Arafura Resouces Ltd



Cross Reference to Terms of Reference

Appendix D

Cross reference to the Terms of Reference for the preparation of an EIS

Terms of Reference	Cross reference
2. Regulatory Context 2.1 Approvals and Conditions	Chapter 2
description of any approvals required by State, Territory or Commonwealth agencies or authorities, including any conditions that apply to the Project	
summary of current agreements between the Proponent and the NT Government, and / or the Australian Government, and/or other stakeholders, including Traditional Owners and/or land managers	Chapter 1 Section 1.4.1
description of the regulatory monitoring, enforcement and review procedures that apply, or are proposed to apply, to the Project.	Chapter 2 Section 2.2.9 Appendix X
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:	Chapter 1 Section 1.4.1
Environment Protection and Biodiversity Conservation Act 1999	Chapter 2 Section 2.1.6
Heritage Act	Chapter 2 Section 2.2.5
Mining Management Act & Regulations	Chapter 2 Section 2.2.9
Mineral Titles Act and Regulations	Chapter 2 Section 2.2.8
Northern Territory Aboriginal Sacred Sites Act	Chapter 2 Section 2.2.10
Public and Environmental Health Act & Regulations	Chapter 2 Section 2.2.13
Radiation Protection Act	Chapter 2 Section 2.2.14
Soil Conservation and Land Utilisation Act	Chapter 2 Section 2.2.15
Territory Parks and Wildlife Conservation Act	Chapter 2 Section 2.2.16
Transport of Dangerous Goods by Road and Rail (National Uniform Legislation) Act	Chapter 2 Section 2.2.18
Waste Management and Pollution Control Act	Chapter 2 Section 2.2.19
Water Act	Chapter 2 Section 2.2.20
Weeds Management Act	Chapter 2 Section 2.2.21

Terms of Reference	Cross reference
2.2 Environmental History The EIS should include details of the environmental record of the Proponent, including	Chapter 2, Section 2.5
details of any proceedings under a Commonwealth, State or Territory law	Chapter 2 Section 2.5.1
obligations, non-compliances or incidents under the Mining Management Act, 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	Chapter 2 Section 2.5.2
any international or national accreditations (e.g. ISO 14001 etc.), environmental awards or other recognition for environmental performance.	Chapter 2, Section 2.5.3
 2.3 Ecologically Sustainable Development When considering the matters to be addressed in the EIS, the NT EPA is required under the Northern Territory Environment Protection Authority Act to: (a) promote ecologically sustainable development (ESD) 	Chapter 2 Section 2.6
(b) protect the environment, having regard to the need to enable ESD.	
3. Project Description 3.1 Project Details	Chapter 3
3.1.1 Proponent Details Provide details of the Proponent, including: details of proponent's company portfolio (e.g. a single entity or in joint venture, ownership being domestic or international, major commodities, position in the market and countries where business dealings are undertaken).	Chapter 1, Section 1.2
3.1.2 Development Context Provide details of the development context of the Project, including:	Chapter 1, Section 1.3
title of the Project	Chapter 1, Section 1.3.1
status of the Project	Chapter 1, Section 1.3.2
background to the development of the Project, including discussion of previous environmental impact assessment and overview of associated / historic mining, exploration and rehabilitation activities	Chapter 1, Section 1.3.4 & 1.3.5
exploration activities, areas that may be mined in future, or other potential future actions planned	Chapter 1, Section 1.4.7 Chapter 3, Section 3.5.1
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	Chapter 1, Section 1.4.8 Chapter 4, Section 4.4.1
3.1.3 Location Effective scoping of the Project will assist with the preparation of the EIS as well as clearly defining the footprint	Chapter 1, Section 1.4

Terms of Reference	Cross reference
and operational details of the proposed action. The EIS should identify all the processes and activities intended for the Project and associated ancillary activities, for each Project stage. Describe the location of the Project components in the region and their proximity to:	
major roads, railways, airstrips, rivers and landmark features	Chapter 1, Section 1.4.1
towns and regional community centres	Chapter 1, Section 1.4.2
underlying and / surrounding tenure and land use (e.g. pastoral, town boundaries, etc.)	Chapter 1, Section 1.4.1
sites of cultural significance	Chapter 1, Section 1.4.5,
sites of social significance	Chapter 1, Sections 1.4.1, 1.4.4 & 1.4.5
significant natural or ecological features, such as areas on the National Reserve System, conservation reserves, major watercourses or significant groundwater resources.	Chapter 1 Sections 1.4.4 to 1.4.6
3.1.4 Infrastructure Delineate the Project footprint and describe Project infrastructure requirements, using detailed maps and diagrams to show:	Chapter 3
Project disturbance footprint through Project stages	Figures 3-1, 3-2, 3-3, 3-4, 3-8
location of the mineral resources to be mined / developed, ore reserves and areas to be explored	Section 3.5.1 to 3.5.3 & Figures 3-5, 3-6, 3-7
locations of proposed mine components and infrastructure	Figures 1-1, 1-2, 3-1, 3-2, 3-3, 3-4, 3-8, Appendix E
water resources / infrastructure	Figure 1-5 Chapter 7 & 8 Appendix X_L Water management plan
layout of the accommodation village with respect to the work sites and mining and processing operations	Figures 1-1, 1-2, 3-4
ancillary infrastructure requirements such as for telecommunications, transport, accommodation, airstrip, waste management and water supplies.	Figure 1-2, 1-3, 1-6 Chapter 3, Section 3.12.3 Appendix X_I Waste management plan
For the linear infrastructure corridor(s), describe corridor elements, such as	Sections 3.2.4 & 3.2.5, 3.12.1
 haul road, pipeline(s) 	Figures 3-1, 3-2, 3-3, 3-4
 exact locations and designs of the slurry pipeline, site access roads, and other linear infrastructure 	
 periodic elements, such as pumping stations, lay-down / turning areas, and construction bores 	

Terms of Reference	Cross reference
 maximum width of corridors required for construction and operation. 	
3.1.5 Construction and Operation Describe proposed mine construction and operation, including, but not limited to:	Chapter 3 Section 3.4
plant and machinery required for construction and operation	Chapter 3, Section 3.5.6 Chapter 13, Section 13.4 Chapter 17, Section 17.4
timeframes for corridor / haul road construction and upgrade, if relevant	n/a
vegetation clearing methods and disposal of plant matter following clearing	Section 3.4.2
methods for crossing corridor interSections with potentially significant / sensitive habitats, geology, watercourses, roads, linear infrastructure, places of cultural / heritage significance, etc.	Section 3.4.2 Chapter 7 Section 7.5.4
pipeline construction methods and timing, including of:	
survey / design / selection of the pipeline route	Flora & fauna survey (Chapter 9) and heritage survey (Chapter 16)
provision of access tracks and temporary facilities clear and grade of the right of way pipe stringing and bending pipe welding hydro-testing rehabilitation of right of way.	Section 3.4.2
type and sources of rock, gravel, fill and other construction materials	Section 3.4.3 & 4.3.6
legislation, standards and guidelines applicable to construction of corridor elements	Chapter 2, Section 2.4.4
3.1.6 Mining Describe proposed component construction and operation, including, but not limited to:	Chapter 3
proposed design and methods of construction of the open pits, including:	Chapter 3, Section 3.5 & Figure 3-7
sequencing	Chapter 3, Section 3.5
designs	Chapter 3, Section 3.5
construction and mining methods	Chapter 3, Section 3.5
types / categories, quantities and characterisation of materials to be mined annually (e.g. ore classes, top soil, waste rock classes, etc.).	Chapter 3, Section 3.5 & Figure 3-7

Terms of Reference	Cross reference
	Appendix L (AMD and classification of waste rock, AMD Management plan)
equipment requirements	Chapter 3, Section 3.5
proposed staging of the Project	Chapter 3, Section 3.5
how target resource grades will be produced	Chapter 3, Section 3.5
product handling requirements	Chapter 3, Section 3.6.2, Section 3.7
run of mine stockpile	Chapter 3 , Section 3.2.1, 3.6.2 & Figure 3-1
waste rock dumps	Chapter 3, Section 3.2.1, 3.10.1-3.10.2 & Figure 3-1
sources and volumes of materials required to support construction of mine infrastructure, such as fill, clays and consumables.	Section 3.4.3
3.1.7 Processing Provide relevant information with respect to each processing circuit and stage to be utilised for the Project, including but not limited to:	Chapter 3, Section 3.7, Figure 3-14
beneficiation and comminution methods (crushing, grinding)	Chapter 3, Section 3.3.1, 3.6.2 & 3.7
sulfuric acid production	Chapter 3, Section 3.7
	Chapter 13, Section 13.3.1 & 13.4.2
rare earth extraction / processing circuits	Chapter 3, Section 3.7
sulfuric acid pre-leach	Chapter 3, Section 3.7
sulfation and water leach	Chapter 3, Section 3.7
double sulfate precipitation and purification	Chapter 3, Section 3.7
rare earth chloride intermediate and cerium carbonate production	Chapter 3, Section 3.7
presence, levels and management of NORM in the:	Appendix P, Chapter 12
rare earth resource	
processing streams / stages	
waste streams, including gangue and overburden	
disposal facilities, including for waste rock.	
projected quantities of rare earth concentrate to be produced	Chapter 3, Section 3.5
other processing methods	Chapter 4, Section 4.3.3

