

Guidelines for completing a review of environmental factors covering exploration in state conservation areas

INTRODUCTION

These guidelines have been developed to assist those proposing to undertake prospecting operations in state conservation areas (SCAs) in New South Wales. The National Parks and Wildlife Service (NPWS) and Department of Mineral Resources (DMR) have prepared the guidelines in consultation with other Government agencies and stakeholder groups. DMR and NPWS have signed a Memorandum of Understanding (MoU) recording the understanding and agreement of the two agencies with respect to assessment of exploration, mining and petroleum production and the conservation of natural and cultural values in SCAs.

SCAs are those areas where it has been agreed that it is possible to manage the areas for conservation and permit exploration. It is the intent of the Government that exploration will occur and mining and petroleum production may occur within SCAs, after proposals are assessed having regard to natural and cultural values. These guidelines are for exploration. Mining and petroleum production will be assessed using the development approval processes in the Environmental Planning and Assessment Act (EP&A Act).

The Minister for the Environment will review each SCA every 5 years. On the basis of this review and with the concurrence of the Minister for Mineral Resources, SCAs can be reserved as a national park or nature reserve. The 5-year review will not impact on existing mining and petroleum interests or renewals of those interests.

After three years of operation these guidelines will be reviewed to evaluate their effectiveness in facilitating exploration while safeguarding environmental values.

What are the requirements of the planning legislation?

SCAs are places of environmental importance and/or cultural significance, potentially containing significant mineral resources. Before any exploration in a SCA can proceed, a determination under Part 5 of the EP&A Act is required. Under this legislation, all determining authorities (ie Ministers and public authorities whose approval is required for activities to be undertaken) have a duty to take into account to the fullest extent possible all matters affecting or likely to affect the environment before granting approvals.

The environmental impact assessment (EIA) process is the method of applying the requirements of the EP&A Act. The level of EIA required will be determined by both the potential impact of the proposed activities and the sensitivity of the area to be explored.

One of the major features of the EP&A Act is its integration of environmental planning processes with the conservation of threatened species, populations, ecological communities and their habitats and critical habitat. If exploration activities have an impact on land that is critical habitat or are likely to impact on threatened species, populations or ecological communities, or their habitats, then the proposal and its impacts must be fully considered in a Review of Environmental Factors (REF). Critical habitat is only that habitat declared under the *Threatened Species Conservation Act 1995* (TSC Act).

The EP&A Act sets out eight factors which must be considered for informed decisions to be made in respect of threatened species issues. These factors are collectively referred to as the "8-part test". The test is the statutory mechanism which allows decision makers to assess whether a proposed activity is likely to have a significant effect on threatened species, populations or ecological communities, or their habitats and therefore, whether the preparation of a species impact statement (SIS) is required. If the activity is assessed as likely to have a significant impact, the proponent can prepare a SIS or choose to modify the exploration to reduce the impact to a non-significant level. The requirements for preparation of a SIS are set out in the Threatened Species Conservation Act.

The Department of Infrastructure, Planning and Natural Resources has guidelines that provide a structured and systematic method for analysing the likely effect of works on the environment and deciding whether an EIS is required pursuant to Part 5 of the Act (*Is an EIS required? Best Practice Guidelines for Part 5 of the Environmental Planning and Assessment Act 1979-Part 5 Guidelines*). The definition of an “activity” under Part 5 of the EP&A Act includes all work in, on, or under land or the use of land. The *Part 5 Guidelines* outline the legal definition of an “activity” in more detail. The *Part 5 Guidelines* describe what information must be provided in a REF to meet the requirements of the EP&A Act. The SCA guidelines provide more assistance on applying the requirements specifically to exploration in SCAs.

What is a review of environmental factors (REF)?

A Review of Environmental Factors is a document that identifies and evaluates the environmental impacts of an activity and the effectiveness of mitigation measures to:

1. determine whether the impacts are likely to significantly affect the environment (and thus require an environmental impact statement (EIS) or significantly affect threatened species, populations or ecological communities or their habitats (where both an EIS and SIS are required); and
2. assist the determination of whether an activity should be approved taking into account, to the fullest extent possible, all matters affecting or likely to affect the environment.

Reviews of Environmental Factors consist of three parts, which reflect the evaluation framework in the *Part 5 Guidelines*. Part 1 involves describing the environment of the proposed activity and other relevant information such as the permissibility of the activity. Part 2 consists of a series of tables which guide the proponent through a detailed assessment of impacts. Part 3 requires the proponent to evaluate the likely environmental significance of impacts.

Requirements for reconnaissance exploration in state conservation areas

NPWS and DMR must assess applications for access to SCAs in accordance with Part 5 of the EP&A Act. It is recognised that reconnaissance exploration has a low impact on the environment. It is also recognised that the requirements for such exploration should not discourage exploration in SCAs. This document sets out simplified procedures to assist explorers to undertake reconnaissance exploration in a SCA with appropriate safeguards. A simplified REF format has been developed for reconnaissance exploration (Attachment 1).

Reconnaissance exploration involves very low impact activities and is limited to:

- foot access;
- vehicular access along existing roads and 4WD tracks;
- hand sampling (eg stream sediment, rock chip, soil);
- geological mapping; and
- non-surface disturbing geophysical readings.

Other procedures may be permitted as reconnaissance:

- minor excavations (but not including costeaning or bulk sampling);
- minor clearing or cutting of vegetation, involving hand lopping or hand clearing affecting a small number of trees;
- use of hand-held mechanised or power equipment; and
- off-track vehicle access;

but this will only be where it is evident to the park authority that these procedures will have low impacts. An important aspect in deciding the impact of off-track access or upgrading of existing tracks is the implication of this to the future management of the park and the possibility of unauthorised access.

In the case of reconnaissance exploration activities, the initial evaluation may only involve a desktop assessment. To determine the level of initial appraisal required discussions with DMR and NPWS need to be undertaken.

