



Consultation by the Minister

Gold Hydrogen

Ramsay Wells Groundwater ReInjection



Department for Energy and Mining

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Acknowledgement of Country

As guests here on Kurna land, we acknowledge everything this department does impacts on Aboriginal country, the sea, the sky, its people and their spiritual and cultural connection which have existed since the first sunrise. Our responsibility is to share our collective knowledge, recognise a difficult history, respect the relationships made over time, and create a stronger future. We are ready to walk, learn and work together.

Date:	Comment:
31-Aug-2026	First published



Public consultation – Act requirements

Under section 105A of the *Energy Resources Act 2000* (the Act), the Minister must undertake public consultation on an environmental impact report (EIR), statement of environmental objectives (SEO). Regulation 14 of the *Energy Resources Regulations 2013* (the Regulations), set out the requirements for public consultation.

This report has been developed pursuant to regulation 14(6), which requires that copies of written submissions and responses made during the consultation by the Minister be available for inspection on the register. Note that, under regulation 14(5) the Minister may refuse to publish submissions made on grounds that the submissions are irrelevant, offensive, or on any other grounds the Minister thinks fit.

Submissions received during the public consultation and referral period and the proponent's responses are reported below in Appendix A and B.

Public consultation – Groundwater Reinjection for Exploration Well Testing of Ramsay Project Wells PEL 687 Yorke Peninsula

In accordance with the Act and Regulations, the **Gold Hydrogen Pty Ltd: Groundwater Reinjection for Exploration Well Testing of Ramsay Project Wells PEL 687 Yorke Peninsula Environmental Impact Report (EIR)** and **Statement of Environmental Objectives (SEO)** were published for public consultation, meeting the minimum of 30 business day requirement, between 14 February 2026 and 27 March 2026.

Pursuant to regulation 14(2), a notice was published specifying a place at which a copy of the relevant report and statement could be obtained and invited written submissions in relation to these reports. The notice was published in The Advertiser (14 February 2026) and the Yorke Peninsula Country Times (17 February 2026).

In accordance with regulation 14(7), the Department for Energy and Mining, on behalf of the Minister, deem the licensee (Gold Hydrogen Pty Ltd) to have satisfactorily addressed all submissions received and where relevant, amended the EIR and SEO to take into account these submissions.

Responses to these submissions by the proponent have been extracted from the EIR and provided in Appendix B of this report. The full versions of the EIR and SEO are available on the Energy Resources [Environmental Register](#).



Appendix A – Submissions received

Document: Comments Register - Public Consultation Rev 4.
Project: EIR & SEO
Application: Ramsay Project Exploration Well Testing – Groundwater Reinjection
Applicant: Gold Hydrogen Pty Ltd
Consultation Period: START 14-Feb-26 END 27-Mar-26
Submission date: 9-Feb-26
Revision date: Rev2(22JAN2026)



LICENSEE RECORD						
Consultee	Consultation Process	Comments Received	Date Received	Application ID	EIR/SEO	DEM Comment
AAR	Government	Yes	27-Mar-26	N/A	EIR/SEO	Email: Joanne Fleer 16:08
DIT	Government	No				
DEW Mining	Government	Yes	20-Mar-26	N/A	EIR/SEO	Email: Christina Fawns 11:27 (inc. attachment)
DHUD	Government	Yes	5-Mar-26	N/A	EIR/SEO	Email: Laura Kerber 09:02
PIRSA	Government	Yes	20-Mar-26	N/A	EIR/SEO	Email: Anna Blades 09:48
EPA	Government	No				
NY Landscape Board	Government	No				
DEM	Government	Yes	31-Mar-26	Engineering	EIR/SEO	Attached to the Public Consultation Record
Colleen Boyanton	iApply	Yes	25-Mar-26	23208686	EIR/SEO	iApply Submission email
Peter Parsons	iApply	Yes	1-Mar-26	23062500	EIR/SEO	iApply Submission email
S&T Slater	DEM inbox	Yes	24-Mar-26	N/A	EIR/SEO	Email: STSlater 11:13
Narungga Nation Aboriginal Corporation RNTBC (NNAC)	DEM inbox	Yes	24-Apr-26	N/A	EIR/SEO	DEM approved an extension to COB 24 April 2026.

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Comment #	Document (version)	Topic/Section	Page(s)	Rev2 - DEM (Eng/Env)			
				DEM Comment/requirement	Action required	Proponent/Consultant Response	New Page(s)
1	EIR	Environmental Impact Assessment (EIA)	-	Views of affected parties left blank in EIA Tables. Primarily these are views derived from the GHY stakeholder engagement, which is then supplemented with GHY views and finally any additional views canvassed from public consultation. The relevant sections and tables of the EIA require updating.	Update Required		
2	EIR	General	-	The current documentation acknowledges uncertainty exists on the proposed injection fluid path from a subsurface perspective. The DTS/DAS and/or other subsurface monitoring is considered a critical control, particularly in early stages of proposed injection, to demonstrate acceptance of fluid into the expected zone and establishing a performance baseline, however it is not clear whether this system is functional. How does Gold Hydrogen propose to define and verify critical controls ahead of injectivity, together with a defined response plan, in the event injectivity deviates from the base case?	Provide Additional Information		
3	EIR	General	-	The conclusion drawn on no/low environmental value on the receiving groundwater compares analytes from Ramsay 2 against EPA WQ Policy and ANZECC/ARMCANZ 2000 guidelines. A series of samples are presented in Appendix A, with summation of results across the entire Ramsay 2 profile. To further support the conclusion being presented, it would be beneficial to: a. Present the comparison of analytes against the guidelines at the zone that is expected to receive the produced water, noting it is yet unclear exactly where the disposed fluid will flow over the entire OH section at Ramsay 1, however the salinity profile indicates a notable change in profile between Zone 3 and Zone 5. b. Compare against analytes from local groundwater users (potential receptors) in the region to form an appropriate baseline and support the concentration of the analytes from the users bores fall within the guidelines, in addition to confirming no impacts from landholder use of this resource.	Provide Additional Information		
4	EIR	General	-	Initial injectivity testing has been proposed and performed to improve understanding of the well's operating envelope and ability to accept fluids. If this activity has increased confidence of subsurface flow pathways (and receiving formations) it would be beneficial to include some information in the EIR/SEO, else if uncertainty remains, and recognising the injected water quality has the potential to significantly differ from the receiving environment during testing activities, has Gold Hydrogen considered additional water quality testing and treatment ahead of reinjection to reduce the likelihood of impacts until a higher level of confidence in the injectivity performance and pathway of fluids is obtained?	Provide Additional Information		

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Rev1 - DEM (Env)							
Comment #	Document (version)	Topic/Section	Page(s)	DEM Comment/requirement	Action required	Proponent/Consultant Response	New Page(s)
1	Rev 2	Table 2-1 Objective 1	8	The assessment criteria for Objective 1 should refer to a groundwater monitoring plan approved for use by DEM.	Update Required		

11/03/2026

Documents:

Version: Rev1

Document Date: February 2026

General Comments

Comment No	Reference	Science Comment (to identify relevant section / paragraph and consider required actions)	Gold Hydrogen Pty Ltd Response	Addressed (Y/N)
1	EIR Summary EIR 3.3.2, pg 21 EIR 5.2.2 pg 35 EIR 5.2.2, Pg. 36/ App. 1, Pg. 7 EIR 5.2.4, Pg 38	<i>Reinjected groundwater is expected to preferentially flow into a high hydraulic conductivity zone that is present at approximately 316 m depth.</i> <i>...and particularly from the high hydraulic conductivity zone at 316 m where reinjected groundwater is expected to preferentially flow).</i> <i>The low permeability throughout the profile also means that any potentiometric head increases from reinjection will not impact the shallow water table aquifers.</i> <i>It is expected that injected groundwater will preferentially flow into a high hydraulic conductivity zone that is present in the Parara Limestone at approximately 316 m depth, as this zone will have the least resistance to flow and higher capacity to accept groundwater.</i> <i>This is referred to as the ‘high hydraulic conductivity zone’ throughout this document and as noted in Section 3.3.2, it is expected that reinjection will result in preferential flow into this zone.</i> <i>Whilst there are some faults mapped in the area their ability to provide hydraulic connection between deeper strata and shallow aquifers is currently unknown.</i>	The hydrological risk assessment report has been updated to address conceptual hydrogeology and strike and dip orientations (refer Appendix A p.1 Introduction).	Partially addressed. This has been sufficiently outlined in the hydrogeological risk assessment, however, the provided description regarding zone conformation, radial flow and migration, and other points as suggested in previous DEW feedback, could be further alluded to and applied in the EIR overall.

Comment No	Reference	Science Comment (to identify relevant section / paragraph and consider required actions)	Gold Hydrogen Pty Ltd Response	Addressed (Y/N)
		<i>The vertical distance and the low permeability of the intervening formations means that all groundwater users have significant vertical disconnection from the formations in contact with reinjected groundwater (and particularly from the high hydraulic conductivity zone at 316 m where reinjected groundwater is expected to preferentially flow).</i> DEW implies from information provided that the groundwater bearing unit in question could be either described as dual porosity or dominated by secondary porosity and permeability and consequently the equivalent of a Fractured Rock Aquifer. Fractured Rock Aquifers may be characterised with high hydraulic conductivity associated with the fractures, low storage and asymmetric preferential flow. The description of the fate of reinjected waters with respect to the hydrogeological conceptualisation could be clarified; whilst reinjected water is anticipated to flow into high K zones at 316m depth, is there any information concerning the strike and dip orientations of this “high hydraulic conductivity zone” beyond its occurrence at 316m depth in Ramsay 1? Does this zone conform with bedding or an understood fault orientation? Does this zone have the potential to become shallower at distance from Ramsay 1? Further, is migratory fate after migration into the high conductivity zone expected to conform to a more low-permeability-porous media conceptualisation, with slow migration and radial flow away from the fracture zone? DEW notes and agrees with the proponent’s acknowledgement that the potential for faulting to provide hydraulic connectivity between shallow and deeper parts of the strata remains a key unknown.		