Terms of Reference	Cross reference
major components and equipment of each processing operation	Chapter 3
processing circuit inputs, outputs, volumes / feed grades of materials / consumables required, product recovery grades	Chapter 3, Section 3.14, Figs 3-14
demonstration and comparison of performance with alternative processing methods, if available	n/a
transport of materials to / from the processing circuits.	Chapter 3, Section 3.12.2 & 3.13.1
3.1.8 Energy Provide relevant information with respect to energy, including but not limited to:	Chapter 3, Section 3.8
information on the Project's energy requirements, including mining fleet fuels	Chapter 17, Section 17.4.1 and Appendix V
and electricity demand for mine / processing operations and workers accommodation	Chapter 3, Section 3.8
details of energy infrastructure requirements, for all components of the Project, including fuel storage	Section 3.8
describe any initiatives proposed to improve energy efficiency and/or reduce emissions to air.	Chapter 2, Section 2.6 Chapter 3, Section 3.8, 3.13.2 & 3.14.2 Chapter 13, Section 13.7 EMP Appendix X_C Air management plan
3.1.9 Residue / Tailings Management Provide details of residue / tailings production and management, within each Project stage, including but not limited to:	Chapter 3, Section 3.9 EMP Appendix X_L Water management plan
methods for managing residue / tailings, process outputs and associated process water, including volumes	Chapter 3, Section 3.9, Section 3.10.4
proposed recycling and/or further processing of residue / tailings components, including process waters, gangue materials and gypsum	Section 3.9, Section 3.10.4 Section 4.3.3 & 4.3.5 Table 7-4
anticipated types and quantities of residue / tailings that would be produced and managed by the Project	Chapter 3 Section 3.9
geochemical characterisation of the residue / tailings, indicating the potential to generate seepage of a poor quality with respect to the National Water Quality Management Strategy	Appendix L
design details, specifications, capacity and integrity of the proposed residue / tailings storage / disposal facilities and evaporation ponds, including details of the location, layout, expected design life, material geotechnical specifications used in construction, permeability of walls / floors / underlying strata, compliance with acceptable international standards and guidelines for disposal facilities, risk assessment and management plan.	Chapter 3 Section 3.9.2 and Appendix E

Terms of Reference	Cross reference
3.1.10 Water Management Provide information on proposed Project groundwater and/or surface water use such as extraction rates, quantities, qualities, sources, storage, treatments, disposal and infrastructure requirements. Details should include:	Chapter 3, Section 3.11 Chapter 7 and 8 Appendix I (surface water) & Appendix K (groundwater)
all phases and areas of the Project, processing circuit(s), process / tailings water, slurry water for product transport, dust suppression, drinking water, water treatments and any other uses.	Section 3.11 Section 7.4
A water balance should be provided for the proposed Project	Chapter 7, Section 7.4 Appendix I and Appendix K
3.1.11 Air Provide relevant information with respect to air quality, including but not limited to:	Chapter 3, Section 3.13 and Chapter 13, Appendix Q
inventory (name, composition and quantities) of Project generated air emissions, including from land disturbance, all processing circuits, disposal facilities, vehicles, plants and machinery	Chapter 3, Section 3.13 and Chapter 13, Appendix Q
proposed monitoring regime and equipment	Chapter 13, Appendix Q Appendix X_C Air and dust management plan
reporting requirements and compliance with relevant health and/or environmental standards	Chapter 13, Appendix Q
air quality target thresholds with reference to regulatory industry-standard, health-related safe-limits, or aspirational parameter levels	Chapter 13, Appendix Q
proposed emission control methods, including dust suppression strategies and monitoring of potential dust impacts.	Chapter 3, Section 3.13 Chapter 13, Appendix Q
3.1.12 Wastes and Hazardous Materials Provide relevant information with respect to other waste management, including but not limited to:	Chapter 3, Section 3.10 Appendix X_H Hazardous substances management plan Appendix X_I Waste management plan
descriptions of predicted waste streams, both industrial and domestic, including solid and liquid wastes at / from all Project components	Chapter 3, Section 3.10
descriptions of proposed waste management strategies, including reduction, reuse, recycling, storage, transport and disposal of waste	Appendix X_I waste management plan
description of potentially hazardous materials to be used or produced and methods for storage, transport, handling, containment, disposal and emergency management of these materials	Chapter 3, Section 3.10 Appendix X_I waste management plan, Section 3.2

Terms of Reference	Cross reference
description of the onsite and offsite transport or transfer of listed wastes including source and destination	Section 3.10.7
description of waste water and sewage treatment, and disposal, including any projected need for discharge waste waters to the environment	Chapter 3, Section 3.10.6 & 3.14.2
details of any proposed reverse osmosis plant and associated (e.g. brine) waste streams	Section 3.11.2
description of garbage disposal and management, the proposed size and construction details for landfill, and a list of wastes likely to be deposited in landfill, legislation, guidelines, and standards applicable to any Project landfill, waste disposal facility, and how such requirements will be fulfilled	Section 3.10.7 Appendix X_I waste management plan
proposed monitoring, management, (including contingency management) that identifies, addresses, and monitors any occurrence of environmental contamination during mine operations.	Appendix X_I waste management plan
3.1.13 Workforce and Accommodation Provide details of the predicted workforce requirements during all phases of the Project, including:	Chapter 3
the potential number of people to be employed, skills base required, and likely sources (local, regional, overseas)	Chapter 3, Section 3.14.1
the number of people that may be employed to manage or undertake environmental duties on the site, including minimum qualifications and the level of experience with mining or other related activities	Section 3.14.1 Appendix X, Environmental Management plan
arrangements for transport of workers to and from Project areas, including air services required.	Section 3.14.1 & 17.4.1
For the mine camp that will be used to accommodate staff, provide brief information on aspects of the facility such as:	Chapter 3, Section 3.14.2
accommodation arrangements proposed for workers, and whether the premises will be licensed to serve alcohol	
proximity to the nearest town, work sites and mining operations	Section 1.4.1
compliance with licensing requirements associated with food preparation and storage for catering premises proposed at Project sites	3.14.2
compliance with Environmental Health Fact Sheet No. 700. Requirements for Mining and Construction Projects.	3.14.2
3.1.14 Transport Provide details of road, rail, air and sea transport requirements during all phases of the Project, including:	
methods to convey all site traffic (including materials, workers and product) to and from the Project, road, rail and port networks to be utilised by the Project	Section 3.2.6 & 3.12.2 Fig 3-15 & 3-16 Section 3.14.1 & 17.4.1 Chapter 17, Appendix V

Terms of Reference	Cross reference
type, size and number of vehicles / vessels required, hours of operation and peak times	Section 3.12.1 & 17.4.1 Chapter 17, Appendix V
types and quantities of materials to be transported to / from the Project (e.g. heavy machinery, equipment, fuel, hazardous materials) including measures to handle hazardous or dangerous material	Section 17.4.1 Appendix X_H Hazardous substances management plan Appendix V
estimated frequency of Project vehicles / aircraft use on public infrastructure.	Chapter 17, Section 17.4.1
Describe the proposed methods, routes and locations for transporting and exporting product, including road, rail, air and port networks to be utilised by the Project	Chapter 3, Section 3.12.2, Fig 3-15 & 3-16
product handling requirements	Section 3.12.2 & 17.4.1 Chapter 12, Section 12.4.1, Appendix P
storage / laydown areas and loading facilities	Section 3.12.2 & 17.4.1
methods of truck / train / vessel loading, load constraint and product containment	Section 3.2.6 & 17.4.1, Appendix V
safety management	Chapter 11, Section 11.3.2
additional transport infrastructure works required, including site access and signage	Chapter 17, Section 17.4.3
discussion of the Project transport facilities purposes and capability (e.g. East Arm Wharf, Alice Springs to Darwin Railway Terminal, etc.) to meet the transporting and exporting requirements of the Project.	Chapter 17, Section 17.4.6 Appendix V
3.2 Alternatives Alternative proposals, which allow the objectives of the Project to be met, should be discussed Alternatives to be discussed should include:	Chapter 4
not proceeding with the Project	Section 4.3.1
alternative locations of infrastructure	Section 4.3.2
alternative sources of raw materials for the Project, including water supply	Section 4.3.5, 4.3.6, 4.3.7, 4.3.8
water reuse / recycling / disposal options	Section 4.3.5, 4.3.6
alternative transport corridors and options for transport of ore to the processing plant	Chapter 4 Section 4.3.2, 4.3.11
alternative extraction and processing technologies	Chapter 4, Section 4.3.3
alternative environmental management technologies considered, such as treatment and disposal of by- products and waste products	Chapter 4, Section 4.3.2

