Assessment Report 110

Assessment by supplementary environmental report

Groote Eylandt Mining Company Pty Ltd (GEMCO)

GEMCO Excess Water Disposal Project

August 2026

This assessment report has been prepared by the Northern Territory Environment Protection Authority (NT EPA) pursuant to section 64 of the *Environment Protection Act 2019* (NT) (EP Act). It describes the outcomes of the NT EPA's assessment of the GEMCO Excess Water Disposal Project Proposal.

The Proposal is the construction, installation and operation of water discharge infrastructure (pumps, pipes and marine outfall) over a distance of ~ 12 km extending to a discharge point 600 m into Milner Bay. The water management infrastructure is proposed to have a water discharge capacity of up to 80 gigalitres per year. The duration of the Proposal is for the remaining life of mine and to support closure activities. The NT EPA's method for assessment of the Proposal is by supplementary environmental report.

The assessment report documents potential environmental impacts and risks identified during the environmental impact assessment process, focusing on those that could be significant, and the measures and recommended conditions required to address potentially significant impacts.

In accordance with section 65 of the EP Act, the assessment report is for the Northern Territory Minister for Environment to consider when making a decision about whether to approve the action under the EP Act.

Dr Paul Vogel AM
NT EPA Chairperson

21 August 2026

Northern Territory Environment Protection Authority
GPO Box 3675
Darwin
Northern Territory 0801

Summary

This assessment report has been prepared by the Northern Territory Environment Protection Authority (NT EPA) pursuant to section 64 of the *Environment Protection Act 2019* (EP Act). This assessment report and the draft environmental approval are provided to the Minister for Lands, Planning and Environment (Minister) for consideration in deciding whether to grant an environmental approval for the GEMCO Excess Water Disposal Project (the Proposal).

The Proposal is located on NT Portions 1031, 1305, 1306, 1632, 1669 & 1671 on the western side of Groote Eylandt at / adjacent to the Port, Rowell Highway and GEMCO's Western Leases. The Proposal sits within the Groote Archipelago Region, and the land tenure is a mix of Aboriginal freehold, Mineral Lease (North), Crown Land and Special Purpose Lease. Groote Eylandt Mining Company Pty Ltd (GEMCO) (the proponent) proposes to construct, install and operate water discharge infrastructure (pumps, pipes and marine outfall) over a distance of ~ 12 km extending 600 m into Milner Bay. The water management infrastructure is proposed to have a water discharge capacity of up to 80 gigalitres per year. The action is proposed to manage increased saline groundwater ingress into the mining quarries located on the Western Leases as the pit depth increases and mining progresses towards the coast. The water will be discharged 600m into Milner Bay through a 145 m diffuser comprised of 30 ports. The duration of the Proposal is for the remaining life of mine and to support closure activities.

The Proposal was referred to the NT EPA under the EP Act due to the potential for significant environmental impacts.

The NT EPA assessed the Proposal by the supplementary environmental report method in accordance with the EP Act. The environmental impact assessment examined the potential for significant direct, indirect and cumulative environmental impacts on the environment.

The NT EPA identified and examined potential significant impacts on five key environmental factors:

1. Terrestrial ecosystems
2. Hydrological processes
3. Marine environmental quality
4. Marine ecosystems
5. Culture and heritage.

To address potential significant impacts of the Proposal on the key environmental factors, the NT EPA has recommended conditions for the Minister to consider in deciding whether to grant or refuse environmental approval for the Proposal. The proponent and statutory decision-makers were consulted on the draft environmental approval as required by regulation 160 of Environment Protection Regulations 2020.

The NT EPA's assessment concludes that the Proposal can be implemented and managed in a manner that is environmentally acceptable and therefore recommends that environmental approval be granted, subject to the conditions in the draft environmental approval (Appendix 1).

The NT EPA has also provided other advice in this report for the Minister, other statutory decision-makers and the proponent to consider in relation to a proactive water management approach.

Contents

1. Introduction

This assessment report has been prepared by the Northern Territory Environment Protection Authority (NT EPA) in accordance with section 64 of the *Environment Protection Act 2019* (NT) (EP Act). It provides an evaluation of the potential significant environmental impacts of the GEMCO Excess Water Disposal Project (the Proposal).

The proponent is Groote Eylandt Mining Company Pty Ltd (GEMCO) (the proponent). The NT EPA carried out an environmental impact assessment by supplementary environmental report (SER) method in accordance with the EP Act and Environment Protection Regulations 2020 (EP Regulations).

On completion of its assessment, the NT EPA provides this assessment report (including a draft Environmental Approval at Appendix 1) to the Minister for Lands, Planning and Environment (Minister) for consideration in deciding whether to grant environmental approval to the proponent for the action.

1.1. Purpose

The purpose of this assessment report is:

- to assess whether the Proposal is likely to meet the environmental objectives
- to assess the potential significant environmental impacts of the Proposal
- to make recommendations for avoiding, mitigating and managing those impacts
- to advise the Minister as to the environmental acceptability of the Proposal.

The assessment report must assess the potential environmental impacts and risks of the Proposal and whether there are any significant residual impacts remaining after all reasonable measures to avoid and then mitigate and manage the risks have been taken.

2. Proposal

2.1. Overview

The proponent proposes to discharge Western Leases' quarry pit water (also known as mine pit / void water) via pipelines from its Western Leases NH2 Quarry into Milner Bay adjacent to the existing Port.

The Proposal involves:

- two 1000 mm terrestrial pipelines running approximately 12,100 m from the NH2 quarry area to the Port, with a 29.5 ha terrestrial disturbance footprint and up to 19.5 ha of vegetation clearing
- a surge control structure located at the top of the foredune receiving flows from both terrestrial pipelines
- a single 1400 mm marine outfall pipeline incorporating a buried de-aeration system in the upper beach zone
- a marine outfall extending approximately 600 m into Milner Bay, with a 2 ha marine disturbance footprint

- a 145 m, 30-port outfall diffuser (included within the 600 m offshore length)
- impact piling to install 0.25 m and 0.61 m diameter steel piles along the outfall alignment
- discharge capacity of up to 80 gigalitres (GL)/year of quarry water via the outfall and diffuser (anticipated to operate at 60 GL pa)
- infrastructure maintenance works.

The duration of the proposed discharge is for the remaining life of GEMCO mining operations and to support closure activities.

2.2. Local context

The Proposal is located on the western coast of Groote Eylandt in the Gulf of Carpentaria, approximately 50 km off the coast of Arnhem Land and 650 km southeast of Darwin. Groote Eylandt is within the Anindilyakwa Indigenous Protected Area (IPA) which covers approximately 10,000 km² of land and sea in the Groote Archipelago (Gulf of Carpentaria).

The Proposal is within the Groote subregion of the Arnhem Coast bioregion[1]. The Arnhem Coast bioregion comprises an area of 33,022 km² (or 2.46% area in the Northern Territory (NT)) that includes a coastal strip extending east of Coburg Peninsula to just north of the Rode River in south eastern Arnhem Land, and many offshore islands. Coastal vegetation includes well developed heathlands, mangroves and saline flats, with some floodplain and wetland areas, most notably the extensive paperbark forest and sedgelands of the Arafura Swamp.

Groote Eylandt and its satellite islands are considered to be sites of conservation significance in the NT for outstanding conservation values, including internationally and nationally significant sites for nesting marine turtles and colonial seabirds. The islands support the densest areas of marine turtle nesting in the NT and are especially significant for green and hawksbill turtles. Approximately 900 plant species and 330 vertebrate species are recorded, including twelve threatened species (amongst them the northern hopping-mouse, brush-tailed rabbit-rat and northern quoll).

Groote Eylandt and the numerous associated smaller islands are Aboriginal freehold land (part of the Arnhem Land Aboriginal Land Trust lands) under the *Aboriginal Land Rights (Northern Territory) Act 1976* (ALRA). In addition to Indigenous land uses, mining, tourism and recreational and commercial fishing occur on Groote Eylandt. The Proposal is located across multiple land tenures, including:

- GEMCO's Western Leases, which are held under mineral leases granted pursuant to the Mineral Titles Act 2010 (NT);
- The Rowell Highway (Portion 1305), situated between the northern boundary of the GEMCO Western Lease area and the Port, which is Crown land owned by the Northern Territory Government and covered by mineral lease MLN 956;
- Aboriginal freehold land located outside the Rowell Highway boundary (off-lease areas);
- The Port (Portions 1306 and 1031), which is held by GEMCO under Special Purpose Lease 383 (SPL 383) for specific purposes including ore stockpiling; and

[1] Baker, B., Price, O., Woinarski, J., Gold, S., Connors, G., Fisher, A. & Hempel, C (2005). Northern Territory Bioregions – Assessment of Key Biodiversity Values and Threat. Palmerston: Department of Natural Resources, Environment and the Arts, Northern Territory Government.

- Milner Bay, which is Crown land gazetted as reserved land under the *Mineral Titles Act 2010*.

Parts of the pipeline will also extend beyond the current lease boundaries, including areas near the Port not covered by the existing mineral leases, previously cleared off-lease areas, and offshore components.

The Proposal area is located within a predominantly low-lying coastal landscape, with ground elevations ranging from sea level to around 50 m Australian Height Datum. The surrounding environment supports native bushland vegetation communities, primarily comprising eucalypt open forest, woodland and shrubland. Darwin woollybutt and Darwin stringybark are the dominant canopy species, alongside a broad diversity of other native flora.

Much of the Proposal area occurs within land that has been subject to previous disturbance associated with existing infrastructure and historical activities near Rowell Highway and the Port, including road verge works, channel development and port-related operations. As a result, sections of the area contain disturbed ground and areas of relatively recent vegetation regrowth.

Areas of permanent or temporary human habitation in the region of the Proposal include:

- Angurugu – located directly adjacent to the mine, approximately 5 km south from the Proposal area
- Alyangula – located next to the Port, approximately 1 km north of the Proposal area
- Malkala - located along the Rowell Highway halfway between the mine and Alyangula, approximately 135 m west from the Proposal area

The Anindilyakwa Land Council (ALC) is the statutory body responsible under ALRA for activities within the Groote Archipelago Region on behalf of the Traditional Owners. The Traditional Owners are an amalgamation of two cultures: the Warnindilyakwa and the Nunggubuyu (ALC, 2019). Both cultures speak Anindilyakwa as their first language, and the land, people and culture are also referred to by this term. Anindilyakwa people maintain a strong connection with Sea Country and believe that ancestral beings created the land and sea and still inhabit them today and were responsible for laying out the traditional laws that govern cultural practice and social organisation of the Anindilyakwa peoples.

3. Strategic context

The Proposal will enable a controlled excess water discharge pathway to support GEMCO's mining operations in its Western Leases to return to previous production capacity and enable future growth.

The continued mining operations will support ongoing social and economic benefits on Groote Eylandt by maintaining employment opportunities and delivering services to the broader community.

The Proposal is consistent with the Northern Territory Government's broader strategic direction, particularly its priority to rebuild the economy and support sectors with strong growth potential, as outlined in the *Northern Territory Economic Strategy 2025*.

4. Statutory context

4.1. Northern Territory

The Proposal requires assessment by the NT EPA under the EP Act. The NT Minister for Lands, Planning and Environment (the Minister) is the approval authority. This assessment report and the draft environmental approval (Appendix 1) are provided to the Minister to consider in making a decision on whether to grant or refuse an environmental approval for the Proposal and conditions of the approval.

Pursuant to section 92 of the EP Act, if an environmental approval under the EP Act is granted, it will prevail over other NT statutory authorisations that the proponent is required to obtain. It is the responsibility of the proponent to obtain all relevant statutory authorisations which may include, but are not limited to:

- approval of an Environmental (Mining) Licence under the mining provisions of the *Environment Protection Act 2019*
- approval(s) to carry out work on a heritage place or object under the *Heritage Act 2011*
- approval to interfere with a waterway under the *Water Act 1992*
- a Crown Land Licence under the *Crown Lands Act 1992* for the construction and operation of the excess water pipeline in the marine area

Groote Eylandt is Aboriginal land under the ALRA. The ALC represent the 14 clan groups of the Groote Archipelago, and is the statutory body (under section 23(1) of the ALRA) responsible for negotiations and engagement regarding activities on Aboriginal land. Parts of the Proposal site extends outside of the proponent's current lease areas and, as such, the proponent requires an access arrangement with the ALC. Further, the ALC has responsibilities where the proposal impacts the rights and interests of traditional Aboriginal owners, and other affected Aboriginal people, within the IPA managed by the ALC's Land and Sea Rangers.

4.1.1. Broader statutory context

The Western Leases of the GEMCO Mine is regulated under a deemed Environmental (Mining) Licence under the EP Act. The deemed licence is made up of an existing authorisation (issued under the *Mining Management Act 2001* (MMA)) and a mining management plan (MMP) approved under the MMA. The MMP (dated 27 June 2024) allows excess water contained in either quarries or tailings storage facilities on the Western Leases to be transferred between facilities to lessen the requirement for discharge to bushland. If water transfer between storage facilities is not an available option water may be discharged to bushland.

The Eastern Leases of the GEMCO Mine was assessed under the former *Environmental Assessment Act 1982* (EA Act) and the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) (the Australian Government accredited the assessment process under the EA Act for the purposes of assessing the project under the EPBC Act). The NT EPA's Assessment Report 77 was released in 2016 and provided an assessment and a series of recommendations to the approval Ministers based upon the information provided by the proponent in an EIS and a Supplement to the EIS. The active MMP dated 27 June 2024 incorporates mining activity on both Western and Eastern Leases for the period FY2025 to Closure. The MMP states that it is not expected that controlled discharges will be required for the Eastern Leases, however discharge limits have been formulated in the event that emergency discharge is required during extreme wet conditions. If required, excess water will be discharged to bushland in accordance with the existing practices at the Western Leases.

GEMCO proposes to develop the Southern Lease Mining Project. The proposal is a controlled action under the EPBC Act and is being assessed under the EP Act at the level of an EIS under the bilateral agreement between the Commonwealth of Australia and the Northern Territory.

GEMCO was issued a Waste Discharge Licence (WDL) 256 pursuant to s74 of the *Water Act 1992* in February 2025, which was amended (and replaced) by a WDL256-01, commencing May 2026. WDL256-01 allows a controlled discharge of mine influenced water (from the Western Leases) into the Angurugu River via authorised discharge points. The WDL256-01 will expire 20 June 2028.

GEMCO's deemed licence is valid until 30 June 2028. GEMCO must obtain, or have commenced the process to obtain, a replacement Environmental (Mining) Licence under the EP Act for the mining activities authorised under the deemed licence by 30 June 2028. Replacement licences are to be granted on substantially the same terms and conditions as those that applied to the related deemed licence. The Minister may include conditions requiring monitoring and reporting, and the publication of certain reports (even if these requirements were not applicable under the previous MMA authorisation/deemed licence). The Minister may include conditions related to other authorisations for the relevant mining activity that have not previously been regulated by the MMA but which are required to enable the mining activity to occur (e.g. waste discharge licence requirements under the *Water Act 1992*).

4.2. Mandatory matters for consideration

In preparing this assessment report and in accordance with regulation 157 of the EP Regulations, the NT EPA considered:

- the referral information
- the SER
- additional information from GEMCO in response to directions given by the NT EPA
- clarifying information provided to the NT EPA from GEMCO
- submissions received on the referral information, the SER, and the additional information
- information provided during stakeholder engagement meetings with the NT EPA, and
- submissions received from GEMCO and other statutory decision-makers of the draft environmental approval.

In carrying out its assessment, the NT EPA took into account the purpose of the environmental impact assessment process under section 42 of the EP Act including consideration of:

- the objects (EP Act, section 3)
- the principles of ecologically sustainable development (EP Act, Part 2 Division 1)
- the environmental decision-making hierarchy (EP Act section 26)
- the waste management hierarchy (EP Act section 27)
- ecosystem-based management
- impacts of a changing climate.

Refer to section 9 of this report for further detail about matters that the NT EPA has taken into account during its assessment.

5. Consultation

The NT EPA invited public and government authority comment on the proponent's referral information during the consultation period from 25 August to 19 September 2025. Submissions from three government authorities were received. One public submission was received.

The NT EPA considered the accepted referral information and submissions received, and on 28 October 2025 decided that the Proposal would require an assessment by SER under the EP Act.

The NT EPA invited public and government authority comment on the proponent's SER during the consultation period from 6 February to 12 March 2026. Submissions from three government authorities were received. One public submission was received.

Following the consultation period on the SER the NT EPA directed the proponent to provide additional information on the SER under regulation 124(1). The additional information was provided on 12 May 2026. In accordance with regulation 126(1) on 14 May 2026 the NT EPA invited the ALC, the DLPE Flora and Fauna Division and the DLPE Mining Division to make a submission on the additional information. The ALC and the DLPE Mining Division made submissions on the additional information.

On 3 and 4 June 2026, NT EPA meeting 124 was held, at which both the ALC and the proponent were provided the opportunity to meet with the NT EPA (separately) to discuss the project.

In preparing this assessment report, matters raised in the submissions were considered in relation to the potential significant environmental impacts of the Proposal. The issues raised in submissions are discussed in section 6.

The NT EPA consulted with the proponent, Delegates of Part 5 of the EP Act (Mining Division), the *Territory Parks and Wildlife Conservation Act 1976* (TPWC) and the *Heritage Act 2011*, the Water Controller and AAPA on the draft environmental approval in accordance with EP Regulation 160. Submissions were received from:

- the proponent
- AAPA
- Delegate of Part 5 of the EP Act (Mining Division)

The NT EPA considered these submissions in finalising its advice and recommendation to the Minister.

The proponent conducted its own consultation in relation to the Proposal as detailed in section 4.6 of the referral report and delivered presentations about the referral and the SER to NT government authorities in September 2025 and April 2026. The proponent has taken reasonable steps to inform and consult with the community and stakeholders about the potential impacts and benefits of the Proposal. However, the NT EPA considers further consultation will be required to ensure stakeholders are adequately informed of the Proposal and its potential impacts.

Relevant significant environmental issues identified from this EIA process were taken into account by the NT EPA during its assessment of the Proposal.

6. Assessment of key environmental factors

6.1. Overview

The NT EPA identified that the Proposal has the potential to have a significant impact on environmental values associated with three key environmental factors[2] (**Table 1)**.

Table 1 Key environmental factors

THEME	FACTOR	ENVIRONMENTAL OBJECTIVE
LAND	Terrestrial ecosystems	Protect terrestrial habitats to maintain environmental values including biodiversity, ecological integrity and ecological functioning.
WATER	Hydrological processes	Protect the hydrological regimes of groundwater and surface water so that environmental values including ecological health, land uses and the welfare and amenity of people are maintained.
SEA	Marine ecosystems	Protect marine habitats to maintain environmental values including biodiversity, ecological integrity and ecological functioning.
	Marine environmental quality	Protect the quality and productivity of water, sediment and biota so that environmental values are maintained.
PEOPLE	Culture and heritage	Protect culture and heritage.

The NT EPA considered other environmental factors during its environmental impact assessment; however, the impact on those factors was not considered to be significant.

6.2. Terrestrial ecosystems

6.2.1. Environmental values

Groote Eylandt supports largely intact native vegetation and fauna habitats of ecological and cultural significance. The island remains predominantly undeveloped and is widely used for traditional Aboriginal hunting and gathering, contributing to the high integrity of terrestrial landscapes across the region. Field investigations undertaken in April and August 2024 identified riparian vegetation within the construction footprint, which is recognised as sensitive or significant vegetation under the NT Land Clearing Guidelines due to its biodiversity value and functional importance in maintaining hydrological and habitat connectivity.

A likelihood assessment identified two threatened flora species, *Eleocharis retroflexa* (EPBC Act) and *Utricularia singeriana* (TPWC Act), as species that may occur in the study area (construction footprint plus a 5km buffer); however, neither was recorded during field surveys.

Several fauna species of conservation significance were also assessed as potentially present, including the northern brushtail possum, ghost bat and northern blue-tongue skink, although none were detected. The masked owl (northern) and Mertens' water monitor were considered likely to

[2] NT EPA Environmental factors and objectives

occur based on habitat suitability but were not observed during field investigations. The northern quoll is known to occur within the project area and was observed during field surveys and represents a key terrestrial fauna value due to its conservation status and sensitivity to habitat disturbance. A total of 74 fauna species were recorded during field surveys, comprising 54 bird species, 11 mammals and nine reptiles however, only one species recorded (the northern quoll) is a listed threatened species.

A range of migratory bird species listed under the EPBC Act were assessed as either 'confirmed present' or 'may occur' within the study area. The eastern osprey and common tern were recorded during surveys. Multiple other migratory marine, terrestrial and wetland species were identified as 'may occur' in the likelihood of assessment but were not recorded during surveys, such as the black-naped tern, Pacific golden plover, fork-tailed swift, oriental cuckoo, Swinhoe's snipe and oriental pratincole. These species utilise coastal areas, riparian corridors, open woodland and seasonally inundated habitats across Groote Eylandt.

The terrestrial ecosystems within and surrounding the construction footprint comprise sensitive riparian vegetation, potential for threatened flora, confirmed and potential habitat for a range of threatened and migratory fauna, and known habitat for the northern quoll.

