



Notice of Significant Variation

Pursuant to section 51(1) of the Environment Protection Act 2019

Rover 1 Project



October 2025

DOCUMENT CONTROL RECORD

Job	EZ24277
Document ID	252758-26
Author(s)	Alice Nicholl

DOCUMENT HISTORY

Rev	Reviewed by	Approved by	Issued to	Date
1	Emma Lewis	Emma Lewis	Michael Poepjes	9 October 2025
2	Emma Lewis	Emma Lewis	Michael Poepjes	28 October 2025

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EXECUTIVE SUMMARY

This significant variation referral pursuant to section 51(1) of the *Environment Protection Act 2019* (EP Act) documents the proposed changes to Castile Resources Ltd's (Castile) Rover 1 Project which is currently being assessed under the EP Act by way of environmental impact statement (EIS).

There are three key changes to the proposal compared to the proposal that was originally referred to the NT EPA:

- Relocation of proposal infrastructure at the Rover 1 site through a redesign.
- Removal of the downstream processing facility from the proposal scope.
- Removal of the gas import pipeline from the proposal scope.

To support this notice of variation, Castile undertook desktop research and consulted with key agencies and stakeholders to inform them of the proposed variation and seek their advice in relation to any significant issues or aspects to be considered and addressed during the EIS process. Separately, Castile is undertaking a strategic and community consultation program to support the EIS and the Social Impact Assessment. An engagement strategy commenced in July 2023 and will continue throughout the EIS process.

A screening level assessment indicates the variation is not likely to affect any additional environmental factors than those already being assessed in the EIS, and potential impacts and proposed avoidance and mitigation are consistent with those assessed in the original referral.

Technical studies and assessment of the new proposal footprint are underway, and the EIS will incorporate assessment of environmental impacts associated with these components. The original EIS terms of reference are considered to adequately capture the potentially significant impacts that require consideration in the EIS, without further amendment.

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ACRONYMS

AAPA	Aboriginal Areas Protection Authority
AMD	Acid mine drainage
CLC	Central land council
EP Act	<i>Environment Protection Act 2019</i>
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i>
EIS	Environmental Impact Statement
ESCP	Erosion and sediment control plan
EL	Exploration lease
FIFO	Fly-in fly-out
ha	hectares
IOCG	Iron Oxide Copper Gold
km	kilometre
MNES	Matters of national environmental significance
NMD	Neutral mine drainage
NT	Northern Territory
NT EPA	Northern Territory Environment Protection Authority
PM2.5	Particulate matter 2.5
ROM	Run-of-mine
SIA	Social impact assessment
TSF	Tailings storage facility
TOR	Terms of reference
t	Tonne
WRD	Waste rock dump
WAP	Water allocation plan

1 INTRODUCTION

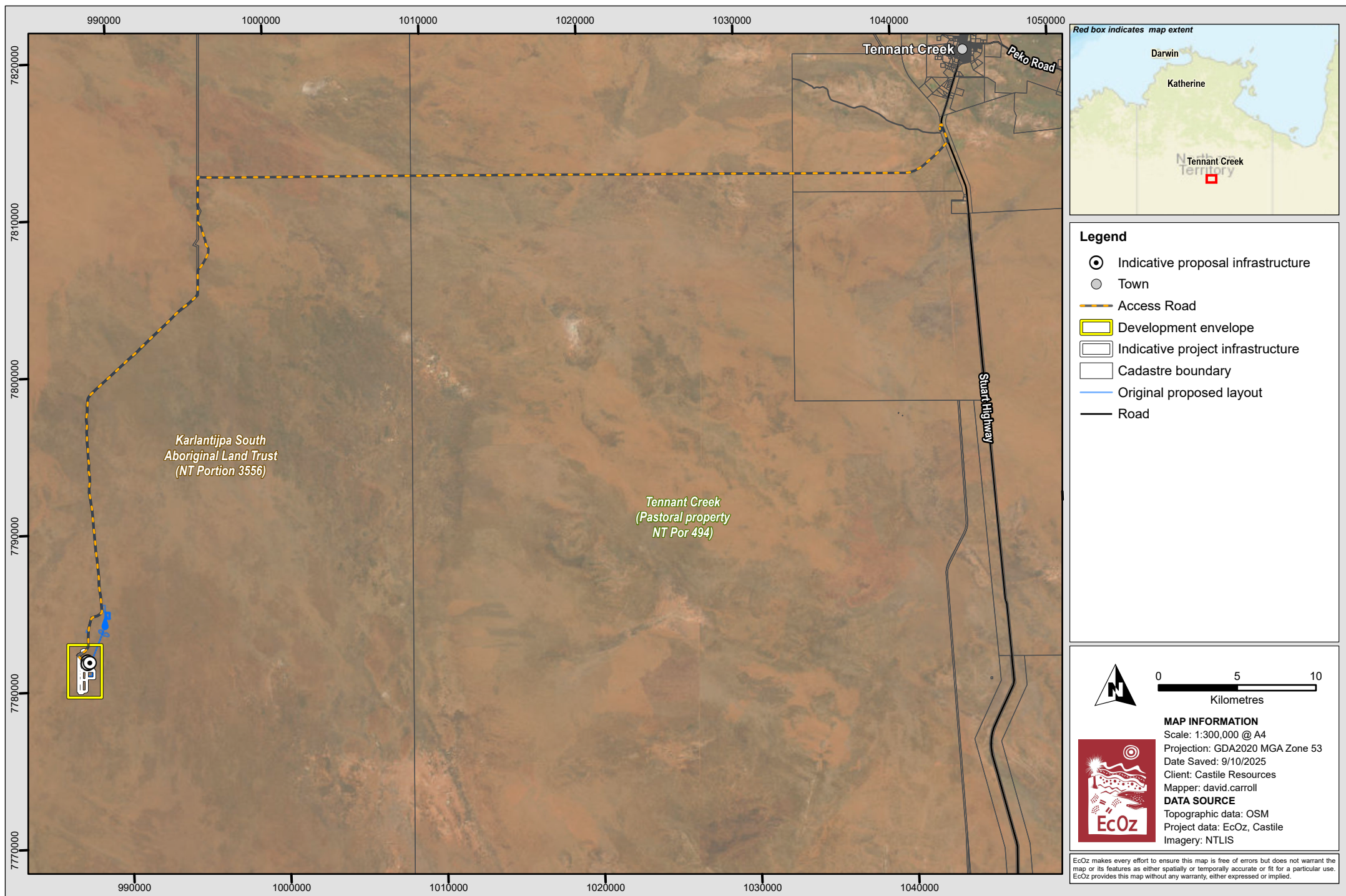
This document provides details of a proposed variation to Castile Resources Ltd's (Castile) Rover 1 Project that was referred to the Northern Territory (NT) Environment Protection Authority (NT EPA) and accepted for standard assessment on the 26 September 2023. The proposal is being assessed under the NT *Environment Protection Act 2019* (EP Act) and Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) under an accredited assessment process¹ by method of environmental impact statement (EIS). Terms of Reference (TOR) for the assessment were issued by the NT EPA on 2 February 2024.

