

MEETING MINUTES

Narrabri Gas Project (NGP)

Water Technical Advisory Group (WTAG)

DATE / TIME

Wednesday 16th February 2020
9:00am

LOCATION

Teams meeting / Shop Front Conference Room

FACILITATOR

Garry West

MINUTE TAKER

Lyn Firth (in person)

ATTENDEES

- ◆ Garry West (Independent Chair) (in person)
- ◆ Jack Warnock (Local groundwater user)
- ◆ Fabienne d'Hautefeuille (DPIE Water) (Teams)
- ◆ Cate Barrett (DPIE Water) (Teams)

- ◆ Edward Trindall (Narrabri LALC)
- ◆ Randall Cox (Independent Expert)
- ◆ Mike Williams (Independent Expert)
- ◆ Annie Moody (Santos)
- ◆ David Gornall (Santos)

GUESTS

Todd Dunn (Santos)
Keith Phillipson (AGE) (Teams)
Servaes van der Meulen (Onward) (Teams)
Damian Barrett (CSIRO)
Kady Pinetown (CSIRO)

APOLOGIES

Councillor Cathy Redding (Narrabri Shire Council)

Discussions

| NO. | DISCUSSIONS |
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| 1. Welcome | Chair welcomed and thanked all members for their attendance and acknowledged Gomeroi country on which the meeting was held as well as Elders past, present and future and all Aboriginal persons present. |
| Recording of Minutes | The chair asked members if there was any objection to the recording of the minutes for secretariat purposes with the minute's audio being deleted once the minutes were final and approved. There was no objection. |
| Declarations of Interest | The Chair asked if there were any new declarations of conflict of interest. Nil |
| Confirmation of Minutes/actions | Minutes of last meeting accepted. Actions update listed in actions table (no actions outstanding). (See Santos presentation slide) |
| 2. Correspondence | Following the last meeting, The Chair presented the Santos & WTAG response to the representations that were made by a local landholder. Those comments and the comments that were made at the meeting were included in a letter which the Chair signed off on. The Chair stated that the matter was closed. |

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| <p>3. Santos Presentations</p> | <p>Santos presentation.</p> <p>Agenda items included:</p> <ul style="list-style-type: none"> - Santos NGP update - NGP indicative timeline and scope - Santos Update - Schedule – Approximate Consultation Timeframes - CSIRO update and GISERA projects - Feedback Received <ul style="list-style-type: none"> - Groundwater Management Plan (GMP) - Groundwater Monitoring Plan (GMonP) - Groundwater Modelling Plan (GModP) - Groundwater Baseline Report (GBR) - Schedule – Approximate Consultation Timeframes - General Business <p>Update from Narrabri Gas Project</p> <p>The management plans are working their way through the various advisory groups. The plans all need to meet the Conditions of Consent before Phase 1 can commence. One of the most often asked questions has been “When is Phase 1 commencing?”. Todd answered that the plan was to commence in August, with the seismic and water monitoring programs targeting September/October and appraisal drilling will start at the back end of the year subject to management plan approvals. Operation of the wells will target Q1 2023.</p> <p>David informed the group that the comments were back for all the WTAG plans. There will be one continuous record made of all the comments received, the formal response to those comments and where changes have been made will be highlighted. This will be circulated to the members. Members will need to review this and get back to Garry if there are any issues concerning Santos’ responses.</p> <p>The Field Development Plan (FDP) is currently being worked on – it is hoped that this will be completed at the start of May. The outstanding item is the Cultural Heritage Clearance. There should be no need for this group (WTAG) to reconvene prior to reviewing the FDB unless there is an issue over the Santos responses to the comments.</p> <p>Ground Water Management Plan</p> <p>Fabienne d’Hautefeuille (DPIE Water) informed the group that the comments from DPIE were still 5 to 10 days away.</p> <p>Most of the comments were about tidying and clarifying items within the reports, which has been done. Many comments related to Phase 2 and about how to improve the model. This was accepted by Santos.</p> <p>Jack Warnock stated that he found the reports were very technical and he did not feel qualified to make substantial comment. David said it was an ongoing challenge to communicate to the public at the right level. Experts need to hold Santos to account technically but community members need to feel assured that Santos are going about the project the right way. David invited the WTAG to “call out” Santos if members felt anything needed further explanation because Santos relies upon a common understanding on technical matters in support of proposed management plan commitments and ultimately its final operations.</p> <p>In other appraisal programs, it has been suggested that Fact Sheets simplifying material be prepared and made readily available.</p> <p>Water is the most significant issue for the broader community, so the community needs to have confidence in what is happening. It was mentioned how difficult it is to communicate to non-locals having strong opinions.</p> |
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David invited further comment at the end of this section. The consensus was that the transition from Phase 1 to Phase 2 was ambiguous. At some time during Phase 1 there would be a decision made to proceed to Phase 2, but the timing of that decision was difficult to predict. In any case, an update to the management plans would be required before Phase 2 could proceed – an update that must be in consultation with the WTAG for the water related plans, amongst others.

