

**GUIDELINE FOR THE PREPARATION OF AN
ENVIRONMENTAL MANAGEMENT PLAN**

DRAFT

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Abbreviations

CEMP	Construction Environmental Management Plan
CSM	Conceptual Site Model
EA Act	<i>Environmental Assessment Act</i>
EIS	Environmental Impact Statement
EMP	Environmental Management Plan
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i>
ESIMP	Economic and Social Impact Management Plan
MMP	Mine Management Plan
NT EPA	Northern Territory Environmental Protection Authority
OEMP	Operational Environmental Management Plan
PER	Public Environmental Report
WMPC Act	<i>Waste Management and Pollution Control Act</i>

1 Introduction

An Environmental Management Plan (EMP) is a site or project specific plan to ensure that appropriate environmental management practices are implemented during the various stages of a project, including construction, operations, decommissioning, closure and post-closure.

EMPs serve a number of functions:

- they are a valuable operational tool that documents and guides the implementation of a proponent's environmental management activities
- they provide a basis for the Northern Territory Environment Protection Authority (NT EPA) to assess and in some cases approve proposed environmental management measures under Northern Territory legislation
- where available to the public, they provide a transparent account of how the environmental risks associated with a project will be mitigated.

2 Objectives

The objectives of this Guideline are to provide project proponents with advice on:

- when an EMP may be required by the NT EPA
- what is required in preparing an EMP for assessment by the NT EPA to ensure a minimum standard and consistent approach to EMP preparation.

3 Limitations

This Guideline is applicable to a range of projects and activities. It does not provide a preferred EMP format or template, as the most appropriate format of an EMP will vary depending on the nature, scale and complexity of a project.

This guidance is:

- confined to generic matters relating to the preparation of EMPs and does not address more proposal-specific issues that may be of significance
- not an instrument for predicting outcomes of deliberations by the NT EPA
- designed to promote a more certain and consistent approach to the preparation of EMPs.

The NT EPA has prepared this document in good faith, exercising all due care and attention, but no representation or warranty, express or implied, is made as to the relevance, completeness or fitness for purpose of this document in respect of any particular user's circumstances. Users of this document should satisfy themselves concerning its application to their situation and, where necessary, seek expert advice.

4 Legislative requirements

An EMP may need to be prepared to satisfy requirements under a range of legislation. These requirements are discussed in Sections 4.1 and 4.2.

4.1 Northern Territory legislation

4.1.1 *Environmental Assessment Act*

When projects are assessed under the *Environmental Assessment Act* (EA Act), the NT EPA will require a draft EMP to be provided by the proponent as part of a Public

Environmental Report (PER) or Environmental Impact Statement (EIS) submitted for public consultation. Provision of a draft EMP assists the NT EPA to assess the acceptability of proposed environmental management practices and procedures.

The NT EPA prepares project-specific Terms of Reference outlining the information that is required in a PER or EIS. This Guideline complements, and is to be used in conjunction with, the project-specific Terms of Reference.

An EMP is likely to require revision by the proponent once assessment under the EA Act is complete to take into consideration the proposed timing of the project, comments on the PER / EIS, and incorporate recommendations and conclusions from the NT EPA's Assessment Report.

Depending on the nature of the project, the EMP may require approval under separate Northern Territory legislation or form part of an approval granted.

4.1.2 *Waste Management and Pollution Control Act*

For those activities that require authorisation under the *Waste Management and Pollution Control Act* (WMPC Act), an approval or licence application will generally require that an applicant submit an EMP to the NT EPA for assessment prior to the issue of an approval or licence. The time required to obtain an approval or licence may be impacted by the quality of the documentation, including the EMP, provided.

Conditions of an approval or licence may require that an approval holder or licensee submit any amendments to an EMP to the NT EPA prior to implementing the amended EMP. The NT EPA may require the approval holder or licensee to revise or amend and resubmit an amended EMP.

Where activities do not require authorisation under the WMPC Act, an EMP may be a useful tool in demonstrating compliance with the general environmental duty in section 12 of the WMPC Act¹.

