Statement of Environmental Objectives for Geophysical Operations in the Otway Basin, South Australia

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ABBREVIATIONS

General

AARD	Aboriginal Affairs and Reconciliation Division (Department of Premier and Cabinet)
APPEA	Australian Petroleum Production and Exploration Association
DEWNR	Department of Environment, Water and Natural Resources (SA)
DMITRE	Department for Manufacturing, Innovation, Trade, Resources and Energy (SA)
EIR	Environmental Impact Report
GAS	Goal Attainment Scaling
GIS	Geographic Information System
SEO	Statement of Environmental Objectives

Measurement

Units of measurement used in this document are those of the International System of Units (SI) as well as units outside the SI that have been authorized for use within Australia's metric system.

km	kilometre (length; 1,000m)
L	litre (volume)
m	metre (length)

GLOSSARY

Biosecurity Threat – Any micro or macro organism which presents a threat to the ecology of the Otway Basin.

Conservation Park – An area protected for the purpose of conserving wildlife, natural or historic features found within the area protected under *National Parks and Wildlife Act 1972.*

Game Reserve – An area preserved for the purpose of conserving wildlife and managing game found within the area protected under *National Parks and Wildlife Act 1972.*

Listed Species – Plants or animals (and their habitats) prescribed under relevant state or federal legislation or identified in regional biodiversity plans.

National Park – An area of national significance by reason of wildlife or natural features found within the area protected under the *National Parks and Wildlife Act 1972*.

Non-Indigenous Species – Any plant or animal that does not originate from the South East region of South Australia.

Recreation Park – An area preserved for the purpose managing public recreation and enjoyment within the area protected under *National Parks and Wildlife Act 1972.*

Regional Reserve – An area protected for the purpose of conserving any wildlife, natural or historic features of the land while, at the same time, permitting the utilization of the natural resources of the area protected under the *National Parks and Wildlife Act 1972*.

Spill – The escape of a controlled substance from its containment vessel.

CONTENTS

STATEMENT OF ENVIRONMENTAL OBJECTIVES FOR GEOPHYSICAL OPERATIONS IN THE OTWAY BASIN, SOUTH AUSTRALIA

Jack A Annear

EXECUTIVE SUMMARY

This Statement of Environmental Objectives (SEO) has been prepared in accordance with section 99 of the *Petroleum and Geothermal Energy Act 2000* (the Act).

The objectives contained in this document are based on the information identified in the 'Environmental impact report for seismic operations in the Otway Basin, South Australia' (Roberts 2001) and are also a revision of those prescribed previously in the 'Statement of environmental objectives for seismic operations in the Otway Basin, South Australia' (Kane 2007). Typical seismic and other geophysical operations within the Otway Basin, which use current field techniques as identified in the environmental impact report (Roberts 2001), have been previously assessed to be of a low environmental significance.

This SEO has been developed in accordance with the document revision period of five (5) years, outlined in the EIR (Roberts 2001), as stated in the previous SEO (Kane 2007), and has been subject to an internal review process by relevant government agencies. It contains a list of environmental objectives to be achieved and adhered to when undertaking geophysical operations in the Otway Basin, as well as a description of the of the methodology and assessment criteria that may be used to appraise and evaluate the level to which the prescribed objectives are achieved.

1. INTRODUCTION

This SEO details the environmental objectives for onshore geophysical exploration operations within the South Australian sector of the Otway Basin. Its location is indicated in Figure 1. It is required that any licensee operating within the Otway Basin (South Australian sector) adheres to and achieves these objectives. The SEO states the methodologies by which the licensee and the Government may utilize in assessing the success in attaining the objectives. These objectives are derived from the environmental impact report (EIR) as prepared by Roberts (2001). This EIR is still applicable, as the receiving environment, the geophysical operation methods or associated potential impacts have not changed notably since the report was published in 2001.

1.1 Scope

Figure 1 outlines the Otway Basin region to which this SEO applies. The region is generally considered to comprise the South Australian lands south of latitude 36°45'00", and is commonly known as the 'Limestone Coast' region. National parks and reserves (under the *National Parks & Wildlife Act 1972* and the *Crown Land Management Act 2009*) are also included on this figure; such areas may have restrictions or exclusions for geophysical exploration activities. There are a large number of parks and reserves that do not provide for exploration access and consequently are not covered by this SEO. Other parks and reserves do allow access for some exploration activities but specific approvals processes are required before any exploration or other regulated activity can be undertaken. Lists of each type of park and reserve are located in Appendix A.

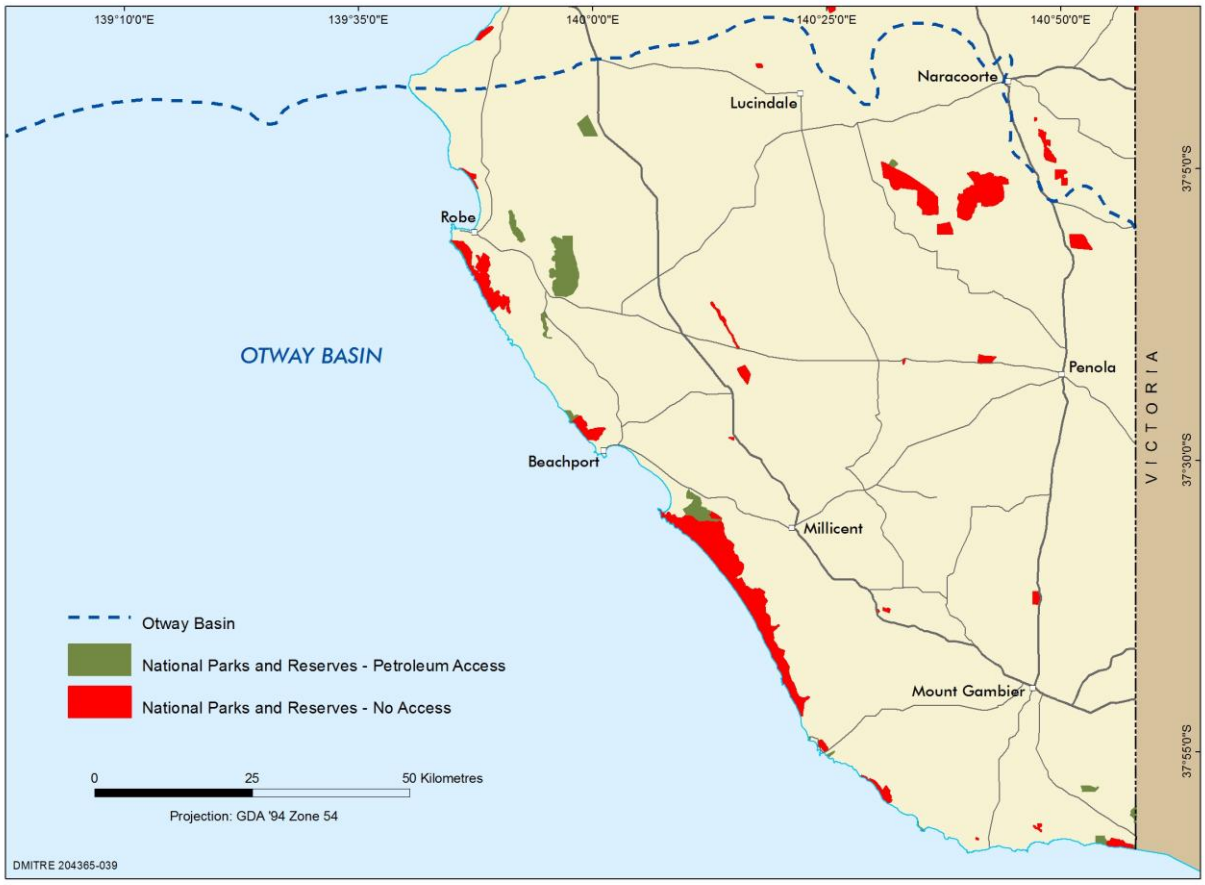

Figure 1 - Parks and Reserves found within the South Australian part of the Otway Basin (May 2013).

Prior to considering undertaking regulated activities in parks and reserves (that allow full or limited access for geophysical operations), relevant information for access, restrictions and/or specific defined conditions should be sourced from appropriate government gazettes (relating to the particular park or reserve) or from the Department of Environment, Water and Natural Resources (DEWNR). Legislation that applies to land, land access and operational issues are included in Appendix B.

Other areas, such as native forest reserves, heritage agreement areas (shown on Fig. 2), registered National Estate sites (both ecological and cultural/heritage), private sanctuaries and other protected areas need to be identified and addressed independently with the relevant authority (i.e. Forestry SA, DEWNR, Department of Sustainability, Environment, Water, Population and Communities (SEWPC), Australian Heritage Commission, landowner, relevant natural resource management board etc).

Provided petroleum exploration (as described below) is undertaken pursuant to this SEO, there are no requirements to provide for Significant Environmental Benefit (SEB) under the Native Vegetation Act 1991. This exemption also applies to native vegetation heritage agreement areas. It is recommended that the Native Vegetation Council be consulted when activities in or near areas of biological importance are proposed. The aim of this consultation is to mitigate the impacts of exploration in high conservation value areas as well as to protect operators from unlawfully but inadvertently clearing protected species or habitats of protected species.

