



EcOz
Environmental
Services

WesternDesert
RESOURCES

TITLE PAGE - Appendix B

Document Cross Reference

Western Desert Resources Limited
Roper Bar Iron Ore Project



2012



EIS Guideline Section	Detail Requested in EIS		EIS Section / Appendix
Section 2.1 General Content Pg. 4	Copy of EIS guidelines		Appendix A
	List of persons and agencies consulted during EIS		Chapter 12
	Contact details for the proponent		Section 1.1
	Names of, and work done by, the persons involved in preparing the EIS		Chapter 12
	Expertise of the people involved in work contributing to the EIS		Chapter 12
	List of commitments made by the proponent		Appendix Q
	Table listing how guidelines have been met		Appendix B (This Table)
	Technical information studies and investigations		All Appendices
	The environmental record of the Proponent, including details of their environmental policy and planning framework and details of any proceedings or applicable under a Commonwealth, or state law for the protection of the environment against them		Section 1.1
Section 3.1 Description of Proposed Development (General Information) Pg. 8	The title of the proposal		Section 1.2
	List of project components (what is covered by the risk assessment performed)		Section 1.7
	Objectives, benefits and justification for the action:	Summary of environmental, economic and social factors supporting the project	Section 1.2
		Commercial objectives (supply and demand)	Section 1.2
	How the project relates to other projects within the region		Section 1.2
	Exploration of additional leases and potential future expansion		Section 1.2
	Proposal location in relation to sensitive environments, landmarks and social features		Section 7.3
	Relevant national and NT legislation, standards and guidelines and codes of conduct		Section 1.8
	Current status of the proposal		Section 1.4
	Delineation of the proposal footprint	Location of the resource	Section 2.1
		Boundaries of land tenures and mining tenures	Section 2.1
		All areas to be cleared (mine, haul road, infrastructure areas etc.)	Section 2.1
		Location of all infrastructure, including Bing Bong (diagrams, plans, maps, illustrations)	Section 2.2
Any other infrastructure associated with the proposal (same as above)		Section 2.5	
Section 3.2 Project Alternatives Pg. 10	Explore possible alternatives for carrying out the proposed activity		Section 1.9
	Not proceeding with the proposal		Section 1.9
	Avoidance of realignment of the tributary of the Towns River		Section 1.9
	Selected sites alternatives (ROM, haul, loadout facilities etc.)		Section 1.9
	Rehabilitation methods		Section 1.9
	Transport options		Section 1.9
	Other sources of water/storage options		Section 1.9
Energy sources		Section 1.9	
Alternative environmental management measures for key risks and impacts		Section 1.9	
Section 3.3 Project Planning Pg. 10	Timeline for construction, commissioning, operation and decommissioning		Section 2.1
	Details of construction, commissioning, operation and decommissioning equipment to be used		Chapter 2
	Waste management measures including treatment, reuse, reduction and disposal		Section 2.10
	Information on potentially hazardous materials (transport, storage, disposal)		Section 2.10
	Number and sources of staff and training provided		Section 2.11
	Buildings required at the mine site and provision of worker facilities (drinking water and treatment, ablution, sewerage and treatment)		Section 2.5
	Infrastructure requirements for ore to be transferred to ROM, including alignment of haul roads, identification of creek crossings, location of borrow pits etc.		Chapter 2
Section 3.4	For all project components provide the following:	Timetable for construction, noting seasonal rainfall	Section 2.1

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Construction Pg. 10		Site access including vegetation clearing and disposal of plant matter following clearing and provision of access, power, telecommunications, water supply and other infrastructure	Chapter 2
		Construction requirements, including type, sources, quantity and method of transport of construction materials, including water; methods of mine construction, volumes of materials required; any staging of construction activities; and plant and machinery required.	Section 2
		Hours of operation	Section 2.1
		Solid and liquid waste handling	Section 2.10
		Erosion and sediment control practices	Appendix L
		Proximity to sensitive habitats	Chapters 4 and 5
		Details of potential disruption to flows of waterways during construction and any diversion works required	Chapter 2.1 and Chapter 9 risk.
		Containment/disposal of construction spoil	Section 2.10
		Dust control requirements and water sources	Sections 2.9 and 7.6
		Provisions for management of weeds and prevention of weed spread.	Appendix F
Section 3.5.1 Project components (Design and operations) Pg. 11	Mine pit	Mining types and methods, including the major equipment to be used in the various components of the operation	Chapter 2
		Number of pits proposed and their location, design and depth	Section 2.2
		Design basis for flood protection bunding and stream diversion infrastructure	Section 2.6
		Handling/stockpiling of topsoil, overburden and waste materials	Chapter 2
		Different techniques to be used for different sites/ore bodies (differing geotechnical character or topography)	Chapter 2
		Quantity of material to be mined annually, including any proposed ramping up of production or staging of development	Chapter 2, Appendix N
		Identify the pit footprint in relation to existing waterways, with consideration of appropriate buffers (with reference to surface water information requirements described in section 5.8, below) Include details of the Towns River tributary realignment and any other planned waterway diversions	Chapter 2, Appendix N
		Projected dewatering requirements of the pit/s	Section 2.9
		Determine potential for generation of acid and metalliferous mine drainage based on ore characteristics	Section 3.6, Appendix K
		If proposed, include details of design, construction and operations of Waste Rock Dump and Tailings Storage Facility	Appendix K
Information on pit backfill methods/designs	Chapter 2		
Section 3.5.2 Project components (Design and	Crushing circuit – provide specific details of crushing circuit including:	Indicative process flow-sheets	Chapter 2
		Materials handling requirements	Chapter 2
		Water requirements – sources, volumes, treatment and wastes (if relevant)	Section 2.9
		Chemicals to be used – inputs and waste handling (if relevant)	Chapter 2

EIS Guideline Section	Detail Requested in EIS		EIS Section / Appendix
operations) Pg. 11		Handling (storage, transport) of waste solids and tailings (if relevant)	Chapter 2
		Handling (storage, transport) of product	Chapter 2
Section 3.5.3 Project components (Design and operations) Pg. 12	Ancillary infrastructure – relevant operational information (including but not limited to):	Water supply facilities, storages, bores and pipelines (drinking, process, raw, waste, etc as required)	Section 2.5
		Power station and associated infrastructure (powerlines, fuel storage)	Section 2.5
		Buildings	Section 2.5
		Roads (internal haul roads, light vehicle access) and bridges	Section 2.6
		Identification of site access points	Section 2.5
		Fuel and chemical storages	Section 2.9
		Telecommunications	Section 2.
		Management of wastes, including recycling, landfill, waste oils	Section 2.10
		Methods for storage, handling, containment and emergency management of chemicals and other hazardous substances (including fuel) and compliance with relevant legislation	Section 2.10
		Permanent and temporary accommodation facilities	Section 2.6 and 2.11
		Airfields to be used/upgraded.	Section 2.8
Section 3.5.4 Project components (Design and operations) 3.5 Pg.12	Haul road	Provide the preferred corridor alignment and justification for its selection, including identification of sensitive habitats	Section 2.6
		Provide length, width, location, land requirements, tenure and acquisition requirements	Section 2.6
		Describe consultation undertaken with relevant regulatory agencies and necessary approvals required	Section 2.8
		Vegetation clearing methods and disposal of plant matter following clearing	Appendix C
		Provision of access, power, telecommunications, water supply and other infrastructure, if required	Section 7.1
		Location of campsites for construction crews, sources of water and treatment of solid and liquid wastes	Chapter 2
		Identify and discuss impacts on availability of materials for competing uses (e. g maintenance of Nathan River Road);	Section 2.6.4
		Source and extraction of construction inputs and materials, including water	Section 6.3
		Methods and timeframes for road construction, including river crossing techniques and identification of creeks and landforms that require specific construction methods (provide cross section diagram/s)	Section 2.6
		Details of potential disruption to flows of waterways during construction and any diversion works required including changes in creek morphology and hydrology of surface water systems due to haul road construction	Section 2.6