As detailed in the original referral - available on the NT EPA website ([available here](#)) - Castile is proposing to develop an Iron Oxide Copper Gold (IOCG) mine approximately 70 kilometres (km) southwest of Tennant Creek see Figure 1-1. The targeted ore deposit, referred to as Rover 1, is situated within Aboriginal freehold lands of the Karantijpa South Land Trust – NT Portion 3556 – with access from the Stuart Highway along the Kunayungka Road through Tennant Creek Station (NT Portion 494 - Perpetual Pastoral Lease).

Proposal planning has progressed significantly since the original referral was made to the NT EPA, including re-designing early proposal infrastructure layouts in response to identification of the Greater Bilby within the original disturbance footprint, and removal of the proposed downstream processing plant from the scope at the Rover 1 site. These changes trigger a 'notice of significant variation' pursuant to section 51(1) of the EP Act and a variation request in accordance with section 156A of the EPBC Act.

This report assesses the potential impacts associated with the variation to determine if the scope changes are likely to significantly alter the magnitude, extent or duration of environmental impacts associated with the proposal.

¹ An assessment conducted using the NT EPA assessment process that has been accredited by the Australian Government, making it possible to conduct a single assessment and avoid duplication.



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 Layout: Figure 1-1. Regional context

Figure 1-1. Regional context

2 DETAILS OF VARIATION

There are three key changes to the proposal from what was referred to the NT EPA and accepted for standard assessment on the 26 September 2023. These are described in more detail below:

- Relocation of proposal infrastructure at the Rover 1 site through a redesign
- Removal of the downstream processing facility from the proposal scope.
- Removal of the gas import pipeline from the proposal scope.

The proposed production remains consistent with the original proposal, as detailed in Table 2-1.

A summary of all proposal components is provided in Table 2-2.

Table 2-1. Rover 1 production summary

Commodity	Unit	Annual average	Life of proposal	% value distribution
Total ore mined	t ore	500,000	4,315,000	-
Copper (Cu)	t Cu	6,900	58,600	42
Gold (Au)	oz Au	28,700	252,300	33
Cobalt (Co)	t Co	300	2,600	13
Magnetite	t Fe ₃ O ₄	75,300	652,000	12

Relocation of proposal infrastructure

A preliminary site layout was presented as part of the referral. Terrestrial ecology surveys undertaken to inform the referral identified Greater Bilby activity in proximity to the main access road. Additionally, the original location of the run-of-mine (ROM) pad, process plant, waste rock dump (WRD) and decline box cut were within the foraging area for Greater Bilby individuals using the identified active burrows (that is, within 1 km of the identified active burrows). In response to this, Castile have relocated the proposal components further south and co-located infrastructure where possible to reduce the area across which infrastructure and components are spread.

While the proposal has been redesigned to avoid areas of known Greater Bilby activity, it is acknowledged that the Greater Bilby is a mobile species that likely moves around the landscape. That is, just because the proposal has been relocated in response to Greater Bilby activity identified in 2022, future surveys may identify the species in other locations. Given the entire area is considered suitable habitat for the Greater Bilby, the proposal is seeking approval within a 'development envelope' that is presented in this report, to allow for flexibility in design as further surveys are undertaken as part of the EIS process.

The original site layout, new development envelope and indicative locations of proposal infrastructure within the new development envelope are shown on Figure 2-1. At this stage, the access road has not changed from the original proposal in an attempt to reduce overall land clearing and disturbance. The approach to avoidance and mitigation of impacts to Greater Bilby using burrows in proximity to the access road will be determined in consultation with relevant government authorities and detailed in the EIS.

Removal of the downstream processing facility

The original proposal included an on-site downstream processing facility to process each copper, gold and cobalt. Castile is removing this facility from the scope at the Rover 1 site and proposing to relocate it to the Middle Arm Peninsula. There are several reasons for this relocation, including the technical feasibility of constructing and operating this plant in such a remote location, the workforce benefits locating the plant closer

to Darwin and Palmerston, and the opportunity to process materials from other producers by having the plant in proximity to East Arm Port and rail facility.

The relocation of the processing facility reduces the power requirement on-site, reduces water requirements, reduces the on-site staff requirement and removes the on-site requirement for a limestone storage, grinding and preparation circuit and a vacuum pressure swing absorption oxygen plant.

The downstream processing facility at Middle Arm Peninsula is now a separate project and the requirement for assessment under the EP Act will be considered separately to the current proposal. Ideally, bulk sulphide material from Rover 1 will be transported to Castile's Middle Arm Peninsula downstream processing facility for processing and export; however, should the processing facility not progress, Castile can directly export the bulk sulphide product without domestic processing. Conversely, with the option to process materials from other producers, the downstream processing facility does not rely on Rover 1 to be feasible. The magnetite contained within the ore will continue to be processed onsite at Rover 1. This will be concentrated to a high-grade product available for sale domestically or internationally as either a fluid density modifier or for 'green steel'. Gravity gold will still be separated from the ore on site. The final process for this concentrate is still being considered. It is likely that the concentrate will be mixed with the sulphide concentrate and extracted at the Middle Arm facility.

Removal of the gas import pipeline

The original proposal included provision for a potential new gas pipeline corridor, to import gas from the existing Amadeus Gas Pipeline located approximately 40 km east of the Rover 1 site as a fuel source for power generation. The removal of the downstream processing facility from the Rover 1 site reduces the power demand. With reduction in power demand, a decision was made to remove the gas pipeline from the scope. Power will be generated via diesel or preferably, still via gas, but gas will be delivered in pressurised vessels and stored onsite rather than via a pipeline.

This change reduces the clearing footprint of the proposal by approximately 120 hectares (ha)².

² The original gas pipeline was proposed to be constructed along an approximately 40 km long and 30 metre wide easement.

