Arckaringa Basin Exploration Activities

Statement of Environmental Objectives

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1. Introduction

Australian Carbon Vault (ACV) is the holder of Gas Storage Exploration Licences (GSELs) 794, 795, 796, 797, 798, 799, 800 and 801 under the *Energy Resources Act 2000* (ER Act).

D3 Energy Limited (D3) through its 100% owned company Unleash Energy Pty Ltd is the holder of Petroleum Exploration Licences (PELs) 121 and 122 (which cover the same area as GSELs 794-798) under the ER Act.

The GSELs and PELs are all located in the Arckaringa Basin in northern South Australia (Figure 1-1) and collectively will be referred to as the Licence Area throughout this document.

ACV and D3 are planning to undertake exploration activities under the ER Act in the Licence Area. ACV plans to undertake drilling and an extended Carbon Dioxide (CO_2) injectivity pilot program. D3 plans to initially undertake 2D seismic survey to assess the potential for hydrogen and helium resources and will then undertake subsequent exploration drilling. ACV and D3's activities are referred to as 'proposed activities' throughout this document.

This Statement of Environmental Objectives (SEO) has been prepared as a requirement of the ER Act. It is designed to operate in conjunction with the Environmental Impact Report (EIR) (ACV/D3 2026).

1.1 Background

This document has been prepared to meet the requirements for preparation of a Statement of Environmental Objectives (SEO) set out in Sections 99 and 100 of the *Energy Resources Act 2000* (ER Act) and Regulation 12 of the *Energy Resources Regulations 2013* (ER Regulations).

The intent of the SEO is to outline the environmental objectives to which the regulated activities will conform. The SEO also sets out the assessment and leading performance criteria to be applied to determine whether the objectives have been achieved. The immediately reportable and reportable incidents that will apply to the activities are also defined in the SEO (refer Section 3).

The objectives of this SEO have been developed on the basis of the information provided in the Environmental Impact Report (EIR) (ACV/D3 2026) and are in keeping with the objectives of the ER Act.

'Environment' is broadly defined in the ER Act to include:

- land, air, water (including both surface and underground water and sea water), organisms, ecosystems, flora and fauna
- buildings, structures and other forms of infrastructure and cultural artefacts
- existing and potential land use
- public health, safety or amenity
- the heritage, aesthetic or cultural values of an area
- the economic or social impact on an area.

1.2 Scope

This SEO covers seismic survey, exploration drilling and injectivity testing of CO_2 activities within Gas Storage Exploration Licences (GSELs) 794, 795, 796, 797, 798, 799, 800 and 801 and Petroleum Exploration Licences (PELs) 121 and 122 (which cover the same area as GSELs 794-

798) (Figure 1-1). The GSELs and PELs are all located in the Arckaringa Basin in northern South Australia. These activities are described in the EIR (ACV/D3 2026).

There is a portion of GSEL 795 located to the west of the Licence Area, NW of Coober Pedy, which is excluded from the Licence Area and for the purposes of this SEO.

The scope of this SEO is limited to activities related to seismic surveys, drilling and CO_2 injectivity testing and applies to:

- well site and access track construction
- geophysical surveys and investigations
- drilling and CO_2 injectivity testing activities
- demonstration that CO_2 can be safely and permanently injected and stored into specifically targeted storage reservoirs
- decommissioning and rehabilitation of well sites and access tracks
- supporting activities and infrastructure.

This SEO does not cover activities in parks or reserves established under the *National Parks and Wildlife Act 1972*.

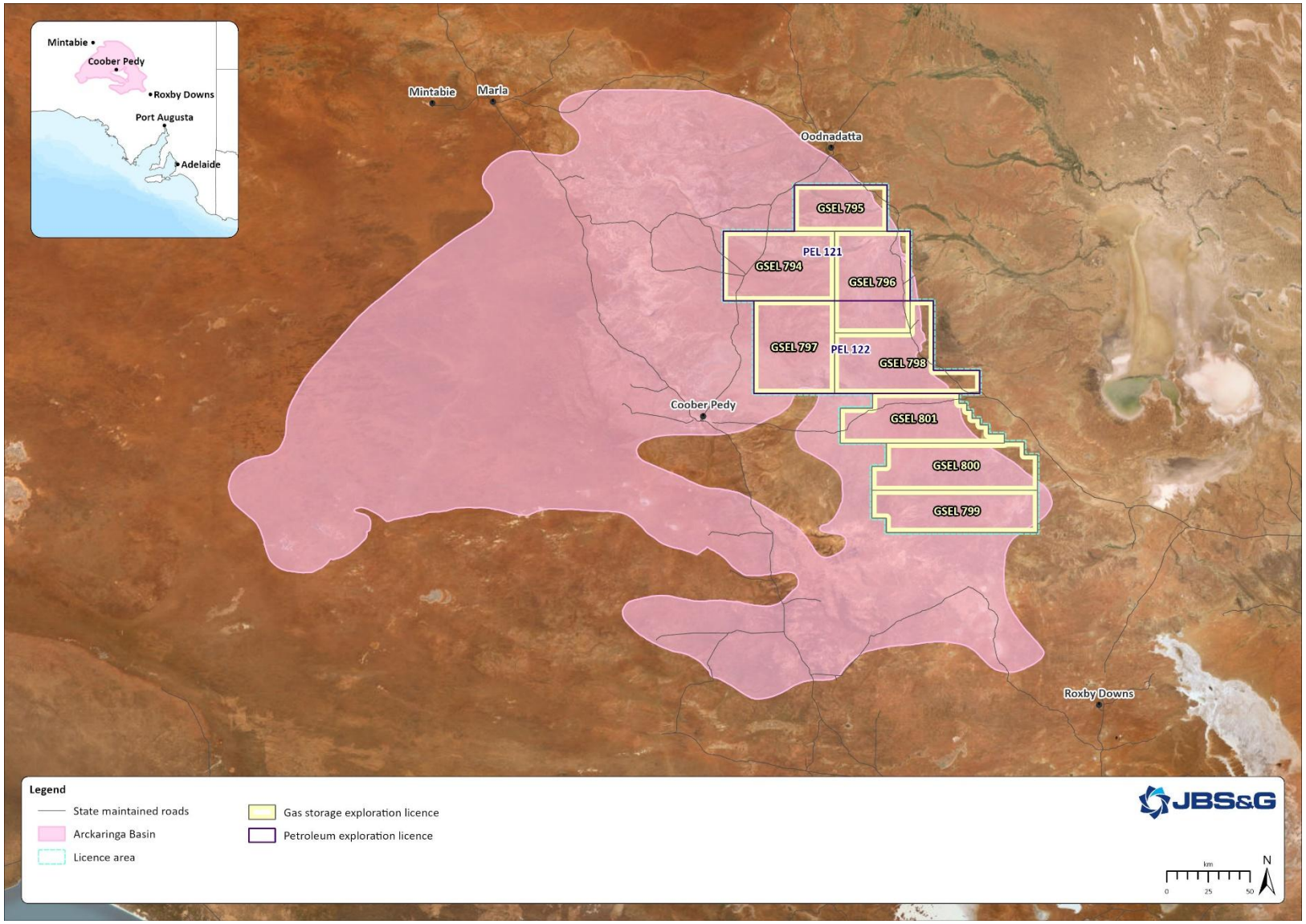

Figure 1-1: Arckaringa Basin and Licence Area

2. Environmental Objectives and Assessment Criteria

Regulation 12(3) of the ER Regulations requires an SEO to include:

- objectives that relate to dealing with the impacts on various elements of the environment associated with undertaking the relevant regulated activity (i.e. the activities proposed in the EIR and subsequently approved)
- criteria to be applied to determine whether the stated environmental objective has been achieved in a particular case.

2.1 Objectives

Potential environmental impacts of the seismic surveys, drilling and CO_2 injection, and environmental objectives that relate to these impacts, have been identified in the EIR (ACV/D3 2026).

These environmental objectives are set out in Table 2-1.

2.2 Assessment Criteria

The environmental objectives identified above are subject to an assessment to measure the level of achievement. Regulation 12(4) sets out the criteria for assessment required to be incorporated in the SEO:

- a description of the objective to be measured and the manner and form of the measurement to be used
- the locations where the relevant measurements are to be taken, or how such locations are to be determined
- the frequency of any measurement or monitoring
- any background or control data that is to be used, or the manner in which such data is to be obtained
- how the achievement of a relevant objective is to be determined (with consideration being given to any inherent errors of measurement)
- if required by the Minister - provisions with respect to assessing the ongoing fitness for purpose of management systems, facilities, plant, equipment, machinery or other infrastructure and
- may include provisions relating to -
    - the gathering of information and the conduct and timing of studies
    - the conduct and timing of management system audits.
    - The assessment criteria for each objective are set out in Table 2-1.

2.3 Leading Performance Criteria

Leading performance criteria have been provided for each impact event. These criteria are intended to give early warning that a control measure may fail or is failing, and that the environmental objective or relevant assessment criteria is at risk of not being achieved, allowing time to respond accordingly. Relevant leading performance criteria for each objective are set out inTable 2-1.

2.4 Guide to How Objectives Can be Achieved

The ‘Guide to How Objectives Can be Achieved’ column in Table 2-1 provides a reference to the relevant impact identification number and impact event in the EIR (refer Sections 5.2 to 5.8 of the EIR) which provides details of the control measures to be implemented to meet the environmental objective.

The ‘Guide to How Objectives Can be Achieved’ column is provided to demonstrate that appropriate controls and systems are in place to achieve a specific objective and/or assessment criteria and is not a legislative requirement (refer DEM 2024).

