

# Onshore Petroleum Activity – NT EPA Advice

## ENVIRONMENT MANAGEMENT PLAN – ORIGIN ENERGY B2 PTY LTD, BEETALOO BASIN VELKERRI EP76 S2 CIVIL CONSTRUCTION

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### BACKGROUND

The Minister for Environment and Natural Resources has formally requested under section 29B of the Northern Territory Environment Protection Authority Act 2012 (NT EPA Act) that the Northern Territory Environment Protection Authority (NT EPA) provide advice on all Environment Management Plans (EMPs) received under the Petroleum (Environment) Regulations 2016.

That advice must include a recommendation on whether the EMP should be approved or not, supported by a detailed justification that considers:

- whether the EMP is appropriate for the nature and scale of the regulated activity to which the EMP relates (Regulation 9(1)(b));
- whether the EMP demonstrates that the activity will be carried out in a manner by which the environmental impacts and environmental risks of the activity will be reduced to a level that is as low as reasonable practicable and acceptable (Regulation 9(1)(c));
- the principles of ecologically sustainable development (Regulation 9(2)(a)); and
- any relevant matters raised through the public submission process.

In providing that advice, the NT EPA Act provides that the NT EPA may also have regard to any other matters it considers relevant.

### ACTIVITY

Interest Holder	Origin Energy B2 Pty Ltd
Petroleum interest(s)	Exploration Permit 76 S2
Environment Management Plan (EMP) title	Beetaloo Basin Velkerri EP76 S2 Civil Construction
EMP document reference	NT-2015-15-MP031, prepared by Origin Energy B2 Pty Ltd
Regulated activity	Civil construction activities on EP76, to enable Origin Energy B2Pty Ltd's 2019/20 exploration petroleum well program and involving: establishment of an exploration lease pad, wet weather storage laydown yard, camp pad, helipad, soil stockpile area, drilling sump, cellar (to accommodate the wellhead equipment and Blow-Out-Preventer) and sediment basin on the cleared lease pad; extraction of gravel from four existing gravel pits to provide material for improving stability and integrity of the access tracks and lease pad; installation of fencing, gates and grids; establishing fire protection and subsequent rehabilitation.

Public consultation	Public consultation on the EMP was not required under the Petroleum (Environment) Regulations as the EMP does not propose drilling or hydraulic fracturing activities.
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## NT EPA ADVICE

### 1. Is the EMP appropriate for the nature and scale of the regulated activity (regulation 9(1)(b))

The civil construction program involves land clearing of 7.4 hectares (ha) and groundwater extraction of approximately 20 megalitres (ML). Civil construction works are scheduled for the third quarter of 2019, which reduces the risk of soil erosion and minimises effects on surface water flow.

Decommissioning and rehabilitation are planned for December 2024 following completion of subsequent exploration activities, which are subject to separate approval. A rehabilitation plan will be developed and implemented progressively to reduce the risk from contamination and return the disturbed land to provide an environment similar to the original conditions.

Information on the location and scale of the proposal is provided in the EMP. The existing environment has been adequately described through baseline surveys and is sufficiently understood. There are no areas of high conservation value or cultural significance in the vicinity of the regulated activity. The closest restricted work area is 7 km from the regulated activity.

The impacts and risks of the regulated activity have been identified by the Interest Holder and these impacts and risks should be reduced to an acceptable level through the proposed mitigation and management measures. Environmental performance standards and measurement criteria have been provided in the EMP.

The level of detail and the quality of information provided in the EMP is sufficient to inform the evaluation, assessment and management of environmental impacts and risks, and meets the approval criteria under Regulation 9 for the Minister's decision about approval of the environment management plan.

### 2. Principles of ecologically sustainable development (regulation 9(2)(a))

#### *Conservation of biological diversity and ecological integrity*

The EMP for the regulated activity has been informed by extensive baseline flora and fauna surveys undertaken between 2004 and 2018.

The EMP identifies 20 listed threatened species as likely to occur on EP76 based on availability of suitable habitat. Of these, five species were considered to have a 'medium' likelihood of occurrence (Table 1).