4.1.3 *Other Northern Territory legislation*

An EMP may be required either to gain project approval or as a condition of an approval under legislation that is not administered by the NT EPA.

An EMP may be required as a condition of a development permit under the *Planning Act*. Such conditions may require the EMP to be provided by the proponent to the NT EPA for its review and comment before the consent authority considers the EMP for approval and before project construction or operation can commence.

Mining operations authorised under the *Mining Management Act* require an approved Mine Management Plan (MMP). The NT EPA does not have a role in approving MMPs, but a draft EMP assessed under the EA Act may form the basis of the environmental management component of an MMP and recommendations arising from the assessment will inform mining approvals. The Department of Mines and Energy has its own MMP guidelines, available on its website at:

http://www.nt.gov.au/d/Minerals_Energy/index.cfm?newscat1=&newscat2=&header=Mining%20Management%20Plans.

¹ Persons conducting an activity that causes or is likely to cause pollution resulting in environmental harm, or generates or is likely to generate waste, must take all measures that are reasonable and practicable to prevent or minimise the pollution or environmental harm or reduce the amount of waste (refer section 12 of the WMPC Act).

Petroleum activities require approval under a range of legislation in the NT depending on the nature and location of the activity. The NT EPA does not have a role in approving petroleum activities, but a draft EMP for a petroleum project assessed under the EA Act may inform a project approval.

4.2 Commonwealth legislation

In addition to Northern Territory requirements, the Australian Government may also have a role in the environmental assessment and approval of a project.

Approval under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) is required for an action which has, will have, or is likely to have, a significant impact on a matter of national environmental significance (NES).

For some projects that require approval under the EPBC Act, the NT EPA may conduct the environmental impact assessment of the project on behalf of the Australian Government (an accredited assessment). In such cases the draft EMP required by the NT EPA during assessment under the EA Act will need to address how significant impacts on matters of NES will be managed and a final EMP may need to satisfy conditions of approval under the EPBC Act.

5 EMP requirements

As a minimum, an effective EMP should ensure:

- the environmental risks associated with a project are properly managed
- the implementation of outcomes from a project's environmental impact assessment
- compliance with environmental legislation and conditions of approval
- environmental performance can be appropriately monitored and reported.

A checklist is provided at Attachment A to assist proponent's in preparing an EMP that meets the requirements of this Guideline.

Proponents are encouraged to consult with the NT EPA when preparing an EMP to ensure it adequately meets the requirements outlined in this Guideline.

5.1 EMP scope

Many stages of a development are likely to require an EMP, including construction, operations, decommissioning, closure and post-closure.

To avoid unnecessary complexity, a separate EMP should be developed for each stage of a project, for example a Construction EMP (CEMP) and an Operations EMP (OEMP).

The scope of an EMP should be clearly defined, particularly where a project comprises a number of project stages.

The EA Act defines 'environment' as 'all aspects of the surroundings of man including the physical, biological, economic, cultural and social aspects'. The assessment of projects under the EA Act may require the preparation of an economic and social impact assessment and an accompanying economic and social impact management plan (ESIMP). An ESIMP should form one component of a broader EMP.

This Guideline provides general guidance that can be applied to the preparation of an ESIMP. Specific NT EPA guidance on economic and social impact assessment and

management plans is available at: <http://www.ntepa.nt.gov.au/environmental-assessments/factsheets-and-guidelines>.

5.2 EMP style

The following points should be considered when preparing an EMP:

- The level of detail provided for each component of an EMP should be commensurate with the significance of the issue or level of environmental risk.
- All information must be accurate, clearly presented and unambiguous. The EMP must be written as clear statements of intent (e.g. use of 'will' rather than 'should', and avoiding ambiguities such as 'where possible' and 'as required').
- The EMP must be written in a manner that is auditable.
- Assertions and assumptions should be supported by adequate argument and/or evidence and any evidence relied upon should be referenced.
- Technical terminology should be avoided as far as possible. Where used, technical terminology should be defined and technical data and supplementary reports necessary to support the main text should be included in appendices.
- All sources of information should be referenced.
- Information should be presented on maps, diagrams and plans to enhance the level of understanding. When providing maps or referring to spatial databases, the coordinate reference system being used should be specified. All text in tables, maps, diagrams and plans must be readable when printed.
- Cross-referencing should be used to avoid unnecessary duplication of text.