Terms of Reference	Cross reference
alternative decommissioning options – analysis should include reference to industry 'best practice' guidelines, including exploration of the option of backfilling the pit with waste rock	Section 4.3.13
alternative configurations to reduce the Project's carbon footprint	-
alternative workforce accommodation	Section 4.3.9, 4.3.10
alternatives to the proposed creek diversion(s) - Kerosene Camp Creek and Nolans Creek	Section 4.3.12
potential recovery of uranium / thorium / phosphate resources from currently proposed residue streams, storages and/or disposal facilities, if economics supporting of such actions were to improve. Assess risks and potential impacts associated with accessing these resources.	Chapter 4, Section 4.3.3
progressive migration of the residual wastes to permanent waste disposal options (i.e. removing option of future recovery of uranium, thorium or phosphate resources from waste streams).	Chapter 4, Section 4.3.3
3.3 Cumulative Impacts An assessment of cumulative environmental impacts should be undertaken	Chapter 4, Section 4.4
 4. Existing Environment The EIS should outline the environmental context of the Project area. The EIS is required to describe baseline (i.e. current) environmental conditions, at least to the spatial extent of the potential environmental impact footprint from the Project in a worst case scenario. Detailed investigation of baseline conditions allows for better understanding of potential impacts from mining in the future. This Section should identify and reference any relevant studies undertaken in the area that will assist in better describing the existing environment. 	Chapter 7, Section 7.3, Appendix I; Chapter 8, Section 8.3, Appendix K; Chapter 9, Section 9.3 and 9.4, 9.5, Appendix M and Appendix N; Chapter 10, Section 10.4, Appendix N; Chapter 12, Section 12.3, Appendix P; Chapter 13, Section 13.3, Appendix Q; Chapter 14, Section 14.3, Appendix R; Chapter 15, Section 15.3, Appendix S and Appendix T; Chapter 16, Section 16.3, Appendix U; Chapter 17, Section 17.3, Appendix V
4.1 Climate The EIS should describe climate and atmospheric characteristics relevant to the Project, e.g. seasonal temperatures, humidity, wind speed and direction, evaporation, rainfall and extreme events (e.g. tropical cyclones, floods, drought and fire).	Chapter 13 Section 13.3.1 Appendix Q Chapter 7 Section 7.3.2
4.2 Topography and Geology The EIS should describe and map geology, topography, soils and significant landscape features of the Project area and surrounding areas; including:	Appendix K (groundwater) and Appendix L (geochemistry)
major geological units, including geological faults	Chapter 9, Section 9.2; Chapter 16 Section 16.3.1
major soil units and characteristics	Appendix M, Table 2.3

Terms of Reference	Cross reference
mineral deposit type and style of mineralisation, the target commodity, the extent and characterisation of the mineral resource and the ore body	Chapter 3, Section 3.5.1 & 3.5.2
sedimentary overburden and/or waste rock, including the ore : waste ratio.	Chapter 3, Section 3.5.4
Radiological conditions in the area need to be established in order to determine the magnitude of exposure to radiation above natural background levels, to sensitive receptors, for the life of the Project and after rehabilitation.	Chapter 12, Section 12.3, Appendix P
4.3 Water The EIS should describe water resource conditions and monitoring should be provided, including discussion and data relating to:	Chapter 7, Appendix I (surface water) and Chapter 8, Appendix K (groundwater)
site and regional surface water catchments, waterways, springs and regional groundwater resources,	Chapter 7, Section 7.3 and Appendix I Chapter 8, Section 8.3 and appendix K
local and regional aquifer properties	Chapter 8, Section 8.3 and appendix K
connectivity between groundwater and surface water	Chapter 8, Section 8.3 and appendix K
results from baseline water quality and hydrology monitoring programs, where available and relevant	Chapter 7 Section 7.3.8; Chapter 8, Section 8.3.8
details of any infrastructure for the monitoring of water resources	Chapter 7 Section 7.6.2
an estimate of annual recharge to regional aquifer systems	Chapter 8, Section 8.3 and appendix K
the environmental values of the surface waterways and groundwater aquifers potentially affected	Chapter 7, Section 7.3.9; Chapter 8, Section 8.3.6
water quality, flows and existing water users potentially impacted by the Project	Chapter 7, Section 7.3; Chapter 8, Section 8.3
site and, if relevant, regional hydrogeology to enable the prediction of potential impacts of the Project on water resources and their features adjacent to mining areas, including drawdown cones and pollution pathways.	Chapter 8, Section 8.3 and appendix K
Consideration should be made of areas / waters within and around all Project elements, upstream and downstream, within identified hydrolithological units, and in waterways (ephemeral and permanent) to be crossed by any infrastructure utilised for the Project (i.e. haul roads, pipeline, rail loading facility, etc.).	Appendix I (surface water report) including Appendix A - Kerosene Camp Creek diversion report
Detailed characterisation should occur of waterway(s) proposed to be diverted by the Project, including contained aquatic / riparian ecosystems and waterway functions.	
 4.4 Biodiversity Describe fauna, flora and vegetation communities of the Project area and local region. Describe survey / program timing, locations and methodology, to demonstrate appropriate and statistically sufficient survey designs. 	Chapter 9 Appendix M Appendix N

Terms of Reference	Cross reference
Where indicated, describe and map:	
any areas that have already been subject to clearing activities or disturbance previously	Chapter 9 Section 9.4, Figure 9-5
any significant or sensitive vegetation types	Chapter 9 Section 9.4, Figure 9-5
habitat within and adjacent to the Project area suitable for species of conservation significance potentially present, including consideration of habitat suitable for breeding, foraging, aggregation or roosting	Chapter 10, Section 10.6
the presence or likely presence of species listed under the Territory Parks and Wildlife Conservation Act (TPWC Act) and/or the EPBC Act, and other species of conservation significance	Appendix N, Table 18
any riparian or aquatic ecosystems or groundwater dependent ecosystems	Chapter 9, Section 9.5, Figure 9-5 Chapter 8, Section 8.3.6
the presence, or likely occurrence, of introduced and invasive species (both flora and fauna) within the Project area, and regionally, including weed species declared under the NT Weeds Management Act.	Chapter 9, Section 9.4.2, Figure 9-6
 4.5 Indigenous and Cultural Heritage The EIS should outline the cultural and heritage significance of any sites or objects located on the Project areas or that could be impacted by Project components. The EIS should include the results of searches on the NT Government database and identify any sites or places protected or nominated for protection under the following legislations: 	Chapter 16, Appendix U
Aboriginal and Torres Strait Island Heritage Protection Act 1984, Environment Protection and Biodiversity Conservation Act 1999	Chapter 16, Section 16.3
Heritage Act	Chapter 16, Section 16.4
Northern Territory Aboriginal Sacred Sites Act	Chapter 16, Section 16.3.2
Aboriginal Land Rights (Northern Territory) Act 1976.	Chapter 16, Section 16.3
a description and location of Indigenous and non-Indigenous sites, places or objects of historic or cultural heritage significance (e.g. traditional land-use)	Chapter 16, Section 16.3; Appendix U
survey(s) used to identify sites, places or objects of historic or cultural heritage significance (e.g. archaeology)	Chapter 16, Section 16.2
Areas nominated for listing or listed on Commonwealth and Northern Territory registers of Indigenous cultural heritage and	Section 16.3.3
Provision of evidence of an Aboriginal Areas Protection Authority (AAPA) Authority Certificate under the Northern Territory Aboriginal Sacred Sites Act.	Chapter 16, Section 16.3.4 Appendix U
The EIS should provide a summary outlining the survey effort and level of confidence that all items of heritage or cultural significance at risk have been identified.	Appendix U Chapter 16, Section 16.3.2

