



Appeals Convenor
Environmental Protection Act 1986

**REPORT TO THE
MINISTER FOR ENVIRONMENT**

**APPEALS IN OBJECTION TO THE CONTENT OF, AND RECOMMENDATIONS
IN, AN ENVIRONMENTAL PROTECTION AUTHORITY REPORT**

**EPA REPORT 1530: EP413 3D SEISMIC ACQUISITION SURVEY
NORTH-WEST OF ENEABBA**

PROPONENT: NORWEST ENERGY NL

Appeal Numbers 156 to 178 of 2014

January 2015

Appeals Summary

This report addresses appeals in objection to the content of, and recommendations in, the report of the Environmental Protection Authority (EPA) in relation to the proposal by Norwest Energy NL (proponent) to undertake a 3D Seismic Acquisition Survey within exploration permit area EP413 (proposal) north-west of Eneabba.

The appellants raised a number of concerns in respect to the proposal's impacts and the EPA assessment process, which are broadly summarised in seven grounds: Flora and vegetation; Terrestrial fauna; Karst landforms; Water; Indirect impacts and Rehabilitation; Offsets; and the EPA's assessment process.

In responding to the grounds of appeal, the EPA advised that it has recommended:

- the preparation and implementation of an Environmental Management Plan (EMP) that requires the proponent to implement management measures to avoid and mitigate potential impacts to native flora, vegetation and fauna, and to ensure that the recovery of vegetation disturbed by the proposal is not inhibited; and
- an offset as a contingency in the event that there is an ongoing significant residual impact from the proposal.

Recommendations

Having regard to the information presented in the appeals, the Appeals Convenor considered that the EPA's assessment of the proposal was appropriate.

It is recommended however that appeals be partly allowed to the extent that the conditions be amended as follows:

- modify condition 6 to ensure that the proponent may only commence clearing of native vegetation once written approval of the EMP is given by the CEO;
- condition 6-2(3) be modified to include buffers where appropriate and procedures for avoiding caves; and
- delete 'condition 6-3(5)' in condition 7-1 and insert the correct reference.

TABLE OF CONTENTS

INTRODUCTION.....	1
OVERVIEW OF APPEAL PROCESS.....	1
OUTCOMES SOUGHT BY APPELLANTS	2
FOUNDATIONS OF APPEAL	3
GROUND 1: FLORA AND VEGETATION	3
GROUND 2: TERRESTRIAL FAUNA.....	8
GROUND 3: KARST LANDFORMS	10
GROUND 4: WATER	11
GROUND 5: INDIRECT IMPACTS; REHABILITATION	13
GROUND 6: OFFSETS.....	15
GROUND 7: EPA'S ASSESSMENT PROCESS.....	17
OTHER MATTERS	19
CONCLUSION AND RECOMMENDATIONS	20
APPENDIX.....	21

INTRODUCTION

This report relates to 23 appeals lodged in objection to the content of, and recommendations in, the report of the Environmental Protection Authority (EPA) in relation to the proposal by Norwest Energy NL (the proponent) to undertake a 3D Seismic Acquisition Survey within exploration permit area EP413 (proposal). The 23 appellants are listed in the Appendix.

The proponent is proposing to undertake a 3D seismic acquisition survey across a 10,600 hectare (ha) area within exploration permit area EP413 located north-west of Eneabba in the Midwest Region (see Figure 1). The proposal involves the cutting (close to ground level) and mulching of up to 185 ha of native vegetation in a grid pattern of seismic lines across the development envelope within Beekeepers Nature Reserve and on adjacent farmland. The seismic survey would be carried out over a period of 12 weeks and the survey lines would then be left undisturbed to naturally regenerate.

The proposal was referred to the EPA in October 2013, and the EPA set the level of assessment as Assessment on Proponent Information (API) Category A. In October 2014, the EPA released its report and recommendations (Report 1530¹) on the proposal, where it concluded that it is likely that the EPA's environmental objectives would be achieved provided there is satisfactory implementation by the proponent of the recommended conditions. It was from this report that the appeals were received.

Report 1530 states the proposal has been declared a controlled action under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* due to impacts to foraging habitat for the endangered Carnaby's black cockatoo and is under separate assessment by the Commonwealth.

This document is the Appeals Convenor's formal report to the Minister for Environment under section 109(3) of the *Environmental Protection Act 1986* (EP Act).

OVERVIEW OF APPEAL PROCESS

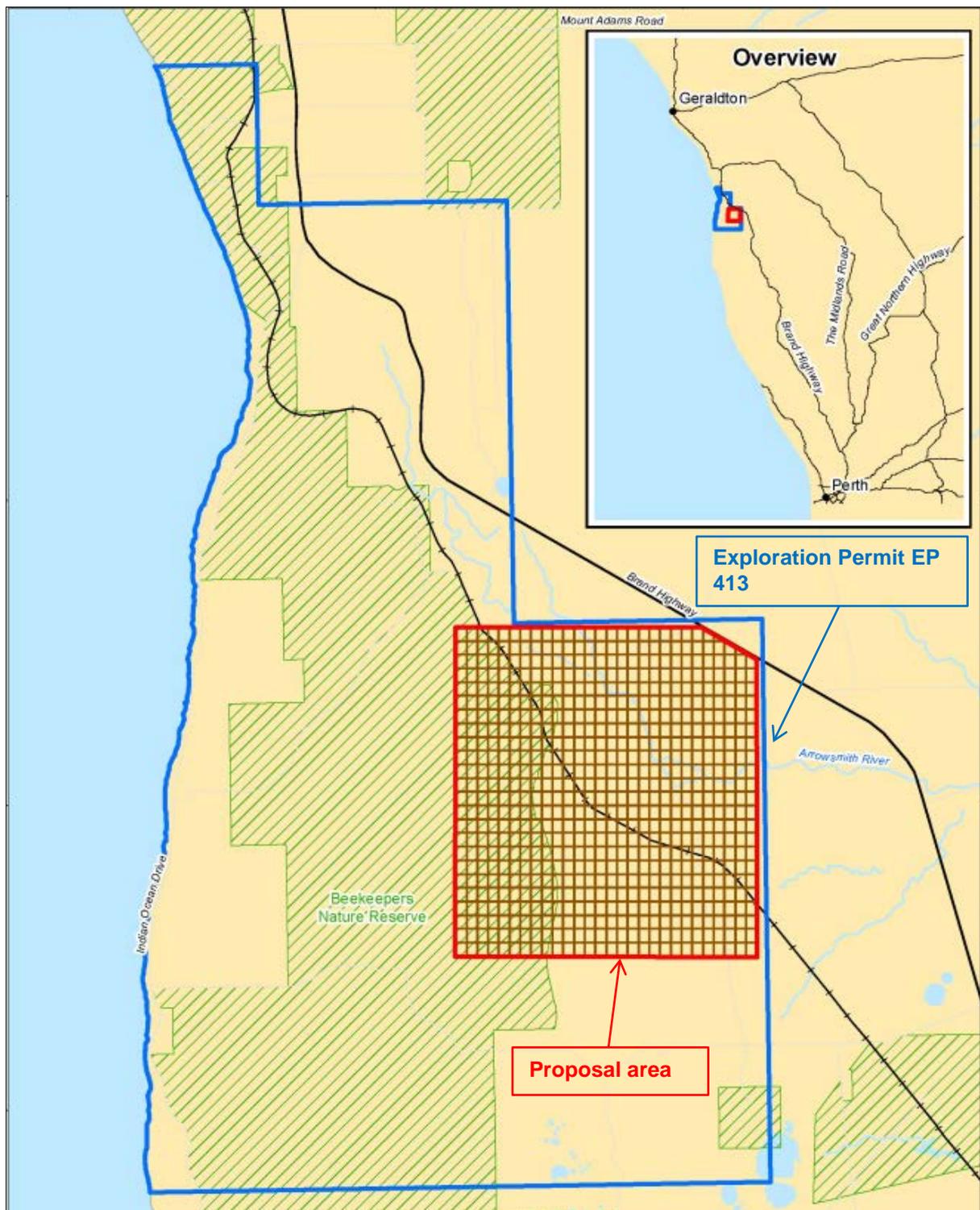
In accordance with section 106 of the EP Act, a report was obtained from the EPA in relation to the issues raised in the appeals. The proponent was also given the opportunity to address the matters raised in the appeals.