EIS Guideline Section	Detail Requested in EIS		EIS Section / Appendix
		Stormwater management	Section 2.9
		Plant and machinery required	Chapter 2
		Provisions for control of weeds	Appendix F
		Ongoing provisions for road maintenance, including source and extraction of construction inputs and materials.	Sections 2.6 and 2.8
		Provide a decommissioning plan if the haul road is no longer required by the mine after the proposed nine year mine life.	Appendix P
Section 3.5.5 Project components (Design and operations) Pg. 13	Bing Bong Load Out Facility – new infrastructure to be located at the Bing Bong load out facility should be described, in context with the existing facility. Include:	Description of key plant and equipment, processes, inputs/outputs, capacities and raw materials required for construction; identify source of materials for hardstand construction;	Section 2.5
		New buildings required and provision of worker facilities including, ablution facilities, sewerage, and sewage treatment, drinking water sources and treatment (where additional to existing facilities);	Section 2.5 and Section 5.2
		Indicative process flow-sheets and materials handling requirements and balances – anticipated rates of inputs, wastes, and recycle streams (where relevant);	Chapter 2
		Determine stockpiling requirements prior to loading;	Section 2.5
		Identify any water storage requirements (ponds or tanks) and/or groundwater extraction requirements, where in significant excess of existing operations;	Appendix L and Section 5.2
		Operational hours/days, if different from existing operations;	Section 2.1
		Lighting requirements, with consideration of impacts on wildlife, particularly marine turtles (where additional to existing facilities);	Section 5.7
		Provide the number of barge trips required (with reference to percentage increase from existing operations) compared with existing operations and proposed expansion by Xstrata.	Section 5.2
		Identify any additional mooring points required for ships, including cyclone mooring facilities.	Section 5.2
		Identify any increase in frequency or extent of dredging requirements;	Sections 5.2 and 5.6
		Specify the design the facility in relation to extreme events and storm surge and discuss provisions for containment of hazardous material and fuels during extreme events;	Section 5.2 and 5.6
		Consider in design of additional infrastructure the original extreme event design criteria for Bing Bong Loadout Facility and whether these values remain appropriate (i.e. provide storm surge and wave height that the facility will be designed to withstand, with reference to those used for existing infrastructure and contemporary data);	Section 5.2 and 5.6
		Assess potential impacts of dust from roadtrains, stockpiles, conveyer, loading facilities and barges and identify management requirements	Section 5.6
Section 3.6 Transport Pg. 14	Description of transport systems and methods to convey all site traffic (including materials, workers and product) to and from the site (both during construction and operation) including: Type, size and number of vehicles required during all phases of the proposal; The estimated volumes, tonnage, composition, origin and destination of traffic generated by the proposal; estimated times of travel; and Additional road infrastructure works required including site access and signage.		Section 2.8
	Provide details of the existing transport infrastructure at locations likely to be impacted by the proposal		Section 2.8
	Describe how the project will, or has the potential to, impact on transport infrastructure during construction and operational phases. In addition, describe possible transport impacts as a		Section 2.8

EIS Guideline Section	Detail Requested in EIS	EIS Section / Appendix	
	result of the proposal including issues such as dust and road traffic noise		
	Identify routes for transport, including vehicles carrying construction materials – including any Public Roads (e. g. the Stuart Highway, Roper Highway and the Nathan River Road)	Section 2.8	
	Describe intersection treatments (e. g. with the Nathan River Road)	Appendix T	
	Identify peak periods for traffic and hours of operation	Section 2.8	
	<p>Describe proposed safeguards, management and monitoring strategies that will be implemented to minimise potential transport impacts during construction and operation including, but not limited to:</p> <ul style="list-style-type: none"> - Methods for complying with any relevant road vehicle axle limits; - Methods for securing loads; - Measures to reduce any road traffic noise impacts; - Consultation with local communities affected by transport impacts; - Traffic management; and - Management of driver fatigue 	Section 2.8	
	Future of the Haul Road	Section 2.6	
Section 3.7 Water demand and management Pg. 15	<p>Provide information on the quantity, quality, source (groundwater, surface water, bores), storage, infrastructure requirements of water be used by the project, and treatment and/or recycling of wastewaters produced. Include process and drinking water requirements for all activities (beneficiation, mining, mine camp) and consider: Note: refer to Please refer to the Northern Territory Department of Resources Water Management Plan Guidance note: http://www.nt.gov.au/d/Minerals_Energy/Content/File/Forms_Guidelines/AA7-023_Water_Management_Plan_Guide.pdf</p>	Describe water management, including: management of clean, dirty and contaminated water; any required diversion of surface waters; and management of high/extreme rainfall events.	Sections 2.9, 6.2 and 6.3
		Dust suppression	Sections 2.9, 6.2 and 6.3
		Drinking water	Sections 2.9, 6.2 and 6.3
		Ablutions and sewage treatment	Sections 2.10, 6.2 and 6.3
		Processing / Crushing plant	Sections 2.10, 6.2 and 6.3
		Mine pits - predict any dewatering requirements for mine pit/s, due to groundwater ingress and/or Wet season rainfall and surface flows, including water quality and quantity and proposed strategy for release to environment	Sections 2.10, 6.2 and 6.3
		Any wetting of ore materials prior to hauling to beneficiation plant	Sections 2.10, 6.2 and 6.3
		Where treatment or recycling of water is required, provide details of waste water treatment systems and effluent disposal	Sections 2.10, 6.2 and 6.3
		Describe stormwater drainage systems proposed at each operational and construction site and proposed disposal or re-use arrangements	Sections 2.10, 6.2 and 6.3
		Identify any requirements for additional clean water in the dry season and wet season discharge options for excess contaminated water	Sections 2.10, 6.2 and 6.3
		Provide a proposed schedule for extraction or retention of water to demonstrate the system can support proposed extraction volumes	Section 2.9
		<p>Describe water management, including:</p> <ul style="list-style-type: none"> - Management of clean, dirty and contaminated water; - Any required diversion of surface waters; and - Management of high/extreme rainfall events 	Section 2.9
Predict any dewatering requirements for mine pit/s, due to groundwater ingress and/or Wet season rainfall and surface flows, including water quality and quantity and proposed strategy for release to environment	Appendix E		

EIS Guideline Section	Detail Requested in EIS		EIS Section / Appendix
		Where treatment or recycling of water is required, provide details of waste water treatment systems and effluent disposal	Section 2.9
		Describe stormwater drainage systems proposed at each operational and construction site and proposed disposal or re-use arrangements	Appendix L
		Identify any requirements for additional clean water in the Dry season and Wet season discharge options for excess contaminated water	Section 2.9
		Water balance model should be provided indicating the relationship between surface and groundwater, the interaction of pits with both surface and groundwater supplies, and the likely 'flow on' resulting from extraction, draw down, dewatering, irrigation or used for dust suppression)	Section 2.9
Section 3.8 Energy Pg. 15	Determine Project energy requirements, including mining fleet fuels and electricity demand		Chapter 7
	Provide details of proposed power plant (type of equipment, fuel use, expected emissions to air)		Chapter 7
	Provide details of energy infrastructure requirements, both on and off the site		Chapter 7
	Discuss energy conservation measures and greenhouse gas mitigation strategies		Chapter 7
Section 3.9 Waste Management Pg. 16	Describe proposed management of solids wastes at the mine site, camp site, and other relevant locations, including industrial and domestic wastes and provisions for recycling		Section 2.10
Section 3.10 Workforce and Accommodation Pg. 16	Describe the number of people to be employed, skills base required, and likely sources (local, regional, overseas) for the workforce during construction, and operational phases.		Section 2.11
	Discuss arrangements for transport of workers to and from project areas, including air services required.		Section 2.11
	Describe provisions for health and safety, including on-site safety and medical facilities and procedures, including measures to prevent exposure to hazardous substances, including fumes and dust, both at the sites and during transportation and handling		Section 2.11 and Chapter 9
	For the proposed mine camp, provide the following information: <ul style="list-style-type: none"> - Proximity to works sites and travel arrangements; - Food preparation and storage; - Licensed premises or alcohol storage facilities; - Ablution facilities, sewerage, and sewage treatment; - Drinking water sources and treatment; and - Dust and noise control (where campsite is located close to construction sites) 		Chapter 2
Section 3.11 Decommissioning Pg.16	Progressive rehabilitation	Proposed staging / timing	Appendix P
		Soil profile reconstruction	Appendix P
		Final landform design and any voids or landscape depressions to be left at cessation of mining	Appendix P
		The rehabilitation techniques to be used and the final topographic and drainage morphology	Appendix P
		The proposed revegetation program, with selection and collection of local native species e.g. native grasses and other vegetation	Appendix P
		Other preparations required for successful rehabilitation (seed harvesting, seedling generation, etc)	Appendix P
		Runoff and erosion control measures	Appendix P
		Water supply	Appendix P
		Describe expected surface and groundwater quality of waters leaving the lease in the long term. Current and future water quality should be maintained at levels acceptable to downstream users and for maintenance of environmental values	Appendix P
		Protection from fauna, including cattle and feral animals	Appendix P
Provide details of how rehabilitated condition will be self-sustaining and weed-free	Appendix P		