Table 2-2. Proposal overview

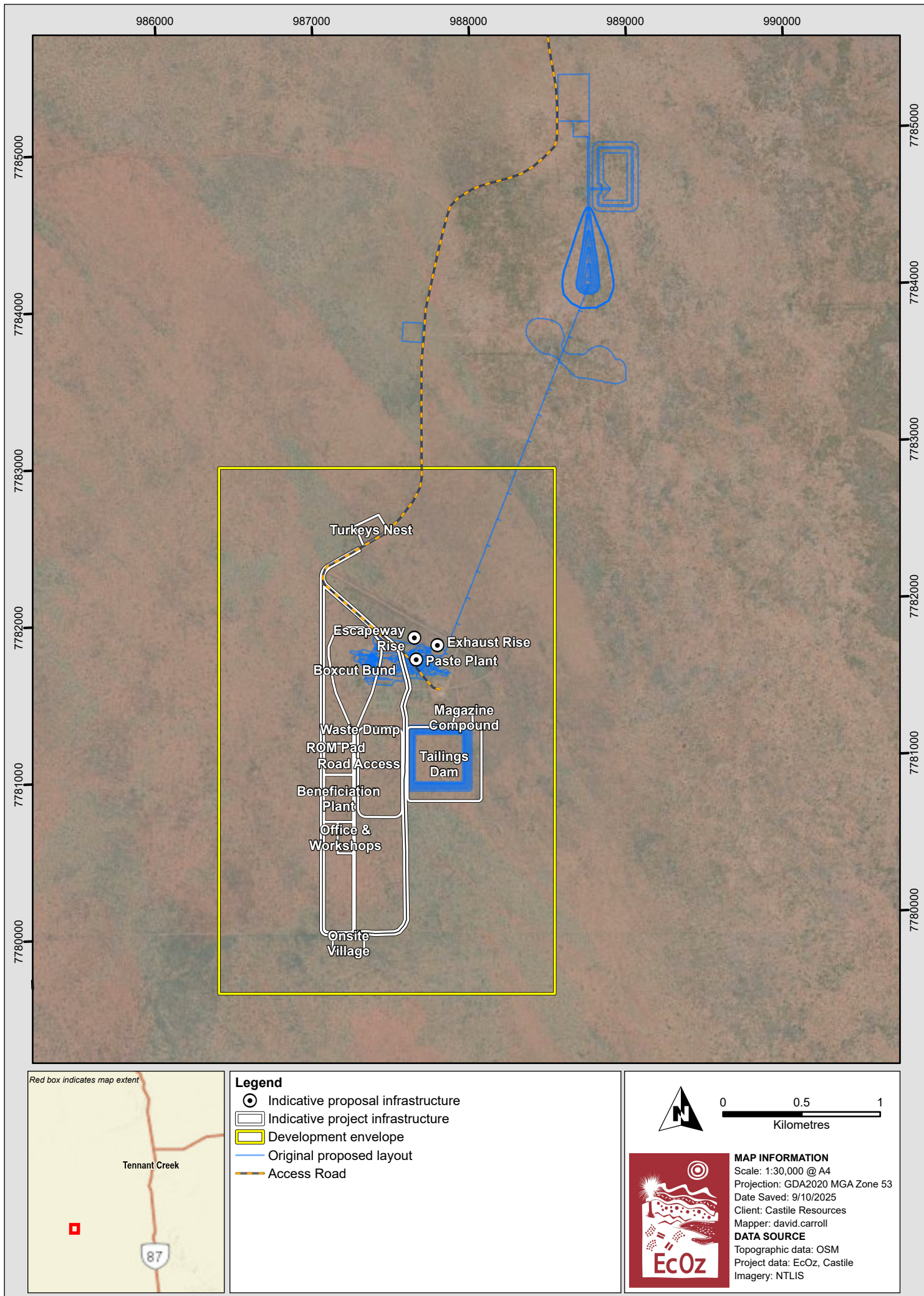
Component	Details	Change from referral
Infrastructure		
Haul roads and access	Upgrades to approximately 70 km of existing roads are anticipated to be required. Mined materials in the form of a bulk sulphide concentrate and high-grade magnetite concentrate will be containerised and transported via existing roads to the Tennant Creek rail siding via a short section of the Stuart Highway and transported to Darwin for further processing. Materials arriving to the site will be delivered by train to Tennant Creek, where available, then transported by road to the proposal area from the Tennant Creek Rail Siding. The exception to this is explosives, which will be delivered directly, via road, from Mount Isa.	No significant change from original submission.
Decline box cut	The backs and walls of the decline, within the Wiso basin, will be sealed to reduce groundwater inflows. The box cut will have an anticipated footprint of 15 ha within the bunded area. A bund (designed according to WA Guideline Document Number ZMA048HA – Safety Bund Walls Around Abandoned Open Pit Mines) will be constructed from excavated boxcut material regardless of backfill status of the boxcut. Castile is considering an option to backfill the box cut with excavated material stored at the WRD. Currently no refrigeration of the air for supply underground is considered. A separate escapeway network from the surface will be constructed. Drill and blast, and mechanical excavation methods will be used depending upon the ground conditions. Castile intends to develop the initial part of the decline (through the Wiso sediments) using a tunnel boring machine. Emulsion explosives will be used for both development and stoping practices. A stope level interval of 25 m is proposed. Ore will be trucked to the surface for processing. Castile is considering cover-grouting prior to the excavation of the decline along with the design and operation of dewatering bores. All attempts will be made to reduce the water inflows to the underground mine and control water flows.	No significant change from original submission
Waste rock dump	A single WRD is proposed with an anticipated footprint of approximately 16 ha. Initially, waste rock removed from the box cut will be transported to the surface for disposal at the WRD. It is anticipated that this will largely comprise non-acid forming (NAF) overburden material. As space becomes available underground, waste rock will remain underground and will be backfilled to stope voids. Ore will be stored at the ROM pad for processing. Segregation and management of waste rock is required since oxidation during surface storage has the potential to lead to acid mine drainage (AMD), neutral mine drainage (NMD) or saline drainage. Waste material will be segregated based on the total sulphur and net acid production potential values, for which preliminary criteria have been developed.	No significant change from original submission