Terms of Reference	Cross reference
The EIS should provide information on the current status of any approvals, permits or clearances in relation to the protection of heritage items or places.	
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.	Chapter 6 incl. Section 6.3.1 and Chapter 16 Section 16.3
5.1 Risk Assessment Approach The EIS should be undertaken with specific emphasis on the identification, analysis and mitigation of potential impacts through a whole-of-Project risk assessment. Through this process, the EIS will:	Chapter 5
identify and discuss the full range of risks presented by the Project	Chapter 5 Appendix F Appendix G
identify relevant potential direct and indirect impacts	Appendix F Appendix G
quantify and rank risks so that the reasons for proposed management responses are clear	Appendix F Appendix G
identify levels of any uncertainty about estimates of risk and the effectiveness of risk controls in mitigating risk	Appendix F Appendix G
explicitly identify those members of the community expected to accept residual risks and their consequences, providing better understanding of equity issues	Section 1.4.2 & 6.3.1
demonstrate that the Project represents best practicable technology.	Section 4.3.3
the Proponent is fully aware of risks of potential impacts associated with all predictable aspects of the Project	Appendix F and Appendix G
the prevention and mitigation of risks of potential impacts are properly addressed in the design specifications	Appendix F and Appendix G
the risks can and will be managed effectively during the construction, operation, decommissioning, closure and post-closure phases of the Project.	Appendix F and Appendix G
5.3 Water	
5.3.1 Environmental Objectives Proposed extraction of water will be within the sustainable limit of the aquifer or water supply to fulfil the Project needs over the predicted life-of-mine, without causing adverse environmental or social impacts.	Chapter 7, Appendix I (surface water) and Chapter 8, Appendix K (groundwater)
Water resources will be protected both now and in the future, such that ecological health and land uses, and the health, welfare and amenity of people are maintained.	Chapter 7, Appendix I (surface water) and Chapter 8, Appendix K (groundwater)

Proposed creek diversion(s) will maintain equivalent ecological functionality of the waterways, and minimise impacts to linked riparian and aquatic ecosystems for the short and long term.	Chapter 7, Appendix I (surface water) and Appendix I_A (Creek Diversion report)
5.3.2 Assessment of Potential Impacts The EIS should identify potential impacts to surface and/or groundwater resources presented by the Project, and assess risks of identified impacts, including consideration of:	
progressive water table drawdown from unsustainable groundwater extraction rates, particularly where aquifers are utilised by other users and/or groundwater dependent ecosystems. Where risks to sensitive receptors are identified, drawdown modelling should quantify potential impacts	s Section 8.5 and 8.5.4 and Appendix K
impacts to the regional public water supplies	Section 8.5 & 8.5.4 and Appendix K
disturbance to, and increased sedimentation of water resources	Chapter 7, Section 7.5.3 and Appendix I
impacts associated with diversion of creeks or rivers, such as impacts to constructed channel stability, existing aquatic / riparian ecosystems and/or ecological functions of waterways	Chapter 7, Section 7.5.3
major or extreme weather events impacting on Project infrastructure and/or water management, including contingency management options	Chapter 3, Section 3.9.2; Chapter 7, Section 7.3.7, 7.5.5
controlled discharge or seepage of contaminated waters into surface and/or groundwater resources	Chapter 8 Section 8.5.2, 8.5.5
uncontrolled discharge of contaminated waters from the Project into surface and/or groundwater resources, du to:	ie
o spills / passive-discharge / seepage of hydrocarbons, AMD / NMD / SD or other hazardous materials	Chapter 8, Section 8.5.5 and Appendix L (AMD assessment)
o loss of control / containment of poor quality mine waters associated with extreme weather events.	Chapter 8, Section 8.5.5 and Appendix L (AMD assessment) Chapter 7, Section 7.5.6
impacts from uncontrolled release of contaminated waters from the Project into water resources.	Chapter 8, Section 8.5.5 and Appendix L (AMD assessment) Chapter 7, Section 7.5.7
The EIS should provide an estimate of quality and quantities of seepage discharging to aquifers and creeks from proposed mine components through all mine phases, including post closure (long term).	Section 8.5.2 & 8.5.5
The influence of seasonality should be discussed where relevant.	Chapter 7, Appendix I (surface water) and Chapter 8, Appendix K (groundwater)
The risk assessment should consider the short (whilst operational), medium (post closure and under institutional control) and long term (post-institutional control) timeframes of the Project.	Chapter 8, Appendix K (groundwater)

Terms of Reference	Cross reference
Provide a detailed conceptual site model describing potential sources, pathways, receptors, and fate of any potentially contaminated waters from the Project, and Project components. The model should be of sufficient detail for the general reader to understand the source(s) of potential contaminants, mechanism(s) of their release, pathway(s) for transport, and potential for human and ecological exposure to these potential contaminants.	Appendix X_ L, water management plan, Section 5.5 & Table 5-2 Appendix K, Chapter 8 Fig 8-3, 8-4 Appendix L
The minimum data required to support the model should include, but not be limited to:	
laboratory and field testing data required to characterise potential physicochemical properties of mine products and infrastructure	Section 8.5.5 & Appendix L
material volume and mass of potential contaminant sources	Appendix L, Chapter 3,
hydrogeological characterisation (e.g. groundwater occurrence, direction and rate of flow, etc.)	Chapter 8 Section 8.3 to 8.5
hydrologic characterisation (e.g. surface water flow, seasonality etc.)	Chapter 8 Section 8.3
baseline water quality of receiving waters (from Section 4.3)	Section 8.3.8 Appendix K (groundwater) and Appendix L (geochemistry)
biological receptors, vectors and their habitats	Section 7.3.9 & Section 8.3.6
other complementary technical studies, at appropriate temporal and spatial scales.	n/a
An appropriately qualified and experienced person should be involved with the supervision and interpretation of test results and the development of the conceptual site model.	Appendix C
Appropriate statistical design details including the number of samples, sampling site selection procedures and quality assurance and quality control protocols to support the development of the model should be provided and justified.	Appendix L
5.3.3 Mitigation The EIS should describe proposed management of water for the Project for all mine-life stages and seasons, according to its source, quality, volume, end use or other parameters, including:	Appendix X_L Water management plan
proposed management to contain contaminants onsite	Appendix X_L, Section 3.2.1
water quality thresholds triggering management actions	Appendix X_L, Section 6.2.3, Section 6.3.3 and 6.4.2.
description of site surplus water volumes, and proposed management	Chapter 7, Section 7.4
management of stormwater, erosion and sediment loads during seasonal and extreme rainfall events.	Appendix X_L, App D (Sediment and Erosion Control Plan)
	Chapter 7 , Section 7.4 Appendix X_L, App D (Sediment and Erosic

Terms of Reference	Cross reference
The EIS should provide a draft Water Management Plan (WMP) that outlines clear and concise measures to mitigate identified risks of the Project to water resources. All mitigation measures in the WMP should be adequately detailed to demonstrate best practicable management and that environmental values of receiving waters will be maintained. The WMP should include but not be limited to measures that avoid or minimise:	Appendix X_L Water management plan
Project contamination of surface or groundwater resources impacts to water dependent ecosystems impacts to existing users of bores and/or surface waterways exposure of sensitive biological receptors to contaminants or water of a poor quality that may be harmful release of contaminated Project waters or hazardous materials to the environment, including post-closure	Appendix X_L Water management plan
The WMP should include measures to: treat and manage domestic wastewater and sewage ensure treatment / neutralisation occurs of hazardous materials to identified safe levels, before any controlled environmental release is considered.	Appendix X_L, Section 8.2.2 Appendix X_L, Section 5.2.4
The WMP should be closely related to but separate from a whole-of-site Erosion and Sediment Control Plan (ESCP) for the Project. The ESCP should include details of permanent and temporary erosion and sediment control methods and treatments to be implemented during all mine phases, for all Project-related land disturbing activities. The ESCP should be undertaken by a suitably qualified and experienced professional in erosion and sediment control planning. The ESCP should be consistent with the International Erosion Control Association's Best Practice Publications.	Appendix X_ L Water management plan, Appendix D, Erosion and sediment conrol plan
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.	-
5.3.4 Monitoring 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 5.3.3), and to monitor for impacts to water resources from the Project.	Appendix X_L, Section 5.5, 6.1, 6.2.1 and 6.3.1.
Proposed monitoring should be described for leaks, spills or seepage of materials from pipelines, storage / disposal facilities (including tailings disposal facilities) and transport operations to identify impacts, should they occur, to local soils, aquifers, environments, workers and/or the general public.	Appendix X_L, Appendix A, Section 2.3.1 and 2.3.2. Appendix X_H, Section 3.2.3 Appendix X_F, Section 3
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	Appendix X_L, Section 5.5, 6.1, 6.2.1 and 6.3.1.