Comment No	Reference	Science Comment (to identify relevant section / paragraph and consider required actions)	Gold Hydrogen Pty Ltd Response	Addressed (Y/N)
2	EIR 5.2.3 pg 39, App. 1, Pg 9 EIR 3.3.5, Pg. 22 EIR Table 5.10, Pg 42	<i>Any biocide in the reinjected groundwater is expected to degrade naturally and be diluted through dispersion in the aquifer, thus presenting a very low risk to the groundwater resource and its intrinsic value (which is characterised by poor water quality).</i> <i>Groundwater will be treated with biocide and oxygen scavengers when pumped from the well being tested and prior to re-injection.</i> Could the proponent please provide more specific information regarding additives once formalised, including MDMA sheets and degradations rates so the residual risk may be better understood?	A specific chemical injection program for groundwater treatment will be developed based on well test data and water samples. This will include details of the additives and dosing based on water analysis results. Gold Hydrogen will consult with subsurface water experts to ensure appropriate chemical additives are used, and dosing procedures are established in accordance with common industry practice. Gold Hydrogen will provide more specific information to DEM as part of the reinjection Activity Notification process and the application for the Water Affecting Activities permit.	Partially addressed. The EIR provides little more than an outline, and no specific information regarding additives or MDMA sheets and degradation rates. DEW appreciates this information will be provided based on well test data and water samples in the future but suggests details on all potential additives (including biocide and oxygen scavenger) should be provided in the absence of a specific chemical injection program for groundwater treatment.
3	EIR 3.3.3 Pg 21	<i>In well tests where multiple zones are being tested simultaneously, groundwater pumped to the surface would be mixed across all zones (e.g. limestone, dolomite and granite) and expected to be in the order of 40,000 to 60,000 mg/L. Salinities could be lower if shallower zones are tested in isolation, and higher if deeper zones are tested in isolation.</i> Is this potential to “shandy” re-injected groundwater from different strata depths so it more closely matches groundwater at the target depth a potential control measure that requires discussion in Section 5 and Table 5.10?	As a consequence of the proposed well test program, co-mingled groundwater from well testing may coincidentally provide reinjected groundwater salinity that more closely matches baseline groundwater at the high permeability zone at 316m in Ramsay 1. However as this is not a controlled process (i.e. mixing of groundwater from multiple zones), Gold Hydrogen considers that it could not be regarded as a control measure to meet groundwater quality objectives.	Addressed.
4	EIR, 5.2.2, Pg 36	<i>The presence of a hydrostatic head gradient throughout most of the profile at Ramsay-2 suggests there may be some degree of connection, however the salinity profile is more characteristic of a diffusion dominated system (at least in the vertical direction).</i>	The hydrological risk assessment has been updated to clarify the possibility of advective flow (refer Appendix A p.7, para 1). The EIR has been updated at p.36 as follows:	Addressed.

Comment No	Reference	Science Comment (to identify relevant section / paragraph and consider required actions)	Gold Hydrogen Pty Ltd Response	Addressed (Y/N)
		Hydrogeological systems may appear diffusion dominated even if advection is possible if groundwater flow velocities are sufficiently slow and if the system is not artificially stressed. Is this observation of diffusion dominance meant to discount the possibility of advective flow or is more a comment on the nature of the hydraulic system as encountered? Please clarify.	<i>"The latter is an observation of the natural (i.e. unperturbed) hydrochemical conditions and does not discount the possibility of vertical advective flow under stressed (e.g. reinjection) conditions".</i>	
5	EIR Footnote 10, Pg 38 App 1, 4.4, Pg 11	<i>The long-term fate of the reinjected groundwater is likely to be very slow lateral migration via advection down hydraulic gradient, which is anticipated to be towards Gulf St Vincent consistent with topographic gradient and the hydraulic gradient in the shallow water table aquifer.</i> There is no potentiometric surface map presented in the EIR that provides evidence for this potential fate. Please provide one.	A new map has been inserted in Appendix A as Figure 5-1 at p.12. The EIR has been updated at footnote 10 at p.38 referencing new map in App A.	Addressed.
6	EIR Table 5.9, Pg. 41	<i>Groundwater monitoring program implemented including landholder bores (subject to landholder permission) and two new groundwater monitoring bores. Monitoring program design considers EPA Guideline 3 - Establishing baseline groundwater quality and adopts elements where appropriate.</i> Are "make good" arrangements planned if groundwater quality impacts occur and are conclusively found to be a result of re-injection activities?	The hydrogeological risk assessment (Appendix A) concludes that the likelihood of the proposed reinjection impacting shallow aquifers (e.g. less than 100 m depth) is negligible and the consequence of such impacts would also be low. The key reasons are: • Very few existing groundwater wells in the vicinity of the Ramsay-1, and all operational wells are significantly less than 100 m depth. • Vertical distance and low permeability of intervening formations means all groundwater user have significant vertical disconnection from formations in contact with reinjected groundwater • Low permeability throughout the profile means that nay potentiometric head	Partially addressed. The explanation sufficiently addresses the question, however, additional clarification is required; what constitutes as "significant groundwater quality impacts" to existing users, and is there a planned response that could be immediately engaged/discussed between DEM, DEW and landholders, should the circumstance arise?

Comment No	Reference	Science Comment (to identify relevant section / paragraph and consider required actions)	Gold Hydrogen Pty Ltd Response	Addressed (Y/N)
			increases from reinjection will not impact the shallow water table aquifers. If significant groundwater quality impacts were conclusively established to have been caused by reinjection activities, Gold Hydrogen would engage with DEM, DEW, affected landowners and other relevant stakeholders to determine the nature of any response.	
7	EIR Table 5.9	DEW recommend the proponent reference and implement recommendations from the SA EPA <i>Guideline 3 – Establishing baseline groundwater quality</i> to ensure proper water quality and hydrochemical baseline is established prior to the trial, as practicably as possible, to ensure material groundwater quality impacts, if they occur, can be conclusively identified from “false positives”.	As noted in the control measures in Table 5-9, the monitoring program design will consider <i>EPA Guideline 3 – Establishing baseline groundwater quality</i> and adopt elements where appropriate.	Addressed.
8	EIR App. A Pg 8	<i>Bold numbers shown in Table 4-2 indicate the ambient groundwater in Ramsay 2 – and by inference across the exploration area of PEL687 – is not suitable for livestock as it exceeds trigger levels for boron, cadmium, copper, lead and molybdenum.</i> Can the proponent please detail any Quality Assurance or Quality Control (QA/QC) that has been undertaken on these results to ensure they are representative of formation waters prior to assessment? DEW notes that results for the analytes Cu, Pb, Zn, Fe, and Nitrate presented in Appendix 1 are all notably higher in the first result presented for Zones 1 and 2, 2a, 3, 3a than any of the proceeding results. For Al and Mo, this is observed for Zone 1 specifically. In some cases, this first result is an order of magnitude higher than any of the	Gold Hydrogen understands that data integrity and adherence to standards is important for confidence in sampling results for both the company and regulators. Gold Hydrogen acknowledges the anomalies in the samples collected initially from the Ramsay-2 well bore, and is reviewing relevant procedures as part of the development of the ongoing program of sampling, monitoring and other collection of groundwater data proposed for the reinjection program. If any shortcomings in previous sampling are identified, these will be addressed and Gold Hydrogen will ensure that future sampling is undertaken in accordance with industry	Not addressed. As per the <i>EPA Regulatory Monitoring and Testing Requirements</i> (2016), monitoring results must be reviewed and discussed where anomalous results may have been presented. Please adhere to this framework and address any potentially anomalous data in water quality results. This is important for characterising the reinjection and native groundwater quality, and any

Comment No	Reference	Science Comment (to identify relevant section / paragraph and consider required actions)	Gold Hydrogen Pty Ltd Response	Addressed (Y/N)
		proceeding results. Assuming the order of results indicates unique sampling events undertaken sequentially, this interpretation would imply that the first sampling event for Zones 1, 2 and 3 may have been anomalous, either via an issue with well development, other sampling protocol or through laboratory analysis. This would consequently alter the water-utility interpretation if such results were found to be anomalous and / or in error. Finally, please build appropriate QA/QC protocols into sampling and groundwater monitoring procedure to ensure that subsequent results are adequately reliable for risk assessment purposes.	standard QA/QC protocols by suitably qualified professionals.	potential impacts outlined in the Hydrogeological Risk Assessment. EPA Regulatory Monitoring and Testing Requirements. Following discussions with the proponent, DEW WSM are aware that additional information and explanation will be received. Proper planning and implementation of a groundwater monitoring and management plan with associated Standard Operating Procedures will be required in light of this data gap.
9	SEO Table 3-1 Pg 13	<i>Identification of cross flows between aquifers in natural hydraulic isolation, or uncontrolled flows to the surface.</i> For the purposes of this SEO, can these aquifers be explicitly identified please?	This table sets out immediately reportable and reportable incident definitions as required by the <i>Energy Resources Act 2000</i>. The incidents identified are by necessity high-level and general to ensure that they can be applied in a range of locations and activities. Aquifer information relevant to a reported incident would be provided to DEM as part of the reporting requirements.	Not addressed. Due to lack of information, this remains an open question. Providing which aquifers are in natural hydraulic isolation or will have uncontrolled flows to the surface elsewhere in the documentation may provide greater specificity of environmental objectives. The proper planning and implementation of an appropriate groundwater monitoring and management plan, with associated Standard Operating Procedures will be required in light of this data gap.



Narungga Nation
ABORIGINAL CORPORATION
Community. Culture. Progress.

24 April 2026

Scott Howell
Principle Environmental Advisor
Department for Energy and Mining

By email: scott.howell@sa.gov.au

Dear Mr Howell

**SUBMISSIONS: GOLD HYDROGEN GROUNDWATER REINJECTION EIR AND SEO –
PEL 687 YORKE PENINSULA (“Project”)**

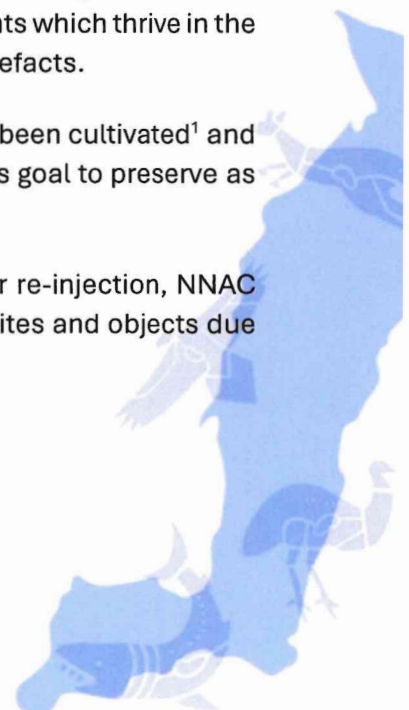
I refer to your letter dated 10 April 2026 addressed to Narungga Nation Aboriginal Corporation’s (**NNAC**) legal advisors, Wallmans Lawyers, and the Environmental Impact Report (**EIR**) and Statement of Environmental Objectives (**SEO**) concerning the Project.

The purpose of this correspondence is to set out NNAC’s submissions in response to the Project and corresponding EIR and SEO.

