


Initial Advice Statement
Cloncurry Copper Project

Exco Resources Ltd
(ABN 99 080 339 671)
Prepared by:
AustralAsian Resource Consultants Pty Ltd

June 2008

Document History and Status

Issue	Rev.	Issued To	Qty	Date	Reviewed	Approved
1	1	Exco Resources (Queensland) Pty Ltd	1	24/06/08	A. Pearce	A. Pearce

Project Manager: Andrew Pearce
Name of Client : Exco Resources (Queensland) Pty Ltd
Name of Project: Cloncurry Copper Project
Title of Document: Initial Advice Statement
Document Version: Final

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LIST OF ABBREVIATIONS

AARC	AustralAsian Resource Consultants Pty Ltd
BOM	Australian Bureau of Meteorology
C	Celsius
CHMP	Cultural Heritage Management Plan
Cth	Commonwealth
EA	Environmental Authority
EIS	Environmental Impact Statement
EM Plan	Environmental Management Plan
EP Act	*Environmental Protection Act 1994* (Qld)
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999* (Cth)
EPM	Exploration Permit for Minerals
EP Regulation	*Environmental Protection Regulation 1998* (Qld)
ERA	Environmentally Relevant Activity
ERE	Endangered Regional Ecosystem
Exco Resources	Exco Resources (Queensland) Pty Ltd
ha	Hectare
IAS	Initial Advice Statement
km	Kilometre
m	Metre
ML	Mining Lease
MLA	Mining Lease Application
mm	Millimetre
mtpa	Million tonnes per annum
MW	Mega Watts
NCWR	*Nature Conservation Wildlife Regulation 2006* (Qld)
NSW	New South Wales

Qld	Queensland
QEPA	Queensland Environmental Protection Agency
RE	Regional Ecosystem
ROM	Run of Mine
t	Tonne
TOR	Terms of Reference
WA	Western Australia

1.0 INTRODUCTION

Exco Resources Ltd ("Exco") are proposing to develop the Cloncurry Copper Project ("the Project") located north east of the town of Cloncurry in North West Queensland. Exco are applying to the chief executive under Chapter 3, Part 2, Sections 70 and 71 of the *Environmental Protection Act 1994* for approval to prepare a voluntary Environmental Impact Statement ("EIS"). This Initial Advice Statement contains the relevant supporting information to accompany a voluntary EIS application.

1.1 PROJECT LOCATION

The Project is located in north-west Queensland within the Cloncurry Shire and is comprised of:

- open cut mining of three ore bodies (E1 North, E1 South and E1 East) at the Mt Margaret Project Area located approximately 39 kilometres north east of Cloncurry;
- open cut mining of two ore bodies (Monakoff and Monakoff East) at the Monakoff project area located approximately 20 kilometres north east of Cloncurry;
- haulage of ore from Monakoff to Mt Margaret by road; and
- development of a copper concentrator processing facility at Mt Margaret

The Mt Margaret Project Area spans an area of approximately 1818 hectares (ha) including existing Mining Lease ML90157 (E1 North). Access to Mt Margaret is via the existing sealed Ernest Henry Road.

The Monakoff Project Area is 544 ha in size and includes existing the existing Monakoff Mining Lease (ML7122). The existing access to the Monakoff Project Area is off the Flinders Highway via the designated access for ML7122. The Cloncurry Copper Project includes a number of options for developing a new haul road between Monakoff and Mt Margaret.

The regional location of the Project sites is illustrated in Figure 1.

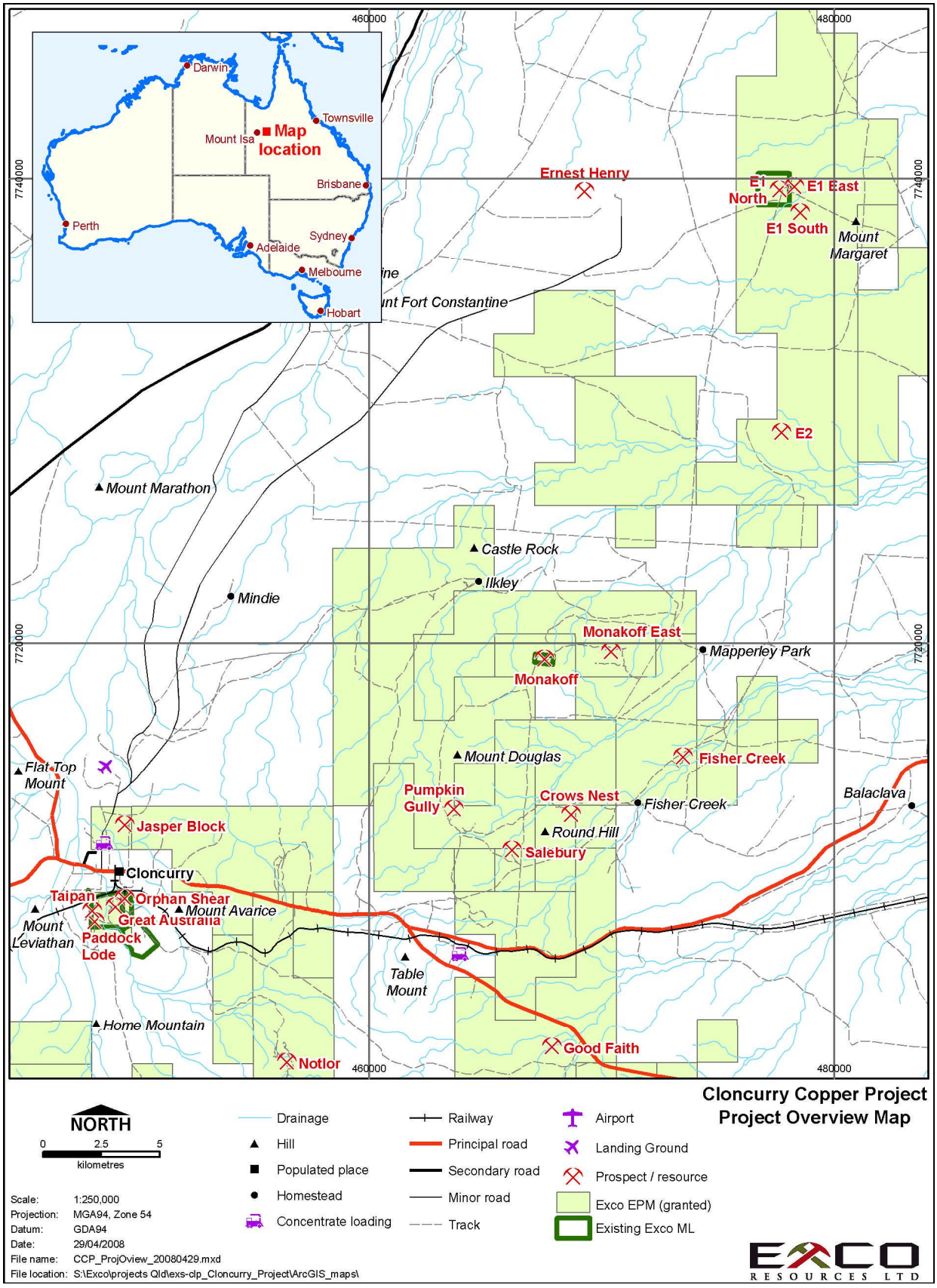


Figure 1: Regional Location of the Project Site

1.2 PROJECT TENEMENTS AND OWNERS

The project proponent for the Cloncurry Copper Project is Exco Resources Limited. The ownership of existing mining tenures in the two project areas is set out below in Table 1. The boundaries for the Mt Margaret and Monakoff Project Areas are illustrated in Figure 2 and Figure 3 respectively.

