

PRIMARY GOLD LIMITED

TOMS GULLY UNDERGROUND PROJECT

TERMS OF REFERENCE CROSS REFERENCE TABLE

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Produced by: Preston Consulting Pty Ltd

Produced for: Primary Gold Limited

	Terms of Reference	Section of Draft EIS Addressed In
1	Introduction	
	The Toms Gully Mine is located within Old Mount Bundey Station, approximately 90 km south-west of Darwin, beside the Arnhem Highway. The original Toms Gully Gold Mine proposal underwent a formal environmental assessment process in 1988, prior to commencement of operations. Between 1988 and the present, the mine has undergone intermittent periods of open pit and underground mining, development / refurbishment, flooding / dewatering, exploratory drilling and 'Care and Maintenance', under a series of owners. The most recent mining was carried out by Crocodile Gold Australia Operations between January 2010 and September 2010, with continuing haulage of stockpiled ore to Union Reefs Mill for processing until January 2011. The Mine has been in Care and Maintenance since November 2010.	Project location described in Section 1.1. Project background and history - Section 1.2. Environmental approvals history described in Section 1.2.2.
	In 2013, Primary Gold Ltd (the Proponent) acquired the Toms Gully Project Area from Crocodile Gold Australia. A feasibility study completed for recommencement of gold production at Toms Gully indicated a maiden Probable Ore Reserve of 775,000 tonnes at 6.9 g/t for 175,000 ounces, or 5443 kg of gold.	Site ownership history described in Section 1.2.1.
	The Proponent proposes to recommence underground mining and ore processing at the Toms Gully Mine. To achieve this, the proposal includes: • construction of a new 2.6 GL process water dam • dewatering of the currently flooded pit and decline • upgrade of a tailings storage facility with two wall-lifts over two years • refurbishment and upgrade of the processing circuit to increase throughput capacity from 250 ktpa up to 350 ktpa • potential 3 m wall-raise to evaporation ponds. The Toms Gully Mine Project (the Project) proposes a five year operation, based upon exploration to date. However mineralisation has not been 'closed off', and potential may exist for a longer mine life. Project documentation to date has not identified potential for significant impacts on matters of National Environmental Significance. The Project documentation to date has not identified potential for significant impacts on matters of National Environmental Significance. The Project Acus. The Mining Management Plan - Toms Gully Project Area 2013-2014 (MMP) and associated documents were referred by the Department of Mines and Energy to the Northern Territory Environment Protection Authority (NT EPA) on 28 February 2014, for consideration under the NT Environmental Assessment Act (EA Act). On 23 April 2014, the NT EPA decided that the Project requires assessment under the EA Act at the level of an Environmental Impact Statement (EIS). The NT EPA decided that the Project requires assessment under the EA Act at the level of an Environmental Statement (EIS). The NT EPA decided that the Project requires assessment under the EA Act at the level of an Environmental Statement (EIS). The NT EPA decided that the Project requires assessment under the EA Act at the level of an Environmental Statement (EIS). The NT EPA decided that the Project requires assessment under the Exploration of Reasons for the decision. These included risks to: • ground and surface water quality and quantities • management of water cock and other material with potent	Project description is provided in Section 3.1 Changes to the Project description include: • no waste rock from existing dumps is used for construction material; • waste rock from the TGU Project is to be retained underground or at the bottom of the pit (i.e. no further placement of waste rock above surface); and • location of WSD moved away from fault lines and drill holes • water storage dam capacity reduced to 2.1GL • evaporation fans no longer part of dewatering strategy • TSF2 upgrade comprising of single lift • Evaporation pond wall raise no longer part of Project plan • Project includes closure of TSF1 & TSF2 Environmental assessment process, reasons and risks described in Section 1.2.2
2	Regulatory Context	
	 2.1 Approvals and Conditions The EIS should provide information on requirements for approval or conditions that apply, or that the Proponent reasonably believes are likely to apply to the Project, including but not limited to: approvals required by State, Territory or Commonwealth agencies or authorities 	Section 2.4 and 2.5

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• summary of current agreements between the Proponent and the Northern Territory Government, and/or the Australian Government, and/or other stakeholders, including Traditional Owners and/or land managers	Section 2.3
any additional approvals required	Section 2.6
description of the regulatory monitoring, enforcement and review procedures that apply, or are proposed to apply, to the Project.	Sections 2.5, 6.6, 7.7, 8.6, 9.6, 10.6, 11.6, and 12.7 Environmental Management Plan (EMP)
When identifying the individual approvals, certificates, permits etc. the Proponent should include details of the approvals, certificates, permits etc., including any conditions imposed. Consideration should be given, but not limited to, the following legislation: • Environment Protection and Biodiversity Conservation Act 1999 • Heritage Act • Mining Management Act • Northern Territory Aboriginal Sacred Sites Act • Public and Environmental Health Act & Regulations. • Territory Parks and Wildlife Conservation Act • Waste Management and Pollution Control Act • Water Act Identify National, State and/or Territory standards, codes of practice and guidelines relevant to the Project	Section 2.4, 4.6, 9.3, 16.1 At this stage of the Projects assessment, approvals and certificates sought to date limited to AAPA certificate (Northern Territory Aboriginal Sacred Sites Act 1989) and clearances under the Heritage Act 2011, Aboriginal and Torres Strait Islander Heritage Protection Act 1984, Native Title Act 1993
 2.2 Environmental History The EIS should include details of the environmental record of the Proponent, including: • details of any proceedings under a Commonwealth, State or Territory law for the protection of the environment or the conservation and sustainable use of natural resources against the Proponent, and details of the Proponent's environmental management systems and processes subsequently upgraded as a result of those proceedings 	Section 2.7.1
• obligations, non-compliances or incidents under the <i>Mining Management Act</i> , which includes the history in relation to environmental matters, compliance or non-compliance with the requirements of the Mining Management Plan and other relevant management plan	Section 2.7.2
 any international or national accreditations (e.g. ISO 14001 etc.), environmental awards or other recognition for environmental performance. 	Section 2.7.3
2.3 Ecologically Sustainable Development When considering the matters to be addressed in the EIS, the NT EPA are required under the Northern Territory Environment Protection Authority Act 2012 to: (a) Promote ecologically sustainable development (ESD); and (b) Protect the environment, having regard to the need to enable ESD. Accordingly, the assessment of the Project, its potential impacts (positive and negative) and the management measures used to enhance positive and reduce negative impacts will be taken in the context of ESD principles, consistent with the National Strategy for Ecologically Sustainable Development. Therefore, it is essential that the Proponent demonstrate how it complies with and contributes to the principles and objectives of ESD in the relevant section(s) of the EIS.	Section 17 – Table 57
Project description	
 3.1 Overview Provide general information and context for the Project including the following: title and brief summary of the Project 	Section 3.1
full name and postal address of the Proponent	Section 3.1
current status of the Project	Section 3.1
 background to the development of the Project, including outcomes of previous environmental impact assessment and overview of historic mining activities 	Section 1.2.2
explanation and outline of the objectives, benefits and justification for the Project	Section 3.2
	Section 3.1
the target commodity and extent of the mineral resource	Section 5.1
 the target commodity and extent of the mineral resource an overview of the Project schedule through all Project life stages 	Section 3.3

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• explanation of how the Project relates to any other proposals or actions, of which the Proponent should reasonably be aware, that have been or are being taken, or that have been approved in the region.	Section 3.12.2
3.2 Project Details	Section 1.1
3.2.1 Location and Infrastructure	
Describe the location of the Project in the region and its proximity to:	
major roads, rivers and landmark features	
regional community centres	Section 1.1 and Section 12.3
sites of cultural or social significance.	Section 12.3
Describe Project infrastructure requirements, including:	Section 3.4.1 and Section 10.4.2
 existing infrastructure to be utilised, and/or upgraded for use 	
proposed new infrastructure	Section 3.4.2 and Section 10.4.1
• ancillary infrastructure requirements, such as telecommunications, power supply and potable water supplies.	Section 3.4.2
Delineate the Project footprint using detailed maps and diagrams to show:	Figure 5
 location of the mineral resources to be mined/developed and/or explored 	
locations of existing and proposed infrastructure and mine components	Figure 2 & 3
• location /extent of any other works to be undertaken, structures to be built or other elements of the Project, such as rehabilitation / closure activities.	Figure 8, 9, 52
3.2.2 Mine Construction and Operation	
Describe proposed mine construction and operations, including, but not limited to:	
proposed mining methods	Section 3.5.1
equipment requirements	Section 3.5.2
energy (power, fuel) requirements	Section 3.5.3
 proposed staging of the Project, and ramping-up of production 	Section 3.5.4
sources and volumes of materials required to support construction of mine infrastructure, such as fill, clays and consumables.	Section 3.5.5 Geotechnical Assessment
Describe types / categories, quantities and characterisation of materials to be mined annually (e.g. ore, top soil, waste rock etc.). Detail proposed cut-off grades. Describe processing, storage and management methods for each category.	Section 3.5.6, Section 3.6, Section 7.3.2
3.2.3 Processing	
Provide relevant information with respect to the processing circuit, including but not limited to:	
 processing methods and major components of the processing operation 	Section 3.6.1, Figure 6 & 7
 processing circuit inputs, outputs and volumes of materials required 	Section 3.6.2
water requirements, treatments, sources and storages	Section 3.9 Section 3.8.2
transport of materials to / from the processing circuit.	Section 3.5.6 Section 3.6.2
3.2.4 Tailings Management	
Provide relevant information with respect to tailings management, including but not limited to:	
 methods for the disposal and management of tailings 	Section 3.6
discussion of planned or potential-for reprocessing of tailings	Section 3.8.4
anticipated quantities of tailings that would be produced and managed by the Project	Section 3.8
geochemical characterisation of the tailings, indicating potential to contaminate seepage / stormwater runoff	Section 7.3.2, 7.3.3, 6.3.5 Table 41, Figure 38, 29, 40
 analysis of potential complexing of tails, such as with cyanide, and of physicochemical mobility of contaminants under expected environmental conditions. 	Section 6.3.5