During the appeals investigation, the Office of the Appeals Convenor met with the proponent and consulted with the appellants through meetings, teleconferences or e-mail. Additional discussions were held with the Department of Parks and Wildlife (Parks and Wildlife).

The environmental appeals process is a merits based process. For appeals in relation to an EPA report and recommendations, the Appeals Convenor normally considers the environmental merits of the assessment by the EPA, based on objectives as set by the EPA as well as other environmental factors. The appeals process considers environmental significance, relevance of factors, additional information not considered by the EPA, technical errors and attainment of policy objectives. Where the development has been the subject of previous EPA assessments, those assessments and any subsequent Ministerial appeal decisions also need to be taken into account.

¹ Environmental Protection Authority 2014, *Report and recommendations of the Environmental Protection Authority, EP413 3D Seismic Acquisition Survey*, Report 1530, Environmental Protection Authority, Perth.

Figure 1 – Location of Proposal



(Source: EPA Report 1530)

OUTCOMES SOUGHT BY APPELLANTS

The appellants sought for the proposal to be resubmitted to the EPA for further assessment or for the proposal not to be allowed to proceed. Several appellants were of the view that if the proposal is to be implemented then more stringent conditions should be applied.

GROUNDINGS OF APPEAL

The issues raised in the appeals are broadly summarised under the following grounds: Flora and vegetation; Terrestrial fauna; Karst landforms; Water; Rehabilitation and indirect impacts; Offsets; and the EPA's assessment process. Each of these grounds of appeal is addressed in turn below.

Issues not directly related to the 3D seismic survey were also raised by appellants and are discussed under 'Other matters'.

GROUND 1: FLORA AND VEGETATION

The appellants contended that the proposal will take place within an area of native vegetation possessing significant conservation values, which requires a high level of protection. Appellants were of the view that the proposal will result in significant impacts to conservation significant flora and vegetation. Appellants also contended that the EPA has had insufficient regard for the status and purpose of Beekeepers Nature Reserve, which is set aside for conservation. Some of the appellants asserted that the EPA failed to consider the cumulative impacts of clearing native vegetation in the local area.

The appellants specifically identified that the proposal area:

- contains unique flora and vegetation including listed threatened species such as *Paracaleana dixonii*, priority flora species, Kwongan heath and old growth macrozamia;
- includes 3,000 ha of Beekeepers Nature Reserve that will be affected by the clearing of 55 ha within the reserve; and
- comprises relatively undisturbed native vegetation that is adjacent to large areas of intact native vegetation to the west, which connects to the coast through crown land. This is in contrast to the highly fragmented landscape of the Wheatbelt and Geraldton Sandplain regions, which greatly increases the conservation significance of native vegetation within the proposal area.

Appellants contended that given the proposal includes the clearing of 130 ha of native vegetation on farmland, the proposed clearing is inconsistent with *EPA Position Statement No. 2 Environmental Protection of Native Vegetation in Western Australia* (Position Statement No. 2).

Appellants asserted that the proponent's flora and vegetation surveys were inadequate, and that further surveys are required at the appropriate time of the year to determine the location of threatened and priority listed flora species, and to assess potential impacts to conservation significant vegetation communities. Several appellants were specifically concerned that the proponent's flora surveys did not identify the listed threatened flora species *P. dixonii*, which is known to occur in the area. The Western Australian Native Orchid Study and Conservation Group advised that it had recorded populations of the species flowering in the vicinity of the proposal area in late October 2012.

Appellants also contended that the proposal presented a number of indirect impacts to the high biodiversity values of the vegetation within the proposal area, by creating vectors for dieback disease, weeds and off-road vehicles to enter the site. Indirect impacts are discussed under Ground 5.

Consideration

It is noted that the API Document² indicates that the proposal area comprises approximately 10,600 ha, which contains 3,006 ha of native vegetation within nature reserve, 7,407 ha of remnant vegetation outside nature reserve and 126 ha of cleared land (see Figure 2).

The EPA's Report 1530, states that the proposal involves cutting and mulching of vegetation, in a grid pattern of seismic lines across the development envelope, which would include:

- up to 55 ha of high quality native vegetation within Beekeepers Nature Reserve; and
- up to 130 ha of high quality native vegetation on adjacent farmland.

The proponent's Level 2 Flora and Vegetation Survey³ indicates that the majority of the vegetation within the proposal area is in very good to excellent condition⁴.

In response to this ground of appeal, the EPA advised that the EPA's objective for the key environmental factor Flora and Vegetation is "To maintain representation, diversity, viability and ecological function at the species, population and community level". The EPA also advised that the cutting and mulching of native vegetation is considered clearing.

The EPA's assessment found that the proposal can be managed to meet the EPA's objective for Flora and Vegetation provided an Environmental Management Plan (EMP) specifying management measures to minimise impacts on vegetation and flora is a condition of approval. The EPA advised that it recommended condition 6, which specifies the preparation and implementation of an EMP that requires the proponent to implement measures to avoid impacts to threatened and priority flora, vegetation and fauna habitat, and prevent land degradation. The EPA also advised that vegetation would be cut above the ground surface, leaving topsoil and rootstock intact, and survey lines would deviate to avoid conservation significant features including priority flora, fauna habitat, slow growing species such as *Macrozamia* and *Xanthorrhoea*, waterways and rock outcrops. The EPA noted that the level of disturbance has also been reduced by minimising the width of seismic lines.

The EPA advised that:

The EMP will be reviewed by the land manager, the Department of Parks and Wildlife, to ensure the proposed measures are contemporary and best practice. The review and subsequent approval of the EMP will occur before any mulching (land clearing) occurs.