Component	Details	Change from referral
Tailings dam	A single lined tailings storage facility (TSF) is proposed, with an anticipated footprint of up to approximately 22 ha. Castile is currently investigating options for dry stacking of tails at the TSF. In the dry stack method, the water content of the tails is reduced, and the solid material transported to the TSF where it can be compacted and reclaimed with native vegetation. Tailings will be consumed and stored underground within paste fill. A paste sample will be tested as part of the Waste Rock Characterisation testing.	No significant change from original submission
Magazine compound	The explosives magazine will be located to the north of the tailings dam. An option to relocate or for an additional underground explosives magazine will be considered once the workings are established.	No significant change from original submission
ROM Pad	The ROM pad will be adjacent to the decline box cut and WRD with an anticipated footprint of 4 ha.	No significant change from original submission
Beneficiation plant	A beneficiation plant will be provided on-site for preliminary processing of raw ore materials. Once processed in the beneficiation plant, materials will be transported to Darwin for further processing. Only crushing, grinding, gravity gold extraction, flotation, magnetic separation and filtration of products will occur at Rover 1. Two products will be produced for transportation – a bulk sulphide product and high-grade magnetite product, with the remaining material reporting to the tailings dam.	No significant change from original submission
Mine site water management infrastructure	A series of ponds will be required to manage raw and mine waters. The sizing of water management infrastructure and length of pipelines required is currently unknown and will be confirmed following collection of baseline data and development of a site water balance. This will be presented in the EIS.	No significant change from original submission
Paste plant	Tailing streams will be recombined and either thickened for use as underground paste fill or deposited to the TSF. Tailings will be neutralised prior to placement to minimise the risk of AMD. Cement will be added to the tailings at the paste plant prior to deposition underground. A laboratory testwork program is required to determine optimum cement dose across a range of ore types. The testwork program will inform the paste plant design. Given this uncertainty, water and electricity demands and paste plant waste streams are not considered further in this referral but will be considered in the EIS if it is confirmed this method will be used.	No significant change from original submission
Office, workshops and accommodation	An onsite office, workshop and warehouse will be constructed on-site. Additionally, onsite accommodation will be provided for the fly-in fly-out (FIFO) workforce. These buildings will cover approximately 4 ha in total.	No significant change from original submission
Power generation	The preferred option to power the proposal is natural gas, taken from the existing Amadeus Gas Pipeline located approximately 40 km east of the proposal area. Gas will be transported to site via pressurised vessels and stored onsite. With the transfer of downstream refining from Rover 1 to the Middle Arm Peninsula, Castile has revised its initial assessment and determined that Rover 1 has a	With reduction in power demand, decision made to remove need for gas pipeline.

Component	Details	Change from referral
	relatively low power demand and that a power station of approximately 10 megawatts will be sufficient to power the operation. A diesel power supply may be needed as a backup system (diesel generator) or to start the system and provide a spinning reserve for a gas system; however, diesel will not be used unless necessary. There will be at least two electric underground pump stations for dewatering; however, the final pump design has not been determined due to uncertainties in the expected inflow rates. Solar is the preferred option for powering surface pumps and other auxiliary surface infrastructure to manage water and tailings. The mining fleet will preferably be powered by battery technology.	Power will be generated via diesel or preferably, still via gas, but gas delivered in pressurised vessels.
Sewage and solid waste streams	Non-hazardous solid waste will be disposed of to an onsite landfill. This will be located within the proposal area and designed in accordance with the Guidelines for the Siting, Design and Management of Solid Waste Disposal Sites in the Northern Territory. Castile will install and operate a septic system. As a minimum, primary treatment via a septic system and discharge to ground (land application) is proposed. Consideration will be given to requirement for a secondary treatment system. Advice will be sought from a qualified soil/hydraulic consultant about the most suitable method of on-site wastewater management. Infrastructure and operation will be consistent with NTG Code of Practice for Wastewater Management and relevant Australian Standards.	No significant change from original submission
Hazardous materials management	All hazardous materials will be stored, handled and disposed of as per relevant Australian Standards and guidelines. It is anticipated that most hazardous materials will be required for processing. The current process plant design includes a variety of reagent preparation and distribution stations which are required as inputs to the process. These include: • flocculent preparation and dosing plant for all the solid liquid separation duties • cyanide (sodium cyanide) storage, preparation and distribution • caustic (sodium hydroxide) storage, preparation and distribution • process reagents such as hydrochloric acid, sulphuric acid and flotation chemicals. • LPG, specifically within the gold room • key consumables include crusher liners, water and semi-autogenous grinding mill liners and balls. In addition, maintenance activities, water (potable) and wastewater treatment will require the use of chemicals and materials, some of which may be classified as hazardous. This will likely include greases, oils and lubricants, oxygen and acetylene and cleaning chemicals. Fuel, most significantly diesel, will be stored and used on-site. Up to 60,000 litres of diesel may be stored (consistent with existing Mining Authorisation A0417-04).	Limestone and oxygen removed from site. To be moved with the downstream processing plant to the Middle Arm Peninsula. A small gold gravity processing plant is proposed on site. This method requires no chemicals and is particularly effective for ores containing coarse gold particles.
Water demand	The primary source of water for the proposal will be groundwater intercepted by, and dewatered from, the underground workings.	No significant change from original submission.

Component	Details	Change from referral
	The total estimated daily water demand for the mine is 4,382 cubic metres per day. To meet this deficit and provide sufficient water for year-round processing, a bore field will be constructed, and groundwater pumped to the raw water dam for use across the mine site. A containerised reverse osmosis plant will be used to treat raw water to produce potable water. The reverse osmosis plant will filter the salts from the water providing fresh water which can then be circulated where needed. A detailed water balance will be developed as baseline data become available, to better understand any quantities of water required to be extracted and sizing of infrastructure. Hydrogeological assessments are being undertaken in accordance with the EIS TOR, the results of which will inform proposal design and be presented in the EIS.	
Rehabilitation and closure	Two closure options are currently under consideration for the box cut: • backfilling the void following installation of the Armco style tunnel, and creation of a stable, final landform engineered to shed water and minimise infiltration, or • allowing the box cut to flood with groundwater to create a pit lake post mining. Upon rehabilitation and a decision to close the decline, salvageable mine infrastructure would be removed, and the dewatering pumps turned off which will allow the workings and decline to flood. Groundwater inflows will fill the voids until groundwater levels stabilise. A groundwater model is being developed by Castile for the operations and closure phases of the proposal, which will be used to predict the timeframe for recovery of groundwater levels post closure. If the box cut is not backfilled, it will be made safe and stable, and a safety bund constructed around the perimeter. As above, the timeframe for recovery of groundwater levels post-closure will be modelled. A pit lake level and water balance assessment will be undertaken to determine the risk of overflow or flow through from the pit lake. The WRD and TSF landforms will be left in-situ. The top of the dump and the berm will be contoured to direct water into the dump to reduce erosion and pollution of the surrounding vegetation with the runoff. Likewise, the TSF will be designed such that a simple cap will be placed post completion of processing. The landforms will be made safe, stable and non-polluting, and will be revegetated with native species from the area. Post closure, it is anticipated the land will be returned to pre-mining land use, being traditional uses and pastoral, noting that there will be some localised restrictions on land use around for example, the WRD/TSF landforms. The preferred post-closure land uses and objectives will be determined in consultation with stakeholders and landowners as part of the mine closure planning	No significant change from original submission.
Indicative schedule		
Financial close	Target date commencement mid-2027.	No significant change from original submission.