Terms of Reference	Cross reference
implemented in the event that monitoring activities identify that any performance indicators have been triggered, or other water related hazard or emergency.	
The monitoring programs should include:	
methods to monitor the impacts of the Project on surface and groundwater quality and quantity during mine operations and beyond mine closure	Appendix X_L, Appendix A, B and C.
provisions to notify and respond to environmental and human health risks associated with water quality, or other water related emergency	Appendix X_L, Appendix A, Section 2.3.2 and 4. Appendix A_F, Section 3.
contingency plans to be implemented should monitoring identify an unacceptable impact.	Appendix X_L, Section 6.3.3.
5.4 Biodiversity	
5.4.1 Environmental Objectives The Project will maintain the conservation status, diversity, geographic distribution and productivity of flora and fauna, at the species and ecosystem levels, through the avoidance or management of adverse impacts.	Chapter 9 (biodiversity) and Chapter 10 (MNES) Appendix M (fauna) and Appendix N (flora and vegetation)
5.4.2 Assessment of Potential Impacts The EIS should assess risks of identified potential impacts 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.	Chapter 9, Section 9.6 and Chapter 10, Section 10.7
The EIS should analyse potential for the Project to impact on:	
ecosystems at a local and regional scale, including the potential for ongoing indirect impacts	Chapter 9, Section 9.6 and Chapter 10, Section 10.7
listed threatened species, at local, regional, state and national scales	Chapter 9, Section 9.6 and Chapter 10, Section 10.7
other flora / fauna species of conservation significance, with consideration of potential for direct, indirect and consequential impacts. Where a risk has been identified, the EIS should include discussion of the severity of those risks to individuals and regional populations	Chapter 9, Section 9.6 and Chapter 10, Section 10.8
vegetation at a local and regional scale, including the potential for ongoing indirect impacts as a result of edge effects, weed incursion or other processes exacerbated through construction or operation of the Project.	Chapter 9, Section 9.2 & 9.6
Where relevant assess potential for impacts from linear developments, road strikes, discharge or seepage of poor quality water, ground / surface water contamination, groundwater drawdown, radiation exposure, vegetation clearance, habitat fragmentation, edge effects, erosion and sedimentation, soil compaction, inappropriate / ineffective rehabilitation, waste material, transport / storage of hazardous chemicals, noise /	Chapter 9, Section 9.6

Terms of Reference	Cross reference
vibration, dust / air quality impacts or other processes exacerbated through construction or operation of the Project.	
Provide detailed assessment 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.	Chapter 9, Section 9.6
5.4.3 Mitigation The EIS should contain a detailed Biodiversity Management Plan (BMP) that outlines clear and concise methods to mitigate likely impacts to biodiversity. All mitigation measures should be in accordance with best practice advice from relevant Northern Territory and Australian Government advisory agencies.	Appendix X_D Biodiversity management plan
The BMP should detail preventative management and treatment measures in relation to: procedures to be adopted during vegetation clearing, including wildlife rescue procedures weed and feral animal management rare, threatened or significant species at risk of being adversely impacted potentially significant impacts to regional biodiversity	Appendix X_D, Appendix B Appendix X_M, Section 4 Appendix X_D, Section 4.3 Appendix X_D, Section 3.4
weed control measures and hygiene protocols as required under the Weeds Management Act.	Appendix X_M, Section 4
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.	Appendix C
5.4.4 Monitoring The BMP should include details of monitoring that is proposed to be undertaken to monitor the effectiveness of the mitigation measures proposed, including the methodology for monitoring the impacts to biodiversity. Where relevant, outline contingency measures to be implemented in the event that monitoring indicates that mitigation measures are ineffective. Provide explicit thresholds / trigger-points for intervention.	Appendix X_D, Section 4 Appendix X_M, Section 4.2
5.5.1 Matter of National Environmental Significance The delegate of the Commonwealth Minister determined that the proposed mine was a controlled action as the Project has the potential to have a significant impact on:	Chapter 10 Appendix N
listed threatened species and communities (Section 18 & Section 18A); and	Chapter 10 & Appendix N
the environment - because the proposal is a nuclear action (Section 21 & Section 22A).	Chapter 12, Appendix P
 5.5.2 Assessment of potential impacts to listed threatened species and communities 5.5.2.1 Description of the Environment The EIS must provide a detailed assessment of the likely presence of listed threatened species and their habitat within the vicinity of the Project area. Species assessed must include, but not be limited to: 	Chapter 10 , Appendix N
Black-Footed Rock-Wallaby (Petrogale lateralis) - MacDonnell Ranges Population	Chapter 10 Section 10.5.3 and Section 10.6.3

Terms of Reference	Cross reference
Great Desert Skink (Liopholis kintorei)	Chapter 10 Section 10.5.3 and Section 10.6.4
Greater Bilby (Macrotis lagotis).	Chapter 10 Section 10.5.3 and Section 10.6.5
5.5.2.2 Relevant Potential Impacts The EIS must include an assessment of the risk of impact, if any, to listed threatened species and their habitat from any potential source of impact arising from the construction, operational and decommissioning phases of the Project, including, but not limited to:	Chapter 10 Section 10.7 Appendix N
Clearing of known and potential habitat for each of the listed threatened species identified above. The type, importance, quality and quantity of habitat to be cleared should be discussed for each species.	10.7.3
Vehicle strike as a result of increased day and night time traffic, including during construction and throughout the operating life of the proposed Project. The number of vehicle movements during construction and normal operations should be estimated and proposed vehicle speed limits should be identified.	10.7.12
· Increase in feral fauna species, particularly cats and foxes, as a result of increased accessibility and use of linear infrastructure (e.g. impacts of increased predation and competition).	10.7.8
· Introduction and increase spread of weeds (e.g. impacts by modification of important habitat; altered fire regimes).	10.7.8
• Barrier effects caused by the mine pit and associated linear infrastructure and the impacts of habitat and population fragmentation.	Chapter 10
Transportation and/or disposal of hazardous material (including NORMs) or wastes.	12.4.3
· Altered hydrology and water quality impacts, including erosion / sedimentation and radiation contamination of water resources	10.7.11
· Water drawdown from groundwater extraction impacting on dependent ecological communities	10.7.11
· Radionuclide exposure from dust emissions, contaminated water resources or other sources of exposure.	10.7.4, 12.4.3
5.5.3 Assessment of potential impacts to the environment Under the EPBC Act the environment is defined as including:	This EIS
a) ecosystems and their constituent parts, including people and communities; and	
b) natural and physical resources; and	
c) the qualities and characteristics of locations, places and areas; and	
d) heritage values of places; and	
e) the social, economic and cultural aspects of a thing mentioned in paragraph (a), (b) (c) or (d).	