Table 2-1: Environmental objectives, assessment criteria and leading performance criteria

Activity / Environmental Element	Environmental Objective	Assessment criteria	Leading performance criteria	Guide to how objectives can be achieved / control measures
Public Health and Safety				
Seismic / Public Health and Safety	S1. No injuries, deaths or adverse health impacts to the public or third parties from regulated activities that could have been reasonably prevented by the operator	▪ Records (e.g. audits / site inspections) demonstrate that reasonable measures have been implemented to ensure no injuries or health risks to the public. ▪ Any notifiable incidents (as per s35 of the *Work Health and Safety Act 2012*) involving the public investigated by a suitably qualified independent third party and the results of the investigation show that the accident could not have been reasonably prevented by the operator.	▪ Records demonstrate all employees have undergone applicable safety training and inductions. ▪ Records show that no vehicle/driving incidents -or unauthorised access have occurred	**Refer S-HS-01** (Impact to public health and safety from direct disturbance associated with vehicle movements, explosives or unauthorised access)
		▪ All wastewater disposed in accordance with the South Australian Public Health (Wastewater) Regulations 2013 or to the satisfaction of the Department of Health) and consistent with the *Environment Protection (Water Quality) Policy 2015*.	▪ Inspections demonstrate waste is appropriately stored and contained. ▪ Inspections demonstrate no evidence of spills or leaks of as a result of activities. ▪ Personnel trained in spill response procedures. ▪ Appropriate spill response equipment is available on site.	**Refer S-HS-02** (Impact to public health and safety from inadequate storage and transport of waste)
		▪ Compliance with relevant legislation or approvals regarding noise and air quality where applicable.	▪ Records of complaints from landholders/users are maintained for the life of the project and show that no complaints are left unresolved.	**Refer S-HS-03** (Impact to public health and safety from airborne emissions or soundwave transmission)
Drilling / Public Health and Safety	D1. No injuries, deaths or adverse health impacts to the public or third parties from regulated activities that could have been reasonably prevented by the operator	▪ Records (e.g. audits / site inspections) demonstrate that reasonable measures have been implemented to ensure no injuries or health risks to the public. ▪ Any notifiable incidents (as per s35 of the *Work Health and Safety Act 2012*) involving the public investigated by a suitably qualified independent third party and the results of the investigation	▪ Planning has been undertaken to minimise impacts of operations and records are available for review. ▪ Reasonable practical measures implemented in design and operation to minimise emissions. ▪ No unnecessary venting during well operations	**Refer D-HS-01** (Impact to public health and safety from drilling activities including vehicle movements and unauthorised access) **Refer D-HS-02** (Impact to public health and safety from

Activity / Environmental Element	Environmental Objective	Assessment criteria	Leading performance criteria	Guide to how objectives can be achieved / control measures
		show that the accident could not have been reasonably prevented by the operator.		direct disturbance associated with well construction, and decommissioning)
Injection / Public Health and Safety	I1. No injuries, deaths or adverse health impacts to the public or third parties that could have been reasonably prevented by the operator.	▪ Records (e.g. audits / site inspections) demonstrate that reasonable measures have been implemented to ensure no injuries or health risks to the public. ▪ Any notifiable incidents (as per s35 of the *Work Health and Safety Act 2012*) involving the public investigated by a suitably qualified independent third party and the results of the investigation show that the accident could not have been reasonably prevented by the operator.	▪ Monitoring of CO_2 injection demonstrates maximum injection pressure not exceeded. ▪ If well integrity monitoring identifies potential issues, risk assessment undertaken to identify hazards / scenarios, and mitigation controls implemented where appropriate to reduce or monitor risk.	**Refer I-HS-01** (Uncontrolled release of CO_2, hydrocarbons and other substances to the atmosphere, surface and / or near-surface environments, from inadequate well integrity adversely impacting public health and safety) **Refer I-HS-02** (Injection of CO_2 into the storage complex results in uncontrolled release of CO_2, hydrocarbons and other substances into non-target geological formation adversely impacting public health and safety)
Heritage				
Seismic / Heritage	S2. No unauthorised damage, disturbance or interference to sites, objects or remains of Aboriginal and / or non-Aboriginal heritage	▪ Records demonstrate that a cultural heritage survey (or Work Area Clearance - WAC) has been undertaken prior to commencement of activities. ▪ Records (e.g. audits / site inspections) demonstrate that damage, disturbance or interference to any Aboriginal sites, objects and remains (all as defined under the *Aboriginal Heritage Act 1988*) is avoided unless authorisation has been obtained under the *Aboriginal Heritage Act 1988*. ▪ Records (e.g. audits / site inspections) demonstrate there has been no impact to non-Aboriginal heritage places and	▪ Processes are in place to meet requirements of legislation and agreements with Native Title claimant groups with respect to protection and reporting of discovery of unknown heritage sites during regulated activities. ▪ Records demonstrate that non-Aboriginal heritage sites have been identified and avoided. ▪ In the event the conditions of a Work Area Clearance(s) are not complied with, the incident is appropriately reported, investigated and remediated in consultation with the relevant Native	**Refer S-H-01** (Impact to cultural heritage from direct disturbance associated with earthworks, vehicle movements and uphole drilling)

Activity / Environmental Element	Environmental Objective	Assessment criteria	Leading performance criteria	Guide to how objectives can be achieved / control measures
		related objects protected under the *Heritage Places Act 1993 u*nless approval has been obtained under the *Heritage Places Act 1993*. ▪ Records demonstrate that any Aboriginal and non-Aboriginal heritage sites, objects and remains discovered during operations have been appropriately reported and responded to, consistent with the applicable NT Agreement and the *Aboriginal Heritage Act 1988* and *Heritage Places Act 1993*.	Title holders and in accordance with any applicable NT Agreement.	
Drilling / Heritage	D2. No unauthorised damage, disturbance or interference to sites, objects or remains of Aboriginal and / or non-Aboriginal heritage	▪ Records demonstrate that a cultural heritage survey (or Work Area Clearance - WAC) has been undertaken prior to commencement of activities. ▪ Records (e.g. audits / site inspections) demonstrate that damage, disturbance or interference to any Aboriginal sites, objects and remains (all as defined under the *Aboriginal Heritage Act 1988*) is avoided unless authorisation has been obtained under the *Aboriginal Heritage Act 1988*. ▪ Records (e.g. audits / site inspections) demonstrate there has been no impact to non-Aboriginal heritage places and related objects protected under the *Heritage Places Act 1993 u*nless approval has been obtained under the *Heritage Places Act 1993*. ▪ Records demonstrate that any Aboriginal and non-Aboriginal heritage sites, objects and remains discovered during operations have been appropriately reported and responded to, consistent with the applicable NT	▪ Processes are in place to meet requirements of legislation and agreements with Native Title claimant groups with respect to protection and reporting of discovery of unknown heritage sites during regulated activities. ▪ Records demonstrate that non-Aboriginal heritage sites have been identified and avoided. ▪ In the event the conditions of a Work Area Clearance(s) are not complied with, the incident is appropriately reported, investigated and remediated in consultation with the relevant Native Title holders and in accordance with any applicable NT Agreement.	**Refer D-H-01** (Drilling activities result in damage to shallow artefact scatters and/or subsurface material)

Activity / Environmental Element	Environmental Objective	Assessment criteria	Leading performance criteria	Guide to how objectives can be achieved / control measures
		Agreement and the *Aboriginal Heritage Act 1988* and *Heritage Places Act 1993*.		
Injection / Heritage	I2. No unauthorised damage, disturbance or interference to sites, objects or remains of Aboriginal and / or non-Aboriginal heritage	▪ Records demonstrate that a cultural heritage survey (or Work Area Clearance - WAC) has been undertaken prior to commencement of activities. ▪ Records (e.g. audits / site inspections) demonstrate that damage, disturbance or interference to any Aboriginal sites, objects and remains (all as defined under the *Aboriginal Heritage Act 1988*) is avoided unless authorisation has been obtained under the *Aboriginal Heritage Act 1988*. ▪ Records (e.g. audits / site inspections) demonstrate there has been no impact to non-Aboriginal heritage places and related objects protected under the *Heritage Places Act 1993 u*nless approval has been obtained under the *Heritage Places Act 1993*. ▪ Records demonstrate that any Aboriginal and non-Aboriginal heritage sites, objects and remains discovered during operations have been appropriately reported and responded to, consistent with the applicable NT Agreement and the *Aboriginal Heritage Act 1988* and *Heritage Places Act 1993*.	▪ Processes are in place to meet requirements of legislation and agreements with Native Title claimant groups with respect to protection and reporting of discovery of unknown heritage sites during regulated activities. ▪ Records demonstrate that non-Aboriginal heritage sites have been identified and avoided. ▪ In the event the conditions of a Work Area Clearance(s) are not complied with, the incident is appropriately reported, investigated and remediated in consultation with the relevant Native Title holders and in accordance with any applicable NT Agreement.	**Refer I-H-01** (Uncontrolled release of CO_2, hydrocarbons and other substances from inadequate well integrity adversely impacting heritage values and reputation)
Soil				
Seismic / Soil	S3. To maintain soil quality and reduce impact to soil resources.	▪ Records of inspections/audits demonstrate that proposed survey lines and campsites have been appropriately located and prepared to minimise the disturbance to soil resources.	▪ Records demonstrate that planning has been undertaken to minimise impacts of operations and records are available for review. ▪ There is no evidence of off-line driving or creation of shortcuts.	**Refer S-SO-01** (Impact to soil quality / resources from direct disturbance associated with line and access preparation, earthworks and vehicle movements)

Activity / Environmental Element	Environmental Objective	Assessment criteria	Leading performance criteria	Guide to how objectives can be achieved / control measures
		▪ Attainment of 0, +1 or +2 GAS criteria for 'Disturbance to land surface' objective, as listed Appendix A.		
		▪ An escape of petroleum, chemical or fuel that cannot be immediately contained or remediated is assessed and managed in accordance with the requirements of the National Environment Protection (Assessment of Site Contamination) Measure 1999, amended 2013 (NEPM), and where required, remediated in line with relevant guidelines.	▪ Records (e.g. audits / site inspections) demonstrate that fuel and chemicals are stored and handled in accordance with relevant standards and guidelines, including AS 1940, EPA Bunding and Spill Management guideline and the Australian Dangerous Goods Code (ADG). ▪ Inspections demonstrate no evidence of spills or leaks as a result of activities. ▪ Personnel trained in spill response procedures. ▪ Appropriate spill response equipment is available on site.	**Refer S-SO-02** (Impact to soil quality / resources from spills, leaks and uncontrolled releases associated with seismic activities such as surveying, drilling and restoration)
		▪ Records and inspections/audits demonstrate that wastes are segregated and transported to an Environment Protection Authority (EPA) licensed waste disposal facility for recycling or disposal. ▪ 0, +1 or +2 GAS criteria are attained for 'Pollution and Litter' listed in Appendix A.	▪ Inspections demonstrate waste is appropriately stored and contained. ▪ Inspections demonstrate no evidence of spills or leaks of as a result of activities. ▪ Personnel trained in spill response procedures. ▪ Appropriate spill response equipment is available on site.	**Refer S-SO-03** (Impact to soil quality / resources from inadequate storage and transport of waste results in a decrease in soil quality)
Drilling / Soil	D3. To maintain soil quality and reduce impact to soil resources.	▪ The attainment of 0, +1 or +2 GAS criteria for 'Minimising impact to soil' objectives for wellsite construction and borrow pit construction and rehabilitation listed in Appendix B. ▪ Records demonstrate that no construction activities are carried out on salt lakes, wetlands or steep breakaway/tableland/stony hills landforms (as defined in the EIR).	▪ Planning has been undertaken to minimise impacts of operations and records are available for review. ▪ There is no evidence of off-road driving or creation of shortcuts.	**Refer D-SO-01** (Impact to soil quality / resources from drilling activities including earthworks and vehicle movements)

