

# Onshore Petroleum Activity – NT EPA Advice

## SANTOS QNT PTY LTD – ENVIRONMENT MANAGEMENT PLAN (EMP) FOR THE MCARTHUR BASIN CIVIL AND SEISMIC PROGRAM EP161

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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.

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 reasonably 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	Santos QNT Pty Ltd
Petroleum interest(s)	Exploration Permit (EP) 161
Environment Management Plan (EMP) title	McArthur Basin Civil and Seismic Program EP161
EMP document reference	Santos_EP161_2019_Civils_Seismic_EMP_Rev1
Regulated activity	Land clearing (59.2ha) and civil construction activities on EP161, to enable Santos QNT Pty Ltd 2019 drilling program and involving: the installation of, or upgrading of, access tracks, camp pad and lease pad; borrow pits to provide gravel for access tracks and lease pads; establishing fire protection areas and subsequent rehabilitation.  Includes installing a 10 km seismic line and undertaking seismic surveys of rock types below the ground.
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.

## NT EPA ADVICE

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

The civil construction and seismic program comprises activities on previously disturbed land (40.2 hectares) and clearing 59.2 hectares (ha). Groundwater extraction is approximately 45.5 megalitres. Construction works are planned to commence early in the 2019 dry season, and are expected to take up to 20 weeks. Construction works are limited to the 2019 dry season which reduces the risk of soil erosion and effects on surface water flow.

Information relating to the nature and scale of the regulated activity is provided in the EMP in a clear format. The civil and seismic works proposed are clearly described in the EMP. The existing environment has been adequately described through baseline surveys and is suitably understood.

The EMP includes an impact and risk assessment based on information gathered during baseline surveys in 2018 and 2019. The impacts and risks of the regulated activity are identified and the risks and impacts 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 quality of information provided in the EMP is sufficient to inform the evaluation and assessment of environmental risks and impacts, 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 surveys, including desktop analysis and field studies, for ecological values and weeds.

The EMP identifies 17 listed threatened species as likely to occur on EP161, based on availability of suitable habitat. Of these, four 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
Mertens' Water Monitor	<i>Varanus mertensi</i>	Vulnerable	

The Grey Falcon occurs in areas of lightly-timbered lowland plains, typically around inland drainage systems and is highly mobile. The Crested Shrike-tit occurs sparsely across the NT and is known to inhabit a wide range of forests and woodlands, including areas that are annually burnt or frequently grazed. 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 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 Flora (DENR) and Fauna Division advises that it is unlikely that the proposal area provides suitable breeding habitat and that the clearing activities would not pose a significant risk to this species.

Mertens' Water Monitor is associated with freshwater waterways and riparian vegetation. This species is widespread across the NT, occupying edges of freshwater courses and lagoons, but is seldom seen far from water. As works are occurring in the Dry Season, the proposal does not pose a significant risk to this species.

Given the relatively small area of clearing that is proposed (59.2 ha) and the very large area of similar habitat within the region, the proposal does not pose a significant risk to any regional populations of this species.

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 draft NT Code of Practice: Onshore Petroleum Activities and the NT Land Clearing Guidelines. 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 to inform the interest holder on the potential for gas production in the Beetaloo Basin. In EMPs for subsequent stages (if they proceed) the Interest holder will need to address cumulative impacts.

In facilitating petroleum exploration, the EMP adequately assesses the environmental impacts and risks associated with the regulated activity and outlines appropriate avoidance and mitigation measures. This includes the assessment and management of social impacts and risks, including the appropriate management of cultural heritage. Santos has undertaken stakeholder engagement with landholders and land managers, traditional owners, the Northern Land Council (NLC) and NT Government Agencies

There are no conflicting economic, environmental, social or equitable considerations 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 environmental potential 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

11,714 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 are 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 as the EMP does not propose drilling or hydraulic fracturing 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 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 draft NT Code of Practice: Onshore Petroleum Activities. The EMP demonstrates how the requirements of the draft Code of Practice will be met, including:

- compliance with the NT Land Clearing Guidelines with respect to the protection of natural waterways
- erosion and sediment control planning by a suitably qualified person in accordance with the International Erosion Control Association (IECA) 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 the Department of Environment and Natural Resources, and a Fire Management Plan
- containment of contaminants in accordance with a Wastewater Management Plan and Spill Management Plan.