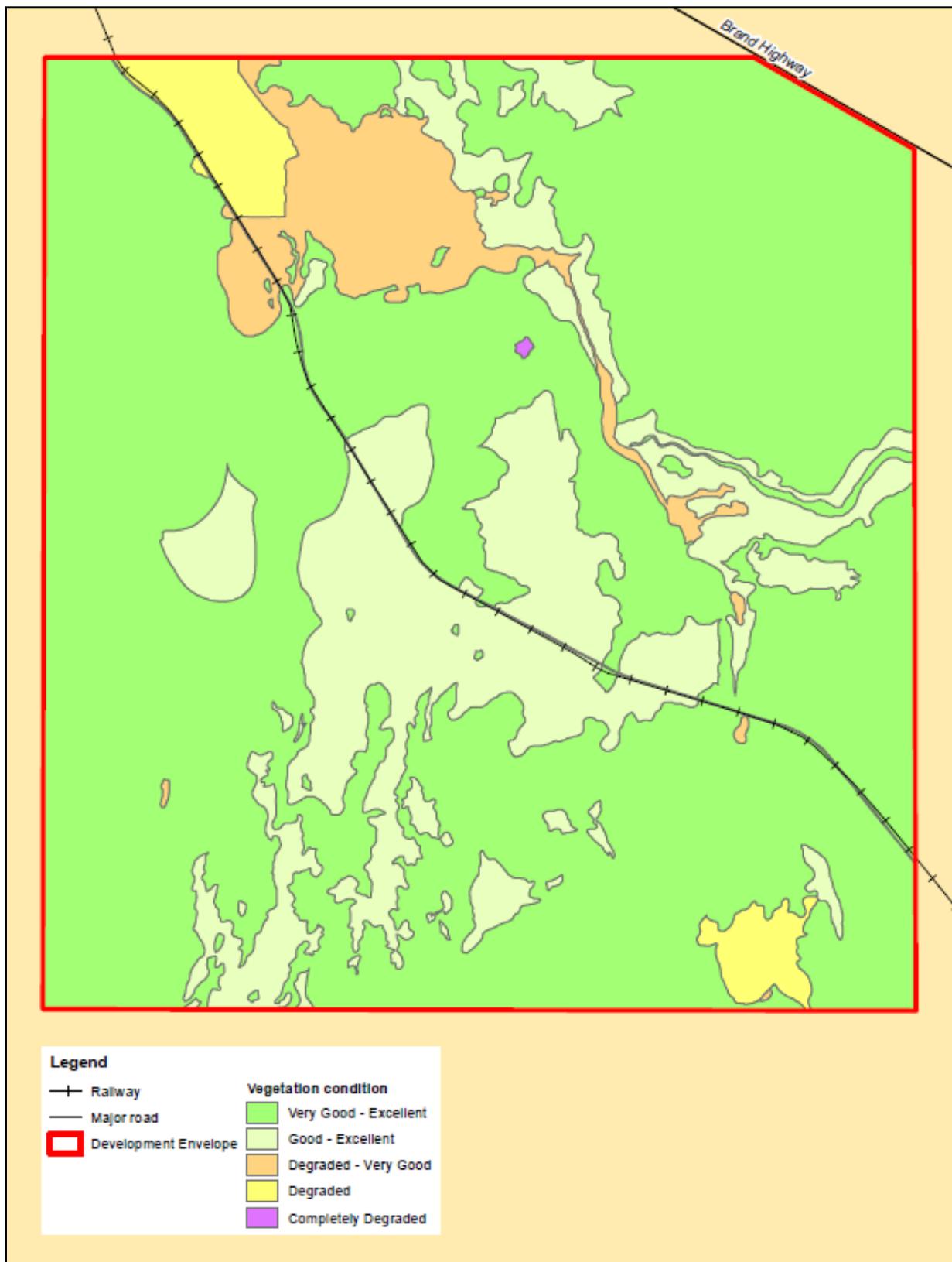
While condition 6-2 requires the proponent to submit the EMP to the CEO before commencement of clearing, condition 6-3 does not expressly state that the EMP must be approved before commencement of clearing.

² Straten environmental consultants 2014a, *EP413 3D seismic survey, Assessment on Proponent Information – Environmental Review*, prepared for Norwest Energy NL, July 2014.

³ Western Botanical 2014, *Norwest Arrowsmith Seismic Survey Level 2 Flora and Vegetation Survey*, prepared for Straten Environmental Consultants, Western Botanical, Midland, April 2014.

⁴ As determined in accordance with Keighery, BJ 1994, *Bushland Plant Survey: A Guide to Plant Community Survey for the Community*, Wildflower Society of WA (Inc.), Nedlands, Western Australia.

Figure 2 – Vegetation condition within the proposal area



(Source: Strategen environmental consultants 2014a²)

In its response to this ground of appeal, the proponent advised that the survey lines are 2.5 to 3.6 m wide, spaced at a distance of 350 to 450 m, and will deviate around the following sensitive features:

- threatened flora species;
- mapped areas of identified populations of Priority 1 (P1) and P2 flora species;
- trees;
- vegetation with a stem diameter greater than 100 millimetres (mm) which is too large to be mulched;
- slow-growing species;
- waterways; and
- rock outcrops.

The proponent also advised that geophones used during the seismic survey would be placed by hand if necessary to avoid clearing any threatened or P1 flora.

It is noted that the API Document states that proposed measures to manage impacts to conservation significant flora and vegetation include:

Demarcate and map areas of identified populations of conservation significant flora. Lines will be deviated around recorded and mapped populations of conservation significant flora. A 50 m buffer will be applied to P1 flora, and P2 flora will be directly avoided by deviation.⁵

It is understood that the draft EMP does not include the specific requirement for a 50 m buffer around P1 flora as was indicated in the API Document.

The proponent advised that the cutting and mulching technique involves cutting vegetation at approximately 100 mm above the ground surface, which is then immediately mulched and spread behind the machine. The proponent submitted that the technique is considered best practice as it retains vegetation rootstock, leaves soil undisturbed and has been demonstrated in other projects to achieve a high standard of regeneration.

It is noted that the proponent's Level 2 Flora and Vegetation Survey indicates that no threatened flora species were recorded, and one P1, two P2, seven P3 and three P4 listed flora species were recorded. It is also noted that the proponent's draft EMP⁶ indicates that the P1 and P2 species will be avoided by deviating survey lines around known populations, and many of the P3 and P4 species are associated with limestone ridges which cannot be surveyed and will be avoided.

In relation to potential impacts to *P. dixonii*, the EPA advised that:

The EPA also notes that there are particular concerns in relation to potential impacts to *Paracaleana dixonii*, a flora species classified as threatened. This species was identified by Western Botanical as potentially occurring in the project area but would likely be restricted to the eastern side. Although *Paracaleana dixonii* was not recorded during the survey, its potential presence was not discounted. Conservation significant flora species will be avoided and the proponent will not be disturb or mulch threatened flora species.

In relation to Threatened Ecological Communities (TECs) and Priority Ecological Communities (PECs), the proponent's Level 2 Flora and Vegetation Survey indicates that no TECs or PECs are known to occur in the proposal area, and none of the mapped vegetation types are recognised TECs or PECs. The proponent submitted that the disturbance of 185

⁵ Strategen environmental consultants 2014a, Table 5-6.

⁶ Strategen environmental consultants 2014b, *EP413 3D seismic survey, Environmental Management Plan – Draft*, prepared for Norwest Energy NL, December 2014.

ha represents 1.8% of the 10,600 ha proposal area, with a maximum of 4% impact to the extent of any one individual vegetation community mapped within the proposal area. The proponent was of the view that vegetation communities which may contain conservation significant flora species will remain well represented within the proposal area.

In respect to cumulative impacts, the EPA noted concerns that environmental decisions are being made without considering cumulative impacts from other proposals. However, the EPA disagreed with this view and advised that it does consider cumulative impacts, particularly where they may impact on the conservation status of a species.