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3.2.5 Water Management	
Provide information on the quantity, quality, source (groundwater and/or surface water), storage, and infrastructure requirements for water use and management, including a water balance, for all phases of the Project, considering:	
• stormwater	Section 6.3, 6.5, Water Management Plan, Water Balance Report, Figure 35, 41
dust suppression	Section 3.9.4, Water Balance Report
drinking water	Section 3.4.2, Section 3.9.4, Water Balance Report
ablutions and sewage treatment	Section 3.1, 3.9.5, 3.10.1
process water	Section 3.1, 3.9, 3.9.2, 3.9.5, Figure 6, 7, Water Balance Report
process water	section 5.1, 5.7, 5.7.2, 5.7.5, Figure 6, 7, Water Butance Report
processing circuit	Section 3.6
any other uses.	Section 3.4.2, 3.9 Water Balance Report, Figure 41
The EIS should describe the details of proposed groundwater extraction and mine dewatering, including	Section 3.8.1, Section 3.9, Section 6.3.2, Section 6.3.3.2
treatment, storage, reuse and disposal options. Anticipated extraction rates, water quality, usage and volumes of water should be provided, where relevant.	Section 3.4.2, 3.9, 3.9,1, 3.9.3, 3.9.6.1, 4.4.4, 4.4.5,
3.2.6 Wastes and Hazardous Materials	
Provide relevant information with respect to other waste management, including but not limited to:	
 descriptions of predicted waste streams, both industrial and domestic, including solid and liquid wastes at/from the mine site, accommodation facilities and other relevant locations 	Section 3.10.1
 information on potentially hazardous materials to be used or produced and methods for storage, transport, handling, containment, disposal and emergency management of these materials, including fuel 	Section 3.10.2, 11.4.6
 legislation, guidelines, and standards applicable to any Project landfill, sewage treatment and waste disposal facility, and how such requirements will be fulfilled 	Section 3.10.1
 descriptions of proposed waste management strategies, including reduction, reuse, recycling, storage, transport and disposal of waste. 	Section 3.10.1, EMP
3.2.7 Workforce and Accommodation	
Provide details of the predicted workforce requirements during all phases of the Project, including:	
the number of people to be employed, skills base required, and likely sources (local, regional, overseas)	Section 3.11.1, Social and Economic Impact Assessment
 the number of people that may be employed to manage or undertake environmental duties on the site, including the specific qualifications and the level of experience with mining or other related activities 	Roles and responsibilities of environmental personnel provided in Project EMP. Details of qualifications and lev of experience unable to be provided at this stage.
accommodation arrangements proposed for mine workers	Section 3.11.2, 12.5.2 No accommodation proposed. Workers to be sourced locally.
any catering premises proposed at the mine.	12.5.2, No catering proposed. Workers to be sourced locally.
3.2.8 Transport	
Provide details of road use during all phases of the Project, including:	
type, size and number of vehicles required, hours of operation and peak times	Section 3.7, 12.5.3 Traffic Management Plan
estimated frequency of Project vehicle use on public infrastructure	Section 12.5.3, Traffic Management Plan
details of the method of truck loading and load constraint	Section 12.5.3 Traffic Management Plan
hazardous or dangerous material which may be transported	Section 3.10.2, Section 11.4.6, Traffic Management Plan
additional transport infrastructure works required, including site access and signage.	Section 3.7.3, 3.7.4, Section 10.4.1, 11.4.1, Traffic Management Plan
3.3 Decommissioning, Rehabilitation and Closure	
3.3.1 Rehabilitation and Closure Provide details of proposed rehabilitation and closure planning for the Project, including:	
an outline of final rehabilitation, revegetation and closure plans for all aspects of the Project on completion of mining on site	Section 13, Figure 52, MCP (MCP)
final topographic and drainage morphology, including design concepts and methodology used	Section 13 Figure 52, MCP
proposed staging and timing of rehabilitation and closure	Section 13 Table 52, MCP
 removal of plant, equipment, structures, hardstand and concrete footings, buildings, water storages, and methods proposed for stabilisation of affected areas 	Section 13.2.2, MCP

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 protocols for the safe and stable securing of the mine 	Section 13.3.7.1, MCP
rehabilitation techniques to be used	Section 13.3.7, MCP
 ancillary preparations for rehabilitation/closure, such as: establishment of an on-site nursery, local native species selection/collection/grow-out and revegetation trails 	Section 13.3.5.1, MCP
closure criteria and future land tenure and land-use arrangements.	Section 13.3.6, 13.3.9, MCP
3.3.2 Care and Maintenance	Section 3.14, 13.1, 13.3.1, MCP
The EIS should include details of a Care and Maintenance Plan based on the MCP. This Care and Maintenance Plan should include measures outlining how the Proponent will maintain its environmental obligations and commitments should the Project be temporarily closed.	
3.4 Alternatives	
The EIS should describe any feasible alternatives to carrying out the Project. The choice of the preferred option(s) should be clearly explained, including how it complies with the principles and objectives of ecologically sustainable development. Alternatives should include: • not proceeding with the Project	Section 3.8.1, 3.9.1, 3.15.1, 6.4.2, 6.4.3.1, 7.4.2, 8.4.1, 13.3.1.2, 13.3.5, 13.3.7.1
site selection for all Project components	
mining and processing methods management of clean dirty or contaminated water.	
 management of clean, dirty or contaminated water management of site water surpluses 	
 management of site water surpluses prevention and remediation of acid and/or metalliferous drainage, neutral mine drainage and/or saline drainage (AMD/NMD/SD) 	
management of wastes	
• rehabilitation methods	
methods of product treatment, storage, transport and export	
 energy sources for power generation, including renewable energy sources 	
designs and construction methods of infrastructure	
 consideration of alternative environmental management measures for key risks. 	
Discussion should include:	
 sufficient detail to make clear why a particular alternative is preferred to another 	
 adverse and beneficial effects (direct and indirect) of alternatives at national, Territory, regional and local levels 	
 the comparison of short (whilst operational), medium (post closure) and relevant long term advantages and disadvantages of the options. 	
Existing Environment	
The EIS should outline the environmental context of the Project area. Description should include:	
 climate and atmospheric characteristics relevant to the Project, such as temperatures, rainfall / evaporation, winds, extreme events 	Section 4.1.2
regional landscape characteristics / features	Section 4.2.1
 proximity / downstream connection to sites of ecological, social or cultural significance or sensitivity, surface / groundwater resources, conservation reserves. 	Section 4.5, Section 4.6
The EIS is required to describe baseline (i.e. current) environmental conditions, to the extent of potential environmental impacts from the Project in a worst case scenario.	Section 4
This section should identify and reference any relevant studies undertaken in the area which will assist in describing patterns and trends in the environment.	
4.1 Topography and Geology	0 V 400 F 44
The EIS should describe and map geology, topography, soils and significant landscape features of the project area and surrounding areas.	Section 4.2.2, Figure 14
Discuss geological factors relevant to Project construction, operation, closure and/or the stability of any final landforms or	Section 6.4.2, 7.4.2, 10.3.1. Geotechnical Assessment Report

