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GOVERNMENT OF WESTERN AUSTRALIA

DEPARTMENT OF MINERALS AND ENERGY WESTERN AUSTRALIA

Information Series

Guidelines for Mineral Exploration and Mining within Conservation Reserves and Other Environmentally Sensitive Lands in Western Australia

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Number Eleven 11



Geologist undertaking magnetometer surveying in D'entrecasteaux National Park

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This information and other relevant publications are available on the Department of Minerals and Energy's Internet website at www.dme.gov.au

1. Introduction

Exploration and mining[1] for minerals is facilitated and administered by the Department of Minerals and Energy (DME) and is fundamental to the economic growth of the State. It is important however that mineral development does not create unacceptable environmental impacts.

This pamphlet provides advice on the procedures relating to the grant of *Mining Act 1978* tenements and the conduct of exploration and mining operations on them within Conservation Reserves and Other Environmentally Sensitive Lands in Western Australia. It is intended to reflect the State Government's policy for management of sensitive terrestrial environments and complements statutory requirements for the regulation of mineral exploration and mining in Western Australia.

This pamphlet covers only those mineral exploration and mining activities taking place on land. Petroleum and mineral exploration and development in the marine environment are not included. It is a revision of the information of Pamphlet No 11 issued in May 1995.

This pamphlet seeks:

- to inform the public on the system used by State Government for the evaluation of mineral exploration and mining proposals located in sensitive terrestrial environments;
- to provide uniform criteria for explorers and developers to address environmental constraints and issues;
- to provide an awareness of the need to protect and manage sensitive environments; and
- to provide a summary of conditions applied to *Mining Act 1978* tenements for mitigation of environmental impacts.

The guidelines are not all-embracing and, consequently there may be adjustments to meet specific situations as well as the changing requirements of other agencies involved in the decision making process.

2. Land Tenure

Land in Western Australia is held under a range of tenures with each having particular levels of access, security and land management provisions. In respect to the *Mining Act 1978*, land tenure involves the following types:

Crown Land (e.g. vacant Crown land, pastoral leases, grazing leases etc);

Reserved Land (e.g. national parks, nature reserves, conservation parks, State forests, townsites etc); and

Private Land (e.g. pre 1899 "Minerals-to-Owner" land, private (freehold/various leasehold) land).

This pamphlet does not cover private land. It refers only to Crown land where such land is environmentally sensitive and reserved land which is held for nature conservation purposes. These lands are described in Section 3. Land tenure as it applies to the *Mining Act 1978* is discussed further in Appendix 1.

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[1] Mining includes fossicking, prospecting, exploring for minerals and mining operations as defined in the *Mining Act 1978*.

3. What are Conservation Reserves and Other Environmentally Sensitive Lands?

3.1 Conservation Reserves

Conservation Reserves are Crown lands to which the *Conservation and Land Management Act 1984* applies (e.g. reserves and State forests). These lands are managed by the Department of Conservation and Land Management (CALM) and include the following categories:

national parks:
are for wildlife management and landscape conservation, scientific study, preservation of features of archaeological, historical or scientific interest, together with recreational enjoyment by the public. They have national or international significance for scenic, cultural or biological values.

nature reserves:
are specifically for wildlife and landscape conservation, scientific study and preservation of features of archaeological, historical or scientific interest.

conservation parks:
have the same purpose as national parks, but they do not have the same national or international significance. They have significant local or regional value for conservation and recreation.

State forests:
are managed for multiple purposes, including water catchment protection, recreation, timber production on a sustainable yield basis, and conservation. Provision is also made for public utilities and mineral production, where these activities are proposed. State forests have no classification, however any changes to the tenure of a State forest requires an Act of Parliament.

timber reserves:
are managed on the same basis as State forests. The category is transitional; as these reserves are evaluated they may be changed at a later stage to a more appropriate tenure (e.g. State forest or nature reserve). Timber reserves may be amended or cancelled by the Governor.

section 5 (g) reserves:
includes any reserve whether classified Class "A" or not under the repealed *Land Act 1933* or existing *Land Administration Act 1997*, not including any of the above. These reserves are mainly used for conservation, recreation, mineral resource development and infrastructure. In some cases land is reserved under this category with the intention of converting it to another conservation purpose category at a later date.

Vesting authorities for these Conservation Reserves include the National Parks and Nature Conservation Authority (NPNCA) responsible for national parks, nature reserves, conservation parks and the Lands and Forest Commission (LFC) responsible for State forests and timber reserves. 5(g) reserves may be vested in either body. The distribution of these lands is shown in Figure 1.

Marine parks, marine nature reserves and marine management areas are reserves established under the *Conservation and Land Management Act 1984*. CALM also manages land held as freehold or special purpose Crown leases in the name of the Executive Director, CALM. These lands are mainly used for timber production, conservation or recreation. These lands are sometimes intended to be converted to a conservation purpose category at a later date. Land held in the name of the Executive Director, CALM and marine parks, marine nature reserves and marine management areas are not discussed in this pamphlet.

3.2 Other Environmentally Sensitive Lands

The Department of Minerals and Energy (DME) encourages industry to be aware of the need to protect the environment outside gazetted conservation areas (e.g. on Crown land). It advocates attention to the following types of environmentally sensitive lands. The distribution of Environmentally Sensitive Lands is shown in Figure 1.

3.2.1 Proposed Reserves from CALM Regional Management Plans and Environmental Protection Authority (EPA) Red Book Areas

CALM is developing a comprehensive conservation reserve system for the State. The administrative framework for this system is provided in a series of draft and final management plans.

In addition, the EPA has proposed a range of Conservation Reserves (Red Book recommendations). When a final CALM Regional Plan is endorsed, related Red Book Recommendations areas are superseded by the CALM conservation categories. Red Book recommendation areas may currently be managed by CALM or other agencies.

Proposed reserves are reserves under consideration that have been endorsed by Cabinet or the Minister for the Environment.

3.2.2 Environmentally Sensitive Areas

There are also special areas referred to collectively as Environmentally Sensitive Areas (ESAs) that the Department of Minerals and Energy (DME), CALM, and the Department of Environmental Protection (DEP) have agreed warrant environmental protection. They include: rainforest areas (and associated rainforest monitoring sites), areas of declared rare flora, mangrove communities and important wetlands. These wetlands include Wetlands of International Importance defined under the Ramsar Treaty (other than those wetlands currently reserved), and Metropolitan Groundwater Mound Protection Areas and wetlands designated by the EPA under Environmental Protection Policies (e.g. Swan Coastal Plain Lakes).

ESAs are reviewed periodically to ensure that the mining industry is kept informed about boundary changes and their relevance to field activities associated with mineral exploration and mining.

3.2.3 CALM Pastoral Leases

Land held under pastoral lease is defined as Crown land for the purpose of the Mining Act 1978. The Minister for Mines may apply additional environmental terms and conditions on Crown land. Administratively, CALM-managed pastoral leases are treated as proposed reserves where the stations are multiple use areas. Consequently CALM is consulted by DME whenever mineral exploration or mining operations are proposed on these leases.

Where a CALM pastoral lease progresses or has been approved by Cabinet to progress to a reserve status (e.g. State Forest), then the appropriate conditions (e.g. Schedule D or E as depicted in Appendix 2), will be applied.

4. Statutory Requirements

4.1 Mining Act 1978

Mineral exploration and mining in Western Australia is administered under the ***Mining Act 1978***. It is through the administration of this Act that mineral explorers can gain appropriate approvals for access to mineral resources on Crown land including Conservation Reserves and Other Environmentally Sensitive Lands.

It is DME's responsibility to ensure that the orderly development of Western Australia's mineral resources provides the optimum economic and social benefits to the community. This responsibility includes ensuring that measures are taken to protect the natural and built environments and where necessary to rehabilitate ground disturbed by exploration and mining activities. There are provisions within the Act that seek to protect the environment from impacts associated with these activities. These provisions are outlined further in sections 5.3.2, 5.3.3 and 5.3.4.

Explorers and developers can gain access to mineral resources through the grant of mining tenements that include the following types:

Exploration Licences (E);

Prospecting Licences (P);

Special Prospecting Licences (SPL);

Mining Leases (M);

Retention Licences (R);

General Purpose Leases (G); and

Miscellaneous Licences (L).

Further information on application for these mining tenements and requirements under the Mining Act 1978 is outlined in DME's information series pamphlet No.1 entitled "Basic Provisions of the Mining Act 1978". Copies are available from DME's Head Office and all Regional Offices as well as at DME's website address (www.dme.gov.au).

4.1.1 Section 19 exemption

The Minister for Mines, under section 19 of the Mining Act 1978, may exempt any Crown land from exploration and/or mining. All other lands are open to exploration and mining subject to varying degrees of environmental assessment, and associated controls and conditions.

4.2 Other Relevant State Legislation

The development of the State's mineral resources may be subject to provisions under other legislation such as the following State legislation:

Mines Safety and Inspection Act 1994;

Explosives and Dangerous Goods Act 1963;

Soil and Land Conservation Act 1945;

Conservation and Land Management Act 1984;

Wildlife Conservation Act 1950;

Environmental Protection Act 1986;

4.2 Other Relevant State Legislation (Continued)

Bushfires Act 1954-77;

Rights in Water and Irrigation Act 1914;

Land Administration Act 1997;

Aboriginal Heritage Act 1972;

Local Government Act 1995; and

Metropolitan Development Act 1959.

4.3 Relevant Commonwealth Legislation

Commonwealth legislation applies only where Commonwealth decisions are required e.g. native title, foreign investment and uranium export. Relevant Commonwealth legislation includes:

Native Title Act 1993;

Environmental Protection (Impact of Proposals) Act 1974;

Australian Heritage Commission Act 1975; and

Endangered Species Protection Act 1992.

4.4 International Treaties

International Treaties may also need to be considered during project planning. These include:

Convention on Wetlands of International Importance Especially as Waterfowl Habitat - (commonly known as the Ramsar Convention);

Japan-Australia Migratory Birds Agreement (JAMBA); and

China-Australia Migratory Birds Agreement (CAMBA).

5. Environmental Management in Mineral Exploration and Mining

It is the responsibility of DME and other responsible parties, such as CALM and the DEP, to ensure that access to sensitive environments for mineral exploration and mining is in accordance with State Government policy for the management and protection of these areas. Best practice environmental management of mineral exploration and mining activities is encouraged and operators must have a commitment to protect the environment. Section 5 provides an outline of environmental management measures put in place by Government to assist the mining industry in achieving best environmental practice.

5.1 Consultative Procedures for Mineral Exploration and Mining within Conservation Reserves and Other Environmentally Sensitive Lands

A Memorandum of Understanding (MOU) agreed to in April 1995 between the EPA and DME with the involvement of CALM clarifies the arrangements for referral of mineral exploration and mining proposals to the EPA and CALM where these proposals occur within Conservation Reserves and Other Environmentally Sensitive Lands.

These referrals ensure that the State government agencies responsible for land management and environmental protection are consulted and advice sought prior to tenements being granted or operations being approved by the DME where such activities have the potential to create significance disturbance. The referral arrangements are set out in detail in Table 1.

