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2 May 2024

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

BY EMAIL.

Dear Sir/Madam

RE: GLENCORE'S PROPOSED CARBON CAPTURE AND STORAGE PROJECT

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I refer to the carbon capture and storage project in the Surat Basin proposed by Carbon Transport and Storage Corporation Pty Ltd (CTSCo) as a subsidiary of Glencore. I wish to make a submission to the senate inquiry into the project.

Please find attached;
(a). Our submission to the Senate Inquiry.
(b). Supporting technical information by way of our Submission on CTSCo's EIS to the Dep't of Environment and Science (QLD Gov't).
(c). Letter from OGIA to DES (QLD Gov't).
(d). Letter from CSIRO to DES (QLD Gov't).

Please confirm receipt of this submission with confirmation that it meets the criteria for a properly made submission as it pertains to the senate inquiry.

Yours Faithfully

Kenneth Cameron (Director Cameron Pastoral Co Group)

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Background
The Cameron family have been farming on 'Lundavra' and the surrounding region since the early 1900s when it was established by my grandfather Kenneth Beauchamp Cameron. For many years it was operated as a mixed enterprise (cattle grazing and dryland farming) until the first piggery was established by me in 1983. My brother, John Cameron, and I both reside on 'Lundavra' or adjoining property.

Since 1983, the Cameron Pastoral Company (CPC) piggeries (now SP Northern Farming Operations) on 'Lundavra' have grown to a capacity of approximately 80,000 standard pig units (SPU). A total of 131,000 SPU is approved for the three existing units and a development application for an expansion to 236,000 SPU is expected to be approved by Goondiwindi Regional Council in May 2024. The future diversification of CPC interest includes a potential large-scale feedlot on 'Parkhurst' near the Moonie Highway. Initial feasibility assessments and pre-lodgement discussions with Western Downs Regional Council have identified that a capacity of at least 30,000 standard cattle units (SCU) is possible on this site (subject to council and state approvals).

The Cameron family business is currently undergoing succession planning and transition to the next generation of the family. The abovementioned piggery expansion and feedlot underpin the future generations of the Cameron family. Additionally, based on advice from expert consultants, the site holds the greatest potential for diversified intensive livestock growth in the country. It is potentially unique in Australian agriculture to find a property under single

ownership with the physical and logistical characteristics of 'Lundavra' and surrounding properties.
All future development is underpinned by multiple groundwater allocations, with 295ML/year currently linked to the Precipice Sandstone, and a proposal for a conversion of an additional existing entitlement of 440ML/year presently accessible from the Hutton Sandstone to also be accessed from the Precipice Sandstone being currently considered by the Office of Groundwater Impact Assessment and the Department of Regional Development, Manufacturing and Water. Without this water, the future of CPC, the Cameron family and the Queensland pork and feedlot sectors are limited.

Groundwater Concerns

The attached document provides a detailed summary of the technical issues and failings of the EIS and proposed project. This document has been prepared with the assistance of hydrogeologist Ned Hamer, who has over 25 years of experience in hydrogeological modelling for water supply as well as environmental impact assessment and monitoring programs for mining, oil and gas, agriculture, and other industries.
The attached document has been summarised below to address the specific terms of reference for this inquiry.

(a) the environmental impact assessment process and the adequacy of the project's approval by federal and state regulatory bodies, including the decision not to classify the project as a controlled action under national environment law;

The GAB is one of the most significant natural resources in Australia and underpins the productivity and liveability of numerous rural towns and businesses including farmers.