Terms of Reference	Cross reference
5.5.6 Other Matters The assessment of potential impacts to matters of National Environmental Significance must show regard to relevant Threat Abatement Plans, Recovery Plans and Survey Guidelines, including but not limited to:	Chapter 10 , Appendix N
Survey Guidelines for Australia's Threatened Mammals. EPBC Act Survey Guidelines 6.4	Chapter 10, Appendix N
 Survey Guidelines for Australia's Threatened Reptiles: Guidelines for Detecting Reptiles Listed as Threatened Under the EPBC Act 	Chapter 10 , Appendix N
Threat Abatement Plan for Predation by Feral Cats	Chapter 10 , Appendix N
Threat Abatement Plan for Predation by the European Red Fox	Chapter 10 , Appendix N
Threat Abatement Plan for Competition and Land Degradation by Rabbits	Chapter 10 , Appendix N
• Threat Abatement Plan to reduce the Impacts on Northern Australia's Biodiversity by the Five Listed Grasses	Chapter 10 , Appendix N
National Recovery Plan for the Greater Bilby (Macrotis lagotis)	Chapter 10 , Appendix N
• A Recovery Plan for the Great Desert Skink (Egernia kintorei) – Please note Egernia kintorei is a toxicological synonym for the modern scientific name Liopholis kintorei	Chapter 10 , Appendix N
Recovery Plan for Five Species of Rock Wallabies: Black-Footed Rock Wallaby (Petrogale lateralis), Rothschild Rock Wallaby (P. rothschildi), Short-Eared Rock	Chapter 10 , Appendix N
5.6.2 Assessment of Potential Impacts The EIS should identify and assess potential hazards to human health and safety associated with all stages and components of the Project, including pathways for development of hazards and increasing of risks.	Chapter 11 Appendix O
Sensitive receptors to hazards associated with the Project should be identified, including their locations and patterns of activity.	11.1
Identification of potential hazards and risk assessment should include consideration of:	
 risks to health and safety of the workforce and the general public for the duration of the Project, including post-closure 	Chapter 11, Chapter 12 (radiation) Chapter 18 (post closure)
fire, including combustible materials and bushfires	Chapter 11, 11.3.5
 hazards associated with the transportation of personnel, rare earth concentrate, explosives (bulk emulsion), consumables and dangerous goods 	11.3.2 & 11.3.4
 hazardous materials exposure, including hazardous process inputs / outputs 	11.3.4

Terms of Reference	Cross reference
	Appendix X_H Hazardous substances management plan
• hazards and increased risks associated with remote area construction, operations and transport, such as due to	11.3.7
\cdot reduced access to communications and monitoring networks, and to emergency, health and vehicle breakdown services	11.3.7
· extreme climates	11.3.6
· fauna	11.3.7
· long travel distances	11.3.7
 project related hazards to transport network users and any communities adjacent to haul routes 	Chapter 17, Section 17.4
 capacity of proposed infrastructure and services to allow the Project to operate safely 	Chapter 17, Section 17.4
• hazards and increased risks associated with climate change and extreme weather conditions, including rainfall, flooding and drought.	11.4.4
5.6.3 Mitigation and Monitoring Detail preventative, management, treatment and monitoring strategies used to minimise the impacts of the Project on human health and safety. Outline environmental management strategies necessary for human health and safety, and describe how these strategies will be incorporated into the EMP (Section 6).	11.4 and Appendix X_F Emergency response plan
Describe the emergency plans and response procedures developed as a contingency in the event of an emergency or accident (e.g. chemical spillages, leaks, fire and explosions, traffic accident, etc.), including management of all emergencies that may impact on the facility, its surrounds, personnel or the public. Responsibilities and liabilities in such an event should be included.	Appendix X_L, Appendix A, Section 2.3.1 and 2.3.2. Appendix X_H, Section 3.2.3. Appendix X_F, Section 2.5 and 3.
5.7 radiation	
5.7.1 Environmental Objectives The EIS should demonstrate that for all stages of the Project:	
• the Proponent is fully aware of potential for the Project to cause harmful radiation doses to people and/or the environment.	Chapter 12 and Appendix P
 proposed management will protect all people and the environment from harmful radiation doses resulting from the Project 	Chapter 12 Appendix P and Appendix X sub plan J Radiation management plan and radiation waste management plan

Terms of Reference	Cross reference
5.7.2 Assessment of Potential Impacts The EIS should identify and assess potential radiation hazards presented by the Project, including:	
• details of radiation dose potential from Project elements to workers, fauna, the public and the environment, include consideration of:	Chapter 12 Section 12.4
o radon and its decay products	Chapter 12 Section 12.4
o radioactive particles in dust	Chapter 12 Section 12.4
o alpha and gamma radiation	Chapter 12 Section 12.4
 exposure pathways from ore and ore processing including tailings / process residue disposal, materials stockpiles and waste disposal facilities. 	12.4.1, 12.4.3
• assessment of potential radiation dose delivered via the consumption of local commonly-utilised bush foods and/or livestock where applicable	12.4.2
 potential for radioactive elements to concentrate and partition in the processing circuits, waste disposal facilities and waste disposal facility seepage / discharges 	12.4.1
 potential for accidental radiation exposure through unintentional or emergency release of hazardous materials / gases 	12.4.1, 12.4.2 and Appendix X sub plan radiation management plan
5.7.3 Mitigation The EIS should demonstrate the following with respect to radiation aspects of the Project:	
• The Proponent will implement a system to control the radiation exposure of people and the environment arising from its mining, processing, storage and disposal activities. The system and the dose limits applied must comply, at the minimum, with relevant Australian law taking into account the most recently published and relevant Australian standards, codes of practice, and guidelines. The Project must achieve the following outcomes:	12.5 Appendix X_J radiation management plan and radiation waste management plan
o radiation doses to company employees and contractors are kept as low as reasonably achievable and must always remain less than the dose limit for workers	12.4.1 and 12.5 Appendix X_J
o radiation doses to people who are not company employees or contractors must be kept as low as reasonably achievable and must always remain within the dose limit for members of the public	12.4.2 and 12.5 Appendix X_J
o the Project will not result in any significant deleterious radiation impacts on surrounding ecosystems	12.4.3 and 12.5 Appendix X_J
The EIS should provide a draft Radiation Management Plan (RMP) for the Project describing proposed measures to identify, avoid, mitigate and monitor for radiation impacts from the Project, including, but not limited to a:	Appendix X_J

Terms of Reference	Cross reference
radiation-monitoring program that includes radiation monitoring for a critical group. The radiation dose to the critical group is often estimated from modelling that requires a discharge-source term. Therefore, the estimated dose to the critical group may set a discharge limit on radioactive material. A critical group is to be identified and defined, as per Section 2.7 of the Code of Practice (2005) mentioned in this Section	Appendix X_J
• A detailed draft Radioactive Waste Management Plan, consistent with, but not limited in scope by Section 2.8.2 of the Code of Practice (2005) mentioned in this Section	Appendix X_J
· monitoring and reporting program to determine the effectiveness of mitigation measures	Appendix X_J
• a systematic hazard and risk review process to assess the effectiveness of proposed measures in meeting objectives of the plan (and this Section).	Appendix X_J
5.7.4 Monitoring The RMP should include a proposed monitoring and reporting program to determine the effectiveness of mitigation measures (Section 5.7.3). The monitoring and reporting program should identify when further action is required and outline contingency measures should the proposed mitigation measures not meet outcomes expected and identified by the Proponent.	Appendix X_J
5.8 Socio - economic	
5.8.1 Environmental Objectives To analyse, monitor and manage the intended and unintended social consequences, both positive and negative, of the Project and any social change processes.	Chapter 15 Appendix S Appendix T
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 risks of social and economic impacts from the Project.	Chapter 15 Appendix S Appendix T
summary of the Project's economic feasibility	Appendix T
• details of the financial capacity to implement the Project, the significance of potential risks to Project implementation and associated proposed mitigation measures, including the capacity to cost for mine closure and care and maintenance activities	
• opportunities available to regional centres based on the activity generated by the Project (construction, rehabilitation and operation)	Appendix T, Chapter 15, Section 15.4.2
current and projected availability of goods and services to existing users within the region, such as availability of: accommodation, emergency medical services, trades-people and transport services	Appendix S, Chapter 15, Section 15.3.3 , 15.3.4
outline of the net economic benefits of the project.	Appendix T, Chapter 15, Section 15.4
Analysis of the proponent financial capacity to allocate sufficient resources to :	

Terms of Reference	Cross reference
· implement the Project, mitigation measures, and contingency management measures	Appendix T
· maintain its environmental obligations should the Project be temporarily closed or suspended	
• meet all stabilisation, rehabilitation and closure requirements, once operations have ceased.	
5.8.3 Mitigation and Monitoring An Economic and Social Impact Management Plan (ESIMP) should be prepared to address any risks of significant impacts identified in the ESIA. The ESIMP should:	Chapter 15 Section 15.5 Appendix X_K (SIMP)
 describe how the Proponent proposes to manage any identified risks of economic, social or cultural impacts (include consideration of tourism) from the Project, or its associated workforce 	Chapter 15 Section 15.5 Appendix X_K (SIMP)
• describe how potential local and regional business and employment opportunities related to the Project will be identified and managed	Section 2.1.4 & Section 15.5 Appendix X_K (SIMP)
· include measures to mitigate negative economic and social impacts on the locality and region	Chapter 15 Section 15.5 Appendix X_K (SIMP)
 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 	Chapter 15 Section 15.5 Appendix X_K (SIMP)
 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. 	Chapter 15 Section 15.5 Appendix X_K (SIMP)
· include a mechanism for monitoring and reporting any identified potential socio- economic and cultural impacts.	Chapter 15 Section 15.5 Appendix X_K (SIMP)
5.9 Transport	
5.9.2 Assessment of potential impacts The EIS should identify and analyse direct and indirect potential impacts, hazards, costs and benefits associated with transport components of the Project.	Appendix V, Chapter 17
Sensitive receptors to potential impacts, hazards, costs and benefits should be identified, including their location and the potential for exposure.	17.3
Aspects to be discussed include:	
 support services and infrastructure to be provided by the Proponent for transport components of the Project 	Chapter 15, 15.4.3
 potential for impacts from the Project to regional community access to emergency and breakdown services, fuel supplies and accommodation from increased demands due to the Project 	Chapter 15, 15.4.3