When a project has been assessed under the EA Act, the Project Overview (section 5.4 below), Existing Environment (section 5.7 below) and Risk Assessment (section 5.9 below) sections of an EMP may refer to information previously provided to the NT EPA in a Notice of Intent, PER or EIS to avoid duplication. If an EMP is required to be made public, any document referenced must also be available to the public.

5.3 EMP Structure

An EMP should address the following broad components:

- background
- environmental management
- monitoring, reporting and review
- training and communication.

Although this Guideline does not provide a recommended structure, the order of information requirements for an EMP detailed in Sections 5.4 – 5.15 may provide a useful guide.

The EMP should be prepared in a format that most simply and effectively presents the required content to its audience. The structure of an EMP may need to vary depending on the nature, size and complexity of a project. The following options should be considered:

- An EMP for a small project comprising a single site and limited project staging could be presented in a simple structure using checklists and an issues-based format
- An EMP for a larger project across multiple sites could be presented in a site-based format, with information common across sites (for example, background company and project information) provided once and other information requirements provided separately for each project site
- An EMP for a large multi-stage project could be presented in a stage-based format, with information common across stages (for example, background company and project information) provided once and other information requirements provided separately for each distinct stage of the project
- An EMP for a large linear project could be presented in an issues-based format. Information common across the project could be provided in an overarching EMP with other information requirements presented in sub-plans for different environmental issues (e.g. water quality management plan, air quality management plan) or activities (e.g. emergency response plan).

5.4 Project overview

Provide information on the following:

- proponent details, including name of proponent and contact details
- clear and comprehensive project description, including
 - the location and layout, including map(s) and site plan(s)
 - a description of all key activities covered by the EMP
 - the timing and staging of the key activities of the proposal, including anticipated commencement and completion dates for each stage; and
 - a description of the key physical components of the project, including infrastructure and major equipment items
- key contact(s), including primary contact responsible for the EMP and emergency contact(s).

Where related works exist that are not covered by the EMP, identify them and reference the relevant EMP where one exists.

5.5 Legal and other obligations

Provide information on the regulatory framework governing the project and other obligations to be complied with, including:

- legislation relevant to the project and any licences, approvals or permits required to be obtained under that legislation
- conditions of approval or consent that apply to the project
- project commitments and recommendations from an assessment under the EA Act, ensuring that they are carried from the planning and assessment stage to the construction and/or operational stages

- other requirements that apply to the project, such as international obligations, industry codes of practice, voluntary agreements, environmental management system requirements.

It may be useful to include this information, or aspects of it, in tables within the EMP or in appendices to it.

5.6 Environmental management framework

An EMP should be consistent and integrated with any existing environmental documentation, such as an organisation's broader environmental management system.

Provide information on strategic matters relating to environmental management of the proposal, including a description of the following:

- any environmental management systems or environmental policies implemented or proposed by the proponent and their relationship to the EMP
- organisational structure and environmental responsibility within that structure for the project.

5.7 Existing environment

Provide a brief overview of the existing environment where the project will occur, including the surrounding environment. As relevant address the following:

- the project location and its proximity to
 - landmark features
 - sites of cultural/social significance
 - regional community centres
 - areas in the National Reserve System
 - sensitive environments such as waterways, groundwater resources, natural features, conservation reserves
- information on land tenure/zoning for the site and surrounding areas
- a description of land use and ownership in the vicinity and areas that may be affected by the proposal
- a description of the general characteristics of the proposed site and surrounding area, including topography, climate, geology, geomorphology, soils, vegetation, fauna, groundwater and surface drainage
- a description of natural processes of particular relevance to the existing environment (e.g. fire, flooding)
- information on threatened species or ecosystems which may be affected by the proposal
- information on existing environmental conditions (e.g. air quality, surface water quality)
- a description of the social and economic environment that may be affected by the proposal.

