STATEMENT THAT A PROPOSAL MAY BE IMPLEMENTED
(PURSUANT TO THE PROVISIONS OF THE
ENVIRONMENTAL PROTECTION ACT 1986)

DENISON 3D SEISMIC SURVEY
WITHIN PETROLEUM EXPLORATION LEASES EP 413, L1 & L2
LOCALITY OF DONGARA, SHIRE OF IRWIN

Proposal: The preparation of seismic access lines, including related flora and vegetation survey activities; deployment and use of seismic impulse generation and reception equipment; acquisition of seismic data; and access lines closure and rehabilitation; as documented in schedule 1 of this statement.


Proponent Addresses:
ARC Energy Limited
ABN 74 009 204 031
Level 4, 679 Murray Street
West Perth WA 6005

Origin Energy Developments Pty Limited
ABN 43 008 432 479
34 Colin Street
West Perth WA 6005

Assessment Number: 1514

Report of the Environmental Protection Authority: Bulletin 1147

The proposal referred to above may be implemented by the proponent subject to the following conditions and procedures:

1 Implementation

1-1 The proponent shall implement the proposal as documented in schedule 1 of this statement subject to the conditions of this statement.

Published on 28 OCT 2004
2 **Proponent Commitments**

2-1 The proponent shall implement the environmental management commitments documented in schedule 2 of this statement to the requirements of the Minister for the Environment on advice of the Environmental Protection Authority.

3 **Proponent Nomination and Contact Details**

3-1 The proponent for the time being nominated by the Minister for the Environment under section 38(6) or (7) of the *Environmental Protection Act 1986* is responsible for the implementation of the proposal until such time as the Minister for the Environment has exercised the Minister’s power under section 38(7) of the Act to revoke the nomination of that proponent and nominate another person as the proponent for the proposal.

3-2 If the proponent wishes to relinquish the nomination, the proponent shall apply for the transfer of proponent and provide a letter with a copy of this statement endorsed by the proposed replacement proponent that the proposal will be carried out in accordance with this statement. Contact details and appropriate documentation on the capability of the proposed replacement proponent to carry out the proposal shall also be provided.

3-3 The nominated proponent shall notify the Department of Environment of any change of contact name and address within 60 days of such change.

4 **Commencement and Time Limit of Approval**

4-1 The proponent shall substantially commence the proposal within three years of the date of this statement or the approval granted in this statement shall lapse and be void.

Note: The Minister for the Environment will determine any dispute as to whether the proposal has been substantially commenced.

4-2 The proponent shall make application for any extension of approval for the substantial commencement of the proposal beyond three years from the date of this statement to the Minister for the Environment, prior to the expiration of the three-year period referred to in condition 4-1.

The application shall demonstrate that:

1. the environmental factors of the proposal have not changed significantly;
2. new, significant, environmental issues have not arisen; and
3. all relevant government authorities have been consulted.

Note: The Minister for the Environment may consider the grant of an extension of the time limit of approval not exceeding three years for the substantial commencement of the proposal.
5 Compliance Audit

5-1 The proponent shall prepare an audit program and submit annual compliance reports to the Department of Environment which address:

1. the status of implementation of the proposal as defined in schedule 1 of this statement;

2. evidence of compliance with the conditions and commitments; and

3. the performance of the environmental management plans and programs.

Note: Under sections 48(1) and 47(2) of the Environmental Protection Act 1986, the Chief Executive Officer of the Department of Environment is empowered to monitor the compliance of the proponent with the statement and should directly receive the compliance documentation, including environmental management plans, related to the conditions, procedures and commitments contained in this statement.

6 Significant Flora and Communities Management Plan

6-1 Prior to commencement of ground-disturbing activities and in consultation with the Department of Conservation and Land Management, the proponent shall prepare a Significant Flora and Communities Management Plan to the requirements of the Minister for the Environment on advice of the Environmental Protection Authority.