New mining tenures required for the project will include:

- a mining lease or leases within the Mt Margaret Project Area;
- a mining lease or leases within the Manakoff Project Area;
- mining leases for transportation to cover access roads, haul roads, pipe lines and transmission lines; and
- a mining lease (other purposes) for the construction of an accommodation village close the Mt Margaret Project Area.

Project tenures will be applied for and held by Exco Resources Limited or nominated wholly owned subsidiaries of Exco Resources Limited.

Table 1: Mining Tenure Ownership

Project Area	Tenement	Holder
Mt Margaret	EPM 8609	Eliza Creek Mines Pty Ltd(1)
	ML 90157	Eliza Creek Mines Pty Ltd(1)
Monakoff	EPM 7085	Exco Resources (Queensland) Pty Ltd(2)
	EPM 14201	Exco Resources Limited
	ML 7122	Tennant Limited(3)

Notes: (1) Eliza Creek Mines Pty Ltd is a 100% owned subsidiary of Exco Resources Ltd
(2) Exco Resources (Queensland) Pty Ltd is a 100% owned subsidiary of Exco Resources Ltd
(3) By agreement between Exco Resources Ltd and Tennant Limited the 100% of the rights, title and interest in ML 7122 is to be transferred to Exco Resources Limited

The contact details for Exco Resources Limited (ABN 99 080 339 671) are as follows:

Office: Level 2
8 Colin St
West Perth WA 6005

Postal: PO Box 1726
West Perth WA 6872

Telephone: (08) 9211 2000

Facsimile: (08) 9211 2001

Website: www.excoresources.com.au

1.3 REAL PROPERTY DESCRIPTIONS

The underlying land tenure for the Project Areas is described in Table 2.

Table 2: Real Property Descriptions

Site	Property Description	Registered Owner
Mt Margaret Project Area	Lot 80 on SP112345	Stanbroke Pastoral Company Pty Ltd GPO BOX 155 Brisbane Qld 4001
Monakoff Project Area	Lot 15 on BD15	Tennant Limited Level 2 40 Yeo St Neutral Bay NSW 2089
	Lot 2463 on PH760	Andrew Jesse, Samuel Daniels, Gabrielle Kennedy and others C/- Samuel Daniels PO BOX 1 Cloncurry QLD 4824
	Lot 2 on BD177	
Existing Monakoff Access Road	Lot 2 on BD177	Andrew Jesse, Samuel Daniels, Gabrielle Kennedy and others C/- Samuel Daniels PO BOX 1 Cloncurry QLD 4824
	Lot 2482 on PH2047	Helen Margaret Monize PO Box 202 Cloncurry Qld 4824
	Lot 4105 on PH2186	Helen Margaret Monize PO Box 202 Cloncurry Qld 4824
Proposed Monakoff – Mt Margaret Haul Road	Lot 2 on BD177	Andrew Jesse, Samuel Daniels, Gabrielle Kennedy and others C/- Samuel Daniels PO BOX 1 Cloncurry QLD 4824
	Lot 2463 on PH760	Andrew Jesse, Samuel Daniels, Gabrielle Kennedy and others C/- Samuel Daniels PO BOX 1 Cloncurry QLD 4824
	Lot 1 on BD103	
	Lot 80 on 112345	Stanbroke Pastoral Company Pty Ltd GPO BOX 155 Brisbane Qld 4001
Proposed Mt Margaret Access Road, Water Pipe Line Corridor & Power Transmission/Haul Road Corridor	Lot 80 on SP112345	Stanbroke Pastoral Company Pty Ltd GPO BOX 155 Brisbane Qld 4001
	Lot 100 on SP108163	Ernest Henry Mining Pty Ltd Level 1 MIM Plaza 410 Ann St Brisbane QLD 4000
Accommodation Camp	Lot 80 on SP112345	Stanbroke Pastoral Company Pty Ltd GPO BOX 155 Brisbane Qld 4001

1.4 NATIVE TITLE

The Mt Margaret and Monakoff Project Areas and all proposed infrastructure are situated wholly within the area subject to the Mitakoodi and Mayi People registered native title application (National Native Title Tribunal file number QC96/101, Federal Court file number QUD6106/98.