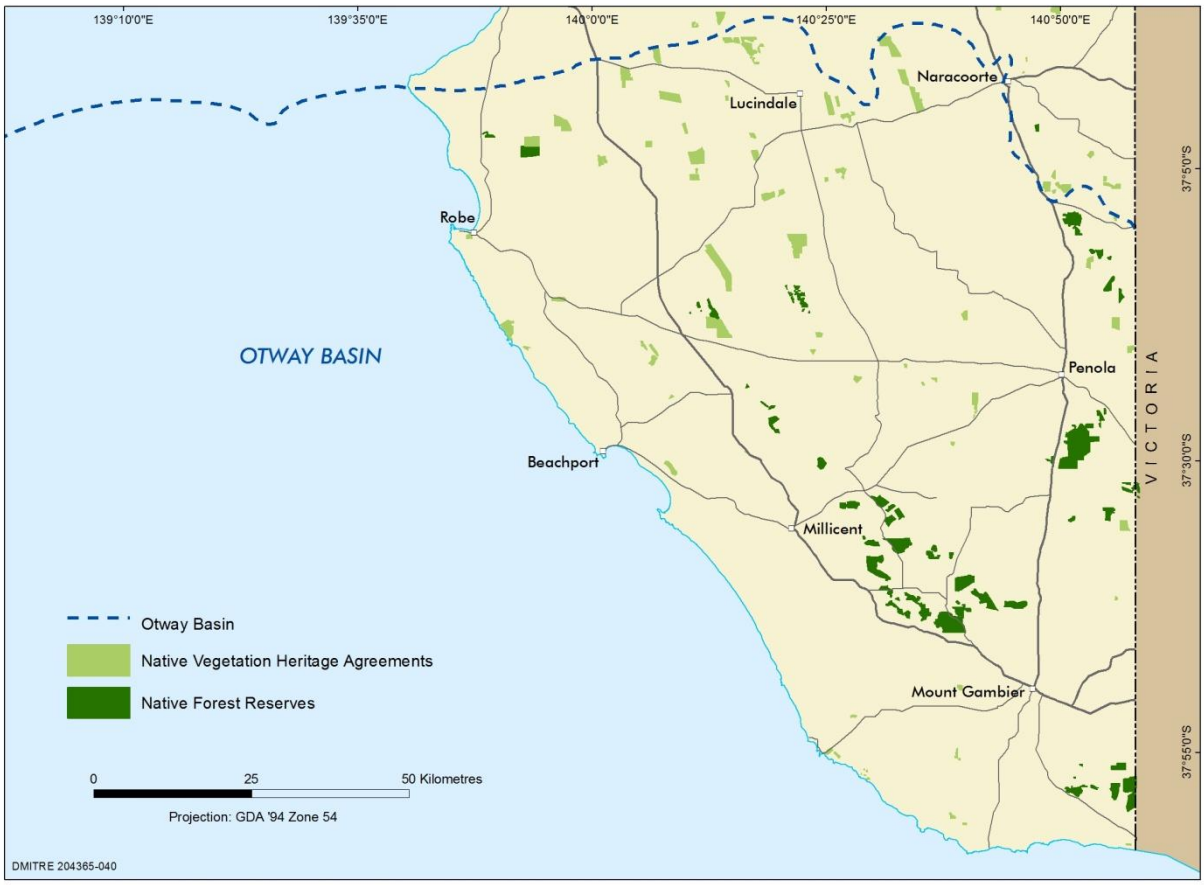

Figure 2 - Native vegetation heritage agreement areas and native forest reserves found within the South Australian part of the Otway Basin (May 2013).

On-ground activities associated with the geophysical operations covered by this SEO include:

- surveying and line preparation;
- recording (including preceding line surveying);
- weathered layer analysis (uphole drilling and logging);
- campsites; and
- line checking (line restoration and ongoing monitoring).

A detailed description of each of these activities is contained in the EIR (Roberts 2001). It should be noted that only the above-mentioned activities are covered within the scope of this SEO. Drilling and other petroleum activities generally have site specific SEOs. Examples of these can be found on the DMITRE website.

1.2 Definition

In the *Petroleum and Geothermal Energy Act 2000*, environment is broadly defined to include natural, social, cultural and economic aspects. The environmental objectives outlined in this statement incorporate all these aspects.

2. ENVIRONMENTAL OBJECTIVES

The core objectives of the *Petroleum and Geothermal Energy Act 2000* are to:

- minimise and mitigate the environmental harm that may arise from activities associated with geophysical exploration operations; and
- to protect the public from direct or indirect risks associated with activities regulated under the Act.

The philosophy that underpins the setting of environmental aims and objectives when conducting geophysical explorations is to perform such activities in an ecologically sustainable and socially acceptable manner. This conforms to the 'National Strategy for Ecologically Sustainable Development' (Ecologically Sustainable Steering Committee 1992).

The key to achieving ecologically sustainable development (ESD) in geophysical exploration is to adhere to the 'Australia's Biodiversity Conservation Strategy 2010-2030' (Natural Resource Management Ministerial Council 2010), which prescribes the goal of protecting biodiversity and maintaining ecological processes and systems.

Other documents that are applicable to biodiversity conservation and management within the Otway Basin include the 'National Local Government Biodiversity Strategy' (Australian Local Government Association 1999), the 'Biodiversity Plan for the South East of South Australia' (Department for Environment, Heritage and Aboriginal Affairs 1999) and the South-East Regional Natural Resources NRM Plan 2010.

The environmental objectives to be defined below are based upon the Otway Basin environmental impact report (Roberts 2001) as well a review of those established in the previous SEO (Kane 2007). The highly experienced staff of DMITRE's Energy Resources Division and many of the operators undertaking geophysical operations in the Otway Basin are also important contributors to this SEO review.

The following environmental objectives for geophysical operations - and which are applicable in the planning stage and management of short-term and long-term impacts - are:

1. Minimise the clearing and/or other impacts on native vegetation and associated wildlife habitats.
2. Avoid long-term damage or irreparable impacts to areas of high biodiversity or conservation value, including areas with threatened species and ecological communities listed under the NPWS Act and/or EPBC Act.
3. Minimise soil disturbance and contamination.
4. Minimise the disturbance to surface water, ground water and drainage patterns.
5. Minimise the risk of initiation and/or propagation of wildfires.
6. Avoid the breaching of and leaking from shallow aquifers.
7. Minimise the risk of introduction and/or spread of non-indigenous species.
8. Minimise the visual impacts of geophysical operations.
9. Avoid areas with cultural significance or heritage value.
10. Minimise the disturbance to other land users.
11. Minimise the loss of resources and optimise waste recovery (recycling and waste minimisation).
12. Minimise the risk of initiation and/or propagation of wildfire.
13. Remediate and rehabilitate operational areas where required.

With the above objectives in place, geophysics operators of the Otway Basin can minimise their short-term and long-term impacts and may achieve the significant target of ESD. Adherence to these objectives should provide the means for operators to avoid significant adverse impacts in the Otway Basin, specifically those relating to groundwater resources, sites of high biological diversity, conflicting land uses and community safety and welfare (e.g. initiation of fire). Details on the assessment criteria and a guide to how to meet the objectives can be found in *Appendix C*.

Maintaining good working relationships with landholders and other community members is an integral part in achieving acceptable environmental outcomes. The DMITRE document *Liaison guidelines for landholders and petroleum explorers in South Australia* (PIRSA 2001) is a valuable tool for recommended communication techniques.

The aims of individual objectives may be at odds in some instances. A structured system to deal with this could not be comprehensive in a generic SEO such as this as geographical, topological and social factors differ greatly within the Otway Basin. It is therefore recommended that professional judgement be used to differentiate between differing imperatives and their possible solutions. An example of this is the possibility that in trying to minimise the visual impacts of a seismic line, the objective of minimising the impact on vegetation may be compromised. However, this vegetation can be (and often is) used as a visual screen to reduce the visibility of the seismic line.

2.1 Assessment Methods

Objective-based regulation requires a method (or methods) of identifying and assessing the attainment of environmental objectives. The following methods may be used independently or in conjunction with one another to measure the level of achievement of the environmental objectives.

2.1.1 DEFINED CONDITIONS

In some circumstances, setting conditions that must be implemented can result in an environmental objective being met.

These defined conditions may include:

- prohibiting specific actions that may have short or long-term implications, such as using earth moving equipment to prepare seismic lines and bulldozing mature trees (which have unacceptable and unwarranted long term effects); and
- requirements to carry out specific actions to minimise potential impacts in accordance with relevant legislation, approved procedures or industry standards (such as required procedures under the *Fire and Emergency Services Act 2005* and the Australian Petroleum Production and Exploration Association (APPEA) code of practice (2008) to ensure protective measures are taken about the initiating and/or spreading of wildfires).

2.1.2 GOAL ATTAINMENT SCALING

Some environmental objectives are likely to be subject to a certain degree of subjective judgement. To minimise the inconsistency from one observer to another in this situation, Goal Attainment Scaling (GAS) is used to measure the level of which objectives are achieved. A series of criterion are used, which is described in writing and/or photographically. GAS is particularly useful in measuring achievement of objectives relating to disturbances to natural vegetation and soil. The pre- defined criterion used in this method allows a person of any skill level or previous knowledge to undertake a relevant and informative GAS analysis.

2.1.3 SCIENTIFIC SURVEYS/STUDIES

In some cases, the assessment of the environmental objectives may not be possible in the shorter term and may require longer term monitoring and/or scientific evaluation. In such cases, the assessment criteria may be

in the form of long term data, information gathering or scientific studies. Such surveys may include ecological, social or cultural studies, or other scientific investigations on specific aspects. An example of this is the use of ant communities and their distribution between on and off-line areas to determine the impacts of seismic line preparation (Watts et al 2002). The results of such work could then be used to develop additional or refine existing defined conditions and GAS criteria.

2.1.4 PHOTOMONITORING

Photographic evidence provided by an operator can provide visual documentation on the state of impact. Re-occupation of photo points over time can provide visual evidence of the level of recovery of geophysical impact.

2.1.5 OTHER TECHNIQUES AS APPROPRIATE

Other techniques may exist, or may be developed in the future that could be beneficial for assessment of achievement of environmental objectives. Use of other techniques can be included where they are appropriate and effective.

2.2 Assessment Criteria

Each objective identified above will be assessed using a selection of the assessment options identified in the preceding section. This will enable operators, regulators and other stakeholders to determine the level of achievement of the objectives. Criteria relevant to each environmental objective are presented in Appendix C. Specific GAS criteria are presented in Appendix D.

3. AUDITING AND REPORTING

3.1 Operator Internal Reports

Prior to commencement of, or during a geophysical survey, the operator may nominate a representative sample of lines to be audited in environmentally sensitive areas (e.g. wetlands, heritage agreement areas, parks or reserves with petroleum access etc.). Ideally, representative sample sites should be easily accessible from existing roads or tracks. Other sites may be selected away from existing tracks or in less sensitive areas on a random basis to provide a check of standards throughout the licence area, and provide representative sampling of all land units. The geophysical survey crew is to be made aware that a sample of lines will be audited but the precise lines will not be made known.

The operator should audit the nominated lines for compliance with the environmental objectives within the period of the survey and any shortfall should be made good before the survey is completed and an audit report prepared. Such an audit report needs to be referenced in the licensee's annual report to DMITRE. This annual report requires a statement on compliance of operations with the *Petroleum and Geothermal Energy Act 2000*, its Regulations and this SEO.