6.2.2. Consultation

The submissions on the referral information, SER and additional information raised the following key issues in relation to terrestrial ecosystems:

- Concerns were raised regarding the identified extent and characterisation of vegetation within the construction footprint and the broader project area, including the presence of sensitive vegetation types (e.g. riparian vegetation, wetlands and potential dry rainforest patches).
- Potential impacts from vegetation clearing were identified, including an increase in clearing extent in the SER due to realignment of the pipeline and the need to minimise clearing width and avoid sensitive vegetation as much as practicable.
- Concerns were raised about impacts to fauna habitat, particularly the disturbance or removal of hollow-bearing trees that provide habitat for threatened and other native species.
- Risks to fauna during construction were identified, particularly fauna entrapment in trenches, with submissions noting that proposed mitigation measures do not fully align with best-practice trench management and fauna rescue requirements.
- Freshwater habitats and biota were identified as insufficiently assessed, including limited consideration of associated fauna (e.g. fish and invertebrates) and reliance on assumptions regarding ephemeral conditions.
- Vegetation disturbance and soil exposure were identified as increasing the risk of weed introduction and spread, including the presence of declared weed species not fully accounted for in the assessment (e.g. Buffel Grass).
- The need for comprehensive management plans (e.g. fauna management, weed management, construction environmental management) was highlighted to manage risks to terrestrial flora and fauna during construction and operation.

6.2.3. Factor assessment and recommended regulation

In assessing whether the residual impacts of the Proposal will meet the NT EPA environmental factor objectives, and whether reasonable and appropriate regulatory conditions can be imposed, the assessment findings, recommendations, and recommended conditions of approval are presented in **Table 2**.

Table 2 Assessment for Terrestrial ecosystems and recommended conditions

Potentially significant impact	Proponent's measures to avoid mitigate and manage impacts	Assessment findings	Recommended conditions and regulation by other statutory decision-makers
Removal of sensitive and/or significant vegetation The proposed action will result in the disturbance and removal of up to 19.5 ha of vegetation, including riparian vegetation, which is considered sensitive and/or significant vegetation under the NT Land Clearing Guidelines.	**Avoid** • Avoid habitat removal and sensitive or significant vegetation by minimising footprint through design and placement of the marine discharge location at the existing disturbed Port area. • Where possible, the on-ground layout and alignment of the corridor will be micro-sited to avoid native vegetation (i.e. trees) and suitable fauna habitat features (e.g. rock piles, termite mounds, hollow logs, etc). **Mitigate and manage** • Works to preferentially occur when the watercourse is dry and / or not flowing and erosion and sediment controls implemented • Construction within the freshwater habitats will be conducted quickly with underground pipeline installation	Based on the information provided, and as supported by the Flora and Fauna Division, the risk to sensitive and/or significant vegetation is low. The proponent has made a number of general statements regarding the minimisation of impacts (e.g. limiting clearing, minimising impacts, reducing the duration of works, avoiding sensitive areas as much as practicable and deferring to the development management plans). These statements are ambiguous and lack sufficient detail, specificity or measurable commitments, and are therefore uncertainty remains about the effectiveness of the measures proposed. A condition for the limitations and extent has been recommended to ensure activities are undertaken in accordance with the assessed disturbance footprint and managed to not be a significant impact.	**Condition 3 – Limitations and extent** Limitations and extent to limit the area of land clearing and disturbance (including marine) within the proposed pipeline disturbance area. **Regulation by other statutory decision-makers** Regulation of vegetation clearing, fauna management, erosion and sediment control during construction through the mining activities provisions (Part 5A) of the EP Act.

Potentially significant impact	Proponent's measures to avoid mitigate and manage impacts	Assessment findings	Recommended conditions and regulation by other statutory decision-makers
	proposed to be completed, watercourses reshaped to match original grades and flow controls removed (if required) within less than a week per watercourse. **Offsets** • None proposed.		
Fauna Impacts Construction activities, including vegetation clearing, may result in habitat loss, direct fauna injury or mortality, behavioural disturbance (e.g. noise, vibration and lighting), and restricted movement. These impacts may contribute to cumulative effects on sensitive species, such as the northern quoll and northern brushtail possum, particularly in combination with existing fragmentation pressures	**Avoid** • Avoid habitat removal and sensitive or significant vegetation by minimising footprint through design and placement of the marine discharge location at the existing disturbed Port area. • Where possible, the on-ground layout and alignment of the corridor will be micro-sited to avoid native vegetation (i.e. trees) and suitable fauna habitat features (e.g. rock piles, termite mounds, hollow logs, etc) • Trees with hollows will be avoided where possible. • Avoidance of prolonged impacts from lighting by conducting work between 6am and 6pm.	The Flora and Fauna Division supports the findings of the likelihood of occurrence assessment of threatened fauna undertaken by the proponent and considers the management and mitigation measures proposed are appropriate. Some additional mitigation measures have been recommended by Flora and Fauna Division to further minimise impacts and ensure fauna protection measures are in accordance with best practice, including: • the total length of open trench and the length of time any section of trench is open is minimised; • trench plugs and ramps are installed at maximum intervals of 500 m as recommended by studies on entrapment of fauna in trenches (e.g. Doody et al. 20031, Swan and Wilson 20122, Woinarski et al. 20003);	**Condition 3 – Limitations and extent** Limitations and extent to limit the area of land clearing and disturbance (including marine) within the proposed pipeline disturbance area. **Regulation by other statutory decision-makers** Regulation of vegetation clearing, fauna management, during construction through the mining activities provisions (Part 5A) of the EP Act.

Potentially significant impact	Proponent's measures to avoid mitigate and manage impacts	Assessment findings	Recommended conditions and regulation by other statutory decision-makers
	Mitigate and manage • Preclearance surveys will be conducted by a suitably qualified person over the extent of clearing disturbance to target threatened and common fauna species and/or habitat features including hollow bearing trees, burrows, dens, hollow logs, caves, rocky areas i.e. crevices, riparian vegetation, embankments, and any other features which may provide suitable habitat for present fauna • Clearing works within 300 m of the marine environment should involve an inspection by a suitably qualified person to ensure no EPBC-listed migratory shorebirds are utilising the area. • Where pre-clearance surveys identify threatened fauna species that cannot self-disperse, works will cease immediately, and a suitably qualified person will attend site and salvage and translocate the animal/s in question. • Construction works within the extent of riparian vegetation (~20 m from watercourse edge) will be planned to occur outside of	• fauna shelters are installed with at least one per 500 m interval between trench plugs, and optionally include funnel traps to help trap and subsequently remove animals; • inspections of the entire length of open trenches are undertaken at least twice daily, the first within 2 hours of first light and the second mid to late afternoon. Additional checks during the middle of the day are recommended in exposed areas during hot periods; and • an adequate number of qualified fauna handlers are available to inspect and clear the entire length of open trench each day, within the conditions of their wildlife permits (under the *Territory Parks and Wildlife Conservation Act 1976*). The NT EPA is satisfied the potentially significant impacts to terrestrial ecosystems can be minimised and managed by limiting terrestrial disturbance to 29.5ha hectares, and through incorporating the recommendations made by the Flora and Fauna Division with regulation under Part 5A of the EP Act.	

Potentially significant impact	Proponent's measures to avoid mitigate and manage impacts	Assessment findings	Recommended conditions and regulation by other statutory decision-makers
	the Mertens' water monitor mating period • Open-air trenches will not be left exposed for longer than 48 hours • Trench plugs, ramps and fauna shelter requirements will be implemented as appropriate for each length of trench • Inspections of the entire length of open trenches are undertaken at least once per 24 hour period (ideally immediately post dawn) • If fauna is detected in the trench, advice will be sought from a suitably qualified person with fauna handling experience. • Construction of 53 crossings along the pipeline alignment; including 17 specifically designed for fauna passage; (approximately 22 elevated crossings, 29 buried crossings and 1 earthen ramp). • No installation of fencing between the road and pipeline crossings. • Crossings range from 15 m to > 50 m, totalling a length of approximately 1.7 km of the pipeline (~14 % of the total terrestrial pipeline).		

Potentially significant impact	Proponent's measures to avoid mitigate and manage impacts	Assessment findings	Recommended conditions and regulation by other statutory decision-makers
	Offsets • None proposed.		
Spread of weeds Vegetation clearing and soil disturbance can facilitate the introduction and spread of weeds including declared weeds (e.g. Buffel Grass).	**Avoid** • None proposed. **Mitigate and manage** • Materials and machinery brought to the island must be clean and free of biological material, and carefully inspected as part of a biosecurity assessment. **Offsets** • None proposed.	The NT EPA is satisfied that the potentially significant impacts to terrestrial ecosystems from the spread of weeds can be minimised and managed through implementation of the proposed mitigation measures. In addition, the Proponent is required to meet its obligations under the *Biosecurity Act 2019* and the *Weeds Management Act 2001*, which provide further controls for the prevention and management of weed risks associated with the Proposal.	**Condition 3 – Limitations and extent** Limitations and extent to limit the area of land clearing and disturbance (including marine) within the proposed pipeline disturbance area. **Regulation by other statutory decision-makers** *Weed Management Act 2001* *Biosecurity Act 2019*

6.2.4. Conclusion against the NT EPA objective

The NT EPA has assessed the proponent's information and taken into account advice and recommendations from the Flora and Fauna Division. While a number of the 'mitigation measures' provided by the proponent lack sufficient detail and do not constitute robust or clearly defined mitigation measures, the NT EPA considers that potential impacts to terrestrial ecosystems can be appropriately managed under the recommended conditions and the mining activities provisions of the EP Act. The NT EPA therefore considers that the Proposal can be conducted in a manner that meets its environmental objective for terrestrial ecosystems.

6.3. Hydrological processes

6.3.1. Environmental values

Environmental values associated with hydrological processes on Groote Eylandt, include groundwater systems, surface water features and groundwater dependent ecosystems (GDEs). The project area is located within an active hydrological environment where mining activities intersect aquifers, resulting in groundwater ingress to mine pits and influencing groundwater levels. As mining has progressed toward the coast, increased groundwater intrusion and salinity have been observed, reflecting connectivity between inland groundwater systems and coastal processes.

The environmental values present that may be affected by groundwater related impact pathways of the Proposal are the groundwater table and local aquifer system, groundwater quality/freshwater aquifer condition, confirmed or potential groundwater-dependent ecosystems, sensitive vegetation types and cultural heritage or sacred site values where those values are associated with groundwater, water features or GDE vegetation condition. GEMCO has identified that environmental values within the current and predicted drawdown extent include GDEs and sensitive vegetation types other than GDEs, including mangroves, monsoon vine thicket and riparian vegetation. These vegetation types are closely linked to hydrological conditions such as shallow groundwater, soil moisture and seasonal water availability, and contribute to ecological function and landscape connectivity.

Surface water features within the project area also represent important hydrological values. The pipeline alignment intersects and runs adjacent to drainage lines, creeks and other surface water features that support seasonal flows and local water movement across the landscape. These systems are typically ephemeral but play an important role in maintaining hydrological connectivity, supporting vegetation communities and sustaining ecological processes, particularly in riparian zones.

6.3.2. Consultation

The submissions on the referral information, SER and additional information raised the following key issues in relation to hydrological processes:

- Submissions identified the need to consider potential impacts to groundwater associated with dewatering activities and revised water management approaches.
- Uncertainty regarding the extent of groundwater drawdown and its impacts on GDEs and other sensitive receptors.
- Potential changes and impacts to the morphology of creek beds and banks, natural flow regimes and water quality from the pipeline construction and ongoing operation
- Submissions highlighted the need for improved description and clarity of the groundwater monitoring network, including its spatial coverage, operational status of bores, and proposed enhancements, as well as increased monitoring frequency and extent to provide greater confidence that potential impacts (including to GDEs) can be effectively identified and adaptively managed.
- The development of monitoring and management measures was identified as important to support ongoing understanding and management of hydrological processes during construction and operation.

6.3.3. Factor assessment and recommended regulation

In assessing whether the residual impacts of the Proposal will meet the NT EPA environmental factor objectives, and whether reasonable and appropriate regulatory conditions can be imposed, the assessment findings, recommendations, and recommended conditions of approval are presented in **Table 3**.

Table 3 Assessment for Hydrological processes and recommended conditions

Potentially significant impact	Proponent's measures to avoid mitigate and manage impacts	Assessment findings	Recommended conditions and regulation by other statutory decision-makers
Groundwater Drawdown and Saline Intrusion For the remainder of the Western Leases mine life, quarrying will continue to progress west into areas with sensitive vegetation types. At the same time, potential drawdown and saline intrusion is expected to increase as: • average submergence depth of the ore body will increase, resulting in high inflows; • quarrying will occur in areas with shallower groundwater levels; and • deposits will be mined closer to the coastline or estuarine areas with the potential to induce saline water. Increased dewatering volumes could have the potential to alter the local water table, leading to changes in surface water flow	**Avoid** • None proposed. **Mitigate and manage** • None proposed. **Offsets** • None proposed.	The groundwater drawdown modelling undertaken by the proponent indicates that drawdown is minimal in areas most likely to support GDEs, suggesting that the potential for significant impacts to these ecosystems is low. Based on the referral information and the '*RFI Response 2, 15 August 2025*' provided by the proponent, the Flora and Fauna Division considers that significant impacts on GDEs from the project are unlikely. The Flora and Fauna Division has advised that the current monitoring regime is limited in both spatial coverage and temporal resolution; and recommended that the monitoring network be expanded beyond the immediate mine footprint, and that higher-frequency monitoring (e.g. daily measurements using data loggers) be implemented. This would provide a more robust and continuous dataset, provide confidence that impacts to groundwater are within acceptable levels, and enable management measures to be implemented promptly should a negative trend be detected.	**Regulation by other regulatory processes** The NT EPA supports Flora and Fauna Division's recommendation to expand the groundwater monitoring network to monitor potential impacts to GDEs - for consideration through the mining activities provisions (Part 5A) of the EP Act.

Potentially significant impact	Proponent's measures to avoid mitigate and manage impacts	Assessment findings	Recommended conditions and regulation by other statutory decision-makers
patterns and potential reduction in the water availability for terrestrial ecosystems. Groundwater drawdown in the upper aquifer may result in reduced water availability at confirmed or potential GDEs. This could potentially result in stressed vegetation and impaired ecological function.		GEMCO has acknowledged this recommendation in the SER, stating that "*There are currently 46 dewatering monitoring bores that are able to monitor groundwater levels within the upper aquifer, orebody and lower aquifer, while selected bores are monitored for electrical conductivity. Data is collected continuously and can be accessed via telemetry. Part of the dewatering network is currently not in operation; however, certain bores are planned to be re-commissioned. GEMCO is planning to expand this monitoring network.*" Based on the information provided, potential impacts to local permanent river systems, including the Angurugu River and Emerald River, are considered low. Modelling indicates that: • dry season baseflow is predicted to remain within the same order of magnitude as existing conditions; and • reductions in dry season baseflow are not expected to materially affect river health, particularly given the high flow volumes during the wet season. Other waterways in the area are ephemeral and are therefore not expected to be significantly influenced by groundwater drawdown.	

Potentially significant impact	Proponent's measures to avoid mitigate and manage impacts	Assessment findings	Recommended conditions and regulation by other statutory decision-makers
		The proponent has stated in the 'RFI Response 1 – 25 July 2025' that '*the presence of large water storage quarries and continuing selective discharges of freshwater to bushland are expected to act as 'recharge mechanisms' and buffers for drawdown*.' Bushland discharge is considered an alternative water management option and is not supported as a mitigation measure for groundwater drawdown or saline intrusion. Bushland discharge is regulated by the Mining Division under an Environmental (Mining) Licence (refer to Other Advice in Section 8). The NT EPA is satisfied that the potential impacts to hydrological processes are not significant and impacts can be minimised and managed through regulation under Part 5A of the EP Act.	

6.3.4. Conclusion against the NT EPA objective

The NT EPA has assessed the proponent's information, taking into account advice from the Flora and Fauna Division. Noting the proponent's commitment to expand the groundwater monitoring bore network, the NT EPA considers that potential impacts to hydrological processes can be appropriately managed under the mining activities provisions of the EP Act. The NT EPA therefore considers that the Proposal can be conducted in a manner that meets its environmental objective for hydrological processes.

6.4. Marine ecosystems

6.4.1. Environmental values

Marine environmental values including sensitive receptors such as benthic communities and protected marine megafauna are within Milner Bay and the broader marine environment. The marine environment surrounding Groote Eylandt supports a range of benthic habitats and marine fauna of ecological, cultural and conservation significance. Seagrass, macroalgae, coral communities and benthic infauna habitats occur within Milner Bay and the broader study area.

Seagrass habitats have been recorded throughout Milner Bay, with six species identified during surveys undertaken by the Australian Institute of Marine Science in 2012. Subsequent surveys in 2024 and 2025 have confirmed the presence of seagrass within and adjacent to the project area (**Figure 1**), including *Halophila ovalis*, *Halophila spinulosa* and *Halodule uninervis*. Seasonal variation in seagrass abundance and density has been observed, with sparse seagrass occurring within the marine footprint and denser seagrass patches present approximately 200 to 800 m south of the marine footprint. Approximately 0.77 ha of seagrass habitat occurs within the marine disturbance footprint.

Macroalgal communities occur on both hard and soft substrates within Milner Bay, including patches of *Sargassum* associated with rocky inshore habitats. Soft corals (sea whips) have also been recorded intermittently within the marine footprint. Coral reef habitat within Milner Bay is generally limited in extent, with the largest known reef area occurring around Tasman Point, approximately 2.5 km north of the marine footprint.

Soft sediment habitats within the study area support benthic infauna communities, with extensive areas of bioturbated mud, silt and sand occurring throughout the nearshore environment. Extensive infauna habitat is present adjacent to the project area in the form of unconsolidated sand habitats (**Figure 2**).

The marine environment around Groote Eylandt is recognised as high-value habitat supporting a range of species of conservation significance. Species confirmed or considered likely to occur within 10 km of the study area include six species of marine turtle (olive ridley, loggerhead, leatherback, flatback, green and hawksbill turtle), estuarine crocodile, green sawfish, narrow sawfish, scalloped hammerhead shark, dugong, Indian Ocean bottlenose dolphin, Australian snubfin dolphin, Australian humpback dolphin and false killer whale. A number of pipefish, pipehorse and seahorse species have also been recorded or are considered likely to occur within the study area.

Three biologically important areas for marine turtles occur in the broader region, including green turtle nesting habitat, hawksbill turtle nesting habitat and flatback turtle nesting habitat. The marine habitats surrounding Groote Eylandt also support traditional hunting activities, recreational and commercial fisheries, and provide important ecological connectivity between nearshore coastal habitats and the wider Gulf of Carpentaria marine environment.

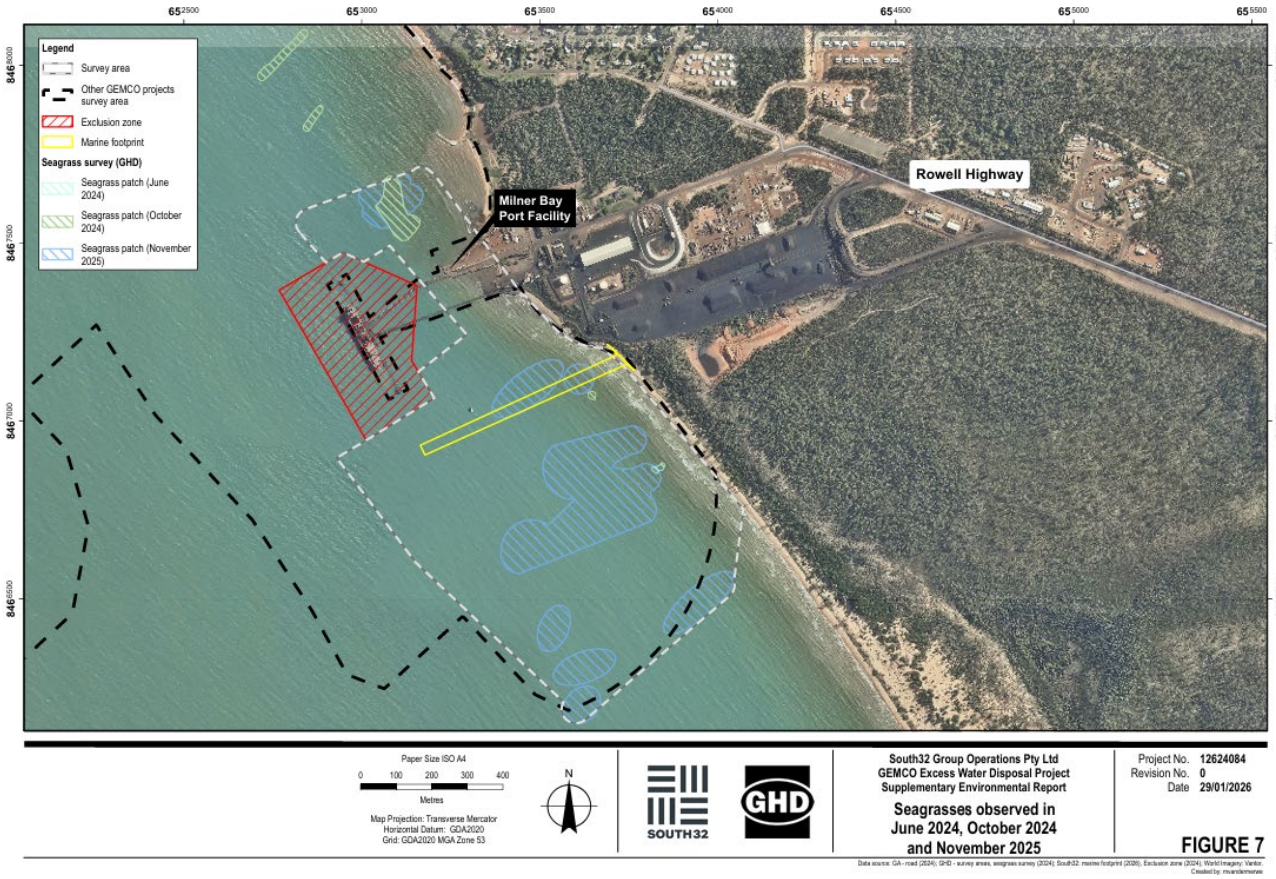


Figure 1: Seagrasses observed in June 2024, October 2024 and November 2025 (source: SER, Figure 7)

Figure 2: Benthic habitat in the vicinity of the proposed pipeline (source: SER, Figure 6)

6.4.2. Consultation

The submissions on the referral information, SER and additional information raised the following key issues in relation to marine ecosystems:

- Concerns were raised regarding the adequacy of benthic habitat surveys, including discrepancies in habitat mapping, limited temporal coverage, lack of wet season surveys and uncertainty regarding the full extent and seasonal distribution of seagrass, coral and reef habitats within and adjacent to the project area.
- Additional benthic surveys and longer-term baseline monitoring were requested to better characterise marine habitats and support impact assessment, including establishment of control/reference sites and monitoring programs capable of detecting ecological change and recovery.
- Potential impacts to sensitive benthic habitats, including seagrass meadows, coral communities, reefs and associated ecological communities, were identified as a key concern due to both construction activities and operation.
- Concerns were raised regarding direct habitat loss and disturbance associated with seabed excavation, trenching, cofferdam construction and associated marine infrastructure, including uncertainty regarding the extent of impacts to benthic communities and habitat recovery timeframes.
- The adequacy of information relating to marine infauna communities and ecological recovery was questioned, with request for additional surveys and monitoring to assess community composition, ecological function and post-construction recovery.
- Concerns were raised regarding the potential impacts of underwater noise, particularly impact piling, on marine fauna including dolphins, turtles, fish and other sensitive species, with recommendations for detailed fauna management and mitigation measures.
- Potential impacts to threatened and protected marine fauna, including Australian snubfin dolphins, Australian humpback dolphins, whale sharks and marine turtles, were identified as requiring ongoing monitoring and management throughout construction and operation.
- Concerns were raised regarding the limited incorporation of Traditional Owner knowledge and observations relating to marine fauna, traditional fisheries and ecological values of the project area.
- Long-term ecological monitoring, adaptive management and scientifically robust monitoring frameworks (including BACI-style monitoring and recovery objectives) were identified as necessary to demonstrate protection of marine biodiversity, ecological integrity and ecosystem functioning during construction, operation and rehabilitation.