Groundwater Monitoring Plan

Refer to slides from the meeting regarding WTAG member comments and the nature of Santos' proposed response.

A comment received was that water chemistry differences between the coal formations and overlying formation has been useful in the Surat Basin because it has provided a line of evidence about connectivity between formations that is independent of groundwater flow modelling. It was therefore suggested that in the NGP ongoing water chemistry sampling of the overlying formation be considered.

In response Santos advised that while such water chemistry data may eventually prove useful, the permeability of the formation directly overlying the coal formation will be very low and the taking of a water sample would therefore distort the water pressure measurements from the formation. The water pressure data is the most important data and should not be distorted by water sampling. Santos advised that if permeabilities in the overlying formation are found to be high enough to allow sampling without distorting the pressure data, then samples will be taken.

Randall agreed with that reasoning and suggested the reasoning be included in the management plan.

No further feedback at the conclusion of this section.

Groundwater Modelling Plan

Refer to slides from the meeting regarding WTAG member comments and the nature of Santos' proposed response.

Comment: There is a need for conceptual groundwater model uncertainty analysis prior to development of the groundwater model for Phase 2.

Santos: Confirmed that the WTAG have an important role to play, as defined by the NGP conditions of consent, in assessing the suitability of the groundwater model for Phase 2. That would include during conceptual groundwater model uncertainty analysis. By its nature, this needs to happen quite early in the Phase 2 modelling process, and at next meeting Santos would propose to share a high-level timeline of the various steps toward Phase 2 model development, including milestones for consultation with the WTAG.

Comment: Monitoring the Gunnedah-Oxley Basin (GOB) to confirm how accurate the model is an optimistic approach.

Santos: This comment suggests that the triggers being proposed are not protecting the high value water sources like the Namoi Alluvium and GAB aquifers - which isn't accurate.

Mike responded with the observation that it is important that Santos have enough entitlement to cover the indirect take of water from aquifers due to their operations. If Santos underestimates the impact, you can go to the market and get more entitlement – noting we are talking very small amounts. The GOB models are important to understand so that Santos has a good handle on the predicted indirect water take from high value water sources in the future.

Comment: Santos groundwater model needs to improve alignment with existing water resource allocation models, for example the interaction between the Namoi Alluvium and GAB aquifers.

Santos response: That is the plan, prior to Phase 2.