The consultative procedures involving CALM, the NPNCA and the LFC identified in Table 1 are based on section 24 of the *Mining Act 1978*. This requires that the Minister for the Environment give his/her **concurrence** for mineral exploration and mining activities in all national parks, and all Class "A" nature reserves and Class "A" designated conservation parks which are situated within the South West Division of the State or within the Shires of Esperance or Ravensthorpe. In the case of grant of Mining Leases and General Purpose Leases for the above reserve categories[2], the consent of both Houses of Parliament is required.

The Minister for the Environment is also required to give his/her **recommendation** for activities in nature reserves (other than Class "A"), all conservation parks which reside outside the South West Division of the State and outside the Shires of Esperance and Ravensthorpe as well as those conservation parks located within these areas that are not designated Class "A"; his/her **concurrence** for activities in State forests and timber reserves located within the South West Mineral Field; and his/her **recommendation** for activities in State forests and timber reserves[3] in the remainder of the State.

In the case of national parks and Class "A" nature reserves and Class "A" designated conservation parks (south west) the DEP will be notified or informed by DME about tenement applications referred to CALM and the NPNCA. This notification will not be treated as a formal referral to EPA until such time that the NPNCA has decided on its approach to the tenement application. If a third party refers a tenement application to the EPA, the EPA will seek further information to determine the environmental significance of the proposal, including the advice of the NPNCA, CALM and the DME prior to considering a level of assessment.

Requirements for DME referrals to the EPA for mining proposals are outlined further in section 5.4.3.

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[2] Land in these reserve categories may only be marked out with the consent of the Minister for Mines and the responsible Minister.

[3] Land in these reserve categories within the South West Mineral Field may only be marked out in accordance with such conditions and restrictions prescribed under section 128 of the CALM Act 1984.

The application for, and/or grant of, a ***Mining Act*** tenement may confer rights of access but does not itself have an impact on the natural environment. The consultative procedures outlined in the MOU ensure that appropriate conditions for the prevention of environmentally significant impacts are formulated and applied.

The MOU is not a formal delegation of powers under the ***Environmental Protection Act 1986*** however it provides an administrative understanding concerning which proposals will be forwarded to the EPA and at what stage the referral is made. The DEP acts on behalf of the EPA in terms of performing administrative and procedural arrangements that are required under the MOU. The EPA is an independent authority reporting to the Minister for the Environment on proposals that have significant environmental impact issues. The EPA does not abrogate its responsibilities in regard to environmental assessment and any proposal may be referred to the EPA at any time.

5.2 What is disturbance?

The definition of what constitutes disturbance for mineral exploration and mining has been formulated under the MOU. Disturbance associated with mineral exploration and mining may be of two types:

(i) Low impact disturbance

Types of activities that usually create little or no environmental disturbance, if carried out in accordance with standard environmental conditions, include:

- Airborne surveys;
- Satellite imaging;
- Reconnaissance in light vehicles, including limited off-road access where approved;
- Geophysical work (for example, magnetometer surveys), especially if carried out on foot, by helicopter or where approved with limited off-road access;
- Geochemical work including collection of small samples (<20kg) especially if collected on foot or with limited off-road access;
- Scout drilling on existing roads, tracks and approved management access routes.

Depending on location, vegetation type, time of year and degree of current road access and vehicle/tyre configuration, the following additional activities may be approved by the management authority which is responsible for management of the land in question.

- Scout drilling off-road using drills mounted on low impact vehicles such as a bobcat, four wheel drive off-road tractor or other similar low ground-pressure off-road unit. Off-road low impact-environmental disturbance activity should be such that, with the passage of a short period of time the disturbance could not be seen, or following a wildfire event the access routes would be very difficult to distinguish from the surrounding landscape.
- Due to the large area covered by some conservation reserves, camping for field parties will be permitted on a limited basis in areas approved by the management authority, or by DME when land involved is unvested.

(ii) Environmental disturbance

Types of activities that have potential for environmental disturbance include:

- Constructing drilling access involving damage to vegetation or soils;
- Constructing gridlines cleared by dozing or grading; and
- Conducting excavations such as:
  - costeans or trenches;
  - exploration shafts; and
  - declines.

5.3 How is Disturbance Managed?

Mechanisms currently in place for management of disturbance associated with mineral exploration and mining within Conservation Reserves and Other Environmentally Sensitive Lands are discussed below. They include reference to the assessment system under the *Environmental Protection Act 1986* and the *Mining Act 1978*, in particular: conditions; ground disturbance approvals; and Notices of Intent.

5.3.1 Environmental Protection Act 1986

The *Environmental Protection Act 1986* provides for the prevention, control and abatement of environmental pollution, for the conservation, preservation, protection, enhancement and management of the environment. The Act applies to all proposals including mineral exploration and mining that are likely to have significant environmental impact.

Part IV of the Act (Environmental Impact Assessment) provides a way in which independent environmental advice can be given to State government so it can properly decide the balance between environment and development on the basis of a range of advice covering political, environmental, economic, social and cultural issues. Through Part V of the Act (Pollution Prevention), pollution control for mining proposals is regulated via Works Approvals (to allow construction on a premise) and licences (to allow for the operation of the works).

5.3.2 Environmental conditions as a means of environmental management

Under the *Mining Act 1978,* **conditions** are placed on tenements to minimise impacts on the environment. Depending on the land involved, these conditions are developed in consultation with other State government agencies such as the Water and Rivers Commission, the DEP, the EPA, CALM, and vesting authorities including the NPNCA, and the LFC.

The environmental conditions placed on Mining Act tenements are dependent on both the type of land tenure and proposed activity. These conditions are continually under review and are supplemented and varied using the results of both industry and government research. Additional conditions for environmental protection may be applied during the life of the tenement.

The *Mining Act 1978* also provides a means of policing mining operations. Under this Act environmental inspectors may issue directions for tenement holders to modify their operations and, in extreme cases, to stop work. Tenement holders who do not comply with directions commit an offence and are liable to a fine or their tenement could be forfeited.

The DME also places **endorsements** on granted tenement titles. These endorsements advise tenement holders of their requirements under other Acts in respect to environmental protection. These Acts include the *Environmental Protection Act 1986*, the *Conservation and Land Management Act 1984*, the *Wildlife Conservation Act 1950*, the *Bushfires Act 1954* and the *Aboriginal Heritage Act 1972-1980*.

Appendix 2 presents the standard conditions and endorsements developed for approved tenements located within Conservation Reserves (existing and proposed) and Other Environmentally Sensitive Lands.

5.3.3 Exploration ground disturbance approvals

If surface disturbance using mechanical equipment will occur then lodgement of a ground disturbing approval application form is required to be submitted to DME. Consultation with DEP and CALM may also be required, depending on the tenement conditions.

This form is used by the tenement operator to detail: a description of exploration work to be undertaken; total area disturbed (hectares); existing land tenure; existing environment; methods for minimising disturbance; and rehabilitation practices to be adopted. DME's Mining Operations Division then assesses these.

Further details on specific requirements for exploration and prospecting are available from the Mining Operations Division.

5.3.4 Notice of Intent requirements

DME and other relevant State government agencies must review any mineral exploration or mining activity that involves environmental disturbance. For any new mining project or major new development associated with an existing operation, the State Mining Engineer requires written approval. A Notice of Intent (NOI) is therefore required to be lodged with DME. NOI's are approved by the State Mining Engineer.

A NOI details the type of operation to be conducted and what environmental controls and rehabilitation procedures will be undertaken. Through this process all relevant environmental factors should be addressed and appropriate conditions are applied, thus minimising the risk of environmental degradation.

Projects that result in significant disturbance to the surface of the land that requires restoration and rehabilitation will require submission of an unconditional performance bond to DME prior to approval being given. These bonds are intended to give the State recourse to funds so that rehabilitation works can be undertaken on a mining tenement to meet the requirements of the environmental conditions imposed on the tenement. The bond itself will be a condition placed on the tenement.

The amount of the initial bond is calculated on the area of land that will be disturbed during the first year of operation and which requires rehabilitation.

The bonds placed on operations are reviewed annually and increased or decreased depending on the extent of land disturbed and rehabilitation undertaken. Retirement of bonds will only be considered once the tenement holder has submitted a compliance audit to the DME for assessment.

In addition to an NOI being a means of obtaining the necessary government approvals, it should be used as a tool to assist operators with on-site environmental management issues. In particular, the NOI should relate to the on-site environmental management program with respect to the criteria to be used for completion, decommissioning and closure of the project.

NOI's for projects situated in sensitive environments (or being rated by DME as being above a certain scale of operation causing significant disturbance), are referred to the EPA for assessment. However the EPA may call in any proposal for assessment at any time.

Guidelines on how to prepare an NOI are available from the Mining Operations Division of DME. To assist planning in environmental management in arid areas of WA, a DME publication titled "***Guidelines for Environmental Management of Mining in Arid Areas***" is also available. Both guidelines are also available at DME's website address.

5.4 Evaluation Process for Referral of Mining Act Tenements within Conservation Reserves and Other Environmentally Sensitive Lands

DME in consultation with the DEP, EPA and CALM has set in place a process for evaluation of proposals located within Conservation Reserves and Other Environmentally Sensitive Lands. Table 1 summarises the agreed referral mechanisms employed by DME for Mining Act tenements in these areas.

5.4.1 Resource assessment of Mining Act tenement applications within National Parks, Class "A" Nature Reserves and Class "A" Conservation Parks (South West)

To assist in gaining approval for tenement applications in national parks, Class "A" nature reserves and Class "A" conservation parks (south west), explorers and developers are required to submit a description of the proposed exploration program or mining project including an overview of management of the potential environmental impacts associated with the proposed program or project.

In the case of mining, DME recommends that a Preliminary Mining Proposal Statement (similar to a Notice of Intent), be prepared by the developer to assist DME and CALM in assessing the potential for environmental impact on the conservation values of the national park, nature reserve or conservation park. Requirement for a Preliminary Mining Proposal Statement may also be applied to other parts of the conservation estate at the discretion of DME and/or CALM. An example of a Preliminary Mining Proposal Statement is provided in Appendix 3.

In the case of exploration, a DME geologist will prepare an assessment of the proposed exploration program in the context of the geology and resource potential of the entire national park, nature reserve or conservation park. This assessment report will include a map of the geology and mineral resources of the area. The report will include reference to previous studies of flora and fauna in the national park, nature reserve or conservation park. DME will forward the details of the company's proposed program together with its own assessment report to CALM.

CALM will then evaluate this information and make an appropriate recommendation to their Minister and liaise with DME.

5.4.2 Mining Act tenement encroachments within Reserved Land

If there is an encroachment or overlap (in general less than 50 percent) of a Mining Act tenement application within reserved land including Conservation Reserves listed in section 3.1, the tenement will be granted with a ***no mining*** (e.g. no access to explore or mine) condition on the encroaching area unless otherwise indicated by the applicant, rather than excising that portion of the tenement from the ground applied for.

Where DME has information that mineral exploration access is warranted on a conservation reserve associated with an exploration tenement application, this advice would accompany the referral to CALM, DEP or the EPA.