5.8 Conceptual site model

Provide a conceptual site model (CSM) that represents the nature, fate and transport of discharges, wastes or contaminants from the project and allows an assessment of potential and/or actual exposure of the environment to contaminants.

The CSM should support the environmental risk assessment and inform the design of the monitoring program.

The NT EPA's Guidelines on Conceptual Site Models provide further information on CSM requirements and format (available at: <http://www.ntepa.nt.gov.au/waste-pollution/guidelines/guidelines>).

5.9 Environmental risk assessment

The EMP should be informed by the identification, analysis and mitigation of environmental risks through a project risk assessment.

By using a robust risk assessment process, the EMP should:

- acknowledge and discuss the full range of risks presented by the project
- quantify and rank risks so that the reasons for proposed management are clear
- acknowledge levels of uncertainty about estimates of risk and the effectiveness of risk controls
- explicitly identify those members of the community expected to accept residual risks and their consequences.

Risk rankings, including assessments of likelihood and consequence, should be fully justified. Where a proposed management measure reduces the level of risk, clear justification for the reduction should be provided.

The risk assessment should be used to identify and prioritise management measures to mitigate the risks to an acceptable level. The EMP should provide sufficient justification that risks are reduced to an acceptable level. If no risk mitigation measures are proposed for an identified risk, the EMP should provide justification as to why.

The risk assessment should be based on internationally recognised standards. Processes for risk management are formalised in Standards Australia / Standards of New Zealand (refer Section 6).

For projects assessed under the EA Act, it is not intended that the risk assessment process be repeated. The risk assessment component of an EMP will be based on that conducted for a PER or EIS, although the final EMP risk assessment may need to be revisited as a result of recommendations arising from the environmental assessment process.

5.10 Environmental management strategies

An EMP should state all the environmental management activities, mitigation and control measures that will be used to mitigate risks identified in the risk assessment and prevent or minimise environmental impacts. It should provide for the implementation of regulatory and other obligations, including commitments and recommendations arising from any assessment under the EA Act.

For each environmental aspect or impact identified the EMP should:

- establish the environmental objective(s)

- define performance criteria including targets and performance indicators to measure achievement of the environmental objective. Performance criteria should be specific, well defined and measurable. They may be standards or requirements specified in legislation, codes or practice, national or Northern Territory guidelines, or may be determined in consultation with the NT EPA. Evidence must be provided that the performance criteria are achievable and acceptable
- detail the management measure(s) or actions that will be used to achieve the environmental objective and performance criteria and describe how and when they will be implemented. Where appropriate provide control plans and maps to demonstrate environmental management measures
- clearly define and document roles and responsibilities in the implementation of the elements of the EMP
- Where appropriate, outline the mechanisms that will be implemented to enable an adaptive approach to managing impacts. Adaptive management is a systematic process for continually improving management practices in response to monitoring and evaluation of the effectiveness of current management practices. An adaptive approach may be necessary where there is a lack of scientific knowledge about the environment potentially impacted and/or uncertainty about the effectiveness of proposed management measures.

It may be useful to present this information in a table.

5.11 Corrective actions and contingencies

Outline corrective actions that will be implemented where there is a non-conformance with a management measure, or if monitoring indicates an environmental objective or performance criteria is not being achieved. Corrective actions should be designed to prevent any further impact and to ensure that environmental objectives are achieved;

Document the procedures to be followed in the event of an environmental incident or emergency, for example hydrocarbon or hazardous chemical spills or natural disasters. Procedures should address:

- names and contact details for emergency personnel that will be available 24 hours a day, seven days a week
- response personnel responsibilities
- location of on-site hazardous materials information and spill containment materials
- steps to follow in response to incidents, including contingency management measures to minimise environmental impact and notifying relevant authorities and the community
- investigating, recording and reporting environmental incidents.

