

# Statement of Reasons

## **ORIGIN ENERGY B2 PTY LTD – ENVIRONMENT MANAGEMENT PLAN (EMP) FOR THE BEETALOO BASIN VELKERRI EP76 S2 CIVIL CONSTRUCTION**

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### **PROPOSAL**

The Environment Management Plan (EMP) for the Beetaloo Basin Velkerri Exploration Permit 76 (EP76 S2) Civil Construction (the Proposal)<sup>1</sup> was referred by Origin Energy B2 Pty Ltd (the Proponent)<sup>2</sup> to the Northern Territory Environment Protection Authority (NT EPA) on 3 July 2019 for consideration under the Environmental Assessment Act 1982 (EA Act).

The Proponent proposes to undertake a series of civil construction activities on EP76 at pad site S2, required to enable its 2019/20 exploration petroleum well program. The civil construction program comprises:

- land clearing of 7.4 hectares (ha), including:
  - establishment of a 4.5 ha exploration lease pad
  - establishment of a 1 ha wet weather storage laydown yard
  - construction of a 1.2 ha camp pad
  - construction of a 0.5 ha helipad
  - construction of a 0.2 ha soil stockpile area
- construction of a drilling sump, cellar (to accommodate the wellhead equipment and Blow-Out-Preventer) and sediment basin on the cleared lease pad
- extraction of gravel from the existing gravel pits to provide material for improving stability and integrity of the access tracks and lease pad
- water extraction from either the proposed Velkerri 76 S2 control groundwater monitoring bore, or the Kyalla 117 N2 control groundwater monitoring bore
- installation of fencing, gates and grids
- subsequent progressive rehabilitation

Construction works are proposed for 2019 and involves a workforce of 15 employees.

The Proposal does not include drilling, hydraulic fracture stimulation or well testing of a petroleum exploration well.

Site selection was informed by a range of considerations, including location of cultural sites, ecological factors and sensitive receptors (e.g. adjacent patches of Lancewood and Bullwaddy), buffer zones and sub-surface geological features such as faults.

### **CONSULTATION**

The EMP has been reviewed as a notification under the EA Act in consultation with Northern Territory Government advisory bodies (see Attachment A) and the responsible Minister, in accordance with clause 8(1) of the Environmental Assessment Administrative Procedures 1984.

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<sup>1</sup> 'Proposal' has the same meaning as 'Regulated Activity' under the Petroleum Act 2014.

<sup>2</sup> 'Proponent' has the same meaning as 'Interest Holder' under the Petroleum Act 2014.

The EMP did not require public consultation under the Petroleum (Environment) Regulations 2016 as it does not propose drilling or hydraulic fracture stimulation activities.

## JUSTIFICATION

The NT EPA assessed the potentially significant environmental impacts and risks associated with the Proposal in line with the NT EPA's environmental factors and objectives, and in accordance with the requirements under the EA Act. The NT EPA identified five environmental factors that could be significantly impacted by the proposal (Table 1). The NT EPA considered the importance of other environmental factors during the course of its assessment, however those factors were not identified as potentially significantly impacted. As this Proposal is a civil works activity that does not include any production of gas or significant land clearing, the NT EPA considers greenhouse gas emissions (626 tCO<sub>2</sub>-e) are minimal and the potential impacts are not significant.

Table 1: Key environmental factors considered for this assessment

Theme	Environmental factor	Objective
Land	Terrestrial flora and fauna	Protect the Northern Territory's flora and fauna so that biological diversity and ecological integrity are maintained.
	Terrestrial environmental quality	Maintain the quality of land and soils so that environmental values are protected.
Water	Inland water environmental quality	Maintain the quality of groundwater and surface water so that environmental values including ecological health, land uses, and the welfare and amenity of people are protected.
	Hydrological processes	Maintain the hydrological regimes of groundwater and surface water so that environmental values are protected.
People and Communities	Social, economic and cultural surroundings	Protect the rich social, economic, cultural and heritage values of the Northern Territory.

### 1. Terrestrial flora and fauna

**Objective:** Protect the NT's flora and fauna so that biological diversity and ecological integrity are maintained.

#### Environmental values

The EMP risk assessment is based on extensive baseline surveys from 2004 – 2018. The terrestrial vegetation is *Corymbia* low woodland/*Terminalia* (mixed) sparse shrubland / *Chrysopogon* (mixed) low tussock grassland. This community is regionally extensive, intact and free of weeds at the proposal site. The potential impacts of the Proposal on terrestrial flora and fauna are associated with habitat loss from land clearing.