3.2 DMITRE Audits

DMITRE may undertake random audits of geophysical surveys, both in the field and in the office, using the assessment techniques defined above. The aim of these audits is to ascertain achievement or otherwise of the environmental objectives as well as to test the veracity of the licensee's annual report on compliance. The selection of sites to be audited will be random, to ensure vigilance on behalf of the operator and contractors. Even so, the more environmentally sensitive land units, particularly those covered by company audits, would be amongst the most likely sites for DMITRE audits. DMITRE will advise of any specific photo monitoring that is deemed to be required in addition to any which has been initiated through the operator's environmental management system.

A summary of the results of DMITRE's audits will be included as part of DMITRE's reporting on environmental management of petroleum operations and will be made public in DMITRE's Annual Report.

3.3 Third Party Audits

Third parties may also undertake audits of the field outcomes of company geophysical operations. The audits may be commissioned by DMITRE, the licensee or by an independent party. If audit findings are to be compared to those of the operator and/or DMITRE, the same assessment criteria must be used. Items of note from these reports can be included in DMITRE's environmental management reporting.

3.4 Incidents

Petroleum and Geothermal Energy Regulation 12(2) requires an SEO to identify events that could cause a serious incident or a reportable incident within the meaning of Section 85 of the *Petroleum and Geothermal Energy Act 2000.*

3.4.1 SERIOUS INCIDENTS

Section 85(1) of the Act defines a serious incident as an incident arising from activities conducted under a licence in which any of the following repercussions occur:

(a) a person is seriously injured or killed; or

(b) an imminent risk to public health or safety arises; or

(c) serious environmental damage occurs or an imminent risk of serious environmental damage arises; or

(d) security of natural gas supply is prejudiced or an imminent risk of prejudice to security of natural gas supply arises; or

(e) some other event or circumstance occurs or arises that results in the incident falling within a classification of serious incidents under the regulations or a relevant statement of environmental objectives.

3.4.2 REPORTABLE INCIDENTS

Section 85(1) of the Act defines reportable incidents (other than a serious incident) arising from activities conducted under a licence that are classified under the regulations as a reportable incident.

Regulation 32(1) classifies the following as reportable incidents:-

(a) an escape of petroleum, a processed substance, a chemical or a fuel that affects an area that has not been specifically designed to contain such an escape;

(b) an incident identified as a reportable incident under the relevant statement of environmental objectives.

Regulation 12(2) requires an SEO to identify events which could arise that could, if not properly managed or avoided, cause a serious incident or a reportable incident within the meaning of Section 85 of the Act.

Table 1 identifies the potential serious and reportable incidents relevant to fracture stimulation activities, pursuant to Regulation 12(2) and Regulation 32(1)(b). These definitions are based on the standard incident definitions for geophysical operations that have been developed by DMITRE.

Serious Incidents	Reportable Incidents
A person is seriously injured or killed. An Imminent risk to public health or safety arises. Serious environmental damage occurs or an imminent risk of serious environmental damage arises. For example: • Disturbance to sites of cultural and / or heritage significance. • A spill or release of fuel, oil or chemicals that could contaminate soils, shallow groundwater or surface waters. • Detection of a declared weed, animal / plant pathogen or plant pest species that has been introduced or spread as a direct result of activities. • Any removal of rare, vulnerable or endangered flora and fauna without appropriate permits and approvals. An event that results in the activation of emergency response and / or evacuation procedures of an area.	An escape of fuel, oil or chemicals that affects an area that has not been specifically designed to contain such an escape (other than a serious incident). Unresolved reasonable complaints from stakeholders regarding operations. Encroachment into a park or reserve listed in Appendix A or a property without approval by DEWNR or Forestry SA or the landowner.

4. DOCUMENT REVISION

This document will be subject to a review after five years from its date of gazettal as per the requirements set out in Regulation 14 under the *Petroleum and Geothermal Energy Act 2000*.

This SEO will also be constantly audited and, if necessary, revised to ensure changes in legal requirements, updated research and technologies, industry practices and stakeholder expectations are encompassed in future SEOs.

5. APPENDICES

APPENDIX A. PARKS AND RESERVES LISTING

Areas with no right of access for petroleum exploration

Park/Reserve Name	Proclamation Type	DEWNR Office (for site reference)
Baudin Rocks	Conservation Park	Robe
Beachport	Conservation Park	Robe
Belt Hill	Conservation Park	Robe
Big Heath*	Conservation Park	Naracoorte
Bool Lagoon*	Game Reserve	Naracoorte
Bucks Lake	Game Reserve	Mount Gambier
Butcher Gap	Conservation Park	Robe
Calectasia	Conservation Park	Mount Gambier
Canunda*	National Park	South End
Dingley Dell	Conservation Park	Mount Gambier
Ewens Ponds	Conservation Park	Mount Gambier
Fairview	Conservation Park	Naracoorte
Furner	Conservation Park	Robe
Glen Roy	Conservation Park	Naracoorte
Gower	Conservation Park	Mount Gambier
Grass Tree	Conservation Park	Naracoorte
Guichen Bay*	Conservation Park	Robe
Hacks Lagoon*	Conservation Park	Naracoorte
Lake Robe*	Game Reserve	Robe
Mary Seymour	Conservation Park	Naracoorte
Mount Scott	Conservation Park	Robe
Mullinger Swamp	Conservation Park	Naracoorte
Naracoorte Caves	National Park	Naracoorte
Nene Valley*	Conservation Park	Mount Gambier
Penguin Island	Conservation Park	Robe
Penola	Conservation Park	Mount Gambier
Reedy Creek	Conservation Park	Robe
Tantanoola Caves	Conservation Park	Mount Gambier
Telford Scrub*	Conservation Park	Mount Gambier

***** *indicates parks where right of access for pre-existing petroleum tenement holders at time of proclamation have since expired due to expiry of those tenements.*

Areas with right of access for petroleum exploration for existing petroleum tenement holders but not future tenements

Park/Reserve Name	Proclamation Type	DEWNR Office (for site reference)	Pre-Existing Licence
Lower Glenelg River	Conservation Park	Mount Gambier	PPL 21
Penambol	Conservation Park	Mount Gambier	PPL 21

Areas with right of access for petroleum exploration for existing and future petroleum tenement holders

Park/Reserve Name	Proclamation Type	DEWNR Office (for site reference)
Bernouilli	Conservation Park	Robe
Carpenter Rocks	Conservation Park	Mount Gambier
Douglas Point	Conservation Park	Mount Gambier
Lake Frome	Conservation Park	South End
Little Dip	Conservation Park	Robe
Piccaninnie Ponds (part)	Conservation Park	Mount Gambier
Woakwine	Conservation Park	Robe

Areas listed as native forest reserves (under the *Forestry Act 1950*) with right of access for petroleum exploration for existing and future petroleum tenement holders

NFR Name	NFR Plan	NFR Name	NFR Plan
Mount Benson	Mount Benson	Grundy Lane	Wandilo
Bagdad	Mount Benson	Honan	Honan
Konetta	Reedy Creek Range	Laslett	Bunganditj
Gillap North	Reedy Creek Range	Snow Gum	Snow Gum
Gillap South	Reedy Creek Range	Hells Hole	Bunganditj
Kennion	Reedy Creek Range	Warreanga	Bunganditj
Rocky Reserve	Reedy Creek Range	Pond Flat	Bunganditj
White Waterhole	Reedy Creek Range	Honeysuckle	Bunganditj
Malone Heath	Reedy Creek Range	Cave Range	Cave Range
Kay	Mount Burr Range	Deadmans Swamp	Deadmans Swamp
Whennen	Mount McIntyre	Wombat Flat	Comaum
Mount McIntyre	Mount McIntyre	Comaum	Comaum
McRosties	Mount McIntyre	Boolara	Comaum
Overland Track	Mount McIntyre	Round Waterhole	Redgum
Rock Shelter	Mount Burr Range	Nangwarry	Nangwarry
Burr Slopes South	Mount Burr Range	Muddy Flat	Redgum
The Marshes	The Marshes	Topperwein	Topperwein
Native Wells	Mount Burr Range	Island Swamp	POW Lane
Glencoe Hill	Mount Burr Range	The Heath	POW Lane
Mount Watch	Mount Burr Range	Dry Creek	Bunganditj
Windy Hill	Mount Burr Range	Khayyam	Khayyam
Long	The Woolwash	Kangaroo Flat	Kangaroo Flat
The Bluff	Mount Burr Range	Mount Lyon	Mount Lyon
The Woolwash	The Woolwash	Lake Edward	Mount Lyon
Hacket Hill	Wandilo	The Claypans	Mount Lyon
Wandilo	Wandilo		

APPENDIX B. RELEVANT LEGISLATION

Aboriginal Heritage Act 1988
Aboriginal and Torres Strait Islander Heritage Protection Act 1984 (Cwlth)
Animal and Plant Control (Agricultural and Other Purposes) Act 1986
Crown Management Land Act 2009
Environment Protection Act 1993
Environmental Protection and Biodiversity Conservation Act 1999 (Cwlth)
Fire and Emergency Services Act 2005
Forestry Act 1950
Heritage Places Act 1993
National Parks and Wildlife Act 1972
National Trust of South Australia Act 1955
Native Title Act 1993 (Cwlth)
Native Title (South Australia) Act 1994
Native Vegetation Act 1991
Natural Resources Management Act 2004
Petroleum and Geothermal Energy Act 2000
Work Health and Safety Act 2013

Disclaimer

The Acts appearing in the above list are applicable to geophysical operations. However, the list does not include all the legislation that could be relevant to operators.