Component	Details	Change from referral
Preliminary works	Target date commencement mid-2027.	No significant change from original submission.
Construction	Target date commencement mid-2027 with an expected construction phase of 6 months.	No significant change from original submission.
Operation	Target date commencement early-2028 with an operational life of the mine of 10 years.	No significant change from original submission.
Rehabilitation and closure	Target date commencement 2038 to be complete within 5 years after operations cease. Ongoing rehabilitation activities to be conducted throughout the life of the proposal as required in line with a mine closure plan being prepared as part of the EIS.	No significant change from original submission.
Workforce		
Construction	100 (total employment).	No significant change from original submission.
Operation	122 (total employment).	No significant change from original submission.
Rehabilitation and closure	50	No significant change from original submission.



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 Layout: Figure 2-1. Original site layout compared to new proposed development envelope

Figure 2-1. Original site layout compared to new proposed development envelope

3 STAKEHOLDER ENGAGEMENT

Castile is undertaking a comprehensive and ongoing program of stakeholder engagement. Castile has engaged with the following stakeholders since submission of the referral:

- NT EPA - meetings have been held regularly since the TOR were approved in 2024. Discussions have centred around the location of the processing plant and various options considered. These discussions also included location of the beneficiation plant at the Rover 1 Project.
- NT Government - Castile was granted Major Project Status in April 2024. Part of these discussions centred around the removal of the backend refining component of the Rover 1 Project and relocation of this infrastructure to the Middle Arm Peninsula.
- Central Land Council - Castile is in regular contact with the Central Land Council regarding the Rover 1 Project. Presentations were held in Tennant Creek in July 2023 and onsite in 2024 and 2025 regarding the progress of the project.
- NT Government Department of Logistics and Infrastructure – the Department was consulted regarding planned usage of infrastructure.

To support this notice of variation, Castile undertook desktop research and consulted with key agencies and stakeholders to inform them of the proposed variation and seek their advice in relation to any significant issues or aspects to be considered and addressed during the EIS process.

Identified stakeholders for the broader proposal include:

- Local community, services and businesses.
- Aboriginal trusts, Land Councils and Authorities:
 - Karlantijpa South Aboriginal Land Trust
 - Central Land Council (CLC)
 - Aboriginal Areas Protection Authority (AAPA).
- Government:
 - Northern Territory Environment Protection Authority
 - Northern Territory Department of Logistics and Infrastructure
 - Northern Territory Department of Mines and Energy
 - Northern Territory Department of Lands, Planning and Environment
 - Australian Government Department of Climate Change, Energy, the Environment and Water.
- Private entities and corporations:
 - Tennant Creek Station (NT Parcel 494 - Perpetual pastoral lease)
 - APA Group (owner and operator of the Amadeus Gas Pipeline)
 - Aurizon Holdings Limited (owner and operator of the railway)
 - Port Darwin
 - Airport Development Corporation Pty Ltd
 - Capiteq Pty Ltd trading as Air North.

Separately, Castile is undertaking a strategic and community consultation program to support the EIS and the Social Impact Assessment (SIA). The EIS engagement strategy commenced in July 2023 and will continue throughout the EIS process.

4 ASSESSMENT OF POTENTIALLY SIGNIFICANT IMPACTS

The NT EPA, in its Statement of Reasons³ issued for the original proposal, considered that the proposal has the potential to significantly impact environmental values associated with eight environmental factors – see Figure 4-1. The change to the proposal scope (removal of the downstream processing plant and gas import pipeline) and relocation of proposal infrastructure has been subject to a screening level assessment by EcOz. The assessment indicates that the variation is not likely to affect any additional factors, and impacts associated with the import gas pipeline and downstream processing plant (largely from land clearing and storage of some hazardous materials) are no longer a consideration for the proposal.

Environmental values relevant to the development envelope are presented in Section 4.1, and potential impacts and avoidance and mitigation are presented in Section 4.2.

LAND	• Terrestrial environmental quality - There is potential for significant impacts on soil quality from: loss of hydrocarbons or other chemicals (such as cyanide); mine dewatering; and handling and storage of mine waste including potentially acid forming, waste rock and tailings. The magnitude and extent of these impacts are uncertain. • Terrestrial ecosystems - There is insufficient information to assess the significance of impacts from vegetation clearing, mining and dewatering operations on sensitive or significant vegetation and threatened species, particularly the Greater Bilby and Grey Falcon.
WATER	• Hydrological processes - There is insufficient information to assess the significance of impacts from groundwater drawdown on environmental values including terrestrial ecosystems and other water users. • Inland water environmental quality - There is potential for significant impacts on inland water quality resulting from changes in groundwater quality due to acid, neutral or saline discharges from mining infrastructure (the tailings storage facility, waste rock dump and stockpiles), hydrocarbon and other chemical spill, irrigation of treated sewage onsite, and dewatering operations. The magnitude and extent of these impacts are uncertain.
AIR	• Air quality - The proposal has the potential to generate air pollutants (such as nitrogen oxides, sulfur dioxide, particulate matter and trace gases) from onsite power generation that may potentially impact local sensitive receptors. Insufficient information is available to determine the significance of impacts on air quality. • Atmospheric processes - There is insufficient information to assess the significance of impacts from the proposal on atmospheric processes, primarily due to the uncertainty regarding the source and supply of power to the mine site during operations.
PEOPLE	• Community and economy - There is uncertainty around the potential for significant benefits for the regional community and economy, and potentially significant impacts particularly from groundwater drawdown. • Culture and heritage - There is potential for significant impacts to known and unknown Aboriginal sacred sites, heritage sites and objects from the proposal. The magnitude and extent of these impacts are unknown.

Figure 4-1. NT EPA factors and objectives identified in the NT EPA Statement of Reasons

³ <https://ntepa.nt.gov.au/resources/documents/eia/roper-one-project/nod-sor-rover-1-project-240109.pdf>

4.1 Environmental values and sensitive receptors

This section focuses on the environmental values and sensitive receptors relevant to the new development envelope, directly south of the original proposal footprint – shown on Figure 2-1. The other proposal components (namely the access track) are consistent with the original proposal and therefore the assessment in the original referral still applies.

4.1.1 Terrestrial environmental quality

The NT EPA's objective for terrestrial environmental quality is to:

Protect the quality and integrity of land and soils so that environmental values are supported and maintained.

The land and soils present in the new development envelope are briefly summarised below from available land system data (DLPE 2025) and observations during a 2022 ecology field survey by EcOz (EcOz 2022).