The applicability of the ***no-mining*** condition is outlined further in DME's Information Series Pamphlet No.17. This publication is available from the First Floor Public Counter Head Office, Perth, and at DME's website address.

5.4.3 DME referrals to EPA

Under the provisions of Part IV (Environmental Impact Assessment) of the *Environmental Protection Act 1986*, a proposal whether it be for exploration, mining or other purpose, that appears likely, if implemented, to have a significant effect on the environment (i.e. high levels of environmental disturbance), will be referred to the EPA for assessment. Under section 41 of the *Environmental Protection Act 1986*, DME is unable to give approval until requirements of the *Environmental Protection Act 1986* have been met.

The Evaluation Division of the DEP administers the referral and assessment process under Part IV of the Act. The Pollution Prevention Division of the DEP administers the Works approval and licensing assessment and approvals process under Part V of the Act. A flowchart of the EPA's evaluation process is shown in Appendix 4.

Under the *Environmental Protection Act 1986*, **referral** implies that a proposal will be sent to the EPA for determination of level of assessment. The EPA may request the referral of a proposal at any time, and the proponent or a third party may also refer proposals to the EPA. For conservation reserves CALM may recommend a referral to the EPA if there is a significant environmental potential associated with the proposal.

In conjunction with the consultative procedures set out in Table 1, the EPA and the DME have jointly agreed on a number of criteria used to determine if a mining proposal (e.g. for mineral development or construction) requires referral to the EPA. These criteria are contained in the following box.

Criteria List For Consultation With The EPA Regarding Referrals Of Mining Proposals.

- *Referrals from DME under Part IV (Environmental Impact Assessment) of the Environmental Protection Act include*:
  - (i) wholly or partly within a declared occupied townsite or within 2 kilometres of the boundary of an occupied townsite;
  - (ii) wholly or partly within, or less than 2 kilometres from the boundary of a national park, nature reserve, conservation park, State forest or EPA Red Book areas and proposed reserves which have been endorsed by State Government;
  - (iii) wholly or partly within, or less than 1 kilometre from any other reserve (with the exception of mining and designated "Public Utility" reserves and Commons)
  - (iv) wholly or partly located within a declared water supply catchment area or groundwater protection area;
  - (v) wholly or partly within 2 kilometres of the coast, or an estuary;
  - (vi) likely to have an effect upon an important wetland including Environmental Protection Policy (EPP) Lakes;
  - (vii) within 250 metres of any historical, archaeological or ethnographic site;
  - (viii) extracting from an open pit or underground operation in excess of 2 000 000 tonnes of ore per annum;
  - (ix) on pre-1899 Crown Grant lands and consequently not subject to the Mining Act 1978;
  - (x) statutory referrals under Section 25 of the Mining Act 1978 (navigable waters).
- *Referrals made by DME under Part V (Control of Pollution) of the Environmental Protection Act*

In October 1996 the DEP introduced new Regulations for Works Approvals and Licensing under Part V of the Act. Further information on provisions and requirements for Works Approvals and Licensing under Part V of the Act are available from the Pollution Prevention Division of the DEP. The Mining Operations Division of the DME will confirm if a proposal is exempt from Works Approval and Licensing provisions.

5.5 Monitoring Mechanisms for Environmental Management

Monitoring is an important tool that can measure capability of the environment to handle impacts associated with mineral exploration and mining. In high conservation value areas such as Conservation Reserves, monitoring should be used by companies as part of their environmental management program.

DME ensures that companies adhere to environmental controls by requesting lodgement of an Annual Environmental Report (AER) where mining projects have a lifespan of more than two years.

5.5.1 Annual environmental reporting

Tenement conditions for mining proposals requires that an AER be lodged with DME for assessment of the project in terms of environmental management.

The objectives of the AER are to:

- document major mining activities for the reporting year and proposed activities for the following year;
- document environmental management and rehabilitation activities for the reporting year and proposed activities and developments for the following year;
- assist companies in monitoring their own performance;
- assist in the preparation of a completion report and audit for the DME on cessation of operations; and
- provide basic information to DME about the extent of mining operations in the State and the standard of environmental management being achieved.

DME's *"Guidelines for the Preparation of an Annual Environmental Report"* is available from the Mining Operations Division as well as at DME's website address.

5.5.2 Monitoring and reporting by DME and EPA on tenement referrals within Conservation Reserves and Other Environmentally Sensitive Lands

DME has a responsibility to monitor environmental impacts associated with mineral exploration and mining. Under the terms of the MOU (April 1995) between the EPA and the DME, each agency is required to monitor performance and determine the effectiveness of the referral mechanism for mineral exploration and mining proposals within Conservation Reserves and Other Environmentally Sensitive Lands.

DME is achieving this by keeping numerical records of:

- all tenement applications and granted tenements within Conservation Reserves and Other Environmentally Sensitive Lands, and brought to the attention of the DEP and the EPA by the DME; and
- all NOIs received by the DME for developmental and productive mining and construction proposals, and those referred to the EPA.

The EPA maintains an independent numerical record of all mineral exploration and mining proposal referrals and notifications.

These records are compared annually to verify the effectiveness of the evaluation process for mineral exploration and mining in environmentally sensitive locations and make recommendations to improve the system.

5.6 Guidelines and Codes of Practice for Environmental Management

Information series pamphlets are produced by DME in consultation with other government agencies to assist industry in protecting the environment and provide guidance on operating in environmentally sensitive locations. Examples include:

- Prospecting, Exploration and Mining on Pastoral Leases (No. 5).
- Guidelines for Management of Dieback in Mineral Exploration (No. 9);
- Managing Declared Rare Flora in Mineral Exploration and Mining (No. 16).

A detailed list of DME's current publications is available from the First Floor Public Counter Head Office, Perth, and at DME's website address.

The Chamber of Minerals and Energy of Western Australia has a code of practice for exploration in environmentally sensitive areas. Its aim is to promote responsible land-use practices during mineral exploration and preserve future land-use opportunities. This Code together with other Chamber publications is available at the Chamber's website address (http://www.minerals.wa.asn.au).

6. Community Consultation and Public Access to Information

Community consultation and public access to information in the review and assessment of developmental proposals provides an opportunity for consideration of issues of relevance to the community that may be either directly or indirectly associated with a proposal. DEP on behalf of EPA, and DME have a responsibility to provide the necessary information to the community.

6.1 Approach used by EPA/DEP

Public involvement is an important part of the formal Environmental Impact Assessment process. Referrals to EPA are advertised weekly in the Saturday's *West Australian*.

6.2 Approach used by DME

A public record is kept at DME of all *Mining Act* tenements and new applications. Information can be obtained by ringing (08) 9222 3333 or facsimile (08) 9222 3640. NOI summary pages are available to the public from DME and DEP head and regional offices.

In addition, all tenements are advertised in the *West Australian* on Wednesdays and the advertisement is repeated in the *Kalgoorlie Miner*. This coverage ensures that mining notices are readily available to the community on a regular basis.

7. Acknowledgements

These guidelines have been prepared by officers of the Land Access Unit - Corporate Resources Division, and the Mineral Titles Division of the Department of Minerals and Energy, in collaboration with the Department of Conservation and Land Management and the Department of Environmental Protection.

Desktop production provided by Corporate Policy, Planning and Finance Division.

Acronyms and Abbreviations

AER Annual Environmental Report

CALM Department of Conservation and Land Management

DEP Department of Environmental Protection

DME Department of Minerals and Energy

DRF Declared Rare Flora

EPA Environmental Protection Authority

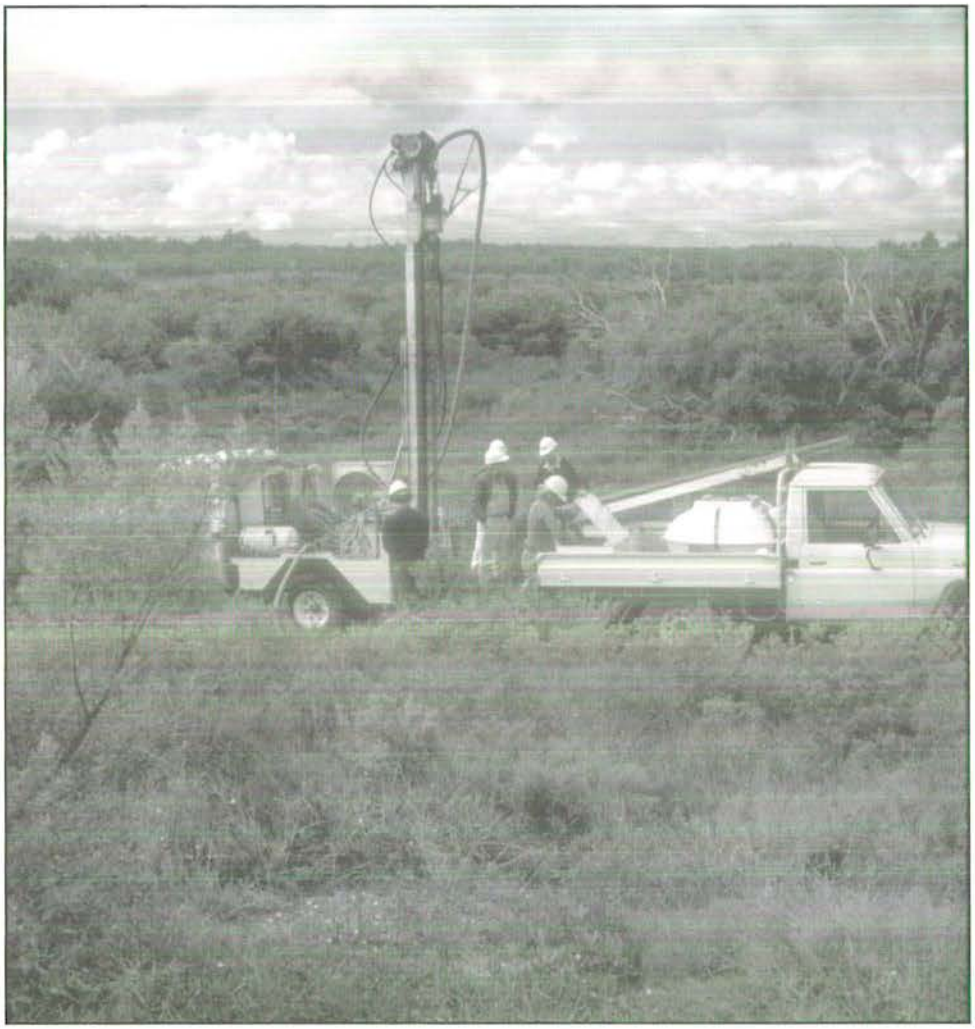
LFC Lands and Forest Commission

MOU Memorandum of Understanding

NOI Notice of Intent

NPNCA National Parks and Nature Conservation Authority

TENGRAPH™ Computer database of graphical and textual mining tenement information



Rig drilling on dune at Minnimup for Heavy Mineral Sands

Table 1 **Referral Procedures for Mining Act tenements within Conservation Reserves and Other Sensitive Lands**

Table 1

Referral Procedures for Mining Act Tenements within Conservation Reserves and Other Environmentally Sensitive Lands