APPENDIX C. ENVIRONMENTAL OBJECTIVES AND ASSESSMENT CRITERIA

Environmental Objective	Assessment Criteria	Guide to how Objectives can be Achieved	Comments
Objective 1 Minimise the clearing and/or other impacts on native vegetation and associated wildlife habitats.	The attainment of a 0, +1 or +2 GAS score for 'Impact on native vegetation – communities' and 'Impact on native vegetation –species' as listed in Appendix D. **Surveying, line and campsite preparation** • Proposed seismic lines, access tracks and any campsites have been planned using accurate GIS-based analysis of known remnant native vegetation communities. In-situ scouting carried out where necessary (in or near heritage agreement areas or significant roadside vegetation communities). • No blading by earthmoving equipment. • Records of clearance are kept and are available for audit upon request. **Fuel and chemical use and management** Refueling occurs only in designated and bunded areas, which are positioned at least 1 km from watercourses or environmentally sensitive areas. • Records of spills and leaks are kept and are available for audit upon request. • Spills and leaks are reported on pursuant to regulatory requirements and remediation promptly initiated with appropriate equipment and procedures.	• Parks, reserves and heritage agreement lists are consulted for access. ForestrySA to be consulted for operations in native forest reserves. • Vegetation communities and roadside verges are considered in planning of seismic lines and access tracks. • Qualified and experienced personnel have scouted tracks to provide the most environmentally sensitive routes. Factors such as significant or isolated trees and remnant vegetation communities should alter the placement of seismic lines. Appropriate government agencies should also be consulted on this process. • The route of least impact (vegetation and habitat clearance) is taken and records of vegetation clearance and habitat disturbance are kept and are available for audit upon request. • Campsites are located in cleared areas not requiring the preparation of new access tracks. • Slashing methods are used to facilitate regrowth and rehabilitation. • Weaving was been undertaken in a manner that minimises vegetation removal and avoids sensitive areas and blocks of low-impacted remnant vegetation.	Risks to native fauna are primarily involved with contact during the line preparation stage and in other vehicle movements .Obstruction of fauna movements is also another impact; however, a number studies have found that line preparation, surveying and campsite preparation have minimal impact on wildlife and their habitat due to the confined area of survey lines and facilitated recovery rates. As the Otway Basin has been extensively cleared (only 13% of native vegetation remains [SENRMB 2006]), and remnant vegetation is highly fragmented and subject to various 'edge effects' (SENRCC 2003), it is important that any impact on these communities is analysed to minimise impact levels and is rigorously monitored and managed to facilitate rehabilitation. Under current line preparation techniques, the potential for the natural rehabilitation of lines (vegetation regrowth) is maximised. It is important that fuels and chemicals are not used near watercourses as many environmentally significant features (such as wetlands) exist in the Otway Basin and have fragile aquatic plant communities and habitat structures. Due to the abundance of accommodation, camp sites are very rarely used in the Otway Basin. Refueling of vehicles is from service stations in towns located in the Otway Basin. Refueling from tankers does not occur.
Objective 2 Avoid long-term damage or irreparable impacts to areas of high biodiversity or conservation value, including areas with threatened species and ecological communities listed under the NPWS Act and/or EPBC Act.	The attainment of a 0, +1 or +2 GAS score for 'Impact on native vegetation - communities' and 'Impact on native vegetation – species' as listed in Appendix D. **Surveying, line and campsite preparation** • Locations of threatened species and/or ecological communities have been acknowledged and, if present, lines adjusted accordingly. • Proposed seismic lines, access tracks and any campsites have been planned using accurate GIS-based analysis of cultural, heritage and important flora and fauna sites. In situ scouting carried out where necessary (in or near sensitive or high conservation value areas). • Records of scouting surveys (with results) are kept and are available for audit upon request. • Records of clearance are kept and are available for audit upon request. **Fuel and chemical use and management** As in Objective 1.	• Lists of threatened species and ecological communities are consulted and their locations identified in relation to proposed seismic lines and access and other tracks. It is recommended that DEWNR be contacted to ensure that operations do not impact on any department programs, such as on- and off-park recovery schemes. • Conservation needs of identified species and communities considered in planning to ensure species and ecosystem stability. • Qualified and experienced personnel have scouted tracks to avoid locations of protected species, areas known to provide habitat to listed fauna or other areas of high conservation value. Factors including buffer zones for individual species and communities to provide protection from 'edge effects' should be included in planning and preparation. • When operating in native forest reserves, ForestrySA management plans are consulted for information regarding threatened species. A forestry SA conservation planner must be contacted to confirm the information in the management plan is still current. Operators should attempt to assist in meeting the management goals (i.e. biological surveys) of native forest reserves when working in	Due to the severity of disturbing or removing a listed species or ecological community, it is recommended that this be noted in the relevant report, or alternatively notify DMITRE. Listed species are plants or animals (and their habitats) as prescribed under relevant state or federal legislation or identified in regional biodiversity plans. Listed species should be identified on national, state and regional levels. Areas of high conservation value include areas of significant remnant vegetation (including those under a heritage agreement plan), significant isolated trees (including dead trees that provide habitat for listed species), wetlands and important roadside vegetation structures or other areas known to provide habitat to listed flora and fauna. Due to the abundance of accommodation, camp sites are very rarely used in the Otway Basin. Refueling of vehicles is from service stations in towns located in the Otway Basin. Refueling from tankers does not occur.

Environmental Objective	Assessment Criteria	Guide to how Objectives can be Achieved	Comments
		these areas. • Any sites identified are to be flagged, reported and avoided. • Disturbance to any listed species and the extent of disturbance to be reported under regulatory requirements.	
Objective 3 Minimise disturbance to soil.	The attainment of a 0, +1 or +2 GAS score for 'Disturbance to land surface' and 'Uphole site restoration' as listed in Appendix D. **Surveying, line and campsite preparation** • Prior to any access, areas subject to inundation or water logging must be carefully assessed for their suitability to support vehicles. **Fuel and chemical use and management** As in Objective 1.	• Waterlogged or intermittently saturated areas should be avoided when possible. The conduciveness of areas to support survey vehicles should also be considered in planning processes. • Areas sensitive to soil disturbance, such as wetlands or areas of steep gradients, should be avoided where possible or appropriate steps taken to ameliorate any impacts. There should be no observable difference in erosion patterns on-line compare to offline. • Campsites are placed on previously cleared areas in a region conducive to camping (i.e. away from watercourses, remnant vegetation, possibly on unused agricultural lands authorized by landowner). • Ripping of any compacted areas (campsites, Vibroseis pad marks) should be undertaken where necessary. • The route of least soil resource impact is taken and records of clearance and strategies implemented are kept and are available for audit upon request. • Minimise soil disturbance during slashing of vegetation • Any soil contamination should be reported and treated immediately with preferred (industry standard) methods. • No off-road driving or 'bush-bashing' should take place. • Activities should be carried out in dry weather to minimise impacts such as bogging, rutting and a loss in soil cohesiveness.	Bioremediation has previously been used successfully in the remediation of oil spills in the Cooper Basin, and should be considered as an option if needed. Due to the abundance of accommodation, camp sites are very rarely used in the Otway Basin. Refueling of vehicles is from service stations in towns located in the Otway Basin. Refueling from tankers does not occur.
Objective 4 Minimise the disturbance to surface drainage patterns.	The attainment of a 0, +1 or +2 GAS score for 'Disturbance to land surface' as listed in Appendix D. **Surveying, line and campsite preparation** • As no earthmoving equipment is permitted in the Otway Basin for line or campsite preparation, minimal disturbance to surface drainage patterns should occur. • Any creeks encountered should have minimal vegetation clearance when undergoing line preparation to minimise potential impacts such as bed and bank erosion and silting.	• The minimal line preparation required in the Otway Basin should ameliorate any risk of disturbance to surface drainage patterns. • Any rehabilitation of features along creek banks etc should be undertaken promptly. • Slashed vegetation should not be left in a manner that would impede the surface drainage of the area.	Possible impacts on aquatic plant communities on hydrography of watercourses (i.e. flow rates) may need to be considered when analyzing disturbance to surface drainage patterns. Regional and local artificial drainage channels should also be considered as a surface feature. Due to the abundance of accommodation, camp sites are very rarely used in the Otway Basin. Refueling of vehicles is from service stations in towns located in the Otway Basin. Refueling from tankers does not occur.

Environmental Objective	Assessment Criteria	Guide to how Objectives can be Achieved	Comments
Objective 5 Avoid the contamination of surface and ground waters.	The attainment of a 0, +1 or +2 GAS score for 'Pollution or litter' as listed in Appendix D. **Fuel and chemical use and management** • Spills are reported on pursuant to regulatory requirements and remediation promptly initiated with appropriate and readily available equipment and procedures. • Records of spills and leaks are kept and are available for audit upon request. **Uphole weathered layer drilling** • All equipment is cleaned as deemed appropriate to prevent contamination of groundwater (dependent on factors such as drill location susceptibility, location of previous drilling, recommendations of regional hydro-geologists)	• Refueling occurs only in designated areas, which are positioned at least 1 km from watercourses or stock watering areas. • Response plans should be in place with appropriate personnel trained to respond to incidents. • Spill kits should be available immediately. • All unnecessary chemical agents should be kept away from uphole drilling sites. • Regional councils and government hydro-geologists (DEWNR) should be approached and informed about drilling programs. Any localized concerns for bacterial contamination or cross aquifer contamination (i.e. between the unconfined aquifer and confined Dilwyn Formation aquifer) should be sourced from the council and/or local DEWNR officers and any processes recommended by them are actioned.	Possible impacts on aquatic plant communities and habitat structures may need to be considered if spills or leaks occur in surface waters. Refueling of vehicles is from service stations in towns located in the Otway Basin. Refueling from tankers does not occur.
Objective 6 Avoid the breaching of and leaking from shallow aquifers.	The attainment of a 0, +1 or +2 GAS score for 'Uphole site restoration' as listed in Appendix D. **Uphole weathered layer drilling** • Aquifers breached during uphole/shothole drilling are backfilled and/or cemented off. A cement cap is required. • The hole should not leak and no subsidence should occur.	• The uphole should be tightly backfilled to support the hole and prevent a cave in, and also to restrict any flows between shallow saline aquifers and the underlying Dilwyn Formation aquifer to a previous (or preferably natural) level, pending advice of hydro-geologists. • Zones of cross-aquifer transfer may require a sealing cement plug and should be installed accordingly. • The uphole should be capped to prevent water leaking to the surface. • The incident should be reported pursuant to the appropriate regulation and any further actions taken if warranted or advised.	Subsidence may lead to traps being formed that may be too large for small animals to escape. Conversely, larger animals (including agricultural stock) may suffer limb injuries as a result of encountering such features.
Objective 7 Minimise the risk of introduction and/or spread of introduced species and biosecurity threats.	**Surveying, line and campsite preparation** • Weeds, feral animals or plant and animal diseases are not introduced to, or spread within, the Otway Basin region. • Details or logs of equipment cleaning are kept and are available for audit upon request. • Records of detection (whether introduced by a geophysical operator or not), monitoring, eradication or control of introduced species are kept and are available for audit upon request. • Areas of known disease infestation (such as Phytophthora dieback, Phylloxera, Mundulla Yellows) are identified with landowners and relevant boards or control officers and be avoided.	• Any vehicles upon entering the Otway basin need to be washed down to remove all likely infesting agents. • Cleaning of equipment must be carried out in accordance with pre-determined company procedures and/or industry standards (i.e. accepted APPEA standards). • Liaison with the animal and plant control officer of applicable local councils and regional NRM boards or appropriate agency can provide important information of local issues to factor into planning. • Contact with any infected plants or animals should result in cleaning of the relevant machinery before relocation, even within the basin, and to best practice standards.	The most likely source of introducing a pest, weed or disease into the Otway Basin is through unclean vehicles and equipment; therefore it is imperative that cleaning of all machinery and other equipment occurs. Identifying locations of weed and pest outbreaks should be a priority in planning stages. Landowners are often highly aware of locations of such outbreaks. It is recommended that if any introduced pests or outbreaks are found during the course of geophysical operations that the information is forwarded onto relevant parties, such as the land owner and the regional NRM board. This will facilitate the monitoring and control of such issues and will also improve the working relationships between the upstream petroleum industry and the community. Due to the abundance of accommodation, camp sites are very rarely used in the Otway Basin.

