

Mullaley Gas and Pipeline Accord Inc.  
Comment on new information received by the  
Independent Planning Commission  
in relation to the Narrabri Gas Project

Comments on Santos document 'Submission to IPC following public hearing' (including attachments), provided on 10 August 2020

*Page 28: "Such submissions failed to recognise the successful operation of CSG in Queensland, which is a better analogue of the regulatory and operational regime under which the Project will operate than case-studies from the US. For example, in Queensland, no regulatory enforcement action has been required in a period where up to 8,000 CSG wells have been operating and all spills greater than 5m<sup>3</sup> in volume must be reported to the regulator." Given the proposed risk controls that will be in place, the likelihood of a significant spill going undetected and unmanaged is very small. The likelihood of small spills causing significant impact on groundwater receptors is extremely small since the spill would be limited to a small area (less than a few hectares) and CSG water is generally free from potentially harmful contaminants."*

Santos claims "in Queensland, no regulatory enforcement action has been required in a period where up to 8,000 CSG wells have been operating and all spills greater than 5m<sup>3</sup> in volume must be reported to the regulator." This is not true.

On 19 March 2019, Santos received a penalty infringement notice and \$12,615 fine from the Queensland Department of Environment and Science for a loss of pond hydraulic integrity incident. On 20 September 2019, Santos received a penalty infringement notice and \$13,055 fine from the Queensland Department of Environment and Science for a produced water release to a watercourse. <sup>1</sup>

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<sup>1</sup> <https://www.santos.com/wp-content/uploads/2020/02/2019-annual-report.pdf>

In 2015, Santos received fines totaling \$34,155 relating to three infringement notices issued for non-compliance with conditions of approval. These events occurred in Santos' eastern Queensland operations: + \$11,385 x 2 for the release of produced water to land at Stakeyard East + \$11,385 for the release of sediment into surface water.<sup>2</sup>

The table below illustrates the large number of spills and incidents that Santos accrued over a six year period. In summary, from 2010 to 2015 inclusive, Santos recorded 611 spills, which involved 939,200 litres of hydrocarbons and 7,535,000 litres of non-hydrocarbons and received 55 fines for non-compliance with environmental regulations.

### Incidents and spills

		2010	2011	2012	2013	2014	2015
Uncontained hydrocarbon volume	m <sup>3</sup>	18.7	65.9	66.7	385.5	20.0	382.4
Total number of hydrocarbon spills	> 10L	73	85	161	30	42	39
Uncontained non-hydrocarbon volume	m <sup>3</sup>	-	-	873	1,426	2,957	2,279
Total number of non-hydrocarbon spills	> 10L	-	-	46	47	52	36
Number of fines for non-compliance with environmental regulations		3	6	14	17	12	3
Value of fines for non-compliance with environmental regulations	\$	6,000	12,000	35,000	34,800	72,000*	34,155

Notes: This includes \$52,500 imposed by the New South Wales Land and Environment Court for incidents that occurred at the Bibblewindi Water Treatment facility in 2011 while the site was under previous ownership and management.

Santos' claim that, "CSG water is generally free from potentially harmful contaminants" is not supported by the previous operator of the Project, Eastern Star Gas' history that reveals just how toxic produced water is to the environment. The well documented Bibblewindi spill that occurred on 25 June 2011 was reported as 10,000 litres of which 3,000 litres was recovered. That leak killed almost 2 hectares of vegetation and 9 years later is still being rehabilitated. If the 7,000 litres of produced water that was not recovered was evenly spread over the vegetation kill area it would amount to a mere 0.35mm in depth.

Reference:	595	Date:	25-Jun-2011 4:00	Workgroup:	OPS - Field	Responsible Organisation:	Eastern Star Gas
Description:	<p>At approximately 04:00am on Saturday morning (25th July) an ABS 8inch cap on a pipeline transferring water from Bibblewindi POND-1 to the Water Treatment Plant burst causing liquid to spill within the bunded water treatment facility area. The water continued to pump into the bunded area, exceeding the bund wall due to a failure of an electronic fail switch, until approximately 09:00am when Dan Hawkins discovered the extent of the spill.</p> <p>It is estimated that approximately 10,000L of liquid exceeded the bund wall with TDS measuring 16,000ppm. The spill reached as far as Garlands Road (420 metres from the point source), with a temporary earth bund being constructed to contain the spill area. 3,000L was emptied from this bund area.</p> <p>Prior to the event a bund was constructed on Friday, 24th July which was able to hold a large majority of the spill liquid however its was not fully effective as it was due to be sealed by contractors Monday morning (27th July).</p>						