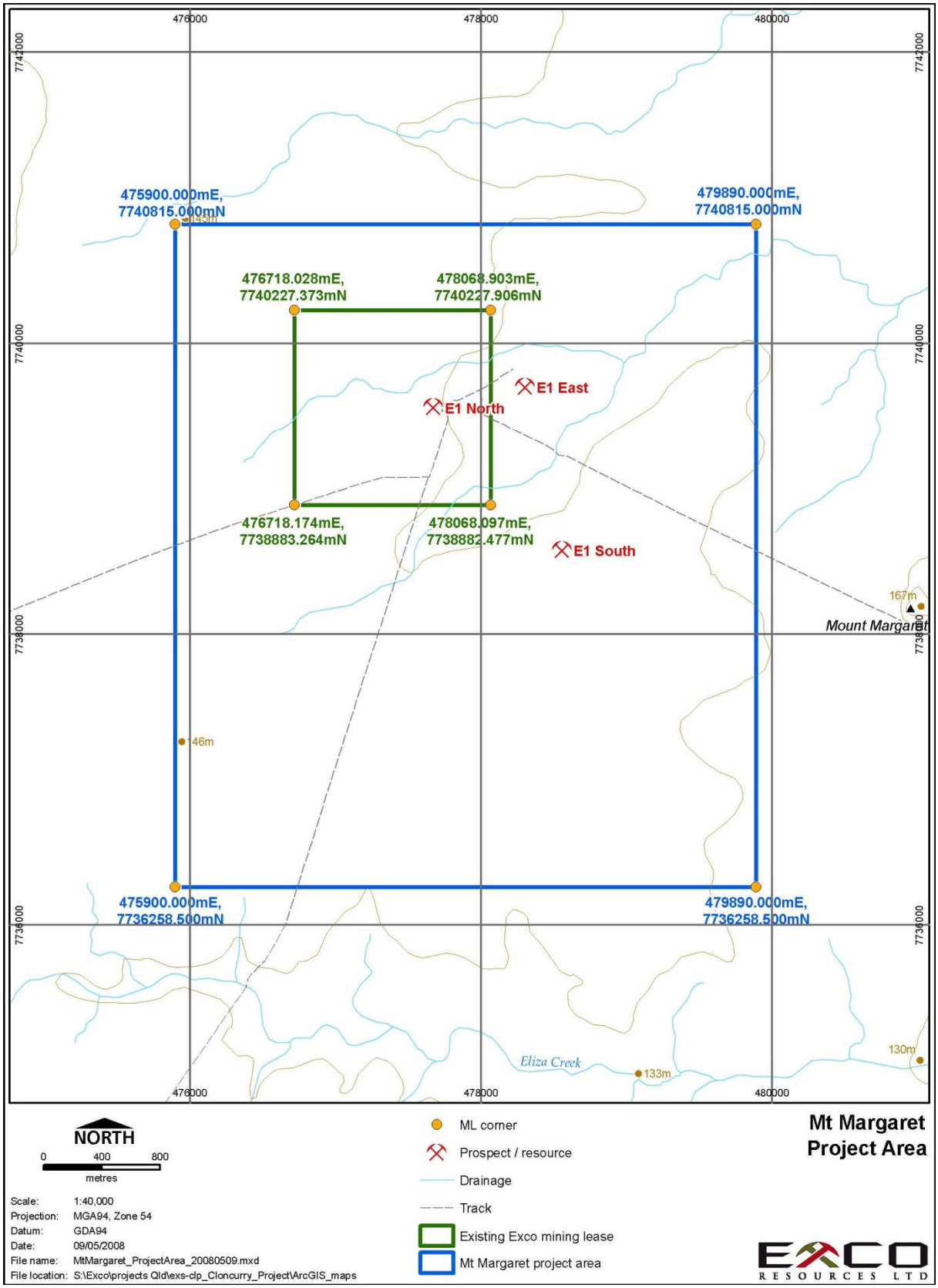


Figure 2: Proposed Mt Margaret Project Area

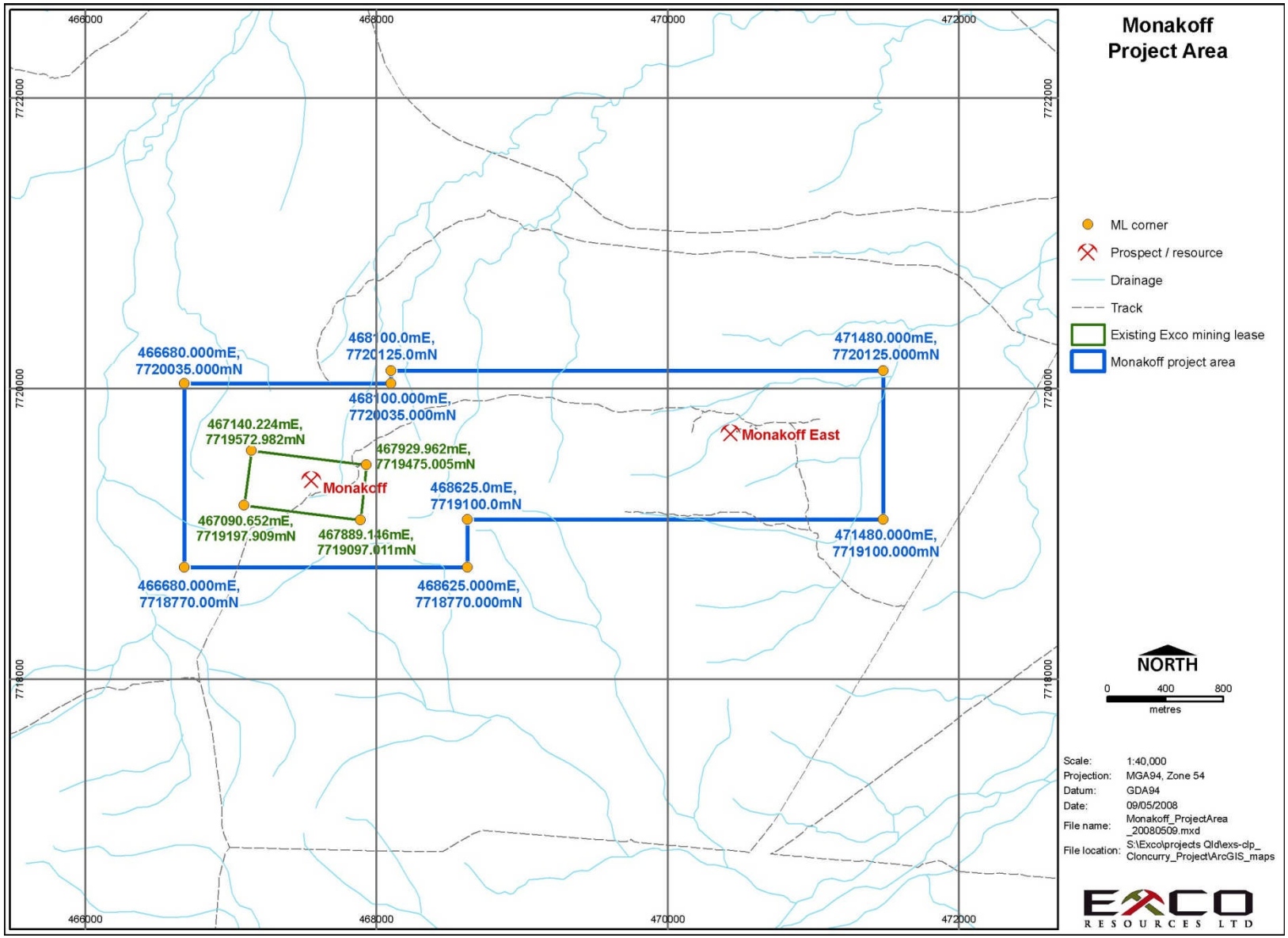


Figure 3: Proposed Monakoff Project Area

2.0 PROPOSED PROJECT ACTIVITIES

2.1 EXPLORATION

Exploration and drilling activities will continue to be undertaken on the Project Areas to confirm and/or determine further ore resources. Drill pads and sumps will be constructed as necessary and where possible existing roads and pads will be used.

2.2 VEGETATION REMOVAL AND TOPSOIL STRIPPING

Prior to the development of any open cut pits, processing areas, waste rock dumps and infrastructure, vegetation and topsoil will be removed from the footprint area and stockpiled. The preferred option to dispose of large vegetation is to appoint a contractor to clear the area and use the timber for milling, wood-chipping, or another economically viable use. If this option is not possible, large vegetation will be windrowed and burnt under controlled conditions. Smaller vegetation and grasses will be removed with the topsoil and stockpiled in windrows no higher than 2m. Where necessary, stockpiles will be seeded to encourage water infiltration, microbial activity and prevent erosion. Topsoil will be respread on the surfaces to be rehabilitated as soon as possible to benefit from the viability of the topsoil seed bank.