Activity / Environmental Element	Environmental Objective	Assessment criteria	Leading performance criteria	Guide to how objectives can be achieved / control measures
		▪ Records of inspections/audits demonstrate that local erosion rates are not significantly accelerated above those of surrounding land.		
		▪ An escape of petroleum, chemical or fuel that cannot be immediately contained or remediated is assessed and managed in accordance with the requirements of the National Environment Protection (Assessment of Site Contamination) Measure 1999, amended 2013 (NEPM), and where required, remediated in line with relevant guidelines.	▪ Records and inspections/audits demonstrate that identified controls are in place.	**Refer D-SO-02** (Impact to soil quality / resources from well control incidents (e.g. blowout, kick) and Loss of well integrity (e.g. casing or cement failure))
		▪ An escape of petroleum, chemical or fuel that cannot be immediately contained or remediated is assessed and managed in accordance with the requirements of the National Environment Protection (Assessment of Site Contamination) Measure 1999, amended 2013 (NEPM), and where required, remediated in line with relevant guidelines. Records demonstrate that any inn situ remediation of spills is monitored and decrease in hydrocarbons over time can be demonstrated.	▪ Records (e.g. audits / site inspections) demonstrate that fuel and chemicals are stored and handled in accordance with relevant standards and guidelines, including AS 1940, EPA Bunding and Spill Management guideline and the Australian Dangerous Goods Code (ADG). ▪ Inspections demonstrate no evidence of spills or leaks of as a result of activities. ▪ Personnel trained in spill response procedures. ▪ Appropriate spill response equipment is available on site.	**Refer D-SO-03** (Impacts to soil quality / resources from spills and leaks associated with drilling activities and associated infrastructure)
		▪ All wastes to be disposed of at an EPA licensed facility in accordance with EPA Licence conditions, with the exception of: o drilling fluids, drill cuttings and other benign completion fluids disposed during well clean-up o sewage and grey water	▪ Inspections demonstrate waste is appropriately stored and contained.	**Refer D-SO-04** (Impact to soil quality / resources from inadequate storage and transport of waste results in a decrease in soil quality)

Activity / Environmental Element	Environmental Objective	Assessment criteria	Leading performance criteria	Guide to how objectives can be achieved / control measures
		○ putrescible domestic wastes (may be buried on-site in accordance with EPA requirements for short-term and temporary sites if transportation impractical). ▪ Records of inspections/audits demonstrate that reasonable steps are taken to securely contain waste prior to removal from site. ▪ Records of inspections/audits demonstrate that all wastewater disposed of in accordance with the *South Australian Public Health (Wastewater) Regulations 2013* or to the satisfaction of the Department of Health. ▪ Attainment of GAS criteria for 'Site to be left in a clean, tidy and safe condition' objective for wellsite restoration and borrow pit rehabilitation as listed in Appendix B.		
Injection / Soil	I3. To maintain soil quality and reduce impact to soil resources.	▪ Pressure monitoring during injection demonstrates maximum injection pressure not exceeded. ▪ Operational/real-time audits / inspections show maximum injection pressure not exceeded.	▪ If well integrity monitoring identifies potential issues, risk assessment undertaken to identify hazards / scenarios, and mitigation controls implemented where appropriate to reduce or monitor risk.	**Refer I-SO-01** (Uncontrolled CO_2 release from well integrity failure resulting in accumulation of CO_2 in soils adversely impact users and soil quality)
		▪ Records of monitoring and inspections demonstrate no adverse impact to soil as a result of CO_2 release.	▪ Monitoring of CO_2 levels demonstrates no evidence of uncontrolled release. ▪ Personnel trained in spill response procedures. ▪ Appropriate spill response equipment is available on site.	**Refer I-SO-02** (Impact to soil quality / resources as a result of CO_2 release at the surface)

Activity / Environmental Element	Environmental Objective	Assessment criteria	Leading performance criteria	Guide to how objectives can be achieved / control measures
Groundwater				
Seismic / Groundwater	S4. To maintain drainage patterns and avoid contamination of surface water and groundwater resources.	▪ Records of inspections/audits demonstrate that no uncontrolled flows were detected to surface from aquifers intersected in upholes / shallow boreholes.	▪ Inspections demonstrate that upholes are constructed and later backfilled in accordance with relevant industry standards and guidelines (e.g. DEM Earth Resources information sheet M21 *Mineral Exploration Drillholes — General specifications for construction and backfilling*).	**Refer S-GR-01** (Impact to shallow groundwater resources from uphole drilling activities)
		▪ Records and inspections/audits demonstrate that wastes are segregated and transported to an Environment Protection Authority (EPA) licensed waste disposal facility for recycling or disposal. ▪ 0, +1 or +2 GAS criteria are attained for 'Pollution and Litter' listed in Appendix A.	▪ Inspections demonstrate waste is appropriately stored and contained.	**Refer S-GR-02** (Impact to shallow groundwater resources from inadequate storage of camp wastewater)
		▪ An escape of petroleum, chemical or fuel that cannot be immediately contained or remediated is assessed and managed in accordance with the requirements of the National Environment Protection (Assessment of Site Contamination) Measure 1999, amended 2013 (NEPM), and where required, remediated in line with relevant guidelines.	▪ Records (e.g. audits / site inspections) demonstrate that fuel and chemicals are stored and handled in accordance with relevant standards and guidelines, including AS 1940, EPA Bunding and Spill Management guideline and the Australian Dangerous Goods Code (ADG). ▪ Inspections demonstrate no evidence of spills or leaks of as a result of activities. ▪ Personnel trained in spill response procedures. ▪ Appropriate spill response equipment is available on site.	**Refer S-GR-03** (Impact to shallow groundwater resources from spills, leaks and uncontrolled releases associated with seismic activities)
Drilling / Groundwater	D4. To preserve reservoir and aquifer pressure and avoid aquifer contamination.	▪ No unauthorised discharge or escape of petroleum, processed substance, chemical, fuel or solid wastes to groundwater.	▪ Inspections demonstrate waste is appropriately stored and contained. ▪ Inspections demonstrate no evidence of spills or leaks of as a result of activities.	**Refer D-GR-01** (Impact to groundwater aquifer from spills or leaks associated with drilling activities including:

Activity / Environmental Element	Environmental Objective	Assessment criteria	Leading performance criteria	Guide to how objectives can be achieved / control measures
			▪ Personnel trained in spill response procedures. ▪ Appropriate spill response equipment is available on site.	▪ storage of drilling muds and cuttings in sump ▪ Storage of fuel, oil and chemicals ▪ Operations and high-pressure hydraulic systems initial production testing / flaring)
		▪ Landholder complaints are documented and reasonable steps taken to resolve them can be demonstrated ▪ No impact on mound spring flow rates due to water extraction activities. ▪ Records of inspections/audits demonstrate no impact on other groundwater users due to the water extraction activities.	▪ Undertake regional groundwater monitoring and sampling of the existing water bores in the area where it is possible.	**Refer D-GR-02** (Impact to groundwater aquifer from groundwater use depleting the GAB and sub-artesian water supplies)
		▪ Records of inspections/audits demonstrate no uncontrolled flow to surface ▪ Sufficient barriers exist in casing annulus to prevent crossflow between separate aquifers or hydrocarbon reservoirs.	▪ Inspections demonstrate waste is appropriately stored and contained.	**Refer D-GR-03** (Impact to groundwater aquifer from uncontrolled release of water and hydrocarbons to surface from drilling and completion activities)
		▪ No crossflow behind casing between aquifers, and between aquifers and hydrocarbon reservoirs unless approved by the Department for Environment and Water.	▪ Well decommissioning program to be submitted to DEM with wireline logs prior to approval ▪ The identification of aquifers (stratigraphic layers) to be separated in well decommissioning activities. Isolation barriers to be set in place to ensure that crossflow, contamination or pressure reduction does not occur. Records of plug depths and intervals are kept.	**Refer D-GR-04** (Impact to groundwater aquifer from crossflow, aquifer contamination or reduction in pressure in aquifers from routine drilling activities)

Activity / Environmental Element	Environmental Objective	Assessment criteria	Leading performance criteria	Guide to how objectives can be achieved / control measures
Injection / Groundwater	I4. Demonstrate storage of CO_2 in deep geological formations	▪ Pressure monitoring during injection demonstrates containment of injected CO_2 in the well and receiving formations.	▪ If well integrity monitoring identifies potential issues, risk assessment undertaken to identify hazards / scenarios, and mitigation controls implemented where appropriate to reduce or monitor risk.	**Refer I-GR-01** (Injection of CO_2 into the storage complex results in lateral flow of CO_2 from storage reservoirs adversely impacting groundwater quality and users)
			▪ If well integrity monitoring identifies potential issues, risk assessment undertaken to identify hazards / scenarios, and mitigation controls implemented where appropriate to reduce or monitor risk.	**Refer I-GR-02** (Uncontrolled CO_2 release from well integrity and infrastructure failure adversely impacting groundwater quality and users)
Surface Water				
Seismic / Surface water	S5. To maintain drainage patterns and avoid contamination of surface water and groundwater resources.	▪ The attainment of 0, +1 or +2 GAS criteria for 'Disturbance to land surface' measure listed in Appendix A. ▪ No new water affecting activities as defined under the Landscape South Australia Act undertaken unless applicable permits have been obtained.	▪ There is no evidence of uncontrolled flows to surface from aquifers intersected in upholes / shallow boreholes.	**Refer S-SW-01** (Impact to surface water quality and availability from direct disturbance associated with line and access preparation, earthworks and vehicle movements)
		▪ No unauthorised discharge or escape of any liquid (including wastewater, petroleum, chemical or fuel) or solid wastes to surface water and / or groundwater. ▪ An escape of petroleum, chemical or fuel that cannot be immediately contained or remediated is assessed and managed in accordance with the requirements of the National Environment Protection (Assessment of Site Contamination) Measure 1999, amended 2013 (NEPM), and where	▪ Records (e.g. audits / site inspections) demonstrate that fuel and chemicals are stored and handled in accordance with relevant standards and guidelines, including AS 1940, EPA Bunding and Spill Management guideline and the Australian Dangerous Goods Code (ADG). ▪ Inspections demonstrate no evidence of spills or leaks of as a result of activities. ▪ Personnel trained in spill response procedures.	**Refer S-SW-02** (Impact to surface water quality and availability from spills, leaks and uncontrolled releases associated with seismic activities such as surveying, drilling and restoration)