SUBMISSIONS

1. The Yorke Peninsula contains many sites, objects and stories sacred to the Narungga people and their heritage. This extends to sites associated with Dreaming stories, land and sea cultural practices, native animals, goods and medicinal plants which thrive in the Yorke Peninsula, burial sites and Ancestral remains, and various artefacts.
2. As Gold Hydrogen identified, much of the Yorke Peninsula land has been cultivated¹ and this has resulted in Narungga heritage being destroyed. It is NNAC’s goal to preserve as much of the remaining Narungga heritage as possible.
3. While NNAC appreciates that the Project is limited to groundwater re-injection, NNAC identifies that there is potential for inadvertent damage to sacred sites and objects due to ground disturbing works.

¹ EIR, pg 8



4. NNAC is primarily concerned with Gold Hydrogen's statements in the EIR and SEO that cultural heritage is unlikely to be impacted by the Project due to the history of cultivation of the land.
5. We understand the Project will impact various 'well sites' as well as the installation of a temporary pipeline situated just east of Minlaton, Yorke Peninsula with the potential for those sites to change (understandably any area within the larger PEL area may be targeted) (the **Affected Area**).
6. While prior cultivation may impact heritage above ground it does not extend to:
 - 6.1 impacts to heritage below ground, where culturally significant artefacts and objects are often discovered; nor
 - 6.2 land where reinjection may occur which has not been subject to prior cultivation.
7. The EIR indicates that a search of the Central Archive and the Register of Aboriginal Sites and Objects (**Heritage Register**) occurred for the Ramsay well locations in July 2025. However, there is no confirmation that searches have occurred for the proposed pipeline installation. This search should occur to ensure that there are no listed sites or objects for those areas.
8. There is also an absence of information available in the EIR or SEO which indicates any formal assessment of sites within the Affected Area which are of cultural significance.
9. The EIR in *Table 5-19: Environmental impact and significance assessment – Impact ID HER01* at page 56 includes the following control measure:

“Consultation carried out with the Narungga Nation Aboriginal Corporation regarding the risk of damage to Aboriginal heritage, and a cultural heritage survey carried out where required. Any identified sites are avoided.”
10. To date, and as far as we are aware there has been no formal or direct consultation with NNAC on this proposal and the potential impact on our cultural heritage sites.
11. Not all Aboriginal Cultural sites and Objects are included in the Heritage Register held by AAR. It is therefore important that NNAC be consulted appropriately and in a timely way so that we can then consult with our members and traditional custodians
12. There are likely to be areas and objects of significance to Narungga heritage within the Affected Area including:
 - 12.1 Wombats and wombat habitat. Wombats are of cultural significance to the Narungga community. It is imperative that wombats and their habitats are preserved and protected from disturbance.
 - 12.2 Artefacts such as stone tools (e.g., chert, quartz) which are rife throughout the Yorke Peninsula.

- 12.3 Possible burial sites and Ancestral remains.
- 12.4 Land and sea cultural practices.
13. NNAC submits that, as the Registered Native Title Body Corporate for the area within which the Affected Area is located:
- 13.1 it is to be consulted by Gold Hydrogen as to the Affected Areas it proposes to disturb prior to Ministerial approval being granted;
- 13.2 its representatives should be entitled to conduct a site visit of the Affected Areas before works begin in order to ensure there are no areas or objects of cultural significance at risk of harm; and
- 13.3 objective 5 of the Statement of Environmental Objectives (**SEO**) be amended to include the following wording:
- "The Registered Native Title Body Corporate for the impacted area, Narungga Nation Aboriginal Corporation, have been consulted and engaged with in good faith regarding proposed ground disturbing works before any such works were undertaken."*
- 13.4 A cultural heritage survey and fauna survey of the areas in which ground disturbing works were undertaken, has been conducted in consultation with Narungga Nation Aboriginal Corporation, prior to any ground disturbing works occurring.
14. The above will allow NNAC to be afforded engagement in the Project necessary to ensure that its members and traditional custodians are consulted and heritage is protected and Gold Hydrogen's obligations under the *Aboriginal and Torres Strait Islander Heritage Protection Act 1984* (Cth) and the *Aboriginal Heritage Act 1988* (SA) are met.

We appreciate your consideration of the above submissions and look forward to your response.

Yours sincerely



Lorraine Merrick

A/g CEO, Narungga Nations Aboriginal Corporation

From: [Fleer, Joanne \(AAR\)](#)
To: [Wyness, Oska \(DEM\)](#)
Cc: [Van Wessem, Alexander \(AAR\)](#); [Sibbald, Jeremy \(AGD\)](#)
Subject: FW: DEM ER Act Referral - Request for comment, Application for PEL 687, EIR/SEO, Groundwater Reinjection for Exploration Well Testing of Ramsay Project Wells, PEL 687 – Yorke Peninsula
Date: Friday, 27 March 2026 4:07:39 PM
Attachments: [image001.png](#)
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[image003.png](#)
[image004.png](#)
[image005.png](#)
[image006.png](#)
[image007.gif](#)
[image008.png](#)

OFFICIAL

Dear Oska

Thank you for the opportunity to comment on an Environmental Impact Report (EIR) and Statement of Environmental Objectives (SEO) written in relation to Gold Hydrogen's natural hydrogen exploration on Yorke Peninsula.

AAR acknowledges the Consultation Summary included as Table 7-3 in the EIR, which demonstrates Gold Hydrogen addressed all feedback AAR provided on the draft EIR and SEO on 8 January 2026. AAR confirms the amendments suggested to Gold Hydrogen have been applied to the documents now circulated for comment.

With the amendments applied in response to AAR's previous comments AAR is satisfied the EIR and SEO now:

- adequately describe the existing heritage environment, as far as this is relevant to the proposed operations
- adequately identify the potential impacts on Aboriginal Heritage and the proposed mitigation measures are practical and are likely to achieve the desired objectives
- propose objectives with regards to Aboriginal heritage that are acceptable
- adequately met guidance and adequately refer to legislation administered by AAR

Kind regards

Joanne Fleer

Joanne Fleer | A/ Principal Project Officer, Aboriginal Heritage

Aboriginal Affairs and Reconciliation

Attorney-General's Department

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Attorney-General's Department Disclaimer:

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Application ID	23208686
Created	25/03/2026 8:33 PM
Modified	25/03/2026 8:38 PM

Name	Colleen Boyanton
Email	colleenjboyanton@outlook.com
Which sections of the EIR and/or SEO does your feedback relate to?	Both sections

Comments	I strongly reject the proposed groundwater reinjection for exploration well testing associated with the Gold Hydrogen Ramsay Project. I have an interest in the land within the vicinity of the proposed project and am adamant that this project should not go ahead. Without publicly available impact assessments of the project in question, a decision to go ahead is fraught with risks to the environment, water quality, and water requirements for farming, which would be irreversible and likely to impact local livelihoods in the near future. The well on our land in question is within 800 mtrs of the exploratory well Ramsay 3. During the drilling of Ramsay 3, this well (that has been providing stock water for over 100 years, and has a windmill installed), overflowed from the tank with water pumped from the bore. This overflow included water and a black mud like substance, which spilt all around the mill and the tank. Samples of this mud were taken by Gold Hydrogen in December 2025 and we have photo evidence of the area. Gold Hydrogen promised that they would inform us of the test results from the mud. This has not been forthcoming. Since this spill, the normal green growth around the mill is now brown and bare. This windmill has always been used for stock water and was tested at 4,000 parts per million salt content. Immediately after this incident the water tested at 9,000 parts per million, over the ensuing weeks monitoring of the water salt content reverted back to the original test value of 4,000. Whilst this is now a good result, I believe any more drilling or reinjection of water in bores in the vicinity could cause irreversible damage. Further well drilling or re-injection of water should not go ahead without the land impact assessments being made by an independent body, and the complete statements made publicly available to all interested parties as well as informing all landowners within the vicinity.
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From: [Kerber, Laura \(DHUD\)](#)
To: [Wyness, Oska \(DEM\)](#); [DEM:Energy Regulation](#)
Subject: FW: DEM ER Act Referral - Request for comment, Application for PEL 687, EIR/SEO, Groundwater ReInjection for Exploration Well Testing of Ramsay Project Wells, PEL 687 – Yorke Peninsula
Date: Thursday, 5 March 2026 9:02:21 AM
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OFFICIAL

Hi Oska

Thank you for your email dated 13 February 2026 inviting comment under the *Energy Resources Act 2000* in relation to Gold Hydrogen Pty Ltd's application to undertake groundwater reinjection for exploration well testing of the Ramsay Project Wells, located approximately 10km east of Minlaton, South Australia (within PEL 687).

The Crown and Impact Assessment Team, Department for Housing and Urban Development (DHUD), has reviewed the Environmental Impact Report (EIR) and Statement of Environmental Objectives (SEO) and offers the following comments relevant to the *Planning, Development and Infrastructure Act 2016*.

Criteria	Advice
Land Use	The proposed groundwater reinjection site (Ramsay 1 well) and associated temporary pipelines are located within the Rural Zone of the Planning & Design Code (P&D Code). The Rural Zone envisages a range of primary production, forestry, and renewable energy generation to support the economic prosperity of the South Australia. Development should support, protect and maintain the productive value of rural land. The exploration of natural energy resources is not specifically envisaged as a land use within the Rural Zone, however it is broadly consistent with the desired outcome of the zone in supporting economic prosperity. The reinjection activities support Gold Hydrogen's existing, approved drilling and well testing activities for natural hydrogen in the region. The land use impacts are expected to be localised and temporary, with access arrangements and the final route of temporary pipelines to be determined in consultation with landowners. Decommissioning and rehabilitation, including removal of temporary pipelines, will return the land to its original drainage and cropping / grazing potential (if desired by the landowner). The proposal is acceptable from a land use perspective.
Planning & Design Code	The 'Resource Extraction' module of the P&D Code seeks that <i>resource extraction activities are development in a manner that minimises human and environmental impacts</i>.

	The 'Interface between Land Uses' module of the P&D Code seeks that <i>development is located and designed to mitigate adverse effects on or from neighbouring and proximate land uses.</i> Ramsay 1 well is appropriately separated from rural townships and residential zones, the nearest being Curramulka (approx. 7km to the north) and Minlaton to the west (approx. 8.5km to the Rural Living Zone). The closest dwellings are approx. 600-800m to the development site (within the Rural Zone). The nearest conservation zone to Ramsay 1 well is over 6.5km to the east, and the reinjection activities will not impact any known Aboriginal cultural heritage sites. The mitigation measures outlined in the EIR / SOE are considered appropriate to manage potential impacts to groundwater, surface water, flora and fauna, aboriginal heritage, interface impacts with sensitive land uses, and public health and safety. It is noted that the Applicant has responded to DHUD's comments on the draft EIR and SOE in Appendix B of the EIR with respect to potential noise impacts from 24/7 operations.
Regional Plans	The current policy framework relevant for the subject site is the Yorke Peninsula and Mid North Regional Plan (January 2026). The plan does not specifically reference natural hydrogen resources in the region but includes a suite of general objectives relating to the mineral and energy resources sector. The objectives seek the protection of key resource areas from encroachment, and the maintenance of adequate separation distances between resource extraction activities and sensitive land uses. The objectives encourage co-existence of mining and other land uses, and facilitation of appropriate post-extraction land uses. <u>Recommendations</u> NA
State Planning Policies	The proposal directly relates to State Planning Policy 10 (Mineral and Energy Resources). The policy seeks that land use planning and mining / energy resource legislation complement each other to facilitate investment, minimise potential for land use conflict, and facilitate post-extraction land uses. <u>Recommendations</u> NA
Previous decisions	NA
Other matters	NA

Should you have any further queries please do not hesitate to contact me.