The EMP identifies 20 listed threatened species that are 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 2). A desktop review by the Department of Environment and Natural Resources (DENR), Flora and Fauna Division did not identify any additional species of potential concern.

Table 2: Listed threatened species assessed as potentially occurring in the vicinity of the Proposal

Common name	Scientific name	EPBC Act	TPWC Act
Gouldian Finch	<i>Erythrura gouldiae</i>	Endangered	Vulnerable

Common name	Scientific name	EPBC Act	TPWC Act
Grey Falcon	<i>Falco hypoleucos</i>		Vulnerable
Crested shrike-tit	<i>Falcunculus frontatus</i>	Vulnerable	Near Threatened
Painted honeyeater	<i>Grantiella picta</i>	Vulnerable	Vulnerable
Yellow-spotted monitor	<i>Varanus panoptes</i>		Vulnerable

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 (approximately 7.4 ha) has been assessed by DENR as unlikely to result in significant impacts to regional populations of these species.

The Gouldian finch has specific requirements including suitable roost trees (e.g. *Eucalyptus leucophloia*) and appropriate sources of grass seed and water. The DENR Flora and Fauna Division considers 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 patchily and sparsely across the savanna woodlands in the NT and is highly mobile. Clearing of the relatively small area of vegetation compared to the very large area of similar habitat in the region, 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 to the painted honeyeater from the proposal has been assessed by DENR as low due to the very small area of disturbance compared to overall 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 the proposed works will exacerbate this threat and the risks to the species are assessed as low.

The area of disturbance for the Proposal has been assessed as non-critical habitat, based on regional extensiveness and lack of sensitive, significant or essential vegetation/habitat types. Site selection for the lease pad and access tracks is predicated on avoidance of clearing of the adjacent patches of Lancewood (*Acacia shirleyi*) and Bullwaddy (*Macropteranthes kekwickii*).

The NT EPA will provide separate advice to the Minister that the Proponent be required to demonstrate compliance with the EMP and all aspects of the Code of Practice: Onshore Petroleum Activities in the Northern Territory (2019) (the Code) for minimising surface disturbance activities by providing a spatial assessment report on the disturbance footprint for the Proposal.

### Threatening processes

Potential impacts and risks to flora and fauna from the Proposal include increases in key threatening processes such as land clearing, weeds and bushfires.

Land clearing under this Proposal represents less than 0.002% of the total area of the exploration permit (EP) and less than 0.003% of the cumulative land clearing across all of the Proponent's EPs assessed by DENR to date. As discussed previously, the area of disturbance lies within regionally extensive non-critical habitat.

Based on weed baseline surveys in all areas that will be disturbed, there is no evidence of weeds on access tracks, camp and lease pad areas. The weed management plan submitted with the EMP provides mitigation measures including inspection and cleaning of construction equipment prior to accessing the site, and onsite weed control. Origin has committed to implement a weed management plan to control weeds during construction, operation and for up to 5 years after completion of works, subject to rehabilitation progress.

The property falls within the Savanna Fire Management Zone. When a Fire Danger Period has been declared, no burning may take place except where a permit to burn has been obtained from a fire control officer or a fire warden.

The whole area is subject to periodic fires, with most of the region having been burnt at some time in the last decade. An assessment of EP76 indicates it was burnt in the last 1 – 2 years, with a fire intensity of 1 (i.e. minor scars on some trees/shrubs of less than 1 m high).

A bushfire management plan has been developed. Effective fire management requires the fire management plan be implemented. Mitigation measures include availability of fire suppression equipment, and the establishment of fire control zones around each of the well sites. Fire control zones are to be cleared of vegetation and maintained to limit the risk of fire spread during project activities.

### NT EPA Assessment

The NT EPA considers that the potential impacts and risks to terrestrial flora and fauna can be mitigated through implementation of the management measures presented in the EMP and that its objective for Terrestrial Flora and Fauna is likely to be met.

## **2. Terrestrial environmental quality**

**Objective:** Maintain the quality of land and soils so that environmental values are protected.

The EMP describes the three main soils types within the vicinity of the activity as highly leached soils of the Tertiary land surface: Tertiary Lateritic Red Earths, Tertiary Lateritic Red Sands and Tertiary Lateritic Podzolic Soils. Potential impacts to soils from the Proposal include erosion of exposed soils from land clearing and potential soil contamination as a result of spills.