Advisory agency (See procedure 3):
- Department of Conservation and Land Management

The objective of this Plan is:

- to ensure the conservation of significant flora species and communities which occur within the vicinity of seismic survey lines within the seismic survey area shown in Figure 1 of schedule 1.

This Plan shall address:

1. the management, monitoring and reporting of impacts on Declared Rare Flora and priority flora species and restricted plant communities, within the seismic survey area, as identified by the Department of Conservation and Land Management following surveys to be undertaken by the proponent as part of the implementation of this proposal;

2. any targeted regional surveys which are required prior to ground-disturbing activities to provide further information on the conservation status of each of the species and/or communities referred to in item 1 above;
3. any regeneration or revegetation strategies which are required for species and/or communities referred to in item 1 above, including completion criteria to be met following the survey for species and/or communities impacted by the seismic survey;

4. any management or mitigation actions required to address any failure to achieve regeneration completion criteria arising from item 3 above; and

5. any further investigations into the regeneration and seed ecology of affected species or communities in order to determine appropriate regeneration methodologies, if completion criteria are not being achieved.

6-2 The proponent shall implement the Significant Flora and Communities Management Plan required by condition 6-1, to the requirements of the Minister for the Environment on advice of the Environmental Protection Authority and the Department of Conservation and Land Management.

6-3 The proponent shall make the Significant Flora and Communities Management Plan required by condition 6-1 publicly available, to the requirements of the Minister for the Environment on advice of the Environmental Protection Authority.

7 **Seismic Line Rehabilitation Plan**

7-1 Prior to commencement of ground-disturbing activities, the proponent shall develop a Seismic Line Rehabilitation Plan for areas of native vegetation disturbed by activities related to the seismic survey, to the requirements of the Minister for the Environment on advice of the Environmental Protection Authority, the Department of Conservation and Land Management and the Commissioner of Soil and Land Conservation.

The long-term objectives of this Plan are:

- to ensure that rehabilitation is optimised;
- to ensure that disturbed areas of vegetation do not become permanent areas for vehicle access; and
- to ensure that vegetation disturbed during the seismic survey is returned to a condition similar to adjacent undisturbed areas.

The Plan shall relate to all areas of native vegetation disturbed during the survey, such as seismic lines staging areas, turning areas and encampments, and shall include:

1. an Access Line Closure Plan which includes:
   1. identification of seismic access lines utilised during the survey which require actions to prohibit public access;
   2. methods of access closure for identified seismic access lines;
   3. performance criteria (including completion criteria) for the effectiveness of closure of seismic access lines; and
   4. contingency actions to be carried out in the event that the defined completion criteria are not being met.
(2) a Vegetation Management Plan which includes:

1. delineation of areas of vegetation proposed to be disturbed by the survey;
2. a baseline vegetation study identifying the appropriate techniques for regeneration or revegetation of the vegetation types affected by the survey;
3. details of weed management to be undertaken following the survey;
4. details of dieback management to be undertaken following the survey;
5. development of specific rehabilitation performance criteria, including completion criteria for the restoration of affected areas to a condition equivalent to, or better than, their condition immediately prior to the survey;
6. proposed methods for rehabilitation / regeneration of seismic access line and other disturbed areas;
7. a monitoring program to determine rehabilitation success; and
8. contingency actions to be carried out in the event that the defined performance criteria are not being met.

(3) A Soil Conservation Management Plan which includes:

1. delineation of seismic access lines and other areas disturbed with steep slopes and/or erosive soils;
2. operational methods of minimisation and remediation of soil erosion in the identified access lines and other areas disturbed during and following the survey;
3. performance criteria (including completion criteria) for the effectiveness of the proposed methods of minimisation and remediation; and
4. contingency actions to be carried out in the event that the defined performance criteria are not being met.

