

Approval notice and statement of reasons

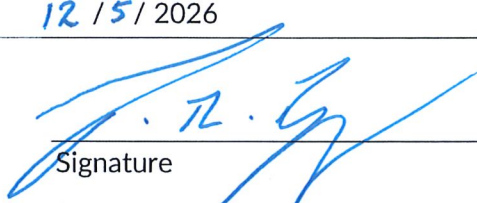
Petroleum (Environment) Regulations 2016 (NT) (Regulations)

Interest holder	Santos QNT Pty Ltd ACN 083 077 196
Petroleum interest(s)	Exploration Permit 161 (EP161)
Environment management plan (EMP) title	Beetaloo Basin Appraisal Pilot
EMP document reference	EMP STO8-2 Prepared by Santos QNT Pty Ltd Dated 13 April 2026
Regulated activity	Clearing 87.34 ha of remnant vegetation and previously disturbed land, along with earthworks for two new well pads. Drilling and hydraulic fracture stimulation of up to 12 appraisal wells. Operating, testing, maintenance and decommissioning of wells. Wastewater management, including evaporation tanks, storage tanks, drilling sumps, cutting pits and any transfer infrastructure within the well pad. Infrastructure and activities required to support the appraisal activities, including water supply bores, groundwater monitoring bores, borrow pits, installation and operation of camps, offices and workshops, bulk material transport and traffic management. Evaluation, maintenance and decommissioning of wells, rehabilitation and civil works.
Is the EMP a new plan submitted under reg 6 or a revision of a current plan submitted in accordance with reg 18, or regs 15 and 17?	This is a new plan submitted under reg 6.
Was the regulated activity referred ¹ for consideration whether environmental impact assessment was required?	No
Was environmental impact assessment ² required?	N/A
Has an environmental approval ³ been issued for the regulated activity?	N/A
Has an Authority Certificate under the <i>Northern Territory Aboriginal Sacred Sites Act 1989</i> been issued for the regulated activity?	Yes C2020/011
Date an EMP compliant with reg 8 was first submitted under reg 6	18 November 2025

¹ This means a referral under the *Environment Protection Act 2019* (NT) (EP Act) and/or the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act).

² This means a requirement for an environmental impact assessment to be conducted under the EP Act and/or the EPBC Act.

³ This means an approval granted under the EP Act and/or the EPBC Act.

Date within which the EMP was published for comment under reg 8A, if applicable	21 November 2025 to 19 December 2025
Date further information was required and submitted under reg 10, if applicable	17 February 2026 (requested) 13 April 2026 (received)
Date of resubmission notice under reg 11(2)(b) and date EMP was resubmitted, if applicable	17 February 2026 (requested) 13 April 2026 (received)
Date of resubmission notice under reg 11(3) and date EMP was resubmitted, if applicable	N/A
Date a notice setting out a proposed timetable for consideration of the EMP was issued under reg 11(2A), or reg 11(3)(c), if applicable	N/A
Proposed timetable given in notice under reg 11(2A), or reg 11(3)(c), if applicable	N/A
Where provided under s29B of the Northern Territory Environment Protection Authority Act 2012 (NT) (NT EPA Act), the dates the Northern Territory Environment Protection Authority (NT EPA) was requested to, and provided, advice on EMP	N/A
Date of decision	12 / 5 / 2026
Decision maker	 Signature
	Hon Joshua Burgoyne MLA, Minister for Lands, Planning and Environment

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I approve the EMP under reg 11(3)(a).

The approval is subject to the following conditions:

Condition 1: Within 45 days of completing land clearing or other ground disturbing activities (being all ground disturbing activities, including earth moving, land clearing, installation of gravel pits, establishment of well pads, and establishment of access tracks), the interest holder must submit to onshoregas.dlpe@nt.gov.au geospatial files (as shapefiles and inclusive of metadata).

Condition 2: The interest holder must submit to onshoregas.dlpe@nt.gov.au a notification at least 14 days before commencement and 14 days after cessation, including the location of the relevant activity for:

- (a) petroleum well drilling activities
- (b) hydraulic fracturing activities; and
- (c) flowback activities.

Condition 3: During drilling activities, the interest holder must record the date, time and position title of the officer who conducted the daily inspection, with the following information:

- (a) the daily freeboard available in drill cutting pits (in cm) and the time of measurement; and

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- (b) whether any non-compliances with the EMP (STO8-2) were identified in the daily inspections and, if relevant, corrective actions taken, or proposed to be taken, and the timeframe for implementation of corrective actions, in response to the non-compliances.

