2 May 2024

Committee Secretary
Senate Standing Committees on Environment and Communications
PO Box 6100
Parliament House
Canberra ACT 2600

Via email: ec.sen@aph.gov.au

To – Committee Secretary

Re: Glencore's proposed carbon capture and storage project within the Great Artesian Basin

The Queensland Water Directorate (***qldwater***) is the central advisory and advocacy body, working with our members to provide safe, secure and sustainable urban water to Queensland communities. In providing these essential services, the urban water sector owns and operates sewer lines, water and wastewater treatment plants, pumping stations, reservoirs, and a range of other critical water technologies/infrastructure including ground water supply bores.

There are 370 water supply schemes and 265 sewage schemes across Queensland. Our members currently service 1,916,519 sewerage connections and 2,117,663 drinking water. These numbers are set to substantially increase with the current and projected population growth.

The Queensland sector is comprised of 75 service providers, directly employing nearly 7,000 people. Of the 75 publicly owned water service providers, 66 are local councils outside of SEQ.

qldwater members include all 69 council water service providers, the council owned statutory authorities in south-east Queensland and the two state-government owned corporations.

Current CCS Project
qldwater understands that the CTSCo Project is seeking to conduct greenhouse gas (GHG) (predominately carbon dioxide) storage injection testing and would be located approximately 44 kilometres (km) south-west of Moonie, Queensland. The project covers a disturbance area of approximately 13.6 hectares of 1,079 hectares of operational lands within GHG exploration tenement EPQ10.

The project will involve injection testing of up to 110,000 tonnes of GHG stream (CO_2) per year for up to three (3) years, totalling 330,000 tonnes. The project will include transport of the GHG stream by truck along 260km of existing local and State controlled roads from Millmerran Power Station to the site, approximately 640m of road improvements to Harts Road, a Transportation Facility, 9.5km of flowline, an injection well and associated monitoring infrastructure. The project's expected life is seven (7) years, including construction, operation, monitoring, and rehabilitation.

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an initiative of
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Local Government Association of Queensland
Local Government Managers Australia
Australian Water Association

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Importance of the GAB to Urban Water

In Queensland, the GAB supplies drinking water for more than 35 towns including Aramac, Barcaldine and Muttaburra as well as Birdsville, Bedourie, Boulia, Winton and Windorah in the wider RAPAD region.

The Basin also holds significant cultural value to traditional owners as well as supporting a range of unique and highly biodiverse environmental values through springs and other ecosystems as well as providing habitat to endangered species.

Specific Concerns

- The injection of CO_2 into the GAB will change the acidity (pH) of groundwater within the GAB.
- The EIS does acknowledge that this change to groundwater acidity will dissolve the aquifer rock, resulting in the release and mobilisation of heavy metals at concentrations substantially exceeding the human drinking water guidelines.
- Modelling contained in a University of Queensland report attached in section 9C of the EIS presents the threat. The site of the proposed CO_2 injection currently has a pH level of 8.35 with zero parts per billion (ppb) of arsenic, cadmium or lead detected.
- The University of Queensland's '*ANLEC Project 7-0320-C323 Final Report: South Surat Metal mobilisation and fate of heavy metals released*' report suggests that following the injection of CO_2 the pH level will drop to 4, and levels of arsenic, cadmium and lead will rise to 500 ppb, 160 ppb and 1000 ppb respectively.
- The Australian Drinking Water Guidelines recommend no greater than 10 ppb of arsenic, 2 ppb of cadmium and 10 ppb of lead in water for human consumption.
- The International Agency for Research on Cancer (IARC) has shown sufficient evidence that arsenic is cancerous, and notes that long term cadmium exposure causes kidney dysfunction and is probably carcinogenic.

Case Study

The Southwest Queensland Water and Sewerage Alliance (SWQWSA) was established as a Queensland Water Regional Alliance Program (QWRAP[1]) Region in 2021, comprising the Shire Councils of Balonne, Bulloo, Murweh, Paroo and Quilpie and Maranoa Regional Council.

The SWQWSA Councils cover a total land area of 319,261 square kilometres or 18.5 per cent of Queensland, but their combined population of approximately 24,000 accounts for less than 0.5 per cent of the State. The Councils provide potable water services to 26 communities with a total of 10,545 connections, non-potable water services comprising 1,157 connections to two communities, and one of which does not receive a potable supply.

The LGAs within the SWQWSA mostly rely on the Great Artesian Basin (GAB) for drinking water from bores at an average depth of 800 metres. GAB bores have an expected asset life of 75 years.

[1] QWRAP is an industry-led initiative to investigate regional collaboration on water and sewerage services in regional Queensland. The program is a collaboration among the LGAQ, ***qldwater***, the Queensland Government, through the Department of Regional Development, Manufacturing and Water.

During 2021, using QWRAP Bid Pool Funds, the SWQWSA developed a detailed application and successfully secured $1.6 million in funding from the Queensland Government's Building Our Regions 6 (BOR 6) funding round. The BOR 6 funding was used to undertake detailed asset management planning across all water and sewage asset categories. That includes Drinking Water Testing & Assessment of Water Quality, Bore Assessments, Reservoir Inspection & Assessment and Sewer Pump Station Inspection & Assessment.

Key risks and issues that have been identified through the SWQWSA asset management plan include:

- 11 per cent of drinking water supply bores (utilising the GAB) in the region are over 100 years old and at critical risk of failure.
- 20 per cent of drinking water supply bores in the region are more than 80 years old and are at serious risk of failure.
- Several of these towns have a single bore supply from the GAB, placing them at higher risk of water supply failure.

Any changes to the conditions of the GAB supplied water (temperature, pressure, chemistry for example) have the potential to cause imminent failure or increased rate of failure to these age-sensitive assets. For these communities there is no alternative (for example, road transport of potable water) for the provision of drinking water. It is totally unacceptable to jeopardise the drinking water supply of any community.

Given the concerns raised to date and the lack of definitive data and evidence from the CCS project proponent, ***qldwater*** asks the Committee to pay regard to the precautionary principle in this case and place an immediate moratorium on all CCS activities anywhere in the GAB.

To summarise:

- The Queensland Water Directorate does not support any carbon capture and storage (CCS) project seeking to inject liquified carbon dioxide into a water producing aquifer within the Great Artesian Basin (GAB).
- The Committee must reject the CTSCo proposal and implement policy parameters to prevent any future CSS incursions into environmental assets such as the GAB.
- The Queensland Water Directorate does not support any activities that will knowingly change the water quality of the GAB or endanger drinking water supply to any Queensland community.

Please do not hesitate to contact me if you have any questions or require any further information.

Yours sincerely

Dr Georgina Davis
Chief Executive Officer
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