**Table 1: Listed threatened species assessed as potentially occurring in the vicinity of the regulated activity**

Common name	Scientific name	EPBC Act	TPWC Act
Gouldian Finch	<i>Erythrura gouldiae</i>	Endangered	Vulnerable
Grey Falcon	<i>Falco hypoleucos</i>		Vulnerable
Crested Shrike-tit	<i>Falcunculus frontatus</i>	Vulnerable	Near Threatened

Common name	Scientific name	EPBC Act	TPWC Act
Painted Honeyeater	<i>Grantiella picta</i>	Vulnerable	Vulnerable
Yellow-spotted Monitor	<i>Varanus panoptes</i>		Vulnerable

The Gouldian finch has specific requirements including suitable roost trees (e.g. *Eucalyptus leucophloia*) and appropriate sources of grass seed and water. The Department of Environment and Natural Resources (DENR) Flora and Fauna Division advises that it is unlikely that the proposal area provides suitable breeding habitat and that the clearing activities would pose no significant risk to this species.

The grey falcon occurs sparsely across the NT and is highly mobile. The grey falcon occurs patchily and sparsely in savanna woodland in the Top End of the NT. Clearing of the relatively small area of vegetation (approximately 7.4 ha) has been assessed by DENR as unlikely to result in significant impacts to regional populations of these species.

The crested shrike-tit occurs patchily and sparsely in savanna woodland in the Top End of the NT. Clearing of the relatively small area of vegetation has been assessed by DENR as unlikely to result in significant impacts to regional populations of these species.

The painted honeyeater is known to occur in the region, with suitable foraging habitat present within EP76. The risk from civil construction on the painted honeyeater has been assessed by DENR as low due to the very small area of disturbance compartmented to suitable habitat in the region.

The yellow-spotted monitor is known to occur in the Beetaloo Basin and is likely to occur within EP76. The species has undergone significant decline in the Top End, due to the spread of cane toads. DENR considers it unlikely that the proposed works will exacerbate this threat and the risks to the species are assessed as low.

The EMP outlines measures to minimise impacts on affected environmental values, including the management of threatening processes such as weeds and fire. Where relevant, management measures are consistent with the requirements of the Code, NT Land Clearing Guidelines and Weed Management Planning Guideline: Onshore Petroleum Projects. The NT EPA considers that implementation of the EMP for the regulated activity will ensure the conservation of biological diversity and ecological integrity.

#### *Integration of long-term and short-term economic, environmental, social and equitable considerations*

The regulated activity is low impact and of short duration. It forms one component of broader gas exploration aimed to inform the Interest Holder on the potential for gas production in the Beetaloo Basin. The EMP includes an assessment of cumulative impacts with the broader exploration program, including greenhouse gas emissions, groundwater and risk assessment. At this stage the cumulative impacts are minor and are considered not to be significant. Groundwater extraction will be managed within the constraints of the groundwater extraction licence across all of the Proponent's exploration permits. Land clearing under this Proposal is 7.4 ha, which represents less than 0.003% of the cumulative land clearing across all of the Proponent's EPs assessed by the NT EPA to date. The area of disturbance lies within regionally extensive non-critical habitat.

In EMPs for subsequent stages (if they proceed) the Interest Holder will need to re-examine cumulative impacts, particularly for aspects such as land clearing for infrastructure and activities across all the Interest Holder's exploration permits.

The EMP assesses the environmental risks and impacts associated with the regulated activity and outlines appropriate avoidance and mitigation measures. This includes the assessment and management of social risks and impacts, including the appropriate management of cultural heritage, fire and weeds.

The Interest Holder has undertaken stakeholder engagement with landholders and land managers, traditional owners, the Northern Land Council (NLC) and NT Government agencies, and has committed to local participation in education, training, employment and enterprise opportunities.

There are no significant economic, environmental, social or equitable effects associated with the regulated activity.