In relation to concerns that the proposal is inconsistent with EPA policy outlined in Position Statement No. 2, the EPA advised that the Position Statement provides guidance on how the EPA may consider proposals that involve clearing of native vegetation in the agricultural area. The EPA noted however that proposals are considered on their individual merits. The EPA also advised that section 4.2 'Clearing in the agricultural area where alternative mechanisms address biodiversity values' applies in this instance. It is noted that section 4.2 indicates that in exceptional circumstances the EPA could consider supporting clearing in the agricultural area if certain criteria are met.

The EPA advised that in applying the guidance provided in Position Statement No. 2 in respect to this proposal, it should be noted that the proposed clearing is for linear seismic lines which does not represent broad scale clearing. The EPA also advised that the recommended requirement for an EMP strengthens rehabilitation procedures by requiring the proponent to carry out remedial rehabilitation, if necessary, until the disturbed areas are returned to an acceptable condition. The EPA submitted that it has recommended an offsets condition if rehabilitation is unsuccessful and completion criteria for disturbed areas are not met. The EPA concluded that is satisfied that the proposal is consistent with guidance provided by the EPA in Position Statement No. 2.

In relation to concerns in respect to the adequacy of botanical assessments, the EPA advised that:

Concerns were also raised that of the total 550 km of proposed seismic lines, only 227 km were surveyed. A level 1 botanical and terrestrial vegetation assessment involving a desktop review and field survey was carried out over the total site (550 km). A level 2 targeted survey was then undertaken to focus on lines with a north-south alignment, concentrating on the sensitive areas in Beekeepers Nature Reserve. The level 2 targeted survey involved surveying 227 km of the proposed seismic lines. This approach to surveys is consistent with EPA Position Statement No. 3 Terrestrial Biological Surveys as an Element of Biodiversity Protection. Table 1 of Position Statement No.3 identifies the indicative level of biological survey expected by the EPA in relation to the scale and nature of the impact and sensitivity of the receiving environment. In the Warren, Avon, Wheatbelt, Geraldton Sandplains, Esperance Plains, Mallee, Swan (Largely Cleared) (WAGEMS) Bioregion, a Level 2 survey is required which is sufficient to place the conservation and functional values of the proposal into a local and regional context. The EPA is satisfied that the level 2 targeted survey (informed by the outcome of the level 1 survey) which concentrated on the sensitive areas within the reserve was appropriate.

The proponent advised that the scope of the flora survey was determined in consultation with Parks and Wildlife and in line with EPA guidance on requirements for a Level 2 flora and vegetation survey. The proponent also advised that a total of 164 survey sites were used to map the total survey area of 10,600 ha. The proponent submitted that vegetation mapping was undertaken and used to identify priority areas for a targeted flora survey, in order to focus attention on the most sensitive areas. The proponent advised that the targeted survey focussed on north-south lines to ensure a more even coverage of the survey area, and that the results can reasonably be extrapolated out to similar vegetation of the surrounding area.

In relation to concerns in respect to the adequacy and timing of surveys for *P.dixonii*, the proponent advised that the Level 2 Flora and Vegetation Survey indicates that potential habitat for that species would be restricted to the eastern side of the proposal area. The proponent also advised that the Level 2 Flora and Vegetation Survey opportunistically searched for *P.dixonii* in potential suitable habitat and concluded that it was unlikely to occur in the proposal area.

From the information provided in respect to this ground of appeal, the following is noted:

- the EPA advised that the proposal is consistent with EPA policy in respect to the clearing of native vegetation in the agricultural area;
- the EPA indicated that the proponent's botanical surveys were conducted in accordance with EPA guidelines;
- vegetation within the proposal area is in very good to excellent condition⁴, and contains suitable flora and fauna habitat for listed threatened and priority flora species and conservation significant fauna including the endangered Carnaby's cockatoo;
- the EPA stated that the potential for *P.dixonii* to occur in the area was not discounted, and that the proponent will not disturb or mulch threatened flora species;
- the EPA has recommended condition 6, which specifies the preparation and implementation of an EMP that requires the proponent to implement management measures to avoid and mitigate potential impacts to native flora, vegetation and fauna, and to ensure that the recovery of vegetation disturbed by the proposal is not inhibited; and
- the EPA has advised that the proponent's draft EMP will be reviewed by Parks and Wildlife prior to implementation of the proposal to ensure that the proposed management measures are appropriate.

In view of the above, it is considered that the EPA's assessment with regard to flora and vegetation values was consistent with identified policies and took into account possible impacts to the high conservation values identified in the assessment. Notwithstanding this, it is recommended that the appeals be allowed to the extent that the EMP condition be amended to clarify that:

- the proponent may only commence clearing of native vegetation once written approval of the EMP is given by the CEO; and
- condition 6-2(3) be modified to include reference to adequate buffers where appropriate.

GROUND 2: TERRESTRIAL FAUNA

The appellants raised concerns in respect to potential impacts to native fauna and native fauna habitat, habitat fragmentation and risks from the incursion of feral animals along cleared survey lines. Appellants also contended that noise generated by survey vehicles will disturb fauna.

Appellants specifically identified that the proposal area:

- comprises critical foraging and roosting habitat for Carnaby's black cockatoo;
- includes malleefowl mounds and potential habitat for Western ground parrot and honey possums; and
- includes subterranean fauna habitat.

Consideration

The EPA's objective for the key environmental factor Terrestrial Fauna is 'To maintain representation, diversity, viability and ecological function at the species, population and assemblage level'. It is noted that Report 1530 states that:

Good quality intact native vegetation both within Beekeepers Nature Reserve and in areas outside the reserve provides habitat for Carnaby's Black Cockatoo, other bird species and other wildlife such as honey possums and reptiles.⁷

It is also noted that Report 1530 states that the proposal would be managed to avoid or minimise impacts on fauna and can be managed to meet the EPA's objective for Terrestrial Fauna.

In response to this ground of appeal, the EPA advised that the proposal may potentially cause the direct loss and degradation of fauna habitat through mulching. It is noted that Report 1530 states that there is potential for a significant residual impact if the proposal is not successfully rehabilitated; should third party access occur; feral animal management is not successful; or dieback or weeds are introduced. However, the EPA also advised that the management measures outlined in the EMP would include procedures for avoiding conservation significant fauna habitat, such as deviating seismic lines around large trees with potential to provide roosting or breeding habitat, induction of staff to identify vegetation species providing foraging habitat for Carnaby's cockatoo, malleefowl mounds and potential habitat for Western ground parrot.

The EPA advised that the seismic lines would be concealed following completion to minimise public access, and mulched to facilitate rehabilitation and remediation of impacts to habitat. The EPA submitted that the proponent expects vegetation to recover to pre-survey conditions within three wet seasons. The EPA noted that there will be a temporary reduction in habitat and foraging values, however given the linear nature of clearing seismic lines and that it involves mulching vegetation leaving rootstock intact, the proposal is unlikely to have a long-term impact on fauna and habitat values.

The EPA advised that no on-site camping or waste storage is proposed which may attract feral species. The EPA also advised that the proponent has committed to providing funding for the control of feral predators. It is noted that the draft EMP states that the proponent will 'Supplement DPaW feral fox control program in Beekeepers NR during the three year rehabilitation period'.

Officer-level advice from Parks and Wildlife obtained during the appeal investigation indicated that cleared survey lines can create pathways or 'run-ways' for feral animals to enter and move through intact areas of vegetation.