Kind regards

Laura Kerber

Project Lead, Crown and Impact Assessment
Planning and Building

Department for Housing and Urban Development

T 08 7133 2371

W dhud.sa.gov.au

Level 10, 83 Pirie St, Adelaide SA 5000



The Department for Housing and Urban Development acknowledges First Nation people as the Traditional Owners of South Australian land and waters and we extend our respect to Elders past, present and emerging. We value and recognise the ongoing cultural heritage, beliefs and relationship First Nations peoples have with these lands and waters and the continuing importance of this today.

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From: [PIRSA:OCE](#)
To: [Wyness, Oska \(DEM\)](#)
Subject: RE: DEM ER Act Referral - Request for comment, Application for PEL 687, EIR/SEO, Groundwater Reinjection for Exploration Well Testing of Ramsay Project Wells, PEL 687 – Yorke Peninsula
Date: Friday, 20 March 2026 9:48:40 AM
Attachments: [image008.png](#)
[image009.png](#)
[image010.png](#)
[image011.png](#)
[image012.png](#)
[image013.png](#)
[image014.png](#)
[image015.png](#)
[image016.png](#)
[image017.png](#)
[image018.png](#)
[image019.png](#)
[image020.gif](#)

OFFICIAL

Good morning,

Please refer to PIRSA's comment below;

“PIRSA notes that the property is used for livestock production however the documentation does not reference livestock disease risks. Consideration of livestock biosecurity risks should be made especially as there is a mandated referral relating to the *Livestock Act 1997*.”

Thank you kindly,

Anna Blades | Ministerial Coordinator
Office of the Chief Executive | **Department of Primary Industries and Regions**
Government of South Australia | Level 21, 11 Waymouth Street, Adelaide SA 5000
GPO Box 1671 Adelaide SA 5001
T: +61 8413 8213 | **E:** Anna.Blades2@sa.gov.au
pir.sa.gov.au



The Department of Primary Industries and Regions cares for the Country and communities of South Australia. We ensure the land, sea, water and sky are healthy for future generations and strive to better understand their spiritual and cultural significance for Aboriginal people across the state. In the spirit of reconciliation, our commitment is to build progressive and trusting relationships, to share knowledge and learn from each other. We recognise and own a difficult past, and together we will walk forward. We acknowledge the many Aboriginal people of this Country as the oldest continuous living culture in the world.

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Application ID	23062500
Created	01/03/2026 10:05 AM
Modified	01/03/2026 10:14 AM

Name	Peter Parsons
Organisation	Local Farmer
Email	parsons1956@bigpond.com
Which sections of the EIR and/or SEO does your feedback relate to?	Both EIR and SEO for this project

Comments	I write in response to the public consultation regarding the proposed groundwater reinjection for exploration well testing associated with the Gold Hydrogen Ramsay Project. I am strongly opposed to this proposal in its current form. My objection is based on the insufficient information available to demonstrate that the proposed activities will not result in negative environmental impacts, particularly in relation to groundwater quality and ground water levels. At present, there is no comprehensive, holistic impact assessment publicly available that clearly demonstrates there will be no adverse effects on the groundwater system or the surrounding environment. Groundwater is a critical and sensitive resource, and any activity that has the potential to alter groundwater quality, pressure, or connectivity carries inherent environmental risk. Based on the information currently provided, it is evident that the full extent of potential impacts is not yet known or adequately assessed. Proceeding in the absence of this certainty presents an unacceptable risk to the environment. Approval of this proposal should not be granted until a detailed, independent, and holistic environmental impact assessment has been completed. Such an assessment must fully consider all potential impacts on groundwater systems, groundwater tables, and the broader surrounding environment, and be made publicly available for proper scrutiny. Only once these impacts are clearly understood, transparently documented, and demonstrated to be manageable should the proposal be considered for approval. Until that time, I believe the precautionary principle should apply, and the application should not proceed.
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From: stslater@internode.on.net
To: [DEM:Energy Regulation](#)
Subject: GHIL Water ReInjection Consultation
Date: Tuesday, 24 March 2026 11:12:49 AM

You don't often get email from stslater@internode.on.net. [Learn why this is important](#)

To whom it may concern

The proposed water reinjection by Gold Hydrogen from Ramsay 2,3 & 4 into Ramsay 1 is predominantly on land we own.

The proposed pipeline runs on our land also.

We have concerns in regard to the underground water quality after reinjection of hypersaline water into the aquifer.

We have been advised by your department that only saline water of a certain concentration can be injected into like aquifers .

We are also concerned if there is a leak from the pipeline transferring the water to Ramsay 1 across our land , there needs to be safeguards and a compensation model in place if there is a spill of any size as the land is highly productive farming land.

We are comfortable with the activity if these issues are addressed.

We did send a submission to GHIL in January and had answers back from them but our concerns don't seem to be in the EIR, just a general paragraph saying all concerns from land holders have been addressed.

We attach our submission below.

-Surface spills of hyper saline water will have an immediate and sustained effect on crop growth so there is no place for such spills on cropped land.

-What will be the process if there is a spill of hyper saline water on cropped land.

-We understand there will be consultation re the location of pipes on our cropping land. We will need to have this planned and the timing of the removal to allow cropping from April 2026 unless a satisfactory compensation plan is worked out.

-Trucks have been driving out side of the pad and gravelled tracks at Ramsay 4 which has to stop . We need to know how the pipes will be laid on cropping land as there is a strong wind erosion problem in lentil stubbles.

- We need full guarantee that neighbours water bore quality won't be affected by re injection of hyper saline water , it is often mentioned in the documents that there are " Small number of ground water wells" in the area , this is true but it can't be forgotten that they are critical infrastructure for those businesses and can't be altered.

- The ground water monitoring bores are a long way away from the reinjection site, how are they going to be effective in measuring the effect on salinity in the close neighbour's water bores.

-It is mentioned that Ramsay 1 well site may be expanded again for this reinjection activity (pg15). We want to find an alternative to this as that area has already been rehabilitated and had two crops sown on it and is returning to reasonable production again.

-We are happy to have a discussion re potential 30x3.5m tank and its location as we have heard about a possible tank but didn't realise the size required.

-What will happen to the residual water in such a large tank as I can't see how it will be fully emptied.

-As I read it, it seems water reinjection might happen at the 316mt level and below.

The salinity at that level is in the 8-10,000 ppm range so how can the mixed saline water at 40-60,000 ppm be injected at that level as we were of the understanding water of a certain saline

level are only injected into like areas.

- We have asked quite a few times how the compensation will look for this stage of activity but as yet haven't had a response and isn't covered in the schedule . This water reinjecting is beyond testing which is covered .

These are our immediate concerns and questions

Thank you for the opportunity to share our concerns,

Shaun and Traci Slater

Shaun & Traci Slater
Berevon Trading



Appendix B – Responses to submissions received (excerpt from EIR)



Appendix C: Summary of issues raised - formal Energy Resources Act Consultation

Comments on the draft EIR and SEO were received from Aboriginal Affairs and Reconciliation, Department for Energy and Mining, Department for Environment and Water, Department for Housing and Urban Development, Department of Primary Industries and Regions South Australia, Narungga Nation Aboriginal Corporation and three public submissions. These are addressed below in Table C-1.

Table C-1: Summary of stakeholder comments and Gold Hydrogen responses

Submitter	EIR / SEO Reference	Comment / issue raised	Response
EIR			
Aboriginal Affairs and Reconciliation	General	AAR acknowledges the Consultation Summary included as Table 7-3 in the EIR, which demonstrates Gold Hydrogen addressed all feedback AAR provided on the draft EIR and SEO on 8 January 2026. AAR confirms the amendments suggested to Gold Hydrogen have been applied to the documents now circulated for comment. With the amendments applied in response to AAR's previous comments AAR is satisfied the EIR and SEO now: - adequately describe the existing heritage environment, as far as this is relevant to the proposed operations - adequately identify the potential impacts on Aboriginal Heritage and the proposed mitigation measures are practical and are likely to achieve the desired objectives - propose objectives with regards to Aboriginal heritage that are acceptable - adequately met guidance and adequately refer to legislation administered by AAR	Noted
Department for Energy and Mining	Environmental Impact Assessment	Views of affected parties left blank in EIA Tables. Primarily these are views derived from the GHY stakeholder engagement, which is then supplemented with GHY views and finally any additional views canvassed from public consultation. The relevant sections and tables of the EIA require updating.	Tables have been updated.
	General	The current documentation acknowledges uncertainty exists on the proposed injection fluid path from a subsurface perspective. The	Gold Hydrogen has completed a step-rate injectivity test on Ramsay 1 under a limited DEM/DEW approval. The test verified the ability to inject



Submitter	EIR / SEO Reference	Comment / issue raised	Response
		DTS/DAS and/or other subsurface monitoring is considered a critical control, particularly in early stages of proposed injection, to demonstrate acceptance of fluid into the expected zone and establishing a performance baseline, however it is not clear whether this system is functional. How does Gold Hydrogen propose to define and verify critical controls ahead of injectivity, together with a defined response plan, in the event injectivity deviates from the base case?	at least 20,000 bbl/day (i.e. 3.18 ML/day, the maximum proposed operational reinjection rate under EIR Section 3.3.1) and was ramped above this rate with no issue, confirming that the well can readily accept the full range of planned reinjection volumes with operating margin. At a stabilised injection rate of approximately 23,000 bbl/day the wellhead pressure was 91 psi, a low operating pressure relative to typical injection outcomes even allowing for surface pressure losses across the flow lines and wellhead, and well below the estimated maximum wellhead pressure of 850 psi adopted in the Hydrogeological Risk Assessment (Appendix A, based on an average fracture gradient of 0.8 psi/ft for dolomite at TVD 700 m). On cessation of injection, the wellhead pressure dropped instantaneously from 91 psi to -14 psi and remained at that level on the following day, with no measurable pressure build-up. GHY's interpretation is that this is consistent with rapid fluid movement into the natural high-hydraulic-conductivity zone of the Parara Limestone at approximately 316 m depth. Distributed Temperature Sensing (DTS) and, where appropriate, Distributed Acoustic Sensing (DAS), are identified as control measures for Impacts GRO01 and GRO02 in EIR Table 5-9 and Table 5-10. A fibre-optic cable is installed on the tubing string in Ramsay 1 and will be re-interrogated for all well testing and reinjection operations. The primary objectives of the fibre-optic monitoring program are reservoir contribution and influence analysis: • Use DTS to identify fluid entry/exit points, vertical flow profiles, and potential cross-flow during injection and production testing • Use DAS to characterise flow behaviour (gas vs. liquid), identify active zones, and support real-time monitoring of micro-seismic events and well integrity • Use the combined dataset to support reservoir engineering and subsurface modelling and other assessments • For Ramsay 1 specifically, to verify that injected fluid is flowing to formations below the surface casing shoe at 218 m (per SEO Table 2-1, Objective 1 leading performance criteria) and predominantly into the high permeability zone at 316 m