LAND TENURE

Tenement	National Parks	Class "A" Nature Reserves and Class "A" Conservation Parks (South West) Notes (a) (b)	Nature Reserves and Conservation Parks Notes (a) (c)	State Forests and Timber Reserves in South West Mineral Field	State Forests and Timber Reserves Outside South West Mineral Field	Red Book Recommendation Areas and Proposed Reserves Notes (d) (e)	Environmentally Sensitive Areas Note (f)
Grant of Prospecting; Exploration and Retention Licences (low impact disturbance)	. Assess by DME . Refer to CALM & NPNCA . DEP notified (not referred to EPA) Note (g) . Min. for Environment concurrence . A1 Conditions Note (h)	. Assess by DME . Refer to CALM & NPNCA . DEP notified (not referred to EPA) Note (g) . Min. for Environment concurrence . A1 Conditions Note (h)	. Refer to CALM & NPNCA . Min. for Environment recommendation . A1 Conditions Note (h)	. Refer to CALM (& LFC via CALM) . Min. for Environment concurrence . B Conditions Note (h)	. Refer to CALM (& LFC via CALM) . Min. for Environment recommendation . D Conditions Note (h)	. A2 conditions . CALM notified on grant . EPA notified if area not to be managed by CALM . DRF or Important Wetland or Rainforest Area endorsement as appropriate after conferring with CALM, DEP as necessary	. A2 Conditions . DRF or Important Wetland or Rainforest Area endorsement as appropriate after conferring with CALM, DEP as necessary
Prospecting & Exploration activity (environmental disturbance) Note (i)	. Refer to CALM & NPNCA . DEP notified . Refer to EPA if required by CALM . Forward to DEP for information for subsequent stages	. Refer to CALM & NPNCA . DEP notified . Refer to EPA if required by CALM . Forward to DEP for information for subsequent stages	. Refer to EPA if required by CALM	. Refer to CALM . Refer to EPA if required by CALM	. Refer to CALM . Refer to EPA if required by CALM	. Informal liaison with CALM (or DEP) prior to DME approval . Refer to EPA if required by CALM (or DEP)	. According to tenement conditions. Refer to EPA, CALM as required
Grant of Mining Lease (low impact disturbance)	. Assess by DME . Refer to CALM & NPNCA . NOI required by DME & CALM . EPA assessment	. Assess by DME . Refer to CALM & NPNCA . NOI required by DME & CALM . EPA assessment	. Assess by DME . Refer to CALM & NPNCA . NOI required by DME & CALM . Refer to EPA if significant impact (MOU) Note (j)	. Refer to CALM . Min. for Environment concurrence . C Conditions	. Refer to CALM . Min. for Environment recommendation . E Conditions	. CALM notified on grant . EPA notified if area not to be managed by CALM . G conditions	. Conditions as appropriate after conferring with CALM, DEP as necessary
Mining activity (environmental disturbance) Note (i)	. Parliamentary concurrence required for grant of title with conditions set . F conditions apply	. Parliamentary concurrence required for grant of title . F conditions apply	. Min. for Environment recommendation . F conditions apply	. Refer to CALM (& LFC via CALM) . NOI required by DME & CALM . Refer to EPA if significant impact (MOU) Note (j)	. Refer to CALM (& LFC via CALM) . NOI required by DME & CALM . Refer to EPA if significant impact (MOU) Note (j)	. NOI required by DME . CALM consulted prior to approval . Refer to EPA if significant impact (MOU) Note (j)	. NOI required by DME . Refer to EPA if significant impact (MOU) Note (j)
General Purpose Leases	as per mining lease	as per mining lease	as per mining lease	as per mining lease	as per mining lease	as per mining lease	as per mining lease
Miscellaneous Licences Note (k)	Case by case basis - DME refers to EPA only if potential significant environmental impact						

Explanatory Notes:

In accordance with the *Environmental Protection Act 1986*, any proposal can be referred to the EPA at any time. Definitions used in the table concerning DEP/EPA involvement include ***Refer*** which means formal referral under the *Environmental Protection Act 1986*; ***Notified*** which means that DEP is advised of an issue but there is no formal referral made; and ***Forwarded*** which means details on mineral exploration program are sent to the DEP for information.

Note (a) Class "A" 5(g) reserves in the South West Land District have the same consultative procedures (e.g. Ministerial approvals) as for:-

- Class "A" nature reserves; and
- Class "A" designated conservation situated **within** the South West Division of the State or **within** the Shires of Esperance and Ravensthorpe.

Other 5(g) reserves have the same procedures (e.g. Ministerial approvals) as for:-

- Nature reserves (other than Class"A");
- Includes all conservation parks **outside** the South West Division of the State and **outside** the Shires of Esperance and Ravensthorpe.

These procedures are consistent with section 24 of the *Mining Act 1978*.

Note (b) Class "A" Conservation Parks (South West) refers to:-

- Class "A" designated conservation parks situated within the South West Division of the State or **within** the Shires of Esperance and Ravensthorpe.

Note (c) This refers to:-

- Nature reserves (other than Class "A") under the *Land Administration Act 1997* and the repealed *Land Act 1933*; and
- Includes all conservation parks **outside** the South West Division of the State and **outside** the Shires of Esperance and Ravensthorpe as well as those located **within** these areas that are not designated Class "A".

Note (d) Proposed reserves are reserves under consideration that have received Government endorsement (e.g. within final CALM management plans).

Note (e) If proposed reserve occurs over State forest then that tenure applies and Schedule B conditions are imposed.

Note (f) Environmentally Sensitive Areas as agreed between DME, EPA or CALM and marked on public plans and in Tengraph.

Note (g) If referred by member of the public, EPA will obtain further advice from NPNCA/ LFC and DME before deciding on assessment.

Note (h) Apply **"No Mining"** (e.g. no access to explore or mine) condition for minor overlaps if not important to applicant. Notify CALM after grant.

Note (i) Definition of environmental disturbance is based on an agreed list developed between CALM, EPA and DME. Criteria for environmental disturbance is outlined further in Section 5.2 of pamphlet.

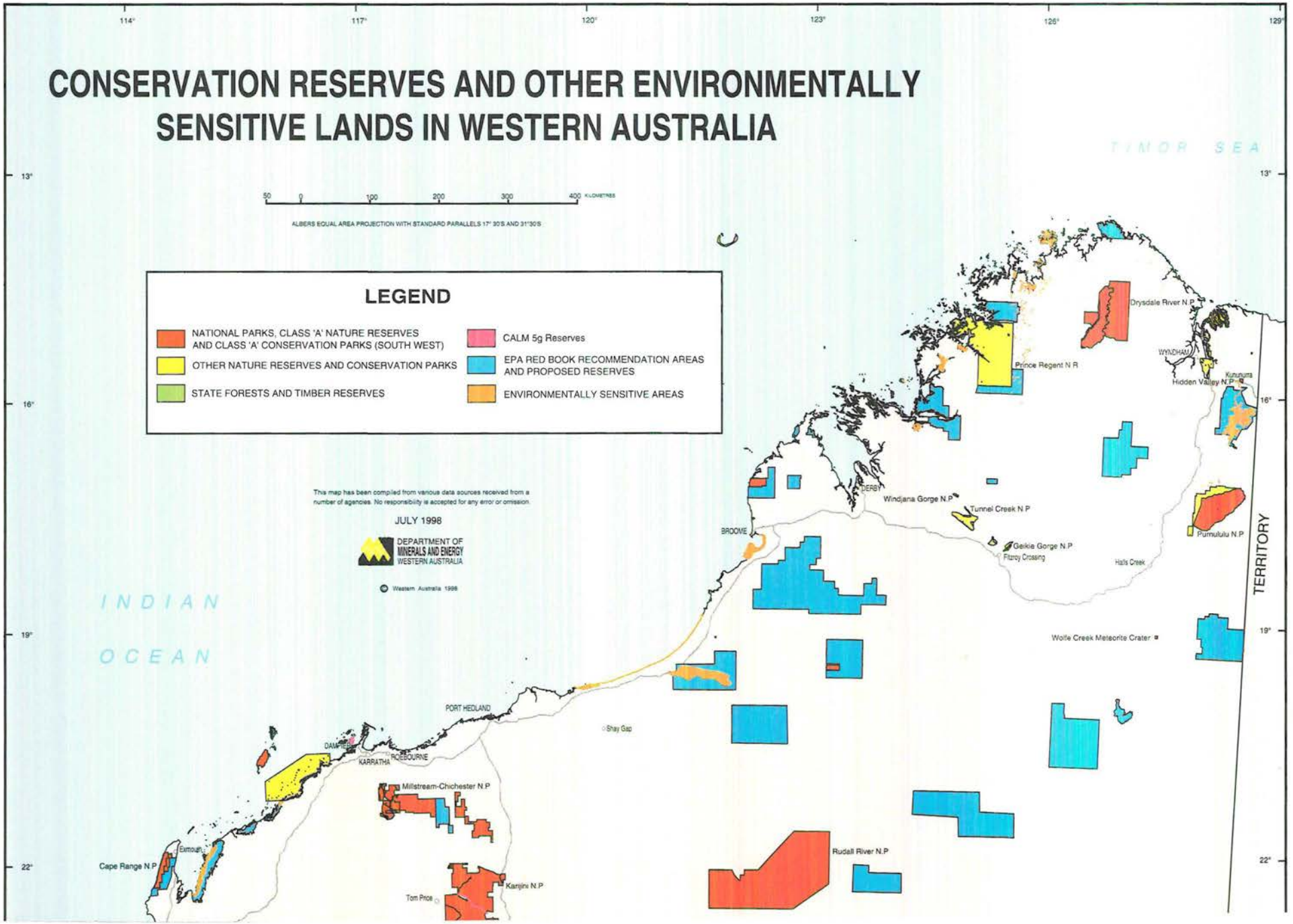
Note (j) MOU refers to Onshore Minerals Memorandum of Understanding between DME and EPA (1995).