Information provided by the proponent in the initial REF must declare the level of activities and available information to enable authorities to determine that impacts will be minor so that approval can be granted.

Requirements for all other exploration in state conservation areas

For activities other than those above, a more detailed assessment is required. Attachment 2 is the REF format for more detailed levels of exploration which may have higher levels of potential impact. The format has been adapted from the *Part 5 Guidelines*.

The REF format will assist the proponent to identify issues associated with the area to be explored, describe the nature of the proposed exploration and mitigation measures, and analyse the potential impacts. This information will be evaluated by DMR and NPWS to assess whether an EIS is required before exploration may be carried out.

The level of environmental assessment required will be determined by both the potential impact of the proposed activities and the sensitivity of the area to be explored. Where the potential for impacts is greater, a higher level of detail should be provided. The level of planning and assessment should be discussed with the DMR and the NPWS prior to submission of a formal application.

The REF process should result in a decision as to whether the exploration can proceed based on an assessment of the net environmental benefits of the exploration weighted against the environmental costs. In those cases where the impacts are likely to be significant, a full analysis of environmental issues should be undertaken and reported in an EIS. In this event, the agencies will advise of the procedures to be followed.

How detailed should a review of environmental factors be?

The level of detail required to support an application to carry out exploration increases as the level of activity and potential for environmental impact increases. The environmental assessment should focus on the potentially significant impacts. Lesser attention is required for those issues of lesser significance. The level of potential impact or significance is a function of both the intensity of the activity and the level of sensitivity of the environment. Together these two factors will determine the level of detail required in the REF.

The REF may also need to address threatened species issues through the application of the 8-part test that applies to all land tenures and to all development and activities that require approval under the EP&A Act. The test sets out factors to be taken into account in deciding if there is likely to be a significant effect on threatened species, populations and communities, or their habitat.

It is important that, where required, associated supporting documentation, such as the 8-part test and record of consultations with Aboriginal communities, fauna/flora surveys and any consultations with agencies, are attached to the completed REF.

Who should prepare a review of environmental factors?

The REF forms are designed to be completed by the proponent. However, it is advisable that the proponents ensure that they are aware of relevant legislative requirements relating to environmental impact assessment. It is advisable that a specialist be used for completing Attachment 2. Agencies can advise on the recommended level of assessment and general legislative requirements.

Who determines the likely environmental impact?

Prior to them approving exploration in an SCA, the Minister for Mineral Resources and the Minister for the Environment must consider the REF. Both Ministers have a statutory responsibility under the EP&A Act, to approve these activities only after determining the environmental impact of that activity. It is also the responsibility of the DMR and NPWS to ensure that there is sufficient information contained in the REF for their Ministers, as determining authorities, to make an informed decision.

If either Minister determines that conditions should be applied to exploration, these will be attached to the approval. Determining authorities may also decide that the exploration cannot be approved in its proposed form and must be altered or amended. In this case it may also be directed that a new or amended REF be prepared.

Getting started

When an exploration licence is granted, DMR will advise if a SCA exists within the licence area. The licensee should discuss any exploration at the earliest opportunity with both DMR and NPWS. By consulting early and including this consultation as part of the planning for exploration, the level of approval and EIA required can be determined early, ensuring that any delays in exploration of the area are avoided.

For reconnaissance exploration in a SCA, the simplified REF format (Attachment 1) will need to be completed. Generally this will require at a minimum a desktop assessment of available information. Where approval is required for additional work in the SCA, which is associated with same type of exploration already approved, the REF can be amended to account for this. If the SCA becomes the focus of more intense and site-specific exploration, the more detailed REF format (Attachment 2) will need to be completed. The preparation of this REF can build on the original information, though site surveys may need to be completed. It is also advisable that an appropriate qualified person completes the REF.

Information sources

The level of information and site surveys required to complete a REF will vary depending on intensity of exploration and the sensitivity of the environment. The NPWS and DMR will be able to provide information to proponents and a list of initial reference material is attached to these guidelines. The level of documentation available will vary greatly across the State. In some areas there may be little existing information and the proponent of intense exploration may have to collect additional environmental information by undertaking surveys.

Consultation

A well-planned consultation program is essential for a successful mineral exploration program where there will be intensive, prominent exploration in a SCA. Consideration needs to be given to neighbours, the Aboriginal community, relevant government agencies and non-government organisations like the Nature Conservation Council and the National Parks Association of NSW.

The role of best practice guidelines

Initial guidance can be found in best practice documents: *Guidelines for Environmentally Responsible Exploration in New South Wales* (NSW Minerals Council 1998), *Code of Environmental Practice* (APPEA 1996) and *Best Practice Environmental Management in Mining: Onshore Minerals and Petroleum* (Environment Australia 1996). These documents are not a replacement for the preparation of REFs. Those sections of the best practice guidelines which apply to sensitive environments will be particularly relevant to a SCA. Best practice environmental management techniques should be applied at all times by explorers undertaking prospecting operations within SCAs.

EXPLANATORY NOTES TO THE REVIEWS OF ENVIRONMENTAL FACTORS

The Review of Environmental Factors (REF) formats for reconnaissance exploration (Attachment 1) and for more intense exploration (Attachment 2) have been structured to reflect the *Part 5 Guidelines*. The notes below apply to both forms. Although the level of information required for reconnaissance should be considerably less than for more detailed exploration, the issues to be considered in the analysis of potential environmental impacts are the same.

The advice of both the DMR and NPWS should be sought to ensure that the information provided meets agency requirements to undertake the analysis under Part 5 of the EP&A Act. It will be important for these discussions to provide as much preliminary information as possible to the agencies, for example the level of exploration and techniques to be used for the management of impacts. At this stage the agencies can also assist in identifying relevant information sources.

1. Project Details

1.1 Licence number and holder:

Provide the details included on the exploration licence and note any project name for the proposed exploration program.

