be banned in problematic locations. As production by the JV partners ramps up in the priceless farm lands of the Condamine Alluvium around Dalby and Cecil Plains and downstream along the Condamine towards Chinchilla, then the BSA would expect that the Queensland Government would apply non-fracking conditions to any further EA's required to bring these tenures into production.

Currently the hydrological model used by Queensland's Office of Groundwater Impact Assessment {OGIA} only attempts to compute the impact of the CSG industry unilaterally. BSA believes that the cumulative impact of all users should be modelled simultaneously so as to more accurately predict total impacts on GAB aquifers.

Another issue of concern is that the Queensland Government may not have been applying the full intent of its Coal Seam Gas Water Management Policy 2012 towards the treatment and beneficial re-use of CSG water and the disposal of the salt and brine from its desalination plants. The BSA requests that the Queensland Government apply the full intent of the 2012 Policy as part of the conditions applied in environmental authorities issued to allow new tenures to be brought into full production. The BSA also expects the Queensland Government to take steps to apply the full intent of the 2012 Policy towards the treatment, beneficial re-use and salt recovery from tenures already in production, but not complying with the provisions of the 2012 Policy.

The BSA also understands that in the Surat Basin, CSG tenure holders are applying to the Queensland Government to amend their existing Environmental Authorities to allow for the development of tight gas. The impacts of tight gas development have not been assessed or considered in the grant of the original CSG Environmental Authorities. The BSA are concerned that the CSG companies will attempt to "do a deal" with the Queensland Government to have their Environmental Authorities expanded without due stakeholder or public oversight of the potential long term impacts on the Basin's underground water resources. As an example – QGC has sought an internal review of an amendment to their Environmental Authority to increase the number of petroleum wells in the Wandoan area by 400 wells. QGC has contended that the DEHP has no proper authority under Queensland environmental legislation to distinguish between the type of petroleum wells to be drilled (including tight gas wells), or to even limit the number of such wells. Furthermore – while

QGC is actively promoting its case – it should be noted that QCLNG's EIS and SEIS made no mention of tight or shale gas development and the conditional approvals given by Queensland's Coordinator-General and the Commonwealth Government were for CSG extraction only.

The Queensland Government is actively promoting the expansion of unconventional gas exploration (deep gas, tight gas and shale gas) in Inland Queensland – in particular in the Eromanga and Cooper Basins. The fracking process for unconventional gas utilises large volumes of water. Each shale gas well may have up to 16 shafts and each shaft may be fracked up to 20 times with 2 – 4 ML of water used for each fracking operation (Reference – Shine Lawyers – personal communication).

Each time an unconventional gas well is developed, it could potentially use between 600 and 1,200ML of GAB water. The scale of water required to develop the unconventional gas industry in the Eromanga and Cooper Basins will potentially be huge as thousands of wells will be needed to extract the gas of just one deposit.

The BSA submits that the high potential for over-use of water from the GAB by an expansion of the unconventional gas industry in Inland Queensland, as well as the potential contamination of the GAB through fracking operations are issues that have to be addressed by an independent jurisdiction to the Queensland Government. Accordingly, the BSA contends that the "water trigger" provisions of the EPBC Act must be expanded to include other projects such as shale and tight gas. The threat to the pastoral industry as well as western Queensland communities from inappropriate development of shale and tight gas resources in the Cooper and Eromanga Geological Basins, is far too great to be left to the whims of the Queensland Government and its bureaucrats.

Furthermore, the dismissive treatment of the IESC's recommendation by the Queensland Government in respect to the assessment of the potential water impacts of the Adani Carmichael Mine on the Nationally Listed GAB springs complexes (Doongmabulla & Mellaluka Springs Complexes) and base flows in the Carmichael River, further reinforces why the independent application of the EPBC Act's Water trigger" provisions are necessary in Queensland and why the Commonwealth should not consider, under any circumstances, the devolution of these statutory responsibilities to State jurisdictions. The BSA contends that the Independent Expert Scientific Committee (IESC) should be given statutory powers to ensure its deliberations are given more authority in the assessment of CSG and large scale coal mines on Australia's precious water resources.

The BSA is concerned that continued pressure on the Queensland Government by the Unconventional Gas Industry, may result in its capitulation to the Industry - this will result in some serious consequences for the GAB's water resources and its water users. The BSA contends that this potential expansion of "tight gas" development in the Surat Basin as well as the Arrow/PetroChina/Shell proposed expansion and elsewhere, should invoke the "water trigger" provisions of the EPBC Act and they should be reviewed by the Commonwealth's Independent Expert Scientific Committee (IESC).

Lee McNicholl.

Chair – Basin Sustainability Alliance.

14th December, 2017.