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		Fire management	Appendix P
		Contingency management against rehabilitation failure	Appendix P
	Mine closure and planning	Removal of plant, equipment, structures, hardstand and concrete footings, buildings, water storages, and methods proposed for stabilisation of affected areas;	Appendix P
		Where diversion of creeks and the Towns River is proposed during operations, describe reinstatement of creeks after operations have ceased; and	Appendix P
Section 4.1 Existing Environment - Climate Pg. 17	Describe climate factors which may affect management of the project, for example	Rainfall patterns (magnitude and seasonality)	Section 7.2
		Temperature	Section 7.2
		Humidity	Section 7.2
		Wind	Section 7.2
		Cyclones	Section 7.2
		Any special factors (e.g. temperature inversions)	Section 7.2
Climate extremes (drought, floods)	Section 7.2		
Section 4.2 Existing environment – Topography and geomorphology Pg. 17	Provide topographic maps and identify significant topographical features		Section 3.2
	Identify environmental values of the cultural landscape in the affected area, in terms of the physical and cultural integrity of the area.		Sections 3.2 and 3.8
	Describe landform processes in the vicinity of the development and predict changes to landform (both onsite and offsite) resulting from the proposal, including impacts relating to changes to surface water hydrology and morphology		Section 3.7
Section 4.3 Existing environment – Geology Pg. 18	Provide a summary of the results of studies and surveys undertaken to identify the extent of the iron ore resource within the project area, including areas underlying related infrastructure;		Section 3.5
	Identify mineral resources which may be sterilised by any proposed infrastructure corridors or easements (electricity, roads, etc);		Section 3.7
	Identify geological properties of the project sites which may influence stability, occupation health and safety, rehabilitation programs, or the quality of wastewater or stormwater leaving any disturbed area;		Section 3.7
	Undertake ore characterisation to determine potential for generation of acid and metalliferous mine drainage. Please refer to - International Network for Acid Prevention (INAP) Gard Guide for guidance on best practices and technology to address issues relating to waste rock dump design and AMD management: http://www.gardguide.com/index.php/Main_Page ; - Australian Government Department of Resources, Energy and Tourism Leading Practice Sustainable Development Program Handbooks – <i>Managing Acid and Metalliferous Drainage</i> : http://www.ret.gov.au/resources/Documents/LPSDP/LPSDP-AcidHandbook.pdf		Sections 2.9, 3.7, and Appendix K
	Investigate the physical, geo-mechanical and chemical properties of waste rock in both fresh and weathered forms. This information will inform site rehabilitation plans in terms of slope stability and possible acid generation.		Sections 2.9, 3.7, and Appendix K
Section 4.4 Existing environment – soils Pg. 18	Provide a soil survey of the Project area with reference to the physical and chemical properties of the material which will influence erosion potential, storm water run-off quality, revegetation of any waterway realignments and rehabilitation.		Section 3.3

EIS Guideline Section	Detail Requested in EIS	EIS Section / Appendix
Section 4.5 Existing Environment – Land use and tenure Pg. 18	Provide details of current land tenures, conservation zones and Limmen National Park, location and owner/custodians of Native Title in the area, designated sacred sites.	Section 1.2
	Identify areas of conservation value, or sensitive environmental areas. Include riparian vegetation, monsoonal vine forest, gorges, gullies, escarpments, etc as required.	Section 4.3
Section 4.6 Existing Environment – landscape character and visual amenity Pg. 19	Describe characteristics of the landscape that may be affected by the project, in particular escarpments adjacent to the mining area. This includes scenic characteristics, panoramas, lookouts, etc.	Section 3.8
	Discuss Project impacts on the community (local and wider community) amenity and recreation values of the region as a remote area	Section 3.8
Section 4.7 Existing Environment – Biodiversity and listed species (Section 4.7.1) Pg. 19	<p>NRETAS has developed standardised methodologies for surveying terrestrial vertebrate fauna and flora in the Northern Territory (available upon request). Proponents should use these methodologies when conducting fauna and flora surveys or a suitable alternative such as www.environment.gov.au/epbc/guidelines-policies.html.</p> <p>For any vegetation surveys reference should be made to the Northern Territory Guidelines and Field Methodology for Vegetation Survey and Mapping (Brocklehurst et al. 2007), Guidelines for Surveying Soil and Land Resources (McKenzie et al. 2008 (eds.)) and The Australian Soil and Land Survey Handbook (NCST, 2009) for further discussion of the techniques and requirements associated with particular scales of mapping.</p>	Chapter 4 and Appendix D
	Identify sensitive environmental areas, i.e. ecosystems that provide important ecological function e.g. riparian vegetation, protected area buffer zones, refugia, important habitat corridors, or geological features which may support unique ecosystems (escarpments, gorges, gullies etc);	Sections 4.3 and 4.4 and Appendix D
	Present flora and fauna surveys of the project area, including the Haul Road route. Identify flora and fauna species of conservation significance present, or potentially present within the project area, and which may be affected by the project. Targeted fauna and flora surveys for listed species should primarily be in areas of uncleared vegetation that will be directly affected by the proposed development. Include seasonal and diurnal variation;	Sections 4.2, 4.3, 4.4 and Appendix D
	Present terrestrial flora and fauna surveys on the section of stream that is proposed to be diverted. Identify threatened species that occur in the area as well as species that are dependent on riparian vegetation, provide an assessment on how these species are likely to be affected, and any negative affects ameliorated.	Appendix D, Section 9
	Present aquatic fauna surveys (including fish, turtles and macroinvertebrates) for sections of the Towns River potentially impacted by mining activities (including stream diversion, dewatering and any wastewater discharge). Include sites above and below the proposed diversion area and MLA, tidal and non-tidally affected waters and permanent water holes. Provide a map of the vegetation communities within the Project areas, including the haul road, and surrounding areas at an appropriate scale such as 1:25 000 or 1:50 000. The map must also identify areas containing sensitive and significant vegetation communities, including creek lines with associated riparian vegetation or rainforest	Appendix D; macro invertebrates in Appendix S
	Identify groundwater dependant ecosystems in the vicinity of the project area;	Section 4.3 and Appendix D and Appendix E
	Identify and discuss species of traditional Aboriginal cultural significance (particularly aquatic and terrestrial fauna species), based upon consultation with traditional owners and surveys of the project area; and	Appendices I and J
	Identify areas requiring clearing of native vegetation for the project, including potential for edge (degradation) effects. Present alternative configurations where available to minimise clearing requirements. Detail habitat types within areas to be cleared, with focus on significant habitats and habitats supporting species of conservation significance	Section 4.6
<p>For each of the species identified, the following information should be provided as a minimum (refer to pages 19 and 20 of guidelines for threatened species list, minimum requirement):</p> <ul style="list-style-type: none"> - Information on the abundance, distribution, ecology, and habitat preferences of listed species and communities; - Information on the conservation value of each habitat type from a local and regional perspective, including the percentage representation of each habitat type on site in relation to its local and regional extent; - If a population of a listed species is present on the site, its size and the importance of that population from a local and regional perspective; - Details of the scope, timing (survey season/s) and methodology for studies or surveys used to provide information on the listed species/community/habitat at the site (and in areas that may be impacted by the project). - Other details required for site-specific species should be included here. - Discussion of known existing threats to the species, whether or not attributable to the proposed action, with reference to relevant impacts from the proposed action (including taking into consideration any relevant guidelines, policies, plans and statutory provisions); - Details of the geology and geomorphology of the area; 	Section 4.4 and Appendix D	