Terms of Reference	Cross reference
 potential for impacts from Project heavy vehicles to the condition and usability of public roads, including consideration of seasonal variability of road surface conditions 	Chapter 17, Section 17.4.2, 17.4.3
• potential for impacts from the Project to other users and available capacities of shared railway resources	17.4.5, 17.4.6
• potential for impacts from the Project to marine waters and ecosystems associated with loading / unloading of vessels, and stockpiles of product and materials	Section 3.2.6, 3.12.2
• potential for impacts arising from other transport components of the Project, including personnel and air transport, rail and sea haulage.	17.4.4
 5.9.3 Mitigation and Monitoring Detail preventative, management, treatment and monitoring strategies used to minimise the impacts of transport components of the Project. Describe how these strategies will be incorporated into the EMP (Section 6). Strategies should address, as a minimum: 	
 measures to reduce any road traffic nuisance impacts (e.g. noise, dust, light) 	Appendix X_C
 road maintenance and upgrades where relevant to human safety and continued access 	Section 17.4.3
 methods for complying with any relevant road vehicle axle limits 	
· methods for securing loads	
consultation with local communities affected by transport impacts	Chapter 6
 spill prevention and management during ship loading / unloading operations, transport of product, and stockpiles of product and materials, to the extent under control of the Proponent 	Appendix X_H
· management of driver fatigue.	
5.10 Historic and Cultural Heritage	
5.10.1 Environmental Objectives Places and items with historic and/or cultural heritage values protected under the Heritage Act, the Northern Territory Aboriginal Sacred Sites Act or any other relevant Territory or Commonwealth legislation, will be identified and those values protected.	Chapter 16 Appendix U
5.10.2 Assessment of Potential Impacts The EIS should:	
· identify and assess risks of the Project to impact on sites / objects of sacred, heritage or cultural significance	Chapter 16, Section 16.4 Appendix U
• detail any requirements to disturb or destroy a prescribed archaeological place and/or object under the Heritage Act	Chapter 16, Section 16.4 Appendix U

Terms of Reference	Cross reference
· identify and assess any risks of impacts to significant cultural sites from Project generated vibration and dust.	Chapter 16, Section 16.4
5.10.3 Mitigation The EIS should describe measures to prevent and/or mitigate risks of impacts to existing sites or items of historic and cultural heritage in a Cultural Heritage Management Plan (CHMP). The CHMP should include:	Chapter 16, Section 16.5 Appendix X sub plan Cultural Heritage Management Plan
 procedures to avoid significant sites and areas 	Chapter 16, Section 16.5 Appendix X sub plan Cultural Heritage Management Plan
 protection of key sites during construction, operation and decommissioning work 	Chapter 16, Section 16.5 Appendix X sub plan Cultural Heritage Management Plan
• 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	Chapter 16, Section 16.5 Appendix X sub plan Cultural Heritage Management Plan
 procedures for the discovery of surface or sub-surface items during the course of the Project. 	Chapter 16, Section 16.5 Appendix X sub plan Cultural Heritage Management Plan
5.10.4 Monitoring The CHMP should include details of a monitoring and reporting program to determine the effectiveness of mitigation measures (Section 5.6.3). 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 sites or items with heritage or cultural significance.	Chapter 16, Section 16.5 Appendix X sub plan Cultural Heritage Management Plan
5.11 Air	
5.11.1 Environmental Objectives Sensitive receptors of Project generated emissions to air, including dust, radon gas and processing-plant emissions, will be identified and protected from significant impacts.	
5.11.2 Assessment of potential impacts Identify and assess potential impacts to sensitive receptors from Project emissions. Include: emissions of chemicals, particulates, biological materials, radon gas and dust, from:	Chapter 13, Section 13.6 and Appendix Q Chapter 12 (radon gas and dust) Section 12.4 , Appendix P
· drilling, blasting, excavation and materials handling (including transportation)	Chapter 13, Section 13.4 to 13.6 Appendix Q

Terms of Reference	Cross reference
each beneficiation / concentrator and processing stage	Chapter 13, Section 13.4 to 13.6 Appendix Q
sulfuric acid plant, power plants, vehicles, machinery	Chapter 13, Section 13.4 to 13.6 Appendix Q
• tailings / residue / waste / overburden / materials / product streams, storages and disposal facilities	Chapter 13, Section 13.4 to 13.6 Appendix Q
· general site movements over unsealed surfaces	Chapter 13, Section 13.4 to 13.6 Appendix Q
• haulage and transport of material along the haul road between the pit, stockpiling site and export facilities	Chapter 13, Section 13.4 to 13.6 Appendix Q
• wind erosion mobilising dust from exposed surfaces, such as from pits, waste dumps, laydown areas, stockpiles, roads and sites of vegetation clearing.	Chapter 13, Section 13.4 to 13.6 Appendix Q
Identify existing variability in air quality target parameters, such as the impact of smoke haze, NORMs and any relevance to potential impacts to sensitive receptors from Project emissions.	Chapter 13, Section 13.3 Chapter 12, Section 12.3.2 and Appendix P
Potential impacts, nuisances and human health issues associated with air quality, including dust, and mitigation measures should be discussed in Sections 5.4 and 5.6.	Chapter 9, Section 9.6.2 and 9.6.3 Chapter 11 Section 11.4.3 Chapter 12 Section 12.4
Consideration should be given to the acute and chronic exposure and pathways, such as inhalation, ingestion and dermal contact. Potential sensitivity of receptors to air quality, including dust, and mitigation measures should be discussed in relevant Sections of the EIS. Identified risks and contaminant pathways should also be included in the conceptual site model for the Project	Chapter 12, Section 12.4
5.11.3 Mitigation The EIS should provide details of mitigation measures to avoid, mitigate and/or minimise identified risks of potential impacts, including but not limited to:	Chapter 13, Section 13.7 Appendix X_C air and dust management plan
technique, location, frequency and target parameters	Appendix X_C, Section 2.4.
• proposed monitoring and reporting to be used to evaluate and report on the effectiveness and performance of the mitigation measures	Appendix X_C, Section 3.4.
• 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.	Appendix X_C, Section 3.4.
5.12 Rehabilitation, Decommissioning and Closure	

Terms of Reference	Cross reference
5.12.1 Environmental Objectives The EIS will demonstrate that:	
• As far as practicable, rehabilitation will achieve a stable and functioning landform which is compatible with the surrounding landscape and other environmental values.	Chapter 18, Section 18.2 and Appendix W
• Potential impacts to downstream water quality / potable-water supplies, ecosystems, beneficial uses, environmental / cultural values or human health, associated with closure and rehabilitation of the Project will be identified, and adequately avoided, mitigated and/or minimised.	Chapter 18, Section 18.3 & Table 18-1 Appendix W
· Rehabilitation of areas impacted by mining, will ensure:	
o Health risk to members of the public, including traditional owners, will be as low as is reasonably achievable.	Chapter 18, Section 18.3 Appendix W
o Members of the public will not receive a radiation dose which exceeds applicable limits recommended by the most recently published, relevant Australian standards, codes of practice, and guidelines.	Chapter 12, Section 12.4.2 and Appendix P
5.12.2 Assessment of Potential Impacts Closure planning should be risk-based taking 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. Identify risks to the successful rehabilitation and closure of the Project, including risks to prescribed closure timeframes, including:	Chapter 18, Section 18.3 and Appendix W
 closure timeframes and objectives and the Project not realising its projected outcomes (i.e. delays, unexpected or forced closure, etc.) 	Chapter 18, Section 18.3 and Appendix W
risks that the Project may create an ongoing environmental, social and/or economic legacy if operations are required to cease ahead of schedule due to unforeseen circumstances, prior to the planned closure and rehabilitation of the site	Chapter 18, Section 18.3 and Appendix W
 the post-closure risk assessment should include a discussion of the effects of: 	Appendix W, Section 7
\cdot changes in the assumptions used as a basis for the post-closure risk assessment	Chapter 18, Section 18.3 and Appendix W
 natural events, including earthquakes, rainfall events, fire and flood. 	Chapter 18, Section 18.3 and Appendix W
The EIS should identify and evaluate risks relating to the handling, storage and disposal of radioactive material, and demonstrate that isolation of radioactive tailings and materials will be secure virtually indefinitely.	Appendix X sub plan radiation management plan
5.12.3 Mitigation A draft Mine Rehabilitation and Closure Plan (MRCP), specific to the Project should be prepared, to:	Appendix W Table 2-1
· describe proposed rehabilitation, decommissioning and closure for all aspects of the Project on completion of mining / operations on individual sites	Appendix W, Section 7 & 8

