



ESG2: Guideline for preparing a Review of Environmental Factors

For exploration activities subject to Part 5 of the
Environmental Planning and Assessment Act 1979



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More information

This **guideline** forms part of a suite of guidelines that provide assistance to explorers:

- **ESG2: Guideline for Preparing a Review of Environmental Factors**
- ESG4: Guideline for Preparing an Environmental and Rehabilitation Compliance Report for Exploration
- ESG5: Assessment Requirements for Exploration Activities
- Exploration and Production Guideline: Drilling and Integrity of Boreholes and Wells
- Exploration Guideline: Work Programs for Prospecting Titles
- Exploration Guideline: Petroleum Land Access
- Exploration and Production Guideline: Petroleum Drilling and Well Servicing – Competencies
- Exploration Guideline: Annual Activity Reporting for Prospecting Titles
- Guideline for Agricultural Impact Statements at the Exploration Stage

The following **Codes of Practice** may also provide assistance to explorers:

- Exploration Code of Practice: Community Consultation
- Exploration Code of Practice: Environmental Management
- Exploration Code of Practice: Produced Water Management, Storage and Transfer
- Exploration Code of Practice: Rehabilitation

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Introduction

The Resources Regulator within the NSW Department of Planning and Environment (the Department) is responsible for the administration of authorisations under the *Mining Act 1992* and petroleum titles under the *Petroleum (Onshore) Act 1991*. Authorisations include exploration licences, assessment leases, mining leases, mineral claims and opal prospecting licences. Petroleum titles include exploration licences, assessment leases and production leases.

As part of this role, the Department has a statutory obligation under section 5.5 of the *Environmental Planning and Assessment Act 1979* (EP&A Act) to 'examine and take into account to the fullest extent possible all matters affecting or likely to affect the environment' when determining certain applications in relation to exploration carried out under authorisations and petroleum titles. This obligation applies where activities have not previously been approved under the former Part 3A or Part 4 of the EP&A Act, or assessed by another Government agency in accordance with Part 5 of the EP&A Act.

In order to assess these impacts, the Department may require the title holder to prepare a review of environmental factors (REF) or an environmental impact statement (EIS) [which may need to include a species impact statement (SIS)].

This guideline has been developed to assist industry prepare a REF, EIS, SIS or other documentation to support an application for approval to carry out assessable prospecting operations (exploration).

A. What is a review of environmental factors?

The Department is required to take into account a number of factors set out in the *Environmental Planning and Assessment Regulation 2000* in order to discharge its obligations under Part 5 of the EP&A Act.

A REF is simply a document that sets out how these factors are likely to impact the environment.

The purpose of a REF is to inform the Department's consideration of the likely environmental impact of the activity under Part 5 of the EP&A Act. Therefore, the length and complexity of a REF will depend on the nature of the environmental impact.

B. When is a REF required?

The Department's *Form ESF4: Application to Conduct Exploration Activities* identifies when supporting information in the form of a REF is required to be submitted to enable the assessment to be completed in accordance with relevant statutory requirements.

Part 5 of the EP&A Act applies (and a REF is therefore required) where an activity (such as an assessable prospecting operation) is subject to approval under the *Mining Act 1992* or *Petroleum (Onshore) Act 1991* and the activity:

- is permissible without consent under an [environmental planning instrument](#), and
- the activity has not previously been approved under Parts 3A or 4 or assessed under Part 5.

Part 5 of the EP&A Act does not apply (and therefore a REF is not required) where an activity is declared to be exempt development under an environmental planning instrument (such as [State Environmental Planning Policy \(Mining, Petroleum Production and Extractive Industries\) 2007](#)).

Activities that are generally subject to assessment under Part 5 include:

- mineral prospecting (exploration) activities (other than exploration declared exempt development pursuant to [State Environmental Planning Policy \(Mining, Petroleum Production and Extractive Industries\) 2007](#))
- petroleum prospecting (exploration) activities (other than exploration declared exempt development pursuant to [State Environmental Planning Policy \(Mining, Petroleum Production and Extractive Industries\) 2007](#))
- opal mining associated with a mineral claim in a mineral claims district.

Exempt Development

Certain exploration activities with minimal environmental impact have been identified as exempt development under [State Environmental Planning Policy \(Mining, Petroleum Production and Extractive Industries\) 2007](#) (Mining SEPP). These minimal-impact activities do not require further environmental assessment or approval prior to being carried out.

Under the Mining SEPP, the following activities are exempt development, provided they are of minimal environmental impact:

- low intensity exploration activities, including:
 - geological mapping and airborne surveying
 - sampling and coring using hand-held equipment
 - geophysical (but not seismic) surveying and downhole logging
 - accessing of areas by vehicle that does not involve the construction of an access way, such as a track or road.

These activities can be undertaken without approval provided that they are on land that:

- is not within an environmentally sensitive area of state significance, or
- is within a state conservation area, but is not otherwise on land referred to in section 3 of the Mining SEPP as being an environmentally sensitive area of state significance.

A REF **will not be required** to support applications where the Department is satisfied that a Part 5 assessment of the activity has previously been carried out by the Department or another public authority and remains current (and therefore the Department does not need to assess the activity).¹ In such circumstances, the Department would still expect the applicant to provide details or copies of those previous assessments with the application.

C. Who prepares a REF?

REFs are either prepared by the determining authority (the Department) or by (or on behalf of) the title holder.

Applicants should ensure that REFs are prepared by a person with appropriate qualifications or experience to ensure that the REF appropriately addresses all relevant issues and does not contain false or misleading information. A typical REF may involve a range of experts with skills in environmental science, biodiversity, Aboriginal and historic heritage, hydrology, noise and air quality, and social and economic assessment.

The provision of false or misleading information in an application under *the Mining Act 1992* or *Petroleum Act (Onshore) Act 1991* is an offence.

¹ Section 5.4 (c) of the EP&A Act exempts certain activities from a Part 5 Assessment where the activity (or part of the activity) has been approved, or is to be carried out, by another determining authority following a Part 5 environmental assessment.

D. What information must be included in a REF?

The information in a REF can be very short or very detailed depending on the nature of the activity, the level of risk to the environment, and the proposed environmental safeguards.

However, the REF should clearly demonstrate that the title holder has identified, and sought to avoid and minimise, adverse impacts on the environment and communities to the fullest.

The Department's *Form ESF4: Application to Conduct Exploration Activities* identifies:

- when a REF is required to be prepared by (or on behalf of) the title holder
- the type of REF that is required to be submitted to enable the assessment to be completed in accordance with relevant statutory requirements.

Depending on the likely environmental impact of the activity, the title holder may be required to prepare either a Targeted REF or a Guideline REF.

Targeted REFs

The title holder has the option of preparing a Targeted REF for non-complying exploration activities as set out in *ESG5: Assessment Requirements for Exploration Activities*. The preparation of a Targeted REF comprises the completion of all questions in *Form ESF4: Application to Conduct Exploration Activities*.

A Targeted REF would generally be more suitable for activities that only slightly deviate from one or more of the complying exploration activity (CEA) criteria. The information in a Targeted REF only needs to specify the potential environmental impacts associated with the departure(s) from the relevant CEA location restriction, impact criteria or management control. In such cases, a Guideline REF would not be required.

When preparing a Targeted REF, title holders should use the information in **Heading 4** of this guideline relevant to the environmental impacts associated with the departure(s) from the CEA location restriction, impact criteria or management control.

Targeted REFs may also be required to be accompanied by an agricultural impact statement (AIS) prepared in accordance with NSW Government's *Guideline for Agricultural Impact Statements at the Exploration Stage*.

Guideline REFs

Alternatively, the title holder may be required to prepare a Guideline REF, which describes all of the environmental impacts of an activity in accordance with this guideline. Applicants:

- **must** prepare and submit a Guideline REF in support of an application for approval to carry out all petroleum exploration activities
- **should** prepare and submit a Guideline REF in support of an application for approval to carry out an activity for which a Targeted REF is impractical (e.g. an activity that is likely to have several environmental impacts which may be classified as medium adverse or higher)
- **may** prepare and submit a Guideline REF in support of an application for any other activity.

Guideline REFs may also be required to be accompanied by an AIS prepared in accordance with the NSW Government's *Guideline for Agricultural Impact Statements at the Exploration Stage*.

Additional Information

The Department may also require an applicant to provide additional information if it considers that the information set out in a *Form ESF4: Application to Conduct Exploration Activities*, a Targeted REF or a Guideline REF is insufficient to enable it to properly consider all matters likely to affect the environment in connection with an activity.

E. REF requirements of other government agencies

Where the approval of another government agency is also required, applicants must have regard to any relevant guidelines published by that agency. In such circumstances, applicants should prepare a single REF document that addresses the requirements of both agencies.

Special note: activities relating to, or adjoining, land reserved or acquired under the *National Parks and Wildlife Act 1974*

The [Office of Environment and Heritage](#) (OEH) is responsible for management of lands reserved or acquired under the [National Parks and Wildlife Act 1974](#). State conservation areas (SCAs) are the only category of reserved land where mining and petroleum activities are legally permissible, subject

to approval from the OEH or the Minister for the Environment.

- REFs accompanying applications relating to land **within SCAs** must be prepared in accordance with the appropriate OEH guidelines and template. Applicants should liaise with the relevant [OEH regional office](#) prior to commencing the REF.
- REFs for activities on land **adjoining land** administered by the OEH must have regard to the OEH publication, [Guidelines for developments adjoining land and water managed by the Department of Environment Climate Change and Water](#).

As outlined in **Section (H)** below, the OEH is responsible for assessing REFs for exploration activities in SCAs.

F. REF or EIS?

If, in reviewing the REF, the Government decision-maker forms the opinion that the activity is likely to significantly affect the environment, an EIS must be prepared (section 5.7(1) of the EP&A Act). The purpose of an EIS is to provide a thorough public examination of a proposed activity that is likely to have a significant impact on the environment, and to inform a decision as to whether that activity should proceed.

In many cases, the scale of the activity may be such that the title holder will know from the outset that an EIS is required and will operate on that basis from the outset. For some activities, however, it may be the case that the significance of impacts becomes apparent only after some assessment has taken place (such as a REF).

Is an EIS Required? Best Practice Guidelines for Part 5 of the Environmental Planning and Assessment Act 1979 (Department of Planning, 1995) is a useful guide to assist an applicant to determine whether an EIS is likely to be required.

The form, content and process for preparing and exhibiting an EIS are set out in the EP&A Act and associated regulations. Environmental assessment requirements must be sought from the [Department of Planning and Environment](#) prior to preparing an EIS.

G. Species impact statements

If an activity is likely to significantly affect threatened species or ecological communities (or their habitats), an SIS is required to be considered as part of the activity assessment process.²

The form, content and process for preparing a SIS are set out in the *Biodiversity Conservation Act 2016* or the *Fisheries Management Act 1994* (as applicable to the impacted species). Title holders should obtain assessment requirements from the Office of Environment and Heritage or the Department of Primary Industries (as applicable to the impacted species) prior to preparing a SIS.

H. Part 5 assessment process

The activity application and accompanying REF will be assessed by the Department. Additional information may be requested during the assessment process.

An assessment of the activity will generally be prepared by the Department under Part 5 of the EP&A Act (in accordance with the Department of Planning and Environment guidelines) for consideration by the decision maker (the determining authority).³

In some circumstances the Part 5 assessment may be undertaken by another agency, in which case the Department will not be required to carry out its own assessment.

Special note: assessment of REFs for activities in State Conservation Areas (SCAs)

The OEH is responsible for assessing REFs for exploration activities in SCAs. The OEH may require additional information during the review process.

If the approval of the Minister for the Environment is required for an activity, the OEH will assess

the REF and submit a determination report for consideration of the Minister.

The determining authority must determine whether the activity is likely to:

- have a significant impact on the environment, in which case an EIS is required, or
- significantly affect threatened species or ecological communities (or their habitats), or impact on declared areas of outstanding biodiversity value/critical habitat, in which case a SIS is required.

I. Activity determination process

Following the completion of the Part 5 assessment process, the Department may grant or refuse an application for approval to carry out a particular prospecting operation under the *Mining Act 1992* or *Petroleum (Onshore) Act 1991*. If the activity is within a SCA, written approvals may also be issued by the OEH or Minister for the Environment.

In most cases, the approval will be issued subject to terms. These terms will usually require compliance with any commitments made in a REF (refer to **Heading 7** and **Appendix 3**). Consequently, environmental protection and conservation measures should not be proposed or set out in the REF if they are impractical, unrealistic or not financially viable.

Other terms may require the title holder to prepare additional plans, undertake specific mitigating measures or limit the proposed activity in some way to minimise harm to the environment.

In carrying out the activity, the title holder must ensure compliance with all regulatory requirements, including:

- the conditions of the title
- the terms of the activity approval
- other relevant legislation or approvals.

The title holder must also ensure that the activities undertaken are consistent with those described in the REF and any associated documentation.

J. Other approvals

The assessment and approval of an activity under the *Mining Act 1992* or *Petroleum (Onshore) Act 1991* does not affect any obligation to comply with the requirements to obtain an approval, licence, permit or concurrence under other legislation. Examples of legislation which may apply include: the *Fisheries Management Act 1994*, *Forestry Act 2012*, *Heritage Act 1977*, *National Parks and Wildlife Act 1974*, *Protection of the Environment Operations Act 1997*, *Roads Act 1993*, *Rural Fires Act 1997*, *Water Act 1912* and the

² An activity is taken not to significantly affect threatened species or ecological communities, or their habitats, if the activity is to be carried out on biodiversity certified land (within the meaning of Part 8 of the *Biodiversity Conservation Act 2016*).

³ Section 5.4 of the EP&A Act exempts certain activities from a Part 5 Assessment where the activity (or part of the activity) has been approved, or is to be carried out, by another determining authority following a Part 5 environmental assessment.

Water Management Act 2000. Accordingly, the REF may be drafted to cover assessment requirements for a number of different approvals and Government agencies.

The title holder is responsible for gaining all required approvals or licences prior to commencement of the activity.

Approvals Required under Other Legislation

Exploration activities may trigger approval requirements under other legislation, including the following:

- Environment Protection Licence (*Protection of the Environment Operations Act 1997*) (for petroleum, including coal seam gas)
- licence to take water (*Water Act 1912* or *Water Management Act 2000*)
- Aboriginal heritage impact permit (*National Parks and Wildlife Act 1974*)
- development consent (*Environmental Planning and Assessment Act 1979*) for activities on land to which *State Environmental Planning Policy (Coastal Management) 2018* applies
- actions likely to have a significant impact on a Matter of National Environmental Significance (*Commonwealth Environment Protection and Biodiversity Conservation Act 1999*) (refer to **Heading 4.5**).

Exempted Areas

Exempted areas are defined in the *Mining Act 1992* and *Petroleum (Onshore) Act 1991* as lands set aside for public purposes. They include travelling stock routes, road reserves, state forests, state conservation areas, public reserves/commons and land held under a lease for water supply.

The consent of the Minister is required prior to exploration in an exempted area. This applies regardless of the type of exploration activity.

K. Changing an activity after approval

Changes to an activity after approval may require further assessment and approval by the Department and this may require submission of a new or revised REF. The title holder must contact the Department to determine the assessment and approval requirements associated with any modification of approved activities.

L. Will I be audited?

The Department may conduct an audit at any time to determine whether:

- the activities being carried out by the title holder are consistent with those described in the REF and set out in the terms of approval
- the actual impacts are consistent with those described in the REF.

Failure to comply with the terms of approval or other title conditions may trigger enforcement action.

From 1 July 2015, under the [NSW Gas Plan](#), the Environment Protection Authority (EPA) is the lead authority to regulate compliance with and enforcement of all conditions (excluding work health and safety) contained within petroleum titles. This includes any terms imposed in relation to specific petroleum exploration activity approvals.