Environmental Objective	Assessment Criteria	Guide to how Objectives can be Achieved	Comments
Objective 8 Minimise the visual impacts of geophysical operations and any future third party use.	The attainment of a 0, +1 or +2 GAS score for 'Visual impact' as listed in Appendix D. **Surveying, line and campsite preparation** • Proposed survey lines have been appropriately located to minimise visual impacts. • Vegetation, terrain variations or appropriate preparation techniques have been used to minimise line visibility. • Planning procedures to minimise visibility aspects are evident and available for audit upon request.	• The conduciveness of an area to support survey vehicles (and potential impacts) should be considered to improve on-ground visual impacts, especially in salt lake systems. • Campsites and seismic lines should have a low visibility from likely public viewpoints. • Any public track verges need to be reinstated. • Fences or roadblocks of track and seismic line crossings can be used to prevent third party access and facilitate rehabilitation.	In areas where future third party access is a concern, the use of vegetation can provide a means of blocking access and also providing a visual screen. This should only be used as final alternative after line preparation planning. Due to the abundance of accommodation, camp sites are very rarely used in the Otway Basin.
Objective 9 Avoid areas with cultural significance or heritage value.	**Surveying, line and campsite preparation** • Appropriately qualified and experienced personnel have scouted proposed survey area and access tracks. • Any aboriginal cultural locations found are identified, recorded and reported accordingly to AARD. **Recording** • These sites are flagged off and detoured around • Any aboriginal cultural locations found are identified, recorded and reported accordingly to AARD. *Note:* Where a negotiated Native Title agreement is in place, compliance with the agreement takes precedence over the above criteria; however, operators must still adhere to all requirements under the state and federal native title and aboriginal heritage legislation.	• Cultural and heritage site registers have been consulted in relation to seismic survey placement and survey lines adjusted accordingly. • A cultural heritage clearance report has been undertaken with qualified and experienced personnel and is available for audit upon request. • Environmental Report Forms are completed for any suspected aboriginal sites or individual artefacts identified, which are forwarded to AARD. Copies may also be forwarded to the Aboriginal Legal Rights Movement and representatives of local claimants as is appropriate and when cultural sensitivity permits • Operators have a reporting system in place for cultural sites discovered during the survey process. *Note:* Where a negotiated Native Title agreement is in place, a Work Area Clearance and subsequent report, undertaken by qualified and experienced personnel, may be required before line preparation can commence. Compliance with this agreement takes precedence over the above criteria.	The aim of this objective is to ensure that any sites of Aboriginal and non-indigenous heritage significance are identified and protected. Disturbance to these sites is considered a long-term impact and is deemed to be unacceptable under this SEO. Disturbance to any cultural sites or removal of any artefacts is an offence under the *Aboriginal Heritage Act 1998.* Due to the abundance of accommodation, camp sites are very rarely used in the Otway Basin.
Objective 10 Minimise the disturbance to other land users.	The attainment of a 0, +1 or +2 GAS score for 'Impact on infrastructure' and 'Impact on agricultural, horticultural or viticultural activities' as listed in Appendix D. All reasonable landowner complaints are addressed and resolved. **Surveying, line, campsite preparation and rehabilitation** • Seismic sources are not activated within 30 m of any pipeline, utility, installation or building. • Upon completion of any seismic survey (and after any repairs, rehabilitation or reparations are administered), the absence of any existing stakeholder complaints will be used as the indicator to the achievement of this objective.	• Notices of entry are to be distributed to all landowners and operators (including owners of community assets) whose land is impacted by the survey, campsites or access tracks prior to commencement (this is a requirement under Part 10 of the *Petroleum and Geothermal Energy Act 2000* and Regulation 22). • A system is in place for logging landowner objections and complaints. • An agreement to the timing and level of disturbance to pastoral, horticultural, agricultural or other land user activities or infrastructure can facilitate landholder relations. • All gates are left in the position in which they were originally found. • All fences are restored to a level satisfactory to the landowner. • Inductions should be carried out for all employees and contractors, covering conservation, legislative, infrastructure and social and community issues.	Communication and establishing working partnerships with landowners and the wider community are fundamental in minimising disturbance and decreasing issues and hold-ups with the survey. Consulting stakeholders on a range of issues (including areas with known plant or animal disease) can assist in decreasing impacts and ease community concerns. *Note:* The PIRSA publication *Liaison guidelines for landholders and petroleum explorers in South Australia* is a valuable tool in promoting effective communication channels. Due to the abundance of accommodation, camp sites are very rarely used in the Otway Basin.
Objective 11 Minimise the loss of resources and optimise waste recovery.	The attainment of a 0, +1 or +2 GAS score for 'Pollution or litter' as listed in Appendix D. **All regulated geophysical operations** • Litter has been removed to authorised disposal sites within the Otway Basin.	• Resource use is minimised to reduce volumes of waste. • Use of recyclable materials is preferred. • Rubbish bins, in situ storage and removal of wastes are in appropriate containers and removed to authorised dumping and recycling centres.	Waste reduction is a process of continual improvement including purchasing, efficiency of use and reuse. Due to the relative proximately to settled areas and associated waste management facilities, it is more feasible to implement recycling programs in the Otway Basin than in other SA petroleum provinces.

Environmental Objective	Assessment Criteria	Guide to how Objectives can be Achieved	Comments
Objective 12 Minimise the risk of initiation and/or propagation of wildfire.	**Fire risk minimisation and situation management** • Appropriate plans in place and equipment available to identify hazards, initiate hazard mitigation and response training, fire-fighting equipment available and maintained accordingly, and fire bans adhered to.	• Procedures are in place to minimise risk of initiating and propagating fire during days considered to have a high Fire Danger Index (FDI) as issued by the CFS. • A hazard identification plan is in place for immediate implementation on days of high temperatures and winds. • A response plan is in place for the safety of crew personnel should a fire approach, or be initiated by, the seismic crew. • Welding and grinding (regarded as high-risk activities) are deferred or curtailed until weather conditions are suitable. • Fuel stores are monitored and equipped with extinguishers. • The risks of fire to crews and transport drivers are clearly defined, and a plan is in place to minimise or eliminate slasher use on defined high-risk days. • Contact with the local Country Fire Service is maintained in order to keep roads clear during episodes of fire.	Processes conducted during the operation and maintenance of equipment during seismic surveys may increase the chance of fire (e.g. welding, grinding, grass slashing). Lock-out procedures (e.g., as part of company policy) minimise the chance of fire, facilitate rapid response to spills of flammable liquid and prevent the chance of propagation. The seismic crew is vulnerable to externally generated fires and procedures must be in place to minimise potential impact to the crew and equipment. Fire prevention should include assistance to the Country Fire Service in the course of their duties and compliance with their requests. Under the *Fire and Emergency Services Act 2005*, section 97, an officer may 'take, or cause to be taken, any action that appears necessary or desirable for the purpose of firefighting', including (f) '…prohibit, direct or regulate the movement of persons, vehicles or animals'.
Objective 13 Remediate and rehabilitate operational areas as required.	The attainment of 0, +1 or +2 GAS criteria for 'Visual impact', 'Impact on infrastructure', 'Uphole site restoration' and 'Disturbance to land surface' as listed in Appendix D.	• Rehabilitation/abandonment plans for surface activities will be developed in consultation with relevant stakeholders.	Depending on circumstances, other assessment criteria may be required. These would typically be determined during the activity approval process. Refer to Objectives 3, 4, 5, 6, 8, 10 and 11.

APPENDIX D. GOAL ATTAINMENT SCALING (GAS) CRITERIA FOR ASSESSING SEISMIC LINES IN THE OTWAY BASIN, SA

Land System	Measure (Relevant environmental objective)	Score				
		+2[(a & d)]	**+1**[(a & d)]	**0**[(a & d)]	**-1**[(b & d)]	**-2**[(b, c & d)]
Non land system specific	*Visual impact* *(Obj 8)*	• No evidence of survey operations.	• Line of sight is significantly impaired (except in cultivated areas). • Wheel tracks or direction of line evident.	• Doglegs or other visual screens have been placed at established roads and tracks in vegetated areas. • Line weaves through vegetated areas at least every 100 m. • Line of sight is impaired (except in cultivated areas). • Line follows route that is most conducive to access by utilizing naturally clear areas through vegetation. • Roadblocks have been established at intersections with roads and tracks. • Third party access along seismic lines is discouraged. • Road/track verges have been reinstated where necessary.	• No doglegs or other visual screens at established roads or tracks in vegetated areas. • Weaving is not appropriate to local vegetation structures or terrain traversed. • Line of sight is unimpaired. • No disincentives to third party access. • Uphole cuttings clearly visible in landscape.	• Line is clearly evident and dominates the landscape.
	Disturbance to land surface *(Obj 3,4)*	• No evidence of survey operations.	• Wheel tracks or footprints are evident but not continuous.	• Wheel tracks and/or pad marks are <0.1 m deep. • Surface watercourse systems are not blocked or altered after rehabilitation.	• Wheel tracks and/or pad marks are >0.1 m deep. • Surface watercourse systems remain blocked or altered even after rehabilitation.	• Wheel ruts or vehicle bogs are evident and are >0.2 m deep.
	Impact on infrastructure *(Obj 10)*	• No impact to any rural, urban or transportation infrastructure.	• No observable repair or damage to infrastructure.	• Any impact to infrastructure has been reported and reinstated or repaired.	• Damage to infrastructure has not been reported. • Repair to damaged infrastructure is incomplete or inappropriate.	• Damage to infrastructure has not been repaired nor reported.
	Uphole site restoration *(Obj 3,6)*	• No evidence of upholes.	• No evidence of cuttings. • Some evidence of operations.	• Cuttings are evident but are dispersed around hole. • No subsidence evident. • Hole has been plugged.	• Cuttings form mound. • Minor subsidence is evident. • Cuttings markedly dissimilar in colour to surrounding terrain. • Uphole is leaking water.	• Hole is open. • Major subsidence is evident. • Uphole is leaking significant volumes of water
	Pollution or litter (Obj 5,11)	• No pollution or litter.	• No evidence of pollution. • Maximum of 1 pin flag/km. • No other litter.	• Wastewater or vehicle oil spills have been managed appropriately. • Maximum of 2 pin flags/km. • No other litter.	• Wastewater forms ponds or boggy ground. • Vehicle oil spills have not been managed appropriately. • Maximum of 9 pin flags/km. • Maximum of 4 items of other litter/km.	• Extensive wastewater ponds are evident. • Oil spills of more than 20 L have not been managed appropriately. • More than 10 pin flags/km. • More than 5 items of other litter/km.
Native Vegetated Areas	*Impact on native vegetation – species* *(Obj 1,2)*	• No disturbance to sensitive vegetation (f).	• Seismic line has been diverted around sensitive vegetation species (f) with a protective buffer area.	• Seismic line has been diverted around sensitive vegetation species (f) but with no protective buffer area.	• Significant trees have been disturbed. • Isolated trees have been disturbed.	• Listed threatened species has been disturbed or removed (e). • Significant or isolated trees have been removed.