7-2 The proponent shall implement the Seismic Line Rehabilitation Plan required by condition 7-1 until such time as the Minister for the Environment determines, on advice of the Environmental Protection Authority, that the proponent’s rehabilitation responsibilities have been fulfilled.

7-3 The proponent shall make the Seismic Line Rehabilitation Plan required by condition 7-1 publicly available, to the requirements of the Minister for the Environment on advice of the Environmental Protection Authority.

8 Rehabilitation Performance Bond

8-1 As security for the due and punctual observance and performance by the proponent of the requirements of condition 7-2 to be observed, conformed and complied with, the proponent shall lodge with the Chief Executive Officer of the Department of Environment on demand prior to ground-disturbing activity, an irrevocable Performance Bond as nominated and approved by the Chief Executive Officer in his sole unfettered discretion to a cash value and in a form acceptable to the Chief Executive Officer ("the Security") which Security at the date hereof being $117,500.
8-2 The Chief Executive Officer may review the Security required by condition 8-1 at any time or times and if, on such review, the Chief Executive Officer considers that a security has ceased to be acceptable to the Chief Executive Officer, then the Chief Executive Officer may, with the approval of the Minister for the Environment, require the proponent to furnish replacement or additional security for performance by the proponent of its obligations under condition 7-2.

8-3 The proponent shall within 14 days after written request by the Chief Executive Officer furnish replacement or additional security in such sum as the Chief Executive Officer shall nominate, in a form and upon terms and conditions approved by the Chief Executive Officer, which approval shall not be unreasonably withheld. On receipt of approved replacement security the Chief Executive Officer shall release and discharge the original security.

Note: In the preparation of advice to the Chief Executive Officer in relation to conditions 8-1, 8-2 and 8-3, the Environmental Protection Authority expects that the advice of the following agencies will be obtained:

- Department of Conservation and Land Management;
- Department of Industry and Resources; and
- Department of Environment.

9 Bush Fire Management Plan

9-1 Prior to commencement of ground-disturbing activity, the proponent shall prepare a Bush Fire Management Plan to the requirements of the Minister for the Environment on advice of the Environmental Protection Authority.

This Plan shall include:

1. bush fire prevention measures;
2. bush fire detection and reporting procedures;
3. fire brigade and the proponent’s fire suppression equipment and preparedness measures; and
4. training of personnel for fighting fires.

9-2 The proponent shall implement the Bush Fire Management Plan, required by condition 9-1, to the requirements of the Minister for the Environment on advice of the Environmental Protection Authority.

9-3 The proponent shall make the Bush Fire Management Plan, required by condition 9-1, publicly available to the requirements of the Minister for the Environment on advice of the Environmental Protection Authority.

Note: In the preparation of advice to the Minister, the Environmental Protection Authority expects that the advice of the following agencies will be obtained:

- Department of Conservation and Land Management; and
- Fire and Emergency Services Authority.
Procedures

Where a condition states “to the requirements of the Minister for the Environment on advice of the Environmental Protection Authority”, the Environmental Protection Authority will provide that advice to the Department of Environment for the preparation of written notice to the proponent.

The Environmental Protection Authority may seek advice from other agencies or organisations, as required, in order to provide its advice to the Department of Environment.

Where a condition lists advisory bodies, it is expected that the proponent will obtain the advice of those listed as part of its compliance reporting to the Department of Environment.

Notes

The Minister for the Environment will determine any dispute between the proponent and the Environmental Protection Authority or the Department of Environment over the fulfilment of the requirements of the conditions.

Within this statement, to “have in place” means to “prepare, implement and maintain for the duration of the proposal”.

Compliance and performance reporting will endeavour to be in accord with the timing requirements of reporting under the Petroleum Act 1967.

Dr Judy Edwards MLA
MINISTER FOR THE ENVIRONMENT

28 OCT 2004
Schedule 1

The Proposal (Assessment No. 1514)

Seismic surveys are necessary to assist with planning petroleum exploration drilling activities. The primary objective of the survey is to define prospects for future drilling and thus contribute to future development of oil and gas production from the companies' tenements.