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4.2 Water	
The EIS should describe pre-mining (if available) and existing water resource conditions, to provide baseline data suitable to serve as a benchmark for comparison with future monitoring data, and to detect Project influences on ground and surface waters. Details should be provided, including discussion and data, relating to:	
 surface and ground waters locally, regionally and seasonally, including extent, connectivity, catchments, flow-paths, and areas of 	
recharge and expression (include Toms Gully Mine water storages and mine-related surface / sub-surface flowpaths)	Section 4.3, Section 4.4, 6.3.2, Water Management Plan
seasonal water quality and flows in local and regional aquifers, surface waterways and mine water storages	Section 4.3.1, Section 4.4.2, Water Management Plan
hydrogeological features relevant to ground and surface water flows and potential pollution pathways from the Project	Section 6.3.3, 6.3.5
 hydrological features relevant to biodiversity, such as natural water bodies, swamps or waterholes within the in the Project area or potential environmental footprint of the Project 	Section 4.5.5, 6.3.2, Aquatic Ecology Report
 environmental values, uses and third party users of the surface waterways and groundwater aquifers potentially affected by the Project 	Section 4.3.4, 4.4.4, 4.4.5
 recreational fisheries downstream of the Project area, such as Hardies Billabong, Corroboree Billabong and the Mary River System. Describe and map downstream areas, waters and recreational fisheries downstream to the Project area, and analyse their importance to the NT 	Section 4.3.4
 identified changes to surface and groundwater systems (hydrology, quality and quantity) as a result of previous exploration, mining and/or mining-related activities. 	Section 6.3.1, 6.3.2, 6.3.3, 6.3.8, 6.7, 8.3.3, 11.4.4
4.3 Biodiversity	
The following information should be provided with regard to biodiversity in the Project area or potential environmental footprint of the Project (i.e. to the spatial extent of potential environmental impacts from the Project):	
 Describe fauna, flora, vegetation communities and aquatic ecosystems of the Project area and impact footprint. Description of aquatic fauna should, as a minimum include fish, frog and macroinvertebrate communities. 	Section 4.5, Biodiversity Report, Aquatic Ecology Report
 Surveys should be in accordance with the NT EPA Guidelines for Assessment of Impacts on Terrestrial Biodiversity and/or Australian Government Guidelines for the surveying of threatened species. Describe survey/program timing, locations and methodology, to demonstrate appropriate and statistically sufficient survey designs. 	Section 8.3.1. Biodiversity Management Plan.
• Identify and discuss potential for presence in and around the Project area and footprint of species listed under the <i>Territory Parks</i> and <i>Wildlife Conservation Act</i> (TPWC Act) and/or EPBC Act, and other un-listed species of conservation significance.	Biodiversity Management Plan, Section 8.3.2, 4.5.6
 Identify and map habitat within and adjacent to the Project area and footprint suitable for species of conservation significance potentially present, including consideration of habitat suitable for breeding, foraging, aggregation or roosting. 	Section 4.5.6, 8.3.2,
Describe and map:	
any areas that have already been subject to clearing activities or disturbance previously	Section 4.5, 4.5.4, Biodiversity Management Plan
areas of vegetation that are proposed to be cleared for the life-of-mine	Section 8.3.1 Biodiversity Management Plan
any significant or sensitive vegetation types	Section 4.5.4, Biodiversity Management Plan
• the presence, or likely occurrence, of introduced and invasive species (both flora and fauna) within the Project area and footprint, and regionally, including weed species declared under the NT Weeds Management Act.	Section 8.3.4, Biodiversity Management Plan
4.4 Indigenous and Cultural Heritage	
The EIS should outline the cultural and heritage significance of any sites or objects located on the Project area or that could be impacted by Project activities. The EIS should include the results of searches on the Northern Territory Government database and identify any sites or places protected or nominated for protection under the following legislations:	
Aboriginal and Torres Strait Island Heritage Protection Act 1984	Section 4.6.3
Environment Protection and Biodiversity Conservation Act 1999	Section 4.6.5, 8.3.2
Heritage Act	Section 2.4.9, 4.6.2
Northern Territory Aboriginal Sacred Sites Act.	Section 2.4.10, 4.6.6
Description is required of:	
	No sites of historic or cultural heritage significance recorded

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• surveys used to identify sites or objects of historic or cultural heritage significance, with outline of survey location and effort	No surveys undertaken, AAPA certificate, Section 4.6.6
 current status of any approvals, permits or clearances under the above legislation. 	Section 4.6
The EIS should outline consultations with Indigenous stakeholders and Traditional Owners for all areas potentially affected by the Project. Determination and details should be provided of any current Traditional Owner utilisation of Project areas, and spiritual/cultural significance of potentially affected areas.	Section 4.6.1
Risk Assessment	
5.1 Risk Assessment Approach	
The EIS should be based upon a comprehensive risk assessment process to be undertaken with specific emphasis on the identification, analysis and treatment of risks through a whole-of-Project risk assessment. Through this process, the EIS will:	Section 5
 identify and discuss the full range of risks presented by the Project, including those of special concern to the public 	
identify relevant impacts	
 quantify and rank risks so that the reasons for proposed management responses are clear 	
 identify levels of any uncertainty about estimates of risk and the effectiveness of risk controls in mitigating risk 	
 explicitly identify those members of the community expected to accept residual risks and their consequences, to provide a better understanding of equity issues 	
 demonstrate that the Project represents best practicable technology. 	
A number of key risks for the current Proposal have been identified through a preliminary assessment of the Project ^{Error!} Bookmark not defined, and in reports from previous operations in Toms Gully Project Area. Previously identified risks relevant to the current Project and protection of the existing environment should be included and addressed by the Proponent in the current risk assessment and management process. It is expected that further risks will be identified through the comprehensive risk assessment process required for the EIS. Risks should be addressed and appropriate management initiatives developed to demonstrate that:	
 the Proponent is fully aware of risks associated with all predictable aspects of the Project 	
 the prevention and mitigation of risks are properly addressed in the design specifications 	
 the risks can and will be managed effectively during the construction, operation, decommissioning, closure and post-closure phase of the Project. 	
Information provided should permit the reader to understand the likelihood and potential severity of each risk presented by the Project, and any uncertainty around these risks, as well as any uncertainty about the effectiveness of controls. Levels of uncertainty that preclude robust quantification of risk should be clearly acknowledged.	
Risk rankings assigned should be fully justified. Where a risk score associated with the likelihood or consequence of an impact is reduced as a result of proposed mitigation measures, clear justification should be provided for the reduction in score. The adequacy and feasibility of mitigation measures should be demonstrated.	
Sufficient quantitative analysis should be provided to indicate whether risks are likely to be acceptable or tolerable. A comparison may be made with similar ventures in Australia and internationally. Assumptions used in the analyses should be explained.	
5.2 Information Requirements	
The NT EPA has prepared a series of Environmental Assessment Guidelines to assist in the preparation of EIS documents. Environmental Assessment Guidelines are developed and updated periodically, and should be referenced and referred to when addressing the information requirements detailed in this Terms of Reference document. Environmental Assessment Guidelines, current at the time of publication of these Terms of Reference, include:	Section 2.4.12, 2.4.7, 2.6.1, 2.6.2, 7.2, 12.1
Environmental Assessment Guidelines on Acid and Metalliferous Drainage	
Guidelines on Conceptual Site Models*	
Guidelines for Assessment of Impacts on Terrestrial Biodiversity	
Guidelines for the Preparation of an Economic and Social Impact Assessment	
Guidelines on Environmental Offsets and Associated Approval	
The above Guidelines are available from the NT EPA website at:	
http://www.ntepa.nt.gov.au/environmental-assessments/factsheets-and-guidelines, and	
* http://www.ntepa.nt.gov.au/waste-pollution/guidelines/guidelines	