The interest holder must submit a notification to onshoregas.dlpe@nt.gov.au where the above records demonstrate that freeboard limits have been exceeded.

Condition 4: During hydraulic fracturing activities, the interest holder must record the date, time and position title of the officer who conducted the daily inspection with the following information:

- (a) the daily freeboard available in wastewater tanks (in cm) and the time of measurement; and
- (b) whether any non-compliances with the EMP (STO8-2) were identified in the daily inspections and, if relevant, corrective actions taken, or proposed to be taken, and the timeframe for implementation of corrective actions, in response to the non-compliances.

The interest holder must submit a notification to onshoregas.dlpe@nt.gov.au where the above records demonstrate that freeboard limits have been exceeded.

Condition 5: Within 60 days of completion of well flowback operations for the first well where flowback fluid has been reused, the interest holder must provide to onshoregas.dlpe@nt.gov.au a risk assessment of the returned flowback fluid following the reuse, which must be:

- (a) prepared by a suitably qualified person; and
- (b) prepared in accordance with the monitoring wastewater analytes specified in section C.8 of the Code.

Condition 6: The interest holder must record all accidental releases of liquid contaminants or hazardous chemicals in a site spill register, which records:

- (a) the liquid contaminant or hazardous chemical spilled or leaked;
- (b) the GPS co-ordinates of the location of the spill or leak;
- (c) the source and volume of the spill or leak;
- (d) the volume of impacted soil removed for disposal and the depth of any associated excavation; and
- (e) the corrective actions taken or proposed to be taken to prevent recurrence of an incident of a similar nature.

Condition 7: The interest holder must undertake continuous groundwater level/pressure and electrical conductivity (EC) monitoring at each impact monitoring bore established for a well pad, using data loggers to record water level and EC at a minimum of every four (4) hours for the duration of the following periods:

- (a) for the pre-operational period, a minimum of 14 days prior to the commencement of hydraulic fracturing operations;
- (b) for the operational period, continuously throughout hydraulic fracturing operations; and
- (c) for the post-operational period, 28 days after completion of hydraulic fracturing operations.

Condition 8: The interest holder must submit logger data to the Department via onshoregas.dlpe@nt.gov.au within 14 days of the completion of each period specified in condition 7 in Excel format, including:

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- (a) barometrically corrected groundwater level data;
- (b) temperature-compensated electrical conductivity data; and
- (c) metadata describing instrumentation, calibration, and data corrections applied.

Condition 9: The interest holder must submit the results of each groundwater monitoring event to the Department via onshoregas.dlpe@nt.gov.au within 60 days of data collection in the following formats:

- (a) Excel format using the template provided by the Department or in EDIF format compatible with ESdat; and
- (b) PDF copies of laboratory reports, including analysis and associated quality assurance and quality control documentation.

Condition 10: Within 90 days of the anniversary of the approval date of the EMP (STO8-2), and each subsequent year, the interest holder must submit to onshoregas.dlpe@nt.gov.au an interpretative report of groundwater quality which includes:

- (a) description of the groundwater monitoring network, including the location of bores and wells, groundwater levels and indicative groundwater flow directions in accordance with the *Preliminary Guideline Groundwater Monitoring Bores for Exploration Petroleum Wells in the Beetaloo Sub-basin*;
- (b) site-specific trigger values for groundwater levels and quality, with a description of the method used to establish these trigger values;
- (c) interpretation of any statistical outliers relative to baseline measured values for each analyte listed in Table 6 of the Code;
- (d) a summary of groundwater monitoring results including appropriate descriptive statistics (e.g. minimum, maximum, mean, median, standard deviation, interquartile range) for each monitored analyte;
- (e) discussion of any temporal trends observed in groundwater levels and quality, including consideration of natural variability; and
- (f) identification and interpretation of any change to groundwater quality and/or level that are attributable, or potentially attributable, to the conduct of the regulated activities at the well site(s), including discussion of the significance and likely cause of any such observed change.