The development envelope occurs within the Singleton land system, which comprises desert sandplains - an extensive land system in the Tanami region. Landform is gently undulating spinifex sandplain and soils comprise red sands and red clayey sands. There are no mapped land units in the development envelope.

In general, the development envelope consists of largely undisturbed flat to gently undulating surfaces with slopes of 1% or less (EcOz 2022). The potential for erodibility is therefore considered low.

The development envelope is largely undisturbed other than a small (approximately 15 ha) exploration camp in the north of the development envelope that has been used by Castile and its predecessor Metals X since the early 2000's.

There is no change to the characteristics of the waste rock to be stored on site. Waste, ore and tailings geochemical characterisation is being undertaken in accordance with the existing TOR and will be detailed in the EIS. Further assessment of land types will be undertaken during field work that is being undertaken as part of the EIS.

4.1.2 Terrestrial ecosystems

The NT EPA's objective for terrestrial ecosystems is to:

Protect terrestrial habitats to maintain environmental values including biodiversity, ecological integrity and ecological functioning.

The terrestrial ecosystems values present in the new development envelope are briefly summarised below from available land system data (DLPE 2025) and observations during a 2022 ecology field survey by EcOz (EcOz 2022). Further survey work is ongoing in accordance with the TOR and a detailed description based on field surveys will be available in the EIS.

The development envelope is expected to occur within one broad land type - a flat to gently sloping spinifex sandplain with *Acacia* shrubs (variable structure; mainly *Acacia lysiphloia*) over open-sparse low trees (*Acacia sericophylla* +/- *Hakea macrocarpa*) +/- sparse-scattered emergent trees (*Corymbia opaca*, *C. aparrerinja*) similar to the original proposal footprint (based on the proximity, the consistency in land system and aerial imagery).

There are no identified significant vegetation types (for example, riparian vegetation, sandsheet heath and vegetation containing large trees with hollows suitable for fauna as defined by the *NT Land Clearing Guidelines*) within the development area, based on previous surveys (EcOz 2022). The ongoing ecology surveys include scope to assess the presence of sensitive and/or significant vegetation and groundwater dependent ecosystems in the surrounding area.

The development envelope is likely to contain habitat for threatened fauna. While the EcOz 2022 survey focused largely to the north of the development envelope (where the original proposal infrastructure was to be

situated), the Greater Bilby⁴ (*Macrotis lagotis*) targeted survey did include survey tracks over the development envelope. No signs of the Greater Bilby were identified in the development envelope during the 2022 survey, hence the relocation of infrastructure from the north, where active Greater Bilby burrows were identified. Regardless, given their confirmed presence nearby and the development envelope falling within the Redsan land system, the entire area is considered likely Greater Bilby habitat. Targeted surveys are ongoing in accordance with the TOR, the results of which will inform ongoing proposal design and be detailed in the EIS.

The ongoing ecology surveys also include assessment of Grey Falcon⁵ (*Falco hypoleucos*) and Painted Honeyeater⁶ (*Grantiella picta*) habitat in accordance with the TOR.

4.1.3 Hydrological processes

The NT EPA's objective for hydrological processes is to:

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.

The surface water and groundwater values present in the new development envelope are briefly summarised below from available hydrology data (DLPE 2025) and the Proponent Initiated EIS Referral – Rover 1 (Castile 2023).

The development envelope is within the Tennant Creek Water Control District but is not within any declared Water Allocation Plan (WAP), Water Plan Management Zone or Water Plan Protection Area. The Western Davenport WAP boundary is approximately 38 km south.

There are no permanent surface water features within or close to the development envelope – the closest surface water feature is Harrison River, approximately 12 km west (DLPE 2025). Seasonal rains may yield very intermittent small streams and pools as runoff from low lying hills in the region. These streams and pools generally only last hours, but in extreme rains may last days to weeks. Paleochannels do exist in the wider area but are not closely connected to the surface hydrology of the development envelope. A flood risk assessment is being undertaken to accurately determine the risk of flooding to and from proposal infrastructure. This will be presented in the EIS.

Groundwater described in the original referral (Castile 2023) is relevant to the new development envelope due to the proximity of the two areas. Groundwater is expected to flow in a north-easterly direction. Groundwater investigations and modelling are being undertaken in accordance with the TOR to characterise the underlying aquifer, including connectivity between surface water and groundwater expression, the results of which will be presented in the EIS.

There are several groundwater bores directly north of the development envelope surrounding the historic camp and airstrip associated with exploration activities (DLPE 2025). There are no other bores or groundwater users within proximity to the development envelope. The nearest production bores are the Tennant Creek West borefield - located over 20 km northeast - and for the Kunayungku Outstation (RN013706) approximately 30 km northeast.

4.1.4 Inland water environmental quality

The NT EPA's objective for inland water environmental quality is to:

Protect the quality of groundwater and surface water so that environmental values including ecological health, land uses and the welfare and amenity of people are maintained.

⁴ Vulnerable under both the NT *Territory Parks and Wildlife Conservation Act 1976* (TPWC Act) and the EPBC Act.

⁵ Vulnerable under both the NT TPWC Act and the EPBC Act.

⁶ Vulnerable under both the NT TPWC Act and the EPBC Act.

There is no permanent surface water within the development envelope. However, given the largely undisturbed nature of the surrounding environment, surface water quality is assumed to be representative of the surrounding area when it does flow.

Groundwater quality described in the original referral (Castile 2023) is relevant to the new development envelope due to the proximity of the two areas.

Groundwater investigations are being undertaken, and 3-dimensional solute transport model is being prepared in accordance with the TOR to provide detail regarding current and predicted surface and groundwater quality information. This will be presented in the EIS.

4.1.5 Air quality

The NT EPA's objective for air quality is to:

Protect air quality and minimise emissions and their impact so that environmental values are maintained.

The air quality in the development envelope is expected to be generally good, based on air quality data from the nearby Tennant Creek (IQ Air 2025). Given the undeveloped nature of the surrounding area, the main air pollutant of concern is expected to be PM_{2.5}, largely driven by bushfire smoke, which is common and characteristic of the NT more broadly. There is likely to be a seasonal difference, with air quality being worse between May and October when bushfires are more frequent and intense.

The nearest sensitive receptor is the Kunayungku Outstation approximately 30 km northeast of the development envelope.

4.1.6 Atmospheric processes

The NT EPA's objective for atmospheric processes is to:

Minimise greenhouse gas emissions so as to contribute to the NT Government's goal of achieving net zero greenhouse gas emissions by 2050.