M. Public access to REFs

REFs are made available on the Department's website for unrestricted public access following lodgement of the application.

N. Privacy considerations

If any part of the REF is considered to be confidential or contains personal information that should not be made available to the public, then this should be provided in a separate addendum clearly marked 'Confidential'.

The Department may provide the information to other government agencies for the purposes of its assessment.

At the request of the individual to whom the personal information relates, the Department may make appropriate amendments (whether by way of corrections, deletions or additions) to ensure that the personal information is accurate, relevant, up to date, complete and not misleading.

Content requirements for a REF

All REFs submitted to the Department in support of an application for approval of an activity under the *Mining Act 1992* or *Petroleum (Onshore) Act 1991* must comply with the relevant content requirements set out under this section (except for activities within SCAs).

As noted in the introduction, the title holder has the option of preparing a Targeted REF for non-complying exploration activities as set out in [ESG5: Assessment Requirements for Exploration Activities](#). The preparation of a Targeted REF comprises the completion of all questions in *Form ESF4: Application to Conduct Exploration Activities*. When preparing a Targeted REF, title holders should use the information in Heading 4 of this guideline relevant to the environmental impacts associated with the departure(s) from the CEA location restriction, impact criteria or management control.

REFs for activities within SCAs must be prepared using guidelines issued by the Office of Environment and Heritage.

Additional REF content requirements may apply to specific activities or circumstances.

Non-complying submissions may be rejected.

1. The site

1.1 Site description

The REF must describe the site of the proposed activity. This description must include a table specifying MGA94 coordinates (Zone, Easting and Northing) for the location of key features of the activity.

1.2 Site plan

The REF must include a site plan(s) at an appropriate scale showing:

- the boundaries of the title
- the Lot/Deposited Plan (DP) numbers and boundaries
- topographic contours

- the location of the proposed activity (including location of key features of the activity such as drill holes using MGA94 co-ordinates)
- the layout of the proposed activity (using dimensions and alignments where appropriate)
- major regional features
- existing and proposed access tracks
- existing structures and infrastructure (including dimensions and alignments where relevant)
- the location of identified sensitive land (refer **Heading 2.2**)
- nearby sensitive receivers (refer **Heading 2.3**)
- any coal seam gas exclusion zones, as relevant (refer **Heading 2.4**)
- the location of threatened species or ecological communities, or their habitats (refer **Heading 2.6**)
- the location of Aboriginal and historic cultural heritage sites (including AHIMS search) (refer **Headings 2.7** and **2.8**).

Additional plans, sections, diagrams, photographs (including aerial imagery where available) should be provided where these will assist with describing the site.

The REF should be supported with spatial information for the plan/s set out above. The information should include metadata and be provided in ESRI geodatabase or shapefile format or any ESRI compatible dataset in GDA94.

2. The existing environment

The REF must include a description of the existing environment of the site and surrounding area that may be affected by the proposed activity as set out under **Headings 2.1 to 2.8**. This description provides the context and identifies aspects of the existing environment against which potential impacts are assessed (under **Heading 4** of this guideline).

The detail provided in this section of the REF must be appropriate to the nature, scale, intensity and potential impacts of the proposed activity.

2.1 General description

The REF must include a general description of the existing environment of the site and surrounding area that may be affected by the proposed activity. The description should focus on features that will magnify or limit the potential impacts of the proposed activity.

The general description of the existing environment must provide enough detail to place the activity in its

local and regional environmental context, including relevant information on:

- climate and weather
- topography
- vegetation cover type, density and condition
- soil types and properties (including susceptibility to compaction, erosion and dispersion; presence of acid sulfate soils and potential acid sulfate soils)
- existing land uses that may be affected by the proposed activity (including agricultural land uses)
- availability of services.

Additional maps, photographs, etc., may be required to ensure that this description is clear to a person who is not familiar with the site.

2.2 Description of sensitive land

The REF must identify sensitive land that may be affected by the proposed activity. The definitions (and information sources) of sensitive land are provided in **Appendix 1**.

2.3 Description of sensitive receivers

The REF must describe the location, type and distances to the nearest sensitive receivers that may be affected by the proposed activity. Sensitive receivers to be considered should include any residential accommodation, tourism facility, educational establishment, child care centre, health services facility, place of public worship, animal boarding or training establishment and intensive livestock agriculture.

2.4 Description of coal seam gas exclusion zones

For any proposed petroleum exploration, the REF must identify any exclusion zones where coal seam gas is prohibited. *State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007* prohibits the carrying out of coal seam gas development on or under the following land:

- land within a **coal seam gas exclusion zone**, being:
 - land within a residential zone
 - future residential growth area land
 - additional rural village land or
 - critical industry cluster land
- land within a **buffer zone**, being land that is not within a coal seam gas exclusion zone, but is within two kilometres of the following land:
 - land within a residential zone

- future residential growth area land or
- additional rural village land.

There is no buffer zone surrounding critical industry cluster land.

2.5 Description of surface and groundwater resources

*Note: This section applies to the description of existing water resources. The assessment of potential impacts on water resources is covered under **Heading 4.1** of this guideline. This section of the REF is intended to provide the site-specific information on which the assessment is based.*

The REF must include a general description of any surface water or groundwater resources that occur in the area which are likely to be affected by the activity. The study area must extend as far as is reasonably necessary to take all potential impacts of the activity into account. It should include the current state of understanding of regional groundwater systems.

Where the proposed activity has the potential to impact on water resources within or surrounding the project area, the REF must:

- describe the current level of use, water quality and reliability of the water source
- identify if a [Water Sharing Plan](#) is in force for any water resources likely to be affected
- identify if the activity is located within a drinking water catchment
- identify and describe:
 - transmissivity, flow rate, hydraulic conductivity, depth to water table and direction(s) of flow for affected groundwater resources
 - water quality in sufficient detail to enable the characterisation and differentiation of waters in the target reservoir
 - any barriers and connections between the target formation and affected groundwater resources
 - potentially affected users of these groundwater resources, including the location of any groundwater bores and dependent ecosystems
 - flow rate, volume and water quality of affected surface water resources, including the local water quality and river flow objectives.

Note: The [Water Management Act 2000](#), [Water Act 1912](#) and [Protection of the Environment Operations Act 1997](#) identify the regulatory framework for water.

2.6 Description of threatened species and ecological communities

*Note: This section applies to the description of existing threatened species and ecological communities. The assessment of potential impacts on threatened species and ecological communities is covered under **Heading 4.2** of this guideline. This section of the REF is intended to provide the site-specific information on which the assessment is based.*

As noted in the Introduction, a SIS is required where an activity is likely to significantly affect threatened species or ecological communities (or their habitats), or impact on land that is a declared area of outstanding biodiversity value/critical habitat.

The REF must identify whether or not threatened species and/or ecological communities, or declared areas of outstanding biodiversity value/critical habitats, are likely to occur in the area affected directly or indirectly by the activity. The study area must extend as far as is reasonably necessary to take all potential impacts of the activity into account.

If the activity is likely to affect threatened species or ecological communities, or their habitat, the REF must describe the area, condition and value of the habitat to be affected, and compare this with the total habitat in the subject site, study area, and the larger region (as relevant).

Note: An ecological community is 'an assemblage of species occupying a particular area' and includes, but is not limited to, micro-organisms, fungi, vertebrate and invertebrate fauna.

If vegetation is to be cleared or modified, the REF must describe the number of individuals or area of plants or vegetation communities to be cleared or modified and compare this with the total number of individuals or area of plants or vegetation communities in the general location of the proposed activity, and the larger region.

The following references are essential to the preparation of this section of the REF:

- threatened species listings and information — [terrestrial](#) and [aquatic/marine](#)
- register of declared areas of outstanding biodiversity value/critical habitat — [terrestrial](#) and [aquatic/marine](#)
- OEH [Field survey methods](#)
- OEH draft [Threatened Biodiversity Survey and Assessment: Guidelines for Developments and Activities](#)

- the relevant OEH [threatened species survey and assessment guidelines](#)
- Department of Primary Industries (DPI) [Policy and Guidelines for Fish Habitat Conservation and Management](#).

Threatened species protection

In NSW, threatened species and ecological communities are protected by the *Biodiversity Conservation Act 2016* (BC Act) and Part 7A of the *Fisheries Management Act 1994* (FM Act). These species are listed in the schedules of both the BC Act and FM Act.

Both the BC Act and FM Act provide for the identification, conservation and recovery of threatened species and ecological communities. They also aim to reduce the threats faced by those species. The OEH administers the BC Act and the DPI administers the FM Act.

2.7 Description of Aboriginal cultural heritage

*Note: This section applies to the description of existing Aboriginal cultural heritage. The assessment of potential impacts on Aboriginal cultural heritage is covered under **Heading 4.4** of this guideline. This section of the REF is intended to provide the site-specific information on which the assessment is based.*

The minimum requirements set out below align with those identified in the following due diligence codes (to the extent that these codes apply to the identification of Aboriginal cultural heritage likely to occur in the area affected by the activity):

- [Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales](#)
- [NSW Minerals Industry Due Diligence Code of Practice for the Protection of Aboriginal Objects](#).

While all effort and care has been taken to ensure the requirements of approved due diligence codes are accurately reflected in this guideline, applicants are responsible for ensuring that they understand the provisions of the relevant code and have satisfied themselves that all applicable steps have been followed.

The REF must identify whether or not Aboriginal cultural heritage is likely to be affected by the activity. The study area must extend as far as is reasonably necessary to take all potential impacts of the activity into account.

Due diligence

At a minimum, the information provided in this section of the REF must:

- identify whether the proposed activity will disturb the ground surface
- identify the extent to which the proposed activity will impact land declared as an Aboriginal place under the *National Parks and Wildlife Act 1974*
- identify the extent to which the proposed activity will impact land identified in an environmental planning instrument (such as a state environmental planning policy or local environmental plan) as being of Aboriginal cultural significance
- identify whether any culturally modified trees occur in the area affected by the activity
- contain copies of [Aboriginal Heritage Information Management System \(AHIMS\) database](#) search results
- if the results of the initial AHIMS search indicate that AHIMS contains information about recorded Aboriginal objects in the area of the proposed activity, those records must be appended to the REF (subject to any restrictions in providing culturally sensitive information)
- identify any other sources of information used to identify whether or not Aboriginal objects and places are likely to be present in the area.

The REF must also identify whether Aboriginal objects are likely to be in the area of the proposed activity by defining whether the proposed activity is:

- within 200 m of waters
- located within a sand dune system
- located on a ridge top, ridge line or headland
- located within 200 m below or above a cliff face, or
- within 20 m of or in a cave, rock shelter, or a cave mouth and is on land that is not disturbed land.

Note: See the due diligence codes for definitions of the above terms.

Where the due diligence codes indicate that further investigation is required, the REF must describe the outcomes of these investigations.

Aboriginal cultural heritage

Aboriginal people have occupied the NSW landscape for at least 50,000 years. The evidence and important cultural meanings relating to this occupation are present throughout the landscape, as well as in documents and the memories, stories and associations of Aboriginal people. Therefore, an

activity that impacts on the landscape may impact on Aboriginal cultural heritage.

For Aboriginal people, the significance of individual features is derived from their inter-relatedness within the cultural landscape. This means that features cannot be assessed in isolation, but rather must be considered in a holistic manner. This may require a range of assessment methods with the close involvement and participation of Aboriginal people.

The assessment must cover lands, waterways, landscape features and native plants and animals that are culturally significant to Aboriginal people.

As with the heritage of all peoples, Aboriginal cultural heritage provides essential links between the past and present for Aboriginal people. It is an essential part of Aboriginal identity.

Protection

Aboriginal heritage is protected under the *National Parks and Wildlife Act 1974* (NP&W Act). It sets up knowing and strict liability offences for harming or desecrating Aboriginal objects and Aboriginal places. Harm is defined in the NP&W Act and encompasses destroying, defacing, damaging or moving.

In addition, the NP&W Act (section 87) and *National Parks and Wildlife Regulation 2009* (NP&W Reg) (clauses 80A and 80B) provide defences to the 'strict liability' offence of harming an Aboriginal object (this type of offence may apply even if a person was unaware that they were harming an Aboriginal object).

The defences include:

- a. that the proponent can demonstrate that they had exercised due diligence to determine whether the proposed activity was likely to harm an Aboriginal object and, on the basis of that assessment, had reasonably determined that harm would not occur. Under clause 80A, due diligence requires compliance with an approved due diligence code
- b. that the proposed activity was classed as a 'low impact activity' under clause 80B. Examples include maintenance of existing trails and utilities, soil conservation works, flood mitigation works, exempt development on disturbed land and certain types of exploration work. The NP&W Reg prescribes the types of low impact activities that can occur and provides examples.

Assessment

The key purpose of the Aboriginal Heritage Impact Assessment is to determine the cultural significance of the Aboriginal heritage site of concern in consultation with the Aboriginal community and to avoid impacts as far as practicable.

The OEH's *Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW* supports the process of investigating and assessing Aboriginal cultural heritage. It specifies the minimum standards for archaeological investigation undertaken in NSW under the NP&W Act. An Aboriginal Cultural Heritage Assessment that requires an archaeological investigation to be undertaken must be done in accordance with the requirements of this Code.

The *Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW* establishes requirements for:

- a. undertaking test excavation as part of archaeological investigation without an Aboriginal Heritage Impact Permit (AHIP) — if you comply with these requirements and you harm an Aboriginal object when undertaking test excavations, your actions will be excluded from the definition of harm and, as such, you will not be committing an offence of harm to an Aboriginal object
- b. carrying out archaeological investigation in NSW where an application for an AHIP is likely to be made – under the NP&W Act, the Director-General can require that certain information accompanies an application for an AHIP. This Code explains what that information is in relation to archaeological investigations.

An AHIP is still required for archaeological excavations where the Code does not apply, e.g. within an Aboriginal Place.

For activities that require an AHIP, the consultation requirements that must be carried out prior to lodging an application for an AHIP are specified in the *National Parks and Wildlife Regulation 2009*. Further guidance on consultation with Aboriginal people and communities can be found in *Aboriginal Cultural Heritage Consultation requirements for proponents*.

Information sources

The OEH keeps a register of all recorded Aboriginal objects and Aboriginal places in NSW. The register is called the *Aboriginal Heritage Information*

Management System (AHIMS). An online search of AHIMS can be undertaken to discover if an Aboriginal object has been recorded, or an Aboriginal place declared, on a parcel of land. Information on AHIMS searches can be found on the [OEH website](#).

A report from AHIMS lists recorded sites only and does not represent a comprehensive list of all Aboriginal objects or Aboriginal places in a specified area. In any given area there may be a number of undiscovered and/or unrecorded Aboriginal objects.

If the proponent is aware of any other sources of information, these need to be used to identify if Aboriginal objects are likely to be present in the area. Other sources of information can include previous studies, reports or surveys that have been commissioned or are known to exist. Refer to the relevant due diligence code for a range of examples and publications which may also assist in identifying Aboriginal objects.

Further information on Aboriginal heritage regulation can be found on the OEH website.

Native title claims, indigenous land use agreements and joint management arrangements

The REF must identify any native title claims, indigenous land use agreements or joint management arrangements likely to be affected by the proposed activity.

Note: The Commonwealth Native Title Act 1993 provides for the identification of native title holders or claimants. A search for native title claims may be undertaken by visiting the National Native Title Tribunal website.

When an area is subject to a native title claim, the claimants should be consulted as to their view on the proposed activity. When the native title claimants do not support the proposed activity, strong justification will be required for the impact to be considered to be a level other than medium or high adverse.

Similarly, in the case of areas that are the subject of an indigenous land-use agreement or joint management agreement, proponents should ensure consultation with the relevant Aboriginal stakeholders.