The main activities to be conducted include:

- flora and vegetation surveys to identify areas of potentially high sensitivity to disturbance by seismic access line preparation;
- establishing a base camp and ongoing provision of supplies;
- preparing survey grid (access line preparation and surveying);
- drilling of boreholes (for up-hole logging necessary for the survey);
- acquiring data (surface seismic acquisition and up-hole logging); and
- demobilising, rehabilitating and closing vehicular access to seismic lines, and monitoring.

An aerial photograph showing the location and boundary of the survey area is provided in Figure 1.

Note: This proposal does not include that portion of Dongara Nature Reserve (no. 23600) covered by Petroleum Exploration Permit Application no. 2/02-3 lodged with the Department of Industry and Resources on 24 April 2003.

The key characteristics of the proposal are listed in Table 1 (overleaf).

Figures (attached)

Figure 1 – Location and boundary of the seismic survey
Figure 2 – Indicative alignment of seismic survey access lines.
Figure 1: Location and Boundary of Denison 3D Survey (See note in Schedule 1)
(April 2002 - from 'Public Environmental Review: Denison 3D Survey')
Figure 2: Indicative location of seismic access lines
(April 2002 - from "Public Environmental Review: Denison 3D Survey")
<table>
<thead>
<tr>
<th>Element</th>
<th>Description</th>
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<tbody>
<tr>
<td>Type of survey</td>
<td>3D seismic.</td>
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| Timing and duration of survey                                         | Preparatory work ~30 days.  
Survey 90-120 days.  
Demobilisation ~15 days.  
Rehabilitation – until completion criteria achieved.                                                                                     |
| Total length of seismic lines (line kilometres)                        | Total line length = 2,229 kilometres approximately.  
Total line length over cleared land = 1,076 kilometres approximately.  
Estimated total line length over nature reserves = 795 kilometres approximately.  
Total line length over other areas of remnant vegetation (outside nature reserves) = 358 kilometres approximately. |
| Maximum width of lines                                                 | 4 metres.  
Note:-  
1. some ‘turning areas’ (up to 5 metres x 5 metres) will be required to reduce the requirement for connecting tracks, facilitate avoidance of environmental constraints and allow for exceptional circumstances (for example tyre repairs).  
2. line width will typically be 3 metres and average no more than 3.5 metres.                                                               |
| Total land area within survey boundary                                 | 39,400 hectares approximately                                                                                                                   |
| Area of cleared land in survey area                                    | 18,045 hectares approximately                                                                                                                   |
| Area of nature reserves in survey area                                | 11,455 hectares approximately                                                                                                                   |
| Area of remnant native vegetation in survey area (excluding nature reserves) | 9,900 hectares approximately                                                                                                                   |
| Maximum total area of seismic lines (ie area of source and receiver lines) | Approximately 782 hectares (2.0% of the total survey area) will be accessed for data acquisition.                                                  |
| Area of seismic lines over cleared land (non-nature reserve areas)      | 377 hectares approximately                                                                                                                     |
| Maximum area of seismic lines in nature reserves                       | Approximately 279 hectares                                                                                                                     |
|                                                                      | Beekeepers’ Nature Reserve = 117 hectares (2.5% of the reserve within the survey area).  
Yardanogoro Nature Reserve = 161 hectares (2.4% of the total reserve).  
Dongara Nature Reserve = 0.3 hectares (0.6% of the total reserve).                                                                                   |
| Maximum area of seismic lines over remnant vegetation (excluding nature reserves) | 126 hectares (1.3% of the remnant vegetation in the survey area outside of nature reserves).                                                 |
| Number of data acquisition holes (up-holes) required                   | Up to 130 up-holes across the survey area (up to 50 in the nature reserves).                                                                 |
| Diameter of data acquisition holes (up-holes)                         | 0.625 metres to 0.75 metres                                                                                                                     |
| Depth of data acquisition holes (up-holes)                            | ≤ 200 metres                                                                                                                                                                                              |
| Plant and equipment for survey                                        | • Camp (including office, mess and accommodation).  
• Up to five truck-mounted source vehicles.  
• Up to 10 camp-based vehicles (including fuel, water and fire trucks).  
• Up to 17 seismic line crew vehicles.                                                                                            |
| Number of persons involved                                            | Approximately 65 personnel, including sub-contractors.                                                                                           |
| Operation hours                                                       | Daylight hours only, 7 days per week.                                                                                                             |
Proponent’s Environmental Management Commitments