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5.3 Cu	mulative Impacts	
	Cumulative impacts can arise from compounding activities of a single operation or multiple mining and processing operations, as well as the aggregation and interaction of mining impacts with other past, current and future activities that may not be related to mining. Considerations include:	Section 6.3.8, Section 18
	 Landscape change originates not only from single projects and management actions, but also from complex and dynamic interactions of multiple past, present and future management actions. 	
	 Biophysical, social and economic change accumulates through additive or interactive (or synergistic) processes. The aggregate impact of multiple actions on the environment can be complex and may result in impacts that are more significant because of interactive processes. 	
	 Any given action does not operate in isolation. The most significant changes are often not the result of the direct effects of an individual action, but from the combination of multiple minor effects over the accumulation of time. 	
	An assessment of cumulative environmental impacts should be undertaken that considers the potential impact of the Project in the context of previous, existing and reasonably foreseeable future developments, to ensure that any potential environmental impacts are not considered in isolation. The extent of cumulative impacts to be considered depends on the nature of the environmental issue. The risk assessment should consider and discuss cumulative assessment, where relevant, and account for impacts on an appropriate scale.	
	Impacts on the general environment, ecosystems and matters of national environmental significance could be permanent. If the impacts are not permanent, describe how long recovery from any impacts is anticipated to take, and identify how soon restoration of habitat could be achieved to reinstate ecosystem function.	
5.4		Section 6.1
5.4.1	Environmental Objectives To ensure that surface water and groundwater resources are protected both now and in the future, such that ecological health and land uses, and the health, welfare and amenity of people are maintained.	
	To prevent, mitigate or manage AMD/NMD/SD and sediment discharge to prevent on and off-site environmental impacts during mine operations and beyond mine closure.	Section 7.1
5.4.2	Assessment of Risks	
	The EIS should assess identified risks to existing surface and groundwater quality as a result of, or associated with the Project. Description is to be provided, at an appropriate spatial scale, of proposed management to avoid, minimise and mitigate identified risks.	Section 6.2, Risk Register, Water Management Plan
	The EIS should include consideration of risks arising from: • passive discharge or seepage of AMD/NMD/SD from the mine into surface and/or groundwater resources	Section 6.2, 7.3.3
	mine-site erosion, and sedimentation of waterways	Section2.6.3, 5.2, 6.2, 6.3.2.3, 6.3.2.8
	• loss of control / containment of poor quality mine waters, such as associated with extreme weather events	Section 3.8.1, 6.3.2.3, 6.3.2.8, 6.3.6, 6.5, 7.2, 7.6, 10.2 Water Management Plan
	need for the Project to dewater the flooded pit and underground mine	Section 6.5, 7.6, Water Management Plan
	need for the Project to discharge surplus contaminated waters to local creeks (particularly at times of low creek flow)	Section 6.3.2.3,6.3.5, 6.3.2.5, 6.3.2.6, 6.3.7, 6.5, 6.6.1.1, 7.6, 7.6.4, 13.7, 15,1,4
	increasing contaminant concentrations in evaporation ponds, reflecting in water quality in pond seepage and evaporation fan	Section 6.2, 6.3.3.6, 6.3.4, 6.3.5.3, 6.3.6, 6.3.8.2, 6.4.3.2, 10.4.2.3
	plumes	Evaporation fans no longer proposed.
	 'first flush' or early Wet season flushing of stored oxidation products (AMD/NMD/SD) generated over the Dry season in mine storage facilities 	Section 6.2, 7.2, 7.7.1, 13.3.4,
	 effects of loading (lifts) to tailings and evaporation ponds on seepage rates 	Section 6.2, 6.3.3.4, 6.3.3.5, Evaporation pond capacity will not be increased.
	 potential hydraulic connections between the proposed process water dam site and fault zones (Crabb, Williams), preferential groundwater flow pathways, springs, creeks and/or the underground mine. 	Section 4.4.1, 4.4.3, 4.4.5, 6.2, 6.3.3.1, 6.3.3.2, 6.3.8
	• The influence of seasonality should be discussed where relevant. The risk assessment should consider short (whilst operational), medium (post closure and under institutional control) and long term (post-institutional control) timeframes of the Project.	Section 6.2, 6.3.2.8, 6.3.3.8
	Risk exists of AMD/NMD/SD from mine infrastructure, impacting water quality and dependent ecosystems. Minimum requirements to address Project risks of AMD/NMD/SD are detailed in the NT EPA Environmental Assessment Guidelines, Acid and Metalliferous Drainage	Acid Mine Drainage Management Plan (AMD Management Plan)
	The EIS should also provide the following information:	Section 6.2, 7.2, 6.3.2.3, 6.3.3.4, 6.3.3.5
	Identify occurrence and risks of AMD/NMD/SD from existing and proposed infrastructure and the Project, and demonstrate how	Occurrence and risks from existing infrastructure – Section 7.3.1
	future development of AMD/NMD/SD will be prevented by design.	Occurrence and risks from proposed infrastructure – Section 7.3.3 Prevention by design - Section 7.4, 7.8
	 Describe proposed methods to characterise currently stored and future mine waste materials, including tailings, in terms of their potential to generate AMD/NMD/SD. 	Section 7.3.2

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 Detail proposed management (and contingency management) that identifies, systematically addresses, remedies and m any occurrence of AMD/NMD/SD, to prevent environmental impacts during mine operations and beyond mine closure. 	
 Provide results of AMD/NMD/SD characterisation already undertaken on existing stored waste rock and tailings, and fur rock and tailings (i.e. based on drill core samples). 	ature waste Section 7.3.2
• Site-wide AMD/NMD/SD management should be summarised in an AMD/NMD/SD Management Plan for the Project.	Section 7.4, AMD Management Plan
 Demonstrate that sufficient quantities of suitable-standard clays, and non-acid forming (NAF) rock without AMD/NMD/potential, are available to fulfil construction requirements for all proposed infrastructure builds and upgrades. Include: clay / NAF-rock sources amounts of clay / NAF-rock needed, and available suitability (i.e. chemistry, permeability, etc.) of the available clays and NAF-rock. demonstration of appropriate identification and management of Arsenic levels, and other contaminants in NAF was streams. 	
 provide a detailed conceptual site model describing potential sources, pathways, receptors, and fate of any contaminate and products, from the Project, and Project components. The model should be of sufficient detail for the general reader understand the sources of potential contaminants, mechanisms of their release, pathways for transport, and potential for and ecological exposure to these potential contaminants. 	to
The minimum data required to support the model should include, but not be limited to: o laboratory and field testing data required in section 5.4.2, to characterise AMD/NMD/SD potential and acid neutral potential of mine products and infrastructure. o permeability and depths of geological strata across the mine site and underlying mine water storage facilities, with identification of preferential flow pathways/strata, such as paleochannels and faults o hydrogeological characterisation from Section 4.2, and flow modelling where appropriate physicochemical mobility of contaminants baseline water quality (i.e. prior to commencement of the current Project) of receiving waters (from sections 4.2) contaminant transport modelling of current and future seepage plumes modelling of contaminant plumes, transport and fate originating from Project's use of evaporation fans biological receptors, vectors and their habitats o other complementary technical studies, at appropriate temporal and spatial scales. An appropriately qualified and experienced person should be involved with the supervision and interpretation of test results development of the conceptual site model. Appropriate statistical design details including the number of samples, sampling s selection procedures and QA/QC protocols to support the development of the model should be provided and justified. Estimate the quality and quantities of seepage discharging to aquifers and creeks from existing and proposed mine component through all mine phases, including post closure (long term).	and the ite Section 6.3.6
Summarise how water quality and flows in local creeks and aquifers will potentially be impacted by the Project in the short a term.	nd long Section 8.3.3
Describe and assess the significance of residual risks to sensitive receptors from mine-induced water quality impacts. Include consideration of downstream ecosystems and stakeholders, in the short and long terms.	e Section 8.3.3, Risk Register
 5.4.3 Mitigation The EIS should describe proposed management of water for the Project for all mine-life stages and seasons, according to its squality, volume, end use or other parameters, including: proposed management to contain contaminants onsite 	Source, Section 7.5.1 (site drainage)
water quality thresholds triggering management actions	Section 6.6.1, 6.3.8, Water Management Plan, Site Specific Trigger Values Report
description of site surplus water volumes, and proposed management	Section 6.2, Water Management Plan
management of stormwater, erosion and sediment loads during seasonal and extreme rainfall events.	Section 3.8.1, 6.3.2.3, 6.3.2.8, 6.3.6, 6.5, 7.2, 7.6, 10.2 Water Management Plan