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| <p>General Business</p> | <p><i>Mike responded: If the model is predicting indirect take from GAB water sources, and then the water management for GOB water sources needs to take into account that indirect take, is it a matter of Santos having to allocate to a specific area over a few model cells. There are few ways of modelling that situation. The way those models are set up are that they take Santos' predicted and modelled pressure surface and apply to those water resource models. This is the approach the regulator would take, and they would need to be consulted with to ensure you provide exactly what they need. Your modelled pressure surface would then be turned into a volume from those water resource models, not from Santos' model necessarily. Another issue for discussion prior to commencement of Phase 2.</i></p> <p><i>Need to be aware that more water entitlements may need to be acquired once, not multiple times. Need to be careful how much is acquired.</i></p> <p>Jack Warnock identified that Santos needs to acquire the entitlements sooner rather than later because they are becoming more tightly held and difficult to acquire. Many other projects are also going to looking for water. Santos is tied to development schedules and when the data becomes available.</p> <p>Groundwater Baseline Report This report will be reissued. The new report will not include the comments made on the first report (any of those comments still relevant will need to be reissued) so the Department of Planning & Environment (DPE) only sees one set of comments. The group will need to review this in a reasonably short timeframe.</p> |
| <p>4. GISERA presentation</p> | <p>General Business – see Santos presentation slide.</p> <p>Gas Industry Social and Environmental Research Alliance, GISERA are focused on community issues of concern. In addition, the goal is to generate data and information and reduce relevant knowledge gaps for industry, government and community stakeholders.</p> <p>GISERA commenced in July 2011. There was a lot of work done in the Surat Basin for communities resulting in many synergies. Initiated with CSIRO and APLNG (Australia Pacific LNG), GISERA has now expanded to include other companies, state governments and the Commonwealth Government. Covers all mainland Australian states but not Victoria or ACT.</p> <p>Budget is about \$57 million and completed or are working on about 70 projects. Groundwater and water resources is the largest single research area of research focus at ~37% of funds.</p> <p>In 2020, CSIRO received funding from the Commonwealth government – GISERA will continue until 2025. As a result, the Research Advisory Committee has been reconstituted in all states. Director is Damian Barrett who is assisted by state leaders. On each Research Advisory Committee, Industry + CSIRO membership must be exceeded by at least one by community member to ensure community members are in the majority. CSIRO does not have a vote on any decision relating to projects. Convening a committee in the next few weeks. Follow up after July 2022.</p> <p>Question: Is there any crossover of membership between the Santos advisory groups and the GISERA committee? Answer: Not at a formal level. Jack Warnock and Ken Flower are both members of both groups.</p> <p>CCC have not nominated any projects. There has been interaction with CCC members. CSIRO's GISERA acquire information and collate the information on community issues and then prioritise the issues into research projects for consideration by the Research Advisory Council.</p> |

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| | <p>Question: Who does the prioritising? Answer: GISERA does that internally after extensive consultation with communities and a wider audience. Try to reduce the workload for the volunteers. Water is always the main concern for the community closely followed by greenhouse gases.</p> <p>Groundwater Projects (all reports available on the website)</p> <ol style="list-style-type: none"> 1) Design of monitoring equipment – given the data that we have, what would be the optimal location of new bores to measure and monitor going forward given what we know about the hydrology of the region. 2) Contamination in the Pilliga sandstone – non-specific about the cause of the contamination, as none is expected, but it is a project about the sub-surface transport of a theoretical and passive contaminant. Passive in this context means it isn't degraded by chemical, physical, biological transformations which are very important for most actual (i.e. not theoretical) contaminants. 3) Linearised groundwater models. The depressurizations of CSG coals are non-linear. It presents corrections needed by a single-phase model to account for two phase flow? <p>There was discussion concerning the impact of depressurisation on the Pilliga sandstone and in particular from the project impacts on the recharge area. This is an emotive issue. Estimation from this work was that the loss through potential connectivity pathways was very little (about 0.3% of the long-term sustainable extraction). This will be updated with new knowledge.</p> <p>One of the proposed projects for this area is to conduct a microorganism breakdown study for this area so it can be customised for the soil and aquifer bacteria.</p> <p>Comment: There is a strong concern for water and that any contamination in the Pilliga will show up in Coonamble. The CSIRO research showed this is unlikely. Jack spoke to the challenge of informing the public of the research findings.</p> <p>Damian presented research on potential connectivity pathways. No prime facie evidence was found for significant connectivity pathways between the coal measures and the Pilliga Sandstone aquifer.</p> <p>Damian is suggesting that there be more discussions with the CCC concerning this issue. There has been a massive amount of work done pre-development so as the project progresses there are going to be some good inferences.</p> |
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Actions

| NO. | ACTIONS | ACTION BY | DUE DATE |
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| 1 | Members to review Groundwater Baseline Report – to be released 4/3/22 | All | 11/3/22 |

Next Meeting

Tuesday 18th May 2022 TBA.