Land System	Measure (Relevant environmental objective)	Score				
		+2[a & d]	+1[a & d]	0[a & d]	-1[b & d]	-2[b, c & d]
	Impact on native vegetation – communities *(Obj 1,2)*	• No disturbance to native vegetation.	• Native vegetation <1m has been slashed. • Rootstock is intact.	• Native vegetation >1 m has been slashed. • Native vegetation has been appropriately weaved around. • Roadside vegetation has been crossed appropriately. • Seismic lines are <5 m wide. • Rootstock still intact.	• Appropriate weaving has not been implemented to avoid unnecessary slashing of native vegetation. • Seismic lines are >5 m wide. • Rootstock largely intact (minimal damage).	• Trees have been removed. • Rootstock has been removed. • Isolated communities have been further segmented. • Seismic lines are >10m wide.
Non-Native Vegetated Areas	*Impact on agricultural, horticultural or viticultural activities* *(Obj 10)*	• No disturbance to any primary production activity.	• Minor disturbance to activities but are less than those agreed to in pre-survey landowner consultation.	• Disturbance to activities are acceptable to landowners as agreed in pre-survey consultation.	• Disturbance to activities are in excess of those agreed to in pre-survey landowner consultation. • Repair, rehabilitation or compensation is less than reasonable/desirable.	• Disturbances are extensive, unwarranted or easily avoidable. • Disturbances likely to have long-term impacts on primary production activities.

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

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

(c) 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.

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

(e) A summary of threatened plants found in the South East biodiversity region is located in Appendix E.

(f) Sensitive vegetation refers to flora and fauna species listed by the NPWS Act as Vulnerable, Rare or Endangered.

APPENDIX E. SUMMARY OF THREATENED PLANTS

Species	Common Name	NPWS Act Status
Acacia trineura	Three-nerve Wattle	Endangered
Asplenium bulbiferum ssp. gracillimum	Mother Spleenwort	Endangered
Austrostipa oligostachya	Fine-head Spear-grass	Endangered
Blechnum chambersii	Lance Water-fern	Endangered
Caladenia calcicola	Limestone Spider-orchid	Endangered
Caladenia clavigera	Plain-lip Spider-orchid	Endangered
Caladenia colorata	Coloured Spider-orchid	Endangered
Caladenia dilatata	Late Spider-orchid	Endangered
Caladenia fulva		Endangered
Caladenia gracilis	Musky Caladenia	Endangered
Caladenia parva	Small Green-comb Spider-orchid	Endangered
Caladenia richardsiorum	Little Dip Spider-orchid	Endangered
Calocephalus lacteus	Milky Beauty-heads	Endangered
Cassinia rugata		Endangered
Cassinia tegulata	Sticky Cassinia	Endangered
Chiloglottis cornuta	Green Bird-orchid	Endangered
Chiloglottis trapeziformis	Dainty Bird-orchid	Endangered
Chorizandra australis	Bristle-rush	Endangered
Cullen microcephalum	Mountain Scurf-pea	Endangered
Cyperus lucidus	Leafy Flat-sedge	Endangered
Dianella callicarpa	Swamp Flax-lily	Endangered
Dillwynia cinerascens	Grey Parrot-pea	Endangered
Dipodium punctatum		Endangered
Diuris chryseopsis	Cowslip Orchid	Endangered
Euphrasia collina ssp. trichocalycina		Endangered
Genoplesium ciliatum	Swamp Midge-orchid	Endangered
Gymnoschoenus sphaerocephalus	Button Grass	Endangered
Hibbertia sessiliflora		Endangered
Histiopteris incisa	Bat's-wing Fern	Endangered
Ixodia achillaeoides ssp. arenicola	Sand Ixodia	Endangered
Lastreopsis acuminata	Shiny Shield-fern	Endangered
Lomandra multiflora ssp. multiflora	Many-flower Mat-rush	Endangered
Myriophyllum glomeratum	Clustered Milfoil	Endangered
Nertera granadensis	Matted Nertera	Endangered
Olearia erubescens	Moth Daisy-bush	Endangered
Olearia glutinosa	Sticky Daisy-bush	Endangered
Olearia suffruticosa	Clustered Daisy-bush	Endangered
Oreomyrrhis eriopoda	Australian Carraway	Endangered
Phebalium squamulosum ssp. squamulosum	Scaly Phebalium	Endangered
Pimelea ligustrina ssp. ligustrina	Tall Riceflower	Endangered
Prasophyllum frenchii	Maroon Leek-orchid	Endangered
Prasophyllum spicatum	Dense Leek-orchid	Endangered
Pterostylis chlorogramma		Endangered
Pterostylis concinna	Trim Greenhood	Endangered

Species	Common Name	NPWS Act Status
Pterostylis falcata	Forked Greenhood	Endangered
Pterostylis lustra	Forked Greenhood	Endangered
Pterostylis melagramma	Tall Greenhood	Endangered
Pterostylis parviflora		Endangered
Pycnosorus chrysanthes		Endangered
Scaevola hookeri	Creeping Fanflower	Endangered
Scleranthus diander	Tufted Knawel	Endangered
Thelymitra cyanapicata		Endangered
Thelymitra epipactoides	Metallic Sun-orchid	Endangered
Thelymitra malvina	Mauve-tufted Sun-orchid	Endangered
Thelymitra matthewsii	Spiral Sun-orchid	Endangered
Thelymitra X merraniae		Endangered
Tricostularia pauciflora	Needle Bog-rush	Endangered
Veronica derwentiana ssp. derwentiana	Derwent Speedwell	Endangered
Viola betonicifolia ssp. betonicifolia	Showy Violet	Endangered
Wurmbea dioica ssp. lacunaria	Lagoon Nancy	Endangered
Wurmbea uniflora	One-flower Nancy	Endangered
Xanthorrhoea minor ssp. lutea	Little Yacca	Endangered
Caladenia versicolor	Grampians Spider-orchid	Endangered
Prasophyllum litorale	Coast Leek-orchid	Endangered
Pterostylis ferruginea	Bangham Rustyhood	Endangered
Thelymitra aristata	Great Sun-orchid	Endangered
Thelymitra ixioides	Spotted Sun-orchid	Endangered
Acacia dodonaeifolia	Hop-bush Wattle	Rare
Acacia iteaphylla	Flinders Ranges Wattle	Rare
Acacia lineata	Streaked Wattle	Rare
Acacia mitchellii	Mitchell's Wattle	Rare
Acacia stricta	Hop Wattle	Rare
Allittia cardiocarpa	Swamp Daisy	Rare
Allittia uliginosa	Wet-heath Daisy	Rare
Amphibromus archeri	Pointed Swamp Wallaby-grass	Rare
Amphibromus macrorhinus	Long-nosed Swamp Wallaby-grass	Rare
Amphibromus recurvatus	Dark Swamp Wallaby-grass	Rare
Anogramma leptophylla	Annual Fern	Rare
Asperula subsimplex	Water Woodruff	Rare
Asplenium trichomanes	Common Spleenwort	Rare
Austrodanthonia tenuior	Short-awn Wallaby-grass	Rare
Austrostipa gibbosa	Swollen Spear-grass	Rare
Baumea acuta	Pale Twig-rush	Rare
Baumea gunnii	Slender Twig-rush	Rare
Baumea laxa	Lax Twig-rush	Rare
Billardiera scandens var. scandens	Eastern Apple-berry	Rare
Blechnum nudum	Fishbone Water-fern	Rare
Blechnum wattsii	Hard Water-fern	Rare
Boronia nana var. pubescens	Dwarf Boronia	Rare
Boronia parviflora	Swamp Boronia	Rare

Species	Common Name	NPWS Act Status
Boronia pilosa ssp. torquata	Hairy Boronia	Rare
Brachyscome graminea	Grass Daisy	Rare
Brachyscome parvula	Coast Daisy	Rare
Brachyscome readeri	Reader's Daisy	Rare
Caesia parviflora var. minor	Pale Grass-lily	Rare
Caladenia congesta	Black-tongue Caladenia	Rare
Caladenia necrophylla	Late Spider-orchid	Rare
Caladenia pusilla	Pigmy Caladenia	Rare
Caladenia vulgaris	Plain Caladenia	Rare
Callitriche sonderi	Matted Water Starwort	Rare
Cardamine paucijuga	Annual Bitter-cress	Rare
Cardamine tenuifolia	Slender Bitter-cress	Rare
Carex gunniana	Mountain Sedge	Rare
Centrolepis cephaloformis ssp. cephaloformis	Cushion Centrolepis	Rare
Centrolepis glabra	Smooth Centrolepis	Rare
Choretrum chrysanthum	Yellow-flower Sour-bush	Rare
Cladium procerum	Leafy Twig-rush	Rare
Correa alba var. pannosa	White Correa	Rare
Corybas unguiculatus	Small Helmet-orchid	Rare
Crassula peduncularis	Purple Crassula	Rare
Cyperus lhotskyanus		Rare
Deyeuxia densa	Heath Bent-grass	Rare
Dianella longifolia var. grandis	Pale Flax-lily	Rare
Diuris sulphurea	Tiger Orchid	Rare
Drosera binata	Forked Sundew	Rare
Elatine gratioloides	Waterwort	Rare
Eragrostis infecunda	Barren Cane-grass	Rare
Eryngium vesiculosum	Prostrate Blue Devil	Rare
Eucalyptus fasciculosa	Pink Gum	Rare
Eucalyptus leucoxylon ssp. megalocarpa	Large-fruit Blue Gum	Rare
Eucalyptus viminalis ssp. viminalis	Manna Gum	Rare
Gahnia clarkei	Tall Saw-sedge	Rare
Gahnia radula	Thatch Saw-sedge	Rare
Galium curvihirtum	Tight Bedstraw	Rare
Gastrodia sesamoides	Potato Orchid	Rare
Gleichenia microphylla	Coral Fern	Rare
Gonocarpus humilis	Shade Raspwort	Rare
Gonocarpus micranthus ssp. micranthus	Creeping Raspwort	Rare
Goodenia heteromera	Spreading Goodenia	Rare
Gratiola pedunculata	Stalked Brooklime	Rare
Gratiola pubescens	Glandular Brooklime	Rare
Gratiola pumilo	Dwarf Brooklime	Rare
Grevillea aquifolium	Prickly Grevillea	Rare
Haloragis brownii	Swamp Raspwort	Rare
Haloragis eichleri	Eichler's Raspwort	Rare
Haloragis myriocarpa		Rare