5.12 Monitoring

Outline clear environmental monitoring objectives and a monitoring program that is capable of meeting those objectives. Objectives may include the following:

- monitoring compliance with performance criteria identified in the EMP to assess whether environmental objectives are being achieved

- assessing the extent to which the predictions of environmental impact in the EIS/ EMP have eventuated
- assessing the extent to which risks are being managed within acceptable levels
- assessing compliance with commitments made in the EMP and/ or approval conditions.

The monitoring program must be designed to have sufficient statistical power to confidently demonstrate whether monitoring objectives are being met.

Provide a map(s) showing the location of all monitoring sites and a table(s) showing key information including monitoring locations, parameters and frequency.

Outline the data recording, quality assurance and quality control procedures to be implemented.

5.13 Audit, reporting and review

Auditing of EMP implementation is required to evaluate and record whether the EMP is being complied with. Audits demonstrate the extent of compliance with EMP commitments and legal conditions internally and to external parties such as the NT EPA. They are a critical input to the process of EMP review.

The EMP should describe the program and procedures for auditing of the EMP's implementation and effectiveness. The audit program should cover internal and/or external audit requirements, including audit scope, timing, frequency, methodology and reporting requirements.

The type and frequency of auditing required will vary according to the nature of a project, the significance of potential environmental impacts and the results of previous audits and regulatory compliance.

Internal audits are conducted by or on behalf of a proponent for management review and other internal purposes. They may be required by the NT EPA as a self-assessment of EMP compliance, particularly for projects with less significant potential environmental impacts. In such cases, internal auditing is generally required, as a minimum, on an annual basis.

External audits are conducted by a qualified third party². They are required by the NT EPA where an objective assessment of compliance is required. External audits may be required in the following circumstances:

- for specific activities or stages of a project that pose significant environmental risks
- in response to an environmental incident
- where previous audits or NT EPA investigations suggest non-compliance
- as a less frequent check on compliance for projects that periodically self-assess and report on EMP compliance through internal audits.

² The NT EPA maintains a register of qualified persons for environmental auditing purposes. Further information is available at:

http://www.ntepa.nt.gov.au/waste-pollution/compliance/audits/qualified_persons.

An external audit of an EMP or a component of an EMP may be required by other NT agencies as a condition of a development permit granted under the *Planning Act*.³

A description of project reporting requirements and the timing of reporting should be included. This may include:

- internal environmental reporting requirements
- periodic (e.g. annual compliance reports) or event-based (e.g. incident reports) reporting required by licences or approvals
- monitoring reports required by licences or approvals.

An EMP is a working document that requires review and possible amendment during the life of a project. The EMP review process is a means of continuously improving the effectiveness of current and future EMPs. The EMP should establish the timing and frequency of reviews and the circumstances that may trigger a review (e.g. where there is an identified need to improve management of a particular environmental aspect, or following an environmental audit).

During the life of a project, the EMP should be revised to reflect changes to a project. If changes to a project have the potential to significantly alter the project's impact on the environment, the amended project should be referred to the NT EPA for consideration under the EA Act.

An approval or licence from the NT EPA or another consent authority may include auditing, reporting and review requirements. The EMP should reflect such requirements.

5.14 Training and awareness

Outline the processes in place to ensure that employees are adequately trained to fulfil their responsibilities under the EMP and understand their obligation to exercise due diligence for environmental matters. An employee in this instance is anyone working on the project including a contractor or sub-contractor.

Environmental training may include:

- site induction
- familiarisation with requirements of the EMP
- environmental emergency response training
- targeted environmental training for specific personnel.

Records of training should be maintained.

Training requirements may change over time, for example in response to environmental incidents or audit recommendations.

³ For example, development permit conditions may require that an acid sulfate soil management plan, required as part of an EMP, be developed by a suitably qualified expert and endorsed in writing by a suitably qualified auditor.

5.15 Communication

Provide details of public and stakeholder consultation undertaken during the planning and assessment stage and provide a summary of how the outcomes of consultation were incorporated into the EMP.

The extent of consultation undertaken should be commensurate with the level of environmental risk and community interest associated with a project.