Submitter	EIR / SEO Reference	Comment / issue raised	Response
			Fibre integrity will be verified prior to commencement of injection; in the unlikely event DTS is unavailable, a wireline production logging tool will be used as a contingency. Consistent with the control measures in EIR Table 5-9, the following subsurface and surface monitoring controls will be in place during well testing and reinjection operations: • Continuous surface monitoring of injection rates, cumulative volume, and wellhead pressure and temperature on Ramsay 1 • Downhole pressure gauge to monitor bottom hole pressure • Periodic step-rate and falloff tests to track any change in injectivity over time relative to the base case • Periodic fluid sampling at the injection wellhead for QA/QC against the pre-injection water analysis • Groundwater monitoring program (per EIR Section 3.3.4) including the two new groundwater monitoring bores and, subject to landholder permission, existing landholder bores Critical controls will be defined against a pre-injection base case established during the initial injectivity test, comprising the observed injectivity index, maximum observed wellhead pressure, and falloff behaviour. The maximum injection pressure during reinjection operations will be controlled below the estimated 850 psi wellhead pressure adopted in the Hydrological Risk Assessment to prevent fracture initiation in the dolomite and avoid compromising the integrity of reservoirs and confining layers. Ahead of each reinjection campaign GHY will re-confirm the base case, verify instrument calibration, re-establish the DTS thermal baseline, and commissioning-test the injection pumps. Pressure control instrumentation in place at Ramsay 1 includes emergency shut-down systems set to prevent reinjection exceeding the maximum injection pressure and a pressure safety valve installed near the wellhead (per EIR Section 3.3 and Table 5-9); operators will not be able to manually override these setpoints. Well testing operations will be supported by two 3.5 ML fluid ponds: a northern pond at Ramsay 3 to store fluid during flow testing, and a southern pond at a laydown area to stage and treat fluid prior to



Submitter	EIR / SEO Reference	Comment / issue raised	Response
			reinjection. Together these provide several days of peak flow-testing buffer storage, giving GHY flexibility to pause or throttle reinjection without curtailing the upstream well test program in the event injectivity performance deviates from the base case. In the event of a sustained deviation outside the defined operational envelope, or any indication of reduced well integrity, monitoring results will be reviewed against the SEO Objective 1 leading performance criteria (maximum injection pressure not exceeded; flow to formations below the 218 m surface casing shoe) and a risk assessment undertaken in accordance with the response framework in the SEO to identify hazards, scenarios and mitigation controls. The incident response framework and definitions for immediately reportable and reportable incidents are set out in SEO Table 3-1; any deviations meeting these thresholds under the Energy Resources Act 2000 will be notified to DEM within the statutory timeframes. Where required, injection will be suspended while the cause is investigated and appropriate mitigation is implemented in consultation with DEM and DEW.
	General	The conclusion drawn on no/low environmental value on the receiving groundwater compares analytes from Ramsay 2 against EPA WQ Policy and ANZECC/ARMCANZ 2000 guidelines. A series of samples are presented in Appendix A, with summation of results across the entire Ramsay 2 profile. To further support the conclusion being presented, it would be beneficial to: - Present the comparison of analytes against the guidelines at the zone that is expected to receive the produced water, noting it is yet unclear exactly where the disposed fluid will flow over the entire OH section at Ramsay 1, however the salinity profile indicates a notable change in profile between Zone 3 and Zone 5. - Compare against analytes from local groundwater users (potential receptors) in the region to form an appropriate baseline and support the concentration of the analytes from the users bores fall within	Appendix 1 of the Hydrogeological Risk Assessment contains data for heavy metals and metalloids at a range of depths in Ramsay 2 including the zone that is expected to receive injected groundwater. Additional data for other analytes have been added for these depths in Ramsay 1 and 2 and for a nearby landholder bore. Note that following feedback from DEW and review of the data, data for two samples (6 and 71) have been removed from tables in Appendix 1 of the Hydrogeological Risk Assessment as they are anomalous and not representative of the formation water obtained from Ramsay 2 zones 1 and 4 respectively, as they are strongly dominated by cushion water used when perforating the casing.



Submitter	EIR / SEO Reference	Comment / issue raised	Response
		the guidelines, in addition to confirming no impacts from landholder use of this resource.	
	General	Initial injectivity testing has been proposed and performed to improve understanding of the well's operating envelope and ability to accept fluids. If this activity has increased confidence of subsurface flow pathways (and receiving formations) it would be beneficial to include some information in the EIR/SEO, else if uncertainty remains, and recognising the injected water quality has the potential to significantly differ from the receiving environment during testing activities, has Gold Hydrogen considered additional water quality testing and treatment ahead of reinjection to reduce the likelihood of impacts until a higher level of confidence in the injectivity performance and pathway of fluids is obtained?	Information on the injectivity testing has been added to Section 3.2.2 of the EIR. Further discussion in response to the comment is provided below. Injectivity test findings: An initial injectivity test was completed in March 2026 at Ramsay 1 across the open-hole interval and has materially increased confidence in the subsurface flow path and the receiving formation. During the test, injection rates ramped up to approximately 23,000 bbl/day at a stabilised wellhead pressure of 91 psi - a low operating pressure relative to typical injection outcomes, even allowing for surface pressure losses across the flow lines and wellhead - indicating that the formation readily accepts the planned injection rates. On cessation of injection the wellhead pressure dropped instantaneously from 91 psi to -14 psi and remained at that level on the following day, with no measurable pressure build-up, consistent with rapid fluid movement away from the well bore into a high-transmissivity zone. Integration of the injectivity test results with other Ramsay 1 subsurface datasets indicates that the injected fluid is being taken predominantly into the loss zone at approximately 316 m that was first encountered during drilling in 2024. Routine core analysis from Ramsay 1 (Corelab 2024) shows very low permeability in the formations immediately above and below this zone, which both provides vertical containment and is consistent with the 316 m zone being a laterally extensive fracture with limited vertical extension. The inferred permeability of the zone (~70 Darcy) is very high, supporting the observed low wellhead pressure during injection and indicating that the zone has substantial capacity to accept the volumes proposed under the reinjection program. These findings are consistent with the conclusion of the Hydrogeological Risk Assessment that the likelihood of the proposed reinjection impacting shallow aquifers and existing groundwater users is negligible.



Submitter	EIR / SEO Reference	Comment / issue raised	Response
			Distributed Temperature Sensing (DTS) data acquired during the 2024 Ramsay 1 exploration test independently supports this interpretation: DTS identified a negative water rate of approximately -22.4 bbl/day at ~316 m, co-located with a large fracture / cavity feature visible on the FMI log at the same depth. DTS will be re-acquired during the upcoming reinjection campaign to verify that fluid entry continues to occur in the expected zone and to detect any change over time. Furthermore, regular sampling of produced water will be conducted. Commingling of produced groundwater will occur in the temporary storage ponds which will then be sampled daily and treated accordingly using biocide and oxygen scavenger treatment. The detailed plan with objectives will be outlined in a Produced Water Sampling Plan which is currently being developed by GHY and its groundwater monitoring advisors for the Ramsay Project. Reference to this plan has been added to the EIR (Section 5.2.4 and Table 5-10)
Department for Environment and Water (Water Science and Monitoring)	EIR Summary Section 3.3.2 p.21 Section 5.2.2 p.35 Section 5.2.2 p.36 App A p.7 Section 5.2.4 p.38	<u>DEW comment on Rev0 is provided in Appendix B Table B-1</u> GHY response to Rev0 comments: <i>The hydrological risk assessment report has been updated to address conceptual hydrogeology and strike and dip orientations (refer Appendix A p.1 Introduction).</i> <u>DEW comment on Rev2</u> Partially addressed. <i>This has been sufficiently outlined in the hydrogeological risk assessment, however, the provided description regarding zone conformation, radial flow and migration, and other points as suggested in previous DEW feedback, could be further alluded to and applied in the EIR overall.</i>	Reference to zone conformation, radial flow and migration and other aspects has been added to the EIR (section 5.2.2).
	Section 5.2.3 p.39 App A p.9 Section 3.3.5 p.22 Table 5-10 p.42	<u>DEW comment on Rev0 is provided in Appendix B Table B-1</u> GHY response to Rev0 comments: <i>A specific chemical injection program for groundwater treatment will be developed based on well test data and water samples. This will include details of the additives and dosing based on water analysis results. Gold Hydrogen will consult with subsurface water experts to ensure appropriate</i>	The EIR has been updated to identify additives that may be used (Section 3.3.5) along with a reference to the provision of further detailed information with the Activity Notification / water affecting activity permit application processes. This reference has also been added to the control measures in Table 5-10.