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	<ul style="list-style-type: none"> - Baseline information and maps identifying at both the site and regional levels: <ul style="list-style-type: none"> - Known occurrences of the protected matters; - Potential habitat for species or communities (differentiating where relevant on the basis of use e.g. breeding habitat, migration pathways, feeding habitat); and - Regional migration pathways for species or communities. - For all listed threatened, migratory or marine species that are believed not likely to be impacted by the proposed action, but for which suitable habitat is present and could be impacted by the proposed action, detailed information must be included to demonstrate that a relevant impact on the species will not occur 	
Section 4.7.2 Existing environment - Marine environment Pg. 20	Climate and atmospheric characteristics (e.g. air quality, seasonal temperatures, humidity, wind, evaporation and rainfall);	Section 5.3
	Oceanographic conditions, especially those which may have a bearing on the proposed action. Information on seasonal variation, waves, tides, currents, water salinity, clarity, temperature and depths must be included as a minimum. Discuss frequency and severity of extreme weather conditions, such as storms and cyclones, for the 2, 10 and 100 year conditions;	Section 5.3
	Known flora and fauna, including baseline information and maps on communities and individual species types, and where known, population genetics and stock structure, in the immediate and surrounding areas that may be subject to relevant impacts, as determined by literature search and survey and sampling programs if required.	Section 5.4
	The environmental impact statement must provide an evaluation of the flora and fauna communities identified with reference to: <ul style="list-style-type: none"> - Habitat values in a local, regional and national context; - Presence of endemic species; - Local and regional representation; - Conservation and biodiversity values; - Economic and cultural values of species; - Migratory species; and - Unique habitats. 	Section 5.4
	The likely presence of any unique, rare, threatened, endangered or vulnerable flora and fauna species and communities or listed migratory species, as well as cetaceans in the marine environment relevant to the proposed action, including the marine environment that may be impacted in the event of a hydrocarbon spill or a failure of the realigned river channel, should be discussed. This should include an evaluation of the significance of their occurrence (including conservation status, distribution, population viability and habitat requirements).	Section 5.4
	A broader description of the biodiversity and biogeography of the receiving environment must be included. Sensitive environments must be identified along with key ecological relationships and interdependencies (e.g. coral spawning, fish spawning aggregations, flora and fauna relationships etc).	Section 5.4
	The extent of existing disturbance to flora and fauna, and the incidence of introduced pest species must be discussed	Section 5.4
Section 4.8 Surface Water Page 21	Provide a detailed map of the current drainage, including both major and minor drainage lines, in relation to the proposed diversion channel, and the planned mining activities	Appendix N2
	Provide baseline surface water quality data including location of monitoring sites to inform ongoing monitoring and assessment of the legacy and future project impacts on water resources using existing relevant site monitoring data	Section 6.1
	Catchments, their significance (Ramsar etc), boundaries, area and topography, including location of mine infrastructure and the mining lease boundary	Section 6.1
	Areas of inundation, drainage lines, surface-water flow directions, creeks and receiving waterways. Existing surface drainage patterns, flows (including flood level contours) and discharge rates	Section 6.1 and Appendix N
	Size and seasonal flow rates of drainage lines, creeks and waterways	Section 6.1 and Appendix N
	Strahler Order of any creeks or rivers to be diverted	Section 6.3.1
	Beneficial uses	Section 6.1
	Identify sensitive receptors to impacts upon surface water systems, including consideration of riparian and aquatic estuarine and marine ecosystems, flora and fauna	Section 6.1 and Chapter 4.3
	Provide a surface water monitoring program and explain how it will be implemented in order to include monitoring of impacts from the project on the local and regional hydrological conditions	Section 6.1
Present and interpret water quality monitoring data for surface water in the area of the project	Section 6.1	

EIS Guideline Section	Detail Requested in EIS		EIS Section / Appendix
Section 4.9 Hydrogeology and groundwater Pg. 22	Volume of water to be extracted;		2.9 Water
	Seasonal groundwater depth(s), surface connections, via springs or recharge zones, extent and degree of connectivity or confinement, proximity and connectivity to local and regional aquifers, and flow velocities and directions;		Section 6.2 and Appendix E
	Information pertaining to any recent hydrogeological assessments;		Section 6.2 and Appendix E
	Sensitive receptors to impacts upon groundwater systems, including consideration of groundwater dependant ecosystems;		Section 6.2 and Appendix E
	Locations of groundwater monitoring bores;		Section 6.2 and Appendix E
	The extent and hydrogeological properties of local and regional aquifers		Section 6.2 and Appendix E
	Describe the groundwater monitoring program and how it will be implemented in order to include monitoring of impacts from the mine site on the local and regional hydrogeological conditions; and		Section 6.2 and Appendix E
	Provide a comprehensive Groundwater Report summarising groundwater levels, quality and trends over time. Identify any issues (e.g. degrading water quality, significant drawdown) and potential causes or issues and details of actions taken to address those issues.		Appendix E
Section 4.10 Air, noise and vibration Pg. 22	Identify sensitive receptors adjacent to the project area and discuss their potential level of sensitivity to dust and noise (including underwater noise).		Chapter 7
	Record applicable ambient air quality parameters such as dust (in particular the PM10 fraction) and background noise.		
	Include meteorological information applicable to air quality and noise parameters.		
Section 5 Social aspects Pg. 22	Public consultation - demonstrate how any public concerns were identified, and how they will influence the design and delivery of the proposal. 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		Stakeholders that were identified and details of methods used for engagement (types of activities, timing, feedback process, etc);
			Identification of affected parties, including a statement mentioning any communities that may be affected and describing their views;
			Consultation undertaken to date and any documented response to, or result of, the consultation;
			Future consultation/communication strategies about relevant impacts of the action to be continued throughout the life of the Project;
			An outline of negotiations and discussions with local government and the Northern Territory Government should be provided; and
			Indicate how feedback from consultations has been integrated into the EIS process and any alterations made in mine planning.
Cultural and historic values	Identify cultural-spiritual environment and values.		Chapter 8 and Appendix H
	Identify areas of historic or archaeological significance likely to have or require consideration under the <i>Heritage Conservation Act</i> ;		
	Describe potential impacts to any heritage or archaeological places identified in baseline studies;		
	Identify areas with special values to indigenous and non-indigenous people (e.g. traditional land use, landscape, visual environment, recreational, commercial, tourism, fisheries, scientific, educational, archaeological sites).		
	Describe the proposal in relation to Limmern National Park and how the Park's announcement influences project planning, site operations and proposed rehabilitation		

EIS Guideline Section	Detail Requested in EIS		EIS Section / Appendix
	Socio-economics	<p>Describe the population, demographic, social, cultural and economic profiles at the local, regional and territory levels, based on available published data as well as additional field based research where required;</p> <p>Identify social factors (lifestyle characteristics, existing trends, social problems and underlying reasons) including reference to results and recommendations of relevant studies;</p> <p>Describe the social amenity and use of the Project area and adjacent areas for fishing, recreation, tourism, industrial, residential and/or educational purposes.</p> <p>Identify community infrastructure and services potentially impacted by the project, including transport, communication, housing, health, education;</p> <p>Provide employment numbers, indigenous employment numbers and targets, training and upskill opportunities, investment, local business opportunity to service and supply the project and any other relevant economic and social benefits</p> <p>Include project financial viability and consequences of reduced commodity prices on project Also address associated risks if the project is forced to cease operations earlier than predicted, including the social-economic consequence of this for the surrounding community and potential legacy issues</p> <p>Identify employment and business opportunities (direct and indirect), including sources of workforce, skill levels required and opportunities for local people and businesses;</p> <p>Describe the existing economic environment that may be affected by the Project at a local and regional level. Where relevant, provide information regarding</p> <ul style="list-style-type: none"> - The current economic position of the local community and any social issues faced by the local community, including employment levels and characteristics; - Any industries potentially impacted (positively or negatively) by the project; - Sectoral activity; - Existing local and regional housing market; - Existing property and land values; - Availability of goods and services. 	Chapter 8 and Appendix H
Section 6 Environmental impacts and risk assessment Pg. 24	General information on risks	<p>The proponent is fully aware of the risks to human health and safety associated with all aspects of the development;</p> <p>The prevention and mitigation of risks to human health and safety are properly addressed in the design specifications for the facility; and</p> <p>The risks can and will be managed effectively during the construction, commissioning, operation, and decommissioning of the development.</p>	Chapter 9 Chapter 9 and Appendix C Chapter 9 and Appendix C
Section 6.2.1 Risk – surface water Pg. 25	<p>Objective:</p> <p>To ensure that surface water quality is protected both now and in the future, such that ecological health and the health, welfare and amenity of people and land uses are maintained.</p> <p>Outcomes:</p> <ul style="list-style-type: none"> - Pre-mining (baseline) water quality conditions of potentially impacted waterways should be established and maintained. - The quality of surface water onsite and moving offsite should be managed so that it complies with relevant standards and guidelines such as the National Water Quality Management Strategy (http://www.environment.gov.au/water/policy-programs/nwqms/) and beneficial use declarations. The surface water monitoring program will be sufficient to ensure surface water runoff from the mine site is not impacting downstream water quality. - The Towns River tributary diversion should not impact on other mine components during flood events 		Section 6.1 and Chapter 9 Section 6.1 and Chapter 9