Special note: Native Title

It is a condition of titles that the title holder must obtain the prior written consent of the Minister before prospecting on any land or waters where native title exists. If native title has not been extinguished on the land, an exploration activity approval cannot be issued without first obtaining the Minister's consent.

2.8 Description of historic cultural or natural heritage

*Note: This section applies to the description of existing historic cultural or natural heritage values. The assessment of potential impacts on historic cultural or natural heritage values is covered under **Heading 4.4** of this guideline. This section of the REF is intended to provide the site-specific information on which the assessment is based.*

The REF must identify any items of historic cultural or natural heritage which have the potential to be impacted by the proposed activity. The study area must extend as far as is reasonably necessary to take all potential impacts of the activity into account.

At a minimum, the REF must identify the extent to which the proposed activity will impact any of the following:

- items listed on the [World Heritage List](#) (a register established by the United Nations Educational, Scientific and Cultural Organisation (UNESCO) to list places of special cultural or physical significance)
- items listed on the [Commonwealth Heritage List](#) (a statutory register established by the Australian Government to list natural, Indigenous and historic heritage places owned or controlled by the Australian Government)
- items listed on the [National Heritage List](#) (a statutory register established by the Australian Government to list places of outstanding heritage significance to Australia)
- items listed in the [State Heritage Register](#) (a statutory register listing items which are recognised as being of State heritage significance)
- items listed in the heritage schedule of an [environmental planning instrument](#) (EPI), being a local council's local environmental plan or a regional environmental plan (statutory registers listing items which are recognised as being of local heritage significance).

3. The proposed activity

3.1 Summary of the activity

A brief statement or table summarising the activity must be included in the REF. This must include a description of the:

- title number (e.g. EL123)
- title holder (e.g. Company A Pty Ltd)
- operator (e.g. Company B Pty Ltd)
- activity type (e.g. seismic surveys, drilling, etc.)
- activity location
- activity duration.

3.2 Description of the activity

The REF must contain a full description of the proposed activity. The description should be clear to a person who is not familiar with the proposed activity or location.

It is essential that all aspects of the proposed activity which have the potential to impact on the environment are included in the description. The type, maximum likely scope, intensity and duration of the activity and any ancillary works must be clearly identified to allow the potential impacts of the activity to be properly assessed. Quantitative figures must be used where

practicable, e.g. area of disturbance, volume of water used, length of access tracks, etc.

The description must include, but should not be limited to:

- a description of all stages of the activity, including before, during and after exploration, decommissioning, and rehabilitation
- a description of exploration methods, including machinery and equipment to be used (including what equipment will be operating at any one time)
- the size of the proposed activity footprint and surface disturbance area
- any earthworks or vegetation clearing, including re-use and disposal of cleared material (including use of spoil on-site)
- the timing and any phasing of the activity, including anticipated commencement and completion dates for activities
- a description and justification of any petroleum pilot or flow testing (including the projected water make, projected flow rate, quality and fate of any produced water or petroleum)
- any proposed suspension of petroleum drill holes, including details of well head sealing, security, maintenance and monitoring programs
- any proposed venting, flaring or re-use of gases, including the predicted gas composition and details of the system design, venting/flaring/re-use procedures and predicted volumes
- a description of the anticipated quality, quantity and management of any water to be used, produced (including groundwater extraction) or discharged (including any discharge points and anticipated frequency, volume and characterisation of water pollutants discharged)
- a description of any ancillary activities (including requirements for water transport or storage, access tracks/roads, infrastructure or bush fire hazard reduction works which are ancillary to the activity)
- hours of operation
- an estimate of on-site employee or contractor numbers.

3.3 Stakeholder consultation

Note: Effective consultation is essential to the identification of potential impacts and can also assist in minimising future disputes. Please check the [Department's website](#) for any community consultation codes or guidelines that may be relevant to the proposed activity.

The REF must describe (in relation to the proposed activity):

- details of any consultation already undertaken (including the results of that consultation)
- how the outcomes of the consultation influenced the design and management of the proposed activity
- ongoing consultation arrangements
- procedures for managing conflicts with stakeholders.

In preparing a REF, consultation must be considered with the following parties:

- adjoining, and/or affected, landholders
- adjoining, and/or affected, authorisation or title holders
- local councils
- affected infrastructure authorities (electricity, telecommunications, water, pipeline, road, rail, port authorities, etc.)
- relevant government agencies
- local Aboriginal communities (as guided by the relevant due diligence codes of practice outlined under **Heading 2.7**)
- the general community.

The level of consultation must be consistent with the scale and potential impacts of the activity. Larger scale activities or projects that have attracted significant community interest must undertake broader community consultation prior to submission of a REF.

3.4 Access arrangements

The REF must list:

- all access arrangements⁴ be in place prior to the commencement of the activity
- the status of these access arrangements.

3.5 Mitigation strategy

The REF must describe any measures proposed to prevent, control, abate or mitigate environmental impacts associated with the proposed activity, reduce risks to human health and prevent the degradation of the environment.

Where the proposed activity will be undertaken in accordance with the Department's Codes of Practice,

⁴ Access arrangement requirements are set out in Part 8, Division 2 of the *Mining Act 1992* and Part 4A of the *Petroleum (Onshore) Act 1991*.

these should be referred to. Codes of Practice have been prepared to provide title holders with information about the minimum performance requirements to ensure that exploration is undertaken to manage and minimise risks to the environment. This allows applicants to adopt innovative solutions and best practice techniques to meet the performance requirements.

Mitigation measures may include, but need not be limited to, biodiversity conservation, Aboriginal cultural and other heritage protection, pollution, noise, dust, erosion and sediment controls, and waste and water management measures.

The REF should also outline any proposed approach (such as an Environmental Management Plan) that will demonstrate how commitments made in the REF will be met. Measures that should be described include:

- operational procedures
- rehabilitation management strategies
- site supervision arrangements
- training programs
- community consultation programs
- complaint management mechanisms
- incident management and reporting procedures
- monitoring protocols (for assessing the effectiveness and reliability of the mitigation strategy and any residual impacts)
- strategies for continual improvement.

3.5.1 Water management strategy

Where the proposed activity has the potential to impact on surface and groundwater, the REF must describe the controls which will be implemented to:

- prevent pollution of water resources
- prevent changes to flow rates and volumes
- prevent depletion of water resources, other than within a target (e.g. coal seam) aquifer
- measure and account for any water extraction
- manage water used or produced during operations, including produced water and flowback water
- monitor impacts
- account for, mitigate or avoid impacts
- comply with any statutory requirements, regulatory controls or standards applicable to the conduct of the activity and its impacts on water.

Note: Where the proposed activity has the potential to impact on water resources and an environmental protection licence (EPL) is required, it is recommended that applicants contact the EPA during the preparation

of the REF to determine what monitoring may be required by the EPL, such as hydrological tracers that can be used to differentiate produced water, flowback water and/or fracture stimulation fluids from the potentially affected water sources.

3.5.2 Produced water strategy

Where the proposed activity proposes to extract groundwater (produced water), the REF must include:

- a characterisation of produced water, including volumes, potential minerals (and other substances that may be associated with the geological source of the produced water) and all chemicals introduced, and the potential for these to change over time (typically associated with volume reduction over time)
- a summary of water quality in sufficient detail to enable the differentiation of produced water from surface water, groundwater and flowback water sources (as relevant)
- a description of the suite of options considered for treatment, reuse or disposal of that water taking into consideration potential beneficial reuse, treatment technologies available, geographical, economic and regulatory constraints
- a justification for the preferred option(s)
- a description of the fate of the produced water including any proposed treatment, reuse or disposal methods, with reference to any relevant guidelines, including the [ANZECC 2000 guidelines](#).

The REF should include an analysis of different options using beneficial reuse considerations. Information on the quality and quantity requirements and capabilities of each option considered should be included. The options considered should include an assessment of the feasibility for the particular project, rather than a generic list of options.

For activities that propose to use irrigation for the management of produced water, reference should be made to any relevant guidelines, including [Environmental Guidelines: Use of Effluent by Irrigation](#) (former Department of Environment and Conservation, 2004).

The REF must describe the management controls that will be implemented to:

- prevent or minimise risks to the environment
- monitor and account for or mitigate impacts

- comply with any statutory requirements, regulatory controls or standards applicable to the management of produced water.

Note: The use of evaporation ponds for petroleum production activities has been banned by the NSW Government under the Strategic Regional Land Use Policy.

3.5.3 Hydraulic fracturing (well stimulation)

Where the proposed activity includes hydraulic fracturing or well stimulation, the REF must describe:

- where, when and how often well stimulation will be undertaken
- the well stimulation process, including any equipment used and a comparison to best international practice
- the type, volume and source of stimulation fluids.

The REF must include a geomechanical model which provides details of the design of the fracture stimulation activity and incorporates the following:

- a characterisation of geological formations, including the identification of rock types and conditions, aquifers and hydrocarbon-bearing zones
- the calculation of distances between these aquifers and the target coal beds
- identification of the characteristics of intervening strata, including porosity/permeability and the extent of natural fracturing
- determination of geological stress fields and areas of faulting
- determination of maximum pressures to be used for fracture stimulation, based on the characteristics of the surrounding geology
- modelling of the likely fracture propagation field, including extent and orientation (including discussion of any potential for the fracture propagation field to exceed that modelled)
- a description on how the model is proposed to be verified.

The REF must describe and evaluate the likelihood of vertical fracture propagation for each proposed zone to be stimulated, with reference to:

- the depth of fracture initiation
- the regional stress regime
- the geometry, lithology and resistance to fracturing of overlying formations
- the fracture stimulation process used
- any other relevant factors.

The REF must describe the management controls that will be implemented to:

- minimise risks
- ensure that fractures are contained within the target formation (including nomination of a buffer zone around each well head to ensure protection of beneficial aquifers, offset wells and other sensitive features)
- monitor and account for or mitigate impacts, including pollution
- comply with any statutory requirements, regulatory controls or standards applicable to the conduct of the well stimulation activity.

The nominated buffer zone should include both a radial distance from the centre of the well head and a vertical distance from the target formation. The calculation of the buffer zone must take into account the risk of establishing a connection between the target formation and the sensitive feature and adopt an appropriate factor of safety.

3.5.4 Waste and chemical management strategy

Where the proposed activity has the potential to generate waste, the REF must describe:

- the volume and type of waste that will be generated (including drilling wastes)
- reuse, recycle and disposal methods for each material
- how waste will be stored and treated on site
- statutory requirements under the *Protection of the Environment Operations Act 1997* applicable to the likely types of waste.

The REF must describe how waste will be characterised and disposed of in accordance with the relevant [EPA waste classification guidelines](#). If waste is proposed to be disposed of on-site (including drilling waste and waste water), the REF must clearly describe and justify how this will be undertaken and managed.⁵

The REF must identify, quantify and describe any chemicals and additives proposed to be introduced, including:

- drilling muds

⁵ The NSW Environment Protection Authority has issued resource recovery exemptions for both excavated natural material and treated drilling mud. If the exemption criteria are met, then waste may be applied to land within the confines of the exemption. This does not include drilling mud that has been generated by deep drilling for mineral, gas or coal exploration.

- the types, volumes and concentrations of chemicals to be injected as part of any hydraulic fracturing or well stimulation process
- the types, volumes and concentrations of chemicals to be used during any well workovers
- re-injection of associated water or brine
- in situ contaminants within targeted formations, including the potential for methane migration to aquifers or the surface
- the management controls that will be implemented to minimise risks, monitor and account for or mitigate impacts.

The REF should include a human health and environmental risk assessment based on [AS/NZS ISO 31000:2009 Risk Management – Principles and Guidelines](#) for all fracture stimulation chemicals. Where a risk assessment/ecotoxicology testing has not already been undertaken for proposed chemicals, the applicant should consult with the EPA during the preparation of the REF.

3.5.5 Noise management strategy

The REF must describe how noise will be managed with regard to relevant EPA guidelines. For most exploration activities, this will be the [Interim Construction Noise Guideline \(ICNG\)](#) and any associated application or practice notes. At a minimum, the REF must identify and describe:

- sensitive noise receivers
- hours of operation
- noise assessment methods
- noise management levels.

Where the activity is likely to affect an individual or sensitive land use for more than three weeks in total, a quantitative noise assessment should be made in accordance with Section 4 of the ICNG.

3.5.6 Air quality management strategy

The REF must describe any air quality impacts, including any dust generation, gas venting, gas flaring and fugitive emissions associated with the proposal. Where the proposed activity has the potential to impact on air quality, the REF must describe the quality and quantity of the impacts from specific components of the activity and the management controls which will be implemented to:

- prevent or minimise air pollution
- monitor and mitigate impacts, where needed.

The REF must include any contingency plans and emergency procedures to deal with foreseeable risks and hazards, including corrective responses to prevent and mitigate environmental harm.

3.6 Justification of activity and analysis of alternatives

The REF must justify why it is necessary to carry out the activity, with particular regard to the objectives, methods, scale, location and timing of the activity.

The justification must be clearly set out in terms of the principles of ecologically sustainable development. These principles are outlined in the [Protection of the Environment Administration Act 1991](#) and are provided below as follows:⁶

- **the precautionary principle**, namely, that if there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation. In the application of the precautionary principle, public and private decisions should be guided by:
 - careful evaluation to avoid, wherever practicable, serious or irreversible damage to the environment
 - an assessment of the risk-weighted consequences of various options
- **inter-generational equity**, namely, that the present generation should ensure that the health, diversity and productivity of the environment are maintained or enhanced for the benefit of future generations
- **conservation of biological diversity and ecological integrity**, namely, that conservation of biological diversity and ecological integrity should be a fundamental consideration
- **improved valuation, pricing and incentive mechanisms**, namely, that environmental factors should be included in the valuation of assets and services, such as:
 - polluter pays, that is, those who generate pollution and waste should bear the cost of containment, avoidance or abatement
 - the users of goods and services should pay prices based on the full life cycle of costs of providing goods and services, including the use

⁶ Proper consideration of the principles of ecologically sustainable development is required to satisfy the objects of the [Environmental Planning and Assessment Act 1979](#).

- of natural resources and assets and the ultimate disposal of any waste
- environmental goals, having been established, should be pursued in the most cost effective way, by establishing incentive structures, including market mechanisms, that enable those best placed to maximise benefits or minimise costs to develop their own solutions and responses to environmental problems.

The REF must include an analysis of any feasible alternatives to the carrying out of the activity, having regard to its objectives, including the consequences of not carrying out the development or activity.

The REF must identify whether any lower impact alternatives to the activity were available, e.g. by varying the activity in terms of:

- use of different methods or materials
- location
- timing
- applying different, or more extensive mitigation or rehabilitation options.

If lower impact alternatives are available, the REF must justify why they were rejected.

4. Impact assessment

The REF must include an analysis of the impacts of the proposed activity on the environment, including any cumulative impacts. Specific environmental issues that must be addressed in the REF are set out under individual headings within this section (headings 4.1 to 4.6). The extent and nature of the impacts will assist in determining whether or not there will be a significant impact.

*Note: The requirements set out in this section are generally derived from **Is an EIS required? Best Practice Guidelines for Part 5 of the Environmental Planning and Assessment Act 1979** (NSW Department of Planning, 1995).*

The assessment needs to consider impacts at all phases of the activity, including site preparation, construction, routine operation, rehabilitation, and decommissioning if relevant.

The REF should take into account:

- *relevant NSW government codes of practice and guidelines*

- *best practice guidelines*
- *relevant research and reference material*
- *relevant preliminary studies or reports for the proposed activity*
- *consultation with stakeholders.*

The detail provided in this section of the REF must be appropriate to the nature, scale, intensity and potential impacts of the proposed activity.

Methodology to characterise impacts

The extent, size, scope, intensity and duration of each impact needs to be assessed in order to categorise the impacts as:

- negligible
- low adverse
- medium adverse
- high adverse, or
- positive.