Submitter	EIR / SEO Reference	Comment / issue raised	Response
		<i>chemical additives are used, and dosing procedures are established in accordance with common industry practice.</i> <i>Gold Hydrogen will provide more specific information to DEM as part of the reinjection Activity Notification process and the application for the Water Affecting Activities permit.</i> <u>DEW comment on Rev2</u> Partially addressed. <i>The EIR provides little more than an outline, and no specific information regarding additives or MDMA sheets and degradation rates.</i> <i>DEW appreciates this information will be provided based on well test data and water samples in the future but suggests details on all potential additives (including biocide and oxygen scavenger) should be provided in the absence of a specific chemical injection program for groundwater treatment.</i>	
	Section 3.3.3 p.21	<u>DEW comment on Rev0 is provided in Appendix B Table B-1</u> <i>GHY response to Rev0 comments: As a consequence of the proposed well test program, co-mingled groundwater from well testing may coincidentally provide reinjected groundwater salinity that more closely matches baseline groundwater at the high permeability zone at 316m in Ramsay 1. However as this is not a controlled process (i.e. mixing of groundwater from multiple zones), Gold Hydrogen considers that it could not be regarded as a control measure to meet groundwater quality objectives.</i> <u>DEW comment on Rev2</u> Addressed.	Noted
	Section 5.2.2 p.36	<u>DEW comment on Rev0 is provided in Appendix B Table B-1</u> <i>GHY response to Rev0 comments: The hydrological risk assessment has been updated to clarify the possibility of advective flow (refer Appendix A p. 7, para 1).</i> <i>The EIR has been updated at p.36 as follows:</i>	Noted



Submitter	EIR / SEO Reference	Comment / issue raised	Response
		<i>"The latter is an observation of the natural (i.e. unperturbed) hydrochemical conditions and does not discount the possibility of vertical advective flow under stressed (e.g. reinjection) conditions."</i> <u>DEW comment on Rev2</u> Addressed.	
	Table 5-9 p. 41	<u>DEW comment on Rev0 is provided in Appendix B Table B-1</u> GHY response to Rev0 comments: <i>The hydrogeological risk assessment (Appendix A) concludes that the likelihood of the proposed reinjection impacting shallow aquifers (e.g. less than 100 m depth) is negligible and the consequence of such impacts would also be low. The key reasons are:</i> • Very few existing groundwater wells in the vicinity of Ramsay-1, and all operational wells are significantly less than 100 m depth. • Vertical distance and low permeability of intervening formations means all groundwater users have significant vertical disconnection from formations in contact with reinjected groundwater • Low permeability throughout the profile means that any potentiometric head increases from reinjection will not impact the shallow water table aquifers. <i>If significant groundwater quality impacts were conclusively established to have been caused by reinjection activities, Gold Hydrogen would engage with DEM, DEW, affected landowners and other relevant stakeholders to determine the nature of any response.</i> <u>DEW comment on Rev2</u> Partially addressed. <i>The explanation sufficiently addresses the question, however, additional clarification is required; what constitutes as "significant groundwater quality impacts" to existing users, and is there a planned response that could be immediately engaged / discussed between DEM, DEW and landholders, should the circumstance arise?</i>	The definition of "significant groundwater quality impact" to existing users will be established through the Trigger Action Response Plan (TARP) development process, using baseline data to determine the most appropriate and defensible threshold type. This may be defined as a categorical change in beneficial use, for example, shallow groundwater no longer suitable for stock watering, or as a quantitative deviation from established baseline conditions, or a combination of both. Baseline data for the derivation of initial trigger thresholds will be drawn from site specific data, publicly available sources, including regulatory monitoring databases, published environmental assessments, and applicable guideline values. Using this data, baseline conditions will be established for each relevant receptor, measurable indicators selected, and conservative interim thresholds set at defined deviations from the reference condition. Each threshold will be linked to a tiered management response. This process is to be detailed in the Groundwater Monitoring Plan. It is acknowledged that publicly available data may not fully capture the natural variability of conditions specific to the project area. Accordingly, the TARP will incorporate a formal adaptive management framework under which thresholds will be subject to scheduled review and, where a statistically meaningful dataset has been accumulated and recalibrated against project-specific monitoring data. A brief overview of the expected contents of the Groundwater Monitoring Plan has been added to the leading performance criteria in the EIR (Table 5-9) and SEO. Gold Hydrogen's Groundwater Monitoring Plan is being finalised in close consultation and advice from a specialist hydrogeology consultancy firm



Submitter	EIR / SEO Reference	Comment / issue raised	Response
			which has been engaged to design and develop the plan to make it fit for purpose for the Ramsay Project groundwater reinjection operations.
	Table 5-9	<u>DEW comment on Rev0 is provided in Appendix B Table B-1</u> GHY response to Rev0 comments: <i>As noted in the control measures in Table5-9, the monitoring program design will consider EPA Guideline 3 - Establishing baseline groundwater quality and adopt elements where appropriate.</i> <u>DEW comment on Rev2</u> Addressed.	Noted.
	App A p.8	<u>DEW comment on Rev0 is provided in Appendix B Table B-1</u> GHY response to Rev0 comments: <i>Gold Hydrogen understands that data integrity and adherence to standards is important for confidence in sampling results for both the company and regulators. Gold Hydrogen acknowledges the anomalies in the samples collected initially from the Ramsay-2 well bore, and is reviewing relevant procedures as part of the development of the ongoing program of sampling, monitoring and other collection of groundwater data proposed for the reinjection program. If any shortcomings in previous sampling are identified, these will be addressed and Gold Hydrogen will ensure that future sampling is undertaken in accordance with industry standard QA/QC protocols by suitability qualified professionals.</i> <u>DEW comment on Rev2</u> Not addressed. As per the <i>EPA Regulatory Monitoring and Testing Requirements</i> (2016), monitoring results must be reviewed and discussed where anomalous results may have been presented. Please adhere to this framework and address any potentially anomalous data in water quality results. This is important for characterising the reinjection and native groundwater quality, and any potential impacts outlined in the Hydrogeological Risk Assessment.	Gold Hydrogen has engaged a specialist hydrogeology consultancy to design, review existing data, and conduct and report on the groundwater monitoring program. This will assist Gold Hydrogen in meeting its legislative responsibilities in managing groundwater and will implement QA/QC protocols informed by the EPA Regulatory Monitoring and Testing Requirements (2016), where applicable to the nature and scale of this project. The Groundwater Monitoring Plan and associated procedures will detail how these protocols will be applied. Gold Hydrogen's Groundwater Monitoring Plan is being finalised in close consultation and advice from a specialist hydrogeology consultancy firm which has been engaged to design and develop the plan to make it fit for purpose for the Ramsay Project groundwater reinjection operations.



Submitter	EIR / SEO Reference	Comment / issue raised	Response
		Following discussions with the proponent, DEW WSM are aware that additional information and explanation will be received. Proper planning and implementation of a groundwater monitoring and management plan with associated Standard Operating Procedures will be required in light of this data gap.	
Department for Housing and Urban Development	General	<u>Land Use</u> The proposed groundwater reinjection site (Ramsay 1 well) and associated temporary pipelines are located within the Rural Zone of the Planning & Design Code (P&D Code). The Rural Zone envisages a range of primary production, forestry, and renewable energy generation to support the economic prosperity of the South Australia. Development should support, protect and maintain the productive value of rural land. The exploration of natural energy resources is not specifically envisaged as a land use within the Rural Zone, however it is broadly consistent with the desired outcome of the zone in supporting economic prosperity. The reinjection activities support Gold Hydrogen's existing, approved drilling and well testing activities for natural hydrogen in the region. The land use impacts are expected to be localised and temporary, with access arrangements and the final route of temporary pipelines to be determined in consultation with landowners. Decommissioning and rehabilitation, including removal of temporary pipelines, will return the land to its original drainage and cropping / grazing potential (if desired by the landowner). The proposal is acceptable from a land use perspective.	Noted
		<u>Planning and Design Code</u> The 'Resource Extraction' module of the P&D Code seeks that resource extraction activities are development in a manner that minimises human and environmental impacts.	Noted



Submitter	EIR / SEO Reference	Comment / issue raised	Response
		The 'Interface between Land Uses' module of the P&D Code seeks that development is located and designed to mitigate adverse effects on or from neighbouring and proximate land uses. Ramsay 1 well is appropriately separated from rural townships and residential zones, the nearest being Curramulka (approx. 7km to the north) and Minlaton to the west (approx. 8.5km to the Rural Living Zone). The closest dwellings are approx. 600-800m to the development site (within the Rural Zone). The nearest conservation zone to Ramsay 1 well is over 6.5km to the east, and the reinjection activities will not impact any known Aboriginal cultural heritage sites. The mitigation measures outlined in the EIR / SOE are considered appropriate to manage potential impacts to groundwater, surface water, flora and fauna, aboriginal heritage, interface impacts with sensitive land uses, and public health and safety. It is noted that the Applicant has responded to DHUD's comments on the draft EIR and SOE in Appendix B of the EIR with respect to potential noise impacts from 24/7 operations.	
		<u>Regional Plans</u> The current policy framework relevant for the subject site is the Yorke Peninsula and Mid North Regional Plan (January 2026). The plan does not specifically reference natural hydrogen resources in the region but includes a suite of general objectives relating to the mineral and energy resources sector. The objectives seek the protection of key resource areas from encroachment, and the maintenance of adequate separation distances between resource extraction activities and sensitive land uses. The objectives encourage co-existence of mining and other land uses, and facilitation of appropriate post-extraction land uses.	Noted
		<u>State Planning Policies</u> The proposal directly relates to State Planning Policy 10 (Mineral and Energy Resources). The policy seeks that land use planning and	Noted



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		mining / energy resource legislation complement each other to facilitate investment, minimise potential for land use conflict, and facilitate post-extraction land uses.	
Department of Primary Industries and Regions		PIRSA notes that the property is used for livestock production however the documentation does not reference livestock disease risks. Consideration of livestock biosecurity risks should be made especially as there is a mandated referral relating to the <i>Livestock Act 1997</i> .	The term 'pathogens' in the EIR (impact event SOC02) encompasses livestock disease and the control measures include reference to biosecurity: <i>Biosecurity procedures implemented as agreed with landowners</i> . To make it clearer that livestock disease is covered, a reference to stock has been added to land use in the receptor column in Table 5-24 and reference added to the Livestock Act in Table 5-22.
Narungga Nation Aboriginal Corporation		1. The Yorke Peninsula contains many sites, objects and stories sacred to the Narungga people and their heritage. This extends to sites associated with Dreaming stories, land and sea cultural practices, native animals, goods and medicinal plants which thrive in the Yorke Peninsula, burial sites and Ancestral remains, and various artefacts. 2. As Gold Hydrogen identified, much of the Yorke Peninsula land has been cultivated and this has resulted in Narungga heritage being destroyed. It is NNAC's goal to preserve as much of the remaining Narungga heritage as possible. 3. While NNAC appreciates that the Project is limited to groundwater re-injection, NNAC identifies that there is potential for inadvertent damage to sacred sites and objects due to ground disturbing works. 4. NNAC is primarily concerned with Gold Hydrogen's statements in the EIR and SEO that cultural heritage is unlikely to be impacted by the Project due to the history of cultivation of the land.	Noted. The wording in the EIR executive summary has been amended to align more closely with the detailed impact assessment in Section 5.6.4, to reflect the importance of the control measures as well as the history of cultivation of the land in reducing the likelihood of damage to sites of cultural significance. The control measures to be put in place include ongoing consultation with NNAC, cultural heritage surveys where required, avoidance of any identified sites or areas of cultural heritage significance and Aboriginal heritage discovery protocols.
		5. We understand the Project will impact various 'well sites' as well as the installation of a temporary pipeline situated just east of Minlaton, Yorke Peninsula with the potential for those sites to change (understandably any area within the larger PEL area may be targeted) (the Affected Area).	It is noted that the focus of the EIR and SEO is the area surrounding the existing Ramsay wells, and it does not apply to the entire PEL area.