1.2 Proponent:

The name of the company or individual undertaking the exploration together with contact address and details of a principal contact. Where the proponent is not the licence holder, an authorisation from the licence holder to carry out the work is required with the REF.

1.3 Name of the state conservation area:

Name of the state conservation area, "e.g. Big Tree SCA". Identify the parts of the reserve that will be affected by exploration works with a sufficiently detailed location map. The detail shown on the map will be particularly important when the exploration involves site disturbance and/or the clearing of vegetation.

1.4 Description of proposed exploration

The description of the proposed exploration should provide sufficient information so the reader is aware of what will be involved. This includes techniques to be employed (eg type of geophysical methods), and any machinery to be used, dimensions of disturbed area (size of area, sample size/frequency), ancillary aspects or other works associated with the exploration (eg any trimming, clearing, track construction, track reforming, drainage and camping requirements).

For later phase exploration, this section may also include the results of exploration to date. This will clarify the value of continued exploration.

1.5 Objectives of proposed exploration

The objectives of the work should clearly describe the reasons behind the proposal. The context of the work in relation to the broader program being carried out in the exploration licence should also be included.

1.6 Mitigation measures

Environmental impact mitigation measures to be employed, including employee/contractor education/induction, procedures to manage the disturbing activities and post exploration rehabilitation and monitoring, should be detailed. The mitigation strategies associated with any ancillary works must also be included.

Impact mitigation strategies and management protocols should focus on the potential disturbance caused by the activity and the nature of the sensitivity of the land affected. Use of appropriate strategies and

protocols to limit disturbance and ensure minimal impact will be taken into account in the agencies' assessment of the significance of the impact.

1.7 Expected commencement date and completion date or duration of exploration

Expected timing of works and length of time on ground works are expected to take.

1.8 Alternatives

Identify alternative sites, designs, technology, construction and management options to achieve the objectives of the exploration. The "do nothing" option should also be considered. It should be clear what features of the chosen option make it the most rational, and how it meets the objectives identified above.

2. Permissibility, planning & statutory matters

The proponent must ensure that the REF addresses all legislative requirements that may affect the proposed exploration works and other State agency approvals required (eg. water or pollution licensing). Below is a list of relevant legislation which will assist the proponent. Where any of these pieces of legislation or statutory requirements apply and will influence the exploration, they need to be identified and the proponent's response to the requirements detailed.

2.1 National Parks and Wildlife Act 1974

Appropriate or necessary use

Activities can only be undertaken which are in accordance with the objects of the Act and the management principles for SCAs. The management principles for SCAs allow for mining interests to be undertaken while having regard to the conservation of the natural and cultural values of the SCA. The REF is the document which demonstrates that these values have been considered in sufficient detail to meet the requirements of the NPW Act and EP&A Act.

Existing interest

An existing interest is described under s.39 of NPW Act as "any authority, authorisation, permit, lease, licence, or occupancy" which existed at the time that land was reserved or dedicated under the NPW Act. This includes any pre existing Exploration Licences. The terms and conditions of an existing interest including any use of land permitted under the interest, are not affected by the reservation of land under the NPW Act. The onus is on the proponent to demonstrate an existing interest.

Existing interests do not require approval to carry out any work that is within the terms and conditions of the interest for which relevant approval has been obtained. However, a licence under the TSC Act or a "consent to destroy" under the NPW Act may be required. Where the work is not covered by the existing licence a further approval will be required. Thus a REF may be required for all activities not approved under the existing interest.

Plans of management and area strategies or plans

Section 81 of the NPW Act requires that NPWS prepare plans of management for all reserved land including SCAs. This plan may identify the areas of high mineral potential or environmental significance. The plan of management, including drafts, is an ideal source of information on the conservation values of a SCA and will be important, where they exist, to the preparation of REFs.

There may be additional plans in existence, such as regional pest or fire plans. The proponent must take these into account in the preparation of the REF.

Aboriginal cultural heritage

The NPW Act protects Aboriginal objects and places in NSW. It is an offence under the NPW Act to damage, deface or destroy an object or place without the consent of the Director-General, regardless of the object or place being in a SCA or not. It also an offence not to notify the Director-General of the location of an object. Part 5 approval under the EP&A Act is not a defence under the relevant provision and a separate consent to destroy would be required under s.90 of the NPW Act.

2.2 Environmental Planning and Assessment Act 1979 (EP&A Act)

An environmental planning instrument cannot prevent a person from carrying on exploration on that land, where it is authorised under the Mining Act (s.381 MA). This has the effect that exploration can not be considered under Part 4 of the EP&A Act and consequently the provisions of Part 5 apply.

Reserved land has been excluded from environmental protection SEPPs (26 - Littoral Rainforest and SEPP 44 - Koala Habitat Protection), on the basis these environments are protected. Where a plan of management is not in place or does not identify the sensitive environments, the values, which would have resulted in the inclusion of an area in an environmental protection SEPP, should be considered by the proponent.

2.3 Threatened Species Conservation Act 1995 (TSC Act)

The provisions of the TSC Act apply to all activities and development undertaken across the State, regardless of the tenure of the land. An 8-part test under s.5A EP&A Act must be conducted to assess whether there is likely to be a significant effect on a threatened species, population and community or their habitat and to ascertain whether a SIS must be prepared.

2.4 The Wilderness Act 1987 (WA)

The proponent must confirm that the SCA in whole or in part is not identified as wilderness under the WA. If the SCA, or part, has been identified under the WA, then the impact of the proposal on the wilderness values for which the area has been identified will be an important consideration in granting approval to that proposal.

In declared wilderness, exploration, mining and petroleum production would generally be prohibited. However, any existing interests would be unaffected by identified or declared wilderness. The same principles apply to all identified and declared wilderness, not just those in SCAs.

2.5 Mining and petroleum legislation

SCAs are also classified as “exempted areas” under the provisions of the *Mining Act 1992* and “lands reserved for a public purpose” under the *Petroleum (Onshore) Act 1991*. Accordingly, an explorer requires an approval from both the Minister for Mineral Resources (under the mining legislation) and the Minister for Environment (under s. 47J of the *National Parks and Wildlife Act 1974*) prior to undertaking exploration in an SCA.