EIS Guideline Section	Detail Requested in EIS	EIS Section / Appendix	
	<ul style="list-style-type: none"> - River morphology upstream and downstream of the Towns River realignment should be maintained during mine life and after mine closure with no afflux upstream of the diversion - Geomorphic conditions within the realigned channel should be similar to the existing Towns River channel so that natural flow regime upstream and downstream can be maintained especially at the intersections of the diversions - There should be no change to flow velocities of flood regimes downstream of the diversion - The aquatic habitat integrity can be maintained both downstream (including estuarine, wetland and coastal areas) and upstream of the Towns River realignment through the life of the mine and after mine closure - functioning aquatic, riparian and riverine system in the diverted Towns River channel is able to be established and sustained within a timeframe that would not cause fragmentation of fauna populations in the medium- to long-terms 		
<p>Information requirements</p> <p>The provision of an adequate potable water supply needs to be provided for mine sites and work places. All water supplies collected from groundwater must be at least 100 metres from any effluent drainage system or other water bodies as described in the <i>NT Code of Practice for Small On-site Sewage and Sullage Treatment Systems and the Disposal or Reuse of Sewage Effluent (The Code)</i>.</p>		<p>Refer to Section 4.8 for information requirements on existing surface water Section 6.1</p>	
		<p>Develop a site water balance (refer to Section 3.7) within the water management system and its management across the mine site. The water balance must take into account inputs (rainfall, surface flows), outputs (e.g. evaporation, evapotranspiration, controlled/uncontrolled discharges, production use etc.), interactions with surface and groundwater, surface area of stores, total catchment surface area per store etc.</p>	<p>Section 2.9, Chapter 9</p>
		<p>Describe proposed domestic wastewater (sewage) treatment processes</p> <p>If the existing effluent treatment system at the mine site is to be used to treat effluent, written certification will be required from a suitably qualified hydraulic consultant, stating that the existing effluent disposal system has the capacity to handle the extra load in accordance with the Code. If a new effluent treatment system is to be installed to treat effluent, DOH requires a notification to install a waste water treatment system outside of a building control area. Any waste water treatment system(s) installed on-site shall be capable of collecting, treating and disposing of waste water on-site in accordance with the Code.</p> <p>It should be noted that if the daily waste water flow exceeds 22kL/day or a capacity of 150EP an application for recycled water systems will be required. All waste water from ablution facilities shall be directed to the waste water treatment system.</p> <p>Further information can be found at: http://www.health.nt.gov.au/Environmental_Health/Wastewater_Management/index.aspx</p> <p>Any discharge of wastewater from the mining lease will require a Waste Discharge Licence under the <i>Water Act 1992</i>. Guidance and application forms can be found at the following site: http://www.nretas.nt.gov.au/environment-protection/licences/guides.</p>	<p>Sections 2.9 and 2.10, Chapter 9</p>
		<p>With respect to proposed creek and river realignments, in particular the Towns River tributary diversion :</p> <ul style="list-style-type: none"> - Describe and illustrate with maps, plans and cross-sections any proposal/s to divert creeks or undertake other instream works; - Assess the potential impacts of in-stream works on hydrology and water quality; - Determine the change of flood extent in the floodplain and the impact of that change on the ecosystem. More precisely, determine post diversion flood extent and impacts on areas within the catchment which flood regularly (pre-diversion), and impacts on areas which will receive post-diversion flood waters (e. g. Melaleuca woodlands, wetlands, riparian woodlands, etc); - Where flooding levels will be affected by diversion and flood mitigation infrastructure, model 	<p>Section 2.13; Appendix N2; Section 9.2;</p>

EIS Guideline Section	Detail Requested in EIS		EIS Section / Appendix
		<p>the afflux and illustrate the extent and height variations with maps.</p> <ul style="list-style-type: none"> - Determine post diversion flow regimes upstream and downstream of the diversion; - Identify post-diversion changes to catchment size or characteristics, including future resource exploitation in catchments above the diversion and likely impacts; and - Provide end of mine life strategies for the diversion 	<p>Appendix N2 Appendix N2 Appendix N2</p>
		<p>Provide details of the history and likelihood of flooding, including the extent, levels and frequency of floods in and around the project site (utilising anecdotal evidence where necessary, e. g. photos from previous flood events). Include depth contours, and potential interaction with mine infrastructure both pre- and post-diversion of the Towns River</p>	<p>Appendix N2</p>
		<p>Describe and illustrate how an operating pit and mine site would be protected from flooding (including design criteria for flood protection), and address the flood protection level of any final void without the need to maintain levees</p>	<p>Appendix N2</p>
		<p>Provide the likelihood/frequency of rain events which would result in breaching of flood protection bunds and describe impacts associated with breach event</p>	<p>Appendix N2</p>
		<p>Describe proposed domestic wastewater (sewage)treatment processes</p>	<p>Section 2.9.4</p>
		<p>Identify broader impacts to surface waters, for example: channel degradation and erosion (due to changes in hydrological processes), loss of habitat value associated with water quality degradation and modified stream flows, weed ingress, etc</p>	<p>Section 6.1 and Chapter 9</p>
		<p>Provide details on the impacts of road construction, including the haul road, on creeks and river crossings:</p> <ul style="list-style-type: none"> • Construction and management of any proposed creek diversions; • Any temporary or long term impacts associated with construction and operation of roads (altered hydrology, erosion and sediment impacts, water quality impacts associated with road runoff, potential weed incursion downstream due to occurrence of weeds on road corridors, etc.) 	<p>Section 2.9 and Chapter 9</p>
		<p>Mine de-watering requirements must be provided with details on water quality, predicted volumes, discharge points and likely impacts on regional drainage.</p>	<p>Section 2.9</p>
		<p>Discuss the potential for formation of AMD during mining activities and following mine closure, and how surface water systems may be impacted</p>	<p>Chapter 9</p>
		<p>If proposed as a project component, discuss Waste Rock Dump and Tailings Storage Facility as potential sources of contamination.</p>	<p>Section 3.6 and Chapter 9</p>
<p>Monitoring and management:</p>		<p>Describe water management systems and design criteria of infrastructure in terms of average recurrence intervals (ARI), durations and intensities; consider local meteorology in the context of project environmental management including the frequency and severity of extreme weather conditions such as storms and cyclones for the 2, 10 and 100 year average return interval events</p>	<p>Section 2.9, Section 5.4, Appendix N, Chapter 9</p>
		<p>Determine potential impacts of, and describe emergency response plans for fuel spills, solid waste spills (e.g. from conveyor belts) and other related incidents which may impact on surface water. Disposal of waste should be conducted in such a way as to avoid potential public health nuisances and environmental pollution.</p>	<p>Appendix C</p>
		<p>Provide strategies for ongoing geocharacterisation of waste rock and management of any Potential</p>	<p>Section 3.6 and</p>

EIS Guideline Section	Detail Requested in EIS		EIS Section / Appendix
		Acid Forming (PAF) material to prevent/minimise and manage Acid and Metalliferous Mine Drainage.	Appendix K, Chapter 9
		Provide ongoing plan for water quality monitoring, indicating baseline conditions determined in Section 6 (existing environment), and criteria for determining the extent of impact of mining activities on water quality.	Section 6.1, Chapter 9
		Provide management strategies for control of erosion and sediment runoff from disturbed areas, processing areas and any stockpiles (Erosion and Sediment Control Plan). Include maps and information detailing contours, areas of seasonal inundation, and location of settling ponds and sediment control measures. Include Wet season operational management strategies. It is important that the proponent comprehensively addresses the need for erosion and sediment controls, sediment capture, runoff collection and storm water drainage, dust control, etc. as described in the NT Erosion and Sediment Control Guidelines to ensure best practice: www.nretas.nt.gov.au/national-resource-management/soil	Appendix L, Chapter 9
		Details of the safeguards and management strategies used to minimise the impacts of construction, operation and closure on hydrogeological features should be provided: - Outline management of clean and contaminated water within the proposed mineral lease; - Detail management strategies for high/extreme rainfall events and probable maximum precipitation events; - Outline any water recycling; - Proposed surface water monitoring program.	Sections 6.1 and 2.9, Chapter 9, Appendices C and L
		Identify contingency measures in the event that monitoring demonstrates that management measures have not been effective	Appendix C
		Propose measures for avoiding or mitigating impacts to hydrology and water quality as a result of creek/river realignment, and discuss measures for stabilising and rehabilitating any diversion works. Monitoring requirements are included in Section 6.3	Appendix L1
		Provide detailed information on the management of potentially acid forming (PAF) material and material with elevated metal levels to prevent contamination of surface water through AMD	Appendix K
Section 6.2.2 Risk – Groundwater Pg. 27	Objective: To ensure that groundwater quality and quantity is protected both now and in the future, such that ecological health and the health, welfare and amenity of people and land uses are maintained.		Section 6.2, Chapter 9, and Appendix E
	Outcomes: - The quality of groundwater is maintained so that it complies with relevant standards and Guidelines such as document four of the National Water Quality Management Strategy (http://www.environment.gov.au/water/policy-programs/nwqms/) and beneficial use declarations; - Groundwater monitoring, based on the known availability and extent of the groundwater resource, is sufficient to ensure over extraction of groundwater does not occur and regional groundwater quality is not impacted; and - No offence is to be committed under the Northern Territory of Australia Water Act(March 2011), particularly in reference to Division 2, Section 16, by contaminated water migrating off-site.		Section 6.2, Chapter 9, and Appendix E
	Information requirements	Refer to Section 4.9 for information requirements on existing groundwater and hydrogeology;	Section 6.2, Chapter 9, and Appendix E
		Provide a conceptual model showing an understanding of subsurface migration processes and behaviour of the groundwater system and interactions with all activities potentially impacting	Section 6.2, Chapter 9, and Appendix E