The approximate amount of vegetation clearance required on the Project site is detailed in Table 3. The conceptual mining and infrastructure layout is illustrated in Figure 4.

Table 3: Estimated Vegetation Clearance Required on the Project Sites

Disturbance Type	Area (ha)		
	Mt Margaret	Monakoff	Total
Pits	60.5	13.1	73.6
Waste rock dumps	157.3	66.2	223.5
Topsoil dumps	15.7	6.6	22.4
Roads/Tracks	50	10	50
Accommodation camp	-	-	1
Process plant and associated buildings	3	-	3
Stormwater, Sediment and Process Ponds	2.5	0.5	3
Exploration	2	2	4
Tailings Dam	113	-	113
Total	**394**	**98.4**	**493.2**

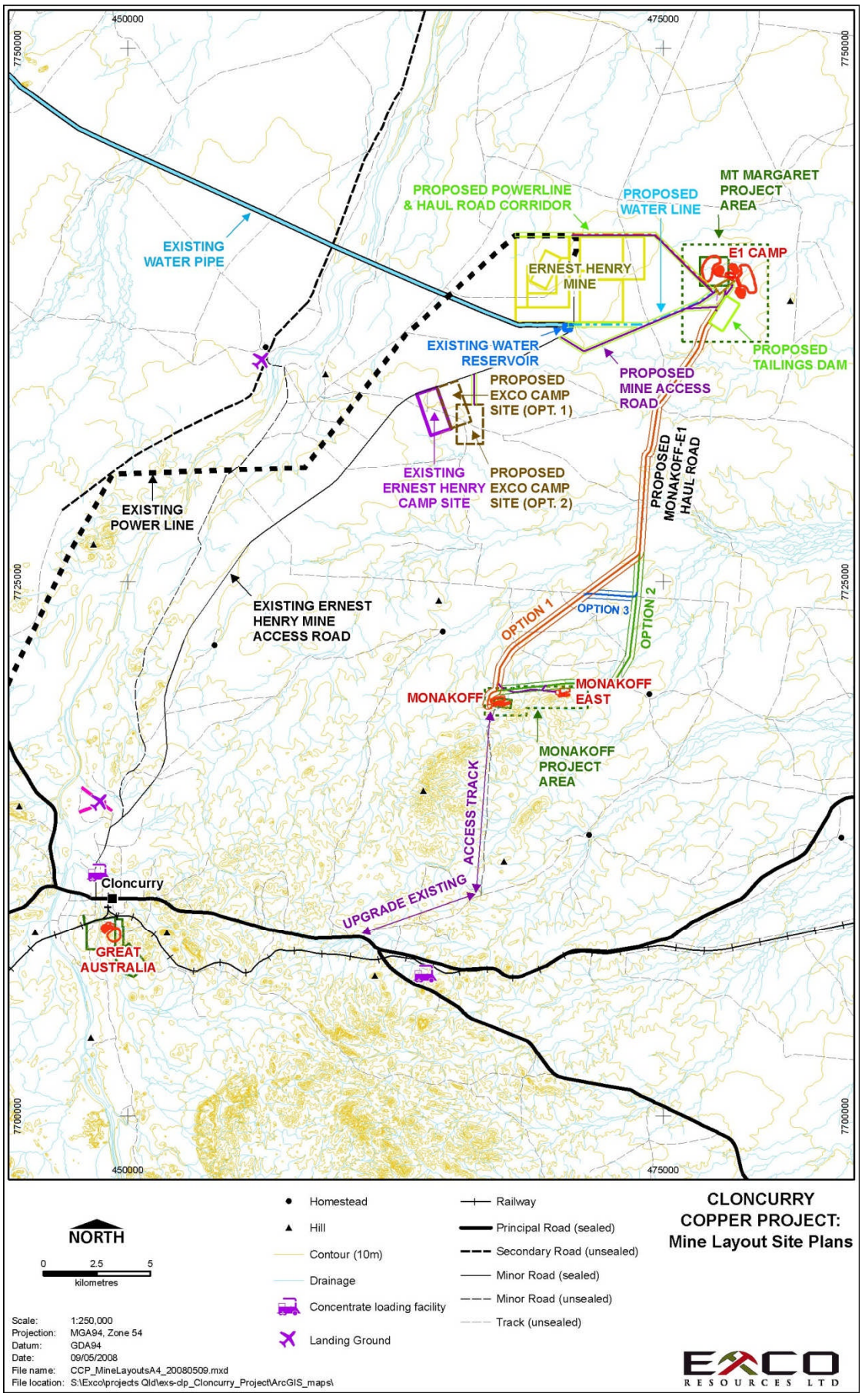


Figure 4: Conceptual Project Layout

2.3 RESOURCES

The Project currently consists of two groups of deposits; the Mt Margaret group and the Monakoff group.

The Mt Margaret group of deposits consists of an iron-oxide-copper-gold mineralisation system and comprises of three prospective pits; E1 North, E1 East and E1 South. The Monakoff group of deposits consists of an iron-oxide-copper-gold mineralisation system and contains two prospective pits; Monakoff and Monakoff East

The Project resource estimates as at March 2008 are shown in Table 4.

Table 4: Project Resources

Deposit	JORC	Tonnes	Grade		Metal	
			Cu %	Au g/t	Cu T	Au Oz
E1 North	72% Indic.	7,932,000	1.11	0.34	88,000	85,800
E1 South	*Inferred*	15,200,000	0.70	0.18	106,900	89,400
E1 East	*Inferred*	8,000,000	0.83	0.26	66,000	65,500
Monakoff	49% Indic.	1,902,000	1.58	0.48	30,100	29,400
Monakoff East	*Inferred*	700,000	1.25	0.36	8,700	8000

2.4 ORE EXTRACTION

Ore will be extracted from the Project site via open cut mining methods, employing dozers and excavators to extract both the ore and waste rock. The Project currently consists of five open cut pits.

The ore will be mined with diesel powered earthmoving equipment, using conventional open cut, drill, and blast/load and haul methods. Waste rock will be stacked in dumps adjacent to the open cut pits. Extracted ore will be trucked to a Run of Mine (ROM) stockpile area at an approximate rate of up to 14 000 tonnes per day. The ore will be truck dumped in windrows, which will allow for separation of ore types and grades where required. Low grade material may be stockpiled separately for treatment later in the Project life.

Open cut mining will occur on a continuous basis 24 hours per day, 7 days per, week, 52 weeks per year,

2.5 WASTE ROCK

Whilst the stripping ratio is dependant upon pit optimisations, it is anticipated to be up to 4:1. Waste rock dumps will be established at Mt Margaret and Monakoff to contain mined wastes. Waste dumps will be designed to encapsulate any potential acid generating materials. Where possible waste rock will be utilised for construction purposes including construction of the tailings dam and access and haul roads.