Activity / Environmental Element	Environmental Objective	Assessment criteria	Leading performance criteria	Guide to how objectives can be achieved / control measures
		required, remediated in line with relevant guidelines.		
Drilling / Surface water	D5. To maintain drainage patterns and avoid contamination of surface waters and shallow groundwater resources.	▪ Wellsites and access tracks are constructed to maintain pre-existing water flows as far as practicable (e.g. channel contours are maintained on floodplains and at creek crossings and overland flows diverted around site if required) ▪ No new 'water affecting activities' as defined under the Landscape South Australia Act undertaken unless relevant permits have been obtained ▪ The attainment of 0, +1 or +2 GAS criteria for 'Minimising impact to drainage patterns' objectives for wellsite restoration and 'Minimising water retention in the pit' for borrow pit construction and rehabilitation listed in the Appendix B.	▪ Planning has been undertaken to minimise impacts of operations and records are available for review. ▪ There is no evidence of off-road driving or creation of shortcuts.	**Refer D-SW-01** (Impact to surface water quality and availability from drilling activities including earthworks and vehicle movements)
		▪ No unauthorised discharge or escape of petroleum, processed substance, chemical, fuel or solid wastes to surface water and/or groundwater.	▪ Records and inspections/audits demonstrate that identified controls are in place.	**Refer D-SW-02** (Impact to surface water quality and availability from well control incidents (e.g. blowout, kick) and loss of well integrity (e.g. casing or cement failure))
		▪ No unauthorised discharge or escape of petroleum, processed substance, chemical, fuel or solid wastes to surface water and/or groundwater.	▪ Records (e.g. audits / site inspections) demonstrate that fuel and chemicals are stored and handled in accordance with relevant standards and guidelines, including AS 1940, EPA Bunding and Spill Management guideline and the Australian Dangerous Goods Code (ADG). ▪ Inspections demonstrate no evidence of spills or leaks of as a result of activities.	**Refer D-SW-03** (Impacts to surface water quality and availability from spills and leaks associated with drilling activities and associated infrastructure)

Activity / Environmental Element	Environmental Objective	Assessment criteria	Leading performance criteria	Guide to how objectives can be achieved / control measures
			▪ Personnel trained in spill response procedures. ▪ Appropriate spill response equipment is available on site.	
		▪ All wastes to be disposed of at an EPA licensed facility in accordance with EPA Licence conditions, with the exception of: o drilling fluids, drill cuttings and other benign completion fluids disposed during well clean-up o sewage and grey water o putrescible domestic wastes (may be buried on-site in accordance with EPA requirements for short-term and temporary sites if transportation impractical). ▪ Records of inspections/audits demonstrate that reasonable steps are taken to securely contain waste prior to removal from site. ▪ Records of inspections/audits demonstrate that all wastewater disposed of in accordance with the *South Australian Public Health (Wastewater) Regulations 2013* or to the satisfaction of the Department of Health. ▪ Attainment of GAS criteria for 'Site to be left in a clean, tidy and safe condition' objective for wellsite restoration and borrow pit rehabilitation as listed Appendix B.	▪ Inspections demonstrate waste is appropriately stored and contained.	**Refer D-SW-04** (Impact to surface water quality and availability from inadequate storage and transport of waste results in a decrease in surface water quality)
Injection / Surface water	I5. To maintain surface water quality and reduce	▪ Pressure monitoring during injection demonstrates maximum injection pressure not exceeded.	▪ If well integrity monitoring identifies potential issues, risk assessment undertaken to identify hazards /	**Refer I-SW-01** (Uncontrolled CO_2 release from well integrity failure resulting in

Activity / Environmental Element	Environmental Objective	Assessment criteria	Leading performance criteria	Guide to how objectives can be achieved / control measures
	impact to surface water resources.		scenarios, and mitigation controls implemented where appropriate to reduce or monitor risk.	accumulation of CO_2 in surface water adversely impact users and quality)
		▪ Records of monitoring and inspections demonstrate no adverse impact to soil as a result of CO_2 release.	▪ Monitoring of CO_2 levels demonstrates no evidence of uncontrolled release.	**Refer I-SW-02** (Impact to surface water quality and availability as a result of CO_2 release at the surface)
Land Use and Infrastructure				
Seismic / Land Use and Infrastructure	S6. No significant disturbance to livestock, pastoral infrastructure and landholders	▪ Records of audits / inspections show the attainment of 0, +1 or +2 GAS criteria for 'Impact on infrastructure' objective listed in A. ▪ Records of audits / inspections show no adverse impact on livestock as a result of activities. ▪ Records of audits / inspections show no disruption to landholder activities as a result of regulated activities unless by prior arrangement. ▪ Where disturbance is unavoidable or accidental, infrastructure or land use is restored to the satisfaction of the landholder, or as otherwise agreed. ▪ No reasonable concerns raised by stakeholders are left unresolved. ▪ Compliance with relevant sections of the *Energy Resources Act 2000* in relation to notification of landholders.	▪ Stakeholder consultation prior to and during seismic activities. ▪ Landholder contact database and liaison program maintained. ▪ Site access in accordance with stakeholder consultation plan prior to and during seismic activities. ▪ Any impact on landholder activities, as a consequence of maintenance, to be minimized, where practicable.	**Refer (S-LU-01)** Impact to land use and landholders due to seismic activities including: ▪ Temporary loss of land utilisation for grazing ▪ Disturbance/collision to stock or restriction to stock movement ▪ Impeded property access ▪ Campsite preparation ▪ Recording – use of energy sources (vibrator machines or explosives.
	S7. Remediate and rehabilitate operational areas to agreed standards.	▪ The attainment of 0, +1 or +2 GAS criteria for: ○ 'Visual impact' ○ 'Impact on infrastructure' ○ 'uphole site restoration' ○ 'disturbance to land surface'	▪ Stakeholder consultation during development of the rehabilitation/abandonment plans for surface activities. ▪ Rehabilitation of disturbed areas to be approved by the landowner or in accordance with landowner's wishes.	

Activity / Environmental Element	Environmental Objective	Assessment criteria	Leading performance criteria	Guide to how objectives can be achieved / control measures
		○ Measures/goals listed in Appendix A. ▪ Records demonstrate no reasonable landowner complaints regarding rehabilitation of land are left unresolved.		
Drilling / Land Use and Infrastructure	D6. No significant disturbance to stakeholders and associated infrastructure.	▪ Records of audits / inspections show no adverse impact on livestock as a result of activities. ▪ Records of audits / inspections show no disruption to landholder activities as a result of regulated activities unless by prior arrangement. ▪ Where disturbance is unavoidable or accidental, infrastructure or land use is restored to the satisfaction of the landholder, or as otherwise agreed. ▪ Records of audits / inspections show landholder complaints are documented and reasonable steps have been taken to resolve them.	▪ Stakeholder consultation prior to and during drilling activities. ▪ Landholder contact database and liaison program maintained. ▪ Site access in accordance with stakeholder consultation plan prior to and during drilling activities. ▪ Any impact on landholder activities, as a consequence of maintenance, to be minimized, where practicable.	**Refer D-LU-01** (Impact to land use and landholders due to drilling activities including: ▪ vehicle movements ▪ unauthorised access ▪ camp site construction and rehabilitation).
	D7. Remediate and rehabilitate operational areas to agreed standards.	▪ The attainment of 0, +1 or +2 GAS criteria for 'Minimise visual impact', 'Re-establish natural vegetation on abandoned well sites and access tracks' and 'Site to be left in a clean, tidy and safe condition' objectives listed for well sites in Appendix B. ▪ The attainment of 0, +1 or +2 GAS criteria for 'Minimise impacts on vegetation', 'Minimise impact on soil', 'Minimise visual impacts' and 'Site to be left in a clean and tidy condition objectives listed for borrow pits in Appendix B. ▪ Records demonstrate no reasonable landowner complaints regarding rehabilitation of land are left unresolved.	▪ Stakeholder consultation during development of the rehabilitation/ abandonment plans for surface activities. ▪ Rehabilitation of disturbed areas to be approved by the landowner or in accordance with landowner's wishes.	

Activity / Environmental Element	Environmental Objective	Assessment criteria	Leading performance criteria	Guide to how objectives can be achieved / control measures
Injection / Land Use and Infrastructure	I6. No significant disturbance to livestock, pastoral infrastructure and landholders	▪ Records of audits / inspections show no adverse impact on livestock as a result of activities. ▪ Records of audits / inspections show no disruption to landholder activities as a result of regulated activities unless by prior arrangement. ▪ Where disturbance is unavoidable or accidental, infrastructure or land use is restored to the satisfaction of the landholder, or as otherwise agreed. ▪ Records of audits / inspections show landholder complaints are documented and reasonable steps have been taken to resolve them.	▪ Stakeholder consultation prior to and during drilling activities. ▪ Landholder contact database and liaison program maintained. ▪ Site access in accordance with stakeholder consultation plan prior to and during drilling activities. ▪ Any impact on landholder activities, as a consequence of maintenance, to be minimized, where practicable.	**Refer I-LU-01** (Impact to land use and landholders due to injection activities as a result of CO_2 release at the surface).
Native fauna and vegetation				
Seismic / Native fauna and vegetation	S8. No significant disturbance to native vegetation and native fauna	Line and access preparation ▪ Records of audits/inspections demonstrate there has been no unauthorised clearing of native vegetation. ▪ The attainment of either 0, +1 or +2 GAS criteria for 'Impact on vegetation' objective listed in A. ▪ Records (e.g. audits / site inspections) demonstrate no mature trees are removed. ▪ Fuel and Chemical Storage and Management ▪ No spills/leaks outside areas designed to contain them. ▪ Appropriate spill response equipment is available on site.	▪ Records demonstrate that terrain and vegetation is considered in planning stage when designing layout of the survey. ▪ There is no evidence of off-line driving or creation of shortcuts.	**Refer S-FF-01** (Impact to native flora and fauna from direct disturbance associated with line and access preparation, earthworks and vehicle movements)