	Terms of Reference	Section of Draft EIS Addressed In
	The EIS should contain a draft Water Management Plan (WMP) that outlines clear and concise measures to mitigate likely impacts of the Project on water resources. All mitigation and monitoring measures in the WMP should be adequately detailed to demonstrate best practice management and that environmental values of receiving waters will be maintained. The WMP should include but not be limited to measures that:	Water Management Plan
	 avoid and remedy Project contamination of surface or groundwater resources 	
	 ensure the protection and resilience of water dependent ecosystems 	
	 protect water quality and levels for existing users of bores and/or surface waterways 	
	 avoid the exposure of sensitive biological receptors to contaminants or water of a poor quality that may be harmful 	
	 treat and manage domestic wastewater and sewage. 	
	The WMP should be related to, but separate from Management Plans for:	
	Erosion and Sediment ControlAMD/NMD/SD.	
	The WMP should undergo a process of peer review by an independent, appropriately qualified expert. Feedback should be included as an attachment to the WMP.	
5.4.4	Monitoring	Section 6.6, Section 7.7, Water Management Plan, AMD Management Plan, EMP
	The WMP and related management plans should outline details of monitoring programs to be implemented throughout the life of the Project to determine effectiveness of the mitigation measures (Section 5.4.35.4.3), and to monitor for risks to water resources from the Project.	
	The monitoring programs should include relevant water quality target values based on appropriate guidelines and/or standards. The monitoring program should outline reporting procedures and contingencies that will be implemented in the event that monitoring activities identify that any performance indicators have been triggered, or other water related hazard or emergency.	Section 6.6, Section 7.7, Water Management Plan, AMD Management Plan, EMP
5.5	Infrastructure Integrity and Suitability	Section 10.1
	vironmental Objectives	
	Designs, construction methods and available materials for proposed and existing infrastructure will be sufficient to ensure infrastructure integrity, and protection of the environment for the short and very long term.	
5.5.2	Assessment of Risks	
	The EIS should assess identified environmental risks associated with proposed new and upgraded infrastructure for the Project, and demonstration of optimised risk reduction and environmental protection for the short and very long term.	Section 10.2, 10.5, Risk Register, Geotechnical Assessment Report
	Consideration is to be included of risks of the proposed new process water dam, or lifts to the new tailings dam or evaporation ponds, being unable to adequately isolate poor quality mine water from the environment, including from:	
	 inadequate engineering or construction methods or having insufficient suitable construction materials available 	Section 7.4.5, 10.2, 10.3, 10.4 Geotechnical Assessment Report
	dam wall leakage or failure	Section 7.4.5, 10.2, 10.3, 10.4, Geotechnical Assessment Report
	extreme rainfall events and overtopping	Section 3.8.1, 6.3.2.3, 6.3.2.8, 6.3.6, 6.5, 7.2, 7.6, 10.2 Water Management Plan
	presence of underlying high permeability geological faults and/or strata.	Section 4.4.1, 4.4.3, 4.4.5, 6.2, 6.3.3.1, 6.3.3.2, 6.3.8
	Hydrological modelling should be undertaken and results presented to demonstrate resilience of the objectives for the Project site, proposed infrastructure and management measures through 100 year average recurrence interval (ARI) climatic and earthquake events.	Water Management Plan, Section 3.8.1, 6.3.1, 6.3.2.2, 6.3.6, 6.6, 10.3, 10.4
5.5.3	Mitigation, Monitoring Describe proposed avoidance, minimisation, mitigation, reactive management and monitoring of risks identified above, to infrastructure integrity and suitability.	Section 10.4, Section 10.5, Section 10.6
5.6 5.6.1 En	Biodiversity avironmental Objectives	
	The Project will maintain the conservation status, diversity, geographic distribution and productivity of flora and fauna species and ecosystem levels through the avoidance or management of adverse impacts.	Section 8.1
	Assessment of Risk	
5.6.2	The EIC should access identified yields to biodiversity values posticularly threatened creates are a result of the Dreiget The EIC should	Section 8.2
5.6.2	The EIS should assess identified risks to biodiversity values, particularly threatened species, as a result of the Project. The EIS should include references to relevant research and statutory plans, such as action plans, recovery plans and threat abatement plans, when assessing the risks.	
5.6.2	include references to relevant research and statutory plans, such as action plans, recovery plans and threat abatement plans, when	
5.6.2	include references to relevant research and statutory plans, such as action plans, recovery plans and threat abatement plans, when assessing the risks.	

	Terms of Reference	Section of Draft EIS Addressed In
	downstream recreational fisheries	Section 8.3.3
	 flora and fauna species of conservation significance. Where a risk has been identified, the EIS should include discussion of the severity of those risks to individuals and regional populations. 	Section 8.3.1, Section 8.3.2.
	Consideration, where relevant, should include potential for impacts from discharge or seepage of poor quality water, ground/surface water contamination, groundwater drawdown, contaminant deposition by evaporative fans, vegetation clearance, habitat fragmentation, edge effects, erosion and sedimentation, soil compaction, inappropriate/ineffective rehabilitation, waste material, transport / storage of hazardous chemicals, noise / vibration, dust / air quality impacts or other processes exacerbated through construction or operation of the Project.	Section 8.3
	Detailed assessment is required of the potential of the Project to introduce and/or increase the presence of introduced and invasive species (both flora and fauna) in the region, and the potential impacts of such species. Show consideration of relevant Threat Abatement Plans, such as:	Section 8.3.4
	Threat Abatement Plan for Predation by Feral Cats	
	 Threat Abatement Plan for Predation, Habitat Degradation, Competition and Disease Transmission by Feral Pigs 	
	 Threat Abatement Plan for the Biological Effects, including Lethal Toxic Ingestion, caused by Cane Toads 	
	Threat Abatement Plan to reduce the Impacts on Northern Australia's Biodiversity by the Five Listed Grasses	
5.6.3	Mitigation The EIS should contain a detailed Biodiversity Management Plan that outlines clear and concise methods to mitigate likely impacts to biodiversity. All mitigation and monitoring measures should be in accordance with best practice advice from relevant Northern Territory agencies and focus on: • potentially significant impacts to the biodiversity on-site and off-site/downstream, including aquatic ecosystems	Section 8.4, Biodiversity Management Plan (Section 5.3)
	mitigating the impacts to vegetation	Section 8.4.1 Biodiversity Management Plan (Section 5.3)
	rare or threatened species at risk of being adversely impacted	Section 8.4.2, Biodiversity Management Plan (Section 5.3)
	weed control measures and hygiene protocols as required under the Weeds Management Act.	Section 8.3.4, Biodiversity Management Plan (Section 5.3)
	The draft EIS should include management measures in relation to:	
	 procedures to be adopted during vegetation clearing, including wildlife rescue procedures 	EMP, Section 8.4, 8.5
	weed, feral animal and livestock management.	Section 8.4 , 13.3.7, 13.6, 13.7
	Management measures should be prepared by a suitably qualified expert that has demonstrated experience in the mitigation and monitoring of adverse impacts to biodiversity and threatened species.	Biodiversity Management Plan prepared by suitably qualified environmental scientist.
	Proposed mitigation measures should be incorporated in relevant sections of the Environmental Management Plan (see Section 6).	EMP has been prepared to eliminate repetition of management actions from other plans, except where the measures provide benefit across more than one environmental factor for which a management plan is required.
5.6.4	Monitoring The Biodiversity Management Plan should include details of a Fauna and Flora Monitoring Program designed to monitor the effectiveness of the mitigation measures proposed. The Flora and Fauna Monitoring Program should identify the methodology for monitoring potential impacts to biodiversity, including aquatic fauna, and identify clear thresholds and contingency measures that will be implemented in the event that the mitigation measures appear ineffective. Flora and Fauna monitoring should be undertaken using Guidelines as described in Section 4.3.	Biodiversity Management Plan (Section 6)
	nan Health and Safety ovironmental Objectives	
	The Project will ensure protection of human health and safety from Project-generated impacts, now and in the future.	Section 11.1
5.7.2 As	Seessment of Risks The EIS should assess risks to human health and safety associated with all stages and components of the Project. Aspects to be considered include risks to human health and safety from:	
	 materials storage, and transport of materials and personnel on public roads, including interaction of Project traffic with tourist traffic and other road users on the Arnhem Highway 	Risk Register
	fire, including combustible materials	Risk Register
	 worker or public inhalation of mists from evaporative fans. Any identified risks from fan mists should be included in the conceptual site model required for section 5.4.2 	Not applicable as fans not being used.
	Project impacts on downstream ecosystems including fish caught for human consumption	Section 8.4.3
	Project impacts on downstream potable water supplies	Section 8.4.3
	underground mine collapse or flooding	Risk Register, Section 11.2, 11.4.5