An erosion risk assessment indicates these soils have a 'very low' risk rating during the Dry season when the civils construction is scheduled to occur. To address the risk of erosion in the subsequent Wet season, an Erosion and Sediment Control Plan (ESCP) has been prepared by a suitably qualified person and assessed by DENR as fit for purpose. The NT EPA will provide advice to the Minister that the Proponent undertake core sampling to validate particle size distribution at the proposed well pad site. This information will provide an indicative assessment of the amount of excavation and fill required to reach acceptable compaction and load bearing for the well pad.

Spill management for the civil construction activities is managed under the Emergency Response Plan and through the implementation of spill management procedures. Effective spill management requires the EMP mitigation measures related to handling, storage, bunding and transport of dangerous goods (diesel, various oils and degreasers) to be implemented.

A rehabilitation plan is essential to minimise the risk of subsequent erosion and return the disturbed land to its original condition and uses. The EMP outlines the approach to rehabilitation intended for the site, which must be implemented progressively, commencing before the Wet season, and include the borrow pits. The NT EPA has provided advice to the Minister that the further development and progressive implementation of the rehabilitation plan be made a condition of the EMP approval.

The NT EPA considers that the potential impacts and risks to terrestrial environmental quality can be mitigated through implementation of the mitigation measures presented in the EMP, including

appropriate site selection and the implementation of management strategies consistent with the International Erosion Control Association Best Practice Erosion and Sediment Control standard, the Code and the NT Land Clearing Guidelines.

Based on these mitigation measures, the NT EPA considers that its objective for Terrestrial Environmental Quality is likely to be met.

### **3. Inland water environmental quality**

**Objective:** Maintain the quality of groundwater and surface water so that environmental values including ecological health, land uses, and the welfare and amenity of people are protected.

The closest major creek system to the proposal site is Newcastle Creek approximately 13 km from the proposal area. The EMP identifies a number of small ephemeral streams (Stream Order 1 and 2) located along existing access tracks. The streams are overland flow paths that only flow for a short period during the Wet season. Potential impacts to water quality include spills associated with waste water, fuel storage and handling.

The EMP specifies that waste water and sewage will be managed via transport offsite to a licensed disposal facility. The exploration lease pad and camp pad will be bunded to a sufficient height to contain waste water in the event of a major spill and prevent any surface flow entering or leaving the well pad. Pad surfaces will be compacted to minimise impacts of infiltration from spills.

Stormwater will be collected in a purpose built retention pond and either used for dust suppression or released, after water quality testing.

The EMP includes estimated volumes of hazardous materials, required storage and containment practices and a spill response strategy. Satisfactory methods for transporting, storing and disposing of these materials are described in the EMP.

Provided that the mitigation and management measures outlined in the EMP are implemented, the NT EPA considers that the proposal is unlikely to have a significant impact on surface water and groundwater quality, and the NT EPA's objective for Inland Water Environmental Quality is likely to be met.

### **4. Hydrological processes**

**Objective:** Maintain the hydrological regimes of groundwater and surface water so that environmental values are protected.

#### Groundwater

Groundwater from the Cambrian Limestone Aquifer (CLA) – Gum Ridge Formation will 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, which takes into account the cumulative impacts of groundwater extraction for all of the Proponent's activities, across all of the Proponent's EPs. The Proposal has potential to impact on groundwater drawdown associated with groundwater extraction. The estimated groundwater volume required for the proposed activities is 20 ML. Based on transmissivity analysis, this volume is well within sustainable recharge levels. The nearest sensitive receptor is a pastoralist bore situated 11.4 km south-east of the proposed activity.

Groundwater extraction volumes will be recorded and submitted to the DENR Water Resources Division, in accordance with the requirements of the relevant of a groundwater extraction licence.

### Surface water

The Proposal is situated on higher ground than the surrounding areas and measures have been taken to avoid surface water flow impacts to the Bullwaddy conservation area, approximately 30 km downstream of the activity. These measures include the design of the pads to divert any overland flow around the pad and to the south-west, away from adjacent streams that feed into the Bullwaddy conservation area.

The NT EPA considers that the potential impacts and risks on hydrological processes can be mitigated through implementation of the management measures presented in the EMP and that its objective for Hydrological Processes is likely to be met.