The NT EPA considered the submissions and the responses provided by the proponent in its assessment of the Proposal.

6.4.3. Factor assessment and recommended regulation

In assessing whether the residual impacts of the Proposal will meet the NT EPA environmental factor objectives, and whether reasonable and appropriate regulatory conditions can be imposed, the assessment findings, recommendations, and recommended conditions of approval are presented in **Table 4**

Table 4 Assessment for Marine ecosystems and recommended conditions

Potentially significant impact	Proponent's measures to avoid mitigate and manage impacts	Assessment findings	Recommended conditions and regulation by other statutory decision-makers
Impacts to Benthic Habitat **Seabed disturbance** - Disturbance to the seabed will occur during construction and operation, including habitat alteration from installation of the discharge pipeline. Low-density seasonal seagrass has been identified within the marine footprint (0.77 ha) and will be directly impacted. The remaining habitat is predominantly open sandy substrate, which has been identified in surveys as exhibiting extensive bioturbation, indicating active use by benthic organisms. **Water quality** - Increase of suspended solids during construction activities and altered water quality via the discharge of quarry water.	**Avoid** • Avoidance of environmental values and sensitive or culturally valued areas by utilising lower environmental value habitat that is widely represented in the region. • Diffuser is designed to avoid seabed scouring and entrainment / entrapment. • Further utilising an area that is already disturbed/modified and impacted by existing Port operations • Engineering controls, such as a silt curtain and sheet piles, will be installed prior to the commencement of excavation and trenching activities • All seabed excavation will be undertaken inside of the cofferdam, or inside of silt curtains	The proponent identified potential impacts to seabed habitats, including direct disturbance to seagrass and benthic communities during marine construction, and indirect impacts associated with increased turbidity and sedimentation. The marine ecology assessment and surveys provide an adequate characterisation of benthic habitats within the study area, indicating that the marine footprint is predominantly comprised of soft sediment habitats within an already partially modified port environment. Reef and coral communities were identified adjacent to, but largely outside, the immediate footprint. In response to submissions made by the Flora and Fauna Division and the ALC on the referral, the proponent undertook additional seagrass surveys within peak seagrass growth season, improving confidence in the spatial and temporal understanding of seagrass distribution within the project area. Survey results indicate that higher-density seagrass	**Condition 4** - Discharge limits **Condition 5** - Validation of outfall diffuser performance through dye tracer test **Condition 7** - Discharge monitoring and management plan (Infauna and benthic habitat surveys) **Condition 8** – Trigger Action Response Plan (TARP) **Condition 13** – Discharge Limit Exceedance **Condition 14** - Compliance reporting

Potentially significant impact	Proponent's measures to avoid mitigate and manage impacts	Assessment findings	Recommended conditions and regulation by other statutory decision-makers
Spills - Accidental release of hazardous or polluting material may occur during construction (from construction vessels), or during operation (from maintenance vessels). **Biosecurity** - Introduction of marine pests and diseases.	**Mitigate and manage** • Development and implementation of an Erosion and Sediment Control Plan (ESCP) for land-based activities relevant to the marine footprint (such as excavation through the beach zone) • A spill response plan will be included in the Construction Environmental Management Plan (CEMP) and based on existing Milner Bay spill response procedures • Vessels will be sourced locally wherever possible. All vessels working on the Project, whether internationally or locally sourced, will adhere to Australian quarantine requirements. • Validation monitoring of the plume will be undertaken to confirm the Marine Discharge Model predictions associated with plume buoyancy (and therefore no impact to benthic habitats) • Monitoring of benthic primary producer communities will be implemented. **Offsets** None proposed.	meadows occur outside the direct disturbance footprint but within the study area. Accordingly, potential significant impacts are more likely to arise from indirect pathways, including increased turbidity and changes to water quality associated with discharge. Advice from the Flora and Fauna Division indicates that the seagrass species recorded in the surveys are opportunistic and exhibit relatively high recovery potential. Seagrass within the proposal disturbance area is characterised as low density, highly seasonal, and of lower ecological value relative to nearby areas within the Milner Bay area and the broader Groote Eylandt region. It is unlikely to provide critical habitat for transient marine fauna. On this basis, the risk to benthic habitats from the Proposal is low. Flora and Fauna Division also advised that risks to marine ecosystems are low due to the discharge plume being naturally buoyant and vertically constrained to surface waters. Flora and Fauna Division noted that updated modelling confirmed no zones of moderate or high impact relating to suspended sediments and localised sedimentation below conservative ecological thresholds for	**Condition 16** – Environmental Performance Reporting

Potentially significant impact	Proponent's measures to avoid mitigate and manage impacts	Assessment findings	Recommended conditions and regulation by other statutory decision-makers
		sensitive benthic habitats. Flora and Fauna Division advised that benthic habitats within the Project footprint are primarily of low ecological value relative to the broader region The proposed construction mitigation measures, including the use of a coffer dam and silt curtains, are considered appropriate to reduce the risk of sediment mobilisation and associated water quality impacts during construction. While the proponent concludes that indirect impacts are likely to be low based on modelling and discharge water quality, reliance on future management plans (e.g. ESCP, spill response procedures etc.), as well as model validation and monitoring, does not in itself constitute avoidance or mitigation. While measures to reduce direct impacts are appropriate, potential indirect impacts to benthic habitat from prolonged altered water quality remain uncertain. To ensure potential significant impacts to benthic habitats are appropriately managed, the NT EPA recommends the following: • the *Australian and New Zealand Guidelines for Fresh and Marine Water Quality* (ANZG) 80% species protection level for non-	

Potentially significant impact	Proponent's measures to avoid mitigate and manage impacts	Assessment findings	Recommended conditions and regulation by other statutory decision-makers
		bioaccumulating toxicants and 95% species protection level for bioaccumulating toxicant be achieved at the low ecological protection (LEP) zone boundary (20m from the diffuser) and the ANZG 95% species protection level for non-bioaccumulating toxicants and 99% species protection level for bioaccumulating toxicants be achieved at the moderate ecological protection (MEP) zone (52 m from the LEP boundary / 72 m from the diffuser). • discharge limits for water quality parameters are achieved in-pipe to ensure the ANZG species protection levels are being achieved; • trigger values reflecting predicted discharge water loads/ concentrations are used to initiate action to ensure the ANZG species protection levels will be achieved; • dye tracer tests are conducted to validate the diffuser is achieving a 13.5 and 22 dilution factor at respective boundaries (in September (approximately one month before coral spawning) and November (warm water conditions);	

Potentially significant impact	Proponent's measures to avoid mitigate and manage impacts	Assessment findings	Recommended conditions and regulation by other statutory decision-makers
		• biannual monitoring of appropriate ecosystem receptors is conducted and impacts to environmental values of the receiving environment is evaluated; • biannual monitoring is designed to detect any changes in abundance and condition of benthic habitat over the life of the action; and • GEMCO be required to provide environmental performance reports. The NT EPA acknowledges the submissions that recommended baseline surveys be undertaken prior to the commencement of the action. However, the NT EPA does not consider baseline surveys to be required, as the receiving environment is highly dynamic and naturally variable due to seasonal conditions, temperature fluctuations and extreme weather events such as cyclones. Consequently, several years of monitoring would likely be necessary to establish a statistically robust baseline and distinguish natural variability of the marine environment, making additional pre-implementation baseline surveys neither necessary nor reasonable.	

Potentially significant impact	Proponent's measures to avoid mitigate and manage impacts	Assessment findings	Recommended conditions and regulation by other statutory decision-makers
		The surveys that have already been undertaken and form part of the EIA documentation have identified and characterised environmental values of the receiving environment, including seagrass, coral and other marine habitats. In addition, monitoring of ecosystem receptors is recommended to be undertaken twice annually by an independent suitably qualified person and will include water quality, sediment quality, infauna, seagrasses and corals. Together, these measures provide multiple lines of evidence to identify adverse changes over time and enable further investigation, management responses or regulatory action where required. Recommended conditions relating to marine environmental quality are discussed in 6.5 of the assessment report (refer to **Table 5**) The NT EPA considers that the proposed mitigation measures, together with the implementation of recommended conditions, will minimise potential direct and indirect impacts to benthic habitats to an acceptable level.	
Impacts to Marine fauna	**Avoid** • Avoidance of environmental values and sensitive or culturally valued	The proponent identified potential impacts to marine fauna during construction, including seabed disturbance, underwater	**Condition 4 -** Discharge limits

Potentially significant impact	Proponent's measures to avoid mitigate and manage impacts	Assessment findings	Recommended conditions and regulation by other statutory decision-makers
Seabed disturbance – disturbance of the seabed during construction and operation including habitat alteration from installation of the discharge pipeline. **Water quality** - Increase of suspended solids during construction activities and altered water quality via the discharge of quarry water. **Spills** - Accidental release of hazardous or polluting material may occur during construction (from construction vessels), or during operation (from maintenance vessels). **Noise** - Generation of underwater noise during construction activities, particularly impact piling. **Fauna Strike** - Interaction of marine fauna with vessels (vessel strike or disturbance) during construction or during operation. **Biosecurity** - Introduction of marine pests and diseases.	areas by utilising lower environmental value habitat that is widely represented in the region. • Diffuser is designed to avoid seabed scouring and entrainment / entrapment. • Further utilising an area that is already disturbed/modified and impacted by existing Port operations **Mitigate and manage** • Vessels will be sourced locally wherever possible. All vessels working on the Project, whether internationally or locally sourced, will adhere to Australian quarantine requirements. • All vessels utilised for the Proposal will adhere to speed limits within and around the wharf (6 knots) • Operations of vessels will follow the vessel disturbance and vessel strike mitigations outlined by the Australian Guidelines for Whale and Dolphin Watching (Commonwealth of Australia, 2017) and the National Strategy for Reducing Vessel Strike on Cetaceans and other Marine	noise, vessel activity, and temporary changes in water quality, as well as potential impacts during operation associated with discharge. The marine ecology assessment indicates that the proposal area supports fish and other marine fauna associated with benthic habitats and nearby reef structures. However, the immediate Port environment is relatively modified compared to surrounding areas, reducing its ecological value at a regional scale. Consequently, the likelihood of significant behavioural disturbance or long-term population-level impacts to mobile marine fauna is considered low. Construction-related impacts are expected to be temporary and localised, primarily associated with increased vessel movements and short-term underwater noise. The proposed mitigation measures, including marine fauna interaction procedures, vessel management controls, and underwater noise management, are considered appropriate to minimise direct impacts to mobile marine fauna during construction. While measures to reduce direct impacts are appropriate, potential indirect impacts to marine fauna from prolonged altered	**Condition 7** - Discharge monitoring and management plan (Infauna and benthic habitat surveys) **Condition 8** – Trigger Action Response Plan (TARP) **Condition 10 –** Construction in the marine environment (Marine megafauna management plan) **Condition 13** – Discharge Limit Exceedance **Condition 14** - Compliance reporting **Condition 16** – Environmental Performance Reporting

Potentially significant impact	Proponent's measures to avoid mitigate and manage impacts	Assessment findings	Recommended conditions and regulation by other statutory decision-makers

	Megafauna (Commonwealth of Australia, 2017).
	• Development of a marine fauna management plan
	• Two safety zones are to be applied around each noise generating activity location:
	  ○ An observation zone, within which the movement of marine mammals, whale sharks and marine turtles will be monitored to identify any approach to the shut-down zone where practicable. The observation zone is sized based on a nominal 250 m distance from the outer edge of the shut-down zone.
	  ○ A shut-down zone, within which the observation of marine mammals, whale sharks and marine turtles will trigger noise-generating activities to cease as soon as reasonably practical. Shut-down zones are sized based on the potential for a Temporary Threshold Shift (TTS).
	• Impact piling activities should avoid periods when marine megafauna are likely to be breeding, calving, feeding, or resting within
		water quality remain uncertain. Mobile species may avoid areas of reduced water quality; however, sessile and slow-moving fauna are unable to relocate and may be exposed to prolonged changes in water quality and degraded habitat. Due to limitations and uncertainty in the quarry water quality data underpinning the modelling, the extent and severity of these indirect impacts cannot be reliably predicted based on the available information. As such, potentially significant impacts on sessile fauna, as well as consequential effects on food webs and ecosystem function, cannot be ruled out.
		Several proposed management measures are described using non-definitive language (e.g. "should"). This terminology does not provide sufficient certainty. Clear and definitive commitments are required to demonstrate that appropriate mitigation measures will be implemented.
		Accordingly, to manage this uncertainty and ensure potential impacts to marine fauna and associated ecosystems are appropriately minimised, the NT EPA recommends the application of conditions relating to water quality and ecosystem monitoring (refer to **Table 5**).	

Potentially significant impact	Proponent's measures to avoid mitigate and manage impacts	Assessment findings	Recommended conditions and regulation by other statutory decision-makers
	biologically important habitats in the potential noise impact area. • Ensure a suitably qualified Marine Fauna Observer (minimum of MFO Level 2 as defined in the SA Guideline) is present during impact piling to oversee and enforce standard operational procedures. • Provide all staff with briefings on environmental regulations, marine mammal (and other relevant marine fauna) identification, and specific environmental obligations. • Information about marine mammal concentration areas, migration patterns, and key feeding sites should be identified during planning and used to enhance the effectiveness of marine fauna observation. **Offsets** • None proposed.	To ensure potential significant impacts to marine fauna are appropriately managed, particularly during construction, the NT EPA recommends: • risks to marine megafauna be avoided or minimised through implementation of an observation zone, a shut-down zone and a shut-down zone for noise generating activities such as piling and that the details be included in a Marine Megafauna Management Plan. • ecosystem health is monitored over the life of the action by undertaking biannual infauna surveys of the meiofauna and macrofauna are undertaken biannually. • discharge limits for water quality parameters are achieved in-pipe to ensure the ANZG species protection levels are being achieved;	

6.4.4. Conclusion against the NT EPA objective

With the implementation of the proponent's proposed management measures and commitments, the recommendations, and conditions for avoidance, monitoring, and mitigation of impacts identified in the draft environmental approval (Appendix 1), and regulation under the mining activities provisions of the EP Act, the NT EPA considers that the Proposal can be conducted in such a manner that its objective for marine ecosystems is likely to be met.

6.5. Marine environmental quality

6.5.1. Environmental values

The relevant declared beneficial uses for the receiving environment are the Groote Eylandt Area Marine beneficial uses, comprising aquatic ecosystem protection and recreational water quality and aesthetics.

Milner Bay is a tropical marine embayment located on the western coast of Groote Eylandt. Consistent with the Australian and New Zealand Guidelines (ANZG) framework, the marine environment is considered to be a slightly to moderately disturbed marine ecosystem, influenced by existing mining and port infrastructure, vessel activity and wastewater discharges associated with the Port of Alyangula.

Marine water quality within Milner Bay has been monitored since 2013 through the proponent's Marine Environmental Monitoring Program (MEMP), with monitoring undertaken at sites in proximity to the Port and at control locations throughout the receiving environment. Historic marine water quality investigations undertaken by the Australian Institute of Marine Science identified elevated manganese concentrations in proximity to port infrastructure relative to control locations; however, concentrations remained below applicable guideline values. No metal or metalloid analytes exceeded relevant marine water quality guideline values. Trace concentrations of hydrocarbons, including polycyclic aromatic hydrocarbons, were detected within marine waters and were considered to be associated with existing port activities, wastewater discharges and historical contamination sources.

Marine sediment quality investigations have also been undertaken within Milner Bay. Elevated concentrations of some metals have previously been identified in sediments immediately surrounding port infrastructure and extending up to approximately 400 m north and south of the Port, with concentrations decreasing rapidly with distance from the Port. Long-term sediment monitoring indicates that concentrations of analytes with established sediment quality guideline values are generally below relevant guideline thresholds within the broader receiving environment.

The seabed within the project area comprises predominantly unconsolidated marine sediments, including sandy and silty substrates. Sediment investigations undertaken within the proposed marine disturbance footprint identified potential acid sulfate soils (PASS); however, sediments also exhibited excess acid neutralising capacity, indicating the material is generally self-neutralising. No elevated concentrations of metals or other contaminants were identified within sediments sampled from the proposed construction footprint.

Overall, the marine environment of Milner Bay comprises a receiving environment that has been subject to existing port, mining and wastewater discharge activities for several decades and for which baseline datasets exists for both marine water quality and sediment quality. The marine waters and sediments continue to support the declared beneficial uses of aquatic ecosystem protection and recreational water quality and aesthetics.

6.5.2. Consultation

The submissions on the referral information raised the following key issues in relation to marine environmental quality:

- Concerns were raised regarding the adequacy of discharge water quality characterisation, including insufficient assessment of metals and metalloids that have periodically exceeded

guideline values and the potential environmental risks associated with their discharge to the marine environment.

- Potential accumulation of contaminants within marine sediments and subsequent exposure to marine biota was identified as a key uncertainty, particularly regarding the transport and long-term behaviour of metals, metalloids and other contaminants within the receiving environment.
- Concerns were raised regarding the potential cumulative, combined and interactive effects of multiple contaminants within the marine environment.
- The adequacy of turbidity assessment and modelling was questioned, including concerns regarding the absence of turbidity plume modelling, uncertainty regarding the extent of suspended sediment impacts, and potential effects on marine habitats and ecological values.
- Concerns were raised regarding the adequacy of marine discharge modelling, including assumptions relating to plume behaviour, salinity, wave influences, dilution, dispersion and mixing zone predictions, and the need for additional modelling and model validation.
- The need for robust baseline water quality and sediment quality datasets was repeatedly identified, including concerns regarding data limitations, quality assurance/quality control issues, insufficient spatial and temporal coverage, and uncertainty regarding the representativeness of available monitoring data.
- Concerns were raised regarding the adequacy of sediment investigations and assessment of potential acid sulfate soils (PASS/AASS), including insufficient sampling density, uncertainty regarding sediment characteristics and the potential for sediment disturbance during construction.
- The need for comprehensive water quality and sediment quality monitoring programs was a recurring theme, including monitoring within and beyond the predicted mixing zone, establishment of trigger values and thresholds, validation of model predictions, and adaptive management responses where impacts are detected.
- Potential cumulative impacts on marine environmental quality were identified as requiring further consideration, including interactions with existing wastewater discharges, nutrient enrichment, contaminant loading and other existing port and mining activities.
- A precautionary approach to management of marine environmental quality was advocated, including strong environmental performance criteria, detailed management plans, real-time monitoring, ongoing review of monitoring results and implementation of adaptive management measures to ensure environmental values are maintained.
- Advice was received that the release of mine wastewater must not alter, contaminate, obscure, dilute, disperse or otherwise adversely affect or damage areas of cultural significance.