	Terms of Reference	Section of Draft EIS Addressed In
	• hazardous materials exposure, and proposed management of hazardous process inputs and outputs, such as cyanide	Risk Register, Section 11.2, 11.4.6
	 other direct and indirect health and safety risks for the workforce and the general public. 	Risk Register, Section 11.2, 12.2
5.7.3 M	Detail strategies to prevent, manage, treat and monitor identified risks of the Project to human health and safety. Outline environmental (including health and safety) management strategies necessary for human health and safety, and describe how these strategies will be incorporated into the Environmental Management Plan (Section 6).	Section 11.4, Section 11.5, 11.6 H&S Management Plan, Risk Register EMP has been prepared to eliminate repetition of management actions from other plans, except where the measures provide benefit across more than one environmental factor for which a management plan is required.
	Describe the emergency planning procedures for the project, including management of all emergencies that may impact on the facility, its surrounds, personnel or the public, and responsibilities and liabilities in the event of an emergency.	Section 11.5.1, Emergency and Crisis Management Plan
	A hazard and risk analysis should identify critical areas that need to be addressed in management plans, monitoring programs, and contingency and emergency plans and should include as a minimum:	
	 mitigation measures to address safety risks identified in Section 5.7.2 	Section 11.4, Risk Register
	 safeguards for minimising the likelihood of bushfire, and fire response plans 	Section 11.4.3, Section 14.1, Risk Register
	• safeguards, management and monitoring strategies to be implemented to minimise potential transport impacts	Section 11.4.1, Risk Register
	• an emergency plan defining responses to road accidents and exposure / spills of hazardous materials, drafted in consultation with the Northern Territory Fire and Rescue Service	Section 11.5.1, Hazardous Material Management Plan, Emergency and Crisis Management Plan, Risk Register
	safeguards to protect downstream potable water sources utilised for human consumption	Section 8.4.3
	• compliance with Environmental Health Fact Sheet No. 700. Requirements for Mining and Construction Projects with respect to use of septic tanks when reinstating office blocks	Section 3.9.5, 3.10.1
	 compliance with applicable licensing requirements associated with food preparation and storage if catering premises are proposed at the mine 	No catering premises proposed
	• contingency emergency, health and safety management procedures to be applied if proposed protective measures fail.	Section 11.5, Emergency and Crisis Management Plan
5.8 5.8.1 Eı	Socio-Economic Risks nvironmental Objectives To analyse, monitor and manage the Project's intended and unintended social and economic consequences, both positive and negative, such that outcomes are optimised.	Section 12.1
5.8.2	Assessment of Risks An Economic and Social Impact Assessment (ESIA) should be conducted in accordance with the NT EPA Guidelines for the Preparation of an Economic and Social Impact Assessment considering social and economic risks from operation of the Project.	ESIA prepared in accordance with Guidelines
	The ESIA should include analysis of the current and projected financial capacity of the Proponent to allocate sufficient resources to: • implement the Project, mitigation measures, and contingency management measures	
	implement the Project, mitigation measures, and contingency management measures	ESIA Section 12.1
	 implement the Project, mitigation measures, and contingency management measures maintain its environmental obligations should the Project be temporarily closed or suspended 	ESIA Section 12.1
	 implement the Project, mitigation measures, and contingency management measures maintain its environmental obligations should the Project be temporarily closed or suspended meet all stabilisation, rehabilitation and closure requirements, once operations have ceased. 	ESIA Section 12.1 ESIA Section 12.1
	 implement the Project, mitigation measures, and contingency management measures maintain its environmental obligations should the Project be temporarily closed or suspended 	ESIA Section 12.1
5.8.3	 implement the Project, mitigation measures, and contingency management measures maintain its environmental obligations should the Project be temporarily closed or suspended meet all stabilisation, rehabilitation and closure requirements, once operations have ceased. The ESIA should also consider contributions to local communities, including Traditional Owners. Mitigation and Monitoring An Economic and Social Impact Management Plan (ESIMP) should be prepared to address any risks identified in the ESIA. The ESIMP should: 	ESIA Section 12.1 ESIA Section 12.1
5.8.3	 implement the Project, mitigation measures, and contingency management measures maintain its environmental obligations should the Project be temporarily closed or suspended meet all stabilisation, rehabilitation and closure requirements, once operations have ceased. The ESIA should also consider contributions to local communities, including Traditional Owners. Mitigation and Monitoring An Economic and Social Impact Management Plan (ESIMP) should be prepared to address any risks identified in the ESIA. The ESIMP 	ESIA Section 12.1 ESIA Section 12.1 Section 8, Section 9, The Project is very small and did not raise any significant economic and social risks (Section 12.3 of EIS). Mitigation measures to manage the minor risks identified have been provided in the EIS and the EMP. A standalon
5.8.3	 implement the Project, mitigation measures, and contingency management measures maintain its environmental obligations should the Project be temporarily closed or suspended meet all stabilisation, rehabilitation and closure requirements, once operations have ceased. The ESIA should also consider contributions to local communities, including Traditional Owners. Mitigation and Monitoring An Economic and Social Impact Management Plan (ESIMP) should be prepared to address any risks identified in the ESIA. The ESIMP should: describe how the Proponent proposes to manage any identified economic, social, cultural or tourism risks from the Project, or its 	ESIA Section 12.1 ESIA Section 12.1 Section 8, Section 9, The Project is very small and did not raise any significant economic and social risks (Section 12.3 of EIS). Mitigation measures to manage the minor risks identified have been provided in the EIS and the EMP. A standalo ESIMP was not prepared.
5.8.3	 implement the Project, mitigation measures, and contingency management measures maintain its environmental obligations should the Project be temporarily closed or suspended meet all stabilisation, rehabilitation and closure requirements, once operations have ceased. The ESIA should also consider contributions to local communities, including Traditional Owners. Mitigation and Monitoring An Economic and Social Impact Management Plan (ESIMP) should be prepared to address any risks identified in the ESIA. The ESIMP should: describe how the Proponent proposes to manage any identified economic, social, cultural or tourism risks from the Project, or its associated workforce describe how potential local and regional business and employment opportunities related to the Project will be identified and 	ESIA Section 12.1 Section 8, Section 9, The Project is very small and did not raise any significant economic and social risks (Section 12.3 of EIS). Mitigation measures to manage the minor risks identified have been provided in the EIS and the EMP. A standalo ESIMP was not prepared. Section 12.4
5.8.3	 implement the Project, mitigation measures, and contingency management measures maintain its environmental obligations should the Project be temporarily closed or suspended meet all stabilisation, rehabilitation and closure requirements, once operations have ceased. The ESIA should also consider contributions to local communities, including Traditional Owners. Mitigation and Monitoring An Economic and Social Impact Management Plan (ESIMP) should be prepared to address any risks identified in the ESIA. The ESIMP should: describe how the Proponent proposes to manage any identified economic, social, cultural or tourism risks from the Project, or its associated workforce describe how potential local and regional business and employment opportunities related to the Project will be identified and managed 	ESIA Section 12.1 ESIA Section 12.1 Section 8, Section 9, The Project is very small and did not raise any significant economic and social risks (Section 12.3 of EIS). Mitigation measures to manage the minor risks identified have been provided in the EIS and the EMP. A standalor ESIMP was not prepared. Section 12.4 Section 12.2.1, Section 12.2.3, Section 12.4

	Terms of Reference	Section of Draft EIS Addressed In
	 provide a stakeholder communications strategy including identification of, and ongoing consultation and negotiations with, all relevant stakeholders, ensuring the full range of community viewpoints are sought and included in the EIS. 	Section 16, Section 12.5, Project EMP (Section 3.9)
5.9	Historic and Cultural Heritage	Section 9.1
5.9.1 En	vironmental Objectives	
	Places and items with historic and/or cultural heritage values protected under the Heritage Act and/or Northern Territory Aboriginal Sacred Sites Act will be identified and those values protected.	
5.9.2	Assessment of Risks	
	The EIS should include:	
	 assessment of risks of the Project's potential to impact on sites / objects of sacred, heritage, cultural or indigenous cultural significance 	Section 4.6, Section 9.2
	• detail any requirements to disturb or destroy a prescribed archaeological place and/or object under the Heritage Act.	Section 4.6, Section 9.2
5.9.3	Mitigation	Based on existing site characteristics and results of database searches there are no heritage sites to manage.
	The EIS should describe the proposed prevention and mitigation of any identified risks to existing sacred sites, or sites or items of historic and cultural heritage in a Culture and Heritage Management Plan (CHMP). The CHMP should include:	General heritage mitigation measures and management of any sites discovered are provided in the EIS and EMP. A standalone CHMP has not been prepared.
	 procedures to avoid significant sites 	Continuo A EMP
	 protection of key sites during construction, operation and decommissioning work 	Section 9.4, EMP Section 9.4, EMP
		Section 9.4, EMP
	 measures to enable the Proponent, or contractor to the Proponent, to meet its duty of care to protect the cultural and heritage values of any places or items of significance 	Section 5.4, EMF
	 procedures for the discovery of surface or sub-surface items during the course of the Project. 	Section 9.4, EMP
5.9.4	Monitoring	
	The CHMP should include details of a monitoring and reporting program to determine the effectiveness of mitigation measures (Section 5.9.3). The monitoring and reporting program should identify when further action is required and outline contingency measures should the proposed mitigation measures result in degradation to the values of items with heritage or cultural significance.	Section 9.6, EMP
5.10	Rehabilitation and Closure	
5.10.1 E	Invironmental Objectives	
	Rehabilitation and closure planning will ensure that:	Section 13.1
	 Rehabilitation will achieve a stable and functioning landform, consistent with the surrounding landscape and other environmental values, and will remove potential for long term or post closure impacts on downstream water quality, beneficial uses or environmental values. 	Section 13.1
	 Closure (and Care and Maintenance) planning will effectively achieve containment of all mine-related environmental contaminants on-site, for the very long term, without need for ongoing management, intervention or expenditure, and allow for post-closure return to agreed land uses on the site 	Section 13.2
5.10.2	Assessment of Risks	
V	Rehabilitation and closure planning, and contingency planning for periods of <i>Care and Maintenance</i> , should take into account results of materials characterisation, data on the local environmental and climatic conditions, and consideration of potential impacts through contaminant pathways and environmental receptors.	Section 13.5
	The EIS should include assessment of risks to successful rehabilitation and closure including:	
	• the Project not realising its projected outcomes (i.e. delays, unexpected or forced closure, falling gold prices, etc.)	Section 13.3, MCP (Section 8.4.1, Section 8.4.2)
	inadequate identification and management of materials with AMD/NMD/SD potential	Section 13.3, 13.4, 13.5, 13.6, 13.7
	changes in the assumptions used as a basis for the post-closure risk assessment	Section 13.2, 13.3, 13.4
	natural extreme events, including earthquakes, cyclones, rain depressions, fire and flood.	Section 13.3, 13.5, 13.6, MCP (Section 8.4.2)
	The EIS should identify and assess environmental risks associated with a potential short and long term period of Care and Maintenance for the Project and site. Assessment and planning should consider all potential Project development stages, and plan to fulfil all relevant environmental objectives and obligations.	Section 3.13., 3.14, MCP
5.10.3	Mitigation	
	Demonstrate that identified risks associated with rehabilitation, revegetation, closure and periods of care and maintenance for the Project will be avoided, mitigated or otherwise minimised to a low level.	Section 13.4, MCP