## **5. Social, economic and cultural surroundings**

**Objective:** Protect the rich social, economic, cultural and heritage values of the Northern Territory.

### Social considerations

The Proponent has undertaken stakeholder engagement with NT Government, landholders and land managers, traditional owners, the Northern Land Council (NLC) and the Aboriginal Areas Protection Authority (AAPA). The EMP cites several current agreements and operating consents associated with the Proposal, and AAPA has confirmed the relevant AAPA Authority Certificate is in place.

Potential amenity impacts from the Proposal include nuisance dust and noise impacting sensitive receptors. The nearest homestead and community are 50 km and 100 km away from the Proposal, respectively. To reduce traffic and travel times for site personnel, the Proponent intends to provide self-contained caravan units near the site to accommodate civil contractors. Noise is not considered a significant issue due to the implementation of control measures and distance to sensitive receptors. Dust will be managed through use of water carts and vehicle speed restrictions. Further, the Proponent has committed to ongoing stakeholder engagement with all affected pastoral property owners to ensure nuisance factors do not impact pastoral activities

### Cultural heritage

An Aboriginal and Historic Cultural Heritage Assessment was completed and provided in the EMP and the proposal is covered by AAPA Certificate C2019/039.

The EMP commits to management strategies for the protection of Aboriginal and cultural heritage, including cultural heritage site inductions and an 'unexpected heritage (artefact) finds' stop work procedure.

The NT EPA considers that the potential impacts and risks on social, economic and cultural surroundings can be mitigated through implementation of the management measures presented in the EMP and that its objective for Social, Economic and Cultural surroundings is likely to be met.

## **CONCLUSION**

The EMP has assessed cumulative impacts as they apply to the proposed activities and the broader exploration program, including GHG emissions, groundwater extraction and risk assessment and are considered not to be significant, and manageable within the constraints of licences such as the groundwater extraction licence. This EMP deals with exploration activities of short duration and limited scope involving civils construction of one well lease pad, accommodation, helicopter pad and ancillary works. The NT EPA considers that the potential environmental impacts and risks, Proposal-related and cumulative are not significant and that the Proposal does not require assessment under the EA Act. The Proponent has prepared the EMP in accordance with the Petroleum (Environment) Regulations 2016 and to demonstrate how it will also meet compliance with the Code.

The Minister for Environment has asked the NT EPA to provide advice under the Petroleum (Environment) Regulations as to whether the EMP meets certain requirements of the Regulations (specifically regulations 9(1)(b), 9(1)(c) and 9(2)(a)). As part of the assessment to provide that advice, the NT EPA proposes to make recommendations to the Minister for Environment on conditions to improve environmental outcomes. The NT EPA's decision not to assess the EMP under the EA Act is not reliant on the Minister accepting the NT EPA advice.

## **DECISION**

The proposed action by Origin Energy Limited has been examined by the NT EPA and investigations and inquiries conducted.

The NT EPA has decided that the potential environmental impacts and risks of the Proposal are not so significant as to warrant environmental impact assessment by the NT EPA under provisions of the EA Act. The Proposal will require approval under the Petroleum (Environment) Regulations 2016. Groundwater extraction will be subject to the conditions of the groundwater licence under the Water Act 1992. Environmental management of the potential environmental impacts is the responsibility of the Proponent through implementation of procedures and management plans specified in the EMP and any conditions imposed by the Minister for Environment under the Petroleum (Environment) Regulations 2016.

This decision is made in accordance with clause 8(2) of Environmental Assessment Administrative Procedures 1984, and subject to clause 14A the administrative procedures under the Environmental Assessment Act 1982 are at an end with respect to the proposed action.



DR PAUL VOGEL AM MAICD  
CHAIRMAN

NORTHERN TERRITORY ENVIRONMENT PROTECTION AUTHORITY

5 SEPTEMBER 2019

**Attachment A: Northern Territory Government Advisory bodies consulted on the Environment Management Plan**

<b>Department</b>	<b>Division</b>
Department of Environment and Natural Resources	Flora and Fauna Water Resources Weeds Environment Bushfires NT Rangelands
Department of Infrastructure, Planning and Logistics	Infrastructure Transport
Department of Primary Industry and Resources	Petroleum
Department of Local Government Housing and Community Development	
Department of Tourism and Culture	Parks and Wildlife Heritage Tourism NT
Department of Health	Environmental Health Entomology Medical Entomology
Department of Trade, Business and Innovation	Strategic Policy and Research
Power and Water Corporation	
Aboriginal Areas Protection Authority	Technical
Department of the Chief Minister	Economic and Environmental Policy
NT Police, Fire and Emergency Services	
Department of the Attorney General and Justice	NT WorkSafe