2.6 COPPER SULPHIDE PROCESSING PLANT

A copper sulphide processing plant will be constructed at Mt Margaret. The processing plant will have capacity to treat up to 3mtpa of ore to produce copper concentrate. The processing facility will consist of a conventional concentrator with crushing, grinding, flotation, dewatering, concentrate handling and reagent makeup circuits. Magnetite and pyrite byproducts will be recovered through magnetic separation and flotation. Pyrite roasting for power generation (see power supply 2.10) would generate sulphuric acid as an additional byproduct.

2.7 TAILINGS DAM

Tailings from the processing operation will be stored in a dedicated dam constructed from waste rock and tailings material. Water will be recovered from the tailings dam and recycled to the process. Opportunities for storage of tailings within mined out pits will be investigated.

2.8 SITE AND HAULAGE ROADS

The Project will require the use and/or construction of roads to the Project site and haul roads between pits and infrastructure. The alignment of new roads will be determined in consultation with other land holders and subject to environmental and heritage constraints. Where possible, the alignment of existing tracks will be used to create roads of an appropriate width and surface to facilitate use by mine vehicles.

Consultation with the Cloncurry Shire Council and the Department of Main Roads will be undertaken regarding the use, maintenance and upgrading of those existing roads required to be used for Project.

2.9 WATER REQUIREMENTS

The Project is anticipated to use approximately 1.5 million m^3 of water per annum. Water use and supply requirements for the Project include but are not limited to; dust suppression, domestic uses and plant usage.

It is intended to maximise the use of water from mine dewatering to meet process and other requirements. Should the Project require additional water, it will be sourced from bore fields and Lake Julius. Provision has been made for construction of a pipe line from the existing Lake Julius pipe line adjacent to Ernest Henry to the Mt Margaret site.

Any excess water will be stored and evaporated on site or treated as required and released to the local water courses. Associated design details and an assessment of potential adverse impacts associated with water use and release will be described in the EIS.

2.10 POWER SUPPLY

The power supply for the Project may be sourced from the local grid if sufficient capacity is available. This will require the construction of power lines from a suitable tie-in point in the existing network. The construction of a new line from the Ernest Henry Mine or Chumvale Sub-Station is currently being considered. If existing power infrastructure cannot support the Project, a power station may be constructed on the Project site. This may be either solar powered, diesel powered or powered through heat recovery of pyrite roasting and sulphuric acid production.

Power supply for the Project is estimated at 12MW.

2.11 STAFFING AND ACCOMMODATION

The Project will employ approximately 250 staff. A permanent accommodation camp has been proposed on a site adjacent to the existing. Ernest Henry camp approximately 10 kilometres south west of the Mt Margaret Project Area. The camp will accommodate approximately 220 operational personnel including contractors. Where possible employees will be sourced from and accommodated in Cloncurry.

2.12 REHABILITATION

2.12.1 Exploration

Exploration disturbances on the Project sites will be rehabilitated. Drill holes will be capped and a drying out period applied to the drilling sumps to allow water to evaporate from the drilling muds. Drilling sumps will then be backfilled and disturbed surfaces scarified. Should natural regeneration not be successful after the first year of rehabilitation, seed from suitable pasture species will be sown before the following wet season to enhance revegetation.

2.12.2 Waste Rock Dumps

The final rehabilitation plan for waste rock dumps will be detailed in the EIS and Environmental Management Plan (EM Plan). Conceptual planning has assumed the final slope of the waste rock dump face to be between the angle of repose and 20 degrees depending on the competency of the waste material. Where necessary, berms will be constructed on the outer faces and graded to slope back towards the dump to act as a water control structure for any stormwater flowing off the lift above.

The slopes and top of the dumps will be topsoiled where possible and deep ripped to bind in the material. Revegetation will use species suitable for the final land use.

2.12.3 Final Voids

The final pit voids will be left in a safe condition by constructing a safety bund wall around the perimeter from competent rock and/or fencing depending on the terrain.

The safety bund wall will be constructed as described in *Technical Guidelines for the Environmental Management of Exploration and Mining in Queensland*. This guideline states that the bund wall should be of a minimum height of 2m, with a minimum base width of 4m and be located at least 10m beyond the area potentially affected by any instability of the pit edge.

Where water quality within the void is suitable for stock, a safe access to the water shall be provided for stock, or provision will be made for the water to be pumped to a stock watering point. Consultation with the land holder will be undertaken to determine the best means of pumping or access. Where water in voids is not suitable for stock then the voids will be bunded or fenced to prevent stock access.

2.12.4 Plant and Infrastructure

All process plants and associated buildings and equipment will be dismantled and removed upon the cessation of mining operations.

2.12.5 Access Roads

Access roads required for pastoral activities will not be rehabilitated. This will be confirmed by written agreement with the landholder. Roads that can be rehabilitated will be deep ripped and where appropriate seeded with a mix of species suitable for the intended post-mine land use.

2.12.6 Revegetation Methods

Surface preparation before revegetation will include surface contouring, ripping and topsoil spreading. Surface contouring will occur to minimise soil erosion. Contour ripping to a depth of 200-500 mm will then take place by dragging tines behind a bulldozer to break up the compacted soils after mining activities. Topsoil will be stockpiled for use in rehabilitation as it contains organic material and local seed banks. Preserved topsoil will be spread to a thickness similar to the original topsoil or an average of 0.2m (where possible).

After appropriate surface preparation has occurred as outlined above, disturbed land will be revegetated as follows:

- Spread fertiliser and/or other ameliorates, such as gypsum at an appropriate rate, if required;
- Native species occurring naturally in the local area will be chosen for areas requiring the re-establishment of local native habitat;
- Where an agricultural land use is planned, the species planted will be those commonly used for pasture known to be successful on soils of similar texture;
- Where practicable, revegetation will occur through direct seeding of selected species. Where direct seeding is not possible (e.g. small areas with limited access), seeds will be manually broadcast; and
- A Weed Management Plan will be implemented to ensure revegetation initiatives are balanced with managing any weed species existing or which are established due to land disturbance.

2.13 ALTERNATIVE PROJECT DEVELOPMENT SCENARIO

The Mt Margaret Project Area is located adjacent to the Ernest Henry Mine owned and operated by Xstrata Copper. As an alternative to Exco developing a new stand alone copper concentrator at Mt Margaret, the ores from Mt Margaret and Monakoff could be transported to Ernest Henry and treated through the existing Ernest Henry concentrator. This would be subject to reaching an acceptable commercial arrangement. Provision has been made in the current project layout for a possible haul road from Mt Margaret to Ernest Henry (see Figure 4). Under this development scenario for the Project, the subject of this assessment would be restricted to the mining of ore and waste, storage on-site of waste rock and the transport of ore by dedicated haul road. Under this scenario there would be a reduced number of environmentally relevant activities, all of which are already considered as part of the stand alone scenario.

2.14 ENVIRONMENTALLY RELEVANT ACTIVITIES

Table 5 describes the Environmentally Relevant Activities (ERAs) associated with the Project as per Schedule 1 of the *Environmental Protection Regulation 1998* (Qld) (EP Regulation).