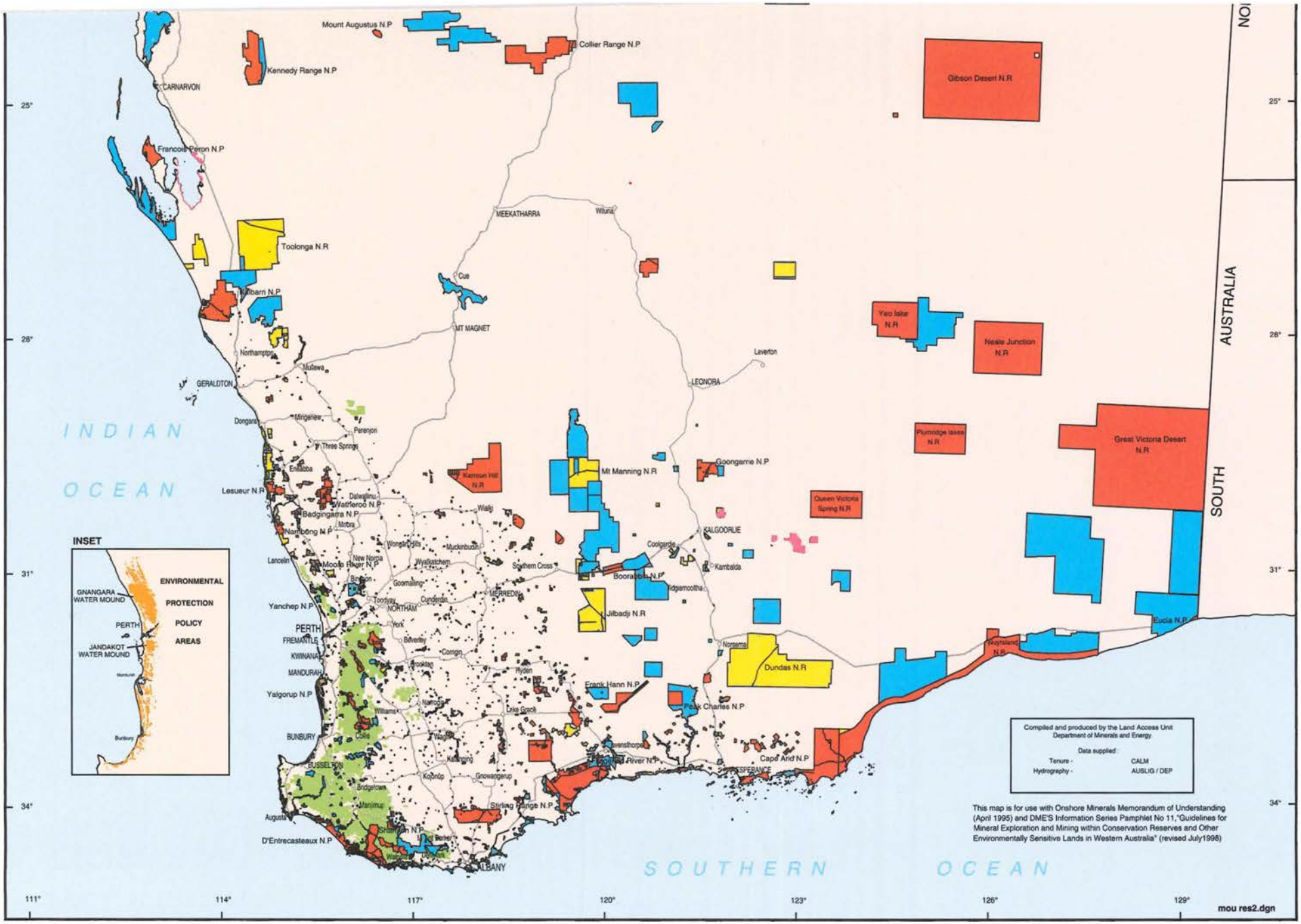
Note (k) Miscellaneous licences for infrastructure purposes have environmental conditions imposed as the result of negotiations with CALM and/or DEP.



Helicopters can be used for reconnaissance, geological sampling and detailed aeromagnetic surveys

Figure 1 **Map showing geographical extent of Conservation Reserves and Other Environmentally Sensitive Lands in Western Australia**


CONSERVATION RESERVES AND OTHER ENVIRONMENTALLY SENSITIVE LANDS IN WESTERN AUSTRALIA
114°
117°
120°
123°
126°
129°
13°
16°
19°
22°
50 0 100 200 300 400 KILOMETRES
ALBERS EQUAL AREA PROJECTION WITH STANDARD PARALLELS 17° 30'S AND 31°30'S
LEGEND
NATIONAL PARKS, CLASS 'A' NATURE RESERVES AND CLASS 'A' CONSERVATION PARKS (SOUTH WEST)
OTHER NATURE RESERVES AND CONSERVATION PARKS
STATE FORESTS AND TIMBER RESERVES
CALM 5g Reserves
EPA RED BOOK RECOMMENDATION AREAS AND PROPOSED RESERVES
ENVIRONMENTALLY SENSITIVE AREAS
This map has been compiled from various data sources received from a number of agencies. No responsibility is accepted for any error or omission.
JULY 1998
DEPARTMENT OF MINERALS AND ENERGY WESTERN AUSTRALIA
© Western Australia 1998
TIMOR SEA
INDIAN OCEAN
TERRITORY
Drysdale River N.P
Prince Regent N.R
WYNDHAM
Kununurra
Hidden Valley N.P
DERBY
Windjana Gorge N.P
Tunnel Creek N.P
BROOME
Geikie Gorge N.P
Fitzroy Crossing
Halls Creek
Purnululu N.P
Wolfe Creek Meteorite Crater
PORT HEDLAND
Shay Gap
DAMPIER
KARRATHA
ROEBOURNE
Millstream-Chichester N.P
Exmouth
Cape Range N.P
Tom Price
Karijini N.P
Rudall River N.P


Mount Augustus N.P
Collier Range N.P
Kennedy Range N.P
CARNARVON
Gibson Desert N.R
Francois Peron N.P
Toolonga N.R
Cue
MEEKATHARRA
Wiluna
MT MAGNET
Yeo lake N.R
Neale Junction N.R
Laverton
LEONORA
GERALDTON
Mullewa
Northampton
Dongara
Mingenew
Perenjori
Three Springs
Eneabba
Lesueur N.P
Watheroo N.P
Badgingarra N.P
Moora
Nambung N.P
Karroun Hill N.R
Mt Manning N.R
Goongarrie N.P
Plumridge lakes N.R
Great Victoria Desert N.R
Queen Victoria Spring N.R
KALGOORLIE
Coolgardie
Kambalda
Boorabbin N.P
Yilgarnooltha
Jilbadji N.R
Eucla N.P
Nuytsland N.R
Dundas N.R
Norseman
Frank Hann N.P
Peak Charles N.P
Cape Arid N.P
Lake Gnarli
Stirling Range N.P
Augusta
D'Entrecasteaux N.P
ALBANY
SOUTHERN OCEAN
INDIAN OCEAN
AUSTRALIA
SOUTH
INSET
ENVIRONMENTAL PROTECTION POLICY AREAS
GNANGARA WATER MOUND
PERTH
JANDAKOT WATER MOUND
Bunbury
Lancelin
Moore River N.P
Yanchep N.P
PERTH
FREMANTLE
KWINANA
MANDURAH
Yalgorup N.P
BUNBURY
BUSSELTON
Margaret River N.P
Yeagarup
Manjimup
Walpole
Nornalup N.P
Compiled and produced by the Land Access Unit
Department of Minerals and Energy
Data supplied :
Tenure - CALM
Hydrography - AUSLIG / DEP
This map is for use with Onshore Minerals Memorandum of Understanding (April 1995) and DME'S Information Series Pamphlet No 11,"Guidelines for Mineral Exploration and Mining within Conservation Reserves and Other Environmentally Sensitive Lands in Western Australia" (revised July1998)
mou res2.dgn
25°
28°
31°
34°
111°
114°
117°
120°
123°
126°
129°

Appendix 1

Land Tenure in Western Australia

Under the *Land Administration Act 1997*, which replaces the repealed *Land Act 1933*, land may be reserved for one or more purposes in the public interest. The Act also provides that the more important reserves may be classified as Class "A" that then requires the approval of both Houses of Parliament for any significant changes to the reserve. Reserves not designated as Class "A" have no classification and can be changed by the Minister responsible for the *Land Administration Act 1997*.

Under the repealed *Land Act 1933*, reserved land was categorised as one of three classes.

Class A - where tenure could only be changed by agreement of both Houses of the WA Parliament;

Class B - where tenure could be changed by the Governor of WA without approval by Parliament. However, the reasons for any change were to be reported to Parliament by the Minister for Lands; and

Class C - where tenure could be changed by the Governor, without reference to Parliament. Any changes however, were required to be published in the Government Gazette.

Existing reserves and classifications under the repealed *Land Act 1933*, have been dealt with under the Transitional and Savings provisions of the *Land Administration Act 1997* as follows:

Class "A" reserves remain as Class "A" under the *Land Administration Act 1997*;

Class "B" reserves remain so classified under the repealed Act until that reserve ceases to be so classified or is cancelled in accordance with the repealed Act; and

Class "C" reserves are treated as a reserve, but not as a Class "A" reserve within the meaning of the *Land Administration Act 1997*.

Appendix 2

Environmental Endorsements and Conditions for Mineral Exploration and Mining within Conservation Reserves and Other Environmentally Sensitive Lands

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(iii) Schedule A-G standard endorsement and conditions 30

Specific endorsements and conditions for Schedules A-G are listed (iv) to (x)

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(v) Schedule B conditions - Prospecting and Exploration Licences on State Forests and Timber Reserves in the South West Mineral Field 34

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(xi) Standard Environmental management endorsements and conditions - for all *Mining Act* tenements (where applicable) *45*

- Declared Rare Flora endorsement
- Important Wetland endorsement
- Rainforest Area endorsement
- Dieback condition
- Swan Coastal Plain Lakes condition

CALM Pastoral Lease Endorsement and Conditions

Applicable to all Mining Act tenements on CALM's Pastoral Leases (Sandalwood Conservation)

Endorsement

- The lessee's/licensee's attention is drawn to the provisions of the Aboriginal Heritage Act, 1972.

In respect to the _____Pastoral Lease___/___/____ the following additional conditions apply:-

- Prior to any "environmental disturbance" as defined by the State Mining Engineer, the licensee preparing a detailed program for each phase of proposed exploration for approval of the State Mining Engineer. This program to include:-
  - (i) maps and/or aerial photographs showing the proposed locations of all ground activities and disturbances;
  - (ii) the purpose, specifications and extent of each activity and disturbance;
  - (iii) details on proposals which may disturb sensitive terrestrial habitats including any declared rare flora and fauna; and
  - (iv) techniques, prescriptions and timetable for the rehabilitation of all proposed disturbances.
- The licensee, at his expense, rehabilitating all areas cleared, explored or otherwise disturbed during the term of the licence to the satisfaction of the State Mining Engineer. Such rehabilitation as is appropriate and may include:-
  - (i) stockpiling and return of topsoil;
  - (ii) backfilling all holes, trenches and costeans;
  - (iii) ripping;
  - (iv) contouring to the original landform;
  - (v) revegetation with seed; and
  - (vi) capping and backfilling of all drill holes.
- Prior to the cessation of exploration/prospecting activity the licensee notifying the Regional Environmental Officer Department of Minerals and Energy and arranging an inspection as required.

General Purpose Lease Endorsement and Conditions

Endorsement

- The grant of the lease being confined to the natural surface of the land and thereunder to a depth of 15 metres.

Condition

The lessee submitting a plan of proposed operations and measures to safeguard the environment to the State Mining Engineer for assessment and written approval prior to commencing any development or construction.

Note

Upon the grant of a General Purpose Lease situated in an environmentally sensitive area additional conditions will be imposed on a case-by-case basis.

Schedules A-G Standard Endorsement and Conditions

Standard Endorsement

- The lessee's/licensee's attention is drawn to the provisions of the Aboriginal Heritage Act, 1972, and Regulations thereunder.