Activity / Environmental Element	Environmental Objective	Assessment criteria	Leading performance criteria	Guide to how objectives can be achieved / control measures
		▪ No impact to rare, vulnerable or endangered flora and/or fauna due to an escape of petroleum, chemical or fuel.		
		▪ Records of site audits/inspections carried out in accordance with site management plans demonstrate that there are no native fauna casualties that could have reasonably prevented through management measures/controls.	▪ Daily inspection of open trenches and excavations for trapped fauna and livestock.	**Refer S-FF-02** (Impact to native fauna from direct disturbance associated uphole drilling and logging activities)
		▪ The attainment of either 0, +1 or +2 GAS criteria for 'Impact on vegetation' objective listed in Appendix A. ▪ Records (e.g. audits / site inspections) demonstrate no mature trees are removed.	▪ Records demonstrate that terrain and vegetation is considered in planning stage when designing layout of the survey.	**Refer S-FF-03** (Impact to native flora and fauna from direct disturbance as a result of campsite construction and associated wastewater)
		▪ Records demonstrate that no uncontrolled fires have resulted from regulated activities.	▪ Appropriate fire-fighting equipment is readily available. ▪ Appropriate personnel are readily available and suitably informed to action response.	**Refer S-FF-04** (Impact to native flora and fauna from direct disturbance as a result of fires caused by seismic activities)

Activity / Environmental Element	Environmental Objective	Assessment criteria	Leading performance criteria	Guide to how objectives can be achieved / control measures
Drilling / Native fauna and vegetation	D8. No significant disturbance to native vegetation and native fauna	▪ Records (e.g. audits / site inspections) demonstrate there has been no unauthorised clearing of native vegetation. ▪ Records demonstrate that any sites of rare, vulnerable and endangered flora and fauna have been identified, flagged and subsequently avoided. ▪ Records (e.g. ecological assessments, audits / site inspections) demonstrate that no rare, vulnerable or endangered flora have been removed without appropriate permits ▪ The attainment of 0, +1 or +2 GAS criteria for 'disturbance to vegetation' and 'Minimising impact on native vegetation and native fauna' objectives for wellsite construction, 're-establishment natural vegetation on abandoned wellsite's and tracks' under wellsite restoration 'Minimising impacts on native vegetation' for borrow construction listed in Appendix B.	▪ Records (e.g. ecological assessments) demonstrate that vegetation and fauna have been considered in the planning stage.	**Refer D-FF-01** (Impact to native flora and fauna from direct disturbance associated with drilling activities including: ▪ earthworks and vehicle movements ▪ fuel and chemical storage)
		▪ Records (e.g. audits / site inspections) demonstrate there has been no unauthorised clearing of native vegetation. ▪ Records demonstrate that any sites of rare, vulnerable and endangered flora and fauna have been identified, flagged and subsequently avoided. ▪ Records (e.g. ecological assessments, audits / site inspections) demonstrate that no rare, vulnerable or endangered flora have been removed without appropriate permits	▪ Records (e.g. ecological assessments) demonstrate that vegetation and fauna have been considered in the planning stage.	**Refer D-FF-02** (Impact to native flora and fauna from direct disturbance as a result of campsite construction and associated wastewater)

Activity / Environmental Element	Environmental Objective	Assessment criteria	Leading performance criteria	Guide to how objectives can be achieved / control measures
		▪ The attainment of 0, +1 or +2 GAS criteria for 'disturbance to vegetation' and 'Minimising impact on native vegetation and native fauna' objectives for wellsite construction, 're-establishment natural vegetation on abandoned wellsite's and tracks' under wellsite restoration 'Minimising impacts on native vegetation' for borrow construction listed in Appendix B.		
		▪ Records demonstrate that no uncontrolled fires have resulted from regulated activities.	▪ Appropriate fire-fighting equipment is readily available.	**Refer D-FF-03** (Impact to native flora and fauna from direct disturbance as a result of fires caused by drilling activities)
Injection / Native fauna and vegetation	I7. No impacts to flora and fauna from the unintended migration of CO_2 to surface and shallow subsurface environments.	▪ Records of monitoring and inspections demonstrate no adverse impact to flora and fauna as a result of CO_2 release.	▪ Monitoring of CO_2 levels demonstrates no evidence of uncontrolled release. ▪ Personnel trained in spill response procedures. ▪ Appropriate spill response equipment is available on site.	**Refer I-FF-01** (Injection of CO_2 into the storage complex results in uncontrolled CO_2 release from undetected permeable geological structures such as open faults and fractures results in a loss of native flora and fauna and biodiversity)
Weeds and pests				
Seismic / Weeds and pests	S9. No introduction or spread of weeds, pest animals and pathogens as a consequence of regulated activities, and implement control measures as necessary	▪ Records (e.g. audits / site inspections) demonstrate that the presence of weeds, pest animals or pathogens is consistent with or better than pre-disturbance conditions and adjacent land or where this is not the case, a management plan is implemented promptly.	▪ No reasonable complaints received from landholders in relation to new outbreaks of weeds, pathogens or diseases for the duration of the project. ▪ Records of site audits and inspections are maintained and demonstrate that the presence of weeds and pathogens is consistent with or better than pre-disturbance conditions and adjacent land.	**Refer S-WP-01** (Impact to native vegetation species, loss of biodiversity and/or ecological value from introduced weeds and/or pests)

Activity / Environmental Element	Environmental Objective	Assessment criteria	Leading performance criteria	Guide to how objectives can be achieved / control measures
		▪ Declared plants[1] occurring as a result of regulated activities are reported and managed in accordance with relevant regulations.	▪ Records demonstrate that all equipment and vehicles are inspected and cleared where required before arrival at the site.	
Drilling / Weeds and pests	D9. No introduction or spread of weeds, pest animals and pathogens as a consequence of regulated activities, and implement control measures as necessary	▪ Records (e.g. audits / site inspections) demonstrate that the presence of weeds, pest animals or pathogens is consistent with or better than pre-disturbance conditions and adjacent land or where this is not the case, a management plan is implemented promptly. ▪ Declared plants[2] occurring as a result of regulated activities are reported and managed in accordance with relevant regulations.	▪ No reasonable complaints received from landholders in relation to new outbreaks of weeds, pathogens or diseases for the duration of the project. ▪ Records of site audits and inspections are and demonstrate that the presence of weeds and pathogens is consistent with or better than pre-disturbance conditions and adjacent land. ▪ Records demonstrate that all equipment and vehicles are inspected and cleared where required before arrival at the site.	**Refer D-WP-01** (Impact to native vegetation species, loss of biodiversity and/or ecological value from introduced weeds and/or pests)
Injection / Weeds and pests	I8. No introduction or spread of weeds, pest animals and pathogens as a consequence of regulated activities, and implement control measures as necessary	▪ Records (e.g. audits / site inspections) demonstrate that he presence of weeds, pest animals or pathogens is consistent with or better than pre-disturbance conditions and adjacent land or where this is not the case, a management plan is implemented promptly. ▪ Declared plants[3] occurring as a result of regulated activities are reported and managed in accordance with relevant regulations.	▪ No reasonable complaints received from landholders in relation to new outbreaks of weeds, pathogens or diseases for the duration of the project. ▪ Records of site audits and inspections are maintained for the life of the project and demonstrate that the presence of weeds and pathogens is consistent with or better than pre-disturbance conditions and adjacent land. ▪ Records demonstrate that all equipment and vehicles are inspected and cleared where required before arrival at the site.	**Refer I-WP-01** (Impact to native vegetation species, loss of biodiversity and/or ecological value from introduced weeds and/or pests)
Waste				

[1] Declared plants as listed under the *Landscape South Australia Act 2019*.
[2] Declared plants as listed under the *Landscape South Australia Act 2019*.
[3] Declared plants as listed under the *Landscape South Australia Act 2019*.

Activity / Environmental Element	Environmental Objective	Assessment criteria	Leading performance criteria	Guide to how objectives can be achieved / control measures
Seismic / Waste	S10. No significant impact on the environment of waste storage, handling and disposal.	▪ Records and inspections/audits demonstrate that wastes are segregated and transported to an Environment Protection Authority (EPA) licensed waste disposal facility for recycling or disposal. ▪ 0, +1 or +2 GAS criteria are attained for 'Pollution and Litter' listed in Appendix A. ▪ Reasonable steps are taken to securely contain waste prior to removal from site. ▪ All wastewater disposed of in accordance with the South Australian Public Health (Wastewater) Regulations 2013 or to the satisfaction of the Department of Health	▪ On site treatment of camp waste water to appropriate water quality standards prior to discharge (e.g. – grey water and effluent) in a manner that prevents entry into water bodies or water courses. ▪ Compliance with the relevant local Government regulations and sanitation regulations. ▪ Liquid waste is disposed in a manner which prevents discharge or runoff to environmentally sensitive areas. ▪ Records maintained in relation to disposal/discharge method and location and any third party consultation. ▪ Containment and treatment on-site or removal off-site for appropriate treatment/disposal where water quality is unsuitable for on-site disposal. ▪ Inspection of water disposal sites for evidence of water entering a environmentally sensitive area. ▪ Waste water disposal systems comply with legislative requirements. ▪ Facility and maintenance audits to validate compliance.	**Refer S-W-01** (Impact to amenity and native fauna from waste produced during seismic activities)
Drilling / Waste	D10. No significant impact on the environment of waste storage, handling and disposal.	▪ All wastes to be disposed of at an EPA licensed facility in accordance with EPA Licence conditions, with the exception of: ○ Drilling fluids, drill cuttings and other benign completion fluids disposed during well clean-up ○ Putrescible domestic wastes (may be buried on-site in accordance with EPA requirements for short-term	▪ On site treatment of camp waste water to appropriate water quality standards prior to discharge (e.g. – grey water and effluent) in a manner that prevents entry into water bodies or water courses. ▪ Compliance with the relevant local Government regulations and sanitation regulations.	**Refer D-W-01** (Impact to amenity and native fauna from waste produced during drilling activities)

