



Australia's National
Science Agency

GISERA | Gas Industry Social and Environmental Research Alliance

Progress report

Environmental baseline characterisation of the springs in Hot Springs Valley, NT



Australian Government
Department of Industry,
Science and Resources



Supported by
Government of
South Australia



NORTHERN
TERRITORY
GOVERNMENT



QGC

Santos

tamboran



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	Stakeholder consultation, access and permission (landowners & TO)	01 Sept 2023	31 Jan 2025	Completed
2	Hydrogeological architecture/fluid flow path models	01 Sept 2023	06 June 2024	Completed
3	Field geology mapping & sampling	01 Jul 2024	31 July 2025	
4	GHG survey, analysis & interpretation	01 May 2024	30 Aug 2025	
5	Water Sampling, laboratory analysis and interpretation	01 May 2024	30 Aug 2025	
6	Terrestrial ecology survey, analysis & interpretation	01 May 2024	30 Aug 2025	
7	Data integration and conceptual model development	01 Sept 2024	30 Aug 2025	
8	Project reporting	01 Sept 2023	31 Oct 2025	
9	Communicate findings to stakeholders	01 Sept 2023	30 Nov 2025	

Project schedule report

TASK 1: Stakeholder consultation, access, and permission (landowners & TO)

BACKGROUND

The areas around the Hot Springs Valley has been under a pastoral lease ownership for the past four decades. Further, the area holds significant historical and cultural significance. Therefore, consultation with the relevant stakeholders is an important first step before the research work can commence. Engagement with the current pastoral lease owners to enable access to the areas to be studied is essential. The project team will also obtain any necessary permits or approvals from traditional owners and representative bodies (such as AAPA and the NLC). Communicating the goals and objectives of the research with community stakeholders is of high importance. Engagement with local Aboriginal communities will be undertaken where welcomed. This will enable some knowledge sharing and allow the project team to undertake their research in a culturally sensitive way. This will also assist CSIRO's understanding of the cultural and historical significance of the area, which will help to inform the environmental data collection and interpretation process.

TASK OBJECTIVES

The objectives of this task are

- Obtain relevant ethics approvals, if required,
- To gain necessary approvals, permits and certificates to access the Hot Springs Valley area and conduct the planned field activities from land holders and traditional owners; and,
- Engage with traditional owners to understand the cultural and historical significance of the Hot Springs Valley and to share information about the objectives of this project.

TASK OUTPUTS AND SPECIFIC DELIVERABLES:

- All necessary approvals, permits and certificates to access the study site and to complete the planned field work.
- An understanding of the traditional owners the Hot Springs Valley.

PROGRESS REPORT

This milestone is complete.

We engaged with the Northern Land Council (NLC) from the start of the project. NLC officers consulted with and engaged broadly with the indigenous community associated with the Hot Springs Valley (HSV) to obtain approval for accessing the area. Prior to the commencement of the field work, two NLC officers managed and facilitated a 2-day site visit and meeting between CSIRO researchers and six traditional owners at the HSV. Approval was granted by the four elders prior to commencement of the field work. The extensive field campaign was conducted from 19-30 August 2024 after Welcome to Country were performed at the sites.

TASK 2: Hydrogeological architecture/conceptual fluid flow paths model

BACKGROUND

The Hot Spring Valley is located along the northern part of the major fault systems of the OT Downs fault zone that is bounding the northern part of the eastern Beetaloo Sub-basin. These regional fault systems are likely to have accommodated episodes of fluid flow as old as 1645-1640 My and are targeted for mineral exploration as potential fluid pathways for ascending metalliferous brines.

They are likely to have been reactivated through the more recent tectonic history of the region with current hot springs such as Lagoon Creek springs and Beauty Creek springs (Frery et al., 2022). There are existing geological, geophysical and hydrogeological data that can be compiled and interpreted in a desktop study to develop conceptual models that allow for targeted field data collection. There is existing knowledge with Northern Territory Government about the Hot Springs Valley.

TASK OBJECTIVES

Conduct a desktop study to develop more comprehensive hydrogeological architecture/fluid flow path models integrating existing geological, geophysical, satellite remote sensing & other associated relevant data as to define the field work zones of interest. This task will also involve

compilation of all existing Hot Springs Valley data (e.g., hydrogeology and hydrochemistry) and engagement with Northern Territory Government staff to capture as much existing information as possible.

TASK OUTPUTS AND SPECIFIC DELIVERABLES

- Compiled dataset and hydrogeological architecture/fluid flow path conceptual model for the springs of the Hot Spring Valley.
- Field work plan for additional data collection.

PROGRESS REPORT

This milestone is complete, the compilation of the datasets has been completed and the field work plan for additional data collection has been made, with fieldwork scheduled to start on 10 August 2024 for 7-10 days.

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
19/10/2024	Delays in obtaining necessary approvals, permits and certificates to access the Hot Springs Valley and conduct field campaign.	Milestone 3 extended from 31 May 2025 to 31 July 2025. Milestones 4-7 extended from 31 March 2025 to 30 August 2025. Milestone 8 extended from 31 May 2025 to 31 October 2025 Milestone 9 extended from 30 June 2025 to 30 November 2025.	
25/02/2025	Field trip contingent with researchers, NTG and TOs was significantly larger than anticipated during proposal development. Additional funds required for base camp, catering and mobilisation costs for the field campaign conducted in August 2024.	An additional \$38,520 allocated to overall budget.	

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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.