Species	Common Name	NPWS Act Status
Hibbertia glaberrima	Central Australian Guinea-flower	Rare
Hydrocotyle comocarpa	Fringe-fruit Pennywort	Rare
Hypericum japonicum	Matted St John's Wort	Rare
Hypolepis rugosula	Ruddy Ground-fern	Rare
Isoetes drummondii ssp. drummondii	Plain Quillwort	Rare
Isotoma fluviatilis ssp. australis	Swamp Isotome	Rare
Juncus australis	Austral Rush	Rare
Juncus procerus	Tall Rush	Rare
Lachnagrostis punicea ssp. filifolia	Narrow-leaf Blown-grass	Rare
Lachnagrostis punicea ssp. punicea		Rare
Lachnagrostis robusta	Tall Blown-grass	Rare
Leptinella reptans	Creeping Cotula	Rare
Leptorhynchos scaber	Annual Buttons	Rare
Leptorhynchos tenuifolius	Wiry Buttons	Rare
Leptostigma reptans	Dwarf Nertera	Rare
Leucopogon clelandii	Cleland's Beard-heath	Rare
Lobelia heterophylla		Rare
Lobelia pratioides	Poison Lobelia	Rare
Lomandra filiformis ssp. coriacea	Wattle Mat-rush	Rare
Luzula ovata	Clustered Wood-rush	Rare
Lycopodiella lateralis	Slender Clubmoss	Rare
Lythrum salicaria	Purple Loosestrife	Rare
Melaleuca squamea	Swamp Honey-myrtle	Rare
Melaleuca squarrosa	Bottlebrush Tea-tree	Rare
Melaleuca wilsonii	Wilson's Honey-myrtle	Rare
Mentha atrolilacina	Slender Mint	Rare
Mentha diemenica	Slender Mint	Rare
Micromyrtus ciliata	Fringed Heath-myrtle	Rare
Microtis atrata	Yellow Onion-orchid	Rare
Microtis rara	Sweet Onion-orchid	Rare
Montia australasica	White Purslane	Rare
Myoporum parvifolium	Creeping Boobialla	Rare
Myriophyllum integrifolium	Tiny Milfoil	Rare
Myriophyllum variifolium	Varied Milfoil	Rare
Olearia passerinoides ssp. glutescens	Sticky Daisy-bush	Rare
Pentapogon quadrifidus var. quadrifidus	Five-awn Spear-grass	Rare
Phyllangium distylis	Tiny Mitrewort	Rare
Phylloglossum drummondii	Pigmy Clubmoss	Rare
Pilularia novae-hollandiae	Austral Pillwort	Rare
Poa fax	Scaly Poa	Rare
Poa morrisii	Soft Tussock-grass	Rare
Poa rodwayi	Velvet Tussock-grass	Rare
Poa sieberiana var. sieberiana		Rare
Podolepis jaceoides	Showy Copper-wire Daisy	Rare
Potamogeton ochreatus	Blunt Pondweed	Rare
Prasophyllum australe	Austral Leek-orchid	Rare

Species	Common Name	NPWS Act Status
Pratia concolor	Poison Pratia	Rare
Pteris tremula	Tender Brake	Rare
Pterostylis curta	Blunt Greenhood	Rare
Pterostylis foliata	Slender Greenhood	Rare
Pultenaea dentata	Clustered Bush-pea	Rare
Pultenaea scabra	Rough Bush-pea	Rare
Ranunculus inundatus	River Buttercup	Rare
Ranunculus robertsonii	Slender Buttercup	Rare
Rorippa dictyosperma	Forest Bitter-cress	Rare
Rumex dumosus	Wiry Dock	Rare
Schoenus discifer	Tiny Bog-rush	Rare
Schoenus laevigatus		Rare
Schoenus lepidosperma ssp. lepidosperma	Slender Bog-rush	Rare
Schoenus sculptus	Gimlet Bog-rush	Rare
Schoenus tesquorum	Grassy Bog-rush	Rare
Sphaerolobium minus	Leafless Globe-pea	Rare
Spiranthes australis	Austral Lady's Tresses	Rare
Sprengelia incarnata	Pink Swamp-heath	Rare
Stellaria multiflora	Rayless Starwort	Rare
Stellaria pungens	Prickly Starwort	Rare
Stylidium beaugleholei	Beauglehole's Trigger-plant	Rare
Stylidium ecorne		Rare
Thelymitra carnea	Small Pink Sun-orchid	Rare
Thelymitra flexuosa	Twisted Sun-orchid	Rare
Thelymitra mucida	Plum Sun-orchid	Rare
Thelymitra orientalis	Plum Sun-orchid	Rare
Triglochin alcockiae	Alcock's Water-ribbons	Rare
Utricularia australis	Yellow Bladderwort	Rare
Utricularia violacea	Violet Bladderwort	Rare
Veronica derwentiana ssp. anisodonta	Kangaroo Island Speedwell	Rare
Viminaria juncea	Native Broom	Rare
Wurmbea latifolia ssp. vanessae	Broad-leaf Nancy	Rare
Xyris operculata	Tall Yellow-eye	Rare
Zieria veronicea ssp. veronicea	Pink Zieria	Rare
Zoysia macrantha ssp. walshii	Manila Grass	Rare
Acacia suaveolens	Sweet Wattle	Vulnerable
Adiantum capillus-veneris	Dainty Maiden-hair	Vulnerable
Arthropodium milleflorum	Pale Vanilla-lily	Vulnerable
Baloskion tetraphyllum ssp. tetraphyllum	Tassel Cord-rush	Vulnerable
Caladenia formosa	Elegant Spider Orchid	Vulnerable
Caladenia venusta	Large White Spider-orchid	Vulnerable
Caleana major	Large Duck-orchid	Vulnerable
Calectasia intermedia	Eastern Blue Tinsel-lily	Vulnerable
Callitriche umbonata	Water Starwort	Vulnerable
Calochilus paludosus	Red Beard-orchid	Vulnerable
Cardamine gunnii	Spade-leaf Bitter-cress	Vulnerable

Species	Common Name	NPWS Act Status
Centella uniflora		Vulnerable
Clematis aristata	Mountain Clematis	Vulnerable
Colobanthus apetalus	Coast Colobanth	Vulnerable
Craspedia paludicola	Swamp Buttons	Vulnerable
Cryptostylis subulata	Moose Orchid	Vulnerable
Cuscuta tasmanica	Tasmanian Dodder	Vulnerable
Deyeuxia minor	Small Bent-grass	Vulnerable
Dipodium campanulatum	Bell-flower Hyacinth Orchid	Vulnerable
Dipodium pardalinum	Leopard Hyacinth-orchid	Vulnerable
Diuris behrii	Behr's Cowslip Orchid	Vulnerable
Dodonaea procumbens	Trailing Hop-bush	Vulnerable
Eleocharis atricha	Tuber Spike-rush	Vulnerable
Eryngium ovinum	Blue Devil	Vulnerable
Eucalyptus pauciflora ssp. pauciflora	Snow Gum	Vulnerable
Eucalyptus splendens ssp. arcana	Carpenters Rocks Manna Gum	Vulnerable
Euphrasia collina ssp. collina	Purple Eyebright	Vulnerable
Eurychorda complanata	Flat Cord-rush	Vulnerable
Gastrodia vescula	Lesser Potato Orchid	Vulnerable
Genoplesium despectans	Sharp Midge-orchid	Vulnerable
Gentianella gunniana	Mountain Gentian	Vulnerable
Glycine latrobeana	Clover Glycine	Vulnerable
Glycine tabacina	Variable Glycine	Vulnerable
Hovea heterophylla	Common Hovea	Vulnerable
Isolepis producta	Nutty Club-rush	Vulnerable
Juncus amabilis		Vulnerable
Juncus homalocaulis	Wiry Rush	Vulnerable
Lachnagrostis scabra	Ruddy Bent	Vulnerable
Lagenophora gracilis	Slender Bottle-daisy	Vulnerable
Lepidosperma neesii	Stiff Raper-sedge	Vulnerable
Levenhookia sonderi	Slender Stylewort	Vulnerable
Lobelia beaugleholei	Showy Lobelia	Vulnerable
Luzula flaccida	Pale Wood-rush	Vulnerable
Mazus pumilio	Swamp Mazus	Vulnerable
Microtis orbicularis	Swamp Onion-orchid	Vulnerable
Mitrasacme pilosa var. pilosa	Hairy Mitrewort	Vulnerable
Myriophyllum crispatum	Upright Milfoil	Vulnerable
Olearia glandulosa	Swamp Daisy-bush	Vulnerable
Olearia pannosa ssp. pannosa	Silver Daisy-bush	Vulnerable
Paracaleana minor	Small Duck-orchid	Vulnerable
Poa meionectes	Fine-leaf Tussock-grass	Vulnerable
Pomaderris halmaturina ssp. continentis	Glenelg Pomaderris	Vulnerable
Pomaderris halmaturina ssp. halmaturina	Kangaroo Island Pomaderris	Vulnerable
Potamogeton australiensis	Thin Pondweed	Vulnerable
Pratia puberula	White-flower Matted Pratia	Vulnerable
Pterostylis sp. Sandheath (D.Murfet 3190)	Tiny Greenhood	Vulnerable
Pterostylis tasmanica		Vulnerable