The process of mining mineral ore (mining activities) is not covered by an ERA in Schedule 1 of the EP Regulation; it is covered separately by Schedule 6, Part 2 of the EP Regulation.

Table 5: Environmentally Relevant Activities Associated with the Project

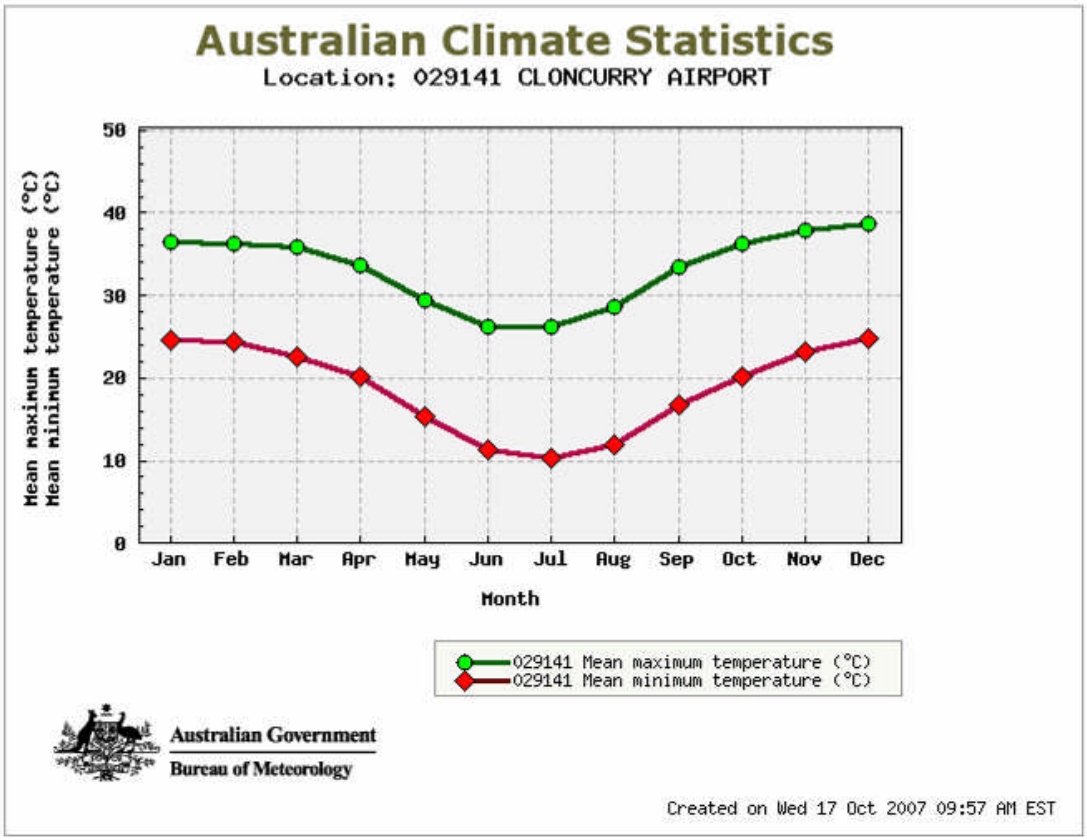
Item (ERA Schedule No.)	Level of Activity	Level	License Fee ($)
ERA 7(b) Chemical Storage	>1000m^3 or more	1	1,740
ERA 11(a) Crude Oil or Petroleum Product Storing	<500,000L	2	-
ERA 15(b) Sewage treatment	Sewage treatment for between 100 and 1500 equivalent persons	1	1,500
ERA 17 Fuel Burning	Using fuel burning equipment capable of burning 500kg or more of fuel an hour	1	3,000
ERA 18(b) Power	Generating power by consuming fuel at a rated capacity of 10 MW electricity or more	1	14,940
ERA 42 Mineral Processing	Commercially processing, classification, mixing or concentration of mineral ores to produce mineral concentrates in works having a design production capacity of more than 1,000,000 tpa	1	16,340
ERA 75(a)(iii) Waste Disposal Facility	<10,000 t per year of domestic waste disposal	1	1,000
ERA 75(b)(iv) Regulated Waste Disposal Facility	≥200,000 t per year	1	10,000
ERA 82 Waste Transfer Station	Waste transfer station receiving waste at 20,000 t or more a year	1	900
ERA 84(a) Regulated Waste Storage	Tyre receiving and storage facility >500 tyres	1	1,400
ERA 84(b) Regulated Waste Storage	Regulated waste storage	1	2,000

3.0 DESCRIPTION OF THE EXISTING ENVIRONMENT

3.1 REGIONAL CLIMATE

The following information provides a climatic description of the Project region, compiled using climatic data from the Australian Bureau of Meteorology (BOM) (http://www.bom.gov.au/). Data has been sourced from the BOM weather monitoring station located at the Cloncurry Airport, approximately 38km south-west from the E1 site and 20km south-west from the Monakoff site. The BOM Cloncurry Airport weather monitoring station commenced collecting data in 1978 and is still operational.

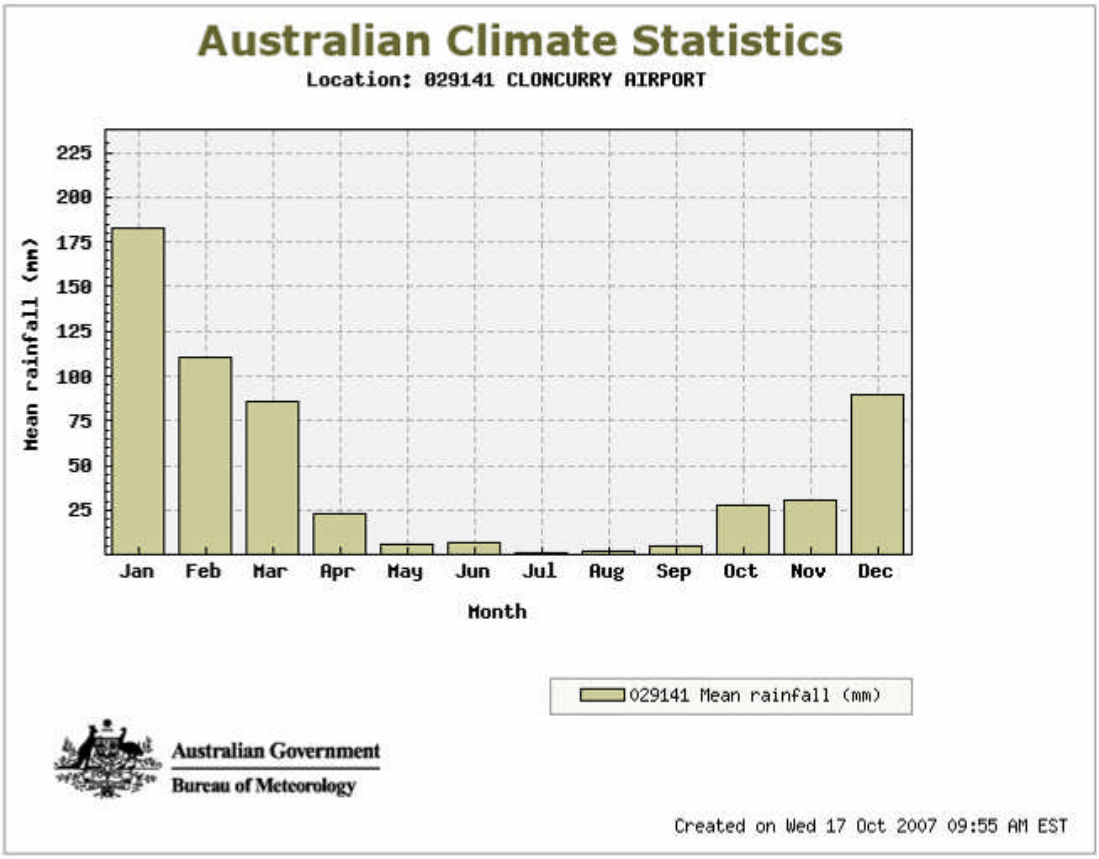
Figure 5 illustrates that the mean minimum daily temperature in the Project region ranges between 10.4°C and 24.8°C with the coolest temperatures occurring between June and August. The mean maximum daily temperatures range between 26.2°C and 38.7°C with the warmest temperatures occurring between the months of October and February. The temperature patterns displayed in Figure 5 are typical of a sub-tropical region experiencing defined wet/dry seasons.