The NT emitted approximately 16.7 million tonnes of carbon dioxide equivalents (CO₂-e) in 2021–22, accounting for about 3% of Australia's total emissions but with one of the highest per capita rates nationally (DCCEEW 2023). Key emission sources include the energy sector, particularly from electricity generation and industrial gas infrastructure, fugitive emissions from fossil fuel extraction, land use and land-use change, especially from savanna burning and agriculture, including livestock and land clearing (CER 2023). Emissions have increased by nearly 49% since 2005, largely driven by growth in the gas industry (DCCEEW 2023). The NT has committed to net-zero emissions by 2050 (NT Government 2022).

4.1.7 Community and economy

The NT EPA's objective for community and economy is to:

Enhance communities and the economy for the welfare, amenity and benefit of current and future generations of Territorians.

Given the proximity of the development envelope to the original proposal footprint, the community and economy values described in the original referral are considered relevant. The information for this section was largely sourced from the Rover 1 Pre-Feasibility Study (Castile 2022) as documented in the original referral.

The proposal is remote, approximately 70 km from Tennant Creek. There are four known outstations in the region, the closest of which is approximately 30 km north of the development envelope.

All materials required to successfully deliver the proposal will go through Tennant Creek. The population of Tennant Creek as of the 2021 census is 3,080 people, of which 1,707 are Indigenous, and a median age of 33 years (ABS 2021). The 2021 unemployment rate of 8.7% is higher than the NT average of 5.6%.

The NT Government has identified Tennant Creek as a mining, minerals and gas services and supply hub.

Castile is undertaking a SIA as part of the EIS. This will ensure that cultural, social and economic context is factored appropriately into ongoing proposal planning and design.

4.1.8 Culture and heritage

The NT EPA's objective for culture and heritage is to:

Protect culture and heritage.

The development envelope is on Aboriginal land. The land has been, and will continue to be, used by the local Aboriginal owners for traditional uses and access. Ongoing access and land use arrangements are subject to ongoing consultation.

Records obtained by Castile under regulation 7 of the *Northern Territory Aboriginal Sacred Sites Regulations 2004*, identified no registered or recorded sacred sites, or restricted work areas on exploration licence in retention (ELR) 29957 within which the development envelope is located. An application for an Authority Certificate will be made to provide a process for identifying any previously unrecorded and unregistered sacred sites through consultation with Traditional Owners and site custodians.

The last archaeological survey undertaken for the proposal was in 2012 within exploration lease (EL) 24541, which included a desktop assessment and predictive model of parts of the original proposal footprint. While the assessment did not identify any areas of high potential for archaeology, or archaeological features through the pedestrian survey on EL24541, a survey of the current development envelope has not been undertaken. An archaeological assessment is being undertaken in accordance with the TOR and will be detailed in the EIS.

A search of the NT Heritage Register did not identify any recorded sites within, or in proximity to, the development envelope.

4.1.9 Matters of National Environmental Significance

One Matters of National Environment Significance (MNES) that is protected under part 3 of the EPBC Act is relevant to the proposal: listed threatened species and communities. There is no change in likelihood of threatened species occurrence between the original proposal area and the new development envelope.

As discussed in Section 4.1.2, the MNES of relevance are:

- Greater Bilby (*Macrotis lagotis*)
- Grey Falcon (*Falco hypoleucos*)
- Painted Honeyeater (*Grantiella picta*).

The TOR includes a requirement for a description of the extent and importance of relevant threatened flora and fauna species (including but not limited to the Greater Bilby, Painted Honeyeater and Grey Falcon) in local and regional settings (informed by updated targeted surveys). These surveys are underway across the development envelope and the results will be presented in the EIS.

The Commonwealth Department of Environment will be informed of the variation to the proposal.

4.2 Potential impacts and mitigation measures

Table 4-1 summarises the potential impacts and mitigation measures associated with the variation for each of the eight environmental factors under assessment.

Table 4-1. Summary of potential impacts and avoidance/mitigation measures for varied components

NT EPA factor	Presence/absence of environmental values (summarised from Section 4.1)	Potential impacts and benefits	Environmental protection and management
Terrestrial Environmental Quality	Within the Singleton land system, of undulating spinifex sandplain with no mapped land units. Generally slopes of 1% or less. Largely undisturbed other than a small exploration camp. Waste, ore and tailings undergoing geochemical characterisation.	• Direct disturbance of landforms and soils from land clearing and earthworks during construction. • Erosion and offsite movement of sediments. • Contamination of soils from accidental spills and leaks. • Contamination of soils from leaching of oxidised waste rock and/or tailings material.	• Installation of erosion and sediment controls in accordance with an Erosion and Sediment Control Plan (ESCP) prepared by a Certified Professional, in accordance with Best Practice International Erosion Control Association Guidelines. • Hazardous materials stored and handled in accordance with Australian Standards and regulatory requirements. • Topsoil and overburden will be managed to ensure it is suitable for mine rehabilitation. • Preparation and implementation of: ○ Waste Rock Management Plan. ○ Mine Closure Plan. • Tailings storage and waste rock management in accordance with relevant best practice guidance⁷.
Terrestrial Ecosystems	Expected to contain one broad land type – a flat to gently sloping spinifex sandplain with Acacia shrubs over open-sparse low trees and sparse-scattered emergent trees. There are no identified significant vegetation types; however, ongoing surveys include scope for identification of significant/sensitive vegetation in the surrounding area. The development envelope potentially contains habitat for threatened fauna – namely, Greater Bilby, Grey Falcon and Painted Honeyeater.	• Direct loss of vegetation and habitat from land clearing during construction. • Habitat degradation from dust, noise/vibration, vehicle movement and weeds/pest. • Direct mortality of threatened fauna due to collision with vehicles/plant and interaction with contaminated water in onsite water storage.	• Final siting of infrastructure to minimise biodiversity impacts, considering NT Land Clearing Guidelines, including design of borefield and groundwater management. • Surveys will be undertaken to verify the presence/absence of threatened species in the development footprint and assess potential for impacts to populations. • Mitigation measures and offsets for threatened species will be developed in consultation with NT and Commonwealth agencies if required, may include measures such as pre-clearance surveys, reduced vehicle speed limits and vegetation clearance limits. • Weed surveys and mapping prior to commencement of works, with weed hygiene

⁷ At a minimum, [ANCOLD guidance](#), [INAP guidance](#), the [ICMM Tailings Management: Good Practice Guide](#) and [Commonwealth Government guidance](#).