Condition 11: By 31 October of each year, the interest holder must submit to onshoregas.dlpe@nt.gov.au the emissions report required by clause D.6.2⁴ of the Code, which must:

- (a) calculate emissions in accordance with the National Greenhouse and Energy Reporting (Measurement) Determination 2008;
- (b) document actual annual greenhouse gas emissions from conduct of the regulated activity estimated and reported under the *Commonwealth National Greenhouse and Energy Reporting Act 2007 (NGER Act)* versus predicted emissions in the EMP (STO8-2);
- (c) demonstrate the actual emissions have been verified by an auditor registered under the Register of Greenhouse and Energy Auditors established under section 75A of the NGER Act;

⁴ FOOTNOTE 1: Clause D.6.2(b) of the Code requires annual actual greenhouse gas emissions to be provided even where emissions are below the NGER Act threshold of 25 ktCO₂-e for scope 1 and scope 2 emissions reporting.

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- (d) include a summary of all regulated activities conducted which have contributed to greenhouse gas emissions during the reporting period;
- (e) account for differences between actual and predicted emissions with reference to all parts of the regulated activity with potential to create greenhouse gas emissions; and
- (f) detail the method of offsetting Scope 1 emissions to a net zero position should actual annual greenhouse gas emissions exceed the thresholds specified under the Safeguard Mechanism of the *National Greenhouse and Energy Reporting Act 2007* and identified in the EMP (STO8-2).

Condition 12: Within 90 days of the anniversary of the approval date of the EMP (STO8-2), and each subsequent year, the interest holder must submit to onshoregas.dlpe@nt.gov.au a completed Annual Environmental Performance Report Template (AEPR). The AEPR must be completed in accordance with the *Onshore Petroleum Annual Environmental Performance Reporting Guideline (21 December 2023)* as updated from time to time.

Condition 13: Within 90 days of the anniversary of the commencement of rehabilitation under the EMP (STO8-2), and thereafter annually, the interest holder must provide a rehabilitation report which:

- (a) provides the dates vegetation monitoring analogue sites were established and surveyed during the preceding 12 month period;
- (b) provides the dates rehabilitation monitoring was undertaken during the preceding 12 month period;
- (c) analyses and compares rehabilitation progress against analogue sites and the rehabilitation criteria in the EMP;
- (d) includes corrective actions identified for rehabilitated areas and the date those corrective actions were implemented, or the date they are proposed to be implemented; and
- (e) is accompanied by geospatial files (as shapefiles and inclusive of metadata) identifying the areas rehabilitated during the preceding 12 month period.

2 Material considered

1. The following material was taken into account in making this decision:
 - a) Beetaloo Basin Appraisal Pilot Environment Management Plan submitted 18 November 2025 and resubmitted 13 April 2026 (STO8-2).
 - b) The principles of ecologically sustainable development referenced in reg 5A and the approval criteria set out in reg 9(1).
 - c) The Authority Certificate issued under the *Northern Territory Aboriginal Sacred Sites Act 1989*.
 - d) The Code of Practice: Onshore Petroleum Activities in the Northern Territory (Code) as set out in reg 4A.
 - e) All public comments submitted under reg 8B.

3 Statement of reasons

1. The EMP meets the approval criterion in reg 9(1)(a), because it contains all the information required by Schedule 1 of the Regulations. reg 9(1)(a)
2. I have taken into account the approval criterion in reg 9(1)(b) by noting the nature and scale of the regulated activity and bearing it in mind during my consideration of the impacts and risks. In particular, I note that: reg 9(1)(b)
 - a) The nature of the regulated activity is as follows:
 - i. land clearing and earthworks
 - ii. establishment of well pads and drilling
 - iii. operation, testing, maintenance and decommissioning
 - iv. hydraulic fracturing
 - v. storage and handling of petroleum and hazardous substances
 - vi. wastewater storage and handling
 - vii. ancillary infrastructure and activities
 - b) The scale of the regulated activity is as follows:
 - i. total area of surface disturbance – 87.34 ha
 - ii. total area of access tracks – 13.1 ha
 - iii. number of exploration wells – 12 wells
 - iv. groundwater usage – 193.5 ML/year. The interest holder intends to apply for an increased Water Extraction Licence of 750 ML/year
 - v. groundwater bores – 10 bores per well pad, including control and impact groundwater bores
 - vi. borrow pits – four borrow pits of two ha each
 - vii. camps – at both the Jibera South and Newcastle South well pads, designed to accommodate up to 105 workers
 - viii. average traffic movements during active drilling and hydraulic fracturing operations– 45 traffic movements (15 heavy and 30 light) per day during peak activities at each site