It is noted that the proponent's draft EMP includes the following mitigation and management measures in relation to fauna:

- inducting site personnel on requirements of the EMP, including fauna management actions;
- avoiding sensitive fauna habitat, including malleefowl mounds and all trees with a diameter greater than 100 mm;

⁷ Environmental Protection Authority 2014, Report 1530, Appendix 2.

- minimising interactions with native fauna by limiting vehicle movement, avoiding encounters with native fauna, controlling storage and management of operational waste, and contingency procedures for injured, sick or orphaned fauna;
- feral animal control; and
- record keeping and incident reporting.

Potential impacts to subterranean fauna habitat are addressed in Ground 3.

As noted previously, the proposal involves clearing of up to 185 ha or 1.8 % of the proposal area of 10,600 ha for survey lines. It is also noted that large tracts of remnant vegetation within and adjacent to the proposal area will remain undisturbed by the proposal and are likely to provide comparable habitat for fauna until the mulched survey lines regenerate.

Noting the above, in particular the EPA's advice and the requirements of the proponent's EMP in relation to the mitigation and management of potential impacts to fauna, it is considered that the EPA's assessment adequately took into account the risks posed to fauna from the implementation of the proposal. As noted under Ground 1 of the appeal, it is recommended however that condition 6-2(3) be amended to require the EMP to identify suitable buffers between clearing and high conservation values, such as conservation significant fauna habitat.

GROUND 3: KARST LANDFORMS

The appellants asserted that the EPA did not consider potential impacts to significant cave systems and fragile geological structures within the proposal area. The appellants contended that the cave systems have not been adequately surveyed and mapped to determine their environmental and Aboriginal heritage values. Appellants were of the view that there is a risk of collapse or damage to cave ecology from the seismic survey and heavy vehicle movements across the area. Appellants also contended that the recommended implementation conditions do not include measures to protect significant cave systems within the proposal area.

Consideration

In response to this ground of appeal, the EPA stated that the proponent undertook consultation with the Western Australian Speleological Group (WASG), which advised that it had no objections to the proposed seismic survey. The EPA advised that WASG noted the importance of avoiding areas of exposed surface limestone for cave protection. The EPA also advised that the proponent intends to avoid areas of surface limestone outcrop during implementation of the proposal.

It is noted that the API Document indicates that WASG advised that:

...We understand that the seismic survey process being undertaken will not impact on 'karst pavement' (areas of exposed limestone on the surface). Karst pavement can be an indicator of the presence of caves even if no surface openings are visible. It is important to avoid these areas for safety reasons as well as for cave protection...

The EPA stated that the methodology for the 3D seismic survey uses very low intensity vibrations in short bursts and the intensity of the vibrations is generally less than the extent of natural seismicity experienced in the region of the proposal area. Given this, the EPA was of the view that the proposal is unlikely to significantly impact on the limestone cave systems. However to ensure that cave systems are avoided, the EPA recommended that draft condition 6-2 (3) be modified to include procedures for avoiding caves in the EMP.

The proponent's response to this ground of appeal mirrored that of the EPA however the following additional points were included. The proponent advised that the vibroseis energy emitted during the survey process is not sufficient to cause any damage to limestone caves. The proponent also advised that the technique has sufficiently low impact levels that it can be employed in built up areas, such as city centres, without impact on the city buildings. The proponent noted that the proposal area is dissected by an existing rail line, which would be expected to generate substantially more vibration than the proposed seismic survey. The proponent also noted that limestone is not well suited for conducted seismic surveys and is therefore generally avoided.

In relation to the EPA's recommendation to amend draft condition 6-2 (3), the proponent did not consider the additional requirement was necessary given that surface limestone outcropping would already be avoided. However, the proponent stated that it had no objection to condition 6-2(3) being amended as recommended by the EPA.

In relation to potential impacts to Aboriginal heritage values, the API Document states that a heritage survey was conducted in November 2013 and no registered heritage sites were identified within the boundaries of Exploration Permit EP413. It is noted that under section 18 of the *Aboriginal Heritage Act 1972* (AH Act), consent must be obtained from the Minister for Aboriginal Affairs to disturb an Aboriginal site.

Taking into account the foregoing, it is considered the EPA adequately assessed impacts to caves as part of the assessment, and that the recommendation to modify condition 6-2(3) to include procedures for avoiding caves provides an additional assurance that appropriate avoidance of impacts will be included in the EMP before being approved by the CEO.

GROUND 4: WATER

The appellants contended that the EPA did not adequately assess potential significant impacts to the Arrowsmith River and other watercourses, and wetland ecosystems within the proposal area. Appellants were concerned that the proposal will require numerous watercourse crossings, including the Arrowsmith River and its tributaries, involving the clearing of riparian vegetation and the movement of heavy survey vehicles across sensitive riparian areas. Appellants asserted that this would seriously degrade water quality through erosion, compaction, alteration of flows, turbidity and sedimentation.

One appellant contended that exclusion zones should be established along watercourses within the proposal area, which would reduce the number of watercourse crossings and the amount of clearing required. The appellant suggested that vehicle movement should be confined to existing tracks, roads and engineered water crossings.

Consideration

The Arrowsmith River flows from east to west through the proposal area (see Figure 1). It is noted that recommended condition 6-2(3) requires that the EMP shall "describe procedures for avoiding trees, conservation significant flora, wetlands, streams and rivers".

In response to this ground of appeal, the EPA advised that:

There would be up to five creek crossings...

In relation to creek crossings, riparian vegetation would be retained through use of existing creek crossings. Where creek crossings are required, lines would be deviated to naturally cleared areas or where there is the least amount of vegetation to reduce impact to riparian vegetation. Water flow would be maintained at creek crossings.

Monitoring will occur and erosion control including scrub-packing would be implemented if necessary. Soil disturbance would be minimised by cutting vegetation above the surface and

leaving the topsoil and rootstock intact for the vehicle access lines. Vehicle passes would also be kept to a minimum to mitigate soil compaction.

Greenstock (native vegetation) that is mulched will be immediately replaced along the disturbed lanes to stabilise soil and minimise erosion. There would be no mulching activities occurring in sensitive areas, including mobile dunes and riparian vegetation of the Arrowsmith River, including both banks to retain bank stability. The avoidance and management measures proposed are considered adequate to prevent degradation of riparian vegetation and water quality.

The draft EMP outlines management actions in relation to riparian vegetation associated with the Arrowsmith River, which include:

- Identify and use existing constructed crossings of the Arrowsmith River where possible. Up to five additional crossings may be cleared where the bank is stable and has low slope, as agreed with Amangu Native Title claimant representatives.
- Surveyor to ground truth the location and condition of Arrowsmith River to define avoidance areas and crossing points.
- Stop seismic lines 20 m from the surveyed creek line of the Arrowsmith River and leave riparian vegetation intact so as to retain bank stability.
- Hand carry cables and equipment to avoid damage to riparian vegetation.
- Monitoring and contingency measures.

In relation to proposed new river crossings (up to five), the proponent's representative advised that no ground disturbance would be required (as the banks at these locations are ill defined and essentially level with the riverbed), however clearing would occur up to the river bank to allow access across the Arrowsmith River.

In relation to the appellant's concern that exclusion zones should be established along watercourses, the EPA advised that:

Seismic lines are prepared by a line preparation crew using maps detailing sensitive areas to be avoided. Where sensitive landforms or vegetation communities are identified, seismic lines are hand-prepared or realigned as appropriate.

