

Actions from GISERA NT Regional Research Advisory Committee Meeting 12 April 2019

Key

Action Open
Action Due/overdue
Action complete/in train

	Item	Action	Owner	Due	Status
1.	24-07-18 Item 2A	Action 2 : The knowledge transfer session to include key stakeholders from various locations including Darwin, Katherine and surrounds.	GISERA Executive Officer	Near project completion	This action has been carried over from July 2018 meeting. KTS will be scheduled in coming months.
2.	12-04-19 Item 2A	Action 1 : GISERA Director and James Pratt to discuss the methodology details of the sampling campaign.	GISERA Director	10 May 2019	
3.	12-04-19 Item 2A	Action 2 : The research proponent to establish a TRG that will include representatives from industry, NT Cattlemen's, NT Farmers and NT Government with a view to utilise NTCA and NTFA networks and NTCA's bore runs where possible.	Research proponent	At project commencement	
4.	12-04-19 Item 2A	Action 3 : The research proponent to include more detail around sampling protocol and methodology with the view that it is a broader sampling plan and that more details are incorporated.	Research proponent	9 May 2019	

5.	12-04-19 Item 2A	Action 4 : Researchers on this project and the Environmental monitoring and microbial degradation project must interact to ensure exchange of information and coordination of fieldwork and testing where possible.	Research proponent	Ongoing	
6.	12-04-19 Item 2A	Action 5 : The GISERA Communications Manager will develop a plain English factsheet at project commencement.	GISERA Communications Manager	At project commencement	
7.	12-04-19 Item 2B	Action 6 : Table 1 will be removed and replaced with text that explains that as part of the Technical Reference Group process, the researchers will interact with industry and a regulator to determine what compounds will potentially be used.	Research proponent	9 May 2019	
8.	12-04-19 Item 2B	Action 7 : The research proponent to remove flowback from this proposal.	Research proponent	9 May 2019	
9.	12-04-19 Item 2B	Action 8 : The research proponent to refine and prioritise where sampling is done. Looking at areas where the impact is likely to happen or impact is greatest. Prioritisation should take into account alluvial aquifers and sediments if relevant.	Research proponent	9 May 2019	
10.	12-04-19 Item 2B	Action 9 : Researchers on this project and the stygofauna must interact to ensure exchange of information and coordination of fieldwork and testing where possible.	Research proponent	Ongoing	
11.	12-04-19 Item 2B	Action 10 : The GISERA Communications Manager will develop a plain English factsheet at project commencement.	GISERA Communications Manager	At project commencement	

12.	12-04-19 Item 2C	Action 11 : The GISERA Director to facilitate the development of a new project proposal that will look at well decommissioning and abandonment strategies including long term risks and mitigation strategies.	GISERA Director	28 June 2019	
13.	12-04-19 Item 2C	Action 12 : The proposal be edited considering RRAC comments regarding actual risks of well failure associated with micro-fractures and the likelihood of barrier failure. In addition, the proposal be resubmitted for consideration in conjunction with a broader proposal on well decommissioning and well abandonment strategies over the long-term.	Research proponent	31 May 2019	
14.	12-04-19 Item 3	Action 13 : The GISERA Director to facilitate the development of a seismicity proposal that is more refined and targeted and takes into account the work Pangaea has already done.	GISERA Director	28 June 2019	

Minutes
GISERA NT Regional Research Advisory Committee Meeting No. 2
Friday, 12 April 2019
Northern Australia Conference Room,
Northern Australia Development Office, First floor, 76 The Esplanade, Darwin

OPENING

The meeting of the GISERA Northern Territory Regional Research Advisory Committee (RRAC) was called to order at 9.08 am (ACST) on Friday, 12 April 2019.

PARTICIPANTS

Damian Barrett: GISERA Director (*CSIRO*)
Fay Miller: Mayor of Katherine (*Katherine Town Council*)
Greg Bicknell: Chief Executive Officer (*Chamber of Commerce Northern Territory*)
Greg Owens: Chief Executive Officer (*Northern Territory Farmers Association*)
Ashley Manicaros: Chief Executive Officer (*Northern Territory Cattlemen's Association*)
Jenny Davis: Co-Director, Research Institute for Environment and Livelihoods (*Charles Darwin University*)
Greg McDonald: Manager, Minerals & Energy (*Northern Land Council*)
James Pratt: Executive Director- Onshore Gas Development (*Department of Primary Industry and Resources, Northern Territory Government*)
Paul Wybrew: Manager Environment, Technical, Monitoring and Approvals (*Santos*)
Tim Radburn: Executive Director (*Pangaea Resources*)
Chris Chilcott: Research Leader Northern Australian Development, Science Strategy (*CSIRO*)

Apologies:

Julie-Ann Stoll: Manager – Mining (*Central Land Council*)
David Dewhurt: Geoscience Research Leader (*CSIRO*)
Cathy Robinson: Director, Northern Australia Research Alliance (*CSIRO*)
Stephanie Stonier: Corporate Affairs Manager (Northern Australia) (*Origin*)

Other attendees:

Dan O'Sullivan: GISERA Deputy Director (*CSIRO*)
Jizelle Khoury: GISERA Executive Officer and Secretariat (*CSIRO*)

ITEMS FOR DISCUSSION

ITEM 1. Welcome, Introductions, overview of GISERA

The GISERA Director welcomed all members to the meeting.