- ix. average traffic movements during other operations – 7 traffic movements (2 heavy and 5 light) at each site
 - x. volume of drilling solid/cuttings and fluids generated - 600 m³ per well
 - xi. flowback volume generated – up to 28 ML per well
 - xii. maximum wastewater storage requirement per annum - up to 108 ML
 - xiii. total Scope 1 greenhouse gas emissions – worst case emissions of 276,896 metric tonnes of carbon dioxide equivalent (t-CO₂-e) for the project
3. The approval criteria in reg 9(1)(c) requires that I be satisfied that the activity will be carried out in a manner by which the environmental impacts and risks of the activity will be reduced to a level that is both: (i) as low as reasonably practicable; and (ii) acceptable. In assessing whether the EMP meets the approval criteria, I note that my decision is a prescribed decision (under reg 5A) for s 6A of the Act, and as such requires me to consider and apply the principles of ecologically sustainable development. In accordance with reg 12(3), I provide the following information about how the EMP meets the approval criteria, and the manner I have taken into account the principles of ecologically sustainable development when considering whether or not the plan meets the approval criteria. reg 9(1)(c)
4. The principles of ecologically sustainable development are defined at section 18-24 of the *Environment Protection Act 2019*, and I address each in turn:
- a) The decision-making principle (s 18 *Environment Protection Act 2019*) requires effective integration of long-term and short-term environmental and equitable considerations, and for processes to provide for community involvement in relation to decisions and actions that affect the community. Related to this, I note the following:
 - i. The regulated activity forms one component of a broader onshore petroleum exploration program in the region. The regulated activity will inform decision-making about longer-term petroleum activities.
 - ii. Public consultation on the EMP was required under the Regulations as the EMP proposes drilling and hydraulic fracturing activities. The EMP was made available for public comment for 28 days from 21 November 2025 – 19 December 2025.
 - iii. The Department received 15 public submissions on the EMP. NT submissions represented approximately 73% of the total submissions received, 20% were from other Australian states and territories and 7% were from undisclosed geographical regions. NGO submissions represented approximately 33% of total submissions.
 - iv. I note the issues raised in public submissions across the following broad environmental themes:

Theme	Overview of issue raised
Flora and fauna (environment)	<ul style="list-style-type: none"> • Impacts on groundwater dependent ecosystems, including stygofauna • Contamination of aquifers • Impact on threatened species • Possible occurrence of endangered Carpentarian Grasswren in the vicinity of project area • Incomplete baseline data and limited field survey • Spread of weeds
Social and cultural	<ul style="list-style-type: none"> • Economic benefit • Damage on Country, Cultural heritage and Sacred Sites • Engagement with Traditional Owners and the Northern Land Council • Need for Cultural Heritage Management Plan to be in place
Climate change	<ul style="list-style-type: none"> • Cumulative greenhouse gas emissions • Impact of greenhouse gas emissions on climate • Low estimated Scope 1 emissions • Exclusion of Scope 2 and Scope 3 emissions • Lack of continuous monitoring, reporting and verification of methane emissions
Wastewater	<ul style="list-style-type: none"> • Open storage tanks for evaporation • Separation distance between storage tanks • Leak detection for sumps • Spills, leaks or discharge of wastewater during major rainfall events • Unclear management of flowback • Storage of large volumes of fracking fluids and flowback in open tanks or pits • Burying of drill waste on site
Water	<ul style="list-style-type: none"> • Drawdown of groundwater due to excessive water extraction over a short timeframe • Contamination of groundwater • Uncertainty on how groundwater interacts with surface water features including those in Hot Springs Valley • Cumulative impacts of the proposed water extraction • Lack of detailed assessment of groundwater dependent ecosystems • Omission of the Inacumba Aquifer and instead referring to an unnamed sandstone aquifer
Human health	<ul style="list-style-type: none"> • Proximity of well site to Tanumbirini station • Health risk due to shale gas hydraulic fracturing • Risk to human health from substances released into drinking water aquifers
Chemicals	<ul style="list-style-type: none"> • Large amount of chemicals proposed to be used • Contamination risks to aquifers via fractures/faults • Impacts of chemicals on human health
Regulation and compliance	<ul style="list-style-type: none"> • Significance of impacts and referral under the <i>Environment Protection Act 2019 (NT) (EP Act)</i> and the <i>Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act)</i>