EIS Guideline Section	Detail Requested in EIS		EIS Section / Appendix
		groundwater (dewatering, extraction, storage of water in disused pits, storage of PAF waste rock etc);	
		Undertake groundwater modelling to determine the potential and scale of drawdown and whether there are impacts to groundwater dependent ecosystems;	Section 6.2, Chapter 9, and Appendix E
		Describe any proposed extraction bores – the number of bores, location, extraction rates;	Section 2.9 and Chapter 9
		Identify the natural hydro-geochemistry of the groundwater system (heavy metals, toxic metalloids, pH, redox, total dissolved solids);	Section 6.2, Chapter 9, and Appendix E
		Discuss the potential for formation of AMD during mining activities and its potential impacts on groundwater;	Appendix K
		Identify and determine impacts on groundwater dependant ecosystems – billabongs, dry season creek/river flows. Present multiple lines of evidence assessment of groundwater dependant ecosystem condition, including water quality data, sediment, rapid biological assessment data and existing land use data; and	Sections 5.3, 6.2, Chapter 9, and Appendix E
		Supply monitoring data from water quality sampling of groundwater monitoring bores receiving discharges and drainage from the mine.	Section 6.2, Chapter 9, and Appendix E
	Monitoring and management	Describe the groundwater monitoring program and how it will be implemented in order to include monitoring of impacts from the mine site on the local and regional hydrogeological conditions;	Section 6.2 and Chapter 9
		Identify existing seasonal depth ranges of aquifers being accessed by the proposed bores, to identify appropriate water table depths which can serve as triggers for management action to provide alternative water supplies;	Section 6.2, Chapter 9, and Appendix E
		Identify water treatment options to manage risk of AMD contaminating groundwater (if relevant);	Chapter 9, Appendix K
		Describe how the periodic assessment of groundwater quality will be undertaken and discuss how any impacts from operations, along with mitigation measures and remediation (if required)to prevent contaminated groundwater migrating off-site will be managed; and	Section 6.2, Chapter 9
		Determine a list of chemical parameters likely to be influenced by operations (may include fuel storage, metals, herbicides etc) and general hydrogeological parameters (major ions) that can be used in the assessment of operations on the environment. Establish a monitoring, reporting and response program that includes periodic analysis of groundwater samples for the parameters identified.	Section 6.2, Chapter 9
		Identify contingency measures in the event that monitoring demonstrates that management measures have not been effective.	Appendix C
Section 6.3.1 Risk Terrestrial and aquatic biodiversity Pg. 28	<p>Objective:</p> <ul style="list-style-type: none"> - To maintain the abundance, diversity, geographic distribution and productivity of flora and fauna at species and ecosystem levels through the avoidance or management of adverse impacts and improvement in knowledge; and - As an action of the Territory 2030 Strategic Plan, intensive developments are to operate under a 'no net biodiversity loss principle'. The proponent will need to demonstrate that the project can proceed without net loss of biodiversity 	Chapters 4 and 9, Appendix D	
	<p>Outcomes:</p> <ul style="list-style-type: none"> - Native flora and fauna species, and significant habitat types, particularly those of conservation and traditional Aboriginal cultural significance, will be identified, and ultimately protected from impacts from the project. - Surveys of flora and fauna species, and proposed clearing of native vegetation will be in accordance with relevant NT Guidelines. 	Chapters 4 and 9, Appendices D and F	

EIS Guideline Section	Detail Requested in EIS		EIS Section / Appendix
	<ul style="list-style-type: none"> - The proponent will ensure that buffer zones, wildlife corridors and protection zones are adequate to prevent significant damage to adjacent sensitive ecosystems. - The Proponent is to prevent the introduction of weeds or spread of weeds whilst constructing and operating the mine - Connectivity of riparian vegetation should be maintained as far as reasonably practicable between the reaches above and below the proposed Towns River realignment during and after establishment of the proposed channel 		
Information requirements		Refer to Section 4.7 for information requirements on describing existing flora and fauna;	Chapters 4 and 9, Appendix D
		Detail the extent of clearing required during construction and operation of all facilities, and indicate on a map;	Section 2.1
		Discuss impacts on species, communities and habitats of local, regional or national significance including sensitivity of species to disturbance;	Section 4.5, Appendix D
		Describe impacts such as loss of vegetation, reduction in species abundance, introduction and increase in abundance of pest plants and animals, edge effects, reduced conditions for favourable plant growth, impacts on habitat corridors, habitat loss and fragmentation impacts associated with the vegetation clearing required during the life of the project;	Section 4.5, Appendix D
		Identify occurrence of weed species, including Weeds of National Significance, which occur on or near the Project area, or have potential to be introduced via contaminated machinery, including <i>Lantana camara</i> (Lantana) and <i>Acacia nilotica</i> (Prickly acacia) and identify weeds with potential to infest the Project sites.	Appendix F
		Discuss potential impacts on water quality of creeks, streams and ephemeral lakes (habitat for aquatic fauna and drinking water for terrestrial species);	Chapter 9
		Identify and discuss environmental risks associated with the proposed vegetation clearing. Discuss proposed clearing with regard to issues raised and recommendations contained within the <i>NT Land Clearing Guidelines</i> : http://www.nretas.nt.gov.au/national-resource-management/natveg/guidelines .	Section 4.5 and Chapter 9
		Identify potential risks to conservation values of Limmen National Park and identify management measures required.	Chapter 9
		<p>With respect to the proposed realignment of the Towns River tributary:</p> <ul style="list-style-type: none"> • Discuss any consequential impacts of changes to water flow or groundwater recharge on ecosystems and wildlife; • Demonstrate that water quality and the health of aquatic ecosystems can be maintained, and habitat for wildlife and corridors for their movement (fish passage/riffles/woody debris/shade/eddies) will be provided; • Demonstrate that the new channel would: <ul style="list-style-type: none"> - withstand bank erosion, undercutting, loss of significant riparian vegetation in flood events; - maintain water quality and the health of aquatic ecosystems; and - not cause sedimentation and burial of the in-stream aquatic fauna 	<p>Chapter 6</p> <p>Chapter 9</p> <p>Appendix N</p>
Monitoring and management		Provide a rehabilitation plan for the Towns River tributary diversion channel, including criteria for success, demonstrating that equivalent riparian vegetation could be successfully established along the length of the diversion channel. Include measures for managing invasive weed species and feral/grazing animals and monitoring of rehabilitation success. Clearly demonstrate how	Appendix P