The NT EPA considered the submissions and the responses provided by the proponent in its assessment of the Proposal.

6.5.3. Factor assessment and recommended regulation

In assessing whether the residual impacts of the Proposal will meet the NT EPA environmental factor objectives, and whether reasonable and appropriate regulatory conditions can be imposed, the assessment findings, recommendations, and recommended conditions of approval are presented in **Table 5**.

Table 5 Assessment for Marine environmental quality, and recommended conditions

Potentially significant impact	Avoidance and mitigation of impacts	Assessment findings	Recommended conditions and regulation by other statutory decision-makers
Impacts to the marine water quality of Milner Bay Seabed disturbance – disturbance of the seabed during construction and operation of the pipeline and diffuser resulting in increased suspended solids and turbidity. Spills - accidental release of hazardous or polluting material may occur during construction (from construction vessels), or during operation (from maintenance vessels). Stormwater - uncontrolled stormwater runoff to the marine environment from land-based activities. Water Quality - during operational discharge of mine-affected quarry water, marine water quality would be impacted within the proposed mixing zone, which has been defined in	**Avoid** None proposed. **Mitigate and manage** • The discharge point avoids high-value, sensitive habitat areas and utilises a lower value, modified area that is already impacted by existing mine and port activities. • Seabed disturbance (up to 2ha) would be minimised as much as practicable and would be temporary, with localised water quality impacts. • To limit sediment suspension during trenching, sheet piles would be used to form a cofferdam or silt curtains would be used to limit sediment mobilisation. • Diffuser is designed to avoid seabed scouring and entrainment / entrapment.	The proponent's conclusions in the EIA documentation rely primarily on dilution and blending to achieve acceptable water quality for marine discharge, forming the basis for the conclusion that impacts to marine environmental quality would not be significant. No active treatment of quarry water is proposed. Discharge without treatment is not consistent with best practice mine water management. Submissions on the SER from the ALC and DLPE Mining Division raised concerns regarding discharge water quality and hydrodynamic modelling. A direction was issued under regulation 124(1) requiring the proponent to address these submissions, provide water quality data and provide clarity on specific aspects of the modelling and water quality. The additional information provided has improved confidence in the hydrodynamic and plume dispersion modelling framework, which is technically detailed and incorporates conservative assumptions, including continuous discharge scenarios,	**Condition 4 -** Discharge limits **Condition 5** - Validation of outfall diffuser performance through dye tracer test **Condition 7** - Discharge monitoring and management plan **Condition 8** – Trigger Action Response Plan (TARP) **Condition 9** – Impacts to Water Quality **Condition 13** – Discharge Limit Exceedance **Condition 14** - Compliance reporting **Condition 16** – Environmental Performance Reporting

Potentially significant impact	Avoidance and mitigation of impacts	Assessment findings	Recommended conditions and regulation by other statutory decision-makers
line with conservative (worst case scenario) discharge modelling and used to inform the assessment of impacts to marine environmental values. Modelling of vertical mixing of discharge waters during high wave conditions indicates: • surface mixing zone for potential indirect effects (42-fold dilution target for nitrate) extends ~630 m north and ~460 m southeast from the diffuser • surface mixing zone for potential direct effects (35-fold dilution target related to salinity reduction) extends ~400 m north-northwest and ~300 m southeast from the diffuser. • there is no mixing zone required for metal and metalloid exposure • There is no mixing zone required at the seabed for any parameters due to the buoyant nature of the plume. Cumulative impacts – cumulative effects of the	• Spill prevention and response measures to be implemented consistent with marine industry standards. • Proposal design incorporates inline real-time monitoring of turbidity, pH and EC of discharge water with telemetry to allow adaptive management and shutdown protocols to be implemented. • Water quality across mine pits/quarries is managed via reticulation and blending to achieve the turbidity and salinity criteria prior to discharge, where practicable. This includes actively managing water quality: • Dispersive clays: mixing with water with higher electrical conductivity to induce flocculation. • Suspended sediments: dilution and settling in large water body. • Metals: dilution. • The NH2 quarry holds ~2 GL of water and this allows for blending to meet criteria prior to discharge.	use of 95th percentile source-water concentrations, cumulative interaction with the STP discharge, and diffuser design measures intended to maximise dilution and minimise plume interaction and seabed entrainment. While the modelling framework itself appears generally appropriate for assessing plume behaviour and dilution characteristics in the receiving environment, uncertainty remains regarding the quarry source-water quality dataset used to define discharge chemistry and inform the modelling. Although the dataset spans 2008–2023, it is limited, discontinuous and contains substantial gaps at the quarry and analyte level. In several cases, nutrient and physico-chemical parameters are based on a small number of samples. The supporting Indo-Pacific Environmental 2023 memorandums acknowledged that the limited dataset are '*well below the level needed to accurately estimate the 95th percentile of the analyte distribution*' and that insufficient data at the individual quarry level '*results in 5th percentile and minimum estimates with extremely high uncertainties*'. The dataset does not adequately capture seasonal variability, operational variability, potential stratification within quarry pits, or	

Potentially significant impact	Avoidance and mitigation of impacts	Assessment findings	Recommended conditions and regulation by other statutory decision-makers
proposed discharge combined with the Alyangula sewage treatment plant (STP) outfall: • there is potential for cumulative effects for nitrate, as the 95th and the 99th percentile contours extend across both the diffuser ports and the STP outlet • there is potential for cumulative effects for salinity as the 1st percentile extends across both the diffuser ports and the STP outlet • no dilution is required from the quarry water discharge for phosphate, as the concentration is below the target value • although phosphate concentrations from the STP outlet are relatively high, the plume does not extend toward the diffuser ports, and no cumulative effects are anticipated. • modelling indicates that interaction between the	• Diversion drains to minimise the volume of sediment-laden runoff entering quarries. • Implementation of erosion and sediment controls to manage stormwater runoff, where necessary. • Waste mitigation hierarchy implementation - monitor water quality of individual quarries to identify suitable management options such as reuse of water that is not suitable for ocean discharge e.g. water containing highly dispersive smectite re-used as concentrator make-up water, or for dust suppression. • Pump intake placement mitigates potential to pump sediment-laden water from a pit sump. **Offsets** None proposed.	changes in water chemistry over time. Despite these limitations, percentile estimates derived from this data has been used to characterise discharge water quality and underpin hydrodynamic modelling. Consequently, there is limited confidence that the discharge concentrations adopted are representative of actual or future quarry water quality, or that predicted plume behaviour, dilution and achievement of water quality criteria will occur in practice. The NT EPA considers the available quarry water quality dataset to be inadequate for a proposal of this scale, duration and potential environmental impact. Despite spanning a 16-year period, the dataset is highly limited, temporally sparse and discontinuous at the quarry and analyte level, and does not meet the standard of baseline characterisation expected to support a robust environmental impact assessment. Consultation information detailed by the proponent indicates that the project has been under development for several years prior to referral in 2025. Notably, in the additional information provided by the proponent it states '*GEMCO presented technical aspects of the Proposal to Traditional Owners*' in July 2023, demonstrating that the proposal was sufficiently advanced at that	

Potentially significant impact	Avoidance and mitigation of impacts	Assessment findings	Recommended conditions and regulation by other statutory decision-makers
proposed quarry water discharge and the existing STP discharge did not result in any meaningful changes to the predicted mixing zones.		time. Despite this, the proponent did not undertake a targeted and systematic baseline monitoring program (e.g. 12–24 months) prior to referral to adequately characterise seasonal variability, establish representative discharge chemistry, and inform impact assessment and modelling. The NT EPA considers that the absence of an appropriate baseline dataset for a project of this nature represents a significant deficiency in the proponent's environmental impact assessment and falls short of the standard reasonably expected to support its conclusions. Given this uncertainty, a precautionary approach is necessary. To ensure the marine environmental quality of Milner Bay is protected, the NT EPA recommends: • in-pipe water quality discharge limits, back calculated to ensure that the ANZG 80% species protection level for non-bioaccumulating toxicants and 95% species protection level for bioaccumulating toxicant be achieved at the low ecological protection (LEP) zone boundary (20m from the diffuser) and the ANZG 95% species protection level for non-bioaccumulating toxicants and 99% species protection level for bioaccumulating toxicants be achieved at	

Potentially significant impact	Avoidance and mitigation of impacts	Assessment findings	Recommended conditions and regulation by other statutory decision-makers
		the moderate ecological protection (MEP) zone (52 m from the LEP boundary / 72 m from the diffuser) as discussed above in Table 4. These limits provide a clear and enforceable control on discharge quality, independent of modelled dilution assumptions, and ensure potential impacts to marine ecosystems are minimised. • dilution factors are verified through a dye tracer test (conducted to validate the diffuser is achieving a 13.5 and 22 dilution factor at respective boundaries to be undertaken in September (approximately one month before coral spawning) and November (warm water conditions). • as discussed in **Table 4** above, to ensure species protection levels are being achieved biannual monitoring of ecosystem receptors is conducted to evaluate any impact to environmental values of the receiving environment; and • the implementation of a Trigger Action Response Plan is required in the event of exceedances of defined trigger values (discussed in **Table 4** above). Conditioning of these measures is considered sufficient to avoid significant	

Potentially significant impact	Avoidance and mitigation of impacts	Assessment findings	Recommended conditions and regulation by other statutory decision-makers
		adverse impacts on marine ecosystems and marine environmental quality.	
Impacts to the marine sediment quality in Milner Bay **Metal/Metalloid Accumulation -** accumulation of deposited metal/metalloid solids from the mine discharge accumulating to toxic levels within the seabed. **Acid Sulfate Soils -** disturbance of ASS/PASS in marine sediments can result in oxidation of sulfides, generating acidity and mobilising dissolved metals. This can lead to localised reductions in pH, release of contaminants, and degradation of water and sediment quality, with potential toxicity to benthic organisms. **Sedimentation and deposition** – changes to deposition rates along coastal areas due to suspended sediments resulting from the discharge of excess water, potentially causing	**Avoid** None proposed. **Mitigate and manage** None proposed. **Offsets** None proposed.	While the proponent concludes that risks of metal/metalloid accumulation in marine sediments are low, this conclusion is not adequately supported by the available data. As outlined above, significant uncertainty in the quarry water quality dataset limits the ability to reliably determine or quantify potential impacts to sediment quality within the receiving environment. There is insufficient confidence to assess the extent of potential accumulation of metals and metalloids in marine sediments over the life of the Proposal, or the likelihood of associated ecological toxicity. These constraints prevent a robust evaluation of long-term contaminant loading and sediment quality outcomes. This is particularly relevant given the Proposal involves continuous marine discharge and relies on dilution rather than treatment or removal of contaminants prior to discharge, which is not consistent with best practice mine water management. Consequently, the potential for accumulation of metals/metalloids in sediments, and associated impacts to benthic ecosystems, cannot be reliably	**Condition 4 -** Discharge limits **Condition 7** - Discharge monitoring and management plan **Condition 9 –** Impacts to Water Quality **Condition 11 –** Aboriginal cultural heritage and sacred sites **Condition 13** – Discharge Limit Exceedance **Condition 14** - Compliance reporting **Condition 16** – Environmental Performance Reporting

Potentially significant impact	Avoidance and mitigation of impacts	Assessment findings	Recommended conditions and regulation by other statutory decision-makers
disturbance to areas of cultural significance (6.6 Culture and Heritage)		determined or ruled out based on the information provided. As discussed above, the NT EPA therefore recommends: • in-pipe water quality discharge limits, back calculated to ensure that the ANZG 80% species protection level for non-bioaccumulating toxicants and 95% species protection level for bioaccumulating toxicant be achieved at the low ecological protection (LEP) zone boundary (20m from the diffuser) and the ANZG 95% species protection level for non-bioaccumulating toxicants and 99% species protection level for bioaccumulating toxicants be achieved at the moderate ecological protection (MEP) zone (52 m from the LEP boundary / 72 m from the diffuser) as discussed above in Table 4. These limits provide a clear and enforceable control on discharge quality, independent of modelled dilution assumptions, and ensure potential impacts to marine ecosystems are minimised. • as discussed in **Table 4** above, to ensure species protection levels are being achieved biannual monitoring of ecosystem receptors, including sediment	

Potentially significant impact	Avoidance and mitigation of impacts	Assessment findings	Recommended conditions and regulation by other statutory decision-makers
		quality and biota and bioaccumulation monitoring, is conducted to evaluate any impact to environmental values of the receiving environment; and • the implementation of a Trigger Action Response Plan is required in the event of exceedances of defined trigger values (discussed in **Table 4** above). The proponent's assessment of acid sulfate soils (ASS/PASS) draws on two investigations: a geotechnical sampling program within the offshore footprint (March 2025) and sediment testing at the GEMCO tug berth (2020/2022). The geotechnical investigation included 14 samples analysed using field screening methods (pHF and pHFOX), while the tug berth study included five samples analysed using chromium reducible sulfur (CRS) laboratory methods. While these findings suggest that widespread ASS/PASS occurrence is unlikely, the NT EPA considers the assessment to be limited. Sampling density within the pipeline alignment is low, and the spatial distribution and representativeness of sampling locations has not been provided. The offshore dataset relies primarily on field screening methods without systematic	

Potentially significant impact	Avoidance and mitigation of impacts	Assessment findings	Recommended conditions and regulation by other statutory decision-makers
		confirmatory laboratory analysis (e.g. CRS or acid-base accounting), which reduces confidence in the robustness of the assessment. Despite these uncertainties, the NT EPA considers that the overall risk is likely to be localised and manageable given the predominance of neutral to alkaline conditions and the limited evidence of PASS occurrence. Accordingly, the NT EPA considers that appropriate management can be achieved through regulatory requirements under the mining provisions of the EP Act. However, given the uncertainties regarding the extent and distribution of PASS and the potential consequences should PASS be encountered during construction, the NT EPA recommends that compliance with the *National Acid Sulfate Soils Guidance: Identification and Laboratory Methods Manual* (2018) and the *National Acid Sulfate Soils Guidance: Sampling and Analysis Methods Manual* (2018) be conditioned during construction to ensure any PASS is appropriately identified, assessed and managed. As part of the SER the proponent undertook sediment dispersion modelling to determine the potential impact associated with	

Potentially significant impact	Avoidance and mitigation of impacts	Assessment findings	Recommended conditions and regulation by other statutory decision-makers
		suspended sediments within discharge water and associated potential for deposition. The assessment of impact was based on the attenuation of light reaching benthic habitats at the seabed, the potential for smothering benthic habitat and the impact to sediment quality in the marine environment. Updated modelling was carried out by the proponent using the discharge limit for TSS proposed by the draft environmental approval. The results are summarised as follows: • Deposition is primarily predicted to occur at depths greater than 10 m, typically located 500 m or more from the shoreline. • Localised areas of deposition were predicted on the northern side of the GEMCO Port causeway that connects the jetty to the land-side operations, as well as within the deeper dredged areas at the offshore extent of the GEMCO Port Ship Loader jetty. Cumulative 20-year deposition thicknesses within these areas were predicted to be 10-100 mm (1-10 cm) thickness.	

Potentially significant impact	Avoidance and mitigation of impacts	Assessment findings	Recommended conditions and regulation by other statutory decision-makers
		• Predicted 20-year deposition thicknesses in other nearshore areas were almost exclusively below 1 mm. The NT EPA is satisfied that sediment deposition will not result in significant impact to the marine environment and marine ecosystems.	

6.5.4. Conclusion against the NT EPA objective

With the implementation of the proponent's proposed management measures, commitments, recommendations, and conditions for avoidance, monitoring, and mitigation of impacts identified in the draft environmental approval (Appendix 1), the NT EPA considers that the Proposal can be conducted in such a manner that its objectives for marine environmental quality are likely to be met.

6.6. Culture and heritage

6.6.1. Environmental values

The Groote Eylandt archipelago and surrounding marine environment contain Aboriginal cultural heritage values associated with the Anindilyakwa people and their ongoing connection to Sea Country. The proponent identified significant cultural values associated with the Groote Eylandt archipelago, including cultural connections to marine and coastal environments, traditional fishing, hunting, ceremonial activities, knowledge transfer and connection to Country.

The proponent's desktop review identified no registered Aboriginal sacred sites within the proposed project footprint. As part of the consultation with the Aboriginal Areas Protection Authority (AAPA) in accordance with regulation 160 of the EP Regulations the NT EPA was informed by AAPA on 4 August 2026 that an Authority Certificate was issued for the proposal area on 25 June 2026. AAPA advised that the Certificate identifies sacred sites in and within the vicinity of the Project area and outlines conditions for their protection.

The proponent provided a copy of the certificate to the NT EPA on 4 August 2026.

A cultural heritage desktop assessment undertaken by the proponent reviewed heritage registers, previous investigations and ethnographic information and identified no registered Aboriginal archaeological sites, Macassan sites, historical heritage places or natural heritage places within the proposed pipeline footprint. Historical heritage values are known to occur elsewhere on Groote Eylandt, including sites associated with Macassan trade and European settlement.

No recorded underwater cultural heritage sites have been identified within or adjacent to the proposal area. However, the proponent recognised that submerged cultural landscapes may occur within the marine environment, consistent with emerging evidence of Aboriginal cultural heritage occurring within submerged coastal landscapes elsewhere in northern Australia.

6.6.2. Consultation

The submissions on the referral information raised the following key issues in relation to culture and heritage:

- The ALC stated that Traditional Owner consent had not been obtained and that free, prior and informed consent requires a sufficient understanding of potential project impacts and proposed management measures before consent can be sought.
- Concerns were raised that environmental impacts associated with the project could affect Sea Country, traditional fisheries, cultural practices, community wellbeing and the cultural and social aspects of Traditional Owner life.
- The ALC considered consultation undertaken with Traditional Owners regarding fishing, foraging and use of the project area to be limited, preliminary and based on an incomplete understanding of the project scope and potential impacts.
- Requests were made for further consultation and engagement with Traditional Owners and the broader community to ensure concerns, values and potential impacts are fully understood and considered prior to project implementation.
- Concerns were raised that Traditional Owner knowledge had not been adequately incorporated into project assessments, particularly in relation to traditional fisheries, marine fauna, habitat values and use of the project area.

- The ALC sought ongoing involvement in project development, including review of future assessments, monitoring programs and management plans, and requested that these documents be independently reviewed before being provided to Traditional Owners.
- In response to the SER AAPA:
    - raised concerns regarding cultural heritage assessment certainty, noting that the likelihood of encountering Aboriginal sacred sites cannot be determined until an Authority Certificate process has been completed.
    - noted that no Authority Certificate had been issued for the Proposal and that conclusions regarding culture and heritage impacts may therefore be subject to uncertainty until the Authority Certificate process is finalised.
    - advised that construction areas, operational footprints and broader zones of influence associated with the project may form part of the Authority Certificate assessment area and may contain Aboriginal sacred sites, with future project design, mitigation measures and work areas required to account for any Authority Certificate conditions.
- In response to consultations taken in accordance with Regulation 160 of the EP Regulations, AAPA informed the NT EPA on 4 August that an Authority Certificate was issued for the proposal and it identified sacred sites in and within the vicinity of the Project area and outlined conditions for their protection.

The NT EPA considered the submissions and the responses provided by the proponent in its assessment of the Proposal.

Table 6 Assessment for Culture and heritage and recommended conditions

Potentially significant impact	Avoidance and mitigation of impacts	Assessment finding	Recommended conditions and regulation by other statutory decision-makers
Loss of connection to the land and sea for Aboriginal people and their culture (Participation by Aboriginal people and communities in environmental decision-making processes (objects of Act) The Proposal, particularly the ongoing discharge of the mine affected water to Milner Bay, has the potential to impact cultural values through the gradual degradation of the marine environment in Milner Bay and surrounding Sea Country. Changes to water quality and ecological condition over time may diminish the integrity of areas that support cultural connection, knowledge systems, and the ongoing relationship between people and Country, including intangible values not confined to specific sites. This presents a risk that cultural practices, beliefs, and community may be indirectly affected. The proponent has not identified any specific potential significant impacts, stating "*The heritage values*	**Avoid** • None proposed. **Mitigate and manage** • No ground disturbing works are to take place outside of Proposal area. • The proponent has committed to the Proposal being executed in line with the guiding principles of the Anindilyakwa IPA Plan of Management (ALC, 2016). • The proponent has committed to undertake appropriate and thorough Traditional Owner consultation that incorporates their knowledge to supplement data gaps from project surveys and previous scientific research from around the island. This process will also inform Traditional Owners of the impacts that the Project will have on the Project Area. **Offsets** • None proposed.	The objects of the EP Act require the participation of Aboriginal people in environmental decision-making. The proponent has an obligation to undertake thorough and culturally appropriate consultation to ensure these values and connections are properly understood and considered, and that potential long-term impacts are avoided or minimised. The proponent undertook initial consultation with the ALC and Traditional Owners in 2023. During this consultation, project information was presented and feedback sought. Since 2023 the proponent has undertaken consultation with the ALC several more times. The proponent has relied on these early discussions to inform aspects of the Proposal and their assessment of impacts, including statements that certain areas, such as the Port, were not considered high-value use areas by some Traditional Owners. In its submission on the Referral, the ALC raised concerns regarding the adequacy of this consultation, stating that "*there is little consideration for Traditional Fisheries as a whole*" and that consultation undertaken in 2023 "*was limited*." The ALC further noted	**Condition 12 -** Stakeholder engagement and communication plan requiring: • participatory consultation and engagement prior to works commencing and ongoing for the life of the action • monitoring, evaluation and public reporting at annual intervals **Regulation by other statutory decision-makers** The *Aboriginal Land Rights (Northern Territory) Act 1976* (ALRA) outlines a process for obtaining consent from the Traditional Owners regarding access and use the off-lease area that the pipeline will traverse.