	<ul style="list-style-type: none"> • Compliance with the Code • Monitoring not appropriate or transparent • Construction of control monitoring bore on Newcastle South • Single Impact and Control Monitoring bore for the Gum Ridge Formation and the Anthony Lagoon Beds
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- v. Public submissions raised concerns about the understanding of aquifers and possible interactions between groundwater and surface water features, specifically those in Hot Springs Valley and nearby spring systems located approximately 45km away from the well pad sites. The updated EMP addresses this concern with additional information on well design and the depths and hydraulic characteristics of aquifers in the vicinity of the proposed activities. The target of proposed hydraulic fracturing is the Velkerri formation, which occurs at depths of approximately 2322 to 3279 metres at the locations of the proposed hydraulic fracturing activities. The likely sources for the surface water features in Hot Springs Valley are the Bessie Creek and Moroak Sandstone formations, which are located at greater than 300 m below, and greater than 500 m above, the Velkerri Formation respectively. The Bessie Creek and Moroak Sandstone formations are vertically separated from the area of the target activities by extensive and low permeability aquitards. Planned hydraulic fracturing heights are proposed to be approximately 60 m and changes in permeability caused by hydraulic fracturing activities are anticipated to be confined to the immediate stimulation zone. In combination, these factors provide evidence that there is unlikely to be hydraulic connectivity between the levels at which hydraulic fracturing occurs and the levels of the likely water sources of Hot Springs Valley.
- vi. CSIRO is completing a research project in 2026 to understand the geology, hydrogeology and ecology of the Hot Springs Valley. CSIRO will use the data to develop a model for the likely sources of water and gas in the springs, the spatio-temporal evolution of the seepage and the discharge pathways. The outputs of this research will increase confidence in understanding the hydrogeological dynamics of the region, which will inform future water planning, management and regulatory activities.
- vii. The potential risks of impact to aquifers, regardless of their depth or hydraulic characteristics, are minimised through implementation of the Code of Practice: Well Integrity. The Code of Practice: Well Integrity requires interest holders to develop a Well Operations Management Plan, including requirements to maintain, test and report on the well barriers which prevent migration of hydrocarbons or fluids into aquifers. Furthermore, the EMP commits to implementing a groundwater monitoring program designed to detect changes in groundwater as a result of drilling and hydraulic fracturing activities. The EMP also includes a spill management plan and a wastewater management plan which assess, manage and monitor the risks to groundwater from drilling and hydraulic fracturing activities. As the risk of water pollution is demonstrated to be ALARP and acceptable, the current understanding of the interactions between aquifers and surface water features is sufficient for the duration of the activities proposed in the EMP.
- viii. Public submissions also raised concerns regarding the impacts of the project on climate change, covering: impact of greenhouse gas emissions, scope 2

- and 3 emissions, offsets, cumulative greenhouse gas emissions, emissions calculations, flaring and venting, offsetting and leak detection.
- ix. The EMP has been updated to demonstrate how emissions have been calculated using recognised emissions estimation tools. Emissions have been calculated in accordance with the National Greenhouse and Energy Reporting Scheme (NGERS). Calculated emissions estimates have been updated to reflect a scenario where beneficial use does not occur. The EMP considers fugitive emissions, provides detail on compliance with NGERS calculation methods and assumptions, considers potential impacts to climate from cumulative greenhouse gas emissions and emissions reduction methods. The EMP itself demonstrates a commitment to minimise emissions to ALARP and acceptable levels and offset the Scope 1 emissions to a net zero position where required under the Commonwealth National Greenhouse and Energy Reporting (NGER) (Safeguard Mechanism) Rule 2015. Under a 'no beneficial use' scenario the interest holder has committed to limiting flaring duration to a maximum of 30 days per well, limiting the number of appraisal wells tested and limiting the purpose of flaring to appraisal testing only. The EMP is not required to account for emissions that may result from a full production scenario, as that is not the subject of regulated activities proposed in the EMP. Cumulative impacts from a full production scenario will be required to be considered in future approvals for production activities, which will be informed by the outcomes from the current proposed activities.
- x. Public submissions also raised concerns about the potential for the endangered Carpentarian Grasswren to occur in the project area. As part of my assessment, I requested an additional review of the relevant information and data from agency expertise within DLPE. The review found that the inclusion of the record as *Amytornis sp.* on the fauna list in Appendix F of the Environmental Assessment Report was an error, that there is a lack of suitable habitat for grasswrens in the project area and that based on this the presence of Carpentarian grasswren at the site is considered highly unlikely.
- xi. The majority of the field data and mapping available for the area suggests that the area is dominated by lateritic plains and low-rises, this is in contrast to areas to the north east and east of Tanumbirini station where gorges and ranges of sandstone occur and are considered to provide suitable potential habitat for grass-wrens. There are no records maintained by Flora and Fauna Division of Carpentarian grasswren within approx. 100km of this proposal. A record of this species from 1999 in the Atlas of Living Australia that is within approximately 30km from the project area has been excluded from the NT Fauna Atlas following a screening process.
- xii. I have reviewed the advice provided by experts within DLPE and consider it unlikely that the Carpentarian grasswren occurs in the project area.
- xiii. Other specific issues of concern raised in public submissions have been addressed in the revised EMP. I recognise the importance the community places overall, on assessment of cumulative impacts, environmental protection and ensuring decisions are based on the principles of ecologically sustainable development. I have taken into account the public submissions in making my decision. The EMP appropriately identifies the risk and potential impacts from the regulated activity and commits to mitigation, management and monitoring measures to address these risks and potential impacts.
- xiv. I am satisfied that the community has had a reasonable opportunity to be involved in processes in relation to this decision.