Species	Common Name	NPWS Act Status
Pterostylis tenuissima	Swamp Greenhood	Vulnerable
Ranunculus glabrifolius	Shining Buttercup	Vulnerable
Ranunculus papulentus	Large River Buttercup	Vulnerable
Ranunculus pumilio var. politus	Smooth-fruit Ferny Buttercup	Vulnerable
Scaevola calendulacea	Dune Fanflower	Vulnerable
Schizaea bifida	Forked Comb-fern	Vulnerable
Schizaea fistulosa	Narrow Comb-fern	Vulnerable
Schoenus latelaminatus	Medusa Bog-rush	Vulnerable
Senecio psilocarpus		Vulnerable
Swainsona behriana	Behr's Swainson-pea	Vulnerable
Tetrarrhena distichophylla	Hairy Rice-grass	Vulnerable
Thelionema caespitosum	Tufted Lily	Vulnerable
Thelymitra holmesii	Blue Star Sun-orchid	Vulnerable
Thelymitra latifolia	Blue Star Sun-orchid	Vulnerable
Thelymitra peniculata	Blue Star Sun-orchid	Vulnerable
Thysanotus tuberosus ssp.	Tuber Fringe-lily	Vulnerable
Thysanotus tuberosus ssp. tuberosus	Tuber Fringe-lily	Vulnerable
Utricularia beaugleholei	Beauglehole's Bladderwort	Vulnerable
Utricularia lateriflora	Small Bladderwort	Vulnerable
Veronica gracilis	Slender Speedwell	Vulnerable
Veronica subtilis	Slender Speedwell	Vulnerable
Villarsia umbricola var. beaugleholei	Beauglehole's Marsh-flower	Vulnerable
Vittadinia australasica var. oricola	New Holland Daisy	Vulnerable
Wahlenbergia gymnoclada	Naked Bluebell	Vulnerable
Thysanotus tuberosus ssp. parviflorus	Tuber Fringe-lily	Vulnerable

N.B. This list was current on the 7th February 2013.

APPENDIX F. PRELIMINARY STAKEHOLDER COMMENTS AND RESPONSES – FIRST ROUND

Stakeholder *Document section and page*	**Stakeholder Comment**	**Response / Editor's Comment**
DEWNR		
John Barker – Adelaide Office	*General - SEO*	
	Change all references in document of DENR to DEWNR.	Done.
	Include a Glossary to explain the terms in the document.	Done .
	Terminology in the document should be made more consistent (comment r7).	All references to pest species, exotic species etc now changed to 'Non-indigenous species'.
	Minor wording and grammar changes.	Done.
	Page Specific - SEO	
SEO – piii	Include a glossary of words (comment r1).	Done.
SEO – p4	Each objective should have supportive text explaining the objective in more detail, i.e. aims, assessing etc (comment r2).	Appendix C goes into detail for each objective. Reference made in the document directing there for more information.
SEO – p4	Incorrect that all activities covered in the SEO are exempt from and SEB.	Addressed in further correspondence from DEWNR.
SEO – p4	Clarify what other impacts there may be (comment r3).	Appendix C goes into detail for each objective. Reference made in the document directing there for more information.
SEO –p4	An introduced species is a biosecurity threat. Clarify what other?? Biosecurity threats there may be (comment r4).	'Non-indigenous species' added to glossary. Umbrella term will capture all previous reference to introduced species, exotic species etc. 'Biosecurity threat' added to glossary also.
SEO – p4	Include an objective on rehabilitation (comment r5).	Done.
SEO – p4	Non-comprehension of paragraph (comment r6).	Reworded for better comprehension.
SEO – p6	Suggested that consider the appointment of a third part auditor such as DEWNR.	Addressed in the 'Third Party Audits' section (p. 6). States '… audits may be commissioned by DMITRE, the licensee or by an independent party'. DEWNR are welcome to audit any with the GAS system areas they find to be of environmental significance.
SEO – p9	In what way are they considered? (comment r8).	Standard practice is they are avoided.
SEO – p9	'Sensitive routes' requires definition (comment r9).	Defined in the accompanying text.
SEO – p9	In what way is seismic line placement altered? (comment r10)	Standard practice is to weave seismic lines around vegetation where possible.
SEO – p9	'Sensitive areas' requires definition (comment r11)	Slightly reworded to assist comprehension.
SEO – p9	Why PIRSA? Should this be DEWNR? (comment r12)	DMITRE (PIRSA) is the lead agency for the operation and will determine whether DEWNR notification is required. DMITRE will automatically notify DEWNR if in a declared park/reserve.
SEO – p9	Add 'listed species' to glossary and include ecological communities (comment r13).	Done.
SEO – p10	Do you mean surface water? (comment r14)	Yes. Changed
SEO – p10	DWLBC no longer exists. Change to DEWNR (comment r15).	Done.
SEO – p11	Are staff aware of pest species and is training provided? (comment r17).	Presence of pests identified during risk assessment. Relevant training provided during crew induction(s).
SEO – p11	Text should go below objective (comment r18).	Appendix C goes into detail for each objective. Reference made in the document directing there for more information.
SEO – p12	Move text to supporting objective (comment r19).	As above.
SEO – p12	Suggest use the Fire Danger Index for guide to meeting objective 12 (comment r20).	Done.
SEO – p12	Move to glossary (comment r21).	Reworded to be covered by glossary definitions.
Oisin Sweeney – Mt Gambier Office	*Page Specific - SEO*	
Figure 1 & 2	Update the parks and reserves layer.	Figures up to date as of 11/02/2013.
SEO – p4	New strategy has superseded the National strategy for the Conservation of Australia's Biological Diversity (1996).	Updated to Australia's Biodiversity Conservation Strategy (2010). Any references to texts found within the old document were also removed.

Stakeholder *Document section and page*	Stakeholder Comment	Response / Editor's Comment
SEO – p8	Woakwine and Naracoorte caves are listed as the wrong park.	Correct as of the figures update.
SEO – p10	Add 'ecological communities' to threatened species under the 'Surveying, line and campsite preparation'.	Done.
SEO – p10	Add criteria and guides which consider wetlands in objective 2.	Geophysical operations do not impact on things such as pH, salinity etc because they are not a producing activity. Flows could be slightly affected physically if a creek crossing is required but that would be all - in any case there are very few creeks in the SE. These suggestions would possibly be pertinent to drilling operations but not to low impact geophysical operations.
SEO – p10	Appendices 4 and 5 refer to Parts 4 and 5.	All references to additional documentation as 'Part' have been replaced with 'Appendix/ice'
SEO – p16	Clarify the negative GAS criteria 'for native vegetated areas' as is ambiguous.	Done.
SEO – p16	Criteria addressing hydrology of wetlands should be added.	Covered by 'objective 4 – Minimise disturbance to drainage patterns'. As stated above, wetland chemistry would be something which is affected by the production activities and not low impact exploration geophysical operations..
SEO – p17	List of threatened plants is out of date.	Up to date as of the 7th of February according to our corporate geodatabase (managed by DEWNR and up to date as of then).
EPA	*General – SEO & EIR*	
	Waste management - Camp sites.	Camps are not used in the Otway Basin during the geophysical operations stage due to the abundance of existing accommodation.
	Waste management - Small camp sites, itinerant and in isolated locations.	Otway Basin is not classed as an isolated area. Most campsites are located within existing accommodation in nearby towns.
	Waste water management – Operations- evaporation ponds.	Not relevant to geophysical exploration activities.
	Waste water management – Waste water from camps etc.	Camps are not used in the Otway Basin during the geophysical operations stage due to the abundance of accommodation.
	Dust management – All activities.	See objective 3 in Appendix C. The Otway Basin is a wetter area than other basins in SA and as such dust is far less of a problem.
	Bunding and Spill Management – All activities.	Already addressed in Appendix C under *Fuel and chemical use and Management*.
	Turkey's nest – Construction.	Not relevant to geophysical exploration activities.
	Turkey's nest – Initial Restoration.	Not relevant to geophysical exploration activities.
	Drilling mud capture – Exploration.	Not relevant to geophysical exploration activities.
	Formation Water – Initial and extended production.	Not relevant to geophysical exploration activities.
	Production Activities in Floodplain areas – Production Activities: Initial, extended or full production.	Not relevant to geophysical exploration activities.
	Blasting – Construction of Pipe line trench.	Not relevant to geophysical exploration activities.
	Noise – All Activities.	See objective 10 in Appendix C. Landholders with noise requirements can set them out during the NOIE process.
Forestry SA	*No specific comment*	
DPTI	*No specific comment*	
AARD	*No specific comment*	

N.B. Some comments listed above have been shortened. The comments with the exact wording from each stakeholder are available on request.

APPENDIX G. PRELIMINARY STAKEHOLDER COMMENTS AND RESPONSES – SECOND ROUND

Stakeholder *Document section and page*	**Stakeholder Comment**	**Response / Editor's Comment**
DEWNR	*General – SEO*	
	General formatting and legal reference updates.	Done.
	Page Specific – EIR	
EIR – p. 36	Concern that Table 7 does not accurately describe the potential impacts (currently classified as 'negligible'). Recommend review risk to reflect 'major'.	Changed in EIR.
Forestry SA	*General – SEO*	
	Would like to see vehicle access to existing tracks only in NFR similar to what is allowed in Parks which allow access.	The opportunity to address the creation of additional tracks should be done on a case by case basis. A blanket ban on creation of new tracks in NFRs is not appropriate given how well they recover (if managed properly).
	Expect at minimum that any works proposed in NFR would involve a Conservation Planner directly to ensure guidelines are followed.	Forestry SA will be consulted as part of the normal NOIE process for any survey.
	Include names of NFR as an appendix.	Done. See Appendix A.
	Page Specific – SEO	
SEO – p. 2	Include NFR in first sentence and reference to Forestry SA.	Addressed in the second paragraph. Forestry SA NFRs are not handled the same as DEWNR parks and reserves because they are under a different act.
SEO – p. 2	Remove reference to 'Forest Reserve'. Keep reference to 'NFR'.	Done.
SEO – p. 3	Update maps to emphasise NFR.	Done.
SEO – p. 11	Reference that a ForestrySA conservation planner to be consulted.	Changed so a conservation planner will check that licensee has most up to date information.
SEO – p. 11	Not all information is up to date on management plans.	See above.
AARD	*No Specific Comment*	
DPTI	*No specific comment*	
EPA	*No specific comment*	

N.B. Some comments listed above have been shortened. The comments with the exact wording from each stakeholder are available on request.

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