Potentially significant impact	Avoidance and mitigation of impacts	Assessment finding	Recommended conditions and regulation by other statutory decision-makers
of the Saltwater Country of the Groote Eylandt Archipelago (place ID 106240) and Anindilyakwa Sea Country (place ID 106212) are not publicly available. An assessment of these places in relation to the Project fundamentally cannot occur without an understanding of their heritage values. Assessment of natural heritage risk requires further detail, and it is recommended that consultation with the ALC is undertaken to determine what natural heritage values associated with the nominations were." In relation to traditional fishing the proponent has stated "*during consultation with the Traditional Owners in October 2023, GEMCO consulted with senior Bara and Jaragba men on Country regarding fishing and traditional foraging activities in the Project area. At that time, the Traditional Owners stated that they do not use the port area or launch boats from the jetty. The areas north and south of the port are being used for boating and fishing. No concerns regarding the Proposal impacting on traditional fishing were*		that the assessment "*does not sufficiently incorporate important Traditional Owner knowledge of the Project Area*" and emphasised that "*without a proper and complete consultation process Traditional Owner activities in the Project Area are not fully understood*," highlighting the risk that impacts may not have been fully identified. In response, the proponent addressed consultation outcomes in the SER, reiterating that feedback from the 2023 meeting with Traditional Owners indicated limited use of the port area. The proponent also committed to ongoing consultation, including further engagement on matters such as traditional fisheries and cultural values. However, in its submission on the SER, the ALC maintained that consultation to date was inadequate and preliminary. The ALC stated that "*the discussions with senior men took place without the full understanding as to the size and impacts of the Project*" and that these discussions "*can only be described as preliminary, due to the number of people involved, inadequate knowledge of the extent of the project and its impacted area.*" The ALC emphasised that "*further detailed community consultations must be undertaken, to ensure*	The FY25 Closure MMP Section 4.2.1 provides detail on GEMCO's obligations under the Mining Agreements in place for the Western Leases and Eastern Leases.

Potentially significant impact	Avoidance and mitigation of impacts	Assessment finding	Recommended conditions and regulation by other statutory decision-makers
raised at that meeting or during any subsequent engagement with the ALC"		*that Traditional Owners can be heard and their concerns in this matter are fully considered before any discharge.*" Following the submissions made on the SER, the proponent was directed to provide additional information to the NT EPA in April 2026. The ALC's submission on this additional information acknowledged that meetings and engagements had occurred; however, it clearly stated that "*the existence of meetings should not be taken as demonstrating that consultation is complete or sufficient for informed decision making.*" The ALC further emphasised that "*consultation cannot be regarded as complete where important technical uncertainties remain unresolved and where the information necessary to evaluate environmental and cultural risks has not yet been provided in adequate detail.*" The proponent has also acknowledged that further consultation is required, noting that "*there is more consultation required before the ALC will seek consent from Traditional Owners with respect to the Proposal.*" The ALC has also noted that engagement specific to the marine discharge has been limited, with Traditional Owners aware only of the	

Potentially significant impact	Avoidance and mitigation of impacts	Assessment finding	Recommended conditions and regulation by other statutory decision-makers
		general concept and not the detailed design or potential impacts. The additional information provided by the proponent primarily documents that consultation activities have occurred, rather than demonstrating that Traditional Owners were fully informed, meaningfully involved in decision-making, or that their input has materially influenced the design or assessment of the proposal. Notably, the proponent does not dispute the ALC's position that earlier discussions were undertaken without full understanding and should be considered preliminary. Based on the information provided by the proponent and submissions from the ALC, while engagement and consultation has occurred, it appears to have been largely preliminary. As such, there is limited evidence to demonstrate that affected Traditional Owners have been fully informed of the nature, scale and potential impacts of the proposal, or have had sufficient opportunity to meaningfully contribute to project planning and decision-making. For a proposal of this scale, in the environmental setting and context, further engagement is expected to ensure consultation is undertaken at an appropriate	

Potentially significant impact	Avoidance and mitigation of impacts	Assessment finding	Recommended conditions and regulation by other statutory decision-makers
		depth and supports informed participation by Traditional Owners. While the consultation undertaken with traditional owners to date has been limited in scope and detail and remains preliminary, the Proposal is subject to additional statutory and regulatory processes that will require more rigorous and comprehensive engagement prior to construction. The *Aboriginal Land Rights (Northern Territory) Act 1976* (ALRA) includes provisions for a proponent to obtain Free, Prior and Informed Consent (FPIC) from Traditional Owners regarding access and use the off-lease area that the pipeline will traverse. This process necessitates that Traditional Owners are adequately informed and have another meaningful opportunity to consider and respond to the proposal. Further, the NT EPA considers it is appropriate that conditions be imposed requiring targeted, culturally appropriate stakeholder engagement prior to construction and on an ongoing basis. A condition requiring a stakeholder engagement and communication plan (SECP), is recommended to be prepared in consultation with the ALC prior to construction and for the life of the action,	

Potentially significant impact	Avoidance and mitigation of impacts	Assessment finding	Recommended conditions and regulation by other statutory decision-makers
		providing opportunity for affected stakeholders, including Traditional Owners, to: be provided with accessible information; raise concerns; provide feedback; and, participate in discussions about project management. Accordingly, while consultation to date has been preliminary, it is considered that the potential significant impacts to cultural values can be appropriately managed and minimised through subsequent statutory and regulatory processes and the imposition of enforceable consultation conditions, as well as operational conditions designed to minimise impacts to the marine environment (which underpins cultural values), ensuring the objects of the EP Act are met.	
Sacred Sites Loss or damage to Aboriginal sacred sites protected under the *Northern Territory Aboriginal Scared Sites Act 1989*. The proponent did not identify any potential significant impacts to sacred sites, stating: "*No Aboriginal sites were identified within the Project area. It is assessed that there*	**Avoid** • The proponent committed to obtain an Authority Certificate under the *Northern Territory Aboriginal Sacred Sites Act 1989*. • No ground disturbing works will take place outside of the approved proposal area. **Mitigate and manage**	The proponent has detailed in the referral that the ALC were engaged in 2019 to conduct an anthropological and ethnographic heritage survey of GEMCO's Western Leases and Special Purpose Leases. The report has not been provided to the NT EPA, and it is unknown what the survey entailed, the currency of the information and there is no mention that the survey included marine areas. It Is not known if the survey was in accordance with any relevant AAPA standards for sacred sites. Therefore,	**Condition 11** - Aboriginal cultural heritage and sacred sites (sacred sites are to be protected. A Cultural Heritage Management Plan is to be developed in consultation with the ALC) **Advisory Note to the draft Environmental Approval** - no condition on the

Potentially significant impact	Avoidance and mitigation of impacts	Assessment finding	Recommended conditions and regulation by other statutory decision-makers
is likely low risk of Aboriginal cultural heritage within the Project area." AAPA issued an Authority Certificate for the Proposal on 26 June 2026. It identifies sacred sites in and within the vicinity of the Project area and outlines conditions for their protection. AAPA defined Restricted Works Areas and set out the work that could occur in those areas and the conditions that apply when undertaking those works. GEMCO provided a copy of the Authority Certificate on 4 August 2026.	• The proponent has committed to implementing an unexpected finds procedure. • The proponent has committed to consulting the ALC as part of the proponent's stakeholder engagement for the proposal to confirm that the proposal is executed in line with the guiding principles of the Anindilyakwa IPA Plan of Management (ALC, 2016). • An Aboriginal cultural heritage induction will be required for personnel undertaking or supervising ground-breaking works. The induction will include detail about the 'Unexpected finds procedure' and any sacred site requirements identified on an Authority Certificate. **Offset** • None proposed.	this survey is not considered to be an appropriate avoidance or mitigation measure. The Aboriginal Areas Protection Authority (AAPA) identified that the SER describes the potential risk for heritage and concludes it is a low risk and low likelihood of encountering unknown sites, however the likelihood of encountering Aboriginal sacred sites is unknown until an Authority Certificate is issued. AAPA confirmed in its submission on the SER that the proponent has applied for an Authority Certificate. As part of the reg 160 consultation in accordance with the EP Regulations AAPA advised that an Authority Certificate was issued on 26 June 2026. The Authority Certificate identified sacred sites in and within the vicinity of the Proposal and outlined conditions for their protection. The proponent provided a copy of the Authority Certificate on 4 August 2026. The AAPA certificate outlines that construction and operational activities including clearing, excavation, pipeline installation, marine works and the discharge of excess water cannot damage areas of cultural significance.	approval removes obligations required under the Aboriginal Sacred Sites Act. **Regulation by other statutory decision-makers** Sacred sites are protected under the *Northern Territory Aboriginal Sacred Sites Act 1989*, administered by AAPA. Heritage sites are regulated under the *Heritage Act 2011*, administered by the DLPE Heritage Branch.

Potentially significant impact	Avoidance and mitigation of impacts	Assessment finding	Recommended conditions and regulation by other statutory decision-makers
		The modelling undertaken by the proponent in the SER predicts suspended sediments (within the vicinity of a sacred site and the restricted works area as identified by the Authority Certificate), are likely to settle out of suspension due to the stagnant currents, but can be resuspended by moderate wave events that occur, and remain within the area (due to poor flushing) for extended periods. The proponent states that these zones would likely experience sediment deposition with very minimal resuspension. Given the modelling predictions in the SER that sediment deposition would occur in areas near the sacred site, and noting the requirements of the Authority Certificate, the NT EPA directed the proponent to assess whether sediment deposition could adversely affect any sacred site features and to demonstrate how such impacts would be avoided. The proponent undertook additional sediment dispersion modelling to determine the potential impact associated with suspended sediments within discharge water and associated potential for deposition.	

Potentially significant impact	Avoidance and mitigation of impacts	Assessment finding	Recommended conditions and regulation by other statutory decision-makers
		Modelling carried out by the proponent using the discharge limit for TSS proposed by the draft environmental approval. The results are summarised as follows: • Deposition is primarily predicted to occur at depths greater than 10 m, typically located 500 m or more from the shoreline. • Localised areas of deposition were predicted on the northern side of the GEMCO Port causeway that connects the jetty to the land-side operations, as well as within the deeper dredged areas at the offshore extent of the GEMCO Port Ship Loader jetty. Cumulative 20-year deposition thicknesses within these areas were predicted to be 10-100 mm (1-10 cm) thickness. These depositional zones do not overlap with any known areas of cultural significance • Predicted 20-year deposition thicknesses in other nearshore areas were almost exclusively below 1 mm The proponent concludes that the potential for impacts to areas of cultural significance as a result of the Proposal remains negligible.	

Potentially significant impact	Avoidance and mitigation of impacts	Assessment finding	Recommended conditions and regulation by other statutory decision-makers
		The proponent is required by law to undertake the proposed activity in accordance with the *Northern Territory Aboriginal Sacred Sites Act 1989*. The NT EPA considers that the Act provides strong protections to Aboriginal sacred sites. While the NT EPA is satisfied that sediment deposition is unlikely to result in a significant impact on the marine environment or marine ecosystems, this does not remove the proponent's obligation to comply with the Authority Certificate. The proponent remains responsible for ensuring that the proposed action does not damage, disturb or otherwise adversely affect any features of the sacred site. AAPA is the body established under the Aboriginal Sacred Sites Act with regulatory responsibility for the protection of sacred sites throughout the NT. The NT EPA considers that potential significant impacts to sacred sites can be appropriately avoided if the proponent implements the proposal in accordance with the advice and requirements of AAPA. Further, the NT EPA recommends that a cultural heritage management plan (CHMP)	

Potentially significant impact	Avoidance and mitigation of impacts	Assessment finding	Recommended conditions and regulation by other statutory decision-makers
		is conditioned to ensure that sacred sites and other culture and heritage values are protected through appropriate controls.	
Direct and indirect loss, damage or degradation to known or unknown Aboriginal and non-Aboriginal archaeological features and places protected under the *Heritage Act 2011*. The proponent has not identified any potential significant impacts to protected Heritage Places. The Cultural Heritage Desktop Assessment undertaken by the proponent concludes that • *'there is likely low risk of Aboriginal cultural heritage within the Project area'* • *'European history in relation to the Project area is focused on the Emerald River Mission area, subsequent use by the Royal Australian Airforce (RAAF), the towns of Angurugu and Alyangula, and the manganese mining activities. These are all known areas and recognised*	**Avoid** • No ground disturbing works will take place outside of the approved proposal area. **Mitigate and manage** • The proponent has committed to implementing an unexpected finds procedure. • The proponent has committed to heritage inductions for relevant personnel undertaking or supervising ground-breaking works. The proponent identified that the induction should cover protocols around access and working in proximity to Aboriginal cultural heritage sites and cover the unexpected finds procedure. • The proponent has committed to continued consultation with the ALC and Project execution in line with the guiding principles of the Anindilyakwa IPA Plan of	The proponent has stated that '*Avoidance of known heritage sites at Groote Eylandt identified through previous heritage surveys was achieved through the proposal design*.' and that *'GEMCO engaged ALC (2019) to conduct an anthropological and ethnographic heritage survey of GEMCO's Western Leases and Special Purpose Leases. The survey covered this report's Proposal area and did not identify any Aboriginal sites along the proposed pipeline route.'* As explained in the row above, details on the survey have not been provided to the NT EPA, and it is unknown what the survey entailed, the currency of the information and there is no mention that the survey included marine areas. It Is not known if the survey was in accordance with any relevant archaeological standards. Therefore, this survey is not considered to be an appropriate avoidance or mitigation measure. The proponent's cultural heritage assessment (desktop analysis) did not identify any known Aboriginal archaeological sites, historical heritage sites	**Condition 11** - Aboriginal cultural heritage and sacred sites (A Cultural Heritage Management Plan to be developed in consultation with the ALC) **Condition 12 -** Stakeholder engagement Plan requiring consultation prior to works and ongoing for the life of the action **Regulation by other statutory decision-makers** Aboriginal and Macassan Archaeological Places and Objects are protected under the *Heritage Act 2011*, including unknown sites. The proponent has an obligation to report unexpected heritage finds to the DLPE Heritage Branch.

Potentially significant impact	Avoidance and mitigation of impacts	Assessment finding	Recommended conditions and regulation by other statutory decision-makers
features, which will not be impacted by the Proposal' • *'There are no Macassan archaeological sites registered on the NT Heritage register and early research into Macassan archaeological sites identified the west side of Groote Eylandt as unsuitable to trepang harvesting (Macknight, 1976, p. 61). Given this, it is unlikely that Macassan archaeological sites would be located within the Project area.'*	Management. The proponent has stated that all land disturbance will be managed through GEMCO's existing Permit to Clear (PTC) process. As identified in the published FY25 Mine Closure MMP the Permit to Clear (PTC) process *"ensures both GEMCO and the ALC assess an area for cultural sites prior to disturbance."* **Offset** • None Proposed.	or Macassan archaeological sites within the proposal footprint and as such have concluded that the likelihood of impacts to heritage sites is considered low. However, as an archaeological survey (or details of) has not been conducted (or provided), there remains potential for previously unrecorded archaeological material to be encountered during construction. The Heritage Branch provided a submission on the referral identifying changes required to the 'Unexpected finds procedure'. The proponent addressed these comments in the updated 'Unexpected finds procedure' in section D-5 of Appendix D of the SER. The Heritage Branch confirmed in their submission on the SER that the changes had been addressed and '*no further changes were recommended for this application.'* The NT EPA recommends that a cultural heritage management plan (CHMP) prepared in consultation with the ALC is conditioned to ensure that sacred sites and other culture and heritage values are protected through appropriate controls. Additionally, the recommended condition requiring a SEP ensures continued traditional owner engagement occurs to	

Potentially significant impact	Avoidance and mitigation of impacts	Assessment finding	Recommended conditions and regulation by other statutory decision-makers
		identify and protect cultural values that may be impacted by the action.	
Direct and indirect loss, damage or degradation to known or unknown underwater cultural heritage. The proponent has not identified any potential significant impacts to underwater cultural heritage.	**Avoid** • No ground disturbing works will take place outside of the approved proposal area. **Mitigate and manage** • The proponent has committed to implementing an unexpected finds procedure. **Offset** • None Proposed.	The proponent's desktop assessment and heritage database searches did not identify any recorded underwater cultural heritage sites or objects within the marine proposal area. The Heritage Branch provided a submission on the referral and confirmed that no known underwater heritage places occur within the proposed marine works area. Based on currently available information, the likelihood of impacts to known underwater cultural heritage is considered low. However, the absence of recorded sites does not eliminate the possibility of previously unidentified submerged heritage objects or cultural heritage occurring within the seabed. Marine construction activities, including seabed disturbance associated with pipeline installation and the temporary platform, have the potential to impact unknown underwater cultural heritage if present. The proponent has not proposed any management measures specific to underwater cultural heritage however they have committed to implementing an	No condition is recommended. **Regulation by other statutory decision-makers** Underwater cultural heritage is protected under the *Underwater Cultural Heritage Act 2018*.

Potentially significant impact	Avoidance and mitigation of impacts	Assessment finding	Recommended conditions and regulation by other statutory decision-makers
		unexpected finds procedure which Heritage Branch confirmed in its submission on the SER that the "*Applicant has addressed or amended all issues previously raised by the Heritage Branch. No further changes are recommended for this application.*" Provided that the works remain within the proposed extent, heritage discovery procedures are implemented and any discoveries are managed in accordance with the *Underwater Cultural Heritage Act 2018*, the residual risk to underwater cultural heritage is considered low and manageable.	

6.6.3. Conclusion against the NT EPA objective

With the implementation of the proponent's proposed management measures, commitments, recommendations, the conditions for avoidance, monitoring, and mitigation of impacts identified in the draft environmental approval (Appendix 1), and through statutory provisions under the *Heritage Act 2011* (NT), the Sacred Sites Act 1989 and the *Underwater Cultural Heritage Act 2018* (Cth), the NT EPA considers that the Proposal can be conducted in such a manner that its objective for culture and heritage is likely to be met.

7. Whole of environment considerations

The NT EPA assessed the impacts of the Proposal against the key environmental factors and environmental values individually in the key factor assessments above. Given the links between marine ecosystems, marine environmental quality, and culture and heritage, the NT EPA also considered connections and interactions between them to inform a holistic view of impacts to the whole of environment.

There is a high level of interaction and connectivity between the environmental factors of marine ecosystems and marine environmental quality. Avoiding and minimising any significant impacts on the quality of marine waters is also important for the protection of marine ecosystems. The NT EPA considers the application of the ANZG 80% level of species protection for non-bioaccumulating toxicants and the ANZG 95% level of species protection for bioaccumulating toxicants at the LEP boundary and the ANZG 95% level of species protection for non-bioaccumulating toxicants and the ANZG 99% level of species protection for bioaccumulating toxicants at the MEP boundary, coupled with monitoring and evaluating appropriate ecosystem receptors within the receiving environment and the application of a Trigger Action Response Plan in the event that trigger values are exceeded will provide sufficient regulatory measures for avoiding significant impacts to marine ecosystems and marine environmental quality.

The NT EPA has recommended that GEMCO engages with the ALC to contribute to the development of a discharge monitoring and management plan, a cultural heritage management plan as well as a stakeholder engagement and communications plan. These conditions have been recommended to support the regulatory measures described above, addressing marine environmental quality and marine ecosystems and, when implemented together, mean any interrelated impacts to culture and heritage are also addressed.

When the separate environmental factors and values potentially affected by the Proposal were considered together in a holistic assessment, the NT EPA considered that the impacts from the Proposal would not alter the NT EPA's views about consistency with the NT EPA's factor objectives as assessed in section 6.

7.1. Whole of site water management

The NT EPA considered the statutory context for the regulation and management of wastewater from GEMCO's Western, Eastern and Southern leases, noting that the current environmental assessment and approval is being sought for the disposal of excess water sourced from the Western Leases only.

Information obtained by the NT EPA indicates that wastewater volumes have exceeded what was predicted for the Eastern Leases. Contrary to that predicted as part of the original environmental assessment process in 2016, GEMCO needs to manage and dispose of wastewater from the Eastern Leases. GEMCO advised it is currently assessing site water balance at the Eastern Leases to determine future management options for excess water. At a presentation to the NT EPA, 4 June 2026, GEMCO confirmed that the current Proposal excludes the discharge of excess water from the Eastern Leases.

Water balance across the Southern Leases is being assessed as part of the environmental impact assessment process of that proposed action.

The current regulatory approvals for wastewater discharge from GEMCO's Western and Eastern Leases allow a mix of bushland release (under an MMP) and a direct discharge into Angurugu River (under a WDL). GEMCO informed the NT EPA at its meeting 4 June 2026 that the current bushland discharge volume is approximately 30 GL per year and the discharge to the Angurugu River allows for 17 GL discharge per year. However, information provided by GEMCO (in its

response to the NT EPA's request for information in accordance with regulation 40 of the EP Regulations) stated that 3,500-6,000 ML of excess water is discharged to bushland per month, equating to 42 – 72 GL per year.