Title for an exploration licence will include conditions imposed by DMR. These conditions must be applied and any work proposed in the REF must be consistent with these conditions.

2.6 Rural Fires Act 1997

The Rural Fires Act 1997 places a duty on the proponent to take all practical steps to prevent bushfires and minimise the danger of bushfires spreading from land under the control of NPWS. Any bushfire management plan must be complied with.

2.7 The NSW Heritage Act 1997

The Heritage Act requires that due care be taken in the management of any heritage items located in lands under management by State authorities and that management be in accordance with guidelines produced by the Heritage Office. Both NPWS's s.170 Register (items of regional significance) and the State Heritage Register should be consulted to determine the presence of heritage items on or near the proposed area of exploration. The NPWS has a Historic Place Register that lists all known items on NPWS land which are over 25 years old. In the spirit of the Heritage Act, due consideration of the heritage values of any items on the register must be part of the assessment process. If an item is on the State Heritage Register, any proposed work must be in accordance with a conservation management plan endorsed by the NSW Heritage Office.

2.8 Other controls and agency approvals

If any other controls apply to the locality of the reserve, to the reserve itself or to the activity, the relevant sections of these also need to be considered in the assessment process. These could include recovery and

threat abatement plans, regional vegetation management plans and legislation such as the Protection of the Environment Operations Act 1997 (eg impacts on water quality, air quality and noise levels), Water Management Act 2000 (eg access to and abstraction of water) and the Noxious Weeds Act 1993 (control measures). In the case of other agency approvals the additional requirements of that agency will also need to be addressed in the REF.

The park authority should be aware of relevant plans, however the proponent is responsible for identifying all relevant controls and approvals.

2.9 Commonwealth matters (eg Ramsar, World Heritage, National Estate)

The SCA in whole or part may be listed under national listing systems (eg National Estate) and/or international conventions or agreements. The natural and cultural values which are the basis of these listings, should be considered in the preparation of the REF.

If the area which is the subject of an EL, regardless of whether it includes a SCA or not, is of national environmental significance, Commonwealth environmental impact assessment procedures could be triggered under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). An approval from the Commonwealth Minister for the Environment may be required, in addition to any approvals required under State legislation.

The EPBC Act *Administrative Guidelines on Significance* provide guidance on whether, and in what circumstances, mineral exploration is likely to have a significant impact on a matter of national environmental significance (see www.ea.gov.au).

3 The existing environment

This section identifies potential issues and allows sensitive areas of the environment to be identified. If the activity has the potential to affect sensitive areas, the impact may be considered high. For example, if the site is a koala habitat or a wetland community. Reference to the SCA management plan and the park authority will assist in identifying environments of potential significance.

3.1 Provide a short description of the existing site characteristics.

For example:

“The site of the proposed exploration is a gently sloping area of 500m² (approximately 25m x 20m) within open woodland. Access to the site is via an existing 2km unsealed road”.

The surrounding environment of the site or area to be explored should also be considered if it could also be affected by the activity. For example, if the activity is likely to interfere with the quantity or quality of water on the site, the down stream environment may also be affected.

3.2 Significant features

This part aims to identify issues, attributes or qualities that may be affected by exploration works in the SCA. Where a feature is noted, a description of its characteristics should be expanded upon in proportion to the likely impacts on the values of that feature. For example, where impacts are complex or where further analysis is required to understand the potential impacts, a more comprehensive study will need to be prepared.

Significant features may include:

- the location of national, state, local natural or cultural heritage values in the SCA;
- the presence of significant geology and geomorphology features;
- soil characteristics;
- the presence of significant plants including Rare or Threatened Australian Plants (ROTAPs), threatened species, populations, communities, and regionally significant species;
- the presence of threatened native fauna species, populations, communities, their habitat or critical habitat;
- significant water catchment values including identified high conservation value subcatchments;
- known or potential Indigenous heritage values (eg. sites, artefacts, objects);
- historic heritage values (eg. historic places, movable heritage or relics);
- recreation values of the SCA (eg water feature, tracks and lookouts);
- scenic and visually significant aspects of the SCA;
- wild and scenic rivers values of the SCA;
- scientific and research sites within the SCA;
- surrounding land users and interests of external stakeholders (eg. apiarists, leaseholders).

4 Potential environmental impacts of exploration activities

The purpose of this section is to identify all potential impacts on the environment which may be caused by activities in the SCA. For the reconnaissance (Attachment 1) this will involve listing each significant features and giving reasons why the potential environment impact is anticipated. For reconnaissance the details below will help in completing this section.

Attachment 2 goes into more detail to ensure that each of the possible impacts are considered. It gives guidance on how to analyse the significance of the impacts. Every identified impact is to be classified as low adverse, medium adverse, high adverse, negligible or positive. Therefore where an impact is not anticipated a “no” will apply. This section incorporates the requirements contained in Tables 2A, B and C of the *Part 5 Guidelines*.

These notes will also be of assistance where a more detailed analysis is required to supplement specific issues of potential significance. Cumulative impacts must also be considered (see section 5).

Significance must consider both the extent and nature (type) of impacts.

Analyse the extent of the impacts

The importance of each impact should be estimated based on the extent of the impact. The extent of the impact will depend on its size, scope, intensity and duration. 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 have the potential to adversely affect threatened species or environmentally significant areas would also attract a ranking of high impact.

Consider the nature of the impacts

The importance of each impact should be estimated, taking into account the following criteria:

- the level of confidence in predicting the impact;
- the resilience of the environment to change;
- 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; and
- whether further information is required to confidently determine the impact of the activity.

For instance, potential impacts are likely to be of high adverse impact if there is a high level of uncertainty about the impacts themselves or the capacity of the environment to sustain such impacts is low. Beneficial environmental impacts should also be noted.