ITEM 2A. PROJECT PROPOSAL

Characterisation of the stygofauna and microbial assemblages of the Beetaloo Sub-basin, NT

The GISERA Director provided a summary of the project proposal.

Key points raised:

- The key objective of this project is to provide new knowledge concerning stygofauna and subterranean groundwater dependent ecosystems in the Beetaloo Sub-basin and Roper River system. In addition this project will address the Northern Territory Government's 'Scientific Inquiry into Hydraulic Fracturing' final report recommendations 7.5, 7.19, 7.20 and 15.1.
- This project will undertake a broad spatial pilot scale study of bores across the region to determine the distribution and abundance of stygofauna and characterise the subterranean groundwater-dependent ecosystem. It will generate to new scientific knowledge around the issues of concern to the community.
- Stygofauna are micro and macroinvertebrates that live below ground and can include bacteria which play an important role in removing contaminants from sediments. They are an important part of the food chain.
- It was noted that as Jenny Davis (CDU) would be working on this project, she would abstain from voting. Jenny did participate in the RRAC discussion to answer any questions raised by the other members.
- Obtaining land access permissions for sampling of sites is a crucial part of this project.
- Project research proponents are able to use NTCA and NTFA's communication network to members to assist with permissions.
- NTCA do bore runs on a regular basis. The research proponent may be able to coordinate sampling with the NTCA schedule.
- Concentration of sampling areas is not preferred. 'Sweet spots' may change, so better to test broader area. Sample in wider area i.e. lease areas and outside of those areas.
- Project order document to include more detail around sampling protocol and methodology with the view that it is a broader sampling plan and that more details are incorporated.
- Early baseline study is important for government.
- A Technical Reference Group (TRG) will be formed for this project. The TRG will include representatives from industry, NT Cattleman's, NT Farmers and government to ensure the research proponent can generate the optimal approach to obtaining samples. The TRG will identify potential follow-on work (e.g. risk analysis) for the NT RRAC to consider.
- A plain English factsheet will be developed at project commencement.

- It was noted that the overall project budget may increase by approximately 10% to allow for the broader scale sampling requested by the NT RRAC.
- Researchers on this project and the Environmental monitoring and microbial degradation project must interact to ensure exchange of information and coordination of fieldwork and testing where possible.

Outcome: The RRAC approved this project, subject to the actions below being addressed to the satisfaction of the GISERA Director.

Action 1: GISERA Director and James Pratt to discuss the methodology details of the sampling campaign.

Action 2: The research proponent to establish a TRG that will include representatives from industry, NT Cattlemen's, NT Farmers and NT Government with a view to utilise NTCA and NTFA networks and NTCA's bore runs where possible.

Action 3: The research proponent to include more detail around sampling protocol and methodology with the view that it is a broader sampling plan and that more details are incorporated.

Action 4: Researchers on this project and the Environmental monitoring and microbial degradation project must interact to ensure exchange of information and coordination of fieldwork and testing where possible.

Action 5: The GISERA Communications Manager will develop a plain English factsheet at project commencement.

ITEM 2B. PROJECT PROPOSAL

Environmental monitoring and microbial degradation of onshore shale gas activity chemicals and fluids

The GISERA Director provided a summary of the project proposal.

Key points raised:

- The key objective of this project is to examine in order of priority the initial state of the fate of chemicals and compounds associated with hydraulic fracturing and drilling fluids used by industry if those compounds come in contact with the soil. It aims to bring in methodologies and new technology around DNA extraction and DNA and rDNA sequencing and identification.
- It was noted that Table 1 on page 9 listing 'Industrial chemicals used in gas production' has been drawn from a Commonwealth Government assessment that was previously done for the CSG industry in Queensland. Some of the compounds used have since changed, so it was suggested that the table be removed and replaced with text that explains that as part of

the Technical Reference Group process, the researchers will interact with industry and a regulator to determine what compounds will potentially be used.