For instance, impacts should be ranked as having a high adverse impact if they are very intense or affect a large area or significant numbers of individuals or species over a long period of time. Impacts that adversely affect threatened species or environmentally significant areas would also attract a ranking of high impact.

The potential importance of each impact should be estimated, taking into account all the criteria used to analyse the nature of the impact, including:

- the level of confidence in predicting the impact
- the reversibility of the impact
- the effectiveness of the proposed methods to manage or mitigate the impact
- compliance with any relevant policies or plans
- the extent of public interest
- whether further information is required to confidently determine the impact of the activity.

For instance, impacts should be ranked as high adverse if there is a high level of uncertainty about the impacts themselves. Proposed activities which do not comply with standards or policies should also be regarded as having the potential to have a medium or high adverse impact. In some instances the overall benefits of a proposed activity will be positive. Where this is the case, the positive aspects of the impact should be commented upon.

The table below provides a guide of how to categorise the impacts. However, applicants will also need to use their own judgment, particularly if the activity is, for example, small in size but of a high intensity.

Guide to categorising the extent of the impact

ANALYSIS OF IMPACT	LOW ADVERSE	HIGH ADVERSE
Size	Small-scale size/volume	Large-scale size/volume
Scope	Localised	Extensive
Intensity	Small impact dispersed over a long period	Large impact over a short or long period
Duration	Short term	Long term
Level of confidence in predicting impacts	High confidence/knowledge and past experience	Low confidence, numerous uncertainties and unknowns
Level of reversibility of impacts	Impacts are reversible and rehabilitation likely to be successful	Reversibility impossible or unlikely due to cost or other factors
Ability to manage or mitigate the impacts	Effective mitigation measures available	Mitigation measures untested or unavailable
Ability of the impacts to comply with standards, plans or policies	Total compliance	Uncertain or part compliance
Level of public interest	Low interest and predictable impacts on community	High interest and uncertain impacts on community
Requirement for further information on the impacts of the activity or mitigation	High level of understanding and information on the impact	Low level of information on and understanding of key issues

Guide to considering the likely environmental significance of the impacts

The REF must summarise the impacts of the activity (preferably in tabular form as set out in **Appendix 2**) and consider the total impact of the activity based on the classification of individual impacts as low, medium or high adverse, negligible or positive.

Note: When considering the likely environmental significance of the impacts associated with the proposed activity, applicants should consider each of the following:

- *how extensive are the impacts?*
- *how adverse are the impacts on environmentally sensitive areas?*
- *how acceptable are the impacts considering the nature of the impacts?*

In addition to medium and high impacts, consideration should also be given to the overall effects of the low impacts. Although impacts may be of only low to medium concern when considered individually, the total effect of the impacts could be substantial.

Further guidance is given below:

Extensive impacts are likely to be significant

In deciding if the impacts of an activity are likely to significantly affect the environment, the type, degree and range of each impact must be considered on its merits. If an impact is extensive in terms of spatial or time dimensions and intensity or severity, then there is potentially a high risk to the environment.

Impacts which adversely impact on environmentally sensitive areas are likely to be significant

The impacts of activities undertaken in environmentally sensitive areas are more likely to be significant than similar activities proposed in less sensitive locations. Relatively small activities carried out in sensitive locations can result in substantial impacts on the environment. A precautionary approach should be adopted for activities proposed in locations known to be environmentally sensitive, including careful investigation of alternatives and mitigation strategies. Activities that are likely to indirectly affect sensitive locations may also be considered to significantly affect the environment.

Impacts with a low level of acceptability because of the nature of the impacts are likely to be significant

When considering the impacts of an activity, the extent of the potential impacts is only one factor to be considered. Impacts that are not very extensive may still significantly affect the environment.

Guide to impacts with potential to significantly affect the environment

Any impact that results in a threat to the health or safety of individuals or the community has a low acceptability level. In considering the risks to the community, particular attention should be given to the welfare of children, the aged or any disadvantaged group.

Any impact that threatens biodiversity also has a low level of acceptability and has the potential to significantly affect the environment.

Activities that will adversely affect a community's amenity, or unacceptably change or transform a locality, or place at risk items, buildings or localities that are particularly valued by the community, will be considered significant.

4.1 Assessment of physical and pollution impacts

The REF must assess how the activity will affect the physical aspects of the environment or introduce pollution or safety risk factors.

4.1.1 Air impacts

Is the proposed activity likely to impact on air quality?

The REF must assess whether the activity is likely to have any significant air quality impacts, including:

- air quality impacts (including dust, smoke, odours, fumes, fugitive emissions, toxic or radioactive gaseous emissions) with economic, health, ecosystem or amenity considerations
- air impacts through generation of greenhouse gas emissions or release of chemicals which affect the ozone layer or produce photo-chemical smog
- air quality impacts on nearby sensitive receivers (such as residential accommodation, a tourism facility, an educational establishment, a child care centre, a health services facility, a place of public worship, an animal boarding or training establishment and intensive livestock agriculture).

The REF should include a quantitative greenhouse gas assessment where the activity includes the venting or flaring of gases.

Note: Greenhouse gas emission levels must be expressed on the basis of total annual emissions and total emissions during the project life, as well as a percentage of total annual NSW and national emissions. If a greenhouse gas offset is proposed, full details of this offset must be included in the REF.

The type of potential impact should be identified taking into account the emission of greenhouse gases, ozone-depleting chemicals or precursors to photochemical smog, and the potential to affect air quality with associated economic, health, ecosystem or amenity impacts.

If the emissions to air are not in line with approved codes of practice, guidelines, processes or policies, if a long-term impact may result, or if there is strong community interest in the issues, the REF will need to provide strong reasons as to why the impact is considered likely to be a level other than medium or high adverse.

Medium or high impact levels are likely to occur in areas sensitive to this type of impact, such as areas in

close proximity to residences or other sensitive receivers. If the applicant determines that the impacts will not be medium or high adverse in these sensitive environments, the REF will need to provide strong justification for this conclusion.

4.1.2 Water impacts

Is the proposed activity likely to impact on water quality and/or water quantity?

The REF must assess whether the activity is likely to have any significant water quality and/or quantity impacts, including impacts from:

- the use of surface or groundwater during the activity (including the use of fracture stimulation injection water)
- the storage of water
- changes to natural waterbodies, wetlands or runoff patterns
- aquifer interference, including changes to inter-aquifer connectivity
- any hydraulic fracturing (well stimulation), including through gas and fluid migration
- changes to flooding or tidal regimes
- changes in surface or groundwater quality and quantity, including impacts on groundwater dependent ecosystems.

'Water' includes the whole or any part of any river, stream, lake, lagoon, swamp, wetland, unconfined surface water, natural or artificial watercourse, dam, tidal waters (including the sea) and groundwater.

Waters will be affected if the activity pollutes water, uses water contained in it, interferes with the natural movement of water in either surface or groundwater, or involves the storage of water.

The types of impact on water should be identified as follows:

- the redirection of flow and changes in flow rates and volumes
- changes to the area, volume or flow of a waterbody
- changes in runoff and stormwater discharges
- changes to flood or tidal regimes or sea level rise
- the actual, or likely, pollution of waters.⁷

In assessing possible impacts on waters, applicants should reference the ambient [Water Quality and River](#)

⁷ Applicants should refer to section 120 and the Dictionary of the Protection of the Environment Operations Act 1997 for a definition of water pollution.

Flow Objectives for the receiving waters. These refer to the community's agreed environmental values and human uses endorsed by the Government as goals for ambient waters. Where these are not available, refer to the [ANZECC 2000 guidelines](#).

The REF should assess if the proposed activity will maintain or protect the environmental values listed for the catchment and waterway type relevant to the proposed activity objectives, or make a contribution to the objectives being met over time.

With regard to impacts on water resources, the REF must consider the impact on water quality or quantity where the community is relying on water catchments and water supplies.

If the proposed activity is located within the Sydney Drinking Water Catchment, the REF should describe how the activity will incorporate Water NSW's current recommended practices and standards (or achieve outcomes not less than those achieved by those practices and standards) as required by clause 9 of the [State Environmental Planning Policy \(Sydney Drinking Water Catchment\) 2011](#).

If an activity is going to impact on water quality or quantity, it is likely that the level of impact will be medium or high adverse. If the applicant determines that the impacts will not be medium or high adverse in these sensitive environments, the REF will need to provide strong justification for this conclusion.

Note: A consolidated and approved list of environmental values is not available for groundwater resources. Where groundwater may be affected, the REF should identify appropriate groundwater environmental values and justify the choice.

The level of impact will be medium or high adverse if the impact occurs in sensitive areas. Sensitive areas include:

- drinking water catchments, wetlands or groundwater recharge areas
- coastline or dunes, alpine areas, karst features or other unique landforms
- waterfront land
- erosion prone areas or areas with slopes greater than 18 degrees
- subsidence or slip areas
- areas with acid sulphate, sodic or highly permeable soils
- areas with salinity or potential salinity problems
- areas with degraded or contaminated land or water.

If the applicant determines that the impacts will not be medium or high adverse in these sensitive environments, the REF will need to provide strong justification for this conclusion by clearly explaining and justifying how impacts will be avoided or mitigated.

If the proposed activity will result in alteration to flood or tidal regimes (of a temporary or permanent nature) or the activity will be affected by flooding, it is likely that the level of impact will be medium or high adverse.

*Note: Contact the Commonwealth Department of the Environment for guidelines on assessing the impact on the ecological character of a Ramsar wetland under the Environmental Protection and Biodiversity Conservation Act 1999 (EPBC Act) (refer to **Heading 4.5**).*

Activities that impact on 'water land' as defined under Part 7 of the Fisheries Management Act 1994 (FM Act)

The Department of Primary Industries (Fisheries) protects aquatic habitats under Part 7 of the FM Act and Part 5, Division 3 of the *Fisheries Management (General) Regulation 2010 (FM Regulations)*. There are several permits which can be issued under these Parts of the FM Act and FM Regulations and these are described below:

i. Dredging and Reclamation

Division 3 of Part 7 of the FM Act states that it is an offence to dredge or reclaim any 'water land' (as defined under section 198A of the FM Act) in NSW without a permit from DPI or authority from another NSW public authority.

Note: If an applicant has already obtained approval for these works from another relevant public authority (not a local government authority), such as DPI Water (e.g. a controlled activity approval under the Water Management Act 2000), a second approval from DPI is NOT required.

ii. Harm to Marine Vegetation

Division 4 of Part 7 of the FM Act deals with the protection of marine vegetation. Section 205(2) states 'that a person must not harm any such marine vegetation in a protected area, except under the authority of a permit'. Harm in relation to marine vegetation means, gather, cut, pull up, destroy, poison, dig up, remove, injure, prevent light from reaching or otherwise harm the marine vegetation or any part of it. Protected area means any public water

land, or any area that is the subject of an aquaculture lease.

iii. Blocking Fish Passage

Under section 219 of the FM Act, the passage of fish is not to be blocked unless under the authority of a permit under the FM Act or another Act. This section notes that obstructions can include nets, netting or other material, construction or alteration of a dam, floodgate, causeway or weir, any other obstruction across or within a bay, inlet, river or creek, or around or across a flat.

iv. Use of Explosives, Electrical Devices and Other Dangerous Substances in Waters

Under Part 5 of the FM Regulations, a person must not use dynamite or any other explosive substance, or use an electrical device in any waters unless under authority of a permit under the FM Act. A person must not use a chemical substance for the purpose of taking, disturbing, injuring or otherwise harming fish in any waters, unless under the authority of a permit under the FM Act.

- buried building foundations, or sub-surface archaeological remains or on-ground scatters or features
- a water catchment, an area in which there are natural waterbodies, wetlands or a groundwater recharge area
- coastline or dunes, alpine areas, karst features or other unique landforms
- erosion prone areas or areas with slopes greater than 18°
- subsidence or slip areas
- waterfront land
- areas with acid sulphate, sodic or highly permeable soils
- areas with salinity or potential salinity problems
- areas with degraded or contaminated soil or contaminated water.

If an activity will disturb large areas of undisturbed ground, or an area which is sensitive to disturbance, it is likely that the level of impact will be medium or high adverse. If the applicant determines that the impacts are not medium or high adverse in these sensitive environments, the REF will need to provide strong justification for this conclusion.

If work is proposed in a subsidence or slip area, any conclusion as to the likely impact must be based on geotechnical advice.

4.1.3 Soil and stability impacts

Is the proposed activity likely to impact on soil quality or land stability?

The REF must assess whether the activity is likely to have significant impacts on soil quality or land stability, including:

- any degradation of soil quality, including contamination, salinisation or acidification
- any loss of soil from wind or water erosion
- any loss of structural integrity of the soil
- any increased land instability with high risks from land slides or subsidence
- any induced seismicity or ground movements associated with fracture stimulation or injection or extraction of groundwater.

In determining the likely impact, the following matters should be considered:

- the extent of the proposed disturbance in terms of area, and how this compares to the surrounding landscape
- prior disturbance to the ground surface (e.g. mechanical scraping, ripping, quarrying, ploughing, trenching, digging, filling or excavating) whether the impact is likely to occur in an area which is sensitive to disturbance such as:

4.1.4 Noise and vibration impacts

Is the proposed activity likely to result in noise or vibration impacts?

The REF must assess whether the activity is likely to have significant noise, blasting or vibration impacts, including any increase in noise or vibration likely to have impacts on nearby sensitive receivers (such as residential accommodation, a tourism facility, an educational establishment, a child care centre, a health services facility, a place of public worship, an animal boarding or training establishment and intensive livestock agriculture).

If the emission of noise or vibration is not in line with approved guidelines, processes or policies, if a long-term impact may result, or if there is strong community interest in the issues, the REF will need to provide strong reasons as to why the impact is considered to be other than medium or high adverse.

Noise must be assessed with regard to relevant EPA guidelines. For most exploration activities, this will be

the Interim Construction Noise Guideline (ICNG) and any associated application or practice notes.

Medium or high impact levels are likely to occur in areas sensitive to this type of impact, such as areas in close proximity to residences or other sensitive receivers.

If the applicant determines that the impacts will not be medium or high adverse in these sensitive environments, the REF will need to provide strong justification for this conclusion.

4.1.5 Other physical or pollution impacts

Is the activity likely to affect coastal processes and coastal hazards, including those under projected climate change conditions?

The REF must assess whether the activity is likely to significantly affect coastal processes and coastal hazards, including those under projected climate change conditions.

Erosion is a major risk along the NSW coast. Current projections for sea level rise and increased storm activity and impacts will exacerbate existing risks and pose new challenges for the management of coastal reserves. Areas likely to be affected include lands along the coastline, beaches, coastal lakes, estuaries, tidal reaches of coastal rivers and low-lying land surrounding these areas.

In determining the likely impact of proposed activities in these areas, the following criteria from the former Department of Planning publication, [NSW Coastal Planning Guideline: Adapting to Sea Level Rise](#), should be applied to assess whether the proposed activity:

- avoids or minimises exposure to immediate coastal risks (within the immediate hazard area or floodway)
- provides for the safety of residents, workers or other occupants onsite from risks associated with coastal processes
- does not adversely affect the safety of the public offsite from a change in coastal risks as a result of the development
- does not increase coastal risks to properties adjoining or within the locality of the site
- infrastructure, services and utilities onsite maintain their function and achieve their intended design performance
- accommodates natural coastal processes including those associated with projected sea level rise

- coastal ecosystems are protected from development impacts
- existing public beach, foreshore or waterfront access and amenities are maintained.

Impacts are likely to be considered medium or high if there is a reasonable risk of adverse consequences based on consideration of the proximity and exposure to coastal hazards, and the likely severity of impacts on a particular type of activity.