EIS Guideline Section	Detail Requested in EIS		EIS Section / Appendix
		rehabilitation success criteria will be achieved and measured	
		Identify the likely impediments and risks to achieving rehabilitation success criteria and how those impediments and risks will be ameliorated. Provide anticipated time frames for successful rehabilitation ;	Appendix P
		Discuss ways in which impacts on species, communities and habitats can be minimised (e.g. timing of works, minimising disturbance area);	Section 4.5, Chapter 9
		Identify the need for provision of wildlife passages along the haul road, associated with fragmentation of habitats;	Appendix D
		Include a weeds and feral animal management plan as part of the Environmental Management Plan, with particular consideration of weed management along the haul road. Specifically address management of Bellyache Bush in relation to the proposed haul road	Appendix F
		Demonstrate that appropriate flora and fauna survey methodology has been employed, to define species present on the project site.	Section 4.2 and Appendix D
		Identify potential offset measures to compensate for residual effects of the Project that cannot be avoided, mitigated or repaired.	Chapter 11
Section 6.3.2 Risk Marine biodiversity Pg. 30	Objective - To maintain the abundance, diversity, geographic distribution and productivity of flora and fauna at species and ecosystem levels through the avoidance or management of adverse impacts and improvement in knowledge.		Chapter 5
	Outcome - Negative impacts on marine biodiversity will be assessed and appropriately managed.		
	Information requirements	Assessment of impacts on marine biodiversity is required where those impacts are new impacts or significantly greater in extent than impacts associated with the existing facility. The assessment should be considered in the context of existing operations and impacts, and the planned expansion works proposed by Xstrata.	Section 5.7
		Determine and discuss potential impacts to marine fauna and habitat during construction and operation, including: - Vessel collision due to increased boat traffic; - Hydrocarbon spills; - Additional underwater noise levels and duration; - Illumination and lighting, including disorientation of fauna such as marine turtles and seabirds/shorebirds from illumination of offshore infrastructure, support vessels and ongoing operations (where additional to existing facility). - Other impacts identified through a risk assessment process.	Section 5.7
		Consider the findings of the Independent Monitor for the McArthur River Mine as they relate to Bing Bong Load Out Facility and ensure that the Proposal does not contribute to any identified impacts or risks of concern associated with the Bing Bong Load Out Facility.	Chapter 5
		Assess the impacts of flow regimes from a realigned Towns River on estuarine and marine environments.	Chapters 5 and 9
Management	Identify ways in which impacts on species, communities and habitats will be minimised.	Sections 5.7 and 5.8,	

EIS Guideline Section	Detail Requested in EIS		EIS Section / Appendix
	Identify contingency measures in the event that monitoring demonstrates that management measures have not been effective.		Chapter 9
Section 6.4 Risk Rehabilitation and mine closure Pg. 31	<p>Objective</p> <ul style="list-style-type: none"> - Rehabilitation of the site will be done in a manner that requires minimal inputs of maintenance post closure, but maximum protection of the environment from seepage of contaminants, weed incursion, erosion or other impacts. 		Appendix P
	<p>Outcome</p> <ul style="list-style-type: none"> - To ensure that rehabilitation achieves a stable and functioning landform which is consistent with the surrounding landscape and other environmental and stakeholder values; - The decommissioning and rehabilitation program is integrated into the mine plan and considered as part of mining operation, rather than as a separate phase at the end of mine life. 		Appendix P
	<p>Information requirements</p> <p>Provide a Mine Closure Plan (MCP) referring to the information requirements in the West Australian Environment Protection Authority and Department of Mines and Petroleum mine closure guidelines http://edit.epa.wa.gov.au/EPADocLib/Guidelines-for-preparing-mine-closure-plans-210611.pdf. The MCP must provide an understanding of the issues that require management at closure and that all relevant issues have been identified and appropriately managed.</p> <p>Refer to <i>Strategic Framework for Mine Closure</i> (ANZMEC/MCA 2000),</p> <p>Refer to the methodology and approaches described in relevant guidance including the national <i>Leading Practice Sustainable Development in Mining</i> handbooks and the <i>Planning for Integrated Mine Closure: Toolkit</i> (ICMM 2008). The DOR Mine Close Out Objectives (2008) should also be considered (http://www.nt.gov.au/d/Minerals_Energy/Content/File/Forms_Guidelines/CA7-011_Mine_Close_Out_Criteria_V3.pdf).</p>	Provide details on the proposed state the mining pit voids will be left and managed following closure (i.e. whether it will remain dry or partially or totally filled with water, or backfilled), and discuss the benefits or detriments of each option and support these with studies or data;	Section 3 of Appendix P
		Provide post-mine closure strategies for the realigned Towns River tributary channel including details of the permanency of the diversion 'structure' and modelling to determine long-term impacts	Chapter 2. Appendices N and P
		If relevant, identify and discuss environmental risks associated with potentially acid forming materials (PAF);	Chapter 9, Appendix P and Appendix K
		Determine availability and volumes of key materials required for rehabilitation such as competent waste rock, subsoil, topsoil and low permeability clays (i.e. encapsulation material, if required);	Appendix P
		Relevant scheduling information with respect to material stockpiling and deployment to ensure that rehabilitation materials mined early in the process are appropriately segregated and preserved for later use;	Appendix P
		Demonstrate potential success of proposed rehabilitation plans through either a pilot scale demonstration or by reference to other project sites which have similar geographical characteristics and support similar vegetation types.	Appendix P
		If fines rejects are to be placed back into the pits, provide details on amount of fines to be backfilled and subsequent impacts on the final rehabilitation	Appendix P
		Develop a protocol for measuring site rehabilitation success through appropriate ecological indices.	Appendix P
Identify seed mixes to be used in rehabilitation and any information gathered from trials.		Appendix P	
Indicate that appropriate materials are available on site and contingencies provided to make landforms secure and non-polluting in the event of unexpected or temporary closure.		Appendix P	
Describe proposed post-mining land uses which have been identified and agreed upon through consultation with stakeholders	Appendix P		
	Identify contingency measures in the event that monitoring demonstrates that management measures have not been effective		Appendix P
Section 6.5 Risk Social and cultural impacts Pg. 32	<p>Objective</p> <p>To analyse, monitor and manage the intended and unintended social consequences, both positive and negative, of the project and any social change processes</p>		Chapters 8 and 9
	<p>Outcome</p> <p>A Social Impact Assessment will identify potential social risks resulting from the mine and associated infrastructure, and develop appropriate mitigation strategies. The design and focus of</p>		

EIS Guideline Section	Detail Requested in EIS		EIS Section / Appendix
	the assessment will reflect social and community risks specific to the Project.		
Information requirements		Estimate the quantity and value of production/exports as it relates to the mine, including expected reduction in revenue should the proposal not proceed;	Chapter 8 and Appendix G
		Identify any impacts on tourism or touristic experience in the region, including potentially impacted tourist operators, relating to the physical presence of the mine and haul road, including noise, dust and visual impacts;	Section 3.8, Chapter 7 and Section 2.6
		Estimate the value of expenditure during the construction phase;	Chapter 8 and Appendix G
		Estimate the value of annual expenditure on regional goods and services as it relates to the mine and associated infrastructure;	Chapter 8 and Appendix G
		Describe potential opportunities related to the mine for the development of new skills and facilities that may be of benefit to the local community, past the lifetime of the mine;	Chapter 8 and Appendix G
		Define risk of the mine or associated workforce impacting on identified social issues in the region of the Project Area.	Chapters 8 and 9, Appendix G
		Describe benefits to the local community, during and beyond the life of the mine, such as development of new skills and facilities, economic development and opportunities for local and regional business and employment opportunities.	Chapter 8 and Appendix G
		Describe how potential local and regional business and employment opportunities related to the mine will be identified and involved.	Chapter 8 and Appendix G
Baseline information should be provided regarding cultural heritage sites in the region, as per section 5, and including		<p>A description of Indigenous and non-Indigenous sites, places or objects of historic or contemporary cultural heritage significance, including:</p> <ul style="list-style-type: none"> - Areas nominated for listing or listed on Commonwealth and Northern Territory Heritage registers and Commonwealth and Northern Territory registers of Indigenous cultural heritage; - Sacred sites - provision of evidence of an Aboriginal Areas Protection Authority (AAPA) Authority Certificate under the <i>Northern Territory Aboriginal Sacred Sites Act</i>; and - European historic sites. 	Appendices I and J
		A description of areas with special values to Indigenous and non-Indigenous people (e.g., traditional land use).	Appendices I and J
The EIS should describe the arrangements that have been negotiated with relevant Indigenous groups in relation to archaeological surveys. The identification of Indigenous cultural heritage impact is to take place in consultation with relevant Indigenous groups. Provide:		An assessment of the Project's effects on lifestyles, traditional practices, heritage places, the impact of increased visitation and the effects on Indigenous culture generally. Discussion of the traditional subsistence economy, Indigenous natural resource use and any Native Title interests in the area;	Chapters 8 and 9, Appendix G
		A discussion of the impacts on the relationships between groups identified with traditional and/or contemporary interest in the Project area;	Chapters 8 and 9, Appendix G
		Details of any requirements to apply to, or applications already made to, the NT Minister for Natural Resources, Environment and Heritage to disturb or destroy a prescribed archaeological place and/or object (as defined in Heritage Conservation Regulation 3) under sections 29 and 34 of the <i>Heritage Conservation Act</i> .	Appendices I and J