With reference to the following advice from the OGIA to the State referral agency namely the Department of Environment and Science **(Refer to attachment "OGIA to DES")** - it is apparent there are many issues not addressed in the EIS;

"Key additional assessments suggested by OGIA in the attached advice include:
- *an uncertainty analysis to improve confidence in the extent and migration of the plume*
- *scenario testing to assess potential remobilisation of the plume in response to changes in groundwater pressure around the injection site from the exercise of existing entitlements, release of unallocated water and future closure of the Moonie oil field*
- *additional monitoring in the Hutton Sandstone and the Precipice Sandstone*
- *further details on the effectiveness of the seismic monitoring*
- *a firmer commitment to remediation actions beyond monitoring, such as the pump out of injected CO2 and the consequences of any accidental leakage into a water supply Bore".*

Further to this please refer to the attachment **"CSIRO to DES Surat Final Report"** again it is apparent that the CTSCO EIS is manifestly deficient in technical content;

"A key weakness of the EIS is that risks are not identified and presented in a structured way. It is recommended that a systematic risk assessment is used to connect identified hazards with potential impacts and the monitoring techniques needed to detect these potential impacts. The review identified major concerns related to the assessment of exposure pathways for potential impacts due to 'water extraction in the Hutton or Precipice Sandstones close to West Moonie-

1 Injection Well'. It is recommended that the assumptions and range of parameter combinations used for particle tracking modelling be revised to rule out potential impacts beyond the modelled plume that considers all possible water resource development scenarios. Additional recommendations include:

1 Groundwater and geological assessments

- *Address uncertainties due to limited baseline data using alternative conceptual (and numerical)*
models to explain groundwater salinities, connectivity pathways, and flow velocity estimates.

- *Additional details to support the adopted 3D geological (static) model, reservoir models, and numerical groundwater models better to characterise geological structures.*

2 Numerical groundwater modelling

- *Broaden the parameter uncertainty analysis to better define likely bounds of the dissolved CO2*
plume extent in the case of a new groundwater extraction well in the Precipice Sandstone aquifer.

- *Re-evaluate the influence of thermal changes to clearly recognize potential impacts near the GHG*
injection well on geomechanical stresses.

3 Exposure pathway assessment

- *Additional interpretation of new 3D seismic survey and collection of passive seismic monitoring is recommended to update knowledge of local faults in the geological structural model.*

4 Human use assets

- *Systematic assessment of the 6 Environmental Values related to human use using conservative modelling approaches considering all possible water resource development scenarios.*

5 Monitoring, mitigation, and remedial measures

- *Evaluate and present in a structured way the logic used to select monitoring technologies, detailing the logic and sensitivity behind selected monitoring technologies.*

- *Examine probability distributions for hazards, encompassing best and worst-case scenarios, and transparently document the logic used to set hydrochemical and water quality trigger values"*

(b) the potential risks and impacts of the project on the groundwater quality within the Great Artesian Basin, especially concerning the findings related to the dification of groundwater and mobilisation of heavy metals such as lead and arsenic;

Refer to attached "Glencore EIS Submission"

(c) the scientific basis and transparency of the data supporting the project's safety claims, including the robustness of fieldwork, data, and analysis presented by CTSCo and critiques by independent hydrogeologists and aqueous geochemists;

Refer to attached "Glencore EIS Submission"

The EIS relies on support being given by the Independent Expert Scientific Committee on Coal Seam Gas and Large Coal Mining Development (IESC) in their review of the EIS, which occurred in February 2023. This was at a time where the water quality within the Precipice Sandstone was incorrectly being described as saline and unsuitable for human or stock use. This is clearly no longer the case and this information may have influenced the decision makers in favour of the approval being granted.

The IESC response to Question one around the adequacy of the information provided is the following:

"The groundwater assessment is constrained by limited site-specific data and requires further information to characterise the duration, extent and magnitude of predicted impacts and improve the hydrogeological characterisation and conceptualisation (Paragraphs 2 and 3). There is particular uncertainty about groundwater quality, and a more robust spatial baseline data set is needed (Paragraph 4). The groundwater modelling is not fully documented and could explore a wider range of possibilities, particularly when more data (e.g., from the 3D seismic survey) are available (Paragraph 3)."