Is the proposed activity likely to result in impacts associated with the use, generation, storage or transport of hazardous substances or chemicals?

The REF must detail all hazardous substances and chemicals to be used during the activity and assess whether the activity is likely to have significant impacts associated with:

- any use, storage or transport of hazardous substances
- any use or generation of chemicals which may build up residues in the environment
- any chemicals or radioactive material that will be reacted, returned to the surface or left in a drill hole or target formation.

Hazardous substances are materials presenting a hazard to people, property or the environment and include flammable, explosive, toxic, radioactive, carcinogenic or mutagenic substances. Chemicals which may build up a residue in the environment include those associated with drilling or fracture stimulation fluids.

The type of impact on the environment should be determined. For example, the use or generation of hazardous substances or chemicals which build up residues in the environment could potentially:

- affect air quality with associated economic, health, ecosystem or amenity impacts
- affect water quality with associated economic, health, ecosystem or amenity impacts
- cause a degradation of soil quality due to contamination, salinisation or acidification.

In determining the likely impact, the following matters in particular should be considered:

- the level of information/degree of confidence regarding the potential impact on the environment of the hazardous substance(s)
- whether chemical concentrations at the point of injection as part of any fracture stimulation process will exceed:

- ANZECC 2000 guidelines for overlying groundwater and surface water uses that may be affected
- ADWG 2004 if a drinking water supply may be affected
- natural background concentrations if the water source is not effectively described by ANZECC or ADWG guidelines, or
- if the chemical is not specified in ANZECC or ADWG guidelines and may have a toxic effect, then assess whether the toxic effect is likely to exceed a trigger toxicity level determined in accordance with a suitable methodology such as those described in [Section 2: OECD Guidelines for the Testing of Chemicals](#).
- the degree of community interest/concern with respect to the transport, use or generation of the substance(s)
- the requirements of the [Radiation Control Act 1990](#) and associated regulations and the [Dangerous Goods \(Road and Rail Transport\) Act 2008](#) and associated regulations.

If the chemical or hazardous substance is being transported and used in line with an approved best practice guideline, a low level of impact may be more easily demonstrable. If no such guideline exists, then the REF will need to demonstrate that the impacts are low and can be acceptably managed.

This type of impact in environmentally sensitive areas is likely to be medium or high adverse. In this context, environmentally sensitive areas include:

- water catchments, wetlands, groundwater recharge areas or natural water bodies
- areas with acid sulphate, sodic or highly permeable soils
- areas with salinity or potential salinity problems
- areas with degraded or contaminated land or water.

If the applicant determines that the impacts are not medium or high adverse in these sensitive environments, the REF will need to provide strong justification for this conclusion.

Is the proposed activity likely to result in any impacts to the environment resulting from the generation or disposal of wastes?

The REF must assess whether the activity is likely to pose any significant risks to the environment resulting from the generation or disposal of gaseous, liquid or solid wastes.

The type of potential impact should be assessed taking into account the generation or disposal of waste and the potential to:

- affect air quality with associated economic, health, ecosystem or amenity impacts
- affect water quality with associated economic, health, ecosystem or amenity impacts, and
- cause a degradation of soil quality due to contamination, salinisation or acidification.

In determining the likely impact level, the following matters should be considered:

- whether there are approved processes for waste disposal that will be used
- whether the activity complies with relevant EPA and Workcover guidelines
- whether the activity will have a long-term impact
- whether the generation and/or disposal of waste will provoke strong community interest, and
- whether the activity complies with relevant EPA policies.

If the generation and/or disposal of waste is not in line with relevant approved guidelines, processes or policies, if a long-term impact may result, or if there is strong community interest in the issues, then the REF will need to provide strong justification as to why the applicant considers the impact will be other than medium or high adverse.

Medium or high impact levels are likely to occur in areas sensitive to this type of impact, such as:

- water catchments, wetlands, groundwater recharge areas or natural waterbodies
- coastlines or dunes, alpine areas, karst features or other unique landforms
- erosion prone areas or areas with slopes greater than 18°
- subsidence or slip areas
- areas with acid sulphate, sodic or highly permeable soils
- areas with salinity or potential salinity problems, and
- areas with degraded or contaminated land or water.

If the applicant determines that the impacts will not be medium or high adverse in these sensitive environments, the REF will need to provide strong justification for this conclusion.

4.2 Assessment of biological impacts

The REF must assess how the activity will affect the biological aspects of the environment and, in particular,

whether there is likely to be an impact on threatened species or ecological communities, or their habitats.

4.2.1 Flora and fauna impacts

Is any vegetation to be cleared or modified (including vegetation of conservation significance)?

The REF must assess whether the activity will result in any significant risks to the environment resulting from vegetation clearing or modification (including vegetation of conservation significance).

Note: Clearing or modifying vegetation includes cutting down, pruning or destroying individual plants, thinning, ringbarking, and felling, as well as killing, destroying, poisoning, ringbarking, uprooting or burning vegetation. It also includes clearing or modifying marine vegetation, such as seagrass, mangroves or kelp (in which case consultation and a permit from the Department of Primary Industries may be required).

In determining the likely level of impact, the following matters should be considered:

- the status of the species or vegetation community. Species or vegetation communities listed as threatened are of greatest concern, followed by rare or threatened Australian plants (ROTAPs) and species or vegetation communities known to be of regional or local significance
- whether [protected native plants](#) will be affected
- whether the individual, species or vegetation community is of any other particular value (e.g. economic or social value)
- whether the vegetation provides important habitat for native species, including threatened species (e.g. hollow-bearing trees, critical food resources such as winter flowering eucalypts, roosting sites, etc.)
- the nature and extent of the clearing or modification proposed
- the condition and size of the vegetated area to be cleared or modified and its proximity to other areas of native vegetation (e.g. local or regional vegetation corridors)
- the likely response of the species or vegetation community to the type of disturbance proposed
- the likely response of exotic/introduced flora, and how this impacts on native species
- the potential for regeneration reduced by the proposed activity

- the result of the Assessment of Significance (see further below).

If clearing or modification is proposed to an individual plant, species or vegetation community of particular conservation value, or if the extent of clearing of native vegetation is medium-large in the local context, it is likely that the level of impact will be medium or high adverse. If the applicant determines that the impacts are not medium or high adverse in these sensitive environments, the REF will need to provide strong justification for this conclusion.

Is the activity likely to have a significant effect on threatened flora or fauna species, or their habitats or declared areas of outstanding biodiversity value/critical habitat, or on an endangered ecological community or its habitat? (the threatened species assessment of significance)

The threatened species assessment of significance

A threatened species impact assessment is an integral part of an environmental impact assessment. The **assessment of significance** is the first step in considering potential impacts. When a significant effect is likely, further consideration is required and should be documented by preparing a species impact statement.

The assessment of significance should be carried out in accordance with section 7.3 of the BC Act and applies to all assessments under Part 5 of that Act. The objective of section 7.3 is to improve the standard of consideration afforded to threatened species and ecological communities, and their habitats, through the planning and assessment process, and to ensure that the consideration is transparent.

The REF must address each of the following factors and draw an overall conclusion of the significance of any impacts from all factors in combination. Where there is reasonable doubt regarding the likely impacts, or where detailed information is not available, a SIS should be prepared:

- in the case of a threatened species, whether the action proposed is likely to have an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction
- in the case of an endangered ecological community or critically endangered ecological community, whether the action proposed:

- is likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction, or
- is likely to substantially and adversely modify the composition of the ecological community such that its local occurrence is likely to be placed at risk of extinction.
- in relation to the habitat of a threatened species or ecological community:
 - the extent to which the habitat is likely to be removed or modified as a result of the action proposed
 - whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed action
 - the importance of the habitat to be removed, modified, fragmented or isolated to the long-term survival of the species or ecological community in the locality
- whether the action proposed is likely to have an adverse effect on any declared area of outstanding biodiversity value/critical habitat (either directly or indirectly)
- whether the action proposed is consistent with the objectives or actions of a recovery plan or threat abatement plan
- whether the action proposed constitutes or is part of a [key threatening process](#) or is likely to result in the operation of, or increase the impact of, a key threatening process.

Note: In completing the assessment of significance, applicants must refer to the OEH publication, [Threatened Species Assessment Guidelines – The Assessment of Significance](#) and the DPI publication, [Threatened Species Assessment Guidelines \(for threatened fish species\)](#). These guidelines have been prepared to help applicants interpret and apply the factors of assessment set out below which need to be considered when assessing whether an activity is likely to significantly affect threatened species or ecological communities, or their habitats.

A SIS is required if the assessment of significance indicates that there will be a significant effect on threatened species or ecological communities, or their habitats. The requirements for a SIS are set out under Division 5, Part 7 of the [Biodiversity Conservation Act 2016](#) and under Division 6, Part 7A of the [Fisheries Management Act 1994](#).

Guidelines for assessing the impact on threatened entities listed under the EPBC Act are available from the [Commonwealth Department of Environment](#).

Does the activity have the potential to endanger, displace or disturb fauna (including fauna of conservation significance) or create a barrier to their movement?

The REF must assess whether the activity has the potential to significantly endanger, displace or disturb fauna (including fauna of conservation significance) or create a barrier to their movement.

Note: Displacing or disturbing fauna includes modification of habitat.

In determining the likely impact, the following matters should be considered:

- the conservation significance of the species
- whether the affected fauna are [protected native fauna](#)
- whether the species is of any other particular value (e.g. economic or social value)
- whether the fauna species is at the limit of its natural distribution
- the nature, extent and duration of the disturbance proposed
- the likely response of the species to the type of disturbance proposed (list references)
- whether the species will be able, and likely, to use the area once the disturbance is over
- the likely response of exotic/introduced fauna, and how this impacts on native species
- if a barrier to movement is to be created, whether this affects the life-cycle of the species and whether this is permanent or temporary
- the results of the threatened species **assessment of significance**.

If displacement or disturbance of a species of a particular conservation value is proposed, or if a barrier to movement will be created, it is likely that the level of impact will be medium or high adverse. If the applicant determines that the impacts will not be medium or high adverse, the REF will need to provide strong justification for this conclusion.

4.2.2 Ecological and biosecurity impacts

Is the activity likely to cause a threat to the biological diversity or ecological integrity of an ecological community?

The REF must assess whether the activity is likely to cause a significant threat to the biological diversity or ecological integrity of an ecological community.

In determining the likely impact, the following matters should be considered:

- whether the ecological community has additional values (e.g. economic or social values)
- the nature, extent and duration of the disturbance proposed
- the condition and size of the ecological community area to be cleared or modified
- the likely response of the community to the type of disturbance proposed
- whether the community will be able, and is likely to, populate the area once the disturbance is over
- the likely response of exotic/introduced fauna, and how this impacts on the community
- the results of the threatened species **assessment of significance**.

Note: An ecological community is not limited to those of conservation significance. Threats may be direct (e.g. clearing) or indirect (e.g. creation of a bushfire risk to a community sensitive to bushfire, impact on a physical or chemical landscape component essential to a species, endangered ecological community such as groundwater dependent ecosystems, or hydrological behaviour).

If a proposed activity is likely to cause a threat to the biological diversity or ecological integrity of an ecological community, it is likely that the level of impact will be medium or high adverse.

If the applicant determines that the impacts will not be medium or high adverse in these sensitive environments, the REF will need to provide strong justification for this conclusion.

Is the activity likely to create a biosecurity risk or introduce genetically modified organisms into an area?

The REF must assess whether the activity is likely to create biosecurity risk or introduce genetically modified organisms into an area. In determining the likely impact, the following matters should be considered:

- the introduction of vertebrate animal pests

- the introduction of plant pests and diseases
- the introduction of animal diseases that pose risks to animal and human health
- the introduction or spread of noxious weeds
- the introduction of genetically modified organisms.

If an activity is likely to introduce vertebrate animal pests, plant pests and diseases, animal diseases, noxious weeds or genetically modified organisms into an area, it is likely that the level of impact will be medium or high adverse. If the applicant determines that the impacts will not be medium or high adverse, the REF will need to provide strong justification for this conclusion.

Is the activity likely to cause a bushfire risk?

The REF must assess whether the activity is likely to cause a significant bushfire risk.

Note: The NSW Rural Fire Service publication, [Planning for Bushfire Protection](#), provides guidance on assessing the level of bushfire risk. Buildings or other construction works may require an asset protection zone in accordance with those guidelines and may also be required to comply with the necessary Building Code of Australia standards.

If an activity is likely to cause or be subject to a high bush fire risk in an area of particular conservation value or public use, it is likely that the level of impact will be medium or high adverse. If the applicant determines that the impacts will not be medium or high adverse in these sensitive environments, the REF will need to provide strong justification for this conclusion.

4.3 Assessment of resource use impacts

The REF must assess how the activity will affect the community and natural resources.

4.3.1 Community Resources

Is the activity likely to degrade or significantly increase the demand for services and infrastructure resources?

The REF must assess whether the activity is likely to degrade or significantly increase the demand for community services or infrastructure, including sites of importance to the community for their recreational or other value.

Note: Infrastructure includes roads, power, water, drainage, waste management, educational, medical or social services.

If the impact will be great enough to cause concern within the community, or community services or infrastructure will be affected, it is likely that the level of impact will be medium or high adverse. If the applicant determines that the impacts will not be medium or high adverse, the REF will need to provide strong justification for this conclusion.

Is the activity likely to require any significant resource recycling or reuse schemes to reduce resource usage?

The REF must assess whether the activity is likely to require any significant resource recycling or reuse schemes to reduce resource usage.

Is the activity likely to result in any diversion of resources to the detriment of other communities or natural systems?

The REF must assess whether the activity is likely result in any significant diversion of resources to the detriment of other communities or natural systems.

If an activity is likely to cause a significant diversion of resources to the detriment of other communities or natural systems, it is likely that the level of impact will be medium or high adverse. If the applicant determines that the impacts will not be medium or high adverse, the REF will need to provide strong justification for this conclusion.

4.3.2 Natural Resources

Note: Natural resources include land and soil, water, air, and minerals.

*Impacts on Strategic Agricultural Land (SAL) identified under the NSW Strategic Regional Land Use Policy are specifically dealt with under **Heading 4.4.***

Is the activity likely to disrupt, deplete or destroy natural resources?

The REF must assess whether the activity is likely to significantly disrupt, deplete or destroy natural resources, including water, land and soil, fuels, timber or extractive materials.

If a considerable amount of natural resources are to be used, it is likely that the level of impact will be medium or high adverse. If the applicant determines that the impacts will not be medium or high adverse, the REF will need to provide strong justification for this conclusion.

Is the activity likely to disrupt existing activities (or reduce options for future activities)?

The REF must assess whether the activity is likely to significantly disrupt existing activities which rely upon natural resources (including forestry, farming or extractive industries).

If considerable disruption of existing activities will occur, it is likely that the level of impact will be medium or high adverse. If the applicant determines that the impacts will not be medium or high adverse, the REF will need to provide strong justification for this conclusion.

Is the activity likely to result in the degradation of any area reserved for conservation purposes?

The REF must assess whether the activity is likely to significantly degrade any area reserved for conservation purposes.

Note: Areas reserved for conservation purposes include National Parks and reserves as well as land zoned environmental conservation/management under a local environmental plan, aquatic reserve under the Marine Estate Management Act 2014, heritage items or land which is the subject of a conservation agreement.

An activity which degrades land reserved for conservation purposes is likely to have a high adverse impact and may not be permissible.

4.4 Assessment of community impacts

The REF must assess how the activity will affect the community, including social, economic, heritage, aesthetic, cultural, land use or transportation impacts.

4.4.1 Social impacts

Is the activity likely to result in a change to the demographic structure of the community?

The REF must assess whether the activity is likely to result in a change to the demographic structure of the community, including changes to workforce or industry structure of the area/region.