The question of the reversibility of the activity is about identifying if the proposed exploration will result in permanent changes to the environment or if the activity and its impacts are reversible.

The *Part 5 Guidelines* state that it is not expected that a full analysis of the impacts is necessary to decide if an EIS is required. The information need only be to a level appropriate for deciding if the impacts are likely to be significance. The requirement is to consider the likely impacts as far as practicable in making this decision.

A table to assist with decision making is provided below
 (Reference can be made to ANZECC “Guidelines and criteria for determining the need and level for environmental impact in Australia” Publication No 51, 1996
<http://www.erin.gov.au/assessments/eianet/eia/anzeccriteria.html>)

Analyse level of impacts	LOW ADVERSE	HIGH ADVERSE
Size	Small scale size/volume	Large scale/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 & unknowns
Resilience of the environment to change	Good resistance of environment to change	Poor capacity to assimilate/absorb change or recover from impact
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 exploration or mitigation	High level of understanding and information on the impact	Low level of information on and understanding of key issues

4.1 Physical, pollution and safety risk issues

For each issue where relevant, the extent and nature of the impact should be described and analysed and the overall level of the impact is to be assessed.

4.1.1 Is the proposed activity likely to disturb ground features (eg track creation, drilling or excavation)?

If the answer is yes, the impact that the disturbance of the ground features may have on the environment must be described. The disturbance may, for example, have an impact on:

- water quantity or quality (eg salinity, turbidity, sedimentation), the course of natural waterbodies or run-off or flooding ; and
- soil stability, soil quality, structural integrity, erosion, the risk of subsidence.

In analysing the significance of the likely impact, the following should be considered: the area of disturbance, whether there is any prior disturbance and whether the impact is likely to occur in an area which is sensitive to disturbance such as erosion prone areas, areas with dispersible soils or contaminated areas.

4.1.2 Is the activity likely to affect a waterbody, watercourse, wetland or natural drainage system?

A waterbody includes rivers, streams, creeks, swamps, lakes, ponds (billabongs), estuaries and coastal lagoons and artificial waterbodies. A waterbody will be affected if the activity uses water contained in it or involves the storage of water. The types of impact on water movement, volume or quality should be identified.

4.1.3 Is the activity likely to change flood regimes, or be affected by flooding?

The extent and nature of the alteration to flooding regimes should be described and the overall level of the impact determined.

4.1.4 Is the activity likely to involve the use, storage or transport of hazardous substances or the use or generation of chemicals that may build up residues in the environment?

Hazardous substances include flammable, explosive, toxic, radioactive, carcinogenic or mutagenic substances. Chemicals which may build up a residue in the environment, may include drill additives.

Impacts on air, soil and water quality must be considered.

In assessing the likely impact, the following matter in particular should be considered: what is the level of information/degree of confidence regarding the potential impact on the environment of the hazardous substance(s)?

Where the chemicals or hazardous substance(s) are being transported and utilised in line with a Best Practice Guideline, a low significance can better be justified.

4.1.5 Is the activity likely to involve the generation or disposal of gaseous, liquid or solid wastes or emissions?

The potential impact should be identified: The generation or disposal of waste, the emission of greenhouse gases, ozone depleting chemicals or precursors to photo-chemical smog could, for example:

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

In determining the likely impact, the following matters relating to the proposed activity should be considered:

- is an approved process for waste disposal available?
- will there be compliance with EPA and Workcover guidelines?
- what is the long-term impact? and,
- will there be compliance with government policies and guidelines?

Where the generation or disposal of gaseous, liquid or solid wastes or emissions result in a long term impact or where there is strong community interest in the issues, you will need to provide strong justification as to why you rate the impact to be less than medium or high adverse.

4.1.6 Is the activity likely to involve the emission of dust, odours, noise, blasts or radiation?

The extent and nature of the potential impact on the environment (which could include air quality or dust noise and vibrations at adjoining properties) should be described and the overall level of the impact determined.

Where the emission of dust, odours, noise, blasts or radiation is not in line with approved guidelines, processes or policies, where a long term impact may result, or where there is strong community interest in the issues, you will need to provide strong justification as to why you rate the impact to be less than medium or high adverse.

4.1.7 Is the activity likely to have any other impact on the physical aspect of the environment?

If during the preparation of the REF an impact affecting the physical environment has been identified and is not address by the questions above, describe the extent and nature of the impact.

4.2 Biological issues

If modification to vegetation is proposed or if exploration has the potential to cause an impact on threatened species, populations, communities or their habitat, the proponent will need to identify the relevant impacts on these. For example, impacts may include: displacement or disturbance of threatened species; disruptions to the breeding cycle; disruptions to roosting behaviour; or changes to foraging behaviour.

The proponent may undertake the 8-part test and attach the results to the REF for review by the agencies. However, the determining authorities (NPWS and DMR) will undertake an assessment of significance (ie consideration of s.5A of the EP&A Act) and advise the proponent as to whether a species impact statement (SIS) is required. Alternatively, should the proponent consider that the impacts are likely to be significant a SIS can be prepared up front.

If it is established through a survey that there are no threatened species, populations, communities or their habitat present, this must be explicitly stated in the REF to satisfy the requirement of s.5A.

4.2.1 Flora

4.2.1.1 Is vegetation to be cleared or modified?

Clearing or modifying vegetation (including destroying individual trees) is particularly relevant to activities such as drilling, track construction, seismic testing, and excavations.

If vegetation is to be cleared or modified, describe the number of individuals or area of plants or vegetation communities to be cleared or modified. Compare with the total number of individuals or area of plants or vegetation communities in the general location of the proposal, as well as in the larger region.

Where clearing or modification is proposed to individual plants, species, populations or vegetation communities of particular conservation value, or where the extent of clearing of native vegetation is medium to large in the local context, you will need to provide strong justification as to why you rate the impact to be less than medium or high adverse.