- It was suggested that the research proponent remove flowback from this proposal and if important to NT RRAC, GISERA will address issues of flowback in another proposal.
- The research proponent must refine and prioritise where sampling is done - start with places where the impact is likely to happen or impact is greatest. The most fertile soil is the most at risk. There is a lot of black soil plains in the Beetaloo.
- Prioritisation should take into account alluvial aquifers and sediments if relevant.
- Researchers on this project and the stygofauna project must interact to ensure exchange of information and coordination of fieldwork and testing where possible.
- A plain English factsheet will be developed at project commencement.

Outcome: The RRAC approved this project, subject to the actions below being addressed to the satisfaction of the GISERA Director.

Action 6: Table 1 will be removed and replaced with text that explains that as part of the Technical Reference Group process, the researchers will interact with industry and a regulator to determine what compounds will potentially be used.

Action 7: The research proponent to remove flowback from this proposal.

Action 8: The research proponent to refine and prioritise where sampling is done. Looking at areas where the impact is likely to happen or impact is greatest. Prioritisation should take into account alluvial aquifers and sediments if relevant.

Action 9: Researchers on this project and the stygofauna must interact to ensure exchange of information and coordination of fieldwork and testing where possible.

Action 10: The GISERA Communications Manager will develop a plain English factsheet at project commencement.

ITEM 2C. PROJECT PROPOSAL

Mitigating Fugitive Gas Emissions from Well Casings

The GISERA Director provided a summary of the project proposal.

Key points raised:

- The key objective of this project is to evaluate the suitability of materials developed by CSIRO scientists to help mitigate methane gas migration and emission along the microfractures/microannuli behind external well casings. This is a lab-based study in response to community concerns and will partially address the Northern Territory

Government's 'Scientific Inquiry into Hydraulic Fracturing' final report recommendations 5.1 and 5.3.

- It was noted by the RRAC that the text of this proposal overemphasised the actual risk associated with micro-fractures. A statement on the likelihood of annulus failure and well failure based on knowledge from other regions should be included in a revised version of this proposal.
- This proposal needs to integrate with a broader project on well decommissioning and well abandonment strategies including longer term risks and their mitigation.
- The RRAC noted that there is greater community concern about well failure in the long-term (when wells are shut-in and decommissioned) than the drilling of the well in the short-term. The more information available to the community the better. This project may satisfy some level of community concerns.
- The NT RRAC discussed whether this project should proceed now or be reconsidered once an overarching project that looks at well decommissioning and abandonment strategies in its entirety is carried out. The project proposal developed would provide a broader strategy and priorities, looking at what the risks are long term and mitigation strategies.
- The NT RRAC agreed that the Mitigating Fugitive Gas Emissions from Well Casings proposal had merits and that it will be held over and could feed into the overarching project along with other projects on cost effective long term monitoring of wells and practical application of technologies.
- In project factsheets, consider having a thought bubble on what's next.

Outcome: The RRAC requested that an additional proposal be developed for their out-of-session approval that would look at well decommissioning and abandonment strategies including long term risks and mitigation strategies.

Outcome: The RRAC decided to hold over the Mitigating Fugitive Gas Emissions from Well Casings proposal until the broader overarching project proposal on well decommissioning and well abandonment strategies over the long-term is developed. Approval of this project can be considered along with approval of the broader project.

Action 11: The GISERA Director to facilitate the development of a new project proposal that will look at well decommissioning and abandonment strategies including long term risks and mitigation strategies.

Action 12: The proposal be edited considering RRAC comments regarding actual risks of well failure associated with micro-fractures and the likelihood of barrier failure. In addition, the proposal be resubmitted for consideration in conjunction with a broader proposal on well decommissioning and well abandonment strategies over the long-term.

ITEM 3. OTHER BUSINESS

- The NT RRAC discussed a new project idea on managing induced seismicity in the Beetaloo Basin. This project would have five components:

- Desktop review of available data on background seismicity and predicted induced seismicity risks in the Beetaloo Basin (may involve some modelling);
 - Design and installation of microseismic monitoring equipment to capture background seismicity before hydraulic fracturing operations, and induced seismicity during and immediately following hydraulic fracturing operations;
 - Analysis of microseismic and hydraulic fracturing data to determine effectiveness of monitoring methods;
 - Review of induced seismicity monitoring and response (traffic light) systems used in other jurisdictions; and
 - Development of options for induced seismicity monitoring and response.
- CSIRO will need to look at the results of Pangaea’s previous testing to develop a proposal where the issue is more refined and targeted.

Action 13: The GISERA Director to facilitate the development of a seismicity proposal that is more refined and targeted and takes into account the work Pangaea has already done.

NEXT MEETING

The next meeting of the NT Regional Research Advisory Committee is yet to be scheduled. It is anticipated that a meeting will occur once further proposals are established.

Damian Barrett adjourned the meeting at 12.10 pm (ACST).

Minutes submitted by: **Jizelle Khoury**

Minutes approved by: **Damian Barrett**