Seismic line preparation is based on the following:

- using existing tracks where practical;
- following natural contours;
- minimising vegetation removal;
- minimising soil disturbance;
- avoiding windrows to prevent effects on natural drainage patterns;
- deviating around avoidance areas;
- discouraging third party access to lines to limit future uncontrolled access and impacts;
- avoiding blocking channel or impeding water flow at creek crossings by hand-carrying cables and equipment or using naturally clear areas; ... and
- avoiding visual corridor effects, particularly in dense vegetation and at crossings by hand cutting rather than removing large trees.

Seismic lines can be deviated from the normal mapped alignments by up to 15 metres without losing definition in survey results. This allows survey lines to avoid rock outcrops, large trees,

soaks, creek lines and other environmental values including populations of conservation significant flora, vegetation of fauna habitat.

Taking the above information into account, it is considered that the EPA adequately assessed potential impacts to watercourses and wetlands, including the Arrowsmith River, and has recommended conditions relating to the avoidance and mitigation of impacts to riparian areas. Notwithstanding this, it is noted that the EMP condition (condition 6) does not specifically reflect the intention that a buffer be established from the banks of the Arrowsmith River. For completeness, and consistent with Grounds 1 and 2 of this report, it is recommended that condition 6-2(3) be amended to specify the requirement for an appropriate buffer of the Arrowsmith River as outlined in the draft EMP.

GROUND 5: INDIRECT IMPACTS; REHABILITATION

By this ground of appeal, appellants contended that the proposed rehabilitation measures are inadequate, cleared areas will not adequately regenerate and become denuded of native vegetation. The appellants also contended that the proposal presented a number of indirect impacts to the high biodiversity values of the proposal area, particularly within Beekeepers Nature Reserve.

The appellants were specifically concerned that the proposal will result in the following indirect impacts:

- Creating vectors for dieback disease and weeds to enter the site.
- Unauthorised access by recreational off-road vehicles causing damage to vegetation, spread of dieback and weeds, and dumping of rubbish.
- Heavy survey vehicles will cause soil compaction and erosion.
- Edge effects of the cleared survey lines will be detrimental to vegetation.
- Plants that regenerate from seed or require smoke/heat/fire to germinate seed will not regenerate after mulching.
- The cleared survey lines will become denuded and wind erosion and dust coating of vegetation will occur.
- The clearing will lead to changes in hydrology, causing land degradation.
- Impact on bees which depend on native vegetation for honey production.
- Impact on amenity values and tourism within Beekeepers Nature Reserve.
- Impact to ecological research that has taken place within Beekeepers Nature Reserve for many years.
- Hydrocarbon spills from survey vehicles causing pollution incidents.

Consideration

The EPA's objective for the key environmental factor Rehabilitation and Closure is 'To ensure that premises can be closed, decommissioned and rehabilitated in an ecologically sustainable manner, consistent with agreed outcomes and land uses, and without unacceptable liability to the state'.

It is noted that Report 1530 states:

The Department of Parks and Wildlife advise that experience with surveys of this type (including previous seismic surveys in Beekeepers Nature Reserve) shows that the rehabilitation of survey lanes can be problematic. In addition, if third party access (four wheel

drive vehicles, trail bikes) were to occur and/or dieback disease or weeds were to be introduced, there would be severe degradation of the conservation values of the vegetation.

In response to this ground of appeal, the EPA advised that:

The EPA has recommended a condition requiring an EMP to be submitted, which includes completion criteria to be developed in consultation with Parks and Wildlife prior to seismic lane preparation. Management actions and monitoring are required to be implemented until the completion criteria are met. Monitoring will be carried out annually for a period of three years following completion of the seismic activities.

If the closure criteria are not met, the proponent must implement remedial rehabilitation measures. The EPA has also recommended a condition for offsets as a contingency, in the event that there is an ongoing significant residual impact.

The EPA also advised that an important part of ensuring that the integrity of Beekeepers Nature Reserve is retained, is ensuring complete regeneration of vegetation. The EPA submitted that the proponent expects that the vegetation would recover to pre-survey conditions within three wet seasons after the survey work.

In relation to monitoring of vegetation regeneration after the proposal is concluded, the draft EMP states:

... monitoring of vegetation will be undertaken to ensure adequate recovery. Vegetation will be monitored in Year 1, Year 3 and Year 5 (after commencement of the project). However, monitoring may also be undertaken at Year 2 and at Year 4 if the monitoring results indicate recovery is not achieving the required standard...

After each monitoring round, an assessment will be made on whether the site has achieved the required completion criteria (based on % cover of native vegetation, presence of weeds and presence of erosion). If the criteria have not been achieved, then contingency actions ... will be implemented, and an additional monitoring round implemented 12 months later to assess the effect of the contingency actions.

In relation to dieback, the EPA advised that:

A dieback survey was undertaken in 2013 and the results were used to inform hygiene management measures. This involves hygiene stations for clean-on-entry, including maintaining cleanliness of vehicles, handheld tools and footwear, and characterising the presence of weed and dieback across the survey area. Survey lines will be concealed from the track entrances with natural barriers to deter third party access and minimise potential for introduction of rubbish, weeds, pathogens and contamination to waterways. Contingency actions would also be initiated if required, which would include notifying the Department of Parks and Wildlife for advice on the appropriate course of action.

It is noted that a *Phytophthora Dieback Occurrence Assessment*⁸ was conducted by the proponent's consultant in November 2013, which involved an assessment of possible vectors of dieback introduction during a desktop assessment followed by field assessment. The strategic survey indicated that there was no identified presence of dieback within the proposal area, however it was noted that vegetation communities within the proposal area have varying levels of interpretability for dieback disease and therefore there were limitations to the disease mapping.

Officer-level advice was also sought from Parks and Wildlife in relation to dieback management, which indicated that the standard of dieback survey and interpretation was appropriate in this instance given the risk posed by the clearing activity. In the view of these officers, clean down procedures must effectively remove all soil and plant material from vehicles and equipment during implementation of the proposal, and it is critical that third

⁸ Glevan Consulting 2013, *Norwest Energy Midwest Project EP413, Phytophthora Dieback Occurrence Assessment*, prepared for Norwest Energy NL, November 2013.

party access be controlled once the proposal is concluded to prevent the incursion of dieback.

The EPA also advised, as previously noted, that the draft EMP would be reviewed by Parks and Wildlife to ensure the proposed management measures are best practice.

In relation to the risk of soil erosion, the EPA advised that mulch would be spread immediately behind the cutting and mulching machine during clearing operations to stabilise soil and minimise erosion.

With regard to potential impacts to amenity, tourism, research and apiary activities, the EPA advised that these activities are unlikely to be significantly impacted, as cleared areas would be rehabilitated following the 12-week survey.

In relation to the risk of pollution incidents during the proposal, the EPA advised that:

The survey will require the use of materials including fuels and lubricants. To prevent any discharges to the environment, management measures including storage of hazardous materials in compliance with the *Dangerous Goods Safety Act 2004* is required and a spill response plan would be in place.

A Waste and Hazardous Materials Monitoring Program will also be implemented to enable assessment of the effectiveness of the waste and hazardous materials management actions. The proponent will report any recordable incidents which have potential to impact on the environment to the Department of Mines and Petroleum in accordance with the *Petroleum and Geothermal Energy Resources (Environment) Regulations 2012*.