Standard Conditions

- Survey
- All surface holes drilled for the purpose of exploration are to be capped, filled or otherwise made safe after completion.
- All costeans and other disturbances to the surface of the land made as a result of exploration, including drill pads, grid lines and access tracks, being backfilled and rehabilitated to the satisfaction of the District Mining Engineer. Backfilling and rehabilitation being required no later than 6 months after excavation unless otherwise approved in writing by the District Mining Engineer.
- All waste materials, rubbish, plastic sample bags, abandoned equipment and temporary buildings being removed from the mining tenement prior to or at the termination of exploration program.
- Unless the written approval of the District Mining Engineer is first obtained, the use of scrapers, graders, bulldozers, backhoes or other mechanised equipment for surface disturbance or the excavation of costeans is prohibited. Following approval, all topsoil being removed ahead of mining operations and separately stockpiled for replacement after backfilling and/or completion of operations.

The following condition being imposed on all Mining Leases (excepting where ongoing mining operations are involved, but not where Schedule C, E or F conditions are imposed in respect of the Mining Lease).

The lessee submitting a plan of proposed operations and measures to safeguard the environment to the State Mining Engineer for his assessment and written approval prior to commencing any developmental or productive mining or construction activity.

The following condition being imposed only on Mining Leases where ongoing mining operations are involved.

The lessee within three (3) months of grant submitting a plan of ongoing mining operations and measures to safeguard the environment to the State Mining Engineer for his assessment and written approval.

Schedule A

Version A1 - Prospecting and Exploration Licences on Existing National Parks, Nature Reserves and Conservation Parks

Consent to mine on _____Reserve No._____granted by the Minister for Mines on _____subject to the following additional endorsements and conditions:

Endorsements

- The grant of this licence not inferring automatic approval to mine or the subsequent grant of a mining lease in accordance with Section 75 of the Mining Act 1978.
- The licensee's attention is drawn to the provisions of:

  (i) the Conservation and Land Management Act, 1984, and Regulations thereunder;

  (ii) the Bush Fires Act, 1954-77, and the Regulations thereunder; and

  (iii) the Wildlife Conservation Act, 1950, as amended and the Regulations thereunder (excepting the Regulations 46a,b,c,d,g,i,l, and o in so far as non-compliance occurs as an unavoidable incident or reasonable consequence in the performance of the approved exploration program).

Conditions

- Prior to accessing the reserve the licensee consulting with and ensuring that, where required by the Regional/District Manager, Department of Conservation and Land Management (CALM), all vehicles, machinery and equipment entering the area are cleaned to remove soil and plan propagules and adhering to such conditions specified by the Regional/District Manager, CALM for the prevention of the spread of soil borne diseases.
- Access to and from and the movement of vehicles and personnel being restricted to ground or seasonal conditions and routes approved by the Regional/District Manager, CALM.
- The Regional/District Manager, CALM being supplied with an itinerary and program of the locations of operations on the licence area and informed at least seven days in advance of any changes to that itinerary.
- Domestic animals, traps, or firearms not being taken onto the reserve.
- The licensee not establishing any camp, base works or area, fuelling depot or similar establishment on the licence area unless the site and access has received prior approval of the State Mining Engineer in agreement with the Regional/District Manager, CALM.
- The licensee making provision to prevent spillage of fuel and discharge of pollutants generally and for all exploration sites being kept free from any rubbish and being left in a clean and tidy state.
- Prior to any activity not specified as "environmental disturbance" the licensee preparing a program for each phase of the proposed exploration for approval of the State Mining Engineer in agreement with the Regional/District Manager, CALM.
- Prior to any "environmental disturbance", (as defined by the State Mining Engineer in agreement with the Executive Director, CALM, the National Parks and Nature Conservation Authority (NPNCA) and the Environmental Protection Authority), the licensee preparing a detailed program for each phase of proposed exploration for approval of the State Mining Engineer in agreement with the Regional/District Manager, CALM and the NPNCA. This process may result in additional conditions being imposed including lodgement of an Unconditional Performance Bond if required.

This program to describe the environmental impacts and programs for their management and is to include:-

(i) maps and/or aerial photographs showing the proposed locations of all ground activities and disturbances;

(ii) the purpose, specifications and extent of each activity and disturbance;

(iii) descriptions of all vegetation types (in general terms), land forms, and unusual features likely to be disturbed by such proposed disturbances. The Regional/District Manager, CALM specifying the level of vegetation description;

(iv) details on proposals that may disturb sensitive terrestrial habitats including any declared rare flora and fauna if applicable;

(v) techniques, prescriptions, and timetable for rehabilitation of all proposed disturbances;

(vi) undertaking for corrective measures for failed rehabilitation;

(vii) details of water requirements from within the reserve;

(viii) details of refuse disposal; and

(ix) proposals for instruction and supervision of personnel and contractors in respect to environmental conditions.

- At agreed intervals, not greater than 12 monthly, the licensee reporting to the State Mining Engineer and the Regional/District Manager, CALM on the progress of the operation and the rehabilitation program.

- All rehabilitation being to the satisfaction of the State Mining Engineer in agreement with the Regional/District Manager, CALM.

- Prior to the cessation of the exploration/prospecting activity in the reserve, the licensee notifying the Regional Environmental Officer, Department of Minerals and Energy and the Regional/District Manager, CALM and arranging an inspection as required.

Schedule A

Version A2 - Prospecting and Exploration Licences on Proposed Reserves and Environmentally Sensitive Areas

In respect to the area outlined in red and designated as a (name and purpose), in TENGRAPH or for areas outside the TENGRAPH capture area, the areas outlined in turquoise on the Public Plan (name, scale of plan and purpose), hereinafter referred to as the designated area, the following additional conditions shall apply:

- Prior to accessing the licence area, the licensee shall consult with the Regional Environmental Officer, Department of Minerals and Energy (DME) and ensure that where required all vehicles and equipment entering the designated area are washed down to remove soil and plant propagules and adhering to such conditions specified for the prevention of the spread of soil borne diseases.
- Access to and from and the movement of vehicles within the licence area being restricted to ground or seasonal conditions and routes approved under the program or otherwise agreed by the Regional Environmental Officer, DME.
- Prior to any activity involving disturbance to vegetation and soils including:
  - exploration access; and/or
  - exploration sampling

  the licensee preparing a detailed program for each phase of proposed exploration for written approval of the State Mining Engineer. The State Mining Engineer to consult with the Regional/District Manager, Department of Conservation and Land Management or the Department of Environmental Protection or other government agency (as relevant) prior to approval. This program to describe the environmental impacts and programs for their management and is to include:-

  (i) maps and/or aerial photographs showing the proposed locations of all ground activities and disturbances;

  (ii) the purpose, specifications and extent of each activity and disturbance;

  (iii) descriptions of all vegetation types (in general terms), land forms, and unusual features likely to be disturbed by such proposed disturbances;

  (iv) details on proposals that may disturb sensitive terrestrial habitats including any declared rare flora and fauna <u>if applicable</u>;

  (v) procedures to protect the integrity of special ecosystems such as wetland systems, mangal communities and rainforests areas (and/or associated rainforest monitoring sites) <u>if applicable</u>;

  (vi) techniques, prescriptions, and timetable for rehabilitation of all proposed disturbances;

  (vii) undertaking for corrective measures for failed rehabilitation;

  (viii) details of water requirements from within the designated area;

  (ix) details of refuse disposal; and

  (x) proposals for instruction and supervision of personnel and contractors in respect to environmental conditions.

- At agreed intervals, not greater than 12 monthly, the licensee providing a brief report to the State Mining Engineer outlining the progress of the operation and rehabilitation program and the proposed operations and rehabilitation programs for the next 12 months.
- Prior to the cessation of the exploration/prospecting activity in the designated area, the licensee notifying the Regional Environmental Officer, DME and arranging an inspection as required.

Schedule B

Prospecting and Exploration Licences on State Forests and Timber Reserves in the South West Mineral Field

Consent to mine on _____granted by the Minister for Mines on _____ subject to the following additional endorsements and conditions:

Endorsements

- The grant of this licence not inferring automatic approval to mine or the subsequent grant of a mining lease in accordance with Section 75 of the Mining Act.
- The licensee's attention is drawn to the provisions of:
  - (i) the Conservation and Land Management Act, 1984, and Regulations thereunder;
  - (ii) the Bush Fires Act, 1954-77, and the Regulations thereunder; and
  - (iii) the Wildlife Conservation Act, 1950, as amended and the Regulations thereunder, and
  - (iv) the Country Areas Water Supply Act, 1947 and the Regulations thereunder.

Conditions

- Prior to any disturbance to vegetation the licensee preparing a detailed program for each phase of proposed exploration for written approval of the State Mining Engineer in agreement with the Regional/District Manager, Department of Conservation and Land Management (CALM). This program to include:-
  - (i) maps and/or aerial photographs showing the proposed locations of all ground activities and disturbances;
  - (ii) details on proposals which may disturb sensitive terrestrial habitats including any declared rare flora and fauna; and
  - (iii) techniques, prescriptions and timetables for the rehabilitation of all proposed disturbances.
- Access to and from and the movement of vehicles within State Forest and Timber Reserves being restricted to road and tracks approved by the Regional/District Manager, CALM.
- No firearms being used or taken onto the licence area.
- The licensee not establishing any camp, base works or area, fuelling depot or similar establishment on the licence area unless the site and access has received prior approval of the District Manager, CALM.
- The licensee washing down and cleaning all rigs, vehicles, tools and other equipment to the standard required by the Regional/District Manager, CALM, prior to and on each occasion any such equipment rig, vehicle or tool is brought onto or taken from the licence area. All sampling equipment to be cleaned between samples to the standard required by the Regional/District Manager, CALM.
- The licensee informing the Regional/District Manager CALM of the whereabouts of the operations on the licence areas by providing a works program or weekly advice of work location.
- The licensee complying with the instructions of the Executive Director, CALM or his nominee in respect of the dieback disease (Phytophthora spp), the prevention and spread of that disease and general forest hygiene.
- The licensee will only undertake entry into a Forest Disease Risk Area once the District Manager, CALM has issued a permit for vehicle access.

- The licensee taking all reasonable precautions not to unnecessarily destroy or damage vegetation on the licence area.
- The licensee, at his expense, rehabilitating all areas cleared, explored or otherwise disturbed during the term of the licence to the satisfaction of the State Mining Engineer in agreement with the Regional/District Manager, CALM. Such rehabilitation as is appropriate and may include:-
  - (i) stockpiling and return of topsoil;
  - (ii) backfilling all holes, trenches and costeans;
  - (iii) ripping;
  - (iv) contouring to the original landform;
  - (v) revegetation with seed and/or plants; and
  - (vi) capping and or backfilling of all drill holes.
- Prior to the cessation of exploration/prospecting activity the licensee notifying the Regional Environmental Officer, Department of Minerals and Energy and Regional/District Manager, CALM and arranging an inspection as required.

Schedule C

Mining Leases on State Forests and Timber Reserves in the South West Mineral Field

Consent to Mine on _____granted by the Minister for Mines on _____subject to the following additional endorsements and conditions:

Endorsements

- The lessee's attention is drawn to the provisions of:
  - (i) the Conservation and Land Management Act, 1984, and Regulations thereunder;
  - (ii) the Bush Fires Act, 1954-77, and the Regulations thereunder; and
  - (iii) the Wildlife Conservation Act, 1950, as amended and Regulations thereunder.