4.2.1.2 Have you accessed all available flora databases?

Yes or No answer. If yes, attach data base report. If no, state why.

4.2.1.3 Has the site been surveyed for flora, including ROTAPs (Rare Or Threatened Australian Plants) and threatened species or their habitat?

Yes or No answer. If yes provide requested details. If no, state why.

4.2.1.4 Are habitats or species of significance or potential significance likely to be affected by the modification or clearing of vegetation?

Examples of habitats or species of significance will include habitat corridors, key habitat features such as trees with hollows, foraging habitat, remnant vegetation and inadequately reserved plant communities, wetlands and vegetation communities known to be of regional or local significance. If they have been identified describe them in detail.

In analysing the level and nature of impacts the following points needs to be considered:

- the likely response of the species, population or vegetation communities to the type of disturbance if known (list reference);
- the likely response of exotic/introduced flora, and how this will impact upon native species; and
- will the potential for regeneration be reduced by the proposal.

4.2.1.5 Is the activity likely to modify any vegetation with cultural landscape value?

This relates to exotic plantings and landscapes and site features as part of the context of historic heritage places. NPWS does acquire property which includes European heritage sites, including associated vegetation.

If yes, describe the value in the context of the landscape or item of historic heritage.

The cultural heritage value of vegetation to Aboriginal people is addressed in section 4.5.

4.2.2 Fauna

4.2.2.1 Is the activity likely to endanger, displace or disturb fauna or create a barrier to movement?

Displacing or disturbing fauna includes modification to key habitat features which can include trees with hollows, foraging habitat, derelict mines, caves and rock crevices.

If the activity might endanger, displace or disturb fauna or create a barrier to movement, describe the number of individuals or habitat to be disturbed, affected or modified, and compare with the total number of individuals or area of habitat in the general location of the proposal, as well as in the larger region. What is the nature disturbance proposed?

4.2.2.2 Have you accessed all available fauna databases?

Yes or No answer. If yes, attach data base report. If no, state why.

4.2.2.3 Has the site been surveyed for fauna, including threatened species?

Yes or No answer. If yes, attach data base report. If no, state why.

4.2.2.4 Were any habitats or species of significance or potential significance noted?

If yes describe them in detail. Species or populations listed as threatened are of greatest concern, followed by species of international significance, including those listed on China-Australia Migratory Birds Agreement (CAMBA) and Japan-Australia Migratory Birds Agreement (JAMBA) and species or populations known to be of regional or local significance.

In analysing the level and nature of impacts the following points need to be considered:

- the likely response of the species, population or communities to the type of disturbance if known (list references);
- the likely response of exotic/introduced fauna, and how will this impact upon native species;
- will the species or population be able to (and likely to) utilise the habitat once the disturbance is over; and
- if a barrier to movement is to be created, how will this impact upon the lifecycle of the species and will it be permanent or temporary?

Note that habitats and wildlife corridors are considered to be sensitive to disturbance. If exploration affects these areas or threatened species in these areas, you will have to provide a strong justification should you consider the impact to be other than medium or high adverse.

4.2.3 Ecological communities and general impacts

The nature of the potential impact should be described and the overall level of the impact assessed.

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

If the activity will cause a threat to biological diversity or the ecological integrity of a community, you will need to provide strong justification as to why you rate the impact to be less than medium or high adverse.

4.2.3.2 Is the activity likely to introduce noxious weeds, vermin, feral species or genetically modified organisms into an area?

Where an activity is likely to introduce noxious weeds, vermin, feral species or genetically modified organisms into an area, you will need to provide strong justification as to why you rate the impact to be less than medium or high adverse.

4.2.3.3 Is the activity likely to cause a bushfire risk?

The nature of the potential impact should be described and the overall level of the impact determined particularly with regard to the intensity and frequency of fires.

4.2.3.4 Is the activity likely to have any other potential impact on flora, fauna or ecological communities?

If during the preparation of the REF, an impact relating to biodiversity is noted, but not addressed above, describe the extent and nature of the impact.

4.3 Community issues

There may be occasions where the exploration proposed is of public interest and it should, as a matter of prudence, be referred to a local council or local community. There is however no statutory obligation to canvass public comment or submissions on a draft or completed REF. In deciding on public consultation, *The Guidelines for Environmentally Responsible Mineral Exploration in New South Wales* (NSW Minerals Council 1998), *Guidelines for Best Practice Community Consultation in the NSW Mining and Extractive Industries* (NSW Minerals Council) and *Community Consultation and Involvement, Best Practice Environmental Management in Mining* (EPA, June 1995) may assist. The need for consultation should be discussed with NPWS and DMR early in the planning stages for the exploration.

4.3.1 Has consultation with the potentially affected community been undertaken?

Yes or no answer. Describe the manner in which the consultation was undertaken and the outcome.

4.3.2 Is the activity likely to affect the existing community services and infrastructure?

Infrastructure includes roads, power, water, drainage, waste management or any other park visitor facilities.

If the answer is yes, describe the extent and nature of the impact on community services or infrastructure. Where the impact will be great enough to cause concern within the community or local government, public consultation should be considered.

4.3.3 Is the activity likely to affect or change the transport requirements of an area?

If the answer is yes, describe the nature of the impact on the transport requirements of the area then consider the likely impacts.

4.3.4 Is the activity likely to affect sites of importance to the local or broader community for their recreational or other values and the access to these sites?

Sites of importance include places of conservation, heritage or cultural significance. The creation of new tracks will be addressed in this section. New tracks have the potential to impact on the future management of the SCA by unauthorised access to areas of the SCA.

If the answer is yes, describe the extent and nature of the impact on sites of importance to the community for their recreational or other values. Where the impact will be great enough to cause concern within the community, public consultation should be considered.

4.3.5 Is the activity likely to change the economic balance of the community?

If the answer is yes, describe the manner in which the economic balance will be changed including any beneficial impacts to the community.