Contradicting CTSCo's statements, the above response from the IESC does not support the assessments that have been completed as part of the EIS. It states that there is inadequate information to complete a thorough assessment. It is heavily reliant on the seismic survey, which CTSCo are only proposing to complete following approval.
The original EIS for the project only identified a single monitoring well approximately 500 m from the injection well.

(d) the potential socioeconomic impacts on agriculture and regional communities, relying on the Great Artesian Basin for water, including an assessment of the project's impact on existing and future water use rights;

The future of agriculture is highly dependent on secure and reliable water supply. In the Murray Darling Basin, and particularly southern Queensland catchments, surface water supplies are inadequate to allow for investment into the growth of livestock businesses. Shallower aquifers of the Great Artesian Basin are already at capacity. As such, the Precipice Sandstone provides the only reliable source of water for the planned growth of livestock industries in Southern Queensland.

The planned expansion of the SP Northern piggery operations to 236,000 SPU is heavily reliant on water supply from the proposed bore 10 km from the CTSCo injection site. The proposed CTSCo project is enough of a risk that the plans for this expansion will be put on hold until more is understood. The proposed piggery would be the largest piggery in Queensland, potentially Australia. It forms the key part of the growth of the related Sunpork business, which is the largest pork producer in Australia. Sunpork produces almost 90,000 tonnes of pork per annum and employs 1550 people across the country.

The opportunity for a feedlot will not progress if the CTSCo project is approved. As per a 2018 Meat and Livestock Australia report, a 30,000 standard cattle unit (SCU) feedlot contributes $27 million to the local economy and over $60 million to the state economy. Given the age of this report, it is likely that current contributions are much larger.

(e) the consultation processes undertaken with stakeholders, including farmers, Indigenous landholders, environmental groups, and the broader public, and the adequacy of these processes in addressing stakeholder concerns;

Much of following information was submitted to the EIS coordinator as part of the assessment by the Department of Environment, Science and Innovation. Since this information was submitted, CTSCo representatives have again met with key stakeholders. However, they have since removed particular comments within the EIS, over which concerns were raised.

Of particular note is the following phrase that was included in the earlier versions of the draft: *"Given the potential impacts associated with water quality within the predicted plume, and community concerns from users of water from the Precipice Sandstone aquifer, in close consultation with Department of Resources, CTSCo made the decision to cease activities in EPQ7, with EPQ7 fully relinquished in 2019."*

During the more recent stakeholder engagement, it was identified that the impacts to water quality and community concerns around the current project (EPQ10) now meet or exceed those from the first project in EPQ7. A statement was made by CTSCo representatives during the abovementioned meeting indicating they had never made such statements. These statements have now been removed from the EIS.

During consultation meetings in January 2023, CTSCo stated that they were already aware of nearby landholders with large water allocations associate with the Precipice Sandstone. However, it was not until I initiated engagement that they provided information. As a close neighbour with an existing allocation associated with the target aquifer, I should have been engaged as part of the development of the draft terms of reference, before the draft EIS was completed.

Following this meeting, questions were asked by my consultants based on the information provided by CTSCo. These questions were not answered.
In particular, it was asked if carbon capture and storage had ever occurred in an aquifer already used for water supply. This question was asked again in the most recent meeting and CTSCo representatives avoided answering it.

CTSCo have provided false or misleading information through the preparation of the EIS and stakeholder engagement, including statements that:

- The water in the precipice was saline and unsuitable for stock or human consumption. This has been proven false;
- The depth of the aquifer makes it unviable for agricultural users. This is false as there was an existing Precipice Sandstone bore drilled to a similar depth prior to the completion of the draft EIS;
- CCS is not new or unproven technology. This is misleading. The concept of injecting CO2 into underground reservoirs has been occurring for decades. However, globally there is no other project that proposes the injection of CO2 into an aquifer already utilised for water supply.
- A failure to approve this project will stop CCS occurring in Queensland. This is misleading. The current state legislation requires no adverse impacts to the environmental values (e.g. use for agriculture) of the receiving groundwaters. However, if there are aquifers where the groundwater has no current or possible use or value, CCS should be appropriate. This could include former gas or oil reservoirs or highly saline aquifers. Highly saline aquifers would not be viable to treat using reverse osmosis (RO) technology.
- The water in the precipice Sandstone is not suitable for human consumption. This is misleading as all raw water is treated prior to human consumption. Simple RO technology is already implemented for drinking water treatment and would allow this water to be used for human consumption. Recycled wastewater is suitable for human consumption following appropriate treatment.
- The closest water bores that extract water from the same sandstone are more than 30Km away. This is misleading. Our water licences into this aquifer are attached to lands within 10Km of the injection site.

The failure of CTSCo to appropriately respond to the questions raised during engagement shows that CTSCo are not willing to achieve the objectives of their community consultation, which are described in Section 8 of the EIS executive summary and Section 3.2 of the EIS.

(f) the potential precedent set by allowing CCS projects within the Great Artesian Basin and its implications for future projects, considering Australia's strategic interests in preserving its largest groundwater system;

The CTSCo proposal is clearly stated as a trial for a much larger project. The CTSCo EIS states the target aquifer has a potential storage capacity for 730 Billion Litres of CO2. If the trial is approved, it is unlikely that an expansion of the injection rate and timeframe would be refused. However, the true outcome of the trial will only be understood in decades or centuries to come and by then it will be too late. Further, CTSCo has stated that they are unable to remove all of the CO2 should something go wrong. Essentially, there is no way to reverse the damage that may be caused by this project. The justification that the water in the Precipice Sandstone is unsuitable for human consumption (without treatment) and potentially suitable for stock use, could be applied to many aquifers within the GAB.

(g) the role of CCS technology in Australia's broader climate change mitigation strategy, including an evaluation of its efficacy, risks and alternatives;

CCS is likely to form a substantial part of offsetting carbon emissions from industries with no viable alternate but to emit carbon emissions to provide crucial resources and materials for infrastructure. However, offsetting carbon emissions from the burning of coal for energy production has clear and viable alternatives in renewable energy. In fact, the transition to renewable energy in South Australia has also resulted in a reduction to the wholesale electricity prices. The idea of 'clean' coal is a myth and the CTSCo project is the last option Glencore has to offset their carbon emissions from burning coal. They have no other permit areas and no ability to offset the huge carbon emissions from their business without this project. The future of their business depends on this one project being approved, and with a business the size of Glencore, that is alarming.

Whilst CCS has been successfully utilised across the world, many of the current or former projects have failed to achieve their goals. Further, most CCS projects are used to increase underground pressure to allow for greater extraction of gas and oil. There is no other project in the world that has suggested the injection of CO2 into a water supply aquifer. Most projects have implemented monitoring to ensure that leaking from the target reservoir into overlying water supply aquifers does not occur.

The recent federal media and political attention over the injection of CO2 into reservoirs below the ocean makes that concept look like a reasonable alternative to injection into the GAB. The target aquifers being discussed for those projects are highly saline and completely unsuitable for alternative use.

The Federal Resources Minister Madeline King is on record as saying there are 10 potential storage sites across 7 different oil and gas basins – why place the GAB in jeopardy as a storage site when there are largely depleted oil & gas basins that have successfully stored hydrocarbons for millennia?

Kevin Gallagher the Santos CEO is quoted as saying "The technology exists and is increasingly cost competitive to capture large scale industrial carbon dioxide sources and transport the CO2 long distances by ship and pipeline to locations such as Moomba".

Clearly there are many and better alternatives for CCS than to destroy the iconic GAB.

Yours sincerely,

Kenneth Cameron
Director / ~~M~~anaging Director

Cameron Pastoral Group of Companies

Attachments:

- Glencore CTSCO EIS Submission (Technical Notes)
- Letter of Advice from CSIRO to DES
- Letter of Advice from OGIA to DES