NT EPA factor	Presence/absence of environmental values (summarised from Section 4.1)	Potential impacts and benefits	Environmental protection and management
			measures, monitoring and follow-up control implemented during construction and operations. • Design of onsite buildings and waste storages to discourage pests and predators being attracted to the site. • Preparation and implementation of relevant management plans (including a Greater Bilby Management Plan) in consultation with relevant government authorities.
Hydrological Processes	There are no permanent surface water features within or close to the development envelope. Groundwater is expected to flow in a north-easterly direction. Groundwater investigations and modelling are being undertaken in accordance with the TOR to characterise the underlying aquifer, including connectivity between surface water and groundwater expression. Within the Tennant Creek Water Control. The nearest production bores is the Tennant Creek West borefield - located over 20 km northeast.	• Altered groundwater levels from dewatering and extraction from groundwater bores.	• The borefield design will take into account sensitive vegetation and other water users in the region. • Appropriate mitigation measures will be determined through ongoing groundwater investigations and modelling, which will be presented in the EIS. As part of this, groundwater reinjection is being investigated as a potential mitigation measure. If considered feasible, this will be presented in the EIS. • Groundwater extraction and dewatering will be undertaken in accordance with relevant approvals under the <i>Water Act 1992</i>.
Inland Water Environmental Quality	There is no permanent surface water within the development area. However, given the largely undisturbed nature of the surrounding environment, surface water quality is assumed to be representative of the surrounding area when it does flow. Groundwater investigations are being undertaken, and a 3-dimensional solute transport model is being prepared in	• Contamination of surface water from spills and leaks of hazardous materials. • Contamination of surface water from seepage of acid or neutral mine drainage. • Sedimentation of surface water from disturbed soils.	• Hazardous materials stored and handled in accordance with Australian Standards and regulatory requirements. • Preparation and implementation of: ○ Waste Rock Management Plan. ○ Mine Closure Plan. • Tailings storage and waste rock management in accordance with relevant best practice guidance⁸.

⁸ At a minimum, [ANCOLD guidance](#), [INAP guidance](#), the [ICMM Tailings Management: Good Practice Guide](#) and [Commonwealth Government guidance](#).

NT EPA factor	Presence/absence of environmental values (summarised from Section 4.1)	Potential impacts and benefits	Environmental protection and management
	accordance with the TOR to provide detail regarding current and predicted surface and groundwater quality information.	- Contamination of groundwater from spills and leaks of hazardous materials. - Contamination of groundwater from seepage of acid or neutral mine drainage.	- Preparation of a Water Management Plan that details how water will be managed and treated on site, accounting for potential flood events. - Installation of erosion and sediment controls in accordance with an ESCP.
Air Quality	The air quality in the development envelope is expected to be generally good, based on air quality data from the nearby Tennant Creek (IQ Air 2025). Given the undeveloped nature of the surrounding area, the main air pollutant of concern is expected to be PM2.5, largely driven by bushfire smoke. The nearest sensitive receptor is the Kunayungku Outstation approximately 30 km northeast.	- Emissions of particulate matter (total suspended particles and deposited dust) from disturbance of soils and vehicle movements. - Air emissions from onsite power station.	- Proposal has been sited away from sensitive receptors. The access road can be redesigned in proximity to Kunayungku Outstation if required to avoid amenity impacts. - Installation of erosion and sediment controls in accordance with an ESCP. - Dust suppression and reduced vehicle speed limits. - Power station to be designed to ensure emissions are compliant with the National Environment Protection (Ambient Air Quality) Measure.
Atmospheric Processes	The NT emitted approximately 16.7 million tonnes of CO₂-e in 2021–22, accounting for about 3% of Australia's total emissions but with one of the highest per capita rates nationally. Key emission sources include the energy sector, particularly from electricity generation and industrial gas infrastructure, fugitive emissions from fossil fuel extraction, land use and land-use change, especially from savanna burning and agriculture, including livestock and land clearing.	- GHG emissions from: - land clearing - power generation (gas or diesel) - use of vehicles, plant and machinery - rock blasting using explosives - airplane use for FIFO workforce.	A GHG emissions assessment is being undertaken to model the emissions profile for all scope 1, 2 and 3 emissions associated with the proposal. This assessment will identify appropriate abatement opportunities, describe the proposal in the context of the NT Government's goal of net zero by 2050 and determine obligations under the <i>National Greenhouse and Energy Reporting Act 2007</i> (if relevant).
Community and Economy	The proposal is remote, approximately 70 km from Tennant Creek. There are four known outstations in the region, the closest of which is approximately 30 km north of the development envelope.	A SIA is being prepared to detail potential impacts, including: increased traffic on the access road which runs through Tennant Creek Station	A Social Impact Management Plan is being prepared as part of the EIS that will provide a comprehensive approach for management of potential impacts.

NT EPA factor	Presence/absence of environmental values (summarised from Section 4.1)	Potential impacts and benefits	Environmental protection and management
	All materials required to successfully deliver the proposal will go through Tennant Creek.	• increased pressure on local emergency services • disturbance of the Kunayungku Outstation • creation of job opportunities.	
Culture and Heritage	The development envelope is on Aboriginal land. Ongoing access and land use arrangements are subject to ongoing consultation. There are no registered or recorded sacred sites, or restricted work areas on ELR29957 within which the development envelope is located. Previous archaeological surveys nearby to the development envelope did not identify any archaeology; however, an updated archaeological survey of the development envelope is being undertaken as part of the EIS. A search of the NT Heritage Register identified no recorded sites within, or close by, the development envelope.	• Direct disturbance of unknown archaeological features through land clearing. • Degradation of unregistered sacred sites.	• Castile will obtain an Authority Certificate from the Aboriginal Areas Protection Authority under the <i>Northern Territory Aboriginal Sacred Sites Act 1989</i>. All works will be undertaken in accordance with any conditions outlined in the certificate and all works will avoid direct impacts to sacred sites if identified. • If archaeology is identified through surveys and cannot be avoided, works will not proceed without approval under the <i>Heritage Act 2011</i>. • Ongoing consultation with AAPA, CLC and Karlantijpa South Aboriginal Land Trust to minimise the likelihood of impact to any sites or objects of cultural value. • Because the development envelope is on Aboriginal land, the proposal will not proceed without appropriate land access agreements in place, developed in consultation with CLC and Karlantijpa South Aboriginal Land Trust.

5 CONCLUSION

The variation to the components of the Castile Rover 1 Project is being referred to the NT EPA under section 51 of the EP Act, and the Commonwealth Environment Minister will also be notified by a variation request in accordance with section 156A the EPBC Act. The variation is not likely to affect any additional environmental factors or MNES and potential impacts and proposed avoidance and mitigation are consistent with that assessed in the original referral.

Technical studies and assessment of the varied proposal footprint are underway (the development envelope), and the EIS will incorporate assessment of environmental impacts associated with these components. The original EIS TOR are considered to adequately capture the potentially significant impacts that require consideration in the EIS, without further amendment.

6 REFERENCES

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