4.3.6 Is the activity likely to have an impact on the safety or amenity of park visitors?

If the answer is yes, describe the extent and nature of the impact on the safety or amenity of park visitors.

4.3.7 Is the activity likely to affect the visual or scenic landscape of the SCA?

If the answer is yes, describe the extent and nature of the impact on the visual or scenic landscape. The use of photos, maps and diagrams may assist in demonstrating the degree of impact.

Scenic landscape settings are generally bounded by the visual barriers or edges of viewsheds formed primarily by the topography (ridgelines and hills), with some contribution in flatter landscapes from vegetation (eg. dense forests), and sometimes other factors including the channels of rivers and foothills. These settings can be viewed from the road system and specific lookouts.

Important in assessing the impacts consider:

- the placement of infrastructure associated with exploration, for example any structure on mountain-tops should be located away from any cliff edges;
- the permanence of the impacts; and
- amelioration measures.

4.3.8 Is the activity likely to cause noise, pollution or visual impacts, affecting park visitors or adjoining landowners?

If the answer is yes, describe the extent and nature of the impact.

4.3.9 Is the activity likely to affect the use of, or the community's ability to use natural resources, especially water in the SCAs?

If the answer is yes, describe the nature of the impact on the use of, or the community's ability to use, natural resources, especially water.

Emphasis is given to water as activities undertaken within SCAs may impact on the quality and quantity of water downstream of the reserve. Where the community is relying on the reserve for the protection of water catchments and water supply, there is a strong need to ensure these values are considered in the assessment process.

4.3.10 Is the activity likely to have any other impact on the community or community resources?

If during the preparation of the REF, any impacts on the community or community resources are identified and are not already addressed above, describe the extent and nature of the impacts.

4.4 Resource use issues during operations

4.4.1 Is the activity likely to involve the use, wastage, destruction or depletion of natural resources including water, fuels or timber?

If the answer is yes, describe the nature and extent of the use of the natural resources.

4.4.2 Is the activity likely to have any other impacts on natural resources?

If during the preparation of the REF any impacts on natural resources is identified and not addressed by the above question, describe the extent and nature of the impact.

4.5 Cultural heritage issues

4.5.1 Aboriginal Heritage

The NPWS Aboriginal Cultural Heritage Standards and Guidelines Kit outlines in detail what is required in a cultural heritage assessment and how it should be reported.

4.5.1.1 Have you accessed the NPWS Aboriginal sites register?

Yes or no answer. If yes, outline the results of the search. If no, state why not and/or what is being done to rectify this.

The National Parks and Wildlife Service maintains the Aboriginal Sites Register of NSW. The Register includes a computer database and site recording cards for all recorded Aboriginal sites in NSW, in addition to a database index of archaeological reports and a library of these reports. It is important to note that a report from the Register does not represent a comprehensive list of all Aboriginal sites in a specified area. In any given area there may be a number of undiscovered and/or unrecorded sites, as well as inaccuracies in the recorded data.

To consult the Aboriginal Sites Register ring the Cultural Heritage Directorate, NPWS on (02) 9585 6471 or (02) 9585 6843. The sites register should be consulted on a regular basis to ensure that a full and up to date record is maintained of all recorded sites on the reserve. Where exploration would require application for a consent to destroy an Aboriginal site, you will need to provide detailed justification in support of the proposal proceeding. It will also be necessary for you to liaise closely with the area manager and relevant Aboriginal community groups. The outcomes of these discussions should be discussed in the REF.

4.5.1.2 Has an assessment been carried out in order to determine the likelihood of occurrence of Aboriginal objects or places of significance?

A site inspection should be undertaken where there is a high potential for sites to occur, and where the proposed exploration has the potential to impact on sites eg. ground disturbance, vegetation clearance, hazard reduction. Areas of high potential may be identified on the basis of previously recorded sites and sites known to be frequented by Aboriginal people. For instance :

- the vicinity of streams, rivers, lakes or lagoons; and
- landscape features such as sandstone outcrops, rock shelf/overhangs, old growth trees, sand bodies and dunes and water holes.

If it is not proposed to carry out a survey, this decision should be discussed with a NPWS sites officer before proceeding any further. An appropriately qualified individual must conduct any site inspections . The following information should be included in the REF:

- who undertook survey (including qualifications and experience);
- the date of the survey;
- what techniques were employed (what was done, and where);
- the results and analysis of the survey.

4.5.1.3 Is the activity likely to affect places of significance or importance to the Aboriginal community or is the activity likely to affect Aboriginal objects?

Discuss with the NPWS Aboriginal Sites Officer the need to consult the local Aboriginal community. This will be dependent on a number of factors including the cultural sensitivity of the location, the scale and intensity of the proposal, and the individual communities concerned. It is the role of the Aboriginal

Sites Officer to assist in identification of the appropriate groups to contact and to facilitate consultation. It is important that a full record of any consultation is recorded in the REF. Attach to the REF names, dates and outcomes of meetings. In some instances a letter from the local community may be required (ie. in particularly sensitive locations). It is important that the community has a full understanding of the proposal and its implications and this may require one or more site visits.

4.5.1.4 Is the activity likely to affect wild resources or access to these resources, which are used or valued by the Aboriginal community?

The use of wild resources forms an important aspect of Aboriginal people's past and contemporary association with the land. Along with the spiritual or ceremonial links, the utilisation of wild resources is an integral part of the cultural significance of country.

If the answer is yes, describe the type of wild resource that will be impacted and the nature and extent of impacts. This may include direct and indirect impacts. A full record of consultation with the community should be included in the REF, including the names, dates and records of all conversations. If the answer is no, indicate the reasons for this conclusion. The NPWS Aboriginal Sites Officer will be able to assist you in identifying the appropriate local Aboriginal community groups to consult with and to facilitate this consultation.