It is noted that the draft EMP includes management measures for waste and hazardous materials, which mirror the EPA's advice above. It is also noted that the API Document indicates that an Environment Plan was submitted to the Department of Mines and Petroleum (DMP) in November 2013. The DMP's *Guidelines for the Preparation and Submission of an Environment Plan under the Petroleum Environment Regulations*⁹ (DMP Guidelines) indicate that an Environment Plan should include operational details for fuel, chemical and hazardous material handling, record keeping and environmental incident reporting. The risk of hydrocarbon spills can therefore be considered by the DMP through its assessment of the Environment Plan required under the *Petroleum and Geothermal Energy Resources (Environment) Regulations 2012* (PGER Regulations), and it is open to the DMP not to approve the Environment Plan if it does not adequately meet all of the requirements of the PGER Regulations.

Taking the above information into account, it is considered that the EPA's assessment addressed appellants' concerns in relation to rehabilitation and potential indirect impacts from the proposal. It is specifically noted that, in respect to dieback and weed management, the EMP is required to be prepared in consultation with Parks and Wildlife, which provides additional assurance that adequate and enforceable requirements in respect to hygiene and weed management will be in place prior to the commencement of clearing to ensure the EPA's objectives are met.

GROUND 6: OFFSETS

The appellants noted that the proposal involves the clearing of high quality native vegetation in Beekeepers Nature Reserve and on adjacent farmland, and considered that offsetting the loss of intact vegetation communities with high biodiversity values unacceptable. Appellants

⁹ Department of Mines and Petroleum 2012, *Guidelines for the Preparation and Submission of an Environment Plan Under the Petroleum Environment Regulations*, Department of Mines and Petroleum, East Perth.

contended that the proposed mitigation measures are inadequate and the proposal will result in significant residual environmental impacts which offsets will not rectify.

Consideration

The EPA's objective for the key environmental factor 'Offsets' is 'To counterbalance any significant residual environmental impacts or uncertainty through the application of offsets'. It is noted that Report 1530 states:

There is potential for ongoing significant residual environmental impacts to flora and fauna if rehabilitation is unsuccessful, dieback or weeds are introduced and/or feral animal management is not successful.

If significant residual environmental impacts remain after reasonable rehabilitation and management measures are undertaken, the reserve Manager (Department of Parks and Wildlife) may be left with a future liability for reserve management.⁷

The EPA advised that:

An offsets condition has also been recommended by the EPA. Recommended condition 6 (5) [6-2(8)] requires "significant residual environmental impact" trigger criteria to be defined. If this criteria is not met after five years (rather than three years as proposed by the proponent), the requirement for an offset will be triggered. The requirement for the offset is addressed in recommended condition 7. If the offset is triggered, then the EPA's view, after considering the environmental impacts of this proposal, is that offsets should be focussed on management of the reserve and not on land acquisition.

It is noted that the proponent's draft Offsets Strategy¹⁰ indicates that potential residual environmental impacts of the proposal include:

- temporary disturbance to up to 200 ha of Carnaby's cockatoo habitat; and
- temporary disturbance of 63 ha of native vegetation within Beekeepers Nature Reserve.

In relation to the value of the proposed offset, recommended condition 7-2 states 'The value of offset(s) to be provided shall be not less than \$200,000 AUD indexed to the Perth CPI'. It is noted that the proponent's draft Offsets Strategy indicates that the proposed offset is based on an offset ratio of 2:1, where up to 400 ha could be acquired for conservation purposes at the regional land value of \$500/ha.

The Offsets Strategy outlines proposed offsets to provide funding to Parks and Wildlife for the acquisition of land to add to the conservation estate or rehabilitation and management of Beekeepers Nature Reserve. It is noted that the WA Environmental Offsets Policy¹¹ outlines that offsets will be used to compensate for residual environmental impacts and be designed to achieve long-term outcomes, building upon existing conservation programs and initiatives. It is also noted that a public Offsets Register has been developed to provide a public record of all offset agreements in WA, which allows monitoring of offset implementation and outcomes.

It appears from the foregoing that the value of the offset was calculated by the proponent to reflect temporary residual impacts. In contrast, the EPA's recommended condition is directed at significant residual impacts that are identified five years after implementation of the proposal (that is, after any temporary impacts are predicted by the proponent to have recovered). As the condition sets the value of the offset as a minimum, this appears to reflect

¹⁰ Strategen environmental consultants 2014c, *EP413 3D seismic survey, Offsets Strategy*, prepared for Norwest Energy NL, July 2014

¹¹ The Government of Western Australia 2011, *WA Environmental Offsets Policy*, The Government of Western Australia, Perth.

the intent of the EPA that only significant residual impacts will be required to be offset, and that the value of the offset may be significantly greater than \$200,000 (as adjusted) depending on the nature and scale of any residual impacts.

For clarity, it is also noted that recommended condition 7-1 is not limited to significant residual impacts occurring only within Beekeepers Nature Reserve – it applies to the whole project area. In this regard, the form and content of any offset is not considered to be limited to funding of reserve management, given that the majority of the proposed clearing will occur outside of the nature reserve.

It is noted that condition 7-1 refers to 'condition 6-3(5)' which does not exist. The erroneous reference should be deleted and the correct reference inserted.

Taking the above information into account, it is considered the issues raised by this ground of appeal have been adequately considered by the EPA and the details of the completion criteria will be subject to consultation with Parks and Wildlife. It is recommended however that condition 7-1 be amended as indicated above.

GROUND 7: EPA'S ASSESSMENT PROCESS

Under this ground of appeal, the appellants contended there was a lack of community consultation in relation to the development and assessment of the proposal. Appellants noted that Beekeepers Nature Reserve is vested in the Conservation Commission, and contended that the EPA and proponent have failed to consult with the Commission.

The appellants were of the view that the EPA did not adequately assess alternatives to the proposal, such as helicopter based survey or hand placed geophones. One appellant contended that the precautionary principle should be applied and the EPA should insist on a helicopter based survey. The appellants also contended that helicopter based survey is considered best practice, which would significantly reduce the potential environmental impacts of the proposal. Appellants asserted that the proponent has chosen not to use helicopter based survey for economic reasons, which is not a relevant consideration for the EPA.

Appellants were also of the view that the recommended conditions are not binding or enforceable and fail to explicitly require the proponent to comply with the undertakings and management actions outlined in the EMP.

Consideration

In relation to consultation, it is noted that the API Document describes the community and stakeholder consultation undertaken by the proponent, which included project briefings, discussions and correspondence with key stakeholders consisting of government authorities and agencies, Native Title claimant groups, landowners, non-government organisations and community stakeholders.

The EPA advised that Beekeepers Nature Reserve is a Class C Nature Reserve vested with the Conservation Commission and administered and managed by Parks and Wildlife. The EPA also advised that the proponent has consulted with Parks and Wildlife to facilitate access to the nature reserve and identify specific management aspects required for the proposal. The EPA further advised that it consulted with Parks and Wildlife in relation to the proposal and the draft environmental conditions. The EPA noted that Parks and Wildlife has key responsibilities including conserving biodiversity and managing the State's conservation estate, and also provides support to the Conservation Commission to carry out its functions.