<sup>2</sup> [https://www.santos.com/wp-content/uploads/2020/02/2015\\_sustainability\\_report.pdf](https://www.santos.com/wp-content/uploads/2020/02/2015_sustainability_report.pdf)

This is not an isolated incident, there are numerous sites within the Project area undergoing rehabilitation following vegetation dieback because of produced water spills

Comments on the Department of Planning, Industry and Environment's 'Response to Independent Planning Commission Questions', provided on the 14 August 2020

### **The Precautionary Principle**

*Page 3: "The Precautionary Principle Under NSW case law, there are two preconditions for the application of the precautionary principle: 1. Threat of serious or reversible (sic) environmental damage; and 2. Scientific uncertainty as to the nature and scope of the threat of environmental damage.*

*Based on its detailed assessment, the Department concluded that the Narrabri Gas Project would not cause any serious or irreversible environmental damage, and consequently that it did not trigger the first of the pre-conditions for the precautionary principle to be triggered."*

The Narrabri Gas Project triggers the precautionary principle because of the severity of the potential harm, the probability, evidence and known origins of that harm. The Department's conclusion, "that the Narrabri Gas Project would not cause any serious or irreversible environmental damage", is not based on the evidence available. The use of the phrase "would not cause" discloses that the Department has assigned zero probability of serious or irreversible harm. This is simply not credible.

*Page 4: "In the Department's view, these speakers focussed primarily on some of the scientific uncertainties associated with the assessment, without providing any new information that materially changes the Department's assessment of these uncertainties, rather than identifying and providing clear evidence of the specific serious or irreversible environmental damage that may or would occur as a result of the project and how likely the threat of this damage is."*

To state, "these speakers focussed primarily on some of the scientific uncertainties associated with the assessment, without providing any new information that materially changes the Department's assessment of these uncertainties" is an abject failure of the Department to recognise that some of the speakers were independent experts that provided new information which should have resulted in a reassessment of the uncertainties. The Department's assertion

that speakers were not “identifying and providing clear evidence of the specific serious or irreversible environmental damage that may or would occur “ is an extreme level of denial of the information presented by numerous experts in their spoken submissions.

The Department, rather than employ an absolute duty of prevention of environmental harm by invoking the precautionary principle for this project it is simply shifting the burden of proof to others. The Department is ignoring current NSW government policy which is to ensure the natural environment and our heritage are protected.

### **Intergenerational equity**

*Page 4-5: “...it would promote the social and economic welfare of the current generation without imposing any significant burdens on individuals or groups within the existing local or regional community and without compromising the needs of any future generations. “*

The Narrabri Gas Project is a fossil fuel project. There is no evidence that gas displaces coal in electricity generation. The burden that climate change resulting from the continued development and use of fossil fuels places on future generations is incalculable.

*Page 5: “all the gas wells would be plugged and abandoned strictly in accordance with the Well Integrity Code to ensure they do not create a liability for future generations or create a potential pathway for polluting the region’s beneficial water resources;”*

This statement by the Department is inadequate. Compliance with the Well Integrity Code does not ensure anything. As explained Professor Anthony R. Ingraffea of Cornell University:

“the word “plugging” carries with it a sense of false assurance. Modern plugging practice is effective (but not forever) in mitigating unwanted fluid flow from within the casings; however, it is ineffective, now and forever, at mitigating flow from outside the casings. There are many ways in which a well might leak from outside the casings, and specialized techniques, not standard plugging, are required to detect such leak paths and attempt to stop them.