Wild resources are defined as including native and introduced species of flora and fauna that are utilised for food, medicine and materials. It includes the land and sea on which these resources are obtained. For example a beach, a pathway through a forest or a stand of trees could fall within this definition. While the word "resource" implies a focus on use, the land, flora and fauna is also associated with people's sense of identity and spirituality and connection with country.

4.5.1.5 Is the proposal likely to affect areas nominated or declared as Aboriginal Places?

The National Parks and Wildlife Act provides for the protection of Aboriginal objects (commonly referred to as sites) across NSW, regardless of significance, land tenure and whether or not they are recorded in the NPWS Sites Register. All Aboriginal objects in SCAs are the property of the Crown, and the D-G of the NPWS is the only authority empowered to have dealings with such property.

The Act also provides for the protection of areas that have been declared to be "Aboriginal Places" by the Minister. An Aboriginal Place is an area of land that "was or is of special significance to Aboriginal culture", not necessarily containing physical objects. It is an offence to knowingly disturb, deface or cause to permit the destruction of relics or an Aboriginal Place without the written consent of the NPWS.

4.5.1.6 Is the activity likely to affect areas subject to Native Title claims?

The *Commonwealth Native Title Act 1993*, provides for the identification of native title holders or claimants. The Department of Infrastructure, Planning and Natural Resources should be your first point of contact to obtain advice on liaising with native title claimants. Where an area is subject to a native title claim, the claimants should be consulted as to their view on the exploration proposed. Where the native title claimants do not support the proposed activity, you will need to provide strong justification as to why you rate the impact to be less than medium or high adverse.

4.5.2 Historic Heritage

4.5.2.1 Is the activity likely to affect known heritage items or historic archaeological relics?

Evaluate if the place is:

- listed on NPWS s.170 Register (a requirement under the NSW Heritage Act);
- subject to an order under the NSW Heritage Act;
- classified by the National Trust of Australia (NSW);
- listed on the Register of the National Estate;
- identified in an LEP or REP or State Heritage Inventory.

If 'Yes' then the proposed activity must be undertaken in accordance with the principles of the Australia International Council on Monuments and Sites (ICOMOS) Burra Charter. Contact the NPWS Cultural Heritage Directorate for more information.

Describe the nature of the impact and how it relates to the purpose of the activity. Also outline if exploration may require ancillary stabilisation, maintenance works, or conservation works. Ascertain whether additional approvals would be required for the proposal to proceed.

4.5.2.2 Has the area been surveyed or assessed for heritage items or historical archaeological sites?

Yes or No answer. If yes provide details as to who undertook the survey and what the results were. If no, state why not.

4.5.2.3 Has a conservation plan or other conservation assessment been prepared for the site? If so, is the proposed activity in accordance with the conservation plan or assessment?

If an activity is being carried out which is not in accordance with a conservation plan or assessment, the NPWS Cultural Heritage Directorate should be contacted to discuss the proposal.

5 Summary of environmental impacts

This section should provide consideration of the cumulative impacts of an activity based on the classification of the individual impacts as low, medium or high adverse, negligible or positive, any mitigating strategies or factors that are relevant to the proposal, and the environmental sensitivity of the land identified in sections above.

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 cumulative effect of the impacts acting together could be substantial.

If the overall impact of an exploration activity is low, the impact is not regarded as significant. If the overall impact of the activity is medium or high, the activity will have a significant impact on the environment.

The Part 5 Guidelines suggest that the answers to the following questions can assist evaluating significance. Will an impact:

1. be extensive in terms of spatial or time dimensions and intensity or severity?;
2. be a threat to the health or safety of an individual or the community?;
3. threaten biodiversity, a sensitive environment or a species, population, community or their habitats?;
4. have been predicted accurately and with confidence?;
5. carry the risk of irreversibility?;
6. be mitigated by the measures proposed?;
7. be within the norms expected by legislation, standards, policies and best practice? or
8. be perceived by sections of the community as disadvantageous through the loss of amenity, pollution, impacts on visitor access or other physical effects?.

Definitions

Activity means:

- the use of land, and
- the subdivision of land, and
- the erection of a building, and
- the carrying out of a work, and
- the demolition of a building or work,

CAMBA: China-Australia Migratory Birds Agreement 1986.

Declared wilderness: land assessed, after public consultation, and declared under the Wilderness Act. The provisions of the Act then protect the wilderness areas.

Identified wilderness: land that is suitable to be declared as a wilderness area or for addition to existing wilderness areas. The land has been identified as having wilderness values but is not protected by the Wilderness Act

ICOMOS: International Committee on Monuments and Sites. An international non-governmental organisation of professionals, dedicated to the conservation of the world's historic monuments and sites.

JAMBA: Japan-Australia Migratory Birds Agreement 1974.

ROTAP: The Rare or Threatened Australian Plants (ROTAP) list developed by the CSIRO. ... This system is based on a coding system which provides a means of ranking the plants according to the level of risk they face in the wild.

Wetlands: areas that are wet for long enough period such that the plants and animals living in them are adapted to, and often dependent on, living in wet conditions for at least part of their life cycle (NSW Wetlands Management Policy 1996).

Reference material

Web sites

www.nationalparks.nsw.gov.au

- search the Wildlife Atlas for plant and animal records across NSW, or search the website for species-related information;
- native animal fact sheets;
- search the list of threatened plants and animals in NSW. Find out about recovery planning, critical habitat protection and key threatening processes;
- read about current and completed survey programs, and down-load guidelines to help you survey the biodiversity of your area;
- NPWS registers of cultural heritage information across NSW;
- heritage registers which can be searched by members of the public;
- useful cultural heritage links;
- a list of conservation management plans, including park management plans, fire management plans and other park conservation information;
- a list of property interests granted in parks and reserves under the National Parks and Wildlife Act.

www.minerals.nsw.gov.au/enviro/policy

The NSW Department of Mineral Resources environmental management system index to policy and guidelines.

www.ea.gov.au

Information on all aspects of the *Environment Protection and Biodiversity Conservation Act 1999*;

www.icomos.org/australia/

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