September 2004

DENISON 3D SEISMIC SURVEY
WITHIN PETROLEUM EXPLORATION
LEASES EP 413, L1 & L2
LOCALITY OF DONGARA
SHIRE OF IRWIN

(Assessment No. 1514)

ARC Energy Limited
&
Origin Energy Developments Pty Limited
Proponent's Environmental Management Commitments – September 2004

DENISON 3D SURVEY (Assessment No. 1514)

Note: The term “commitment” as used in this schedule includes the entire row of the table and its separate parts as follows:
- a commitment topic;
- the objective of the commitment;
- a commitment number and the 'action' to be undertaken by the proponent;
- the timing requirements of the commitment; and
- the body/agency to provide technical advice to the Department of Environment.

<table>
<thead>
<tr>
<th>Topic</th>
<th>Proponent's Objective</th>
<th>Action</th>
<th>Timing</th>
<th>Advice</th>
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<tbody>
<tr>
<td>General Environmental Management</td>
<td>Manage the environmental aspects of the Seismic Survey to minimise its impacts on the environment.</td>
<td>1. Fully implement steps 1 to 17 of the Seismic Survey Line Planning Process (Figure 2.3) presented in the PER document, prior to preparing the seismic lines (See attachment A).</td>
<td>Before the survey.</td>
<td>DoR; CALM; FESA; Shire of Irwin; Department of Agriculture (DoA).</td>
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<td>2. Develop an Environmental Management Plan (Denison 3D Seismic Survey Environmental Management Plan (EMP) which incorporates steps 18 and 19 of the Seismic Survey Line Planning Process (Figure 2.3 of the PER document) (See attachment A), and includes specific plans and procedures to:</td>
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<td>1. minimise the environmental impacts on native flora, fauna, conservation areas, surface and groundwater, soil and landform, and cultural heritage sites;</td>
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<td>2. manage the spread of weeds and soil-borne pathogens, noise and dust, wastes, hazardous materials, and fire risks;</td>
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<td>3. engage stakeholders in the planning process, maintain avenues of communication during the survey, and satisfactorily manage complaints or concerns raised by landowners or members of the public;</td>
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<td>4. train the workforce on the environmental values of the area and the procedures to follow for minimising environmental impacts;</td>
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<td>5. undertake ongoing auditing and reporting on the environmental performance during the survey; and</td>
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<td>6. rehabilitate the survey area and monitor rehabilitation success after the survey has been completed.</td>
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<td>3. Implement the EMP referred to in commitment 2.</td>
<td>During all phases of the survey.</td>
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| Vegetation and Flora        | Minimise effects of the proposal on sensitive areas, discrete colonies of rare plants and other significant species. | 4  
Fully implement steps 1 to 13 of the Vegetation and Flora Management Process (Figure 5.1 of the PER document – See attachment B), prior to preparing the seismic lines consistent with the requirements of condition 6. | Before the survey.               | CALM.  |
|                             |                                                                                        | 5  
Incorporate into the Seismic Survey EMP, step 14 of the Vegetation and Flora Management Process (Figure 5.1 of the PER – See attachment B) and specific management measures to:  
1 plan the locations of the camp site and seismic lines to minimise impacts on native vegetation;  
2 minimise the disturbance of all native vegetation occurring across the seismic survey area, and particularly in areas of agreed high sensitivity or risk, when laying out the seismic lines or drilling the up-holes; and  
3 protect DRF and Priority listed plant species wherever they occur across the seismic survey area, consistent with the requirements of conditions 6 and 7. |                                |        |
