

## Media release

Monday 23 September 2019

### CSIRO's GISERA completes baseline studies in Northern Territory's Beetaloo Sub-basin

The CSIRO'S Gas Industry Social and Environmental Research Alliance ([GISERA](#)) has completed detailed studies in the Northern Territory's Beetaloo Sub-basin providing baseline data on background methane levels and groundwater characteristics.

The Beetaloo Sub-basin lies south-east of Katherine, spanning an area of about 30,000 square kilometres, and contains an estimated prospective resource of 178,200 petajoules (PJ) of shale gas.

These studies address community concerns about fugitive methane emissions and potential groundwater impacts by providing detailed information about methane and groundwater before development occurs.

These studies also fulfil recommendations 7.8 and 9.3 of the Northern Territory Government's 2018 final report of the *Scientific Inquiry into Hydraulic Fracturing in the Northern Territory* for the Beetaloo Sub-basin.

GISERA Director Dr Damian Barrett said the science would inform appropriate policy and resource management decisions by the Northern Territory Government in relation to proposed shale gas exploration activities.

"The results of these baseline studies into background methane levels and groundwater characteristics are important because the Northern Territory is one of the few places in the world where these baselines can be developed before virtually any natural gas exploration or development has occurred," Dr Barrett said.

"In particular, the groundwater study has helped improve understanding of the recharge mechanism of the Cambrian Limestone Aquifer in onshore gas exploration permit areas."

CSIRO researchers travelled more than 15,000 kilometres over 29 days during the 2018 dry and fire seasons and the 2019 wet season using specially-equipped vehicles to measure various sources of methane emissions.

Average atmospheric methane concentration across the survey area ranged from 1.80 to 1.82 parts per million – equivalent to the background concentration of approximately 1.80 ppm expected in rural or natural areas.

Each survey observed isolated sources of slightly elevated methane concentrations in some areas; these were identified as grazing cattle, townships, fires, termites, wetlands and a small section of above-ground pipeline. No elevated methane concentrations were detected at petroleum wells and water bores.

Groundwater baseline measurements focussed on the regionally important Cambrian Limestone Aquifer and sampled groundwater from 25 water bores. Geochemical analysis revealed groundwater is suitable for irrigation and livestock purposes, and that concentrations of metals and hydrocarbon compounds are within Australian Drinking Water Guidelines (2017).

These studies were approved through GISERA's Northern Territory Regional Research Advisory Committee in which community members have majority control.

## Media release

GISERA is a collaboration between CSIRO, Commonwealth and state governments and industry established to undertake publicly-reported independent research.

The purpose of GISERA is for CSIRO to provide quality assured scientific research and information to communities living in gas development regions focusing on social and environmental topics.

The governance structure for GISERA is designed to provide for and protect research independence and transparency of research outputs.

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### Links

GISERA baseline studies:

[Baseline measurement and monitoring of methane emissions in the Beetaloo Sub-basin, NT](#)

[Baseline monitoring of groundwater properties in the Beetaloo Sub-basin, NT](#)

Fact sheets:

[Methane emissions in the Northern Territory's Beetaloo Sub-basin](#)

[Groundwater characteristics in the Beetaloo Sub-basin](#)