#### *Precautionary principle*

The NT EPA considers there is no threat of serious or irreversible damage from the regulated activity.

The Interest Holder's investigations into the physical, biological and cultural environment provide a satisfactory scientific basis to assess potential environmental impacts and risks, and to identify measures to avoid or minimise those impacts and risks.

The NT EPA is of the view that the precautionary principle has been considered in assessing the regulated activity and has not been triggered due to no threat of serious or irreversible damage existing and the presence of a satisfactory scientific basis to assess potential impacts and risks.

#### *Principle of inter-generational equity*

The potential environmental impacts and risks associated with the regulated activity can be adequately avoided or managed through the management measures and monitoring programs proposed in the EMP. The NT EPA considers the estimated greenhouse gas emissions of 626 tonnes of carbon dioxide equivalent associated with the activity are minimal in the context of annual Northern Territory and national emissions, and potential impacts on the environment not significant.

The NT EPA considers that environmental values will be protected in the short and long term and that the health, diversity and productivity of the environment will be maintained for the benefit of future generations.

#### *Promotion of improved valuation, pricing and incentive mechanisms*

The Interest Holder would be required to prevent, manage, mitigate and make good any contamination or pollution arising from the regulated activity, including contamination of soils, groundwater and surface waters through accidental spills.

All stages of the regulated activity, including progressive rehabilitation of all disturbed areas to an acceptable standard would be at the cost of the Interest Holder.

### **3. Relevant matters raised through public submissions**

Public consultation on the EMP was not required under the Petroleum (Environment) Regulations 2016 as the EMP does not propose drilling or hydraulic fracture stimulation activities.

### **4. Environmental impacts and risks reduced to a level that is as low as reasonably practicable (ALARP) and acceptable (regulation 9(1)(c))**

The EMP demonstrates a systematic identification and assessment of environmental impacts and risks associated with the regulated activity. Through this assessment the Interest Holder

concludes that the environmental impacts and risks have been reduced to a level that is ALARP and acceptable.

The Interest Holder has undertaken a site selection process to avoid impacts on environmental values, informed by appropriate baseline studies.

The measures proposed to minimise the disturbance footprint and manage environmental impacts and risks arising from the activity are appropriate and consistent with the Code of Practice: Onshore Petroleum Activities in the Northern Territory (the Code). The EMP demonstrates how the requirements of the Code will be met, including:

- compliance with the NT Land Clearing Guidelines with respect to the protection of soils, natural waterways and flora and fauna
- Erosion and Sediment Control Plan, developed by a suitably qualified person in accordance with the International Erosion Control Association Best Practice Erosion and Sediment Control standard
- the protection of flora and fauna through site selection and minimising the project footprint
- the management of threatening processes through the development of a Weed Management Plan that meets the requirements of DENR, and a Bushfire Management Plan
- all sewage collected and transported off-site to a licenced disposal facility
- contaminant and spill management strategies such as spill kits, designated workshop areas, compacted hardstand surfaces and the installation of containment bunds around pads
- a commitment to develop and implement a site-specific rehabilitation plan for each disturbed area once a determination has been made to decommission an asset.

NTEPA recommends that the Interest Holder provide to DENR an assessment report on the spatial disturbance footprint to demonstrate that surface disturbance activities remain ALARP and acceptable.

Approximately 20 ML of groundwater is to be extracted from either the proposed Velkerri 76 S2 control groundwater monitoring bore, or the Kyalla 117 N2 control groundwater monitoring bore. These bores will be added to the groundwater extraction licence GRF10285. Impacts of groundwater extraction have been considered by the Controller of Water Resources during the assessment and subsequent issue of the extraction licence.

The regulated activity is covered by an Authority Certificate (C2019/039) issued by the Aboriginal Areas Protection Authority on 9 May 2019.

The NT EPA considers that all reasonably practicable measures will be used to control the environmental impacts and risks, considering the level of consequence and the resources involved to mitigate them.

The environmental impacts and risks will be reduced to an acceptable level, considering the principles of ecologically sustainable development as discussed above, sensitivity of the local environment, relevant standards and requirements of the Code.