Conditions

- The lessee submitting a Notice of Intent (NOI) for any proposed operations, including measures to safeguard the environment, to the State Mining Engineer, for assessment; and written approval, subject to the agreement of the Executive Director, Department of Conservation and Land Management (CALM) prior to commencing any developmental or productive mining. The approved NOI (as amended) then becoming a condition of this lease and the lessee providing a bond in favour of the Minister for Mines for the sum specified in the NOI approval for due compliance with the environmental conditions of the lease.
- The lessee submitting to the State Mining Engineer and the Regional/District Officer, CALM in [month] of each year, a brief annual report outlining the project operations, minesite environmental management and rehabilitation work undertaken in the previous 12 months and the proposed operations, environmental management plans and rehabilitation programs for the next 12 months. Following receipt of the annual report a site inspection by the Regional Environmental Officer, Department of Minerals and Energy and Regional/District Manager, CALM may be required.
- Exploration programs involving vegetation disturbance are subject to the approval of the State Mining Engineer in consultation with the Regional/District Manager, CALM.
- The lessee giving the Executive Director, CALM six (6) months notice in writing of the intention to enter upon any uncleared area of State Forest for the purposes of mining or operations associated with mining. Rights to remove any marketable timber from such area in advance of mining operations being with the Executive Director, CALM. In the event of shorter notice, the lessee may be required by the Executive Director, CALM to meet the costs of removing marketable timber.
- The lessee paying to the Executive Director, CALM compensation for all areas cleared of vegetation for mining, in support of mining and degraded as a result of mining in association with this lease. Provided that the Executive Director and the lessee may agree from time to time that land shall be transferred or works undertaken by the lessee in lieu of payment under this condition. The rate of compensation being $____per hectare and being adjusted annually by the Executive Director, CALM. The CPI for Perth providing the basis of such adjustments. The Lessee providing detailed surveys of areas cleared in conjunction with annual mining proposals. The Executive Director, CALM issuing a notice for the amount of compensation due and the lessee paying the amount within two (2) months of the date of such notice. A penalty of interest at the Commonwealth bond rate plus 4 percent being charged for late payment.

- The lessee paying royalty at current rates to the Executive Director, CALM for any forest produce obtained from State Forest and Crown Land used in connection with mining operations on the lease.
- The lessee at his/her expense carrying out all necessary measures to prevent the spread of the dieback disease (Phytophthora spp) on the area of the lease and complying with instructions of the Executive Director, CALM or his nominee before commencing exploratory work outside areas being mined.
- The lessee taking all such necessary precautions as may be indicated by the Regional/ District Manager, CALM to prevent the occurrence or spread of any fire within or adjacent to the leased area.
- The lessee at his/her expense rehabilitating all areas affected by mining or operations associated with mining conducted during the term of the lease. Rehabilitation being to the satisfaction of the State Mining Engineer and in agreement with the Regional/District Manager, CALM and in accordance with CALM Policy No. 10 (Rehabilitation of Disturbed Lands).
- The lessee designating to the Regional/District Manager, CALM a responsible officer to direct and control the rehabilitation program.
- Where reasonable, the lessee permitting CALM to remove for CALM requirements, sand, rock, clay, gravel and soil subject to a working agreement.

Schedule D

Prospecting and Exploration Licences on State Forests and Timber Reserves Outside the South West Mineral Field

Consent to mine on _____granted by Minister for Mines on _____subject to the following additional endorsements and conditions:

Endorsements

- The grant of this licence not inferring automatic approval to mine or the subsequent grant of a mining lease in accordance with Section 75 of the Mining Act.
- The licensee's attention is drawn to the provisions of:
  - (i) the Conservation and Land Management Act, 1984, and Regulations thereunder;
  - (ii) the Bush Fires Act, 1954-77, and the Regulations thereunder; and
  - (iii) the Wildlife Conservation Act, 1950, as amended and Regulations thereunder.

Conditions

- Prior to any disturbance to vegetation the licensee preparing a detailed programme for each phase of proposed exploration for written approval of the State Mining Engineer in agreement with the Regional/District Manager, Department of Conservation and Land Management (CALM). This program to include:-
  - (i) maps and/or aerial photographs showing the proposed location of all ground activities and disturbances;
  - (ii) the purpose, specifications and extent of each activity and disturbance;
  - (iii) details on proposals which may disturb sensitive terrestrial habitats including any declared rare flora and fauna; and
  - (iv) techniques, prescriptions and timetable for the rehabilitation of all proposed disturbances and historic ground disturbances the licensee has agreed to rehabilitate.
- Access to and from and the movement of vehicles within the Reserve being restricted to roads and tracks approved under the program or otherwise agreed by the Regional/District Manager, CALM.
- No firearms being used or taken onto the licence area.
- The licensee not establishing any camp, base works or area, fuelling depot or similar establishment on the reserve unless the site and access has received the prior approval of the Regional/District Manager, CALM.
- In consultation with the Regional/District Manager, CALM, machinery or equipment being cleaned of all soil, mud and plant propagules prior to entering the reserve.
- The licensee taking all reasonable precautions not to unnecessarily destroy or damage vegetation on the licence area.
- The licensee at his expense, rehabilitating all areas cleared, explored or otherwise disturbed during the term of the licence to the satisfaction of the State Mining Engineer in agreement with the Regional/District Manager, CALM. Such rehabilitation as is appropriate and may include:-
  - (i) stockpiling and return of topsoil;
  - (ii) backfilling all holes, trenches and costeans;

(iii) ripping;

(iv) contouring to the original landform;

(v) revegetation with seed; and

(vi) capping and backfilling of all drill holes.

- Prior to the cessation of exploration/prospecting activity the licensee notifying the Regional Environmental Officer, Department of Minerals and Energy and Regional/District Manager, CALM and arranging an inspection as required.

Schedule E

Mining Leases on State Forests and Timber Reserves Outside the South West Mineral Field

Consent to mine on _____granted by the Minister for Mines on _____subject to the following additional endorsements and conditions:

Endorsements

- The lessee's attention is drawn to the provisions of:
  - (i) the Conservation and Land Management Act, 1984, and Regulations thereunder;
  - (ii) the Bush Fires Act, 1954-77, and the Regulations thereunder; and
  - (iii) the Wildlife Conservation Act, 1950, as amended and Regulations thereunder.

Conditions

- The lessee submitting a Notice of Intent (NOI) for the proposed operations, including measures to safeguard the environment, to the State Mining Engineer, for assessment and written approval, subject to the agreement of the Executive Director, Department of Conservation and Land Management (CALM) prior to commencing any developmental or productive mining. The approved NOI (as amended) then becoming a condition of this lease and the lessee providing a bond in favour of the Minister for Mines for the sum specified in the NOI approval for due compliance with the environmental conditions of the lease.
- The lessee submitting to the State Mining Engineer and the Regional/District Officer, CALM in [month] of each year, a brief annual report outlining the project operations, minesite environmental management and rehabilitation work undertaken in the previous 12 months and the proposed operations, environmental management plans and rehabilitation programs for the next 12 months. Following receipt of the annual report a site inspection by the Regional Environmental Officer, DME and Regional/District Manager, CALM may be required.
- Exploration programs involving vegetation disturbance are subject to the approval of the State Mining Engineer in consultation with the Regional/District Manager, CALM.
- The lessee providing an Unconditional Performance Bond (guaranteed by a Bank or other approved financial institution) in favour of the Minister for Mines in the sum of $_____for due compliance with the environmental conditions on the lease.
- The lessee paying to the Executive Director, CALM, compensation for all areas cleared of vegetation for mining, in support of mining and degraded as a result of mining in association with this lease. Provided that the Executive Director and the lessee may agree from time to time that land shall be transferred or works undertaken by the lessee in lieu of payment under this condition. The rate of compensation being $____ per hectare and being adjusted annually by the Executive Director, CALM. The CPI for Perth providing the basis of such adjustments. The Lessee providing detailed surveys of areas cleared in conjunction with annual mining proposals. The Executive Director, CALM issuing a notice for the amount of compensation due and the lessee paying the amount within two (2) months of the date of such notice. A penalty of interest at the Commonwealth bond rate plus 4 percent being charged for late payment.
- The lessee paying royalty at current rates to the Executive Director, CALM for any forest produce obtained from Crown land in connection with mining operations on the lease.

- The lessee not establishing any camp, base works or area, fuelling depot or similar establishment on the reserve, unless the site and access has received prior approval of the Regional/District Manager, CALM.
- The lessee taking all such necessary precautions as may be indicated by the Regional/ District Manager, CALM to prevent the occurrence or spread and undertake suppression of any fire within or adjacent to the leased area.
- The lessee at his/her expense rehabilitating all areas affected by mining or operations associated with mining conducted during the term of the lease. Rehabilitation being to the satisfaction of the State Mining Engineer and in agreement with the Regional/District Manager, CALM and in accordance with CALM Policy No. 10 (Rehabilitation of Disturbed Lands).
- The lessee designating to the Regional/District Manager, CALM a responsible officer to direct and control the rehabilitation program.

Schedule F

Mining Leases on National Parks, Nature Reserves and Conservation Parks

Consent to mine on _____granted by Minister for Mines on _____subject to the following additional endorsements and conditions:

Endorsements

- The lessee's attention is drawn to the provisions of:
  - (i) the Conservation and Land Management Act, 1984, and Regulations thereunder;
  - (ii) the Bush Fires Act, 1954-77, and the Regulations thereunder; and
  - (iii) the Wildlife Conservation Act, 1950, as amended and Regulations thereunder.

Conditions

- The lessee submitting a Notice of Intent (NOI) for the proposed operations, including measures to safeguard the environment, to the State Mining Engineer for assessment and written approval, subject to the agreement of the Executive Director, Department of Conservation and Land Management (CALM) prior to commencing any developmental or productive mining. The approved NOI (as amended) then becoming a condition of this lease and the lessee providing a bond in favour of the Minister for Mines for the sum specified in the NOI approval for due compliance with the environmental conditions of the lease.
- The lessee submitting to the State Mining Engineer and the Regional/District Officer, CALM in [month] of each year, a brief annual report outlining the project operations, minesite environmental management and rehabilitation work undertaken in the previous 12 months and the proposed operations, environmental management plans and rehabilitation programs for the next 12 months. Following receipt of the annual report a site inspection by the Regional Environmental Officer, DME and Regional/District Manager, CALM may be required.
- Exploration programs involving disturbances which are not included in productive mining approvals are subject to the approval of the State Mining Engineer in agreement with the Regional/District Manager, CALM and in the case of environmental disturbance the approval of the National Parks and Nature Conservation Authority (NPNCA) is also required. The State Mining Engineer, the Executive Director of CALM or the Chairman of NPNCA may refer any program to the Environmental Protection Authority, if required.
- The lessee paying to the Executive Director, CALM, compensation for all areas cleared of vegetation for mining, in support of mining and degraded as a result of mining in association with this lease. Provided that the Executive Director, CALM and the lessee may agree from time to time that land shall be transferred or works undertaken by the lessee in lieu of payment under this condition. The rate of compensation being $____per hectare and being adjusted annually by the Executive Director, CALM. The CPI for Perth providing the basis of such adjustments. The Lessee providing detailed surveys of areas cleared in conjunction with annual mining proposals. The Executive Director, CALM issuing a notice for the amount of compensation due and the lessee paying the amount within two (2) months of the date of such notice. A penalty of interest at the Commonwealth bond rate plus 4 percent being charged for late payment.
- The lessee taking all such necessary precautions as may be indicated by the Regional/ District Manager, CALM to prevent the occurrence or spread of any fire within or adjacent to the leased area.