Outline the communication strategy for project implementation. This should establish an ongoing process for the community and stakeholders to be informed and express concerns and a process for actively responding to those concerns.

Early and sustained community engagement often leads to better outcomes and is strongly encouraged by the NT EPA.

6 Further information

Further information on environmental impact assessment in the Northern Territory is available at: <http://www.ntepa.nt.gov.au/environmental-assessments>.

Information on approvals and licences under the WMPC Act is available at: <http://www.ntepa.nt.gov.au/waste-pollution/approvals-licences>.

The Guidelines for the Siting, Design and Management of Solid Waste Disposal Sites in the Northern Territory provide further NT EPA guidance on EMP requirements for landfill operations and are available at: <http://www.ntepa.nt.gov.au/waste-pollution/guidelines/guidelines>.

For projects being undertaken for the NT Department of Infrastructure, the Department has developed a Contractors EMP template, available at: <http://www.nt.gov.au/infrastructure/techspecs/index.shtml>.

Information on the EPBC Act can be obtained from the Department of Environment's website at: <http://environment.gov.au/epbc/>.

Relevant Australian Standards include:

- Australian Standard/New Zealand Standard (AS/NZS) International organisation for Standardisation (ISO) 14000 Series (including AS/NZS 14001 *Environmental management systems – Specification with guidance for use*)
- AS/NZS ISO 31000: 2009 Risk management – Principles and guidelines
- HB 436:2013 Risk management guidelines – Companion to AS/NZS ISO 13000: 2009
- HB 203:2012 Managing environment-related risk.

Guidance on environmental risk assessment:

- UK Department for Environment, Food and Rural Affairs 2011, *Guidelines for environmental risk assessment and management: Green leaves III* (<https://www.gov.uk/government/publications/guidelines-for-environmental-risk-assessment-and-management-green-leaves-iii>).

If you have any queries about how to apply this Guideline to your circumstances, please contact the NT EPA:

Guideline for the Preparation of an Environmental Management Plan

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Attachment A: EMP checklist

The Checklist below briefly outlines the key EMP requirements presented in this Guideline. It is intended to be used by proponents in conjunction with this Guideline, not as an alternative to it. Proponents should objectively review their EMP against this checklist prior to submitting an EMP to the NT EPA.

EMP characteristic	Yes / No
EMP style: is your EMP presented in a way that:	
Is accurate, clearly presented and unambiguous?	
Is auditable?	
Provides a well-defined and clear document structure?	
Presents information in tables, maps, plans and diagrams?	
References information sources?	
EMP content: does your EMP contain:	
Content and a level of information that is commensurate with the significance of an issue or level of risk?	
Clear statements of commitment?	
A project overview including clearly defined project scope?	
Key project contacts (EMP, emergency)?	
An outline of legal requirements, approval conditions and recommendations from any environmental impact assessment?	
An overview of the existing environment?	
A conceptual site model (CSM)?	
An environmental risk assessment that: <ul style="list-style-type: none"> • is informed by the CSM • justifies risk ranking • acknowledges uncertainty • justifies acceptable risk levels • is based on recognised risk standards 	
For each environmental aspect or issue: <ul style="list-style-type: none"> • environmental objective(s) • performance criteria • management actions • timing and responsibility for implementation 	
Corrective actions and contingencies?	
Clear monitoring objectives and a monitoring plan capable of achieving them?	
Reporting commitments, timing and responsibility?	
Audit commitments, timing and responsibility?	
EMP review commitments, timing and responsibility?	
Staff training and EMP awareness raising commitments?	

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A communication strategy for project implementation?	
EMP as a management tool: does your EMP:	
Define the relationship between the EMP and overall environmental management framework or system?	
Provide for the proper management of environmental risks?	
Provide for implementation of outcomes from the environmental impact assessment process?	
Provide for implementation of legislative requirements including conditions of approval?	
Utilise operational control plans to illustrate management measures?	
EMP preparation: have you:	
Consulted with stakeholders and documented the outcomes?	
Consulted with the NT EPA?	