|                             |                                                                                        | 6  
Implement the vegetation management measures detailed in the Seismic Survey EMP consistent with the requirements of conditions 6 and 7. | During and after the survey.     |        |
<table>
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<tr>
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<tr>
<td>Weeds</td>
<td>Minimise the risk of introducing exotic species and spreading weeds in the region.</td>
<td>7 Fully implement steps 1 to 10 of the Weed Management Process (Figure 5.2 of the PER document – See attachment C) prior to preparing the seismic lines.</td>
<td>Before the survey.</td>
<td>CALM.</td>
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<td>8 Consistent with the requirements of condition 7, incorporate into the Seismic Survey EMP, steps 11 to 17 of the Weed Management Process (Figure 5.2 of the PER document – See attachment C) specific management measures to control weeds including:</td>
<td>Before, during and after the survey</td>
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<td>1 appropriate hygiene techniques to control the spread of noxious and environmental weeds along the proposed seismic survey areas with high risk;</td>
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<td>2 conducting inspections of the survey area for the introduction or spread of weeds; and</td>
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<td>3 eradicating introduced weeds along the railway line in the Beekeepers’ Nature Reserve and other areas affected by survey activities where considered necessary.</td>
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<td>9 Implement the weed management measures detailed in the Seismic Survey EMP.</td>
<td>During and after the survey.</td>
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<td>Dieback</td>
<td>Minimise the risk of introducing or spreading dieback into unaffected areas and areas of agreed high sensitivity or risk.</td>
<td>10 Fully implement steps 1 to 9 of the Dieback Management Process (Figure 5.3 of the PER document – See attachment D) prior to preparing the seismic lines.</td>
<td>Before, during and after the survey.</td>
<td>CALM.</td>
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<td>11 Consistent with the requirements of condition 7, incorporate into the Seismic Survey EMP, steps 10 to 14 of the Dieback Management Process (Figure 5.3 of the PER document – See attachment D) and specific management measures to control spread of dieback including:</td>
<td>During and after the survey.</td>
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<td>1 appropriate hygiene techniques to control the spread of dieback along the proposed seismic survey areas with high risk; and</td>
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<td></td>
<td>2 conducting inspections of the survey area for the introduction or spread of dieback.</td>
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<td>12 Implement the dieback management measures detailed in the Seismic Survey EMP.</td>
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<td>Rehabilitation and revegetation</td>
<td>Ensure that rehabilitation achieves a stable and functioning landform which is consistent with the surrounding landscape and other environmental values.</td>
<td>13 Consistent with the requirements of condition 7, fully implement steps 1 to 7 of the Rehabilitation/Revegetation Management Process (Figure 5.9 of the PER document – See attachment E) prior to preparing the seismic lines.</td>
<td>Before the survey</td>
<td>CALM</td>
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<td>14 Consistent with the requirements of condition 7, incorporate into the Seismic Survey EMP, steps 8 to 14 of the Rehabilitation/Revegetation Management Process (Figure 5.9 of the PER document – See attachment E) and specific management measures to:</td>
<td>Before, during and after the survey</td>
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<td>1 plan rehabilitation and revegetation in disturbed areas that is appropriate for the existing land use of the area;</td>
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<td>2 engage stakeholders in the planning process;</td>