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	A draft Mine Closure Plan (MCP), specific to the Project, should be prepared to address identified risks. The MCP should provide an outline of the risks and demonstrate that all relevant issues and appropriate management measures have been identified. The MCP should demonstrate that ecologically sustainable mine closure can be achieved consistent with agreed post-mining outcomes and land uses, and without unacceptable liability to the Territory.	MCP
	The MCP should include:	
	mitigation measures to address identified risks	MCP (Section 8.4, Section 9.4)
	 measures required to prevent contamination of surface and groundwater resources 	MCP (Section 9.4), Water Management Plan, AMD Management Plan
	 measures to ensure that tailings and overburden with AMD/NMD/SD potential, and poor quality mine waters, will be physically isolated from the environment, and not result in any short (whilst operational), medium (post closure and under institutional control) or long term (post-institutional control) detrimental ecological impacts 	MCP (Section 8.3, Section 9.4)
	measures to minimise the long term introduction and control of weeds	MCP (Section 9.4), EMP
	 revegetation strategies for disturbed sites to utilise local native plant species similar in type, density and abundance to those existing in adjacent areas 	MCP (Section 9.4)
	• assessment of the void geochemistry, including modelling to predict the likely post mining water quality in the open pit once it is left to accumulate water	Section 6.3.3.7, 6.5, 7.6, 13.2, 13.3.3
	measures to ensure the environmental sustainability and full containment of contaminated mine and pit-water post-closure	MCP (Section 9.8)
	measures to ensure the stabilisation of erosion, to a level similar to comparable landforms in surrounding undisturbed areas	MCP (Section 5.1)
	• contingencies to make landforms and mine components secure and non-polluting in the event of unexpected or temporary closure, or failure of rehabilitation, revegetation or closure actions	MCP (Section 11)
	The MCP should include a Care and Maintenance Plan, which will identify how risks from the site will be managed should the Project be temporarily closed or suspended at any stage of the mine operation and development. The Plans should outline how the Proponent will fulfil its environmental obligations, objectives and commitments.	MCP
	Monitoring The EIS should describe proposed:	
	• post-mining monitoring and reporting to be used to evaluate and report on the effectiveness and performance of the mitigation measures (Section 5.10.3).	Section 13.6, MCP
	• contingency measures to be implemented in the event that monitoring demonstrates that management measures have not been effective.	Section 13.7, MCP
	 Provide outcome and assessment criteria that will give early warning that management and mitigation measures are not achieving the outcomes and benefits expected and identified by the Proponent. 	Section 13.7, MCP
5.11 Oth	er Risks	
	Other risks not assessed in the preceding sections (5.4-5.10) should be identified and management strategies proposed that detail avoidance, minimisation, mitigation and monitoring for the risks. The following risks and advice should also be addressed as a minimum:	Section 14 details avoidance, minimisation, mitigation and monitoring measures for Waste, Fire, Noise and Vibration, Air Emissions, Visual Amenity and Mosquito Breeding.
	5.11.1 Bushfires, Fires The Proponent should be aware of sections of the <i>Bushfires Act</i> and Regulations that apply to the Project and address risk and management of bushfires, in a Fire Management Plan for the Project. The Plan should be in consultation with Bushfires NT, traditional owners, pastoralists and their representative organisations, including the Northern Land Council, where appropriate, that have specialist knowledge in fire management. The Fire Management Plan should be incorporated into the Environmental Management Plan (Section 6) for the Project.	Section 14.1
	All buildings on site should comply with Australian Standards and Fire Safety regulations. Any on-site accommodation must include photoelectric smoke alarms.	No accommodation buildings proposed to be constructed.
	5.11.2 Noise and Vibration	
	Risk assessment should occur with respect to noise and vibrations from Project components. Communication with local residents and communities should be part of the risk assessment. Potential sensitive receptors, sensitivity of receptors, expected impacts and proposed management should be identified with regard to Project-generated noise and vibrations.	Section 14.2, Risk Register.
	The EIS should outline proposed management to mitigate any identified risks from the Project with regard to noise and vibration emissions. If relevant, the EIS should describe proposed communication with any residents and communities predicted to be impacted by noise and vibration from the project.	Section 14.2, EMP

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	5.11.3 Air	
	The potential nuisance and health issues for sensitive receptors associated with air quality, including evaporative fan mists, and dust, and mitigation measures should be discussed in Sections 5.7 and 5.7 as appropriate. Consideration should be given to the acute and chronic exposure pathways, such as inhalation, ingestion and dermal contact, if relevant. The potential sensitivity of receptors to air quality, including dust, and mitigation measures should be discussed. Any identified risks and contaminant pathways should also be included in the conceptual site model for the Project (section 5.4.2).	Section 14.3. No evaporative fans proposed.
	5.11.4 Visual Amenity	
	The extent and significance of the changed landscape on visual amenity during all stages of the Project should be discussed in a relevant section of the EIS. Aspects of the project that would be visible from key vantage points, publicly accessible areas and areas of significance, should be discussed.	Section 14.4
	5.11.5 Mosquito Breeding	
	There is potential for mine sites to create mosquito breeding sites. The Proponent should be aware of sections of the <i>Public and Environmental Health Act</i> that apply to the Project and address risk and management of biting insects.	Noted
	A Baseline Biting Insect Assessment was completed for the Tom's Gully Mine Project in 2001. Applicable recommendations should be considered with the current Project. The Project should also conform to 'Guidelines for Preventing Mosquito Breeding Associated with Mining Sites'	Noted in developing mitigation measures in Section 14.5
	Wetlands Oxbow should be managed to minimise mosquito breeding. Potential management measures for wetland filters are outlined in the above mentioned guideline.	Noted in developing mitigation measures in Section 14.5
	Measures to prevent mosquito breeding should be outlined in a biting insect management section in the Environmental Management Plan (Section 6). Information on personal protection can be found in 'Personal protection from mosquitoes and biting midges in the Northern Territory'	Section 14.5
6	Environmental Management	
	Specific safeguards and controls proposed to be employed to avoid, minimise or remedy environmental impacts identified in previous sections are to be included in an EMP.	EMP (Section 4)
	The EMP should be strategic, describing a framework for continuing management, mitigation and monitoring programs for the relevant impacts of the Project, including any provisions for independent environmental auditing of the Project. As much detail as is practicable should be provided to enable adequate assessment of the Project, proposed environmental management practices and procedures, during the public exhibition phase. Specific management practices and procedures should be included in the EMP, where possible.	EMP (Section 4)
	The EMP needs to address the Project phases (construction, operation, decommissioning, closure and post-closure) separately. It should state the environmental objectives, performance criteria, monitoring, reporting, corrective action, responsibility and timing for each environmental issue.	EMP (Section 4) addresses construction and operation phases. MCP addresses decommissioning, closure and post-closure phases.
	The EMP should include:	
	 proposed management structure of the Project and its relationship to the environmental management of the site, including personnel responsible for maintaining and approving the EMP 	EMP (Section 3.5, Section 3.6)
	 description of the main elements of the environmental management system and reference to related documents determined by the Proponent to be necessary to ensure the effective planning, operation and control processes that relate to the environmental management system 	EMP (Section 3)
	a register of ownership for the mining interests associated with the Project, including the title numbers, title holders and status	EMP (Section 2.1)
	proposed reporting procedures consistent with Territory and Australian Government legislative requirements	EMP (Section 3.2 and 3.9)
	 a summary table listing the commitments made in the EIS, including clear timelines for key commitments and performance indicators, with cross-references to the text of the EIS 	EMP (Appendix 1)
	management targets and objectives for relevant environmental impacts and/or factors	EMP (Section 4)
	performance indicators by which all anticipated and potential impacts can be measured	EMP (Section 4)
	proposed monitoring programs to allow early detection of adverse impacts	EMP (Section 4)
	sampling procedures and frequency	Water Management Plan, AMD Management Plan
	contingencies for emergency events, such as hydrocarbon and other hazardous chemical spills or natural disasters	EMP (Section 3.10, Section 4)
	 procedures for dealing with failure to meet performance criteria and targets, non-compliance with environmental management controls, environmental incidents and emergencies 	EMP (Section 4)
	 contingency and reactive management for when interpretation of the monitoring data or other observations detect potential for impact or actual adverse trends in performance. Detail should be provided of when remedial/corrective strategies and actions will be implemented. Include scopes of work where appropriate together with a commitment to an implementation timetable and any modifications to the monitoring program required in order to assess the performance of the actions 	EMP (Section 4)