- In consultation with the Regional/District Manager, CALM the lessee ensuring that vehicles, machinery and equipment entering the reserve are cleaned to remove soil and plant propagules and adhering to such conditions specified by the Regional/District Manager, CALM, for the prevention of the spread of soil borne diseases and weeds.
- The lessee at his/her expense rehabilitating all areas affected by mining or operations associated with mining conducted during the term of the lease. Rehabilitation being to the satisfaction of the State Mining Engineer in agreement with the Regional/District Manager, CALM and in accordance with CALM Policy Statement 10 (Rehabilitation of Disturbed Lands).
- The lessee designating to the Regional/District Manager, CALM, a responsible officer to direct and control the rehabilitation program.

Schedule G

Mining Leases on Proposed Reserves Not Vested in NPNCA and in which CALM has an Interest

In respect to the area outlined in red and designated as a (name and purpose), in TENGRAPH or for areas outside the TENGRAPH capture area, the areas outlined in turquoise on the Public Plan (name, scale of plan and purpose), hereinafter referred to as the designated area, the following additional conditions shall apply:

- Prior to accessing the lease area, the lessee shall consult with the Regional Environmental Officer, Department of Minerals and Energy (DME), and ensure that where required all vehicles and equipment entering the designated area are washed to remove soil and plant propagules and adhering to such conditions specified for the prevention of the spread of soil borne diseases.
- Access to and from and the movement of vehicles within the lease area being restricted to ground or seasonal conditions and routes approved under the programme or otherwise agreed by the Regional Environmental Officer, DME.
- Prior to any "environmental disturbance", as defined by the State Mining Engineer, the licensee preparing a detailed program for each phase of proposed exploration for approval of the State Mining Engineer. This program to include:-
  - (i) maps and/or aerial photographs showing the proposed locations of all ground activities and disturbances;
  - (ii) the purpose, specifications and extent of each activity and disturbance;
  - (iii) descriptions of all vegetation types (in general terms), land forms, and unusual features likely to be disturbed by such proposed disturbances;
  - (iv) details on proposals that may disturb sensitive terrestrial habitats including any declared rare flora and fauna;
  - (v) techniques, prescriptions, and timetable for rehabilitation of all proposed disturbances;
  - (vi) undertaking for corrective measures for failed rehabilitation;
  - (vii) details of water requirements from within the designated area;
  - (viii) details of refuse disposal; and
  - (ix) proposals for instruction and supervision of personnel and contractors in respect to environmental conditions
- At agreed intervals, not greater than 12 monthly, the lessee providing a brief report to the State Mining Engineer outlining the progress of the operation and rehabilitation program and the proposed operations and rehabilitation programs for the next 12 months.
- Prior to the cessation of the exploration/prospecting activity in the designated area, the lessee notifying the State Mining Engineer and arranging an inspection as required.

Standard Environmental Management Endorsements and Conditions

DME has a commitment to provide industry with information on requirements under other legislation for environmental management of mining operations such as requirements for protection of rare flora, rainforest areas, wetlands, groundwater protection areas and dieback management. The following list outlines standard endorsements and conditions that have been developed by DME in consultation with CALM, DEP and the EPA. These standard endorsements and conditions are applied to all relevant Mining Act tenements.

Declared Rare Flora endorsement

Endorsement for all Mining tenements on Declared Rare Flora

"The land the subject of this licence/lease affects a *Rare Flora site or sites declared under the Wildlife Conservation Act 1950. The licensee/lessee is advised to contact the Department of Conservation and Land Management for detailed information on the management of Declared Rare Flora present within the tenement area."*

Important Wetland endorsement

Endorsement for all Mining Act tenements on Important Wetlands including Metropolitan Groundwater Mound Protection Areas, Environmental Protection Policy Lakes and some Wetlands of International Importance (RAMSAR TREATY) *

"The land the subject of this licence/lease affects an Important Wetland {WETLAND NAME AND CLASSIFICATION TYPE}."

Rainforest Area endorsement

Endorsement for all Mining Act tenements affecting Rainforest Areas and Rainforest monitoring sites

"The land the subject of this licence/lease affects a Rainforest area and/or rainforest monitoring site or *sites. The licensee/lessee is advised to contact the Department of Conservation and Land Management for detailed information on the management requirements for rainforest areas and rainforest monitoring site or sites present within the tenement area."*

Dieback condition

Impose on both prospecting and exploration licences (do not use when Schedule B and C conditions are imposed.)

"No exploration activities commencing until the licensee provides a plan of management to prevent the spread of dieback disease (Phytophthora spp) in all appropriate areas of native vegetation occurring within the tenement to the State Mining Engineer for assessment and until his written approval has been received. All exploration activities shall then comply with the commitments made in the management plan".

Swan Coastal Plain Lakes condition

Condition for Mining Leases on Swan Coastal Plain Lake

"No mining operations being carried out on the Swan Coastal Plain Lake _____ unless authorised under the Environmental Protection Act 1986."

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* This refers only to those Wetlands of International Importance that are not located within the boundary of existing conservation reserves. Wetlands of International Importance located within existing conservation reserves have reservation status and as such the wetland endorsement is not applicable.

Appendix 3

Preliminary Mining Proposal Statement (Example Only)

Upon application for a mining lease or in the initial stages of planning a project which is likely to occur within or affect the conservation estate, initial information may be required by the Department of Minerals and Energy (DME) and the Department of Conservation and Land Management for initial assessment to assist the decision making process before grant of title is considered or a Notice of Intent (NOI) is called for. This information will assist in determining:

- Possible conservation values at stake and the need for special guidelines;
- Merit; and
- Further assessment or information required.

In order to support the mining lease application, it will be necessary to supply DME with more information in relation to the planned operation of the lease. The Preliminary Mining Proposal should therefore include the following information:-

(a) outline of intended access to site (e.g., off road, via an existing track, or new track);

(b) the intended process of extracting the target mineral;

(c) the amount to be extracted and time frame of operation;

(d) the details of the expected market;

(e) outline of proposed disturbances associated with operation;

(f) method of rehabilitation to be adopted; and

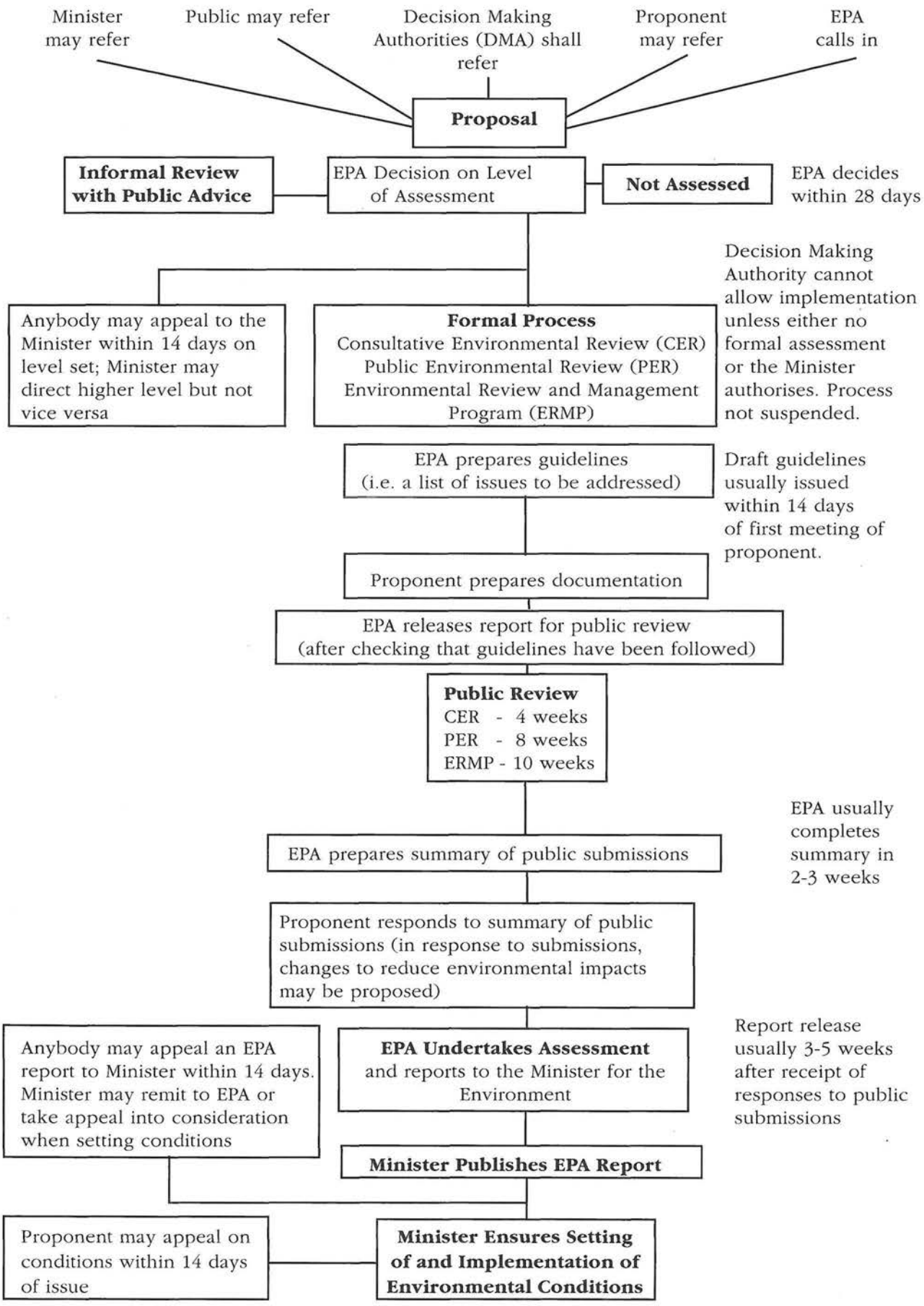
(g) any other details of the proposed operation that may help to support the mining lease application.

Please Note:

This is not intended to be an extensive report. The aim is to convey an initial overview of the proposal only, not to replace an NOI.

Appendix 4

Environmental Impact Assessment in Western Austaralia





DEPARTMENT OF
MINERALS AND ENERGY
WESTERN AUSTRALIA

This pamphlet is one of the Department of Minerals and Energy's General Information Series which are available from:

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N.B. The information contained in this pamphlet is designed to assist in gaining a general awareness of the requirements of the Mining Act 1978 and is not intended to be a substitute for understanding the statutory requirements of the Act and Regulations thereunder. This edition issued July 1998.