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<td>3 monitor rehabilitation/revegetation against clearly defined completion criteria of rehabilitation success (which includes criteria relating to: implementation of the EMP; decommissioning; landform; and vegetation); and</td>
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<td>4 minimise the potential for long-term environmental impacts such as erosion, weed infestation and access by the general public through effective closure of access to seismic lines.</td>
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<tr>
<td>Rehabilitation and revegetation</td>
<td>Ensure that rehabilitation achieves a stable and functioning landform which is consistent with the surrounding landscape and other environmental values.</td>
<td>15 Consistent with the requirements of condition 7, implement the rehabilitation and revegetation measures detailed in the Seismic Survey EMP.</td>
<td>Before and after the survey</td>
<td>CALM</td>
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<td>16 Provide funds to CALM for a trial burn programme in the Yandarogo Nature Reserve for the purpose of obtaining quantitative data on the use of burning as a best-practice management measure for regeneration of vegetation on seismic line.</td>
<td>Funds to be provided within 60 days of receipt of invoices from CALM for work carried out and within 3 years following the completion of the survey.</td>
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<td>17 Support CALM's involvement in the annual auditing and monitoring of the seismic survey area by providing funding to CALM to cover administration costs of this work with a cumulative total amount up to $15,000.</td>
<td>Funds to be provided within 60 days of the receipt of invoices from CALM for work carried out.</td>
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<td>Topic</td>
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</table>
| Significant flora and fauna   | Protect significant flora and fauna and their habitat from unacceptable impacts        | 18  
Implement a field survey of native fauna in vegetation community types which are likely to be inhabited by rare, endangered or disturbance-sensitive fauna, if considered necessary by CALM, based on the findings and recommendations of the desk-top fauna survey (Barnford 2004, in prep.). | Before the survey       | CALM    |
|                               |                                                                                        | 19  
Incorporate into the Sessmac Survey EMP, specific management measures to:  
1. plan the locations of the camp site and seismic lines to minimise impacts on native fauna;  
2. minimise the disruption of native fauna in nature reserves and other agreed high sensitivity or risk areas when laying out the seismic lines or drilling the up-holes;  
3. minimise the impacts on native fauna from the activities of the workforce at the camp; and  
4. protect Threatened or Priority fauna. | Before the survey       |         |
|                               |                                                                                        | 20  
Implement the fauna management measures detailed in the Sessmac Survey EMP.                                                                 | During and after the survey |         |
| Conservation and rehabilitation in Nature Reserves | Protect flora and fauna and other environmental values of Nature Reserves affected by the survey consistent with the management objectives for those areas. | 21  
Consistent with the requirements of conditions 6 and 7, incorporate into the Sessmac Survey EMP specific management measures to:  
1. protect the conservation values of the nature reserves;  
2. communicate to the workforce the conservation values and specific procedures to be used when working in the nature reserves; and  
3. rehabilitate and revegetate disturbed areas to promote recovery of native vegetation in the nature reserves. | Before the survey       | CALM    |
|                               |                                                                                        | 22  
Consistent with the requirements of conditions 6 and 7, implement the management measures detailed in the Sessmac Survey EMP for protecting the conservation values of the nature reserves. | During and after the survey |         |