...

the issue is not that a vast majority of plugged and abandoned wells will have adverse impact; the issue is that there is data ... that some such wells will indeed have adverse

impact, and, as noted by O’Kane, there is very little data on long-term durability of even “modern” wells. Therefore, the problem of leaking plugged and abandoned wells will never cease because there will be an unending addition of wells to the aging queue.”<sup>3</sup>

*Page 7-8: This assessment concluded that the direct emissions of the project (around 17% of the total emissions) are likely to be low, and could be reduced by prohibiting the use of flares for pilot wells (given the gas could be used in the nearby Wilga Park power station) and targeting the more prospective gas resources within the project with lower CO<sub>2</sub> levels. Under the recommended conditions, this would be achieved through the assessment and approval of the Air Quality and Greenhouse Gas Management Plan. The remaining emissions (or indirect or downstream emissions) are associated with the ongoing use of gas in NSW over the next 20-25 years by heavy industry, business and over 1.4 million households. As the Department pointed out in its assessment report, these emissions are likely to occur whether the Narrabri Gas Project is approved or not.*

There is no sound basis for the statement that, “...these emissions are likely to occur whether the Narrabri Gas Project is approved or not”. For it to be true assumes that, over the 25 year lifetime of the project, there is no transitioning away from fossil fuels to renewable energy sources which defies logic.

### **Chief Scientists Recommendations**

*Page 10: “The Government has subsequently responded to 15 of the 16 recommendations and is currently finalising its response to the last recommendation (cost recovery for regulatory).”*

The recent NSW government’s parliamentary inquiry into “The implementation of the recommendations contained in the NSW Chief Scientist’s Independent Review of Coal Seam Gas Activities in New South Wales” demonstrates that the Department’s assertion above is false. The inquiry concluded that only two recommendations have been fully implemented, six partially implemented and eight not implemented at all.

*Page 13: “Recommendation 5. That government use its planning powers and capability to designate those areas of the State in which CSG activity is permitted to occur, drawing on appropriate external expertise as necessary.”*

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<sup>3</sup> Refer Appendix A. Prof A Ingraffea, Cornell University. Comments on Narrabri Gas Project.

The Department's view on this is, "The Government has done this. The Narrabri Gas Project is located where CSG development is permitted to occur. It sits within existing petroleum titles and is permissible with development consent under both the Mining SEPP and Narrabri Local Environmental Plan. The Department's assessment, which incorporates the advice of independent experts, has found that the project can be carried out in a safe and sustainable way without causing any significant impacts on people or the environment."

Recommendation #5 is one of the eight recommendations not implemented and was to identify areas appropriate in geological and land-use terms for CSG. It has not been applied to the 12 expired Petroleum Exploration Licences (PEL) in the North West of NSW including the PEL which contains the Project. While the NSW Government has developed the Strategic Release Framework, which is not constructed with the clarity that the Chief Scientist recommended, it has not been applied to any of these PELs

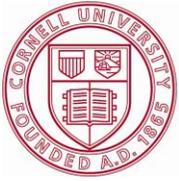
*Page 18: "Recommendation 15. That government develop a plan to manage legacy matters associated with CSG. This would need to cover abandoned wells, past incomplete compliance checking, and the collection of data that was not yet supplied as required under licences and regulations. There will also need to be a formal mechanism to transition existing projects to any new regulatory system."*

Bizarrely, the Department declares it is "Not applicable." when it is one of the two recommendations that is implemented. During the parliamentary inquiry Santos obviously thought this recommendation was applicable and had this to say, "that once decommissioning has occurred, final rehabilitation will take place and sites will be relinquished, in accordance with all regulatory requirements including the provision of final rehabilitation and relinquishment reports to the regulator". Further, Santos explained that it, "...will engage an independent scientific body such as the CSIRO to conduct a study into the integrity of decommissioned wells across its operations ... [to] provide a baseline assessment of the long-term integrity of decommissioned coal seam gas wells. The study will reviewed and updated throughout development and decommissioning of the Narrabri Gas Project to ensure any residual risks are appropriately managed."

## APPENDIX A

Comments on Narrabri Gas Project

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August 19, 2020

TO: Mr. Steven O'Donoghue, Director, Resources Assessment, NSW Department of Planning, Industry and Environment

I have been asked to review a memo from Professor Peter Cook, Chair, Water Assessment Panel, to you dated 5 June, 2020, with respect to its content regarding decommissioning of CSG wells in NSW.