- xv. Next, I have considered short-term and long-term environmental impacts of carrying out the regulated activity. Environmental impacts include direct and indirect effects on the physical, biological, economic, cultural and social aspects of the environment, and may include cumulative impacts or occur over time.
 - xvi. The information before me suggests long-term and short-term environmental impacts are acceptable and ALARP with the proposed mitigations in place.
 - xvii. Taking an integrated view of long-term and short-term environmental and equitable considerations, I am satisfied that the considerations on balance and taken together support approval of the EMP.
- b) The precautionary principle (s 19 *Environment Protection Act 2019*) applies when there are threats of serious or irreversible environmental damage and requires that lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation.
- i. I have evaluated the proposed precautionary measures against the risk-weighted consequences of impacts given the options available, and with a view to avoiding serious or irreversible damage to the environment wherever practicable. I am satisfied that the regulated activity and the control measures identified by the interest holder mitigates risks of serious or irreversible damage due to lack of full scientific certainty to a level that is both as low as reasonably practicable and acceptable.
- c) The principle of evidence-based decision-making (s 20 *Environment Protection Act 2019*) requires decisions to be made on the best available evidence in the circumstances that is relevant and reliable. I am of the view that the evidence before me satisfies this requirement for the following reasons:
- i. The EMP was developed by persons who have professional qualifications, training, skills and experience on the subject matter of environment, safety management and petroleum development and operations.
 - ii. The interest holder employed a comprehensive process to obtain relevant information including baseline assessments, archaeological assessments, stakeholder engagement and consultation with relevant NT government agencies.
 - iii. The EMP has undergone review and assessment by a multi-disciplinary team in DLPE and NT government agencies, which has informed my decision on the EMP. Consideration has also been given to the findings of the Strategic Regional Environmental and Baseline Assessment (SREBA).
 - iv. The interest holder provided further information to clarify aspects of the EMP and modified the EMP to ensure it meets the requirements of the Regulations and the Code.
 - v. Public submissions and inter-agency comments, together with internal assessments, identified matters that required clarification or further information, and the interest holder responded by revising the EMP. Having considered the revised EMP, I am satisfied that the EMP is comprehensive for the purpose of this decision.
 - vi. I believe the information regarding the proposed regulated activity adequately provides the best available evidence in the circumstances that is relevant and reliable to the evidence-based decision-making process.

- d) The principle of intergenerational and intra-generational equity (s 21 *Environment Protection Act 2019*) requires that the present generation should ensure that the health, diversity and productivity of the environment is maintained or enhanced for the benefit of present and future generations. I have given consideration to the impact on present and future generations as follows:
- i. This criterion requires me to turn my mind to whether the benefits of the proposal disproportionately burden present or future generations, or particular groups or communities of present or future generations.
 - ii. I have considered the use of groundwater and am satisfied that the proposed groundwater use will not result in either short-term or long-term impacts to other groundwater users.
 - iii. I have considered whether the health, diversity and productivity of the environment is maintained or enhanced for the benefit of each of these relevant groups.
 - iv. The environmental burdens of the regulated activity will not disproportionately affect particular stakeholders.
 - v. I consider that cumulative emissions are not significant when considered in context of 2023 Financial Year NT and Australian emissions, which were approximately 23.58 million tonnes and 465.2million tonnes respectively. I note the Australian Government's Safeguard Mechanism applies to projects in the Northern Territory that exceed the trigger threshold.
 - vi. I have considered the protection of cultural heritage and am satisfied that conduct of the regulated activity will not impact on preservation of cultural heritage for the benefit of future generations.
 - vii. Cultural values relating to sacred sites will be protected through the application of Authority Certificates issued to the interest holder under the *Northern Territory Aboriginal Sacred Sites Act (NT) 1989*.
 - viii. Cultural heritage will be protected by ensuring compliance with the *Heritage Act (NT) 2011*, including measures for reporting on discovery of archaeological sites during all activities. The interest holder is aware of its obligations under that Act.
 - ix. The Controller of Water Resources must issue a groundwater extraction licence under the *Water Act (NT) 1992* (Water Act) in relation to the proposed increase of groundwater extraction. The Water Act provides for the investigation, allocation, use, control, protection, management and administration of the Territory's water resources. The Controller and the Water Resources Division in DLPE will ensure compliance with the Water Act and any groundwater extraction licences issued.
 - x. Accordingly, I do not believe that the carrying out of the regulated activity in accordance with the EMP would have an effect contrary to the principle of inter or intra-generational equity.
- e) The principle of sustainable use (s 22 *Environment Protection Act 2019*) requires that natural resources should be used in a manner that is sustainable, prudent, rational, wise and appropriate. In applying this principle, I have considered the following:
- i. The interest holder has obtained a water extraction licence (GRF10280) covering previous water usage for exploration activities. A new or amended water extraction licence will be required to cover the proposed exploration activities in the EMP. Sustainable use of the targeted aquifers will be