In general, impacts that will have a direct adverse effect on the demographic structure of the community are likely to be rated at a medium to high level.

Is the activity likely to have any environmental impact that may cause substantial change or disruption to the community?

The REF must assess whether the activity is likely to have an environmental impact that may cause

substantial change or disruption to the community, including loss of facilities, reduced links to other communities or loss of community identity.

In general, impacts that will cause substantial change or disruption to the community are likely to be rated at a medium to high level.

Is the activity likely to result in some individuals or communities being significantly disadvantaged?

The REF must assess whether the activity is likely to result in some individuals or communities being significantly disadvantaged.

In general, impacts that will cause substantial disadvantage to the community are likely to be rated at a medium to high level.

Is the activity likely to result in any impacts on the health, safety, privacy or welfare of individuals or communities?

*Note: Impacts on safety from bushfire are considered under **Heading 4.2**.*

The REF must assess whether the activity is likely to have a significant impact on the health, safety, privacy or welfare of the community. In determining the likely impact, consideration should be given to pollution, odour, noise, vibration and lighting.

If the activity is likely to create a health or safety risk for the community, it is likely that the level of impact will be medium or high adverse. If the applicant determines that the impacts will be medium or high adverse, the REF will need to provide strong justification for this conclusion.

Is the activity likely to result in a change in the level of demand for community resources?

The REF must assess whether the activity is likely to result in a significant change in the level of demand for community resources, including community facilities, community services and labour force.

In general, impacts that will cause substantial disadvantage to the community are likely to be rated at a medium to high level.

4.4.2 Economic impacts

The REF must assess whether the activity is likely to have significant economic impacts, including:

- any impacts which may affect economic activity (positive or negative), particularly impacts which result in a decrease to net economic welfare

- any impacts which may result in a decrease in the economic stability of the community
- any impacts which may result in a change to the public sector revenue or expenditure base.

In general, impacts that will have a direct adverse effect on local economies are likely to be rated at a medium to high level.

4.4.3 Heritage impacts

Is the activity likely to cause impacts on localities, places, landscapes, buildings or archaeological relics of heritage significance?

The REF must describe and assess whether the activity is likely to significantly impact on localities, places, landscapes, buildings or archaeological relics of heritage significance, based on the information provided under **Heading 2.8**.

Note: The REF must not only deal with the physical impacts of the activity, but also with the impact on the heritage values of the place.

If an activity is likely to have a significant impact on known historic heritage items and is inconsistent with any conservation management plan, there will need to be strong justification to proceed. Where there is going to be a significant impact to historic heritage, it is good practice to prepare a separate heritage impact statement. This document will set out the justification for the impacts and the mitigating measures to be taken to ameliorate any identified impacts. Guidelines on how to prepare that document can be found on the [OEH website](#).

Activities that impact on heritage may require additional approvals under the [Heritage Act 1977](#).

In some cases there are shortened processes (exemptions and exceptions) for activities which fall below certain significance or impact thresholds. Full details of the exemptions and all relevant forms can be found on the [OEH website](#).

Applications that require one of these additional approvals must be accompanied by a heritage impact statement.

4.4.4 Aesthetic impacts

Is the activity likely to cause impacts on the visual or scenic landscape?

The REF must assess whether the activity is likely to cause significant impacts on the visual or scenic landscape, including any venting or flaring of gas.

In determining the likely impact, the following matters should be considered:

- the viewshed of the activity (i.e. from what area will the activity be able to be seen)
- whether there are any particular points within the viewshed of the activity which may cause concern (e.g. lookouts, popular walking tracks, neighbours)
- whether there are any impacts such as loss of privacy, glare or overshadowing of members of the community
- whether the design of the activity is visually sympathetic to the surrounding environment and blends in, or whether it will stand out as an obvious feature.

If an activity is likely to cause a noticeable impact to the visual or scenic landscape, it is likely that the level of impact will be medium or high adverse. If the applicant determines that the impacts will not be medium or high adverse in these sensitive environments, the REF will need to provide strong justification for this conclusion.

4.4.5 Cultural impacts

Will the activity disturb the ground surface or any culturally modified trees (e.g. a scar tree)?

The REF must assess whether the activity is likely to disturb the ground surface or any culturally modified trees (e.g. a scar tree) based on the information provided under **Heading 2.7**.

Activities that disturb the ground surface or culturally modified trees will have a higher potential to harm Aboriginal objects.

Does the activity affect known Aboriginal objects or Aboriginal places?

The REF must assess whether the activity is likely to affect known Aboriginal objects or Aboriginal places based on the information provided under **Heading 2.7**.

Is the activity located in areas where landscape features indicate the likely presence of Aboriginal objects?

The REF must assess whether the activity is likely to be located in areas where landscape features indicate the presence of Aboriginal objects based on the information provided under **Heading 2.7**.

Activities that are located in areas where landscape features indicate the likely presence of Aboriginal objects will have a higher potential to harm Aboriginal objects.

Can harm to objects or disturbance of landscape features be avoided?

The REF must assess whether harm to objects or disturbance of landscape features can be avoided based on the information provided under **Headings 2.7** and **2.8**.

*If answers to the previous questions indicated that Aboriginal objects or landscape features are known or likely to be present in the area of the activity, the REF (under **Headings 2.7** and **2.8**) must demonstrate the steps to be taken to avoid harm to these as the first priority. Possible solutions include reducing the proposed footprint of an activity, re-positioning particular elements, or controlling and limiting access to areas.*

If it is clearly demonstrated that harm can be avoided (or that no objects or places are known or likely to be present), then assessment of the proposed activity can proceed with caution, without the need for further investigation or the preparation of an AHIP application.

*If there is still potential for harm or disturbance to occur to objects or landscape features, and it cannot be avoided for certain, then the applicant should proceed to the next step. Refer to the due diligence codes and the OEH website referenced under **Heading 2.7** for further information.*

If it is considered that an activity is likely to impact on Aboriginal objects or Aboriginal places, then the proponent will need to redesign the proposed activity to avoid impacts as the first priority. If impacts are unavoidable, the title holder will need to apply for an AHIP under section 90 of the NP&W Act. Applicants should refer to the OEH publication, [Applying for an Aboriginal Heritage Impact Permit - Guide for applicants](#).

Consultation with the Aboriginal community is critical to ensure they have early input into the design and decision-making stages, on the necessary steps to avoid impacts. This should involve an inspection of the site with representatives of the relevant Aboriginal groups and may also involve persons with appropriate qualifications or training in locating and identifying Aboriginal objects.

Does the proposed activity affect areas subject to native title claims, indigenous land use agreements or joint management arrangement?

The REF must assess whether the proposed activity is likely to affect areas subject to native title claims, indigenous land use agreements or joint management

arrangements based on the information provided under **Heading 2.7**.

4.4.6 Land use impacts

Is the activity likely to result in major changes to land use, including any curtailment of other beneficial land uses?

The REF must assess whether the activity is likely to significantly disrupt or change current land uses, including any curtailment of other beneficial land uses. In determining the likely impact, consideration should be given to impacts on land identified as Strategic Agricultural Land (SAL) under the [NSW Strategic Regional Land Use Policy](#) (DP&I, 2012).

An agricultural impact statement (AIS) may be required for some exploration activities that require a REF. An AIS should be prepared in accordance with the NSW Government's [Guideline for Agricultural Impact Statements at the Exploration Stage](#). An AIS may be included as a chapter in, or an Appendix to, a REF.

If an activity will result in a significant and/or long-term disruption or change to current land uses, it is likely that the level of impact will be medium or high adverse. If the applicant determines that the impacts will not be medium or high adverse, the REF will need to provide strong justification for this conclusion.

Special note: NSW Strategic Regional Land Use Policy (DP&I, 2012)

The *NSW Strategic Regional Land Use Policy* (SRLUP) outlines the importance of the protection of valuable agricultural land through strategic land use planning. Key to the implementation of the SRLUP is the assessment of impacts from mining activities, including exploration, and coal seam gas development on land identified as being strategic agricultural land (SAL). There are two types of strategic agricultural land identified in the SRLUP – biophysical strategic agricultural land (BSAL) and critical industry clusters (CICs).

BSAL is land with high quality soil and water resources capable of sustaining high levels of productivity (DP&I, 2012). BSAL plays a critical role in sustaining the State's agricultural industry. BSAL is land that has been identified as having high agricultural production capacity due to the biophysical attributes it possesses and climatic factors. This land has been identified as warranting

special consideration when assessing mineral and petroleum exploration and extraction industries due to their potential to impact on the productive capacity of this land, particularly if the activities will remove or relocate soil material, alter the terrain, or impact on surface water and groundwater systems that are relied upon to maintain the productive capacity of this land.

CICs are localised concentrations of an agricultural industry that provides significant employment opportunities and contribute to the identity of the region. Equine and viticulture CICs have been identified as part of the SRLUP.

The SAL maps form part of [State Environmental Planning Policy \(Mining, Petroleum Production and Extractive Industries\) 2007](#).

Is the activity likely to result in any significant property value impacts with land use implications?

The REF must assess whether the activity is likely to result in significant property value impacts with land use implications.

If an activity will result in significant and/or long-term property value impacts which have land use implications, it is likely that the level of impact will be medium or high adverse. If the applicant determines that the impacts will not be medium or high adverse, the REF will need to provide strong justification for this conclusion.

4.4.7 Transportation impacts

The REF must assess whether the activity is likely to have any significant impacts on transportation, including:

- any substantial impacts on existing transportation systems (such as road, rail, pedestrian) which alter present patterns of circulation or movement
- any impacts associated with direct or indirect additional traffic.

In general, impacts that will have a direct adverse effect on transportation will be likely to be rated at a medium to high level.

4.5 Assessment of national impacts

Is the proposed activity likely to impact on matters of national environmental significance under the Commonwealth Environmental Protection and Biodiversity Conservation Act 1999?

The REF must assess whether the activity is likely to significantly impact on matters of national environmental significance under the Commonwealth *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act).

Note: Listed matters of national environmental significance include certain threatened species and ecological communities, migratory species, Ramsar wetlands, the Commonwealth marine environment, world or national heritage listings and water resources in relation to coal seam gas and large coal mining development. The REF must consider potential impacts on these matters to identify whether referral to the Commonwealth is required. Applicants should refer to the [Commonwealth Significant Impact Guidelines](#) for further information.

Special note: Commonwealth Environmental Protection and Biodiversity Conservation Act

Where an activity could have a significant impact on matters of national environmental significance, as defined under the EPBC Act, it will require referral to the Commonwealth Department of the Environment for assessment and approval. The EPBC Act process is independent of the Part 5 assessment process and both the referral under the EPBC Act and the normal Part 5 process under the EP&A Act apply.

Notwithstanding, the Commonwealth and NSW have signed a bilateral agreement relating to environmental assessment designed to reduce duplication between the EPBC Act and EP&A Act processes. The current agreement includes provisions that allow Part 5 assessments to be used for EPBC Act purposes, provided that all of the requirements of the bilateral agreement are met.

For information, refer to the agreement made between the Commonwealth and NSW known as the [Bilateral agreement made under section 45 of the Environment Protection and Biodiversity Conservation Act 1999](#) (Cth).

Title holders should be aware that the requirements of the bilateral agreement are subject to change and

should always consult the agreement currently in force.

4.6 Assessment of cumulative impacts

The REF must assess whether the activity is likely to have any significant cumulative impacts by identifying and taking into account interactions with existing and proposed activities in the immediate locality and the region. Particular regard should be given to cumulative impacts resulting from interactions with other exploration, mining or petroleum production activities. Any cumulative impacts must be identified and specifically addressed under this heading.

5. Summary of impacts

The REF must summarise the impacts of the activity and consider the total impact of the activity based on the classification of individual impacts as low, medium or high adverse, negligible or positive.

Applicants should summarise the impacts of activities using the table in **Appendix 2**. Applicants should use the assessment methodology under **Heading 4** to complete this table.

6. Conclusions

The REF must describe whether:

- there is likely to be a significant effect on the environment (if so, an EIS is required)
- there is likely to be a significant effect on threatened species, ecological communities or their habitats (if so, a SIS is required)
- the activity is in respect of land that is, or is part of, a declared area of outstanding biodiversity value/critical habitat (if so, a SIS is required).

In considering whether there is likely to be a significant effect on the environment, the applicant must describe whether the activity as a whole will have a significant effect on the environment and explain the reasons for this conclusion.

Note: The ranking of the potential significance of the individual impacts of an activity must be considered, as well as the aggregation of all the impacts of the activity. The cumulative effect could result in the activity as a whole having a significant effect.

Examples of activities that have the potential to have significant effect on the environment include, but are not limited to, circumstances where:

- *the impacts from the proposed activity would result in a permanent and adverse change to the environment*
- *there is a low level of confidence in forecasting outcomes. In this case the risks may be high. If the risks to the environment are high, then impacts can be judged to have the potential to significantly affect the environment*
- *the risks of irreversible change may be high due to the environment's natural sensitivity and/or induced sensitivity because of cumulative impacts*
- *it is known that the environment is already stressed and therefore the acceptability of activity that will further degrade the environment may be significantly reduced.*

7. Statement of commitments

The REF must include a consolidated summary statement of any commitments included in the REF (refer to **Appendix 3**). This statement will form the basis of any activity approval terms imposed under the *Mining Act 1992* or *Petroleum (Onshore) Act 1991*.

The statement of commitments must be consistent with the content of the REF. The statement of commitments shall describe the measures for management, mitigation and monitoring of impacts of the activity.

If the Statement of Commitments is inadequate to define and constrain the potential impacts of the activity, an EIS may be required, or relevant approval terms may be imposed at the discretion of the Department.