At its presentation to the NT EPA meeting 124 (4 June 2026) GEMCO advised that the bushland discharge will continue once the ocean outfall is operational, however it is expected to be at a reduced rate (GEMCO estimated this to be 15-30 GL per year). Figure 3 provided by GEMCO does not support the continued need for ongoing bushland discharge as a measure to manage excess water. The Figure shows that there will be an increase in the volume of excess water from the Western Leases throughout late 2028 and 2029 (due to the commissioning of new quarries), however groundwater inflow rates will reduce post 2029 as deeper quarries are exhausted. Except for the 2029 and 2030 financial years, Figure 3 demonstrates that once the ocean outfall is operational it can replace other water disposal methods.

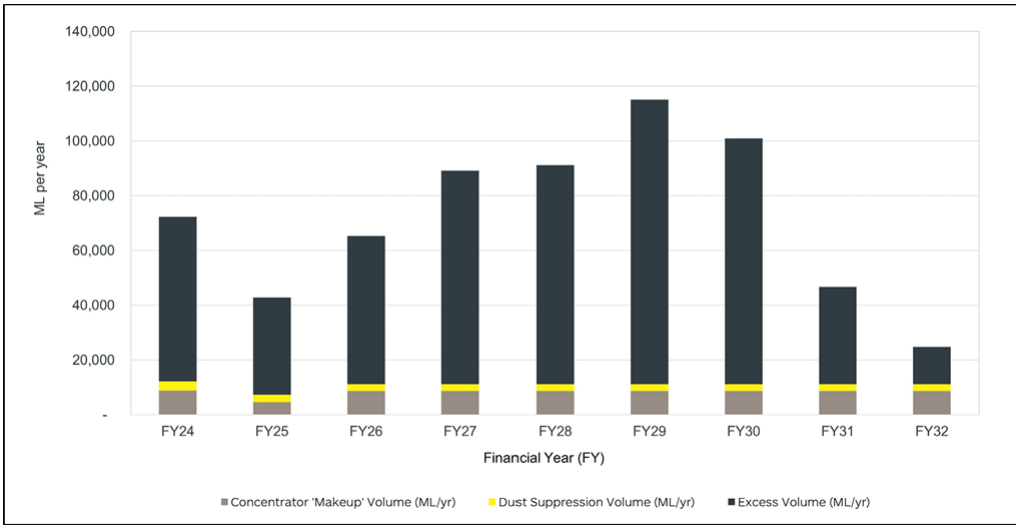


Figure 3 Actual and predicted excess water volumes (FY24 to FY32)
(provided by GEMCO in response to the NT EPA's request for additional information in accordance with regulation 40 of the EP Regulations)

While GEMCO states 'the presence of large water storage quarries and continuing selective discharges of freshwater to bushland are expected to act as 'recharge mechanisms and buffers for drawdown' the NT EPA does not support bushland discharge as a mitigation measure for groundwater drawdown or saline intrusion. The MMP for the Western Leases allows excess water to be discharged to bushland if water transfer between storage facilities is not an available option to manage water volumes during the wet season. Bushland discharge was not proposed as a management measure for saline intrusion.

The ALC has communicated its concern about the bushland release, stating Traditional Owners are saddened by the impact they have witnessed. They are also concerned about the disposal of excess water to Angurugu River. During NT EPA meeting 124, the ALC met with the NT EPA members to discuss the project, during which the ALC advised the NT EPA that they want the discharges to bushland and to the Angurugu River to cease.

The ALC informed the NT EPA that it wanted to see an overarching water management strategy / plan for the whole of GEMCO mine site (including the Western, Eastern and proposed Southern Leases) to inform a planned approach to water management and disposal across all the leases; the water management strategy would provide information on site water sources (surface as well as groundwater) and volumes, water storage capacities, water quality, proposed on-site water usage, the proposed, progressive rehabilitation of voids etc.

The NT EPA agrees that a proactive approach to wastewater management, treatment and disposal is required based upon an adequate whole of site water balance investigation.

The NT EPA recommends that GEMCO develop and provide a whole of site water balance to support their mining operations and to use this information to develop an informed management approach to the generation, management, treatment and disposal of excess water for the Western and Eastern Leases (and Southern Leases if approved).

The NT EPA is concerned that the disposal of excess water through the Western Leases will be used to manage excess water from the Eastern Leases and potentially the Southern Leases, without going through the appropriate assessment under the EP Act. Until GEMCO has developed a whole of site water balance and developed a water management strategy to demonstrate the use of the ocean outfall beyond the Western Leases, the NT EPA recommends that the proposed ocean outfall should only be used for the disposal of water sourced within the Western Leases.

7.2. Decommissioning and closure

Decommissioning, closure and rehabilitation of the project is proposed to occur in accordance with the GEMCO Closure Plan, once finalised. The timing of decommissioning and closure remains subject to the life of the associated mining operations and will be informed by the approved Closure Plan. A range of scenarios may necessitate earlier decommissioning or closure, consistent with operational, environmental or regulatory requirements.

The construction footprint and associated infrastructure would be decommissioned and rehabilitated with the objective of restoring the area to a condition as close as practicable to pre-disturbance conditions. Similarly, the pipeline footprint would be rehabilitated as part of broader GEMCO mine closure activities. Rehabilitation works would be undertaken progressively where practicable and completed during final decommissioning.

Decommissioning and rehabilitation activities are proposed to be incorporated into the GEMCO Closure Plan, which is subject to approval and regulation under the mining provisions of the EP Act.

A recommended condition in the Environmental Approval (Appendix) 1 is for the approval holder to develop, implement, and comply with a Decommissioning and Rehabilitation Plan. The plan is to define closure objectives and completion criteria, describe the methodology and staging for dismantling and removal of infrastructure, and outline rehabilitation and remediation measures. It also includes provisions for post-decommissioning monitoring and, where necessary, adaptive management and remediation

8. Other advice

The NT EPA provides the following advice for consideration by the proponent and the Minister.

To support a proactive approach to managing and disposing of excess water across the Western, Eastern (and Southern) Leases, the NT EPA recommends that GEMCO complete and provide a mine water management strategy that is supported by a whole of site water balance assessment (based on the Minerals Council of Australia Water Accounting Framework).

At a minimum a mine water management strategy must support efficient water management (ensuring volumes of excess water are controlled through appropriate onsite management as well as disposal), operational stability, transparency, and compliance with environmental regulations. It should be based upon the water balance assessment, and incorporate stakeholder consultation, water management options, water quality measurements, monitoring and evaluation, review and

improvements, contingency planning, accountabilities and commitments and consider the impacts of the changing climate.

The NT EPA advises that the proposed ocean outfall should only be used to dispose of excess water sourced within the Western Leases. If GEMCO seeks approval for excess water to be piped from the Eastern Leases for disposal through the Western Leases, the NT EPA advises that this may constitute a significant variation under the EP Act or be subject to a call-in notice in accordance with section 53 of the EP Act.

8.1. Cumulative impacts

Groote Eylandt and its surrounding marine environment are recognised as significant and valuable assets, due to the unique environmental and cultural values of the region. The residual impacts from this proposal, combined with potential impacts from port operations including but not limited to maintenance dredging and STP wastewater discharge, may result in significant cumulative impacts to the values of Milner Bay if not managed carefully.

Following the submissions received on the referral, the proponent identified in the SER a range of potential cumulative impact pathways, including seabed disturbance, underwater noise, marine fauna disturbance, biosecurity risks, and water quality interactions. Across these pathways, it was acknowledged that cumulative effects could arise particularly where activities overlap spatially or temporally (e.g. with dredging or nearby proposed developments). However, the proponent determined that cumulative impacts would be low to negligible, largely because no concurrent major port works are planned, the likelihood of overlap with nearby projects is considered low, and standard controls (such as cofferdams, silt curtains, vessel speed limits, and biosecurity protocols) will be implemented.

For marine water quality, the proponent identified some potential for cumulative effects (notably for nitrate and salinity) between mine discharge and existing treated effluent. However, modelling demonstrated that interactions between discharge plumes are limited and do not materially change the overall impact footprint. As a result, the proponent determined that the cumulative impact would not be significant.

The NT EPA has considered and assessed the potential for cumulative impacts associated with the Proposal. The NT EPA is satisfied that the proponent has appropriately identified relevant cumulative impact pathways and demonstrated that risks are generally low. The NT EPA considers that the proposed management measures, in combination with recommended approval conditions (Appendix 1), will be sufficient to minimise and manage potential cumulative impacts.

9. Matters taken into account during the assessment

9.1. Environment Protection Act 2019

The NT EPA's assessment also took into account the purpose of environmental impact assessment process (section 42 of the EP Act) (**Table 7**).

Table 7 Purpose of environmental impact assessment process

Matters taken into account during the assessment	Consideration
Objects of the EP Act	
To protect the environment of the Territory	The proponent's referral, SER, additional information and this assessment report, including the NT EPA's recommended conditions for an environmental approval, provide detail about how the environment of the Territory would be protected from potentially significant environmental impacts that could occur as a result of implementation of the Proposal.
To promote ecologically sustainable development so that the wellbeing of the people of the Territory is maintained or improved without adverse impact on the environment of the Territory	The NT EPA is satisfied the development can be carried out in a manner consistent with the principles of ecologically sustainable development (ESD) (refer below for further detail on how individual ESD principles have been taken into account).
To recognise the role of environmental impact assessment and environmental approval in promoting the protection and management of the environment of the Territory	The NT EPA recognises the importance of the environmental impact assessment and approval processes in the protection and management of the environment of the Territory. The NT EPA has assessed the potential environmental impacts of the Proposal to inform an environmental approval decision by the Minister that, in the NT EPA's view, promotes the protection and management of the Territory. The recommended conditions would ensure that any potentially significant environmental impacts from the Proposal would be adequately avoided, mitigated or managed.

Matters taken into account during the assessment	Consideration
To provide for broad community involvement during the process of environmental impact assessment and environmental approval	The referral indicated that the proponent has undertaken consultation and engagement with the ALC and Traditional Owners. The proponent has committed to ongoing engagement as the project progresses. The proponent will undertake consultation with stakeholders, including traditional owners and the ALC, in line with a SECP prior to construction and throughout the life of the project. The recommended condition, requiring the development of a SECP, will ensure that the proponent has consulted with all affected stakeholders, including but not limited to, traditional owners, the ALC and AAPA. The public and interested persons were provided the opportunity to make a submission to the NT EPA during the statutory consultation periods. The NT EPA's consultation undertaken during its assessment of the Proposal provides for public and Australian and NT government authorities submission to be considered during the environmental impact assessment process. The NT EPA has given due consideration to public submissions and the technical expertise and comments provided by government authorities in its assessment of the Proposal.
To recognise the role that Aboriginal people have as stewards of their country as conferred under their traditions and recognised in law, and the importance of participation by Aboriginal people and communities in environmental decision-making processes.	The NT EPA recognises the role of Aboriginal people as stewards of their country and the importance of participation by Aboriginal people and communities in environmental decision-making. The public consultation process provided an opportunity for interested persons to make a submission in relation to the Proposal. The NT EPA has taken into account advice received from AAPA in the preparation of this report and the recommended conditions to inform the Minister's decision on environmental approval. Protection of cultural heritage is promoted through the NT EPA's recommended conditions for a SEP as well as a culture heritage management plan which includes the requirements for ongoing consultation and the identification of Aboriginal cultural values and heritage. The SEP requires that affected stakeholder will be consulted on potential positive and negative impacts of the action and it is required that the proponent demonstrate that Aboriginal values and the rights and interests of Aboriginal communities within the proposed extent have been understood and considered.

Matters taken into account during the assessment	Consideration
Principles of ecologically sustainable development	
Decision-making principle 1. Decision-making processes should effectively integrate both long-term and short-term environmental and equitable considerations. 2. Decision-making processes should provide for community involvement in relation to decisions and actions that affect the community.	The NT EPA has considered the decision-making principle in its assessment and has had particular regard to this principle in its assessment of terrestrial ecosystems, hydrological processes, marine environmental quality, marine ecosystems and culture and heritage. The NT EPA considers that its environmental impact assessment and recommended conditions have identified and mitigated both short-term and long-term environmental impacts. The community has been provided the opportunity for involvement in the environmental impact assessment process during public consultation on the Proposal, and the submissions received have been taken into account in the preparation of this report and the recommended conditions to inform the Minister's decision on environmental approval.
Principle of proportionality Decision-making processes should ensure that decisions or actions directed at minimising harm or a risk of harm or impact to the environment are proportionate to the harm or risk of harm or impact that is being addressed.	The NT EPA has considered the potential significant impacts of the action and recommended environmental approval conditions which are proportionate to the risk of harm or impact of each activity on each receptor. The NT EPA recognises that other regulatory processes also account for minimising harm or risk of a harm to the environment.
Precautionary principle 1. If there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation. 2. Decision-making should be guided by:	The NT EPA has applied the precautionary principle in its assessment of the Proposal, particularly in relation to uncertainties surrounding source water quality and the absence of active treatment prior to discharge. Given the potential significant impacts to the marine environmental quality and marine ecosystems of Milner Bay, the NT EPA has adopted a precautionary approach by recommending discharge limits back calculated to achieve appropriate ANZG species protection levels for the receiving marine environment, and the implementation of monitoring and adaptive management conditions. These conditions are intended to minimise the risk of environmental harm in the absence of complete scientific certainty regarding water quality characteristics and potential impacts.

Matters taken into account during the assessment	Consideration
(a) careful evaluation to avoid serious or irreversible damage to the environment wherever practicable; and (b) an assessment of the risk-weighted consequences of various options.	In addition, the NT EPA has considered the concerns raised during consultation periods in the EIA process and, consistent with a risk-based and precautionary approach, the NT EPA has recommended conditions requiring the development and implementation of a Stakeholder Engagement and Communications Plan (SECP) and a Cultural Heritage Management Plan (CHMP). These plans are intended to ensure meaningful and ongoing consultation with stakeholders prior to construction and throughout the life of the proposal.
Principle of evidence-based decision-making Decisions should be based on the best available evidence in the circumstances that is relevant and reliable.	The NT EPA has considered the available evidence during its assessment of the Proposal. While the information provided by GEMCO has not provided robust certainty about water quality the NT EPA has been able to draw upon the national guidelines, including the *Australian and New Zealand Guidelines for Fresh and Marine Water Quality* (ANZG). The NT EPA has used the ANZG to inform the derivation of discharge limits and the selection of appropriate species protection levels for the receiving marine environment. These guidelines provide a scientifically robust and nationally accepted framework for protecting aquatic ecosystems and have been applied in the absence of site-specific data of sufficient certainty. Where information gaps or uncertainties remain, particularly in relation to source water quality and potential impacts on marine environmental quality, marine ecosystems, and cultural and heritage values, the NT EPA has adopted an adaptive, evidence-based approach. The NT EPA has recommended monitoring, investigation and consultation requirements to generate additional information over time. This information would be used to verify impact predictions, improve understanding of environmental responses to the discharge, and refine management measures where necessary. For example, while the recommended discharge limits have been derived using the ANZG Guidelines, bi-annual monitoring of ecosystem receptors will be used to assess whether those limits are effectively protecting environmental values in Milner Bay. This approach ensures ongoing management and decision-making are informed by site-specific evidence collected throughout the life of the Proposal.
Principle of intergenerational and intragenerational equity The present generation should ensure that the health, diversity and productivity of the environment	The NT EPA considers that the recommended conditions for an environmental approval would provide an appropriate degree of protection for environmental values and that the health, diversity and productivity of the environment will be maintained for the benefit of current and future generations.

Matters taken into account during the assessment	Consideration
is maintained or enhanced for the benefit of present and future generations.	
Principle of sustainable use Natural resources should be used in a manner that is sustainable, prudent, rational, wise and appropriate.	The NT EPA has considered the importance of sustainable development and use of resources (water) during the environmental impact assessment process. The NT EPA has concerns that the proposal has not been informed by an overarching water management strategy aimed at reducing the disposal of excess water. The NT EPA has provided a recommendation that GEMCO be required to complete this work, particularly if it seeks to extend the use of the proposed ocean outfall beyond the Western Leases, with the aim of reducing the creation of excess water and therefore its disposal.
Principle of conservation of biological diversity and ecological integrity Biological diversity and ecological integrity should be conserved and maintained.	This principle was considered when assessing the impacts of the Proposal on the environmental values, particularly in relation to terrestrial and marine ecosystems. The assessment of these impacts is provided in this report. Biological diversity and ecological integrity are likely to be conserved due to the avoidance, minimisation and mitigation measures that will be implemented by the proponent as well as through conditions recommended by the NT EPA to reduce impact to the water quality of the receiving environment and associated impacts to marine ecosystems.
Principle of improved valuation, pricing and incentive mechanisms 1. Environmental factors should be included in the valuation of assets and services. 2. Persons who generate pollution and waste should bear the cost of containment, avoidance and abatement. 3. Users of goods and services should pay prices based on the full life cycle costs of providing the goods and services, including costs relating to the	This principle was considered by the NT EPA when assessing the impacts of the Proposal. From the Proponent's perspective, site water requires management and is not simply a resource contributing to its operations. As such, excess water on site is a waste product. The Proponent is bearing the cost of containment, avoidance and abatement. In the absence of a water management strategy that demonstrates proactive steps to reduce the creation of excess water and accordingly, the volumes of excess water required for disposal, the Proponent bears the cost of developing and implementing disposal infrastructure. The NT EPA has provided advice that GEMCO be required to complete a water balance study and develop a water management strategy with the aim of reducing the creation of excess water and therefore its disposal as a waste, particularly if it seeks to extend the use of the proposed ocean outfall beyond the Western Leases.

Matters taken into account during the assessment	Consideration
use of natural resources and the ultimate disposal of wastes. 4. Established environmental goals should be pursued in the most cost-effective way by establishing incentive structures, including market mechanisms, which enable persons best placed to maximise benefits or minimise costs to develop solutions and responses to environmental problems.	
Environmental decision-making hierarchy	
1. In making decisions in relation to actions that affect the environment, decision-makers, proponents and approval holders must apply the following hierarchy of approaches in order of priority: (a) ensure that actions are designed to avoid adverse impacts on the environment; (b) identify management options to mitigate adverse impacts on the environment to the greatest extent practicable; (c) if appropriate, provide for environmental offsets in accordance with this Act for residual adverse impacts on the environment that cannot be avoided or mitigated.	The Proponent has demonstrated the application of the environmental decision-making hierarchy in its design of the Proposal, specifically locating infrastructure to avoid impacts where possible. The Proponent has committed to developing and implementing a range of environmental management plans for the Proposal. These plans will outline the management measures and controls to avoid, minimise and manage potential impacts and will be submitted to the Mining Division for approval. The NT EPA has recommended the implementation of the ANZG species protection levels appropriate for receiving marine environment, and associated monitoring and management actions aimed at reducing and mitigating adverse impacts on the marine environment. The Proponent's proposed avoidance and management actions (particularly within the terrestrial environment) and the NT EPA's recommendations for minimising impact to the marine environment has led the NT EPA to conclude that there would be no significant residual impacts that would require offsetting.
2. In making decisions in relation to actions that affect the environment, decision-makers, proponents and approval holders must ensure	The Proponent has identified the reduced need for bushland discharge of excess water if the ocean outfall proposal proceeds. It is anticipated that with the implementation of this proposal

Matters taken into account during the assessment	Consideration
that the potential for actions to enhance or restore environmental quality is identified and provided for to the extent practicable.	bushland discharge will no longer be required or will be greatly reduced – an action that will reduce pressure on the bushland environment and allow natural vegetation restoration.
Waste management hierarchy	
1. In designing, implementing and managing an action, all reasonable and practicable measures should be taken to minimise the generation of waste and its discharge into the environment. 2. For subsection (1), waste should be managed in accordance with the following hierarchy of approaches in order of priority: (a) avoidance of the production of waste; (b) minimisation of the production of waste; (c) re-use of waste; (d) recycling of waste; (e) recovery of energy and other resources from waste; (f) treatment of waste to reduce potentially adverse impacts; (g) disposal of waste in an environmentally sound manner.	In considering the principle of waste hierarchy, the NT EPA notes that the Proponent has opted for the disposal of excess water after applying passive treatment approaches (such as natural settling, flocculation and blending prior to discharge). Alternatives for the Proposal presented by the Proponent included active treatment, however they considered this was not feasible. While the Proponent actively diverts surface water away from quarry areas and reuses some of the excess water for operational activities, it has not developed a whole of mine site water management strategy, based on water balance studies, that would allow a more proactive approach for reducing excess water volumes. The Proponent has also provided information that shows excess water volumes will reduce post 2029 once deeper quarries are exhausted. The NT EPA has provided advice that GEMCO be required to complete a water balance study and develop a water management strategy with the aim of reducing the creation of excess water and therefore its disposal as a waste, particularly if it seeks to extend the use of the proposed ocean outfall beyond the Western Leases.
Ecosystem-based management	

Matters taken into account during the assessment	Consideration
Management that recognises all interactions in an ecosystem, including ecological and human interactions.	The NT EPA considered the importance of ecosystem-based management for achieving both sustainable development and biodiversity protection goals. With consideration of the link between terrestrial ecosystems, hydrological processes, marine environmental quality, marine ecosystems and culture and heritage, the NT EPA assessed the connections and interactions between parts of the environment to inform a holistic view of impacts to the whole environment. The NT EPA formed the view that the impacts from this Proposal can be managed to be consistent with the NT EPA's environmental factors and objectives.
The impacts of a changing climate	
The effects of a changing climate on the Proposal and resilience of the Proposal to a changing climate	The NT EPA considered the potential effects of a changing climate on the Proposal over its operational life, noting the duration of the Proposal is undefined and therefore considered long term. Climate change may increase rainfall intensity and extreme weather events, resulting in higher runoff volumes and greater water management and discharge requirements. The NT EPA has provided advice that GEMCO be required to complete a water balance study and develop a water management strategy with the aim of reducing the creation of excess water and therefore its disposal as a waste, particularly if it seeks to extend the use of the proposed ocean outfall beyond the Western Leases. The proponent's Hydrology and Hydraulic Modelling Report (developed to assess design considerations for waterway crossings and drainage features and to evaluate the flood impacts resulting from the pipeline installation) incorporated climate-adjusted intensity-frequency-duration rainfall data derived from the Bureau of Meteorology and adjusted in accordance with *Australian Rainfall and Runoff (ARR) 2019* methods to account for projected climate change impacts. The modelling indicated an approximate 9% increase in peak flows under future climate conditions.