Activity / Environmental Element	Environmental Objective	Assessment criteria	Leading performance criteria	Guide to how objectives can be achieved / control measures
		and temporary sites if transportation impractical). ▪ Records of inspections/audits demonstrate that reasonable steps are taken to securely contain waste prior to removal from site. ▪ All wastewater disposed of in accordance with the *South Australian Public Health (Wastewater) Regulations 2013* or to the satisfaction of the Department of Health ▪ Attainment of GAS criteria for 'Site to be left in a clean, tidy and safe condition' objective for wellsite restoration and borrow pit rehabilitation as listed in Appendix B. ▪ No adverse effects on native fauna from waste management through any stage of construction, drilling and/or production.	▪ Liquid waste is disposed in a manner which prevents discharge or runoff to environmentally sensitive areas. ▪ Records maintained in relation to disposal/discharge method and location and any third party consultation. ▪ Containment and treatment on-site or removal off-site for appropriate treatment/disposal where water quality is unsuitable for on-site disposal. ▪ Inspection of water disposal sites for evidence of water entering a environmentally sensitive area. ▪ Waste water disposal systems comply with legislative requirements. ▪ Facility and maintenance audits to validate compliance.	
Injection / Waste	I9. No significant impact on the environment of waste storage, handling and disposal.	▪ All wastes to be disposed of at an EPA licensed facility in accordance with EPA Licence conditions, with the exception of: ○ Drilling fluids, drill cuttings and other benign completion fluids disposed during well clean-up ○ Putrescible domestic wastes (may be buried on-site in accordance with EPA requirements for short-term and temporary sites if transportation impractical). ▪ Records of inspections/audits demonstrate that reasonable steps are taken to securely contain waste prior to removal from site.	▪ On site treatment of camp waste water to appropriate water quality standards prior to discharge (e.g. – grey water and effluent) in a manner that prevents entry into water bodies or water courses. ▪ Compliance with the relevant local Government regulations and sanitation regulations. ▪ Liquid waste is disposed in a manner which prevents discharge or runoff to environmentally sensitive areas. ▪ Records maintained in relation to disposal/discharge method and location and any third party consultation. ▪ Containment and treatment on-site or removal off-site for appropriate	**Refer I-W-01** (Impact to amenity and native fauna from waste produced during injection activities)

Activity / Environmental Element	Environmental Objective	Assessment criteria	Leading performance criteria	Guide to how objectives can be achieved / control measures
		▪ All wastewater disposed of in accordance with the *South Australian Public Health (Wastewater) Regulations 2013* or to the satisfaction of the Department of Health ▪ Attainment of GAS criteria for 'Site to be left in a clean, tidy and safe condition' objective for wellsite restoration and borrow pit rehabilitation as listed in Appendix B. ▪ No adverse effects on native fauna from waste management through any stage of construction, drilling and/or production.	treatment/disposal where water quality is unsuitable for on-site disposal. ▪ Inspection of water disposal sites for evidence of water entering a environmentally sensitive area. ▪ Waste water disposal systems comply with legislative requirements. ▪ Facility and maintenance audits to validate compliance.	
Visual amenity				
Seismic / Visual amenity	S11. To maintain the visual amenity during regulated activities	▪ Records of inspections/audits demonstrate that proposed survey lines and campsites have been appropriately located and prepared to minimise the visual impact. ▪ The attainment of 0, +1 or +2 GAS criteria for 'Visual impact' objective listed in Appendix A.	▪ Adverse impacts from disturbed areas resolved to the reasonable satisfaction of the landowner	**Refer S-VA-01** (Impact to visual amenity to the remote and natural qualities / visitor experience of the Licence Area region from the direct disturbance associated with earthworks and uphole drilling activities)
		▪ Records of inspections/audits demonstrate that proposed survey lines and campsites have been appropriately located and prepared to minimise the visual impact. ▪ The attainment of 0, +1 or +2 GAS criteria for 'Visual impact' objective listed in Appendix A.	▪ Planning has been undertaken to minimise impacts of operations and records are available for review.	**Refer S-VA-02** (Impact to the natural values of the Licence Area region as a result of campsite preparation and site activities)
Drilling / Visual amenity	D11. To maintain visual amenity during regulated activities	▪ The attainment of 0, +1 or +2 GAS criteria for 'Minimise visual impact' objectives for wellsite restoration and borrow pit construction and rehabilitation listed in Appendix B.	▪ Adverse impacts from disturbed areas resolved to the reasonable satisfaction of the landowner	**Refer D-VA-01** (Impact to landforms from drilling activities resulting in degraded visual amenity)

Activity / Environmental Element	Environmental Objective	Assessment criteria	Leading performance criteria	Guide to how objectives can be achieved / control measures
Injection / Visual amenity	I10. To maintain visual amenity during regulated activities	▪ Location of injection activities have been appropriately located and prepared to minimise the visual impact.	▪ Adverse impacts from disturbed areas resolved to the reasonable satisfaction of the landowner	**Refer I-VA-01** (Impact to visual amenity of landholders/land users from the direct disturbance associated with the presence of vehicles and equipment during injection activities)

3. Reporting

3.1 Incident definitions

Section 100 of the ER Act requires an SEO to set out 'immediately reportable' and 'reportable' incidents (both within the meaning of section 85 of the ER Act).

3.1.1 Immediately reportable incidents

Section 85(3) of the ER Act defines an immediately reportable incident as:

- an incident arising from activities conducted under a licence specified in the relevant statement of environmental objectives to be an immediately reportable incident; or
- any other matter brought within the ambit of this definition by the ER Regulations.

3.1.2 Reportable incidents

Section 85(3) of the ER Act defines a reportable incident as:

- an incident (not being an immediately reportable incident) arising from activities conducted under a licence specified in the relevant statement of environmental objectives to be a reportable incident
- any other matter brought within the ambit of this definition by the ER Regulations.

Regulation 32(1) of the ER Regulations classifies the following as reportable incidents:

- an escape of a regulated substance, a processed substance, a chemical or a fuel that affects an area that has not been specifically designed to contain such an escape
- an incident identified as a reportable incident under the relevant statement of environmental objectives.

Table 3-1 identifies the potential immediately reportable and reportable incidents relevant to seismic surveys, drilling and CO_2 injection activities.

Table 3-1: Incident definitions for immediately reportable and reportable incidents

Immediately reportable incident	Reportable incident
1. A person is seriously injured[1] or killed. 2. An imminent risk to public health or safety arises. 3. Serious environmental damage occurs or an imminent risk of serious environmental damage arises. For example: a. Damage, disturbance or interference to sites of cultural and / or heritage significance without appropriate authorisations[2]. b. An escape of a regulated substance, processed substance, a chemical or a fuel to a water body, or to land in a place where it is reasonably likely to enter a water body by seepage or infiltration, or onto land that affects the health of native flora and fauna species[3]. c. Identification of cross flows between aquifers in natural hydraulic isolation, or uncontrolled flows to the surface. d. Any well incident or failure that threatens or poses an imminent risk to safety or a risk of serious damage to environmental values whether or not those values are referred to in State or Commonwealth legislation. e. Detection of a declared weed, animal / plant pathogen or plant pest species that has been introduced or spread as a direct result of activities. f. Any removal of rare, vulnerable or endangered flora and fauna or threatened ecological community without appropriate permits and approvals[4]. g. Any significant alteration of hydrology that affects a significant wetland area. 4. A regulated activity[5] being undertaken in manner that involved or will involve a serious risk to the health or safety of a person emanating from an immediate or imminent exposure to a hazard[6]. 5. An uncontrolled release resulting in the activation of emergency response and / or evacuation procedures of an area in or adjacent to the release, and / or fire or explosion.	1. An escape of a regulated substance[7], processed substance, a chemical or a fuel that affects an area that has not been specifically designed to contain such an escape[8] (other than an immediately reportable incident). 2. An event that has the potential to compromise the physical integrity of an asset or facility. For example: ○ An unapproved excursion outside of critical design or operating conditions / parameters. ○ Identification of a critical barrier failure that could lead to the potential for cross flows between aquifers in natural hydraulic isolation, or uncontrolled flows to the surface. ○ Failure of a critical procedural control in place to reduce a credible threat to low or as low as reasonably practicable (ALARP)[9]. 3. Malfunction or failure of critical plant or equipment that had (or still has) potential to cause a serious incident. 4. Unresolved reasonable complaints from stakeholders regarding operations. 5. Any event where an incursion outside a culturally cleared area has occurred or the conditions[10] of a cultural heritage clearance have not been complied with (other than a serious incident).

[1] As per the definition in Section 36 of the *Work Health and Safety Act 2012*.

[2] Pursuant to *Aboriginal Heritage Act 1988* and *Heritage Places Act 1993*.

[3] For reporting purposes, the assessment of 'reasonably likely to enter a water body by seepage or infiltration' may require further intrusive assessment. Should delineation of the extent of the release not be achieved within one week of becoming aware of the incident, DEM will be notified of the incident and the proposed site investigation methodology, including timeframes.

[4] Pursuant to *Native Vegetation Act 1991* (flora) and *National Parks and Wildlife Act 1972* (fauna).

[5] Regulated activity as defined in Section 10 of the *Energy Resources Act 2000*.

[6] Resulting in the issuing of a prohibition notice by SafeWork SA pursuant to Section 195 of the *Work Health and Safety Act 2012*.

[7] As defined in Section 4 of the *Energy Resources Act 2000*.

[8] An area assigned during a Hazard and Operability Process (HAZOP) study as a hazardous area for the purpose of gas venting, and designed as such, is considered to be an area specifically designed to contain a gas escape.

[9] As per the Safety Management System process articulated in AS 2885.1-2012, or similar risk assessment process.

[10] Note: Cultural heritage clearances are not defined under or referenced by the *Aboriginal Heritage Act 1988* and cannot ever authorise impacts to Aboriginal heritage.

3.2 Reporting Requirements

3.2.1 Reporting under the ER Act

Immediately reportable incidents must initially be reported to the Minister within 24 hours after the licensee becomes aware of the occurrence of the incident, as described in Section 85 of the ER Act and ER Regulation 32. A written report on the incident must be provided in accordance with Regulation 32 within 3 months of the occurrence of the incident or a period specified by the Minister.

Reportable Incidents must be reported to the Minister on a quarterly basis within 1 month after the end of each quarter, as per ER Regulation 32.

3.2.2 Reporting to the Environmental Protection Authority

Where applicable, incidents causing or threatening serious or material environmental harm under the Environment Protection Act 1993 (EP Act) must be reported to the EPA in accordance with section 83 of the EP Act.

The EP Act and its reporting obligations do not apply to:

- exploration activity undertaken under the ER Act; or
- wastes produced in the course of an activity (not being a prescribed activity of environmental significance) authorised by a licence under the ER Act when produced and disposed of to land within the area of the licence.

3.2.3 Reporting to SafeWork SA

Notifiable incidents (i.e. death, serious injury or illness, or dangerous incidents) must be reported to SafeWork SA in accordance with Part 3 of the Work Health and Safety Act 2012.

3.2.4 Cultural Heritage Reporting

Reporting on cultural heritage must be undertaken in accordance with the requirements of the *Aboriginal Heritage Act 1988* and the *Coroners Act 2003* as set out below:

- If new Aboriginal sites, objects, or remains are discovered, or new information about them is discovered, this must be reported to AAR as soon as practicable on (08) 8429 9400.
- In the event suspected human skeletal remains are discovered, SAPOL should be contacted immediately on 131 444.