considered as part of the water extraction licence application, under the Water Act.

- ii. I note that the EMP has assessed the cumulative impacts of groundwater extraction from the Gum Ridge Formation.
 - iii. Accordingly, I am satisfied that the EMP has taken into account the concept of sustainable use of natural resources.
- f) The principle of biological diversity and ecological integrity (s 23 *Environment Protection Act 2019*) requires that biological diversity and ecological integrity should be conserved and maintained. I have applied this principle as follows:
- i. I believe the information I have regarding the existing biodiversity and ecosystems that are to be affected by the regulated activity; the effects that are likely; and the mitigation measures reasonably available, is sufficient.
 - ii. The regulated activity does not pose a significant risk to any regional populations of threatened species. No core habitat for threatened fauna was identified in the project area, but 24 threatened species occur in the wider landscape.
 - iii. The EMP outlines measures to minimise impacts on 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, the NT Land Clearing Guidelines and Weed Management Planning Guideline: Onshore Petroleum Projects. Specific examples of mitigation controls include construction and maintenance of firebreaks, annual weed inspection and the requirement to have weed hygiene declarations prior to accessing the site.
 - iv. The conservation of biological diversity and ecological integrity is vital to the achievement of ecologically sustainable development. Given the fundamental nature of this consideration, I have given importance to the conservation of biological diversity and ecological integrity in weighing whether I am satisfied the approval criterion in reg 9(1)(c) have been met.
 - v. It is often the case that the conservation of biological diversity and ecological integrity is vital to the achievement of ecologically sustainable development. By their nature, ecosystems are complex and interdependent systems and relationships; this needs to be considered in relation to what preserves their integrity. Biological diversity also represents a wealth of potential natural resources that may provide options for present and future generations. I have borne this in mind when considering the weight to be given to the evidence before me regarding the potential impacts of the regulated activity on biodiversity and ecological integrity.
 - vi. I am satisfied that the regulated activity does not pose a significant risk to the threatened species, important habitats or significant vegetation types. The measures to conserve and maintain biological diversity and ecological integrity in the EMP are appropriate, given the nature and scale of the regulated activity.
 - vii. If carried out in accordance with the EMP, the risks of the regulated activity to the conservation of biological diversity and ecological integrity are considered to be mitigated to an acceptable level.
- g) The principle of improved valuation, pricing and incentive mechanisms (s 24 *Environment Protection Act 2019*) requires that environmental factors should be included in the valuation of assets and services, through application of the 'polluter pays' principles, consideration of full life cycle costs of providing goods

and services and pursuing environmental goals in the most cost-effective way. I have applied the principle as follows:

- i. The pollution and waste that will be generated by the regulated activity in the general course of its operation includes domestic waste, drilling waste and waste from hydraulic fracturing and emissions.
 - ii. I am satisfied that both hazardous and non-hazardous waste will be disposed of in accordance with the requirements of the *Waste Management and Pollution Control Act 1998* and the *Radiation Protection Act 2004* by the interest holder at its own cost, as outlined in the relevant sections of the EMP, including the wastewater management plan.
 - iii. In relation to the risks of a pollution event that may occur unintentionally during the operations of the regulated activity, I consider that the following measures are in place to ensure the interest holder bears the costs of containment, avoidance, and abatement:
 - (1) impacts and risks associated with containment of soil, surface water and groundwater, which are managed through meeting mandated requirements for well integrity and clean-up of spills and leaks and remediation of impacted soil; and
 - (2) impacts and risks associated with loss of containment of wastewater, which are managed through containment measures.
 - iv. In relation to full life cycle costs, it is expected that the regulated activity will have a life cycle of five years, and at the end of this cycle the interest holder will take action to remove any residual pollution and waste as detailed by the EMP.
 - v. All interest holders are required to provide an environmental security related to the activities in an EMP, as per the onshore petroleum environmental security calculation guideline and prior to commencement of the activities.
 - vi. Measures are in place to conduct continuous waste management and remediation. Flowback water will be reused and wastewater will be evaporated on-site, and the residual concentrated liquid will be disposed of at licensed facility.
 - vii. With these measures in place, I am satisfied that the EMP ensures that environmental costs are not left as externalities to be paid for by Territory taxpayers or the local community. They will be fairly paid for by those who stand to benefit from the regulated activity, such as the interest holder, and consumers who choose to purchase the interest holder's products.
 - viii. In relation to options to pursue environmental goals in relation to the regulated activity, I have taken into account that these goals should be pursued in the most cost-effective way.
 - ix. I believe approval of the EMP with the conditions I have imposed is consistent with the principle of improved valuation, pricing and incentive mechanisms.
- h) The EMP was not referred under the *Environment Protection Act 2019*, as the regulated activity does not have the potential to cause a significant impact on the environment. reg 9(3)
- i) The existing environment along with its particular values and sensitivities is appropriately identified in section 4 of the EMP, and to the extent I do not agree reg 9(1)(c)

or there is some uncertainty, I have imposed conditions to address the relevant risk or risks.

- j) I agree with the risk assessment set out in Appendix O of the EMP, and to the extent I do not agree I have imposed a condition or conditions to address the relevant risk or risks.
- k) The interest holder's risk assessment is applicable to activities in all seasons and the outcomes are reflected in the EMP that includes, for example; a weed management plan; bushfire management plan; wastewater management plan; rehabilitation management plan; emergency response plan; stakeholder engagement management plan; chemical risk assessment; and spill management plan. The EMP also includes the required elements for the ongoing management of erosion and sediments. This is consistent with the requirements of the Code that allows for the regulated activity to occur in the wet season months when contingency planning is provided and minimum freeboard in wastewater infrastructure is maintained.
- l) The anticipated environmental impacts are appropriately identified in Appendix O of the EMP. The regulated activity is a continuation of current activities and cumulative effects have been identified and assessed. In EMPs for subsequent stages (if they proceed) the interest holder will need to continue to address cumulative effects.
- m) The EMP demonstrates how the interest holder will comply with relevant requirements of the Code in undertaking these regulated activities. This includes reference to applicable Australian and international standards that have been adopted for regulated activity, as applicable. The EMP cross references relevant sections of the Code which enable the assessment process to identify and confirm that the proposed activities comply with the Code, as applicable. The EMP provides water management commitments and management plans that meet the requirements of the Code.
- n) I am satisfied that the interest holder has conducted stakeholder engagement in accordance with the Regulations. The EMP provides details of stakeholder engagement that meets Regulation 7 and Schedule 1, Clause 9 of the Regulations (Section 5 and Appendix N). Stakeholder engagement records (Appendix N) demonstrate that stakeholders raised objections about environmental impacts of the proposed activity that required specific changes from the interest holder. The EMP provides details of written feedback and input from stakeholders as part of the stakeholder engagement records. The risk assessment in the EMP details the potential environmental impacts of the activity and proposed environmental outcomes to manage impacts on social and cultural surroundings.
- o) I recognise the importance the community places on the protection of water, human health management of chemicals and waste, stakeholder engagement, social impacts and regulation and compliance. The EMP appropriately identifies the risks and potential impacts from the regulated activity and commits to mitigation and management measures to address these risks and potential impacts.
- p) There are no environmental impacts or environmental risks relating to the proposed regulated activity that I consider to be unacceptable.
- q) Overall, having regard to the above, I am satisfied that the EMP is appropriate for the nature and scale of the activity, and demonstrates that the regulated activity is to be carried out in manner by which the environmental impacts and environmental risks are reduced to a level that is:

- i. as low as reasonably practicable; and
- ii. acceptable.