Abbreviations:
CALM = Department of Conservation & Land Management
DRF = Declared Rare Flora
FER = Public Environmental Review
Figure 5.1 ARC-Origin Vegetation and Flora Management Process

Vegetation and Flora Management Process

Process Step

1 - Develop statement of objective and strategy

2 - Confirm with CALM that they agree in principle with the strategy

3 - Conduct desktop review of aerial photography to determine key vegetation and community types

4 - Develop criteria to determine areas of high sensitivity or risk

5 - Conduct vegetation community type

6 - Identify areas of high sensitivity or risk based on vegetation mapping, database reviews and criteria for sensitivity and risk

7 - Confirm with CALM that identified areas of high sensitivity or risk

8 - Realign proposed seismic lines to avoid areas of high sensitivity or risk (where practicable)

9 - Confirm with CALM that the seismic line realignments are acceptable

10 - Conduct botanical survey of seismic lines in areas of high sensitivity or risk (including GPS locations of significant flora and other significant features)

11 - Identify whether further alignment is required and arrange realignments accordingly

12 - Confirm with CALM that finalised seismic line alignments are acceptable

13 - Enter all significant lines onto existing maps

14 - ARC-Origin Field Botanist to supervise rolling operations in areas of agreed high sensitivity or risk
Figure 5.3 ARC/Origin Dieback Management Process

**Dieback Management Process**

<table>
<thead>
<tr>
<th>Process Step</th>
<th>ARC/Origin</th>
<th>ARC/Origin Environmental Permit Officer</th>
<th>ARC/Origin, Field Officer</th>
<th>CALM</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 - Develop strategy for minimizing risk of spreading dieback</td>
<td>Responsible</td>
<td>Involved or Notified</td>
<td>Decision</td>
<td>Go To</td>
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<tr>
<td>2 - Conduct desktop review of vegetation reports over the region, from both previous seismic survey and DoA reports, focusing on areas of known dieback</td>
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<td>3 - Ground truth dieback infestations and high dieback risk areas</td>
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<tr>
<td>4 - Identify high dieback risk areas</td>
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<td>5 - Confirm with CALM that the dieback infestations have been identified/high dieback risk areas</td>
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<td>6 - Develop a dieback hygiene and quarantine protocol</td>
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<tr>
<td>7 - Develop completion criteria for dieback infestations as part of rehabilitation/vegetation control criteria</td>
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<tr>
<td>8 - Confirm with CALM that the dieback hygiene and quarantine protocol and completion criteria are acceptable</td>
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<td>9 - Enter all agreed high risk areas and clean down points on cleaning matrix</td>
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<tr>
<td>10 - Implement the dieback hygiene and quarantine protocol</td>
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<td>11 - Undertake monitoring for dieback infestation after three years</td>
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<td>12 - Determine whether dieback completion criteria are met</td>
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<tr>
<td>13 - Confirm with CALM that dieback completion criteria have been met</td>
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<tr>
<td>14 - CALM sign-off that dieback completion criteria have been met</td>
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</table>
Figure 5.9  ARC/Origin Rehabilitation and Revegetation Management Process

<table>
<thead>
<tr>
<th>Process Step</th>
<th>ARC/Origin</th>
<th>Field Officer</th>
<th>ARC/Origin Field Officer</th>
<th>CALM</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Develop strategy for implementing effective rehabilitation and revegetation on the survey lines.</td>
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<tr>
<td>2. Conduct desktop review of rehabilitation/revegetation success on seismic lines from previous surveys</td>
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<tr>
<td>3. Ground truth rehabilitation/revegetation of seismic lines from previous surveys</td>
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<td>4. Determine dominant species in each vegetation community type and identify their life cycles (i.e. opportunistic and successor species).</td>
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<tr>
<td>5. Develop rehabilitation/revegetation completion criteria for each vegetation community type, including species diversity and soil condition to match the life cycle of the community type.</td>
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<tr>
<td>6. Develop rehabilitation/revegetation management strategies for each vegetation community type.</td>
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<td>7. Confirm with CALM that the rehabilitation/revegetation completion criteria and rehabilitation/revegetation management strategies are acceptable.</td>
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<tr>
<td>8. Implement rehabilitation/revegetation management strategies</td>
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<td>9. Undertake monitoring of rehabilitation/revegetation success, record progress, and report all new observations.</td>
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<td>10. Determine whether further active rehabilitation/revegetation methods are required and implement accordingly.</td>
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<td>11. Continue monitoring rehabilitation/revegetation progress against completion criteria on an annual basis.</td>
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<td>12. Determine whether rehabilitation/revegetation criteria are met</td>
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<tr>
<td>13. Confirm with CALM that rehabilitation/revegetation completion criteria have been met.</td>
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<tr>
<td>14. CALM sign-off that rehabilitation/revegetation completion criteria have been met.</td>
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