The Interest holder has provided an Erosion and Sediment Control Plan (ESCP), prepared to IECA Best Practice Erosion and Sediment Control standards that is specific to vertical seismic profiling (VSP) activities occurring at the Tanumbirini-1/2H location. The EMP provides a commitment to prepare a second ESCP which will be specific to the civil works activities.

An ESCP for the civil works component of the regulated activity is required due to the presence of ephemeral creeks and drainage lines within the project area. The proposed

access tracks that will be upgraded and constructed under the proposal cross several ephemeral waterways.

The NT EPA has made a recommendation that the preparation of the second ESCP be made a condition of the EMP approval.

The Interest holder has included an initial Rehabilitation Management Plan as part of the EMP. This plan identifies that rehabilitation is dependent on exploration outcomes and as such site specific details and proposed timing is not incorporated into the plan.

The NT EPA has made a recommendation that, once exploration outcomes are known, a site specific Rehabilitation Management Plan be prepared. This procedure is considered to be appropriate for the scale of the regulated activity and sensitivities of the local ecosystem as determined through the baseline surveys.

Potential impacts resulting from groundwater extraction will be considered by the Controller of Water Resources. Conditions on water extraction may be imposed as part of the extraction licence issued under the *Water Act*.

The regulated activity will be subject to requirements of an Aboriginal Areas Protection Authority Certificate.

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 needed 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, the sensitivity of the local environment, relevant standards and the draft NT Code of Practice.

## **5. Other relevant matters**

Regulation 9 requires that an environment management plan provides 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 approval of the EMP. 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.

## **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 environmental 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 Santos QNT Pty Ltd be approved, the following conditions be considered:

**Condition 1:** Prior to the commencement of civil works a site-specific Erosion and Sediment Control Plan (ESCP) is to be prepared by a suitably qualified person in accordance with the International Erosion Control Association Best Practice Erosion and Sediment Control standard. The ESCP must be provided to the Department of Environment and Natural Resources for approval and shall form part of the EMP.

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

**Condition 3:** The Interest holder must develop, in consultation with DENR, a rehabilitation management plan for each disturbed area appropriate to the nature and scale of the activity. At a minimum, the plan should include:

- i. final land use, rehabilitation objectives and details of how rehabilitation objectives will be achieved;
- ii. commitments to stakeholder engagement where relevant including with the pastoral station and NLC;
- iii. implement progressive rehabilitation, 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 and schedule for reinstating and rehabilitating areas;
- vi. timetable for implementation

**Condition 4:** The regulated activity be undertaken in compliance with relevant requirements of Part A .3 (Surface Activities) of the draft NT Code of Practice: Onshore Petroleum Activities (as amended from time to time). These include:

- i. The planning, design, locating and construction of petroleum infrastructure must have regard to the considerations of the Land Clearing Guidelines as published on the DENR website and amended from time to time. Specific consideration must be given to the following:
  - a. erosion and sediment controls
  - b. amenity
  - c. wildlife movement
  - d. biodiversity protection
  - e. water
  - f. weeds and
  - g. cultural heritage
- ii. Road corridor designs must minimise erosion of exposed road surfaces and drains, ensure that roads and pipeline surface water flow paths minimise erosion of all exposed surfaces and drains and comply with relevant guidelines such as the International Erosion Control Association Best Practice for Erosion and Sediment Control
- iii. The Land Clearing Guidelines as published on the DENR website and amended from time to time must be complied with in relation to the protection of natural waterways as a result of land disturbance and ensure the following:
  - a. appropriate buffers are implemented around natural waterways
  - b. disturbance in the wet season is minimised
  - c. the number of crossing points is minimised
  - d. crossings are constructed at right angles to the waterway
  - e. erosion hazard, sedimentation and pollution of waterways is minimised through the appropriate design and implementation of best practice erosion and sediment control measures.
- iv. Land clearing for corridors, well pads and other operational areas must be kept to a minimum
- v. All infrastructure stream crossings must provide for appropriate fauna passage
- vi. Activities that involve wastewater or chemical storage must be carried out according to the wastewater management plan and spill management plan which are part of the EMP

- vii. 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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NORTHERN TERRITORY ENVIRONMENT PROTECTION AUTHORITY

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