Terms of Reference	Cross reference
· address objectives identified in Section 5.12.0	
· describe how risks identified in Section 5.12.2 will be mitigated	
• 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.	Appendix W, Section 8
The draft MRCP should include description of:	
· removal of plant, equipment, infrastructure, water storages, and methods proposed for stabilisation of affected areas	
 proposed staging and timing of rehabilitation and closure 	Appendix W Table 12
 protocols for the securing a safe and stable mine -site 	Appendix W Section 8.3.1
• proposed methodologies of topsoil management, and soil profile reconstruction, with demonstration of their effectiveness for rehabilitating disturbed areas	Appendix W Section 8.3.3 and 8.4.3
closure criteria and future land tenure and land-use arrangements	Appendix W Section 6 and Table 9
• revegetation strategies for disturbed sites to utilise local native plant species similar in type, density and abundance to those existing in adjacent areas	Appendix W Section 8.4
• measures to ensure the soil stabilisation against erosion, to a level similar to comparable landforms in surrounding undisturbed areas	Appendix W Section 8.4.6 and 8.4.7
 contingencies to make landforms and mine components secure and non-polluting 	Appendix W Section 8.4.2 and 8.4.6
· proposed final topographic and drainage morphology, including design concepts and methods to be used.	Appendix W Section 2, 8.4.6 and 8.4.7
The MRCP should include a Care and Maintenance Plan based on the MRCP. The Care and Maintenance Plan should include measures outlining how the Proponent will maintain its environmental obligations and commitments should the Project be temporarily or unexpectedly closed or suspended at any stage in the Project life.	Appendix W Section 8.3.6 and the C&M Plan
5.12.4 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 MRCP 	Appendix W Section 9
describe contingency measures to be implemented in the event that monitoring demonstrates that management measures described in the MRCP have not been effective	Appendix W Section 9
 provide monitoring criteria that will give early warning that management and mitigation measures are not achieving the outcomes and benefits expected and identified by the Proponent 	Appendix W Section 9

Terms of Reference	Cross reference
5.13.1 Bushfires and Emergency The Proponent should be aware of Sections of the Bushfires Act 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 developed in consultation with traditional owners, pastoralists and their representative organisations, where appropriate, that have specialist knowledge in fire management. The Fire Management Plan should be incorporated into the EMP (Section 6) for the Project.	Appendix X_G Fire management plan Appendix X_F Emergency Response Management Plan Chapter 11, 11.3.5 and 11.4.6
5.13.2 Noise and Vibration The potential sensitivity of human and biological receptors to noise and vibration and mitigation measures should be discussed in a relevant Section of the EIS. The Proponent should address the impact of noise and vibration resulting from the Project on residents and the community in a relevant Section of the EIS should outline methods for communicating with, and reducing the impact on, residents within the vicinity of Project components or transport corridors who may be adversely affected by the Project.	Chapter 14, Appendix R
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.	Chapter 14 Section 14.5 Appendix R
5.13.3 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.	n/a
5.13.4 Mosquito Breeding There is potential for mine sites to create mosquito breeding sites. The Proponent should be aware of Sections of the Public and Environmental Health Act that apply to the Project and address risk and management of biting insects in a relevant Section of the EIS. In particular, the EIS should provide:	n/a
 measures to ensure water pond (i.e. sediment pond) is designed with minimal mosquito breeding potential (i.e. steep sides, deep open water). The Project should conform to Guidelines for Preventing Mosquito Breeding Associated with Mining Sites [1] 	n/a
 Measures to prevent mosquito breeding should be outlined in a biting insect management Section in the EMP. Information on personal protection can be found in Personal protection from mosquitoes and biting midges in the Northern Territory[2] 	n/a
6.0 Environmental Management The specific safeguards and controls proposed to be employed to minimise or remedy environmental impacts identified in the risk assessment process are to be included in an EMP. The EMP should be strategic,	Appendix X, Appendices C to M

Terms of Reference	Cross reference
describing a framework for continuing management, mitigation and monitoring programs for the significant impacts of the project	
The EMP needs to address the Project phases (development, operation, decommissioning, closure and post- closure) separately. It must state the environmental objectives, performance criteria, monitoring, reporting, corrective action, necessary resourcing, responsibility and timing for each environmental issue.	Appendix X, Section 2.5 Appendix C, Appendices C to M
The EMP should include:	
• the 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	Appendix X , Section 6.2
• 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	Appendix X , Section 6.1.2
• a register of ownership for the mining and infrastructure interests associated with the Project, including the title numbers, title holders and status	Appendix X , Section 2.2
• the name of the agency responsible for endorsing, approving and/or overseeing each mitigation measure or monitoring program	Appendix X , Section 6.5.1
 proposed reporting procedures consistent with Territory and Australian Government legislative requirements 	Appendix X , Section 6.4 and 6.5
• 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	-
 management targets and objectives for relevant environmental impacts and/or factors 	Appendix F and Appendix G Appendix X, Appendices C to M
 performance indicators by which all anticipated and potential impacts can be measured 	Appendix X, Appendices C to M
 proposed monitoring programs to allow early detection of adverse impacts 	Appendix X, Appendices C to M
· sampling procedures and frequency, where relevant:	Appendix X, Appendices C to M
o how results will be recorded	Appendix X, Appendices C to M
o laboratory techniques and methods of data analysis	Appendix X_C, Section 2.4
o equipment and instruments calibrated or verified at specified intervals	Appendix X_L, Appendix A, Section 1.2 Appendix X_L, Appendix C, Section 1.2
o sample preservation techniques.	Appendix X_L, Section 7.3

Terms of Reference	Cross reference
 contingencies for emergency events, such as hydrocarbon and other hazardous chemical spills or natural disasters 	Appendix X_F, Section 3.2
 procedures for dealing with failure to meet performance criteria and targets, non-compliance with environmental management controls, environmental incidents and emergencies 	Appendix X, Section 6.6
• Where interpretation of the monitoring data or other observations have detected the potential for or actual adverse trends in performance or impacts, detail what 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.	Appendix X, Section 6.6.1 Appendix X_F Section 3 Appendix X_L Section 6.3.3
• an overview of the environmental awareness training and education process regarding responsibilities, including:	Appendix X, Section 6.3
o the induction program (e.g. general, site, department)	Appendix X, Section 6.3
o communication of the requirements of the EMP to all employees and contractors	Appendix X, Section 6.3
environmental emergency response training	Appendix X_F Section 2.6
particular training requirements for targeted personnel	Appendix X, Section 6.3
any other environmental training or education requirements	Appendix X, Section 6.3
provision for the periodic review of the EMP	Appendix X, Section 6.4.3 Appendix X, Section 6.5.1
provision for independent environmental auditing of the Project.	Appendix X, Section 6.6
The EIS must include information on any consultation about the Project, including:	Chapter 6
· any consultation that has already taken place	Chapter 6, Section 1.3
a list of persons and agencies consulted during the EIS	Chapter 6 Section 1.3.1 Appendix H Section 3.3.2 and 3.3.3
· if there has been consultation about the Project, any documented response to, or result of, the consultation	Chapter 6 Section 1.4 Table 6-1 Appendix H Section 4.1, 4.2 and 4.3, Table 4-2
 proposed consultation about relevant impacts of the Project 	Chapter 6 Section 1.5 Appendix H Section 3.3.4 Appendix S
· identification of affected parties, including a statement mentioning any communities that may be affected and describing their views.	Chapter 6, Appendix H

Terms of Reference	Cross reference
The EIS has an important role in informing the public about this Project. It is essential that the Proponent demonstrate 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 Project because of consultation. Details of any ongoing liaison should also be discussed.	Chapter 6, Appendix H