10. Conclusion and recommendation

The NT EPA has considered the GEMCO Excess Water Disposal Project Proposal by the Groote Eylandt Mining Company Pty Ltd. The NT EPA's assessment of the Proposal identified potentially significant environmental impacts associated with the key environmental factors.

The NT EPA considers that the Proposal can be implemented and managed in a manner that is environmentally acceptable and therefore recommends that environmental approval be granted subject to the conditions recommended in Appendix 1.

Appendix 1 – Draft Environmental Approval

ntepa Northern Territory Environment Protection Authority

Draft Environmental Approval

PURSUANT TO SECTION *69* OF THE *ENVIRONMENT PROTECTION ACT 2019*

Approval number	EP2025/043-001
Approval holder	GROOTE EYLANDT MINING COMPANY PROPRIETARY LIMITED
Australian business number (ABN)	26 004 618 491
Registered business address	Level 2 100 St Georges Terrace Perth WA 6000
Action	GEMCO Excess Water Disposal Project

Action overview

GROOTE EYLANDT MINING COMPANY PROPRIETARY LIMITED (GEMCO) is proposing the construction, installation and operation of water discharge infrastructure (pumps, pipes and marine outfall) over a distance of about 12 km extending to a discharge point 600 m into Milner Bay. The water discharge infrastructure is located on GEMCO Western Leases and is to discharge a maximum of 80 gigalitres (GL) per year to dispose of excess water sourced from mining activity on the Western Leases. The duration of the action is for the remaining life of the Groote Eylandt manganese mine and to support rehabilitation and closure activities.

Advisory notes

i. All statutory authorisations as required by law must be obtained and maintained as required for the action. No condition of this approval removes any obligation to obtain, renew or comply with such statutory authorisations.

ii. No condition of this approval removes obligations required under the ***Northern Territory Aboriginal Sacred Sites Act 1989***.

iii. Failure to comply with the requirements of a condition of this approval, or with the content of a plan required under a condition, constitutes a non-compliance, regardless of whether the contingency measures, rectification or other measures have been or are being implemented.

iv. Notification of an environmental incident must be made to the Chief Executive Officer of Department of Lands, Planning and Environment (herein referred to as **CEO)** in writing and within 24 hours of becoming aware of the incident, in accordance with Part 9 Division 8 of the **Environment Protection Act 2019 (EP Act)** and Part 10 of the Environment Protection Regulations 2020. Notification to pollution@nt.gov.au is considered notification to the **CEO**.

v. Submission of all notices, reports, documents or other correspondence required as a condition of this approval, including notification to the **CEO** or **Minister**, must be provided

	in electronic form by emailing mineralinfo.dlpe@nt.gov.aumailto:. All documents should be in electronic form suitable for online publication.
Primary address of action	The action is located on NT Portions 1031, 1305, 1306, 1632, 1669 & 1671 on the western side of Groote Eylandt (adjacent to the Port, Rowell Highway) and GEMCO's Western Leases. The action is in the Groote Archipelago Region and the land tenure includes Aboriginal freehold, Mineral Lease (North), Crown Land and Special Purpose Lease.
NT EPA Assessment Report number	110
Person authorised to make decision	Hon Joshua Burgoyne MLA Minister for Lands, Planning and Environment
Signature	NOT FOR SIGNING
Date of decision	N/A

Recommended environmental approval conditions

1 Change of contact details

1-1 The approval holder must notify the **Minister** in writing of any change of its name, physical address or postal address for the serving of notices or other correspondence within 14 calendar days of such change. Where the approval holder is a corporation or an association of persons, whether incorporated or not, the postal address is that of the principal place of business or of the principal office in the State.

2 Commencement of action

2-1 This approval expires 5 years after the date on which it is granted, unless there is **substantial implementation** on or before that date.

2-2 The approval holder must provide notification in writing to the **Minister,** at least 2 months prior to **substantial implementation**.

3 Limitations and extent of action

3-1 All activities must be carried out within the **approved extent** (**Figure 1**, **Figure 2**, **Figure 3** and **Figure 4** and **Table 1 and Table 2**).

3-2 The approval holder must ensure that only water sourced from mining activity on the GEMCO Western leases, is discharged via the authorised intake point. The discharge of excess mine-affected water sourced from the Eastern or Southern GEMCO leases is not permitted.

3-3 The action must not exceed the limitations and extents in **Table 1**.

Table 1 Limitations and extents

Action element	Location	Limitation or maximum extent
Physical elements		
Water discharge pipeline size	-	Up to 1400 mm in diameter
Authorised discharge point (Diffuser)	Start point Latitude: 13.862866972°S Longitude: 136.418771822°E End point Latitude: 13.863420433°S Longitude: 136.417537847°E	145 m (end point is 600 m into Milner Bay and oriented north east – south west)
Development area	**Figure 1** **Figure 2**	Terrestrial footprint: 29.5 ha Marine footprint: 2 ha

Action element	Location	Limitation or maximum extent
Clearing of vegetation	**Figure 3**	Up to 19.5 ha
Operational elements		
Authorised intake point	Latitude: 13.9485°S Longitude: 136.4342°E	NH2 Quarry
Maximum annual discharge volume	-	Up to 80 GL/year
Maximum daily discharge volume	-	220 ML/day.
Discharge limits	**Table 3**	Discharge water quality must not exceed the limits specified in **Table 3**

4 Discharge limits

4-1 The approval holder must ensure that all water discharges from the action achieve the **ANZG** species protection levels at the low ecological protection (**LEP**) and moderate ecological protection (**MEP**) boundaries required in **Table 2** and the **discharge limits** specified in **Table 3**.

4-2 Compliance with the **discharge limits** must be determined from samples collected from the **discharge monitoring point**.

5 Dye Tracer Tests

5-1 To validate the operational performance of the outfall diffuser and demonstrate achievement of a 13.5 dilution factor at the **LEP** boundary and 22 dilution factor at the **MEP** boundary**,** in situ dye tracer tests must be designed and undertaken by an **independent qualified person.**

5-2 The dye tracer tests must be undertaken during the first year of operation in:

(1) September; and

(2) November

5-3 The dye tracer tests required by condition 5-2 must be undertaken during neap / 'dodge' tide conditions to assess plume behaviour under worst-case dilution and flushing conditions.

5-4 A report on the results of each dye tracer test must be prepared by the **independent qualified person**.

5-5 The report required by condition 5-4 must include an assessment of the applicability of different tracers, dye concentration injected into the discharge pipe, flow rate to simulate the discharge rate, raw monitoring data, sampling locations, tidal conditions, dilution calculations, aerial imagery of the plume with the **LEP** and **MEP** boundaries demarcated, and an assessment of whether plume behaviour, diffuser performance and the dilution factor (for species protection levels at the **LEP** and **MEP** boundaries), were achieved.

5-6 The report required by condition 5-4 must be submitted to the **CEO** within 28 calendar days of completion of the tests

6 Marine Ecosystems and Marine Environmental Quality

6-1 The approval holder must ensure that all discharges achieve the following environmental outcomes:

(1) protect the quality and productivity of water, sediment and biota so that environmental values and declared beneficial uses outside of the **MEP,** including aquatic ecosystem protection, and recreational water quality and aesthetics are maintained; and

(2) no adverse impact to marine ecosystem values including the biodiversity, ecological integrity and ecological functioning of benthic habitats and communities outside the **MEP.**

7 Discharge Monitoring and Management Plan

7-1 The approval holder must implement a Discharge Monitoring and Management Plan (**DMMP**), prepared by a **suitably qualified person** in consultation with the Anindilyakwa Land Council (**ALC**), with the purpose of ensuring the marine ecosystems and marine environmental quality environmental objectives in condition 6-1 are achieved.

7-2 The **DMMP** required by condition 7-1 must:

(1) include the Trigger Action Response Plan (TARP) required by condition 8-1;

(2) be reviewed by an **independent qualified person** to ensure it is consistent with achievement of the environmental outcomes required by condition 6-1;

(3) be submitted with the independent review and statement addressing how the reviewer's findings have been addressed, to the **Minister** at least one month prior to commencing discharge;

(4) specify how requirement of condition 4-1 and will be met;

(5) specify how the outcomes of condition 6-1 will be met;

(6) specify the **ecosystem receptors** and locations to be monitored and evaluated to assess the performance of discharge limits for achieving the protection of environmental outcomes identified in condition 6-1

(7) specify that the selected **ecosystem receptors** will be located no further than 350 m northwest and southeast from the **authorised discharge point** and will be selected to provide representative coverage of the receiving environment in all directions from the diffuser;

(8) include the monitoring program of selected **ecosystem receptors,** that includes at a minimum the monitoring outlined in **Table 4,**7-2(6) to evaluate the environmental impacts of discharging mine-affected water into the environment of Milner Bay to assess performance against the outcome identified in condition 6-1.

(9) specify the management actions that will be implemented if monitoring of selected **ecosystem receptors** detects declining condition and/or abundance of the environmental outcomes identified in 6-1;

(10) include a program to undertake whole-of-effluent toxicity testing to evaluate the environmental impacts of discharging mine-affected water into the environment of

Milner Bay to assess performance against the outcome identified in condition 6-1; and the reporting procedures, including the format, timing and frequency for the reporting of monitoring data against **trigger values** (**Table 3**), selected **ecosystem receptors** (including **Table 4**) and the outcome of condition 6-1.

7-3 The approval holder must implement the **DMMP** that satisfies the requirements of condition 7-1.

7-4 The **DMMP** must include a monitoring program that, at a minimum, meets the requirements of the monitoring schedules in **Table 4** and **Table 5**.

7-5 The instruments used for continuous monitoring **Table 5** are to be maintained, calibrated and the measurement resolution is to be suitable for detecting a significant change in the value of the parameter being measured.

8 Trigger Action Response Plan

8-1 The approval holder must develop and implement a Trigger Action Response Plan (**TARP**) for the duration of the action.

8-2 In the event that **trigger values** identified in **Table 3** are exceeded the approval holder shall immediately implement the **TARP** required by condition 8-1.

8-3 The **TARP** must:

(1) include corrective actions for exceedances of **trigger values** including verification sampling, investigation of cause, optimisation of treatment or blending, reduction of discharge rate or duration, diversion of discharge, when temporary cessation of discharge may be required, and criteria for recommencement;

(2) identify requirements for notifying the **CEO** of any exceedance of **trigger values** including:

(a) the date, time, duration and likely cause of the exceedance;

(b) the parameter affected;

(c) the corrective actions implemented, including whether discharge was reduced, stopped or recommenced; and

(d) the timeframe for submission of investigation findings and any additional proposed corrective or preventative actions.

9 Impacts to water quality

9-1 The approval holder shall minimise soil and groundwater disturbing activities in accordance with the following guidance documents, or any approved update of these guidance documents:

(1) National Acid Sulfate Soils Guidance Identification and Laboratory Methods Manual (2018);

(2) National Acid Sulfate Soils Sampling and Identification Methods Manual (2018); and

(3) International Erosion Control Association Guidance *Best Practice Erosion and Sediment Control* (2025).

10 Construction in the Marine Environment

10-1 The approval holder must ensure that implementation of the action achieves the following environmental outcomes:

(1) risks of physical injury, mortality, behavioural changes and health impacts on **marine megafauna** are minimised; and

(2) protect the quality and productivity of water, sediment and biota so that environmental values and declared beneficial uses outside of the **marine disturbance area,** including aquatic ecosystem protection, and recreational water quality and aesthetics are maintained; and

(3) no adverse impact to marine ecosystem values including the biodiversity, ecological integrity and ecological functioning of benthic habitats and communities outside the **marine disturbance area.**

10-2 The approval holder must implement a Marine Megafauna Management Plan, prepared by a **suitably qualified person** in consultation with the **ALC**, with the purpose of ensuring the objectives in condition 10-1 is achieved.

10-3 The Marine Megafauna Management Plan must be submitted to the **Minister** at least 14 calendar days prior to **substantial implementation** within the **marine disturbance area**.

10-4 The Marine Megafauna Management Plan required by condition 10-2 must:

(1) identify actions that will be implemented to avoid, minimise and/or manage impacts to marine megafauna from underwater noise;

(2) require a **shut-down zone** to be established around the location of underwater noise-generating activities based on predicted temporary threshold shift distances for relevant species;

(3) require an **observation zone** to extend 250 m beyond the **shut-down zone**; and

(4) require piling to cease immediately if marine megafauna are observed within the **shut-down zone** and not recommence until the zone has been clear for 30 minutes.

11 Aboriginal cultural heritage and sacred sites

11-1 The approval holder must implement the action to meet the following environmental outcomes:

(1) Avoid disturbance to cultural and heritage values within the **approved extent**; and

(2) Protection of sacred sites.

11-2 In accordance with condition 12-2(9) the approval holder must conduct ongoing consultation and engagement with Traditional Owners about achievement of the objectives in condition 11-1 for the **life of the action**.

11-3 The approval holder must, in consultation with the **ALC**, prepare a Cultural Heritage Management Plan (**CHMP**) that demonstrates how the Aboriginal cultural heritage objectives in condition 11-1 will be achieved.

11-4 The **CHMP** must be submitted to the **Minister** at least 14 calendar days prior to **substantial implementation**.

11-5 The **CHMP** required by condition 11-3 must:

(1) document known Aboriginal cultural **heritage values** in the **approved extent** and in Milner Bay;

(2) identify actions that will be implemented to avoid, minimise and/or manage impacts to known and unexpected sites of potential cultural and **heritage values**; and

(3) include an unexpected finds protocol.

12 Stakeholder engagement and communications plan

12-1 The approval holder must develop and implement a stakeholder engagement and communications plan (**SECP**) for the management of the action**.**

12-2 The **SECP** required by condition 12-1 must:

(1) be developed in consultation with the **ALC**;

(2) be developed in accordance with the International Association for Public Participation's Quality Assurance Standard for Community and Stakeholder Engagement[1] or the latest version;

(3) be developed in accordance with any relevant stakeholder engagement protocols established between NT government and Aboriginal corporations;

(4) identify all affected stakeholders including but not limited to:

(a) traditional owners;

(b) **the ALC**;

(c) Aboriginal Areas Protection Authority;

(d) other people or organisations determined to be Aboriginal stakeholders; and

(e) community members and residents that have the potential to be affected by the action.

(5) demonstrate that affected stakeholders have been consulted on potential positive and negative impacts of the action, including details of the process used to identify these impacts, and that the affected stakeholders feedback has been understood and considered in implementing the action;

(6) demonstrate that Aboriginal values and the rights and interests of Aboriginal communities within the proposed extent have been understood and considered;

(7) be reviewed by an **independent qualified person** to ensure the **SECP** meets the requirements of condition 12-2;

(8) be submitted to the **Minister** with the comments from the **independent qualified person** required by condition 12-2(7) and a statement from the approval holder

[1] International Association for Public Participation (IAP2) (2015). Quality Assurance Standard for Community and Stakeholder Engagement.

addressing how the reviewer's findings have been addressed, at least one month prior to **substantial implementation**;

(9) include provisions for ongoing stakeholder engagement for the **life of the action**, including:

(a) undertaking consultation with identified stakeholders at least annually;

(b) commitments to provide stakeholders with accessible information on environmental performance, compliance outcomes, and potential impacts to cultural and **heritage values**; and

(c) commitments to provide meaningful opportunities for stakeholders to raise concerns, provide feedback and participate in discussions about adaptive management of impacts; and

(d) commitments to provide opportunities for stakeholder involvement in the development and implementation of environmental monitoring

12-3 The Compliance Assessment Report required by condition 16-1 must:

(1) document stakeholder consultation activities and discussions;

(2) include a summary of issues and concerns raised by the community and stakeholders;

(3) document how stakeholder input has been considered and, where appropriate, incorporated into the adaptive management of the action; and

(4) where stakeholder input or concerns have not been incorporated into the adaptive management of the action, provide a clear justification for why it was not adopted.

13 Discharge Limit Exceedance

13-1 In the event that the discharge limits identified in **Table 3** are exceeded the approval holder must:

(1) report this to the **CEO** within 24 hours and discuss the corrective actions that will be implemented;

(2) implement corrective actions;

(3) investigate the cause;

(4) investigate environmental impacts;

(5) advise rectification measures to be implemented;

(6) advise any other measures to be implemented to ensure no further impact; and

(7) within one month of the exceedance provide a report to the **CEO** detailing the measures required in conditions 13-1(1) to 13-1(6)

(8) continue implementing the corrective actions to until the outcomes of condition 6-1 is being met.

14 Compliance Reporting

14-1 The approval holder must provide an annual Compliance Assessment Report to the **CEO** for the purpose of determining compliance with each condition of this approval.

14-2 Unless a different date or frequency is approved by the **CEO**, the first annual Compliance Assessment Report must be submitted within 18 months of the date of this approval, and subsequent reports must be submitted annually from that date.

14-3 Each annual Compliance Assessment Report must be endorsed by the approval holder's Chief Executive Officer, or a person approved by the approval holder's Chief Executive Officer to be delegated to sign on the Chief Executive Officer's behalf.

14-4 Each annual Compliance Assessment Report must:

(1) state whether each condition of this approval has been complied with, including:

(a) exceedance of any limitations and extents in **Table 1**;

(b) achievement of environmental outcomes and objectives in condition 6-1, 10-1 and 11-1;

(c) requirements to implement the content of management plans required under this approval;

(d) monitoring requirements;

(e) requirements to implement contingency measures;

(f) requirements to implement adaptive management; and

(g) reporting requirements.

(2) include the results of any monitoring (inclusive of any raw data) that has been required under a condition of this approval;

(3) provide evidence to substantiate statements of compliance, or details of where there has been a non-compliance;

(4) include the corrective, remedial and preventative actions taken in response to any potential non-compliance;

(5) include the stakeholder engagement and consultation details required by condition 12-3; and

(6) be provided in a form suitable for publication on the approval holder website and online by the **DLPE**.

14-5 The approval holder must prepare a Compliance Assessment Plan and submit it to the CEO at least 6 months prior to the first Compliance Assessment Report required by condition 14-1, or prior to implementation of the action, whichever is sooner.

14-6 The Compliance Assessment Plan must include:

(1) what, when and how information will be collected and recorded to assess compliance;

(2) the methods which will be used to assess compliance;

(3) the methods which will be used to validate the adequacy of the compliance assessment to determine whether the implementation conditions are being complied with;

(4) the table of contents of Compliance Assessment Reports, including audit reports required by condition 18-1; and

(5) how and when Compliance Assessment Reports will be made publicly available, including being published on the approval holder's website within 6 weeks of being provided to the **CEO**.

15 Decommissioning and rehabilitation

15-1 The approval holder must develop, implement, and comply with a decommissioning and rehabilitation plan.

15-2 The decommissioning and rehabilitation plan required by condition 15-1 must:

(1) define closure objectives and criteria;

(2) describe the methodology, progressive staging and timing for dismantling and removal of infrastructure, rehabilitation and remediation; and

(3) describe the approach for post-decommissioning monitoring and remediation;

(4) be submitted to the **Minister** at least 3 months before **substantial implementation**.

16 Environmental performance reporting

16-1 The approval holder must prepare an Environmental Performance Report (**EPR**) that reports on the environmental performance of the action

16-2 The **EPR** required by condition 16-1 must:

(1) be submitted to the **Minister** on the first anniversary of **substantial implementation**;

(2) be submitted to the **Minister** every 5 years thereafter following the submission of the report required by condition 16-2(1);

(3) be endorsed by the approval holder or a person delegated to endorse on the approval holder's behalf;

(4) include a statement as to the extent the approval holder has complied with each condition of this approval;

(5) provide an interpretation of all monitoring data required by the conditions of this approval;

(6) provide an evaluation of monitoring results of ecosystem receptors (set out in **Table 4**) and a statement as to whether the receiving environment exhibits adverse impact and the extent the approval holder has achieved the protection of environmental outcomes identified in condition 6-1, 10-1 and 11-1; and

(7) identify all non-compliances and describe corrective and preventative actions taken to date and actions that will be taken.

16-3 The approval holder must maintain records demonstrating compliance with the conditions of this approval for the **life of the action**.

17 Revision of plans

17-1 The approval holder may revise any management plan required by this approval and must provide the following to the **Minister** at least one (1) month prior to any material amendment(s) being implemented:

(1) the revised plan(s);

(2) a tabulated summary of the amendment(s) with document references;

(3) reasons for the amendment(s); and

(4) an assessment of environmental risks and potential environmental impacts associated with the amendment(s).