## **5. Other relevant matters**

Regulation 9 requires that an environment management plan give a comprehensive description of the regulated activity, including provision of a detailed timetable for the activity. To meet this requirement, the NT EPA recommends that the Interest Holder be required to submit a detailed timetable for the regulated activity to DENR prior to commencement of the activity. The timetable should address all aspects of the activity and include, but not be limited to: dates for the implementation of commitments and associated hold points, dates for receipt of water licences,

land access, development of sub-management plans, and progress reporting. The NT EPA recommends that the timetable be updated each month.

The amount of excavation and fill required for construction of a well pad can potentially impact on land clearing requirements for stockpiling of excavated material, haulage requirements of suitable gravel material and disturbance areas of gravel pits. The NT EPA recommends the Interest Holder provide to DENR a geotechnical assessment report across the proposed well site to inform an indicative calculation of the amount of excavation (and stockpiling) and fill required to reach acceptable compaction and load bearing for the well pad.

## CONCLUSION

The NT EPA considers that, subject to the recommended EMP approval conditions, the EMP:

- is appropriate for the nature and scale of the regulated activity
- demonstrates that the regulated activity can be carried out in a manner that environmental impacts and risks of the activity will be reduced to a level that is as low as reasonable practicable and acceptable

In providing this advice the NT EPA has considered the principles of ecologically sustainable development.

## RECOMMENDATION

The NT EPA recommends that should the EMP for Origin Energy Limited Beetaloo Basin Velkerri EP76 S2 Civil Construction be approved, the following conditions be considered:

**Condition 1:** The Interest Holder must provide a report to DENR where there is a non-compliance of an approval condition within 48 hours of becoming aware of the non-compliance.

**Condition 2:** The Interest Holder must submit to DENR a timetable for the regulated activity prior to commencement of the activity and update the timetable each month.

**Condition 3:** The Interest Holder must provide to DENR within 3 months of completion of civil activities:

- i. high resolution satellite imagery of the civils disturbance area
- ii. digital aerial photography or UAV imagery, ortho-rectified using ground control points measured using a differential GPS (DGPS) and spatial accuracy of approximately 1 – 2 metres
- iii. a spatial assessment report on the disturbance footprint for the approved regulated activity

**Condition 4:** The Interest Holder must provide to DENR within 1 month of approval of this EMP, a geotechnical assessment report, developed by a suitably qualified geotechnical professional that:

- i. includes results of 60 cm soil cores, taken at three sites across the well pad area for analysis for particle size distribution
- ii. assesses in-situ infiltration
- iii. determines the amount of excavation and quantity of surface material that will be required to be stripped at the well pad to ensure a stable base
- iv. determines stockpiling requirements of stripped material
- v. determines the amount of suitable gravel material required to build the well pad

**Condition 5:** The Interest Holder must develop in consultation with DENR a rehabilitation plan for each disturbed area appropriate to the nature and scale of the activity within 3 months of commencement of the regulated activity. At a minimum, the plan should be based on the rehabilitation strategy described in the EMP and include:

- i. final land use rehabilitation objectives and details of how rehabilitation objectives will be achieved
- ii. commitment to stakeholder engagement where relevant
- iii. implementation of progressive rehabilitation strategies, with the borrow pits rehabilitated before the wet season, to avoid depressions, make them self-draining with topsoil and seeding for return of vegetation
- iv. continuation of rehabilitation and monitoring for three years after completion of activities or until demonstration that rehabilitation objectives have been met
- v. monitoring and maintenance program for reinstated and rehabilitated areas, including rehabilitation criteria to be met
- vi. a timetable for implementation.

Progressive rehabilitation of significantly disturbed land, not required for the ongoing conduct of future activities, must commence as soon as practicable but no longer than 12 months following cessation of the activity.



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CHAIRMAN

NORTHERN TERRITORY ENVIRONMENT PROTECTION AUTHORITY

5 SEPTEMBER 2019