Statistics	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual	Years
Mean maximum temperature (°C)	36.5	36.3	35.9	33.7	29.4	26.3	26.2	28.7	33.4	36.2	37.8	38.7	33.3	13
Statistics	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**	**Annual**	**Years**
Mean minimum temperature (°C)	24.6	24.4	22.5	20.2	15.4	11.4	10.4	11.9	16.7	20.2	23.1	24.8	18.8	13

Figure 5: Mean Monthly Temperatures at Cloncurry Airport

Rainfall data from the Cloncurry Airport weather monitoring station indicates that mean annual rainfall for the region is 533.8 mm. Figure 6 illustrates that rainfall is typically highly seasonal, with the dry season occurring in July and August and the wet season peaking in January.



Statistics	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual	Years
Mean rainfall (mm)	182.8	110.9	85.4	23.5	5.8	6.7	0.9	2.4	4.9	28.1	30.6	89.6	533.8	14

Figure 6: Mean Monthly Rainfall at Cloncurry Airport

Light winds between 10 and 20 kilometres per hour (km/hr) from a south to south-eastern direction are dominant in the region. Wind roses for the region as measured at the Cloncurry Airport are presented in Figure 7.

Rose of Wind direction versus Wind speed in km/h (01 May 1978 to 31 Dec 2006)
CLONCURRY AIRPORT
Site No: 029141 • Opened Dec 1978 • Still Open • Latitude: -20.6664° • Longitude: 140.505° • Elevation 186m

An asterisk (*) indicates that calm is less than 0.5%.
Other important info about this analysis is available in the accompanying notes.

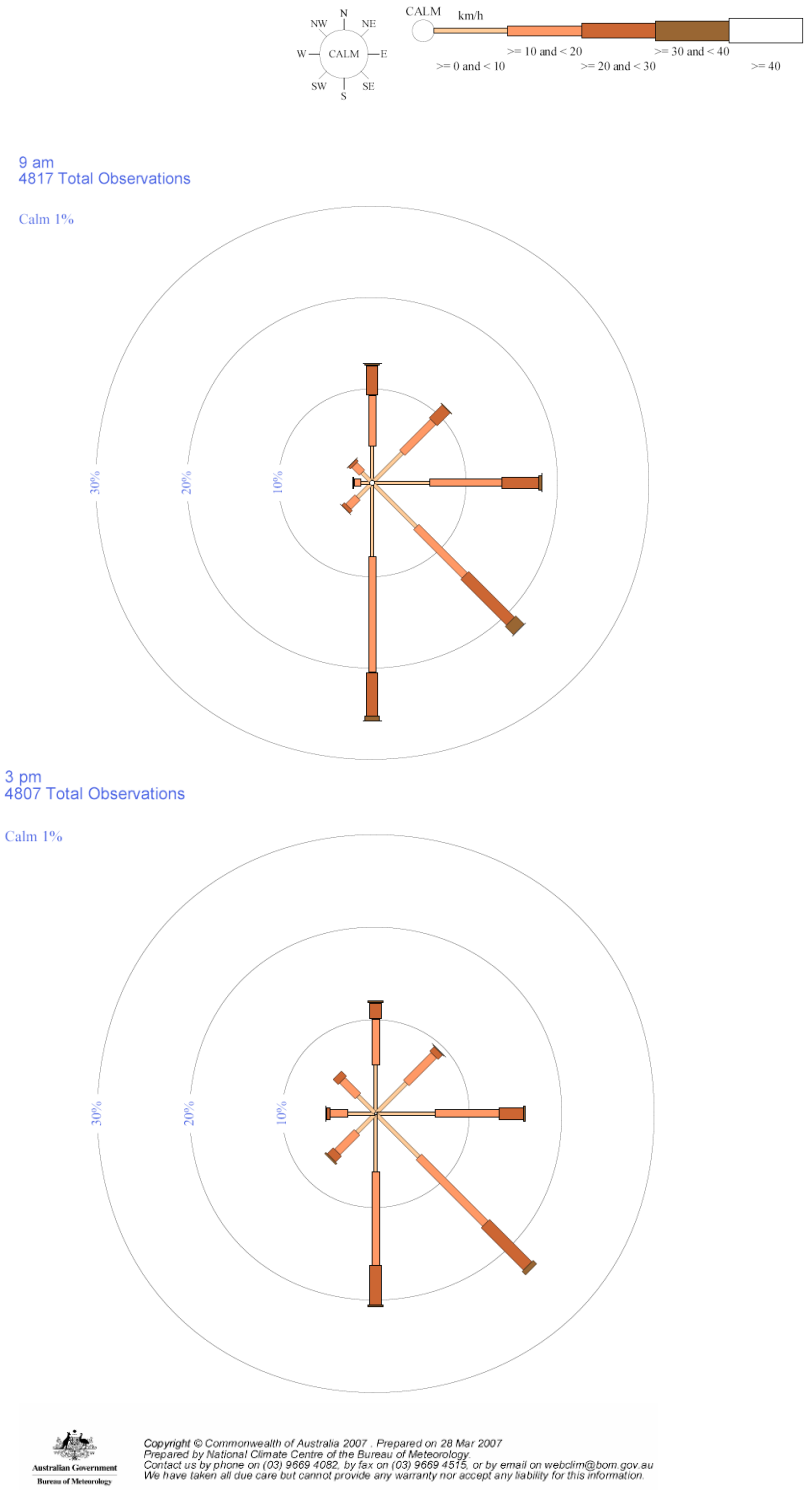


Figure 7: Wind Roses Measured at Cloncurry Airport

3.2 CURRENT LAND USE

Cattle grazing and exploration activities are the current land uses of both the Mt Margaret and Monakoff sites.