4. List of Abbreviations

Abbreviation	Definition
AAR	Aboriginal Affairs and Reconciliation, Attorney General's Department (South Australia)
DEM	Department for Energy and Mining (regulator of the Energy Resources Act)
EIR	Environmental Impact Report prepared in accordance with Section 97 of the *Energy Resources Act 2000* and Regulation 10.
EPA	Environment Protection Authority
ER Act	Energy Resources Act 2000
ER Regulations	Energy Resources Regulations 2013
GSEL	Gas Storage Exploration Licence
NVC	Native Vegetation Council
PEL	Petroleum Exploration Licence
SEO	Statement of Environmental Objectives prepared in accordance with Section 99 and 100 of the *Energy Resources Act 2000* and Regulation 12.

5. References

ACV/D3 (2026). *Arckaringa Basin Exploration Activities – Environmental Impact Report*. ACV/D3, May 2026.

DEM (2024). *Environmental Impact Assessment Criteria Guidelines. Energy Regulatory Guidelines ERG 015*. Department for Energy and Mining, South Australia, Adelaide.

NVC (2025). *Guide for a Significant Environmental Benefit for the Clearance of Native Vegetation Associated with the Minerals and Petroleum Industry*. Native Vegetation Council. Government of South Australia, Department for Environment and Water, Adelaide.

Appendix A Goal Attainment Scaling Criteria – Seismic Activities

GAS Criteria for Seismic Activities

Land system	Measure Associated Goals	Score				
		+2	+1	0	-1	-2
Non land system specific	Visual impact	No evidence of survey operations.	Only wheel tracks are evident. Line of sight is significantly impaired.	Established roads and tracks have been reshouldered. Doglegs have been placed at established roads and tracks, particularly in vegetated areas. Dozer or grader has been walked 50m either side of established road or track. Line weaves through vegetated areas at least every 100m. Line of sight is impaired. Line follows route that is most conducive to access by utilising naturally clear areas through vegetation.	No doglegs at established roads or tracks, particularly in vegetated areas. Weaving is not appropriate to terrain traversed. Line of sight is unimpaired. Uphole cuttings clearly visible in landscape.	Line is clearly evident and dominates the landscape.
	Impact on infrastructure	No impact to any pastoral, tourist or mining infrastructure.	No observable repair or damage to infrastructure.	Any impact to infrastructure has been reported and reinstated or repaired.	Repair to damaged infrastructure is incomplete or inappropriate. Damage has not been reported.	Damage to any infrastructure has been left un-repaired and not reported.
	Uphole site restoration	No evidence of upholes.	No evidence of cuttings. Some evidence of operations.	Cuttings are evident but dispersed around hole. No subsidence. Hole has been plugged. Aquifers have been plugged.	Cuttings form mound. Subsidence is evident. Cuttings markedly discoloured compared to surface.	Hole is open. Water is flowing from hole.

Land system	Measure Associated Goals	Score				
		+2	+1	0	-1	-2
	Pollution or litter	No pollution or litter.	No evidence of water or oil pollution. Maximum of 1 pin flag/km.	Wastewater and vehicle oil spills have been managed appropriately. Maximum of 2 pin flags/km. No other litter.	Wastewater forms ponds or extensive boggy ground. Vehicle oil spills have not been remedied. Maximum of 9 pin flags/km. Maximum of 4 items of other litter/km.	Extensive wastewater ponding. Oil spills of more than 20L have not been remedied. Ten or more pin flags/km. Five or more items of other litter/km.
Wetlands (including GAB spring tails)	Disturbance to land surface	No evidence of survey line. No disturbance to vegetation.	No evidence of shotholes. Little evidence of foot trafficking. No disturbance to vegetation.	Only footprints are evident. No significant evidence of shotholes. Evidence of minor disturbance of vegetation.	Wheel tracks exist and are <0.2m deep. Minor evidence of shotholes. Evidence of disturbance of vegetation.	Wheel tracks exist and are >0.2m deep. Bog holes are evident. Dominant evidence of shotholes (e.g. cratering, blow out, discolouration). Vegetation has been removed.
Drainage Lines & Floodplains	Impact on vegetation	No removal of vegetation.	No removal of Priority 1 and 2 vegetation. No removal of Priority 3 vegetation >1m.	No removal of Priority 1 and 2 vegetation. No removal of Priority 3 shrubs >2m high. Less than 10% of tree branches have been removed from individual trees. Rootstock is intact.	Priority 1 and 2 vegetation <2m high have been removed. Priority 3 shrubs >2m high have been removed.	Trees and/or shrubs >2m high have been removed. Rootstock has been removed.
	Disturbance to land surface	No windrows. No interference with drainage channels.	Windrows are <0.1m high for more than 50% of line length. Only creek banks <0.5m high have been cut.	Windrows are <0.1m high. Creek banks <1m high have been cut. Creeks are not blocked. Wheel tracks are <0.1m deep.	Windrows are <0.3m high. Windrows are generally continuous. Creek banks 1–2m high have been cut and not restored. Creeks are blocked by material <1m deep.	Windrows are >0.3m high. Windrows are continuous. Creek banks >2m high have been cut. Creeks are blocked by material >1m deep.

Land system	Measure Associated Goals	Score				
		+2	+1	0	-1	-2
					Off line trafficking is evident. Wheel tracks are >0.1m deep.	
Moon Plains	Disturbance to land surface	No evidence of survey line.	Only wheel tracks are evident <10cm deep.	Line has been rolled or walked. No blade work in erodible soils. Drainage lines have been cut only where necessary and have not been blocked.	Windrows exist but are <0.5m high. Off line trafficking is evident. Extensive wheel ruts exist.	Gypsiferous mantle has been removed. Drainage lines are blocked by material Windrows are >0.5m high.
Breakaways & Stony Hills	Impact on vegetation	No disturbance to vegetation.	No removal of vegetation.	Maximum of two trees 1–3m high have been unavoidably removed at creek crossings or escarpments. Less than 10% of tree branches have been removed from individual trees. Creek crossings are doglegged.	Vegetation has been removed unnecessarily. Three or more trees 1–3m high have been removed on escarpments.	Trees have been removed unnecessarily. Two or more trees >3m high have been removed on escarpments.
	Disturbance to land surface	No evidence of survey line.	No evidence of shotholes. On steep slopes, little evidence of foot trafficking, no evidence of wheel tracks. On gentle slopes, criteria for Stony Plains apply.	No significant evidence of shotholes. On steep slopes, minor disturbance from foot trafficking, no evidence of wheel tracks. On gentle slopes, criteria for Stony Plains apply.	Minor evidence of shotholes On steep slopes, wheel tracks exist. On gentle slopes, criteria for Stony Plains apply.	Dominant evidence of shotholes (e.g. cratering, blow out, discolouration). On step slopes, extensive wheel ruts exist, surface blading has occurred. On gentle slopes, criteria for Stony Plains apply.
Stony Plains	Impact on vegetation	No disturbance to vegetation.	No removal of vegetation.	Maximum of two trees 1–3m high have been	Vegetation has been removed unnecessarily.	Trees have been removed unnecessarily.

Land system	Measure Associated Goals	Score				
		+2	+1	0	-1	-2
				unavoidably removed at creek crossings or escarpments. Less than 10% of tree branches have been removed from individual trees. Creek crossings are doglegged.	Three or more trees 1–3m high have been removed at creek crossings or escarpments.	Two or more trees >3m high have been removed at creek crossings or escarpments.
	Disturbance to land surface	No evidence of survey line.	Only wheel tracks are evident <10cm deep.	Line has been rolled or walked. No blade work. Creek banks have been cut only where necessary. Creeks are not blocked.	Creek banks 1–2m high have been cut and not restored. Creeks are blocked by material <1m deep. Windrows exist but are <0.5m high. Off line trafficking is evident. Extensive wheel ruts exist.	Gibber mantle has been removed. Creek banks >2m high have been cut and not restored. Creeks are blocked by material >1m deep. Windrows are >0.5m high.
Dunefields & Sandy Plains	Impact on vegetation	No removal of vegetation.	Only herbs and shrubs less than 0.5m high removed on dunes. No removal of vegetation in swales.	No removal of Priority 1 and 2 vegetation. No removal of Priority 3 shrubs >2m high. Less than 30% of tree branches have been removed from individual trees.	Priority 1 or 2 vegetation <2m high have been removed, including rootstock. Priority 3 shrubs >2m high have been removed, including rootstock.	Priority 1 or 2 vegetation >2m high have been removed.
	Disturbance to land surface	No dune cuts. No windrows.	Dune cuts are <0.5m deep. No blade cutting in swales.	Dune cuts are 0.5–1m deep. Clay-rich dune cuts are <1m deep. Side cuts in clay rich dunes <0.75m. Sand is stacked along side of cut.	Dune cuts are 1–2m deep. Side cuts in clay dunes >0.75m. Clay dune cuts >1m. Off line trafficking is evident.	Dune cuts are >2m deep. Extensive ramping of sand onto swale. Windrows in swales are continuous. Windrows in swales are >0.3m high.

Land system	Measure Associated Goals	Score				
		+2	+1	0	-1	-2
				Windrows in swale are <0.1m high and not continuous.	Minor ramping of sand onto swale. Windrows in swale are 0.1–0.3m high.	Claypans have been cut.
Salt lakes	Disturbance to land surface	No evidence of survey line.	No evidence of shotholes. Little evidence of foot trafficking.	Only footprints are evident. No significant evidence of shotholes.	Wheel tracks exist and are <0.2m deep. Minor evidence of shotholes.	Wheel tracks exist and are >0.2m deep. Bog holes are evident. Dominant evidence of shotholes (e.g. cratering, blow out, discolouration).