Much of the issue discussed in this memo refers to the process of "plugging" wells as part of decommissioning. Unfortunately, the word "plugging" carries with it a sense of false assurance. Modern plugging practice is effective (but not forever) in mitigating unwanted fluid flow from within the casings; however, it is ineffective, now and forever, at mitigating flow from outside the casings. There are many ways in which a well might leak from outside the casings, and specialized techniques, not standard plugging, are required to detect such leak paths and attempt to stop them. It is imperative, therefore, that the first order of business during decommissioning is a thorough inspection to determine if a well is leaking to the surface or under the surface, and to determine the manner and source of leakage.

The memo notes that:

"Under current NSW legislation, once a well is plugged and abandoned and certified by the Regulator as being satisfactorily abandoned, the area is remediated and handed back to the landowner or the State. There is no ongoing requirement for monitoring the abandoned well. As O'Kane (2014c, page 5) points out

*"Despite the abundance of information and research on petroleum well integrity (including design and cements), very little data exists about the longterm (100 -1000 years) durability of abandoned petroleum wells."*

There is no evidence that the vast majority of plugged and abandoned oil and gas wells have an adverse impact on the environment."

However, the issue is not that a vast majority of plugged and abandoned wells will have adverse impact; the issue is that there is data (Boothroyd, Kang, Townsend-Small, Lebel,

Williams: see reference list) that some such wells will indeed have adverse impact, and, as noted by O’Kane, there is very little data on long-term durability of even “modern” wells. Therefore, the problem of leaking plugged and abandoned wells will never cease because there will be an unending addition of wells to the aging queue. The problem of leaking abandoned wells is so important that the USEPA recently modified its yearly Greenhouse Gas Inventory to include methane emissions from such wells as a new source category (USEPA, 2020).

Further, the fact that very little long-term durability data exists makes this assertion by the WEP contradictory and dubious:

“The high standards required for the completion of wells, does provide confidence that they will be effective for many decades if not centuries.”

I do agree, in principle, with the conclusion of the WEP, but it raises many unanswered questions:

“In conclusion, the WEP recommends to Government that it develops policies and procedures to monitor and inspect abandoned CSG wells, beyond the life of the NGP, for the purpose of detecting leakage of methane or saline groundwater, and the rectification of leaking wells should that be deemed necessary. Furthermore, the WEP suggests government should consider the establishment of a legacy fund to cover the costs of rectification work that may be required in the future.”

They leave open the questions of who/how/how long/who pays to monitor and inspect abandoned wells.

*Who* is to do the monitoring and inspection? The landowner now with an unwanted inheritance? Perhaps a new cadre of specially trained and equipped government inspectors with access to an ever-growing list of wells and reams of associated data to be curated “forever”?

*How* is such monitoring and inspection to be done, both above and below ground? Optical gas imaging? Sniffers? Groundwater monitoring wells? Testing of private water wells?

*How long* and how frequently is such monitoring and inspection to be done? If one does not know now when to expect even initially perfectly plugged wells to begin to leak by some manner of degradation, how can one state now when the monitoring and inspection should cease? If monitoring and inspection ceases at some point in time, and wells begin to leak, who will know, and for how long will they have been leaking if detected?

*Who Pays* for long-term monitoring, measurement, repair? That the WEP merely *suggests* the establishment of a legacy fund to cover the costs of future monitoring, inspection and rectification work indicates a bit of naiveté. In the U.S. and Canada, there is a well-known and growing economic crisis with regards to the ducking by well owners of their “asset retirement obligations” (ARO’s). It is *standard practice* in the U.S. and Canada to require that an owner obligate to the state/province a certain amount of money for each well for the express purpose of retirement, including the cost of plugging and abandonment, and repair should that be necessary. It is now recognized that the amount of obligation per well has been too low, and some owners have been using dubious methods to circumvent the actual costs of retirement. Moreover, when wells that are abandoned and *orphaned* (they become wards of the state because the owner has ceased doing business) begin to leak, the financial obligation has been abrogated. Even if the owner has complied with the obligation, the cost of repair most often exceeds it. Clearly, in my opinion, the NSW Department of Planning Industry and Environment must research this issue before any decision is made with regard to the NGP, and in so doing conclude that a realistic legacy fund must be established from contributions from well owners.

Thank you for your attention to my comments.



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