The proponent advised that it consulted with Parks and Wildlife, as the manager of Beekeepers Nature Reserve under the *Conservation and Land Management Act 1984*. The proponent submitted that it understood that Parks and Wildlife have kept the Conservation Commission informed at all stages of the assessment process, and that the Commission will be directly involved in the approval process under requirements of the *Petroleum and Geothermal Energy Resources Act 1967*.

It is noted that the level of stakeholder consultation for the API document was consistent with the EPA's *Environmental Impact Assessment (Part IV Divisions 1 and 2) Administrative Procedures 2012*. Schedule 1 of the Administrative Procedures describes the procedure for an API Category A level of assessment, which includes:

- Seven day public comment period on the referral information.
- EPA issues API scoping guideline that includes confirmation of the stakeholders to be consulted during the environmental review and preparation of the API document.
- The proponent consults with the stakeholders including decision making authorities (DMAs) and submits an API document that is acceptable to the EPA.
- The EPA assesses the proposal and seeks comment from the proponent and relevant DMAs and other government agencies on any draft recommended conditions.

In relation to the evaluation of alternatives, the EPA advised that the proponent has referred a proposal to carry out a 3D seismic survey, which would require mulching of vegetation in a grid pattern of seismic lines across the proposal area to form survey lines. The EPA submitted that the proponent advised that the use of helicopter based survey was not viable for the project, and the EPA has therefore considered whether the proposed survey method can meet the EPA's objectives. The EPA concluded that its environmental objectives could be met provided that recommended condition 6 relating to the preparation of an EMP to avoid and minimise impacts to native flora, vegetation and fauna is implemented.

It is noted that, as previously described in Ground 1, the proponent advised that geophones used during the seismic survey would be placed by hand if necessary to avoid clearing any threatened or P1 listed flora species.

In relation to the precautionary principle, which states 'Where there are threats of serious or irreversible damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation', the EPA considered that the threats from the project are significant but neither serious or irreversible and therefore the precautionary principle is not applicable to this proposal. The EPA advised that the potential impacts are reversible and the recommended condition for an EMP includes requirements to rehabilitate disturbed areas.

In relation to appellants' concerns in respect to the recommended conditions, the EPA advised:

The proponent is required to prepare an EMP to minimise impacts to native flora, vegetation and fauna prior to commencement of seismic lane preparation involving rolling and/or cutting of vegetation. The EMP is required to address specific management actions that will be implemented to ensure the objective to minimise impacts is achieved, as well as outline monitoring procedures and contingency plans. From a regulatory perspective, it is the outcome that is most important, and the EMP must specify completion criteria which are agreed with Parks and Wildlife. The EPA considers that condition 6 specifying the preparation and implementation of an EMP to avoid, minimise and manage impacts to native flora, vegetation and fauna is enforceable. If the proposal is approved, the Office of the EPA

monitors the implementation of approved proposals for the purposes of determining whether the implementation conditions are being complied with.

Noting the above, it is considered that the EPA has undertaken its assessment of the proposal taking into account the Administrative Procedures, and has had regard to information and comments received from stakeholders and the public, the precautionary principle and compliance matters. In addition, changes have been recommended to the conditions under above appeal grounds to better reflect the environmental outcomes identified by the EPA.

OTHER MATTERS

The appellants raised concerns relating to the extraction of unconventional gas, which is not considered to be directly related to the proposal and is therefore considered to be beyond the scope of this appeal report. This matter is addressed below and includes the responses from the EPA and the proponent.

The appellants contended that the EPA has not addressed the proposal in the context of opening the area up for further unconventional gas extraction, and were of the view that if the proposal is approved then the proponent may presume that future exploration activities and gas extraction will also be approved. One appellant noted that there is a Parliamentary Inquiry currently underway into the implications for Western Australia of hydraulic fracturing for unconventional gas, and asserted that unconventional gas exploration should be postponed until the matter is dealt with by that Inquiry.

Some of the appellants asserted that extraction of unconventional gas in the region will increase greenhouse gas emissions and exacerbate climate change, and were of the view that renewable and alternative energy sources should be developed instead.

In this regard, the EPA advised that under the EP Act the EPA is obliged to consider proposals referred to it. The EPA acknowledged public concerns in respect to potential impacts from hydraulic fracturing, however noted that in this case, the proponent has referred a proposal to carry out seismic survey investigations and the EPA is obliged to consider the environmental impacts from that specific proposal. The EPA advised that the seismic survey is intended to explore for gas reservoirs and is not limited to tight and shale gas reservoirs. The EPA also advised that there is no current proposal for exploration drilling or gas development related to the 3D seismic survey, the subject of this appeal.

The EPA advised that any future proposal for exploration drilling or gas development that is likely, if implemented, to have a significant impact on the environment can be referred to the EPA for the EPA to determine whether the potential environmental impacts are significant enough to warrant formal assessment, and if so, the level of assessment.

The proponent responded similarly, noting that the API Document states "No drilling is proposed as part of the proposal. There is no intention to undertake any future drilling within the portion of the survey area covered by Beekeepers Nature Reserve."

The EPA advised that in relation to the Parliamentary Inquiry, the EPA is required to fulfil its duties and obligations under Part IV of the EP Act regarding referral and assessment of proposals.

CONCLUSION AND RECOMMENDATIONS

Having regard to the issues raised in the appeals, it is acknowledged that the native vegetation proposed to be cleared is in very good to excellent condition⁴ and possesses significant flora and fauna habitat values.

In considering the concerns raised in the appeals and the information provided through the appeals investigation process, and for the reasons set out in each appeal ground, it is considered that the EPA adequately assessed the proposal.

It is recommended however that appeals be allowed to the extent that the conditions be amended as follows:

- modify condition 6 to ensure that the proponent may only commence clearing of native vegetation once written approval of the EMP is given by the CEO;
- condition 6-2(3) be modified to include buffers where appropriate and procedures for avoiding caves; and
- delete 'condition 6-3(5)' in condition 7-1 and insert the correct reference.

The final wording of recommended changes to the conditions should be determined by the Minister in consultation with relevant DMAs under section 45 of the EP Act.

It is otherwise recommended the appeals be dismissed.

Jean-Pierre Clement
ACTING APPEALS CONVENOR

Investigating Officer:
Michael Power, Senior Environmental Officer

APPENDIX

LIST OF APPELLANTS

- Wildflower Society of Western Australia (156/14)
- Hon Robin Chapple MLC (157/14)
- Ms Peggy Hodgson (158/14)
- Mr & Mrs Colin & Ursula Clarke (159/14)
- Ms Pauline Winrow (160/14)
- 350 Australia (161/14)
- Mr John Koch (162/14)
- Ms Sandra Reed (163/14)
- Dr Gregory Glazov (164/14)
- Mr Brett Glossop (165/14)
- Mr Peter Skippings (166/14)
- Mr Robin Ding (167/14)
- No Fracking Way (168/14)
- The Wilderness Society WA (169/14)
- Ms Kelli McCreery (170/14)
- Mr Ross Crump (171/14)
- Conservation Council of Western Australia Inc (172/14)
- WA Native Orchid Study and Conservation Group Inc (173/14)
- Ms Tiffane Bates (174/14)
- Ms Vanessa Westcott (175/14)
- Dr Johannes E Wajon (176/14)
- Ms Nina Stick (177/14)
- Mr Gene Adam (178/14)