Terms of Reference	Section of Draft EIS Addressed In
overview of the environmental awareness training and education process regarding responsibilities, including:	EMP (Section 3.3)
o the induction program (e.g. general, site, department)	
o communication of the requirements of the EMP to all employees and contractors	
o environmental emergency response training	
o particular training requirements for targeted personnel	
o any other environmental training or education requirements.	
provision for the periodic review of the EMP	EMP (Section 1.2)
 provision for independent environmental auditing of the Project. 	EMP (Section 3.9)
The EMP would continue to be developed and refined following the conclusion of the assessment process, taking into consideration the proposed timing of development activities, comments on the EIS and incorporating the Assessment Report recommendations and conclusions.	Noted, EMP prepared as a draft.
General Advice on the EIS	
7.1 General Content	
The EIS should be a stand-alone document and should contain sufficient information to avoid the need to search out previous or additional, unattached reports.	EIS is a stand-alone document with all required information provided in the EIS and/or attached appendices.
The EIS should enable interested stakeholders and the Minister to understand the environmental consequences of the proposed action. Information provided in the EIS should be objective, clear, and succinct and, where appropriate, be supported by maps, plans, diagrams or other descriptive detail. The body of the EIS is to be written in a clear and concise style that is easily understood by the general reader. Technical jargon should be avoided wherever possible. Cross-referencing should be used to avoid unnecessary duplication of text.	EIS summarises and focuses on key environmental issues and risks. It assesses the key factors against EPA objectives. Detailed information deferred to appendices.
The level of analysis and detail in the draft EIS should reflect the level of significance of the expected and potential impacts on the environment, as determined through adequate technical studies. Any and all unknown variables or assumptions made in the assessment should be clearly stated and discussed. The extent to which the limitation, if any, of available information may influence the conclusions of the environmental assessment should also be discussed.	Risk assessment identifies potentially significant impacts. EIS reflects level of significance of the expected imp Significant assumptions and limitations identified in the risk assessment – with levels of certainty indicated. K uncertainties with significant implications identified.
Information materials summarising and highlighting risks of the Project should be provided in a culturally appropriate format and language, where relevant.	Noted
It is an offence under the Northern Territory Environment Protection Authority Act to give information to the NT EPA that the person knows is misleading or contains misleading information.	Noted
7.2 Format and Style	
The EIS should comprise three elements:	Noted
1. Executive summary	
The executive summary should include a brief outline of the Project and each chapter of the EIS, allowing the reader to obtain a clear understanding of the proposed Project, its environmental implications and management objectives. It should be written as a stand-alone document, able to be reproduced on request by interested parties who may not wish to read the EIS as a whole.	
2. Main text of the document	
The main text of the EIS should include a list of abbreviations, a glossary to define technical terms, acronyms and abbreviations, and colloquialisms. The document should consist of a series of chapters detailing the level of significance of the expected and potential impacts on the environment from the Project.	Noted
3. Appendices	
The appendices should include detailed technical information, studies or investigations necessary to support the main text that can be made publicly available, including:	
 a table listing how these Terms of Reference have been addressed in the EIS, cross-referenced to chapters, page numbers and/or appendices 	Appendix 1
o the name of, work done by and the qualifications and experience of the persons involved in preparing the EIS	
o a table listing commitments made by the Proponent	EMP (Appendix 1)
o detailed technical information, studies or investigations necessary to support the main text.	Detailed technical information, studies and investigations included as appendices in EIS.
The EIS should be produced on A4 size paper capable of being photocopied, with any maps, diagrams or plans on A4 or A3 size paper,	

Terms of Reference	Section of Draft EIS Addressed In
7.3 Referencing and Information Sources	
All sources should be appropriately referenced using the Harvard Standard. The reference list should include the address of any internet pages used as data sources. All referenced supporting documentation and data, or documents cited in the EIS should be available upon request. For information given in the EIS, the EIS should state:	Noted. All sources referenced using Harvard Standard
the source of the information	
how recent the information is;	
how the reliability of the information was tested What we contain the ofference in the information.	
What uncertainties (if any) are in the information. All and a second of the seco	N. I
All known and unknown variables or assumptions made in the EIS should be clearly stated and discussed. Confidence levels should be specific, as well as the sources from which they were obtained. The extent to which a limitation, if any, of available information may influence the conclusions of the environmental assessment should be discussed.	Noted
The results of quality assurance / quality control (QA/QC) testing are to be provided where data are used to support statements or findings in the EIS. Sufficient discussion should accompany the data to demonstrate that the QA/QC and data are suitable and fit for purpose.	Noted
Spatial data should be provided to the NT EPA as importable Geographic Information System shape files, with relevant features and areas geospatially referenced and marked as polygons, lines and points.	Noted
Topography / contours should be detailed at appropriate intervals with respect to Australian Height Datum (AHD).	Noted. Contours detailed at 2 m intervals
The reporting of exploration results, ore reserve and mineral resource estimates in the EIS should be consistent with the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves, of the Joint Ore Reserves Committee of The Australasian Institute of Mining and Metallurgy, Australian Institute of Geoscientists and Minerals Council of Australia (JORC), 2012. Available at: http://www.jorc.org/docs/JORC code 2012.pdf.	Noted
The EIS should include information on any consultation about the Project, including:	
any consultation that has already taken place	Section 16.1
a list of persons and agencies consulted during the EIS	Section 16.1
• if there has been consultation about the Project, any documented response to, or result of, the consultation	Section 16.1
 proposed consultation about relevant impacts of the Project 	Section 16.2
 identification of affected parties, including a statement mentioning any communities that may be affected and describing their views. 	Section 16.1
The EIS has an important role in informing the public about this Project. It is essential that the Proponent demonstrates how any public concerns were identified and will influence the design and delivery of the Project. Public involvement and the role of government organisations should be clearly identified. The outcomes of any surveys, public meetings and liaison with interested groups should be discussed including any changes made to the proposal as a result of consultation. Details of any ongoing liaison should also be discussed.	Section 16.2
7.4 Administration	
The Proponent should lodge ten bound, hard copies and an electronic copy (Adobe PDF format) copy of the draft EIS with the NT EPA. The electronic copies should be provided both as a single file of the entire document and separate files of the document components. Additionally, a Microsoft Word copy of the EIS should be provided to facilitate the production of the Assessment Report.	Noted
The Proponent should consider the file size, the number of files, format and style of the document appropriate for publication on the NT EPA website. The capacity of the website to store data and display the material may have some bearing on how the documents are constructed. The Proponent should discuss potential requirements with NT EPA.	
At a minimum, the Proponent is to advertise that the draft EIS is available for review and comment in the NT News.	
The NT EPA requires the complete draft EIS document and a draft of the advertisement at least one week prior to advertising the draft EIS, to arrange web upload of the document, and review and comment on advertising text.	
If it is necessary to make use of material that is considered to be of a confidential nature, the Proponent should consult with the NT EPA on the preferred presentation of that material, before submitting it to the NT EPA for consideration.	

Terms of Reference	Section of Draft EIS Addressed In
7.5 Public Exhibition	
Sufficient copies of the EIS should be provided to and be made available for public exhibition at:	Noted
NT EPA, 2nd Floor, Darwin Plaza, 41 Smith Street Mall, Darwin	
 Mines and Energy Information Centre, Department of Mines and Energy, 3rd Floor, Paspalis Centrepoint, 48 Smith Street Mall, Darwin 	
Northern Territory Library, Parliament House, Darwin	
 A nearby Government office to be determined, such as the local Legislative Assembly member's office at Coolalinga (Shop 4, Coolalinga (Woolworths Shopping Centre), Stuart Highway, NT 0835. E:mail: electorate.goyder@nt.gov.au) 	
 Environment Centre Northern Territory, Unit 3, 98 Woods St, Darwin. 	
The public exhibition period for the draft EIS will be six weeks. The EIS exhibition period should not occur in late December or January in any year to ensure optimal opportunity for public and Government viewing of the EIS document. Additional time will be added to the EIS exhibition period if the EIS exhibition overlaps any Christmas and January periods.	