17-2 The approval holder must implement the action to comply with the latest revision of management plans required by this approval.

18 Independent Audit

18-1 The approval holder must arrange for an independent audit of compliance with the conditions of this approval, including achievement of the environmental outcomes and/or the environmental objectives and/ or environmental performance with the conditions of this approval, as and when directed by the **CEO**.

18-2 The independent audit must be carried out by an **independent qualified person** with appropriate qualifications who is nominated or approved by the **CEO** to undertake the audit under condition 18-1.

18-3 The approval holder must submit the independent audit report with the Compliance Assessment Report required by condition 14-1, or at any time as directed in writing by the **CEO**. The audit report must be supported by credible evidence to substantiate its findings.

18-4 If an independent audit report is required by condition 18-1, it must be made publicly available in the same timeframe, manner and form as a Compliance Assessment Report, or as otherwise directed by the **CEO**.

19 Provision of environmental data

19-1 All environmental monitoring data required to be collected or obtained under this approval must be retained by the approval holder for the **life of the action**.

19-2 The approval holder must, as and when directed by the **Minister**, provide any environmental data (including sampling design, sampling methodologies, empirical data and derived information products such as maps) or information relevant to the assessment of the action and implementation of this approval, to the **Minister** in the form and manner and at the intervals specified in the direction.

Table 2 Marine environmental quality management areas

Area	Location	Required level of protection
Low ecological protection area (LEP)	20 m radial zone from the authorised discharge point (refer to **Figure 4**)	At the boundary of the **LEP** the approval holder must achieve the **ANZG** 80% level of species protection for non-bioaccumulating toxicants and the **ANZG** 95% level of species protection for bioaccumulating toxicants
Moderate ecological protection area (MEP)	52 m from the LEP boundary (72 m from the **authorised discharge point** (refer to **Figure 4**)	At the boundary of the **MEP**, the approval holder must achieve the **ANZG** 95% level of species protection for non-bioaccumulating toxicants and the **ANZG** 99% level of species protection for bioaccumulating toxicants

Table 3 Trigger Values and Discharge limits

Parameter	Unit	Limit type	Trigger Value	Trigger Value Basis	Discharge Limit	Discharge Limit Basis
Aluminium, dissolved	µg/L	Maximum	292	Calculated from receiving water trigger of 37 µg/L, background of 2.5 µg/L and dilution factor of 8.4.	762	Calculated from receiving water trigger of 37 µg/L, background of 2.5 µg/L and dilution factor of 22.
Zinc, dissolved	µg/L	Maximum	15	Calculated from receiving water trigger of 3.3 µg/L, background of 2.5 µg/L and dilution factor of 2.2.	20	Calculated from receiving water trigger of 3.3 µg/L, background of 2.5 µg/L and dilution factor of 22.
Cadmium, dissolved	µg/L	Maximum	0.06	Predicted discharge concentration. SER concluded that no dilution required as the discharge concentration is below the receiving water trigger value.	13	Calculated from receiving water trigger of 0.7 µg/L, background of 0.1 µg/L and dilution factor of 22.
Mercury, dissolved	µg/L	Maximum	0.05	Predicted discharge concentration. SER concluded that no dilution required as the discharge concentration is below the receiving water trigger value.	1	Calculated from receiving water trigger of 0.1 µg/L, background of 0.05 µg/L and dilution factor of 22.
Manganese, dissolved	µg/L	Maximum	293	Predicted discharge concentration. SER concluded that no dilution required as the discharge concentration is below the receiving water trigger value.	6566	Calculated from receiving water trigger of 300 µg/L, background of 1.6 µg/L and dilution factor of 22.
Copper, dissolved	µg/L	Maximum	1.8	Calculated from receiving water trigger of 0.6 µg/L,	3	Calculated from receiving water trigger of 0.6 µg/L, background of 0.5 µg/L and dilution factor of 22.

Parameter	Unit	Limit type	Trigger Value	Trigger Value Basis	Discharge Limit	Discharge Limit Basis
				background of 0.5 µg/L and dilution factor of 13.1		
Rare-earth elements, dissolved	µg/L	Maximum	6.75	Calculated from receiving water trigger of 0.5 µg/L, background of 0 µg/L and dilution factor of 13.5.	N/A	No discharge limit is proposed for rare-earth elements due to the absence of established guideline values.
Ammoniacal nitrogen, dissolved	µg/L	Maximum	910	ANZG 95% level of species protection	19,894	Calculated from receiving water trigger of 910 µg/L, background of 6 µg/L and dilution factor of 22.
Total nitrogen	kg/day t/year	Maximum load	68 24	Nutrient load control and receiving environment response.	100 25	Nutrient load limit and receiving environment response.
Turbidity	NTU	Maximum	3.25	Biologically relevant threshold for protection of seagrasses and corals.	44	Operational limit to support receiving water turbidity and light outcomes.
pH	pH units	Minimum	N/A	Operational control to support receiving water pH outcomes.	5.2	20th Percentile of baseline marine water quality. Operational limit to support receiving water pH outcomes.
Total suspended solids	mg/L	Maximum	N/A	Operational control to support receiving water TSS, turbidity and sedimentation outcomes.	50	Operational limit to support receiving water TSS, turbidity and sediment deposition outcomes.

Notes:
Discharge limits for conservative dissolved contaminants are calculated as: dilution factor × (receiving water trigger value − background concentration) + background concentration.

Dissolved metals must be measured on 0.45 µm filtered samples unless otherwise approved.

The following rare earth elements must be monitored - Cerium, Dysprosium, Erbium, Europium, Gadolinium, Holmium, Lanthanum, Lutetium, Neodymium, Praseodymium, Samarium, Terbium, Thulium, Ytterbium and Yttrium. The discharge limit and trigger value for rare earth elements in **Table 3** apply to all of the listed rare earth elements.

Table 4 Marine monitoring schedule

Ecosystem receptor monitoring	
Inshore reef/seagrass area	Two surveys per year of benthic flora and fauna are to be undertaken for the life of the action by an **independent qualified person**. The surveys are to be undertaken during the period of highest water temperatures (November–December) and during the period of lowest water temperatures (July–August). The surveys must include monitoring of seagrass, coral, macroalgae and benthic ecological communities at the **ecosystem receptor** sites.
Infauna survey	Two surveys per year of the meiofauna and macrofauna are to be undertaken for the life of the action by an **independent qualified person**. The surveys are to be undertaken during the period of highest water temperatures (November–December) and during the period of lowest water temperatures (July–August). The surveys must include monitoring of infauna abundance, taxonomic composition, diversity, sediment characteristics and recovery at the **ecosystem receptor** sites.
Water quality monitoring	At the time of undertaking the inshore reef/seagrass and infauna surveys, undertake water quality monitoring at **ecosystem receptors,** including but not limited to electrical conductivity, pH, turbidity, total suspended solids, dissolved oxygen, temperature, nutrients, chlorophyll-a, and total and dissolved metals and metalloids, to assess the condition of ecosystem receptors and any impacts on environmental values.
Sediment quality monitoring	Monitor marine sediment quality before discharge, during the first year of operation and at an approved ongoing frequency, including diffuser areas, predicted depositional areas, sensitive benthic habitats and reference locations.
Biota and bioaccumulation monitoring	Monitor locally relevant biota for metals, metalloids and other contaminants, including species relevant to traditional fisheries or seafood consumption pathways, where practicable.
Construction-phase marine monitoring	Monitor turbidity, underwater light and visual plume extent during seabed excavation, trenching, temporary work platform construction and removal, backfilling, and any activity with potential to mobilise sediment.

Table 5 Discharge monitoring schedule

Discharge monitoring	
Discharge volume	Measure volume of discharge in ML daily, including flow rate and cumulative volume.
Discharge Characteristic (continuous)	Measure electrical conductivity, DO, pH, TSS and turbidity of discharge every 10 minutes. Data is to be available of 90% of time in any calendar month and 95% of time in any rolling 12 months.
Discharge Characteristic	A full ANZG analyte suite must be sampled and submitted for laboratory analysis weekly. Samples must comprise a 24-hour composite sample made up of 24 samples of equal volume collected over a 24 hour period on the same day each week.

Acronyms

Term	Definition
ALC	Anindilyakwa Land Council
ANZG	Australia and New Zealand Guidelines for Fresh and Marine Water Quality
CEO	Chief Executive Officer (of NT Government Department of Lands Planning and Environment)
CHMP	Cultural heritage management plan
DLPE	Department of Lands, Planning and Environment
DMMP	Discharge Monitoring and Management Plan
EPR	Environmental performance report
LEP	Low ecological protection
MEP	Moderate ecological protection
SECP	Stakeholder engagement and communications plan
TARP	Trigger Action Response Plan

Definitions

Some of the terms used in this approval have the same meaning as the terms defined in the *Environment Protection Act 2019* and Environment Protection Regulations 2020.

Table 6 Definitions

Term	Definition
approved extent	The extent identified in **Figure 1**, **Figure 2**, **Figure 3**, **Figure 4, Table 1** and **Table 2** of this approval.
CEO	Has the same meaning as in section 4 of the **EP Act.**
discharge limits	means the discharge limits specified in **Table 3**
Discharge monitoring point	The discharge monitoring point must be located in the discharge pipeline downstream of the intake but within the onshore portion of the discharge pipeline
ecosystem receptor	Any living organism or natural habitat that could be exposed to a stressor.

Term	Definition
heritage values	Heritage places and heritage objects as defined under the *Heritage Act 2011* and includes Aboriginal or Macassan archaeological places and objects**.**
independent qualified person	An independent qualified person means an independent person who is: a) a registered environmental auditor, or b) a registered environmental practitioner, or c) a person with a degree and at least five years' experience relevant to the subject matter. For this definition means: d) is not a current employee of the environmental approval holder or otherwise engaged by the environmental approval holder or by any of its subsidiaries, and in the last two years was not a former employee of the environmental approval holder e) does not have a financial interest or any involvement which would lead to a conflict of interest with the environmental approval holder, and f) is independent of the person or organisation or any of its subsidiaries that prepared or authored the SER and any additional information.
low ecological protection (LEP)	**ANZG** 80% species protection values are to be achieved at the boundary of the low ecological protection for non bioaccumulating toxicant and 95% species protection values for bioaccumulating toxicants
life of the action	The period of time from the **substantial implementation** of the action until the issue of a closure certificate under section 213 of the EP Act, or revocation of the environmental approval by the Minister at the request of the approval holder under section 114 of the EP Act.
marine disturbance area	The extent identified in **Figure 2** of this approval.
moderate ecological protection (MEP)	ANZG 95% species protections values are to be achieved at the boundary of the moderate ecological protection for non bioaccumulating toxicant and 99% species protection values for bioaccumulating toxicants
Minister	The **Minister** responsible for administering the **EP Act**.
observation zone	Area within which the movement of marine mammals and marine turtles would be monitored to identify any approach to the shut-down zone where practicable. The observation zone is sized based on a nominal 250 m distance from the outer edge of the **shut-down zone**.

Term	Definition
suitably qualified person	A person (including an entity) who has professional qualifications, appropriate training or skills or experience relevant to the nominated subject matters or tasks. They can give authoritative assessment, advice and analysis about performance relevant to the subject matters using relevant protocols, standards, methods or literature or conduct tasks in accordance with requirements.
referral	The approval holder's referral to the NT EPA under section 48 of the EP Act.
sensitive or significant vegetation	Vegetation communities defined as sensitive or significant by the Northern Territory Planning Scheme Land Clearing Guidelines[2].
shut-down zone	Area within which the observation of marine mammals and marine turtles would trigger noise-generating activities to cease as soon as reasonably practical. Shut-down zones are sized based on the potential for a temporary threshold shift.
substantial implementation	The commencement of any ground disturbing activity undertaken to carry out the action.
terrestrial disturbance area	The extent identified in Figure 1 of this approval.
trigger value	Parameters that indicate discharge water concentrate/load is not consistent with load/concentration that was predicted. The trigger value triggers investigation.

Location and extent of action

Spatial data is held by DLPE as follows:

- TerrestialDisturbanceArea_South32-20260114
- Marine DisturbanceArea South32-20260114
- Total vegetation clearing area MGA94 Rev1 (2026-0706)
- PipelineDiffuser MidPoint 20260706

[2] Northern Territory planning scheme land clearing guidelines (2024).

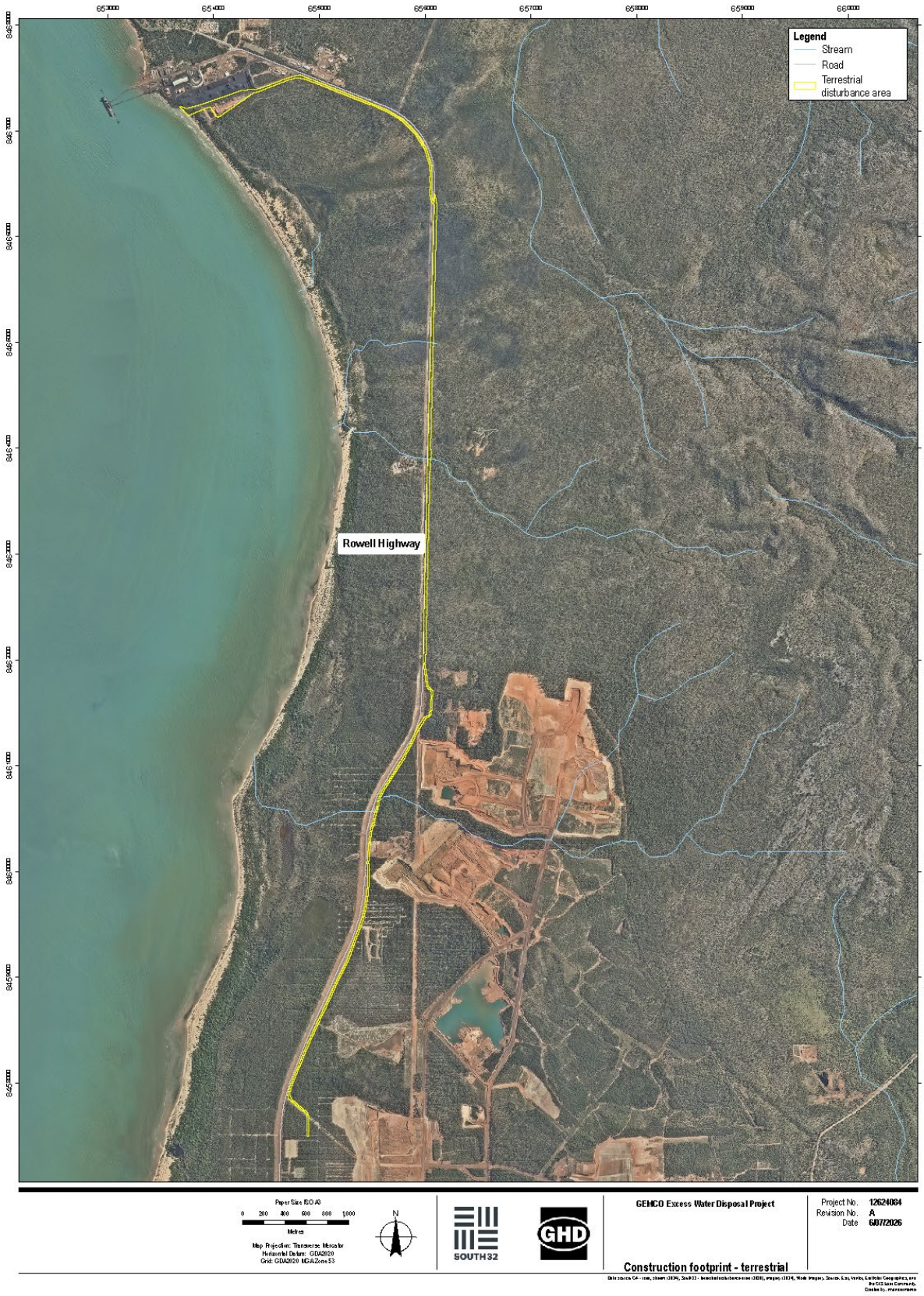


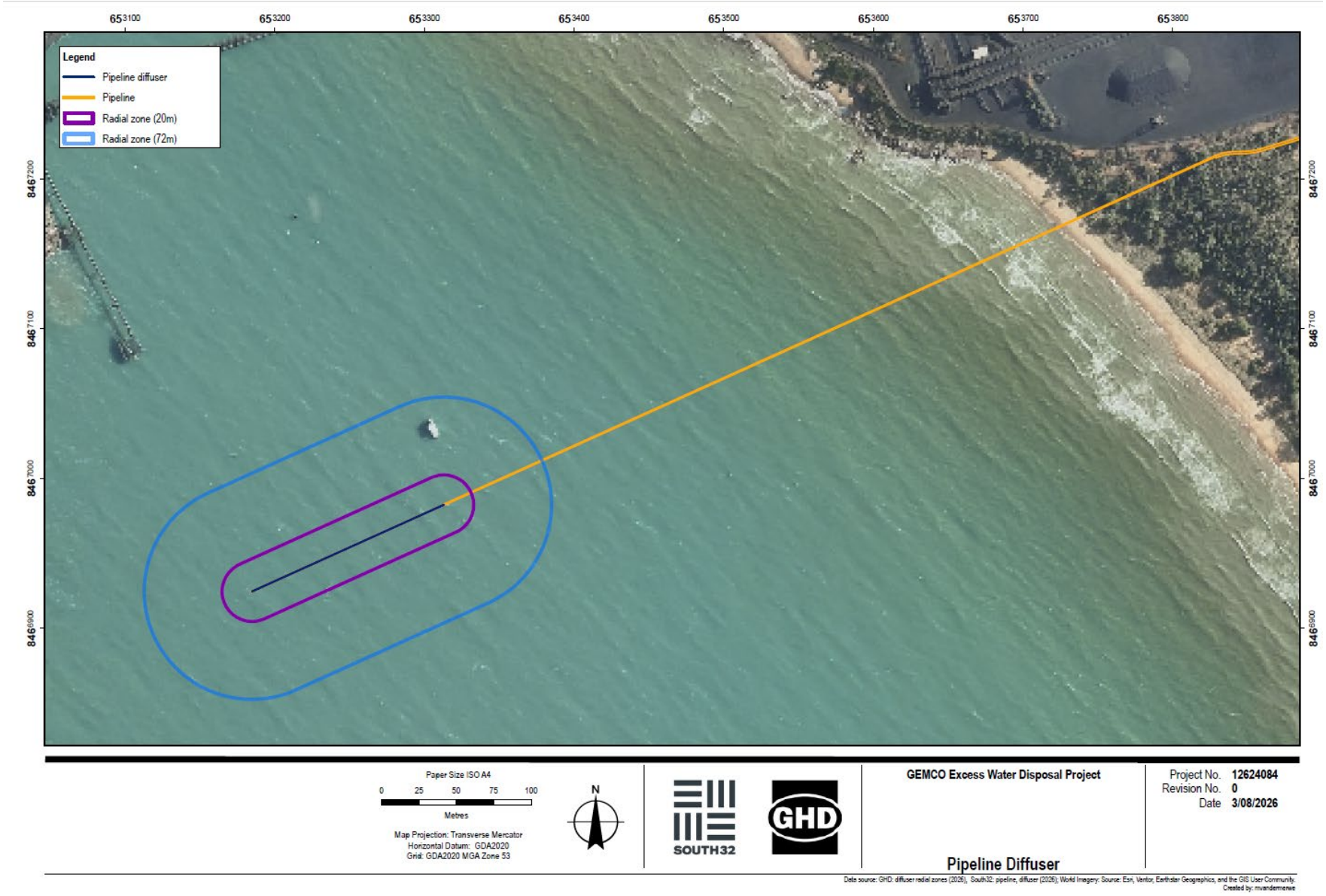
Figure 1 - Terrestrial disturbance approved extent and alignment

Figure 2 - Marine disturbance area approved extent and alignment

Figure 3 Native vegetation clearance extent

Refer to spatial file - Total vegetation clearing area MGA94 Rev1 (2026-0706)

Figure 4 LEP and MEP radial boundaries



Appendix 2 – Environmental impact assessment timeline

Date	Assessment stages
28 March 2025	NT EPA directed the proponent to provide additional information about the referral
26 June 2025	Proponent requested to extend the specified period to provide additional information in relation to the referral
11 August 2025	Proponent requested to extend the specified period to provide additional information in relation to the referral
21 August 2025	Referral accepted
25 August to 19 September 2025	Referral consultation submission period
28 October 2025	NT EPA decided environmental impact assessment required by the supplementary environmental report (SER) method
20 November 2025	NT EPA directed the proponent to provide additional information in the SER
6 February to 12 March 2026	SER consultation submission period
13 April 2026	NT EPA directed the proponent to provide additional information on the SER
14 May to 4 June 2026	NT EPA invited submissions on the additional information on the SER
21 to 4 August 2026	Consultation with proponent and statutory decision-makers on draft environmental approval
11 August 2026	The NT EPA directed the proponent to provide additional information on comments received on the draft environmental approval
18 August 2026	Additional information received
20 August 2026	Statutory timeframe for the NT EPA's assessment report to be provided to the Minister for Lands, Planning and Environment
30 business days after receiving the NT EPA's assessment report	Minister's decision on environmental approval due (If the Minister does not make a decision within 30 business days after receiving the assessment report the Minister is taken to have accepted the NT EPA's recommendation for approval).