Definitions

Note: To search for NSW legislation, visit www.legislation.nsw.gov.au. Commonwealth legislation can be found at www.legislation.gov.au

Aboriginal object	Has the same meaning as it has in the <i>National Parks and Wildlife Act 1974</i>
Aboriginal place	Has the same meaning as it has in the <i>National Parks and Wildlife Act 1974</i>
Acid Sulfate Soils	Sediments and soils containing iron sulfides which, when exposed to oxygen, generate sulfuric acid Acid sulfate soils include actual acid sulfate soils (AASS) or potential acid sulfate soils (PASS).
Activity	Any activity carried out in connection with exploration, including: <ul style="list-style-type: none"> • the use of land • means of accessing land • the carrying out of a work
Activity approval	An approval to carry out assessable prospecting operations granted under the <i>Mining Act 1992</i> or the <i>Petroleum (Onshore) Act 1991</i>
Actual Acid Sulfate Soils (AASS)	Sediments and soils containing highly acidic soil horizons or layers resulting from the aeration of sediments and soils that are rich in iron sulfides, primarily sulfide
Applicant	In relation to an exploration activity, the person proposing to carry out the exploration activity
Aquatic reserve	Has the same meaning as it has in the <i>Marine Estate Management Act 2014</i>
Aquifer	Has the same meaning as it has in the <i>Water Management Act 2000</i>
Areas of Outstanding Biodiversity Value (AOBVs)	Has the same meaning as it has in the <i>Biodiversity Conservation Act 2016</i> (Note: Areas of declared critical habitat under the now repealed <i>Threatened Species Conservation Act 1995</i> have become Areas of Outstanding Biodiversity Value (AOBVs) under the <i>Biodiversity Conservation Act 2016</i>
Assessable prospecting operation	Any prospecting operation that is not exempt development within the meaning of clause 10 of <i>State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007</i>
Authority/Authorisation	Has the same meaning as it has in the <i>Mining Act 1992</i>
Beneficial aquifer	An aquifer containing water of sufficient quality and quantity for use in domestic, agricultural or industrial purposes
Borehole	A hole made by drilling or boring, but excludes: <ul style="list-style-type: none"> • sampling and coring using hand held equipment • petroleum wells
Clearing of vegetation	Any one or more of the following: <ul style="list-style-type: none"> • cutting down, felling, thinning, lopping, logging or removing vegetation, or • killing, destroying, poisoning, ringbarking, uprooting or burning vegetation
Complying exploration activities (CEA)	Exploration activities that are considered unlikely to significantly affect the environment as set out in ESG5: Assessment Requirements for Exploration Activities

Critical habitat	Has the same meaning as it has in the <i>Fisheries Management Act 1994</i> Areas of declared critical habitat under the now repealed <i>Threatened Species Conservation Act 1995</i> have become Areas of Outstanding Biodiversity Value (AOBVs) under the <i>Biodiversity Conservation Act 2016</i>
Department	The Resources Regulator within the Department of Planning and Environment
Determining authority	Has the same meaning as it has in the <i>Environmental Planning and Assessment Act 1979</i>
Drilling	The perforation of the earth's surface crust by mechanical means to form a hole, whether the hole caused by the perforation is vertical, inclined or horizontal, and includes all operations for preventing collapse of the sides of such hole or for preventing it from being filled with extraneous materials including water
Drilling fluid	Any liquid or gaseous fluid, or mixture of fluids and solids (as solid suspensions, mixtures and emulsions of liquids, gases and solids) used in operations to drill boreholes into the earth
Drilling mud	Liquid-based drilling fluid
Environment	Has the same meaning as it has in the <i>Mining Act 1992</i>
Environmentally sensitive area of State significance	Has the same meaning as it has in <i>State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007</i>
Evaporation pond	A pond designed in such a way that the principal method of removing (extracting) the liquid being stored is via evaporation. Evaporation ponds are relatively large and shallow and may incorporate methods to accelerate the evaporation process (such as mechanical diffusers or sprays).
Excavation	The removal of the surface layer to a depth greater than 500 mm from the natural surface level
Exempt development	Has the same meaning as it has in <i>State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007</i> .
Exploration	Has the same meaning as it has in <i>State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007</i>
Fate	The disposal and/or reuse of produced water
Fauna	Has the same meaning as it has in the <i>National Parks and Wildlife Act 1974</i>
Feasible	Relates to engineering considerations and what is practical to build or implement
Flowback water	Fluids actively extracted from a petroleum well following fracture stimulation, in preparation for a subsequent phase of fracture stimulation or clean-up prior to dewatering of produced water
Forestry Management Zone	The management zones identified by the relevant Ecologically Sustainable Forest Management Plan prepared by Forestry Corporation.
Fracture stimulation	The process by which target hydrocarbon bearing formations are 'stimulated' when fluids or gases are forced at high pressure to create a conductive flow path, resulting in enhanced flow of hydrocarbons to the wellhead (also known as 'hydraulic fracturing', 'fracking' or 'fracking')
Groundwater	Water that occurs beneath the ground surface in the saturated zone

Habitat	Has the same meaning as it has in the <i>Biodiversity Conservation Act 2016</i> or the <i>Fisheries Management Act 1994</i> (as relevant)
Harm	<p>In relation to matters of national environmental significance, has the same meaning as 'significant impact' as provided by the 'Significant Impact Guidelines' used to determine whether assessment and approval is required under the Commonwealth <i>Environment Protection and Biodiversity Conservation Act 1999</i></p> <p>In relation to the environment, has the same meaning as it has in the <i>Protection of the Environment Operations Act 1997</i></p> <p>In relation to threatened species or ecological communities, has the same meaning as:</p> <ul style="list-style-type: none"> • 'harm an animal' in the <i>National Parks and Wildlife Act 1974</i> • 'pick a native plant' in the <i>National Parks and Wildlife Act 1974</i> • 'harm' in the <i>Fisheries Management Act 1994</i> <p>In relation to an aquifer or waterfront land, has the same meaning as it has in the <i>Water Management Act 2000</i></p> <p>In relation to Aboriginal places or Aboriginal objects has the same meaning as it has in the <i>National Parks and Wildlife Act 1974</i></p> <p>In relation to items of heritage significance, has the same meaning as it has in the <i>Heritage Act 1977</i></p> <p>In relation to protected marine vegetation, has the same meaning as it has in the <i>Fisheries Management Act 1994</i></p>
Items of heritage significance	<p>Means:</p> <ul style="list-style-type: none"> • any heritage items listed in one or more of the following: <ul style="list-style-type: none"> - the Commonwealth Heritage List - the World Heritage List - the National Heritage List - the State Heritage Register - an Environmental Planning Instrument • any relic (being any deposit, object or material evidence which relates to the settlement of the area that comprises New South Wales, not being Aboriginal settlement, and which is 50 or more years old), or • within State Conservation Areas: <ul style="list-style-type: none"> - items that are listed on the DECC Historic Heritage Information Management System, or - any deposit, object or material evidence relating to the settlement or occupation of New South Wales or a part of New South Wales (not being Aboriginal settlement or occupation) if the deposit, object or material evidence is more than 25 years old at the date of the interference or removal
Land	<p>Includes:</p> <ul style="list-style-type: none"> • the sea or an arm of the sea • a bay, inlet, lagoon, lake or body of water, whether inland or not and whether tidal or non-tidal • a river, stream or watercourse, whether tidal or non-tidal, and • a building erected on the land
Marine vegetation	Has the same meaning as it has in the <i>Fisheries Management Act 1994</i>
Matters of national environmental significance	'Matters of national environmental significance' protected under the Commonwealth <i>Environment Protection and Biodiversity Conservation Act 1999</i>

Minister	The Minister administering the <i>Mining Act 1992</i> or <i>Petroleum (Onshore) Act 1991</i> , as relevant.
Native vegetation	Has the same meaning as it has in the <i>Local Land Services Act 2013</i>
Petroleum title	Has the same meaning as it has in the <i>Petroleum (Onshore) Act 1991</i>
Petroleum well	A hole made by drilling or boring in connection with prospecting for petroleum or operations for the recovery of petroleum, but excludes: <ul style="list-style-type: none"> • sampling and coring using hand held equipment • a hole constructed and operated for the following purposes where the operation of that hole does not involve fracture stimulation or the recovery of petroleum: <ul style="list-style-type: none"> • stratigraphic definition • seismic (for example shot holes, geophone, tilt meters bores • water monitoring, or • environmental assessment
Potential acid sulphate soils (PASS)	Sediments and soils that contain iron sulfides or sulfidic material which have not been exposed to air and oxidised
Produced water	Any form of groundwater that is actively extracted from a borehole, petroleum well or excavation, excluding incidental groundwater mixed with drilling fluids
Proponent	In relation to an exploration activity, means the title holder, or the person proposing to carry out the exploration activity on behalf of the title holder.
Prospect	Has the same meaning as it has in the <i>Mining Act 1992</i> and the <i>Petroleum (Onshore) Act 1991</i> (as relevant)
Rehabilitation	Has the same meaning as it has in the <i>Mining Act 1992</i>
River	Has the same meaning as it has in the <i>Water Management Act 2000</i>
Seismic survey	The use of shock waves (generated in the ground using either small explosive charges detonated below the surface, hand-held mechanical hammers or vehicle-mounted hammers) and an array of geophones, which are connected to measuring instruments, to differentiate the geophysical properties of the subsurface of the earth
Sensitive receiver	Includes: <ul style="list-style-type: none"> • dwellings • libraries • educational and research institutions (including schools, colleges and universities) • childcare centres • kindergartens • hospitals, surgeries and other medical institutions • places of worship • milking sheds and holding yards associated with dairies • animal boarding or training establishments • aquaculture • intensive livestock agriculture • land identified as declared areas of outstanding biodiversity value/critical habitat
Site	The land on which an activity is located.
State conservation area	Has the same meaning as it has in the <i>National Parks and Wildlife Act 1974</i>

Surface disturbance	Means: <ul style="list-style-type: none"> • disturbance or exposure of the soil or surface rock layer, or • degradation or deterioration in any manner of the physical surface of land
Terms	In relation to activity approvals, the terms imposed by the decision-maker on the grant of an activity approval
Threatened species or ecological communities	Has the same meaning as it has in the <i>Biodiversity Conservation Act 2016</i> or <i>Fisheries Management Act 1994</i> (as relevant)
Title	An authority under the <i>Mining Act 1992</i> or a petroleum title under the <i>Petroleum (Onshore) Act 1991</i>
Title holder	A person or company to whom a title has been issued
Track	All unsealed routes that will be traversed multiple times, but does not include single pass (ingress and egress) routes or seismic shot and receiver lines
Waste	Has the same meaning as it has in the <i>Protection of the Environment Operations Act 1997</i>
Water resource	Has the same meaning as 'water source'
Water source	Has the same meaning as it has in the <i>Water Management Act 2000</i>
Water land	Has the same meaning as it has in the <i>Fisheries Management Act 1994</i>
Waterfront land	Has the same meaning as it has in the <i>Water Management Act 2000</i>
Well	Has the same meaning as it has in the <i>Petroleum (Onshore) Act 1991</i> .
Well head	Means casing head, and includes any casing hanger or spool, or tubing hanger, and any flow control equipment up to and including the wing valves.
Wetlands	Has the same meaning as it has in the <i>Fisheries Management Act 1994</i> .
Wilderness	Lands identified as wilderness under the <i>Wilderness Act 1987</i>
Wilderness area	Lands (including subterranean lands) declared to be a wilderness area under the <i>Wilderness Act 1987</i> or the <i>National Parks and Wildlife Act 1974</i>

Appendix 1: Identification of sensitive land

Note: **Heading 2.2** requires sensitive land that may be affected by the proposed activity to be identified. The definitions (and information sources) of sensitive land are provided below.

Land	Identification
Conservation Areas	
Land reserved under the <i>National Parks and Wildlife Act 1974</i> .	Land reserved as National Park, Nature Reserve, Karst Conservation Reserve, Historic Site, Regional Park or State Conservation Area, is mapped by the Office of Environment and Heritage (OEH). Basic mapping of the areas is available at the OEH website , with more detailed mapping available on the OEH spatial data portal and the SEED environmental database . A Karst Conservation Reserve generally comprises an area of land, including subterranean land, which contains caves that have developed in soluble rock.
Land acquired by the Minister for the Environment under the <i>National Parks and Wildlife Act 1974</i> .	Under Part 11 of the <i>National Parks and Wildlife Act 1974</i> , the Minister for the Environment can acquire and hold land which is not reserved under the <i>National Parks and Wildlife Act 1974</i> . An up-to-date copy of the certificate of title should be obtained for all land on which exploration activities are proposed in order to ensure that the notification and land access requirements under the <i>Mining Act 1992</i> are satisfied. The Minister for the Environment will be identified on the certificate of title for all land acquired under Part 11.
Land subject to a 'conservation agreement' under the <i>National Parks and Wildlife Act 1974</i> .	A conservation agreement means an agreement entered into under Division 12 Part 4 of the <i>National Parks and Wildlife Act 1974</i> . A conservation agreement is a joint voluntary agreement between landholders and the Minister for the Environment. The area under a conservation agreement is registered on the title of land. The existence of a conservation agreement will be identified on the certificate of title to the land.
Land declared as an aquatic reserve under the <i>Marine Estate Management Act 2014</i> .	Aquatic reserves are part of the marine protected areas system declared under the <i>Marine Estate Management Act 2014</i> . Information relating to the location of aquatic reserves is available from the Department of Primary Industries (DPI) protecting habitats webpage . Spatial information on aquatic reserves is available as part of the SEED environmental database .
Land declared as a marine park under the <i>Marine Estate Management Act 2014</i> .	Marine Parks are declared under the <i>Marine Estate Management Act 2014</i> . Information relating to the location of marine parks is available from the DPI protecting habitats webpage . Spatial information on marine parks is available as part of the SEED environmental database .
Land within a State Forest set aside under the <i>Forestry Act 2012</i> for conservation values including: <ul style="list-style-type: none"> • Flora Reserves, or • Special Management (and other) Zones. 	Forestry Management Zones are provided for under the <i>Forestry Act 2012</i> , including the declaration of special management zones. The mapping of Forestry Management Zones is provided for by the Forestry Corporation Ecologically Sustainable Forest Management Plans . Spatial information on State Forests is available as part of the SEED environmental database .

Land	Identification
Land reserved or dedicated under the <i>Crown Lands Act 1989</i> / <i>Crown Lands Management Act 2016</i> (as applicable) for the preservation of flora, fauna, geological formations or for other environmental protection purposes.	Areas of Crown Land are identified by cadastral information available from the DPI — Crown Land Division . Spatial information on Crown Lands is available as part of the SEED environmental database .
Land identified as wilderness or declared a wilderness area under the <i>Wilderness Act 1987</i> .	Areas identified as wilderness or declared as a wilderness area under the <i>Wilderness Act 1987</i> are mapped by the Office of Environment and Heritage. Online mapping of wilderness areas is available through the SEED environmental database and NSW BioNet .
Land subject to a Biodiversity Banking and Offsets Scheme under the <i>Biodiversity Conservation Act 2016</i> .	BioBanking agreements are established between a landowner and the Minister for the Environment (under the now repealed <i>Threatened Species Conservation Act 1995</i>). A biobanking agreement is a conservation covenant that is attached to the land title. It runs with the land and generally has effect in perpetuity so as to offset the impacts of development on biodiversity values. The existence of a biobanking agreement will be identified on the certificate of title to the land and on the OEH website .
Drinking water catchment protection areas	
Land declared to be a controlled area or a 'special area' under the <i>Water NSW Act 2014</i> or a 'special area' under the <i>Water Management Act 2000</i> or <i>Hunter Water Act 1991</i> .	Access to land within catchment management areas, particularly surrounding drinking water dam catchment areas, can be restricted by the relevant controlling water authority. For example, areas surrounding Warragamba Dam are special and controlled areas declared under the <i>Water NSW Act 2014</i> , and areas around Grahamstown Dam are special areas under the <i>Hunter Water Regulation 2010</i> . The relevant water management authority responsible for the regulation of water storage facilities in relation to areas of restricted access within the authority, should be contacted. Further information regarding catchments managed by WaterNSW is available at www.waternsw.com.au/water-quality/catchment Spatial information on drinking water catchments is available as part of the SEED environmental database .
Environmentally sensitive areas	
Land declared as areas of outstanding biodiversity value under the <i>Biodiversity Conservation Act 2016</i> or critical habitat under Part 7A of the <i>Fisheries Management Act 1994</i> .	Declared areas of outstanding biodiversity value under the <i>Biodiversity Conservation Act 2016</i> are listed in the Register maintained by the OEH. Areas declared as critical habitat under the <i>Fisheries Management Act 1994</i> are recorded in the DPI register of critical habitat .
Land designated as a wetland of international significance under the Ramsar Convention on Wetlands.	Information relating to the Ramsar Wetlands located within Australia can be obtained from the Australian Wetlands Database provided by the Australian Government Department of Environment and the NSW SEED environmental database .

