



Australia's National
Science Agency

GISERA | Gas Industry Social and Environmental Research Alliance

Progress report

Microbial communities and their ability to degrade
prospective chemicals used in coal seam gas activities



QGC



Santos



Australian Government
Department of Industry, Science,
Energy and Resources



Supported by
**Government of
South Australia**



Progress against project milestones

Progress against milestones/tasks are approved by the GISERA Director, acting with authority in accordance with the GISERA Alliance Agreement.

Progress against project milestones/tasks is indicated by two methods: Traffic light reports and descriptive Project schedule reports.

1. Traffic light reports in the Project Schedule Table below show progress using a simple colour code:

- **Green:**

- Milestone fully met according to schedule.
- Project is expected to continue to deliver according to plan.
- Milestone payment is approved.

- **Amber:**

- Milestone largely met according to schedule.
- Project has experienced delays or difficulties that will be overcome by next milestone, enabling project to return to delivery according to plan by next milestone.
- Milestone payment is withheld.
- Milestone payment withheld for second of two successive amber lights; project review initiated and undertaken by GISERA Director.

- **Red:**

- Milestone not met according to schedule.
- Problems in meeting milestone are likely to impact subsequent project delivery, such that revisions to project timing, scope or budget must be considered.
- Milestone payment is withheld.
- Project review initiated by GISERA Director.

2. Progress Schedule Reports outline task objectives and outputs and describe, in the 'progress report' section, the means and extent to which progress towards tasks has been made.

Project schedule table

TASK NUMBER	TASK DESCRIPTION	SCHEDULED START	SCHEDULED FINISH	COMMENT
1	Logistics, planning, bore and soil selection	Jul 2022	Sept 2022	This task will be complete end of November 2022
2	Literature review	Jul 2022	Aug 2022	This task will be complete end of November 2022
3	Sampling campaign	Oct 2022	Mar 2023	
4	Baselining microbial communities	Nov 2022	Jun 2023	
5	Microbial degradation and sole carbon growth trials	Nov 2022	Jun 2023	
6	Data analysis and project reporting	Nov 2022	Dec 2023	
7	Communicate findings to stakeholders	Jul 2022	Dec 2023	

Project schedule report

TASK 1: Logistics, planning, bore and soil selection

BACKGROUND

During Task 1 staff will work to establish the sampling sites for soil and water samples required for downstream activities. Chemicals to be tested in subsequent tasks will be determined in Task 1 via consultation with the TRG. Up to 25 chemicals will be tested with priority given to chemicals with the greatest environmental and stakeholder concern. All chemicals will be verified as being planned for use in the Narrabri region by Santos. Task 1 will also include the safe and environmentally sensitive planning, provisioning and logistics for the sampling campaign.

The study proposes to sample up to 48 soil samples and up to 48 surface and ground water samples, taking in agriculturally and ecologically important soils and waters of the region.

TASK OBJECTIVES

- 1) Establish water and soil sampling sites within the Narrabri region;
- 2) Conduct site selection and sampling campaign logistics;
- 3) Determination of chemicals of relevance for CSG production in the Narrabri region;
- 4) Preparation of sampling equipment/reagents;
- 5) Preparation for remote sampling fieldwork; and

- 6) Identification of any permits, permissions or consultation required for sampling.

TASK OUTPUTS AND SPECIFIC DELIVERABLES

A briefing document will be prepared for the sampling campaign describing the outcomes of task objectives 1-6.

PROGRESS REPORT

The logistics and planning for the sampling campaign is near completion with sampling equipment and reagents prepared. Requests for information from two key stakeholders have been made regarding suitable graziers and horticulturalists for sampling of soils and water. This has been done particularly to collect samples from non-government and non-industry-related sites. Some sites for soils have been selected and permission from relevant authorities is being sort. It is expected that the sampling campaign will be conducted in November.

TASK 2: Literature review

BACKGROUND

Task 2 will involve a detailed review of existing work being done on the geology, surface water and groundwater chemistry, and microbiology of the Narrabri region. Furthermore, microbial biodegradation of CSG-related chemicals will be reviewed in light of the relevance to the Narrabri region. A wide range of literature including publicly accessible reports, scientific journals and web-based resources will be used. Task 2 will also help inform Task 1. CSIRO Myall Vale will also be contacted to determine what, if any, unpublished data are available on the microbiology of these soils.

TASK OBJECTIVES

- 1) Review previous work as published in reports, journals, and web-based resources; and
- 2) Use this information to inform Task 1.

TASK OUTPUTS AND SPECIFIC DELIVERABLES

A written document that comprehensively reviews previous work will be prepared.

PROGRESS REPORT

This task will be complete end of November 2022

Variations to Project Order

Changes to research Project Orders are approved by the GISERA Director, acting with authority, in accordance with the GISERA Alliance Agreement. Any variations above the GISERA Director's delegation require the approval of the relevant GISERA Research Advisory Committee.

The table below details variations to research Project Order.

Register of changes to Research Project Order

DATE	ISSUE	ACTION	AUTHORISATION

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GISERA is a collaboration between CSIRO, Commonwealth and state governments and industry established to undertake publicly-reported independent research. The purpose of GISERA is to provide quality assured scientific research and information to communities living in gas development regions focusing on social and environmental topics including: groundwater and surface water, greenhouse gas emissions, biodiversity, land management, the marine environment, and socio-economic impacts. The governance structure for GISERA is designed to provide for and protect research independence and transparency of research.