Appendix B Goal Attainment Scaling Criteria – Drilling Activities

GAS Criteria for Wellsite Construction and Restoration

Objectives	Measure Associated Goals	Goal Exceeded +2	Goal Exceeded +1	Goal Attained 0	Minor Shortfall - 1	Significant Shortfall - 2
CONSTRUCTION						
Minimise impacts to soil	Topsoil stockpiled and separated from sump/trench spoil	-	-	Separate topsoil, cleared vegetation and spoil stockpiles present at well lease and campsite	Topsoil and spoil stockpile mixing evident	No stockpiled topsoil evident
	Stony/gibber pavement rolled	-	-	Stony/gibber pavement rolled	-	Blading has occurred in giber and tableland environments in areas where erosion risk is high or unmanageable, or with no drainage or erosion control structures in other areas. Uncontrolled erosion has occurred.
Minimise disturbance of vegetation	Impact on vegetation	No trees or vegetation removed	No trees removed, only vegetation of Priority 4 cleared.	Trees and vegetation removed in area where could not have been avoided	Vegetation of Priority 2 or 3 removed in area where could have been avoided	Trees of Priority 1 removed where could have been avoided
Minimise disturbance to drainage patterns	No obstruction of water flows	No obstruction of channels of any dimension	-	No obstruction of water flows or flows diverted around the well lease if required	Minor channels only obstructed during well lease and access track construction	Water flows obstructed as a result of earthworks
RESTORATION						
Minimise visual impact	Wellsite restoration	The site contours and colour blend with the surroundings and earthwork disturbance is	The earthwork disturbance is beginning to blend into the surroundings	The site contours and colour blend with the surroundings; but earthwork disturbance (eg ripping or	The site surface and edge have been contoured into the surrounding landscape, but the	The site remains as a prominent consolidated surface with a distinct edge.

		indistinguishable from the surroundings.		respreading of original material) is still prominent.	colour of foreign material contrasts with the surroundings.	
	Wellsite restoration on dunes or slopes	The edge and colour of the site blend with the surroundings. The site contours are indistinguishable, whether viewed from the top or base of the slope.	The edge and colour of the site blend with the surroundings. The site contours are visible only when viewed from the top of the slope. They cannot be seen from the base. There are no erosion gullies down the face of the slope.	The edge and colour of the site blend with the surroundings. The site contours are visible only when viewed from the top of the slope. They cannot be seen from the base. Erosion gullies are present down the face of the slope but they are not extensive or prominent.	The edge of the site has been restored into the natural contour of the dune/slope, but the colour of foreign material contrasts with the surroundings.	Extensive gully erosion down the face of the slope and/or a steep site edge is prominent
	Access track restoration	The track contours and colour blend with the surroundings and the earthwork disturbance is indistinguishable.	The track contours and colour blend with the surroundings and the earthwork disturbance is beginning to blend also.	The track contours and colour blend with the surroundings, but the earthwork disturbance (eg. ripping, rolling or respreading of original material) is still prominent.	The track surface has been contoured into the surrounding landscape, but the colour of foreign material contrasts with the surroundings.	The track is prominent because of a scraped surface, windrows along its edges or gully erosion.
Re-establish natural vegetation on abandoned wellsites and access tracks	For wellsites where it has been less than 5 years since restoration	The revegetation is extensive and mostly consists of annuals and biennials. Perennials which are consistent with the surroundings are beginning to establish.	The revegetation is extensive and consists of annuals and biennials. In contrast to the surroundings, there are no perennials.	The site surface has been appropriately restored to facilitate revegetation (eg. ripping or respreading of original material).	The colour of foreign material contrasts with the surroundings. Re-vegetation with inappropriate species	The site remains as a consolidated surface.
	For wellsites where it has been more than 5 years since restoration	The revegetation type, density and maturity is indistinguishable from the surroundings.	The revegetation, mostly perennials, is consistent with the surroundings, but there is contrast in maturity between them.	The revegetation consists of annuals, biennials and perennials, but there are some bare patches which are inconsistent with the surroundings.	The revegetation mostly consists of annuals and biennials. In contrast to the surroundings, there are few perennials.	No revegetation evident.

Site to be left in a clean, tidy and safe condition	Well marked and cellar backfilled	-	-	Cellar backfilled and marker installed.	Cellar backfilled but no marker installed.	Cellar not completely backfilled.
	Rubbish removed	-	-	No evidence of litter on site.	Small items of litter spread over more than 50% of the site (eg. tin cans, nuts & bolts, rags, small pieces of cable, wood etc.).	Large items of litter present across site (eg. drums, pieces of casing, cables etc.).

GAS Criteria for Borrow Pits

Objectives	Measure Associated Goals	Goal Exceeded +2	Goal Exceeded +1	Goal Attained 0	Minor Shortfall - 1	Significant Shortfall - 2
Minimise impacts to soil	Pit sited to minimise erosion and facilitate rehabilitation	Gibber plain and tableland				
		-	-	Pit located on flat terrain Gibber mantle around pit intact No wind rows on tracks	Pit located on sloping terrain (<1% slope) Gibber mantle around pit intact (rolling only) No wind rows on tracks	Pit located on sloping terrain (>1% slope) Or: Pit located in any terrain where gibber mantle around pit removed and/or wind
		Dunefields				
		-	-	Pit located on terrain less than 1% slope	Pit located on sloping terrain (between 1 and 2% slope)	Pit located on sloping terrain (greater than 2% slope)
		Flood Plain				
		-	-	Pit located more than 200 meters away from any creek channel, waterhole, terrace of levee	Pit located within 200 meters of any creek channel, waterhole, terrace or levee	Pit located within 100 meters of any creek channel, waterhole, terrace or levee
Minimise impacts on vegetation	Perennial vegetation clearance minimised	Pit located in bare area – no clearance required	No trees or shrubs removed	Trees or shrubs removed where clearance could not have been avoided No trees or shrubs with hollows removed	Moderate trees or shrubs (between 15 and 30cm diameter) removed where clearance could have been avoided No trees ort shrubs with hollows removed	Large trees (over 30cm diameter) removed and/or Trees or shrubs with hollows removed
	Topsoils and seed source retained	-	-	Topsoil and vegetative material stockpiles and stable		No topsoil and vegetative material stockpile evident

Protect sites of natural, scientific or heritage significance	Avoid sites	-	-	Sites avoided	-	Sites disturbed
Minimise visual impacts – public roads	Pits sited appropriately	-	Pits not visible from public road	Pit screened by vegetation	-	Pit clearly visible – not screened
Minimise water retention in pit	Minimise or no water retention in pit footprint	-	-	No evidence of water retention or minor retention – pit retains water for less than 1 month following rainfall event or drawdown of floodwaters (max depth up to 0.2meters)	Pit retains water for up to 3 months following rainfall event or drawdown of floodwaters (max depth < 1 meter)	Pit holds water for water more than 3 months following rainfall event or drawdown of floodwaters (max depth > 1.0 meters)
Minimise impacts on soil	Minimise soil erosion	**Gibber plain and tableland**				
		Gibber layer in situ (apart from pit base and sides) Pit footprint soil surfaces stable No accelerated erosion on pit footprint	-	Gibber layer insitu, run-off minimised Tracks rolled with no wind rows Localised minor erosion (typically pit sides)	Gibber layer disturbed or removed in areas Run-off controlled Minor gullying around pit and/or access tracks	Widespread disturbance of Gibber Layer Run-off uncontrolled Moderate to sever gullying
		Other land units				
		Soil surface stable No accelerated erosion on pit footprint	-	Run-off controlled Minor erosion of pit sides or up-slope from pit	Areas of pit footprint unstable with some uncontrolled run-off Moderate erosion	Uncontrolled run-off Large areas of pit footprint unstable Active severe erosion
Minimise impacts on vegetation	No weed infestations	-	-	No weeds on pit footprint	Weeds present on pit footprint	Declared weeds present on pit footprint
Minimise water retention in pit	Minimal or no water retention in pit footprint	-	-	No evidence of water retention or minor retention – pit retains water for less than 1 month following rainfall event or drawdown of floodwaters (max. depth up to 0.2 meters)	Pit retains water for up to 3 months following rainfall event or drawdown of floodwaters (max. depth < 1 meter)	Pit holds water for more than 3 months following rainfall event or drawdown of floodwaters (max depth > 1.0 meters)

Minimise impacts on soil	Minimise soil erosion	Soil surfaces stable No accelerated erosion	-	Minor erosion of pit sides or up-slope from pit	Moderate erosion Areas of pit footprint unstable with some uncontrolled run-off	Active severe erosion Uncontrolled run-off Large area of pit footprint unstable
Minimise impacts on vegetation	Pit footprint revegetated with indigenous species	Vegetation community re-established with species and cover typical for land unit	Pit footprint revegetated with perennial species mix and cover levels typical for land unit	Pit footprint revegetated with species mix similar to surrounding area, some bare patches still present	Revegetation confined to base of pit, pit sides bare, species mix differs from surrounding areas, annual species dominate	No revegetation evident
	No weed infestations on pit footprint	-	-	No weeds on pit footprint	Weeds present on pit footprint	Declared weeds present on pit footprint
Minimise visual impacts	Borrow pit effectively contoured and ripped	Pit contours indistinguishable from surrounding landscape Access tracks ripped	Pit contours blend in with surrounding landscape, although still evident	Pit sides battered and ripped along contours but pit outline visible Topsoil and vegetative material re-spread over disturbed area	Pit visible Pit sides battered but not ripped	No re-contouring of pit has occurred – pit sides very steep Top soil and vegetative material not re-spread
Site to be left in a clean and tidy condition	Litter and other man-made materials removed	-	-	No litter and other man-made materials on pit footprint or surrounds	Scattered litter and/or other man-made materials on pit footprint or surrounds	Litter and/or other man-made materials common on pit footprint or surrounds

Notes:

Weeds are defined in these tables as any invasive plant that threatens native vegetation in the local area or any species recognised as invasive in South Australia.

Declared weeds are defined in these tables as any exotic plant species that are currently declared under the Landscape South Australia Act.

In a case where the landholder requests a borrow pit for pastoral watering purposes, pursuant to section 111(2)(b) of the *Energy Resources Act 2000*, the following may be applied to facilitate transfer of ownership and liability of the borrow pit to the landholder –

> **111—Liability for damage caused by authorised activities**
>
> (2) If a licensee provides the Minister with a report, made by an independent expert acceptable to the Minister, containing an assessment of the risk inherent in regulated activities, and of the precautions necessary to eliminate or minimise the risk, the Minister may enter into an agreement with the licensee under which—

(b) the licensee's liability under this section is limited or excluded.

(a) Priority classification refers to Priority Plant species as described in the *Arckaringa Basin Exploration Environmental Impact Report*.

(b) Windrows in this context refer to the mounding of soil or gibbers through the action of wheel trafficking and associated dispersal of soil/gibbers away from wheel tracks.

(c) All vertical measurements to be measured from normal ground surface.

(d) If any criterion (dot point) within a -1 or -2 cell occurs, then a score of -1 or -2 will be allocated.

(e) For 0, +1 and +2 cells, all relevant criteria (dot point) within the cell must be satisfied to score at that level.

(f) Some criteria at -2 levels may also be subject to defined conditions, but are included in this table to ensure that they are clearly identified.

(g) The *Field Guide for the Environmental Assessment of Abandoned Petroleum Wellsites in the Cooper Basin, South Australia*. (PIRSA Petroleum Group, 2002) provides photographic outcomes for some of the Land Systems found in the Arckaringa Basin.