Land	Identification
Land designated as a nationally important wetland in the Directory of Important Wetlands of Australia.	Information relating to nationally important wetlands can be obtained from the Australian Wetlands Database provided by the Australian Government Department of Environment and the NSW SEED environmental database .
Coastal wetlands to which <i>State Environmental Planning Policy (Coastal Management) 2018</i> applies.	Land identified as coastal wetlands by <i>State Environmental Planning Policy (Coastal Management) 2018</i> is mapped by the OEH spatial data portal and the NSW SEED environmental database . Coastal Wetlands declared under the SEPP are also typically mapped by local councils. Mapping may be available from the development planning or environment sections of the local council relevant to the location of the authority. Mapping may also be available via the council website.
Littoral rainforests to which <i>State Environmental Planning Policy (Coastal Management) 2018</i> applies.	<i>State Environmental Planning Policy (Coastal Management) 2018</i> applies to littoral rainforests which are rainforests which occur in coastal areas. Broad scale mapping of littoral rainforests is contained in OEH spatial data portal (refer to Coastal Wetlands above for further details) and the NSW SEED environmental database . Local councils may also have more detailed mapping of littoral rainforests within their local government areas.
Coastal Zone as defined in the <i>Coastal Management Act 2016</i> .	The Coastal Zone includes the Coastal Waters of the State. The Coastal Waters of the State are defined by the <i>Interpretation Act 1987</i> as being: <ul style="list-style-type: none"> the part or parts of the territorial sea of Australia that is or are within the adjacent area in respect of the State, other than any part referred to in section 4 (2) of the <i>Coastal Waters (State Powers) Act 1980</i> of the Commonwealth, or any sea that is on the landward side of any part of the territorial sea of Australia and is within the adjacent area in respect of the State, but is not within the limits of the State. The Coastal Waters of the State generally extend up to three nautical miles from the NSW Coastline.
Land identified in an environmental planning instrument as being of biodiversity significance or zoned for environmental conservation.	Environmental planning instruments (such as local environmental plans, regional environmental plans and state environmental planning policies) relevant to the authority may identify land as being of biodiversity significance or zoned for environmental conservation. Reference should be had to the relevant environmental planning instruments to determine whether the authority contains an area of biodiversity significance or environmental conservation. Spatial information on land use zoning is available as part of the SEED environmental database . Environmental planning instruments which apply in NSW can be found at NSW Legislation .
Waterfront land as defined under the <i>Water Management Act 2000</i> .	The <i>Water Management Act 2000</i> defines waterfront land as the bed of any river, lake or estuary and any land within 40 metres of the river banks, lake shore or estuary mean high water mark. Rivers, lakes or estuaries can be identified with reference to the SEED environmental database . Waterfront land forms a transition zone between the land, also known as the terrestrial environment, and the river or watercourse or aquatic environment.
Land with a slope greater than 18 degrees measured from the horizontal.	The identification of these areas can be undertaken using topographic mapping or geographic information systems. These areas can also be identified in the field using a clinometer or similar instrument. Spatial information on slope of land/contours is available as part of the SEED environmental database .

Land	Identification
Land with potential for soil and water contamination	
Potential Acid Sulfate Soils or Actual Acid Sulfate Soils.	<p>Acid Sulfate Soils Risk Maps for NSW are managed by the OEH. Acid Sulfate Soils risk mapping is available via the OEH spatial data portal and the NSW SEED environmental database.</p> <p>Spatial information on potential or actual acid sulfate soils is available as part of the SEED environmental database.</p>
Aboriginal heritage protection areas	
Land declared as an Aboriginal place under the <i>National Parks and Wildlife Act 1974</i> .	<p>Under Section 84 of the <i>National Parks and Wildlife Act 1974</i>, the Minister may, by order published in the Gazette, declare any place specified or described in the order, being a place that, in the opinion of the Minister, is or was of special significance with respect to Aboriginal culture, to be an Aboriginal place.</p> <p>Information regarding Aboriginal Places is available through the OEH Aboriginal Heritage Information Management System.</p>
Land identified in an environmental planning instrument as being of Aboriginal cultural significance.	<p>Environmental planning instruments (such as local environmental plans, regional environmental plans and state environmental planning policies) relevant to the authority may identify land as being of Aboriginal cultural significance.</p> <p>Spatial information on land identified in an environmental planning instrument as being of Aboriginal cultural significance is available as part of the SEED environmental database.</p> <p>Environmental planning instruments which apply in NSW can be found at NSW Legislation.</p>
Historic or natural heritage protection areas	
Land identified on the World Heritage List, National Heritage List or Commonwealth Heritage List.	<p>A full list of World Heritage Sites located within Australia is maintained by the Australian Government Department of Environment. View the online listing of World Heritage Sites within Australia and the NSW SEED environmental database.</p> <p>The Australian Government Department of Environment also maintains the National Heritage List.</p> <p>The Commonwealth Heritage List is a list of natural, Indigenous and historic heritage places owned or controlled by the Australian Government.</p>
Land, places, buildings or structures listed on the State Heritage Register.	<p>The State Heritage Register is a list of places and objects which are legally protected under the <i>Heritage Act 1977</i>.</p> <p>This spatial information can also be viewed on the NSW SEED environmental database.</p>
Land identified in an environmental planning instrument as being of heritage significance.	<p>Local environmental plans, regional environmental plans and state environmental planning policies relevant to the authority may identify land as being or containing a heritage item or heritage conservation area.</p> <p>The applicant is required to refer to the relevant environmental planning instruments and determine whether it contains any heritage items.</p> <p>This spatial information can be viewed on the NSW SEED environmental database.</p> <p>Environmental planning instruments which apply in NSW can be found at NSW Legislation.</p>

Land	Identification
Biophysical strategic agricultural land and critical industry clusters	
<p>Land identified as biophysical strategic agricultural land under <i>State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007</i>.</p>	<p>State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007 identifies biophysical strategic agricultural land (BSAL). BSAL is land with high quality soil and water resources capable of sustaining high levels of productivity.</p> <p>This spatial information can be viewed on the NSW SEED environmental database.</p>
<p>Land identified as critical industry cluster land under <i>State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007</i>.</p>	<p>State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007 identifies critical industry cluster (CIC) land. CICs are concentrations of highly productive rural industries within a region that are related to each other, contribute to the identity of that region and provide employment opportunities.</p> <p>This spatial information can be viewed on the NSW SEED environmental database.</p>
Community land	
<p>Public land classified as community land under the <i>Local Government Act 1993</i>.</p>	<p>Local Councils are responsible for the management of community land. All community land must be managed in accordance with a plan of management prepared in accordance with the <i>Local Government Act 1993</i>. Councils are also required under the <i>Local Government Act 1993</i> to keep a register of all land vested in it or under its control.</p> <p>Areas classified as community land are identified by the relevant local environmental plan (which can be found at NSW Legislation) and by reviewing the Council Land Register.</p>

Appendix 2: Summary of potential impacts

Impacts (Refer to Heading 4 of ESG2)	Size	Scope	Intensity	Duration	Level of confidence in predicting impacts	Resilience of environment to cope with impacts?	Level of reversibility of impacts?	Ability to manage or mitigate impacts	Ability of the impacts to comply with standards, plans or policies?	Level of public interest	Requirement for further information on the impacts of the activity or mitigation	Ranking of potential significance
Physical or pollution impacts (refer Heading 4.1)												
Add relevant text as per examples below — refer Heading 4 for guide to categorising the extent of the impact												
Air	Small scale size/ volume Large scale size/ volume	Localised Extensive	Small impact dispersed over a long period Large impact over a short or long period	Short term (X weeks) Long term (X months/years)	High confidence/ knowledge and past experience Low confidence, numerous uncertainties and unknowns	High resilience Low resilience	Impacts are reversible and rehabilitation likely to be successful Reversibility impossible or unlikely due to cost or other factors	Effective mitigation measures available Mitigation measures untested or unavailable	Total compliance Uncertain or part compliance	Low interest and predictable impacts on community High interest and uncertain impacts on community	High level of understanding and information on the impact Low level of information on and understanding of key issues	Positive Negligible Low adverse Medium adverse High adverse
Water												
Soil and stability												
Noise and vibration												
Coastal processes and hazards												
Hazardous substances and chemicals												

Impacts (Refer to Heading 4 of ESG2)	Size	Scope	Intensity	Duration	Level of confidence in predicting impacts	Resilience of environment to cope with impacts?	Level of reversibility of impacts?	Ability to manage or mitigate impacts	Ability of the impacts to comply with standards, plans or policies?	Level of public interest	Requirement for further information on the impacts of the activity or mitigation	Ranking of potential significance
Wastes												
Biological impacts (refer Heading 4.2)												
Flora and fauna												
Ecology												
Resource use impacts (refer Heading 4.3)												
Community resources												
Natural resources												
Community impacts (refer Heading 4.4)												
Social factors												
Economic factors												
Heritage impacts												
Aesthetic impacts												

Impacts (Refer to Heading 4 of ESG2)	Size	Scope	Intensity	Duration	Level of confidence in predicting impacts	Resilience of environment to cope with impacts?	Level of reversibility of impacts?	Ability to manage or mitigate impacts	Ability of the impacts to comply with standards, plans or policies?	Level of public interest	Requirement for further information on the impacts of the activity or mitigation	Ranking of potential significance
Cultural impacts												
Land use												
Transportation												
RANKING OF ACTIVITY AS A WHOLE												Positive Negligible Low adverse Medium adverse High adverse

Appendix 3: Example statement of commitments

Item	Commitment
Activity type	<p>Exploration activity comprising:</p> <ul style="list-style-type: none"> • X diamond drill holes • X reverse circulation drill holes • X cubic metre bulk sample (A metres x B metres x C metres) • X kilometres of new access tracks
Activity location	<p>Within EL 1234, X kilometres from Maitland, NSW</p> <p>Activities will occur on the following land within EL 1234:</p> <ul style="list-style-type: none"> • Lot A in Deposited Plan B • Lot C in Deposited Plan D • Lot E in Deposited Plan F.
Activity scope (including any ancillary activities)	<ul style="list-style-type: none"> • Vegetation clearing for access tracks, drill pads and laydown areas • Operation of drill rigs and ancillary support equipment • Rehabilitation of all disturbed areas with support equipment
Hours of operation	Monday to Friday, 7.00 am to 6.00 pm
Activity duration	Three months from commencement
Proposed commencement date	Estimated March 201X (pending approvals)
Proposed completion date	Estimated May 201X
Maximum area of disturbance	<ul style="list-style-type: none"> • Total area of disturbance = X hectares as follows: <ul style="list-style-type: none"> ○ Y metres x Z metres for each drill pad ○ X cubic metre bulk sample (A metres x B metres x C metres) ○ C metre wide access tracks with total length of B kilometres
Air quality	<ul style="list-style-type: none"> • To be in accordance with <i>Exploration Code of Practice: Environmental Management</i> • Rehabilitation to be progressive and to commence upon completion of each activity to reduce exposure to disturbed areas • All equipment will be maintained and switched off when not in use • Surface disturbing activities will cease during periods of high winds which have the potential to generate dust

Item	Commitment
Protection of water sources	<ul style="list-style-type: none"> • As per Erosion and Sediment Controls • All surface disturbance activities will be set back a minimum of 40 metres from all watercourses • Drilling fluids and groundwater returned to the surface as part of the drilling process will be contained in a tank or sump with an impervious liner pending re-circulation or disposal in accordance with the <i>Protection of the Environment Operations Act 1979</i> • Groundwater extracted during the drilling process will not exceed X megalitres • No water will be extracted from surface water bodies • Drill holes will be fully sealed in accordance with Departmental guidelines upon completion of drilling activities
Erosion and sediment controls	<ul style="list-style-type: none"> • To be in accordance with <i>Exploration Code of Practice: Environmental Management</i> • To be in accordance with <i>Exploration Code of Practice: Rehabilitation</i> • Surface disturbance (other than that associated with road or track construction) will implement erosion and sediment controls in accordance with <i>Managing Urban Stormwater: Soils and Construction Volume 2E, Mines and Quarries</i> (DECC 2008b) • The construction and upgrading of roads or tracks will meet the requirements set out in <i>Managing Urban Stormwater: Soils and Construction, Volume 2C, Unsealed Roads</i> (DECC 2008a)
Noise and vibration	<ul style="list-style-type: none"> • To be in accordance with <i>Exploration Code of Practice: Environmental Management</i> • All equipment used on site will be maintained in good working order and inspected prior to use • All equipment will be properly serviced and fitted with appropriate noise suppression equipment, where required
Use of chemicals, fuels and lubricants	<ul style="list-style-type: none"> • To be in accordance with <i>Exploration Code of Practice: Environmental Management</i> • Refuelling of plant and equipment will be undertaken by a mobile service truck and appropriate spill prevention equipment will be utilised • Drillers and personnel will be trained in spill response management
Waste	<ul style="list-style-type: none"> • To be in accordance with <i>Exploration Code of Practice: Environmental Management</i> • All refuse and waste materials will be collected, segregated and disposed of in suitable containers and removed to a licensed waste facility
Ecology	<ul style="list-style-type: none"> • To be in accordance with <i>Exploration Code of Practice: Environmental Management</i> • No hollow bearing or habitat trees will be removed • Prior to commencement, a qualified ecologist will undertake due diligence inspections at each ground disturbance site to ensure avoidance of derived native grassland. If required, activities will be located to avoid significant impacts • Access tracks will be restricted to up to X metres wide

Item	Commitment
Fauna and livestock	<ul style="list-style-type: none"> To be in accordance with <i>Exploration Code of Practice: Environmental Management</i> No hollow bearing or habitat trees will be removed Trees and shrubs that will be impacted by vegetation disturbance activities will be inspected for active bird nests no less than two days prior to disturbance. Trees, shrubs and/or canopy branches with active bird nests will not be disturbed while nests are active and demarcated and fenced to avoid impacts All work sites will be fenced off during the exploration program
Aboriginal cultural heritage	<ul style="list-style-type: none"> To be in accordance with <i>Exploration Code of Practice: Environmental Management</i> Prior to commencement, due diligence surveys will be undertaken at each ground disturbance site by a qualified archaeologist in order to confirm no Aboriginal objects will be impacted. If required, drill sites will be relocated to avoid significant impacts All personnel involved in ground disturbance will be trained in locating, identifying and avoiding Aboriginal objects and their legislative protection under the <i>National Parks and Wildlife Act 1974</i>
Other heritage	<ul style="list-style-type: none"> To be in accordance with <i>Exploration Code of Practice: Environmental Management</i> Prior to commencement, due diligence surveys will be undertaken at each ground disturbance site by a qualified heritage consultant in order to confirm no heritage items will be impacted. If required, drill sites will be relocated to avoid significant impacts
Weeds, pests and diseases	<ul style="list-style-type: none"> To be in accordance with <i>Exploration Code of Practice: Environmental Management</i> All vehicles, machinery, equipment and work boots will be inspected and cleaned prior to moving to new locations
Rehabilitation commitments and timeframes	<ul style="list-style-type: none"> Rehabilitation to be undertaken in accordance with <i>Exploration Code of Practice: Rehabilitation</i> Rehabilitation to be progressive and to commence as soon as reasonably practicable upon completion of each activity Disturbed land will be returned to a capability consistent to that which existed pre-exploration Sealing of drill holes to be undertaken in accordance with Departmental guidelines
Other regulatory approvals required	None
Community consultation	<ul style="list-style-type: none"> To be in accordance with Departmental guidelines Land access and compensation agreements will be negotiated with landholders of properties where activities will take place Weekly updates about the exploration program will be provided to these landholders
Complaint management	<ul style="list-style-type: none"> A Complaints Management Procedure will be established and information provided to all landholders of properties where activities will take place Landholders will be provided with relevant contact details to be able to contact a staff member seven days a week
Incident management	<ul style="list-style-type: none"> An Incident Management Procedure will be established and utilised in the event of an environmental or safety incident The Department will be notified of all incidents in accordance with the requirements of EL 1234.

Item	Commitment
Monitoring	<ul style="list-style-type: none"> • Monitoring of exploration activities will be undertaken regularly by the Technical Officer to monitor implementation of the approved exploration program. Inspections will be recorded on the Environmental Exploration Inspections Checklist • Monitoring of rehabilitation will be in accordance with <i>Exploration Code of Practice: Rehabilitation</i>
Continuous improvement	No additional measures identified
Reporting	Reporting to the Department will be in accordance with the conditions of EL 1234
Other (as applicable)	<ul style="list-style-type: none"> • The bushfire danger will be reviewed daily and drilling activities modified accordingly. • Exploration activities will not to be undertaken during periods of extreme or catastrophic fire danger as declared by the Bureau of Meteorology.