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		6. While prior cultivation may impact heritage above ground it does not extend to: 6.1 - impacts to heritage below ground, where culturally significant artefacts and objects are often discovered; nor 6.2 - land where reinjection may occur which has not been subject to prior cultivation.	Agreed. The EIR specifically acknowledges that although significant ground disturbance has previously occurred, it is possible that cultural heritage (tangible and/or intangible) may still exist.
		7. The EIR indicates that a of search of the Central Archive and the Register of Aboriginal Sites and Objects (Heritage Register) occurred for the Ramsay well locations in July 2025. However, there is no confirmation that searches have occurred for the proposed pipeline installation. This search should occur to ensure that there are no listed sites or objects for those areas.	A search covering the proposed pipeline installation has been undertaken - the search of the Central Archive and the Register of Aboriginal Sites and Objects that is referred to in the EIR covered the region surrounding the Ramsay wells, including the indicative pipeline routes. The search did not identify any registered Aboriginal heritage sites in proximity to the well locations or indicative pipeline routes.
		8. There is also an absence of information available in the EIR or SEO which indicates any formal assessment of sites within the Affected Area which are of cultural significance	Both the search of the Central Archive and the Register of Aboriginal Sites and Objects and the inspection of the Ramsay 1 and 2 sites that was carried out with a NNAC representative in August 2023 did not identify any sites of cultural significance in the vicinity of the Ramsay wells, therefore there has been no formal assessment of any sites to date.
		9. The EIR in Table 5-19: Environmental impact and significance assessment- Impact ID HER01 at page 56 includes the following control measure: <i>"Consultation carried out with the Narungga Nation Aboriginal Corporation regarding the risk of damage to Aboriginal heritage, and a cultural heritage survey carried out where required. Any identified sites are avoided."</i> 10. To date, and as far as we are aware there has been no formal or direct consultation with NNAC on this proposal and the potential impact on our cultural heritage sites.	This control measure relates to site-specific consultation on future ground disturbance for the reinjection activities covered by the EIR. Once the EIR and SEO are approved and pipeline locations confirmed, Gold Hydrogen will consult with NNAC in accordance with this control measure. Gold Hydrogen is committed to consistent, respectful, and effective consultation with NNAC, and to this end has provided information on its exploration activities via email and in person to NNAC representatives at various times since 2023, as the Ramsay project has been developing. In relation to the current reinjection proposal, Gold Hydrogen contacted representatives of NNAC via email in December 2025 (and followed up via email in January 2026) regarding the reinjection activities and the development of the EIR and the SEO, seeking comments on the draft documents and offering to meet with NNAC to discuss the documents or



Submitter	EIR / SEO Reference	Comment / issue raised	Response
			the proposed activities. A fact sheet on the proposal and links to the draft EIR and SEO were provided. Email responses indicated that these emails had been received and were also forwarded to the acting CEO. Gold Hydrogen plans to continue direct consultation with NNAC and its representatives and will seek to meet with the NNAC Board in the near future to discuss the Ramsay project and ongoing activities, including the proposed reinjection activities.
		11. Not all Aboriginal Cultural sites and Objects are included in the Heritage Register held by AAR. It is therefore important that NNAC be consulted appropriately and in a timely way so that we can then consult with our members and traditional custodians	Agreed.
		12. There are likely to be areas and objects of significance to Narungga heritage within the Affected Area including: 12.1 - Wombats and wombat habitat. Wombats are of cultural significance to the Narungga community. It is imperative that wombats and their habitats are preserved and protected from disturbance. 12.2 - Artefacts such as stone tools (e.g., chert, quartz) which are rife throughout the Yorke Peninsula. 12.3 - Possible burial sites and Ancestral remains. 12.4 - Land and sea cultural practices.	Noted. Ecological assessments of the Ramsay sites and surrounds have been carried out and have not indicated presence of wombats.



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		13. NNAC submits that, as the Registered Native Title Body Corporate for the area within which the Affected Area is located: 13.1 - it is to be consulted by Gold Hydrogen as to the Affected Areas it proposes to disturb prior to Ministerial approval being granted; 13.2 - its representatives should be entitled to conduct a site visit of the Affected Areas before works begin in order to ensure there are no areas or objects of cultural significance at risk of harm; and 13.3 - objective 5 of the Statement of Environmental Objectives (SEO) be amended to include the following wording: "The Registered Native Title Body Corporate for the impacted area, Narungga Nation Aboriginal Corporation, have been consulted and engaged with in good faith regarding proposed ground disturbing works before any such works were undertaken." 13.4 - A cultural heritage survey and fauna survey of the areas in which ground disturbing works were undertaken, has been conducted in consultation with Narungga Nation Aboriginal Corporation, prior to any ground disturbing works occurring.	The control measures in the EIR (Table 5-19) commit to consulting with the Narungga Nation Aboriginal Corporation regarding the risk of damage to Aboriginal heritage and carrying out a cultural heritage survey where required. This would be undertaken prior to submission of the application for Minister's approval of the reinjection activities under Regulation 19. To ensure this is clearly captured as a requirement in the SEO, the following has been added to the leading performance criteria under Objective 5 of the SEO: <i>Records demonstrate that consultation has been carried out with the Narungga Nation Aboriginal Corporation regarding proposed reinjection activities and the level of risk of damage to Aboriginal heritage from new ground disturbing activities, and a cultural heritage survey carried out where required.</i> The EIR and SEO assessment criteria also require that ecological assessments are carried out, as follows: <i>Ecological assessment by appropriately trained and experienced personnel undertaken to determine biodiversity values and to identify and avoid any areas of sensitivity or 'no-go' areas.</i>
		14. The above will allow NNAC to be afforded engagement in the Project necessary to ensure that its members and traditional custodians are consulted and heritage is protected and Gold Hydrogen's obligations under the <i>Aboriginal and Torres Strait Islander Heritage Protection Act 1984</i> (Cth) and the <i>Aboriginal Heritage Act 1988</i> (SA) are met	Noted. As noted above, Gold Hydrogen is committed to ensuring consistent, respectful, and effective consultation with NNAC
Public submission¹⁹	EIR and SEO	I write in response to the public consultation regarding the proposed groundwater reinjection for exploration well testing associated with the Gold Hydrogen Ramsay Project. I am strongly opposed to this proposal in its current form.	The submission's objection to the proposed activities is noted. However, Gold Hydrogen considers that there is sufficient information available to demonstrate that the proposed activities will not result in negative environmental impacts. The EIR constitutes a publicly available,

¹⁹ Names have been redacted to protect privacy



Submitter	EIR / SEO Reference	Comment / issue raised	Response
		My objection is based on the insufficient information available to demonstrate that the proposed activities will not result in negative environmental impacts, particularly in relation to groundwater quality and ground water levels. At present, there is no comprehensive, holistic impact assessment publicly available that clearly demonstrates there will be no adverse effects on the groundwater system or the surrounding environment. Groundwater is a critical and sensitive resource, and any activity that has the potential to alter groundwater quality, pressure, or connectivity carries inherent environmental risk. Based on the information currently provided, it is evident that the full extent of potential impacts is not yet known or adequately assessed. Proceeding in the absence of this certainty presents an unacceptable risk to the environment. Approval of this proposal should not be granted until a detailed, independent, and holistic environmental impact assessment has been completed. Such an assessment must fully consider all potential impacts on groundwater systems, groundwater tables, and the broader surrounding environment, and be made publicly available for proper scrutiny. Only once these impacts are clearly understood, transparently documented, and demonstrated to be manageable should the proposal be considered for approval. Until that time, I believe the precautionary principle should apply, and the application should not proceed.	comprehensive, holistic assessment, and demonstrate that the level of risk to groundwater quality and groundwater levels is low. The importance of groundwater resources is acknowledged, and the EIR demonstrates that the proposed activities do not present an unacceptable risk to the environment. The Hydrogeological Risk Assessment presents a detailed, independent, and holistic environmental impact assessment. It considers all potential impacts on groundwater systems, groundwater tables, and the broader surrounding environment, and has been made publicly available. Gold Hydrogen considers that impacts are understood, transparently documented, and demonstrated to be manageable. Consequently, Gold Hydrogen considers that it would be appropriate for the proposed activities to proceed.
Public submission	EIR and SEO	I strongly reject the proposed groundwater reinjection for exploration well testing associated with the Gold Hydrogen Ramsay Project. I have an interest in the land within the vicinity of the proposed project and am adamant that this project should not go ahead. Without publicly available impact assessments of the project in question, a decision to go ahead is fraught with risks to the environment, water quality, and water requirements for farming,	The submission's objection to the proposed activities is noted. Publicly available impact assessments have been produced, in the form of the EIR and appended Hydrogeological Risk Assessment. These demonstrate that the level of risk to groundwater quality and groundwater levels is low. In regard to the overflow from the tank and the mud-like substance reported, Gold Hydrogen commissioned ALS to perform water composition analysis and Petrolab and CSIRO to perform a



Submitter	EIR / SEO Reference	Comment / issue raised	Response
		which would be irreversible and likely to impact local livelihoods in the near future. The well on our land in question is within 800 mtrs of the exploratory well Ramsay 3. During the drilling of Ramsay 3, this well (that has been providing stock water for over 100 years, and has a windmill installed), overflowed from the tank with water pumped from the bore. This overflow included water and a black mud like substance, which spilt all around the mill and the tank. Samples of this mud were taken by Gold Hydrogen in December 2025 and we have photo evidence of the area. Gold Hydrogen promised that they would inform us of the test results from the mud. This has not been forthcoming. Since this spill, the normal green growth around the mill is now brown and bare. This windmill has always been used for stock water and was tested at 4,000 parts per million salt content. Immediately after this incident the water tested at 9,000 parts per million, over the ensuing weeks monitoring of the water salt content reverted back to the original test value of 4,000. Whilst this is now a good result, I believe any more drilling or reinjection of water in bores in the vicinity could cause irreversible damage. Further well drilling or re-injection of water should not go ahead without the land impact assessments being made by an independent body, and the complete statements made publicly available to all interested parties as well as informing all landowners within the vicinity.	characterisation of the mud, using samples collected on 20 November and 19 and 30 December 2025. The results of these analyses and an interpretation of the data were provided to the landholder on 30 March 2026 (and the landholder has given permission for these results to be shared, which was in progress at the time of finalisation of this document). The results conclusively showed that: - no drilling fluid impact can be observed in the water composition analysis of the water bore - no evidence of water contamination has been found through the analysis of the samples recovered - the 'mud' is of naturally occurring, purely mineral origin and is likely to have mobilised from the Cambrian detrital Minlaton Formation - there is no contamination from drilling activity and the mud is of natural subsurface formation origin. Publicly available impact assessment has been undertaken through the EIR and SEO, including independent hydrogeological risk assessment. Gold Hydrogen has also consulted all potentially affected landholders regarding the proposed reinjection and the EIR and SEO development, and have also made the EIR and SEO available. Furthermore, in addition to assessment and regulation under the Energy Resources Act via the EIR/SEO and activity approval processes outlined in the EIR (Section 2.1), the activities would also be subject to regulation under the Landscape South Australia Act via a water affecting activity permit.
Public submission	EIR and SEO	Surface spills of hyper saline water will have an immediate and sustained effect on crop growth so there is no place for such spills on cropped land. What will be the process if there is a spill of hyper saline water on cropped land.	Gold Hydrogen understands the sensitivity of cropping land to potential spills of saline water and has addressed this in the EIR (Section 5.3, Table 5-13) and SEO (Objectives 2 and 3). The EIR and SEO set out the measures that Gold Hydrogen will put in place to minimise the risk of spills occurring, as well as the actions that will be taken to mitigate the impacts to soil and water in the unlikely event of a leak or spill of saline water. Assessment in the EIR concludes that if a spill occurred, impacts