EIS Guideline Section	Detail Requested in EIS		EIS Section / Appendix
Management		Describe how WDRL proposes to manage any identified social, cultural or spiritual risks from the Mine and infrastructure, or its associated workforce, in the region of the Roper region.	Chapter 8 and Appendix G
		Establish a mechanism for monitoring any identified potential socio-economic impacts.	Chapter 8 and Appendix G
		Provide a community liaison and consultation plan including identification of, and ongoing consultation and negotiations with, all relevant stakeholders, ensuring the full range of community viewpoints are sought.	Chapter 8 and Appendix H
		The EIS should identify the monitoring program to be implemented for each potential cultural heritage impact and should provide outcome and assessment criteria that will give early warning that management and mitigation measures are failing.	Chapter 8 and Appendices G and H
		<p>A management plan should be developed to include:</p> <ul style="list-style-type: none"> - Procedures to avoid significant areas; - Protection of key sites during construction, operation and decommissioning work; - Ongoing protection measures; and - Procedures for the discovery of surface or sub-surface materials during the course of the Project. 	Appendices I and J
	<p>Provide details of any consultation about the proposal, including:</p> <ul style="list-style-type: none"> - any consultation that has already taken place; - proposed consultation about relevant impacts of the project; - if there has been consultation about the proposed project, any documented response to, or result of, the consultation; and - identification of affected parties, including a statement mentioning any communities that may be affected and describing their views 	Chapter 8 and Appendices I and J	
Section 6.6 Risk cumulative impacts Pg. 34	Regional ecosystems within the Roper region;		Section 4.3, Chapter 9 and Appendix D
	Perception of the region as remote or wilderness;		Section 3.8, chapter 9 and Appendix G
	Key habitats (e.g. riparian, wetland, threatened species habitat) which retain connections with adjacent vegetation and habitat; and		Section 4.3, Chapter 9 and Appendix D
	Hydrologically connected surface water and groundwater systems that support wetlands and base flows in rivers and creeks.		Section 4.3, Chapters 6 and 9 Appendices E and N
	Cumulative impacts on the marine environment in association with existing and proposed future activities at the Bing Bong Load Out Facility.		Section 5.7 and Chapter 9
Section 6.7 Risk Other Issues Pg. 35	<p>Bushfires:</p> <p>The proponent should be aware of sections of the <i>Bushfires Act 2009</i> and Regulations that may apply to the Project and address risk and management of fires occurring both within the mine site (eg. during site clearing operations) and outside the mine site.</p>		Appendix C and Chapter 9
	<p>Biting insects:</p> <p>A 12 month baseline mosquito assessment should be conducted at both the proposed accommodation village site and the Hodgson Downs mine site, to determine the risk of transmission to workers of mosquito borne diseases such as Ross River virus, Barmah Forest virus and the potentially fatal Murray Valley encephalitis virus.</p> <p>A biting insect assessment including an examination of the old mine site for actual and potential mosquito breeding sites and ensure new facilities are designed to have minimal mosquito</p>		Appendix O and Chapter 9

EIS Guideline Section	Detail Requested in EIS		EIS Section / Appendix
	breeding potential. The biting insect assessment should include trapping to determine the current seasonal population and abundance of adult mosquitoes. Refer to the Medical Entomology guideline Department of Health (2005) <i>Guidelines for preventing mosquito breeding sites associated with mining sites in the Northern Territory</i> . http://health.nt.gov.au/Medical_Entomology/Publications/Development_Guidelines/index.aspx		
	<p>Noise and vibration:</p> <ul style="list-style-type: none"> - Describe the expected noise levels and vibration associated with the project construction and operation, including timing and duration, in comparison to background levels, sensitivity of receptors and nominated performance indicators and standards. - Describe the management of noise and vibration impacts. 		Section 7.4 and Chapter 9
	<p>Air quality and dust:</p> <p>Discuss dust suppression strategies and monitoring of dust impacts</p>		Section 7.6
Greenhouse gas emission and climate change		<p>The Northern Territory Government's objective for managing greenhouse gas emissions from new and expanding operations is to minimise emissions to a level that is as low as practicable. This will help fulfil the objective of minimising greenhouse gas emissions from the NT into the future. The Northern Territory Government's objective for considering future climate change in the assessment process is to ensure projects and developments are planned taking climate change science and projections into account, to minimise future environmental, social and economic costs and take advantage of any opportunities. The Environmental Impact Assessment Guide (http://www.nretas.nt.gov.au/__data/assets/pdf_file/0012/6600/EAGuideGreenhouseClim.pdf) aims to assist proponents in providing the information needed by the Department of Natural Resources, Environment, the Arts and Sport (NRETAS) to assess the impact of greenhouse gas emissions from proposed projects and assess other potential impacts from proposed projects under projected future climatic conditions under the Northern Territory <i>Environmental Assessment Act</i>.</p>	Section 7.7
		The project is considered likely to lead to very significant greenhouse gas emissions due to both extensive land clearing and burning of fossil fuels for power generation and motor vehicle operation.	Section 7.7
		Undertake greenhouse gas emissions modelling, and demonstrate consideration of measures to minimise and/or offset emissions.	Section 7.7
		The implication of climate change on the project's environmental and commercial feasibility should be assessed.	Section 7.2
		Analyse risks to the Project from climate change impacts (e.g. increased risk and severity of flood; increased vulnerability to more intense bushfires, sea level rise, etc);	Section 7.2
		Identify adaptation measures to minimise risk to the project from climate change impacts, particularly where there may be a significant impacts to human safety or property.	Section 7.2
	<p>Visual amenity:</p> <p>Describe the extent and significance of the changed visual landscape as a result of the proposed mining of outcrops, mesas, and escarpments on visual amenity from key vantage points day and night and during all stages of the Project, as it relates to the surrounding landscape. Provide aspects visible from any sensitive locations (public access areas).</p>		Section 3.8 and Chapter 9
Section 7 Management of impacts Pg. 36	The EIS must provide anEMP that is strategic, describing a framework for environmental management of the proposal and the property; however, as much detail as is practicable should be provided to enable adequate assessment of the proposed activity during the public exhibition phase. Where possible, specific	The proposed management structure of the operation and its relationship to the environmental management of the site	Chapter 10 and Appendix C
		Management targets and objectives for relevant environmental factors;	Appendix C

EIS Guideline Section	Detail Requested in EIS		EIS Section / Appendix
	management practices and procedures should be included in the EMP. Include:	The proposed measures to minimise adverse impacts and maximise opportunities, including environmental protection outcomes;	Appendix C
		Performance indicators by which all anticipated and potential impacts can be measured;	Appendix C
		Proposed monitoring programs to allow early detection of adverse impacts;	Appendix C
		Describe contingencies for events such as failure of sewerage systems, heavy or prolonged rainfall, or saltwater intrusion into ground water.	Appendix C
		The EMP needs to address the project phases (construction, operation, decommission) separately. It must state the environmental objectives, performance criteria, monitoring, reporting, corrective action, responsibility and timing for each environmental issue.	Appendix C
		The name of the agency responsible for endorsing or approving each mitigation measure or monitoring program.	Appendix C
		A summary table listing the undertakings and commitments made in the EIS, including clear timelines for key commitments and performance indicators, with cross-references to the text of the EIS; and	Appendix C
		Provision for the periodic review of the EMP	Chapter 10 and Appendix C
Section 8.2 Environmental Offsets Pg. 37		<p>The Draft NT Environmental Offsets Policy provides guidance on when and how offsets should be incorporated into development proposals so that there is no net loss of environmental quality. Offsets are designed to compensate for significant residual damage that cannot be avoided, reduced or mitigated at reasonable cost at the development site. The draft NT Environmental Offsets Policy is available at www.greeningnt.nt.gov.au/climate/environmental_offsets.html. Consideration of proposed activities or projects that could be implemented to offset the residual detriment should be discussed with the NRETAS Offsets Group.</p> <p>The EIS should provide information on:</p> <ul style="list-style-type: none"> Any identified impacts or detriments that cannot be avoided, reduced or mitigated at reasonable costs; and Risks of failure of management actions (such as rehabilitation, weed control, etc.) and uncertainties of management efficacy should be identified. 	Chapter 11