Submitter	EIR / SEO Reference	Comment / issue raised	Response
			would generally be localised and short-term and readily manageable using standard control measures. Storage, transport and reinjection of the groundwater will be in accordance with industry and regulatory standards and the temporary pipeline will be designed to meet the prevailing operating pressure and conditions. Gold Hydrogen will also be required under the SEO to implement leak detection measures and undertake regular inspections of the pipeline and tanks and reinjection activities will be monitored at all times. Should there be a leak or spill despite the implementation of the control measures set out in the EIR, it will be immediately contained, reported (both internally and to State regulators as required) and clean up actions initiated. Depending on the extent of the spill, this may involve implementation of remediation measures in consultation with the landowner, which may include the removal and replacement of soil in the affected area. Spills that cannot be immediately contained, cleaned up and/or delineated will be assessed and remediated in consultation with the landowner, DEM and in accordance with relevant standards and guidelines which include the Site Contamination NEPM and SA EPA guidelines.
		We understand there will be consultation re the location of pipes on our cropping land. We will need to have this planned and the timing of the removal to allow cropping from April 2026 unless a satisfactory compensation plan is worked out.	Gold Hydrogen takes seriously its responsibility to minimise impacts on affected landowners and their farming activities. Every effort will be made to ensure that the location, timing and duration of the installation of the temporary pipelines does not interfere with farm infrastructure and activities. As stated in the EIR (Section 5.8, Table 5-23), activities will be restricted to those areas that have been agreed or defined with affected landowners for disturbance / compensation (where relevant). Pipeline locations are intended to follow fencelines, roads and other access tracks, avoiding crossing of open paddocks or impacting other farming infrastructure. All activities will be conducted in accordance with the notification, timing and duration details agreed with landowners.



Submitter	EIR / SEO Reference	Comment / issue raised	Response
		Trucks have been driving outside of the pad and gravelled tracks at Ramsay 4 which has to stop.	This issue is outside the scope of the EIR and SEO and has been addressed separately with the landowner.
		We need to know how the pipes will be laid on cropping land as there is a strong wind erosion problem in lentil stubbles.	Pipeline locations and installation will be agreed with landowners as noted above and will aim to avoid potential wind erosion issues.
		We need full guarantee that neighbours water bore quality won't be affected by re injection of hyper saline water , it is often mentioned in the documents that there are “ Small number of ground water wells” in the area , this is true but it can't be forgotten that they are critical infrastructure for those businesses and can't be altered.	Gold Hydrogen acknowledges that the water bores in the area are critical infrastructure and is confident that the water quality in these bores will not be affected by proposed reinjection activities. Gold Hydrogen commissioned a hydrogeological risk assessment by groundwater specialists Water Technology as part of the preparation of the EIR and SEO, in order to determine the risk of impacts to shallow groundwater aquifers from reinjected groundwater. Important findings from the report include: • The Ramsay-1 well is cased and cemented to 218 m depth preventing reinjection of groundwater into the shallower aquifers. Groundwater will be reinjected into formations below 218 m and is expected to preferentially flow into a highly permeable (fractured and faulted) zone at 316 m. As there is very little evidence of porous or permeable formations above this zone, propagation of reinjected groundwater into the shallow aquifers from which nearby bores source water is not expected. • There are only five water wells within a 2 km radius of Ramsay-1: two are operational and were originally drilled to 68.58 m and 96.01 m; one is recorded as rehabilitated to zero depth; one was abandoned in 1995; and one has unknown status but was only drilled to 7.62 m depth. All existing groundwater users in the area, especially those within 2 km of Ramsay 1 injection well, therefore have significant vertical disconnection from the Parara Limestone at 218 m depth and all deeper formations. • The reinjected groundwater is expected to be more saline than the groundwater present at 316 m. The more saline water is, the denser it becomes creating the potential for downwards convection of the reinjected groundwater into deeper more saline formations, which are not accessed by the surrounding bores.



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			Gold Hydrogen therefore consider that the risk of impacts to shallow groundwater aquifers and the bores which draw water from these aquifers due to groundwater reinjection is very low. The hydrogeology assessment is attached to the EIR at Appendix A.
		The ground water monitoring bores are a long way away from the reinjection site, how are they going to be effective in measuring the effect on salinity in the close neighbour's water bores.	The recently drilled groundwater monitoring bores approximately 7km from Ramsay 1 are designed to be sampled regularly and provide information for confirming baselines for pressure and groundwater quality over the greater Ramsay project area, and support the long-term monitoring program. Gold Hydrogen also plan to confirm the location of existing groundwater wells and groundwater use during ongoing consultation with landholders in the Ramsay project area. A sampling program of working water bores in close vicinity of Ramsay 1 will be conducted (subject to landholder permission) to provide specific datapoints on the quality of the aquifers being used by landowners in the area. Baseline samples have already been collected for analysis and the ongoing sampling program will look at groundwater quality characteristics, mineralogy and geochemical analysis. The monitoring program will include sampling immediately prior to and on completion of the well testing program and sampling approximately 12 months after completion.
		It is mentioned that Ramsay 1 well site may be expanded again for this reinjection activity (pg15). We want to find an alternative to this as that area has already been rehabilitated and had two crops sown on it and is returning to reasonable production again.	This issue is outside the scope of the reinjection EIR and SEO and has been addressed separately with the landowner.
		We are happy to have a discussion re potential 30x3.5m tank and its location as we have heard about a possible tank but didn't realise the size required.	Tank locations and sizes for initial well tests have now been identified and agreed with landholders. Steel-sided above-ground tanks for temporary storage of pumped groundwater will be located at the Ramsay-3 well testing location and the and an 'laydown area' site agreed with the landowner adjacent to the Ramsay-1 and Ramsay-2 well sites. The size and capacity of the tanks have been considered for the well test operations and associated footprint. The north pond on the Ramsay-3 wellsite will have a capacity of 3.5ML with a 48.9m diameter



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			and a height of 1.75m. The south pond at the laydown area will have a capacity of 2.8ML with a 27.5m diameter and a height of 4.4m.
		What will happen to the residual water in such a large tank as I can't see how it will be fully emptied.	As much residual water as possible would be pumped from the storage tanks to the pipelines for reinjection into Ramsay-1. Evaporation is the primary method used to empty water from large ponds, and this may also be considered for the storage tanks, which would likely require the tanks to remain in place for several months after operations cease. This approach would be considered when determining the location of the tanks and in consultation with the affected landowner.
		As I read it, it seems water reinjection might happen at the 316mt level and below. The salinity at that level is in the 8-10,000 ppm range so how can the mixed saline water at 40- 60,000 ppm be injected at that level as we were of the understanding water of a certain saline level are only injected into like areas.	See response to query regarding water bore quality above. In addition to the commentary above, it is noted that the assessment concluded that while there will be a localised increase in salinity at 316 m depth, reinjection of higher salinity water during the exploration well testing would not result in a significant loss of value of groundwater resources. The key reasons for this conclusion are that the receiving water in Ramsay-1 is not used as a groundwater resource and has limited value due to its significant depth and poor water quality, and that the radius of influence of injected water is small.
		We have asked quite a few times how the compensation will look for this stage of activity but as yet haven't had a response and isn't covered in the schedule. This water reinjecting is beyond testing which is covered.	Compensation is commercially sensitive and has been addressed separately.
SEO			
Department for Energy and Mining	Table 2-1, Objective 1 (p.8)	The assessment criteria for Objective 1 should refer to a groundwater monitoring plan approved for use by DEM.	Added to assessment criteria for Objective 1. A brief overview of the expected contents of the groundwater monitoring plan has also been added to the leading performance criteria.
Department for Environment and Water	Table 3-1 p.13	<u>GHY response to comments previously provided (refer Appendix B Table B-1)</u> This table sets out immediately reportable and reportable incident definitions as required by the <i>Energy Resources Act 2000</i> .	The key aquifers that are in natural hydraulic isolation from the reinjection zone are the shallower aquifers accessed by groundwater users. These would clearly be the subject of incident reporting if cross flow to these aquifers was detected. If cross flows between other aquifers were identified, an assessment would be undertaken to



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(Water Science and Monitoring)		The incidents identified are by necessity high-level and general to ensure that they can be applied in a range of locations and activities. Aquifer information relevant to a reported incident would be provided to DEM as part of the reporting requirements. <u>DEW comment</u> Not addressed. <i>Due to lack of information, this remains an open question. Providing which aquifers are in natural hydraulic isolation or will have uncontrolled flows to the surface elsewhere in the documentation may provide greater specificity of environmental objectives.</i> <i>The proper planning and implementation of an appropriate groundwater monitoring and management plan, with associated Standard Operating Procedures will be required in light of this data gap.</i>	determine the extent that these aquifers are in natural hydraulic isolation (and whether cross flow is likely to be the result of the reinjection activities) and incident reporting undertaken accordingly. Uncontrolled flows to the surface are not anticipated given the limited vertical conductivity of intervening formations and a standing water level of approximately 60 metres below ground level. Where uncertainties in aquifer characterisation and connectivity remain, these will be carried through into the Groundwater Monitoring Plan. The monitoring program will be designed with these uncertainties in mind, and they form a key input into the TARP development process and the adaptive management framework. As project-specific data is collected and the understanding of subsurface conditions improves, aquifer characterisation will be refined and the TARP thresholds and management responses updated accordingly.

Further information

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