A mining pit and associated waste rock dump are located on the Monakoff site as a result of previous mining activities.

3.3 GEOLOGY

The E1 Group of deposits is a copper-gold mineralisation system. Deposits are overlain by approximately 40 metres of unconsolidated Mesozoic-Cenozoic cover.

The E1 North deposit is hosted in a series of steeply dipping metasediments and metavolcanic lenses. The deposit is bounded by two north-trending faults to the east and west, each dipping inwards and intersecting at depth.

Both the E1 East and E1 South deposits are hosted within massive magnetite ironstones. The E1 East deposit is hosted within 2 steeply dipping lenses whilst the E1 South deposit is contained in a parallel series of stacked, folded lenses.

The Monakoff deposit occurs within the Pumpkin Gully syncline and is hosted within a regionally extensive magnetite iron formation.

The Monakoff deposit consists of a sulphide copper-gold mineralisation system, predominantly within a magnetite-pyrrhotite-chalcopyrite-pyrite mineral assemblage. The mineralisation is hosted by a well defined east west striking iron-rich alteration zone within steeply south dipping metasediments and amphibolites. The ore zone is associated with magnetite and high levels of sulphur are restricted mainly to the ore zone and the immediate footwall position.

A simplified geological map of the Project area is presented in Figure 8.

To determine the detailed design of waste rock dumps and develop associated environmental impact mitigation strategies, waste rock samples will be analysed for the following parameters to determine their acid producing potential:

- pH(OX);
- Net Acid Generation Capacity (kg H_2SO_4/tonne);
- % Total Sulphur;
- Acid Neutralising Capacity (kg H_2SO_4/tonne); and
- Net Acid Producing Potential (kg H_2SO_4/tonne).

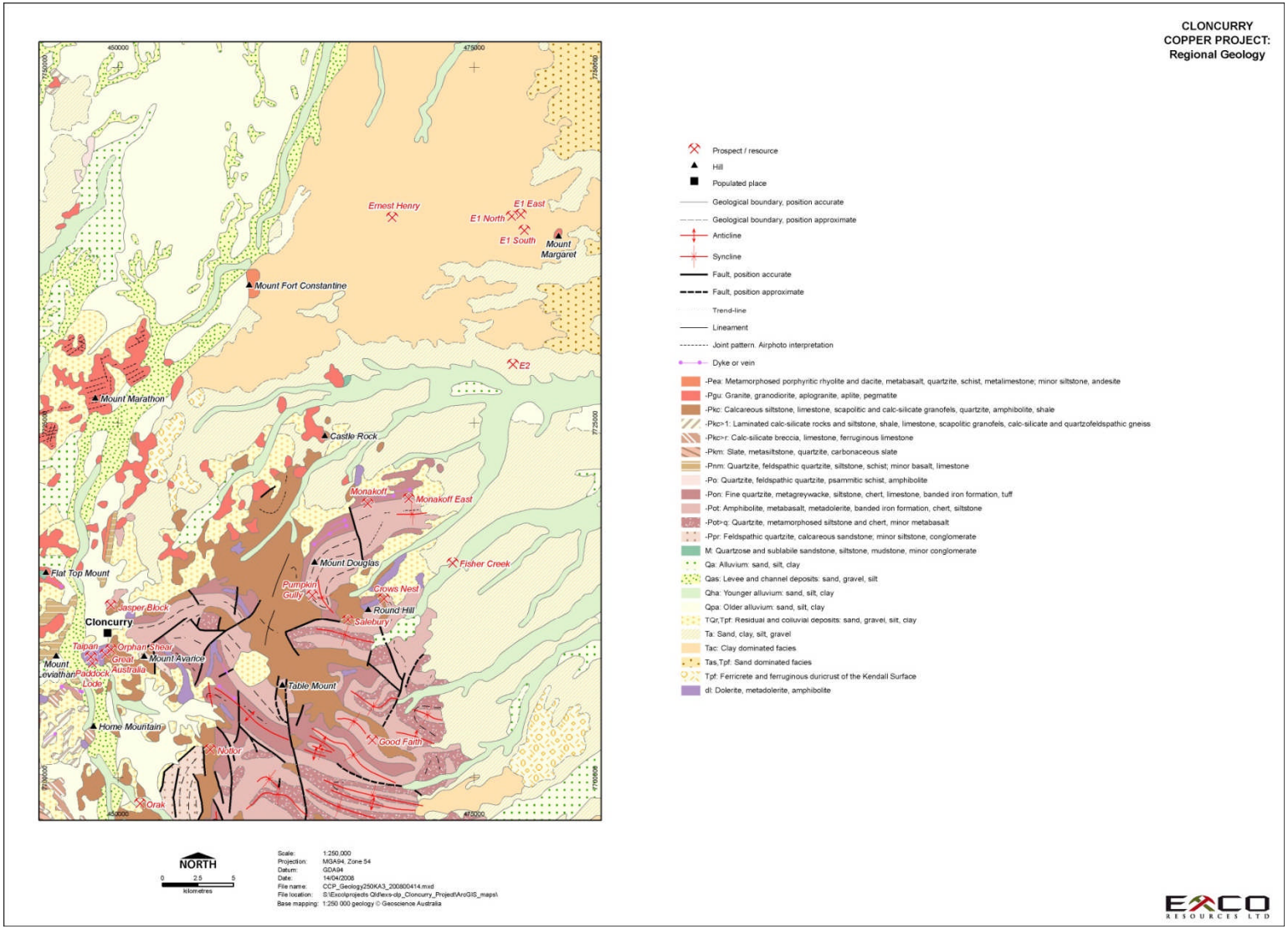


Figure 8: Geology of the Project Region

3.4 ENVIRONMENTALLY SENSITIVE AREAS

A search of the QEPA Ecoaccess database (http://www.epa.qld.gov.au/ecoaccess/ecomaps) for environmentally sensitive areas shows that there are no environmentally sensitive areas pertinent to the Project sites. An endangered regional ecosystem (ERE) consisting of *Eucalyptus camaldulensis* (River Red Gum) communities surrounds the Monakoff site however regional ecosystem (RE) mapping on the Monakoff MLA area confirms that this ERE does not occur within the boundaries of the Monakoff MLA.

The proposed haul road corridor crosses areas of potential *Eucalyptus camaldulensis* (River Red Gum) community. This will be confirmed with a flora/fauna assessment of the haul road corridor to be undertaken in 2008.

Figure 9 is an Endangered Regional Ecosystem map generated from the Queensland Herbarium RE data. Figures 10, 11 and 12 are the individual maps for the accommodation camp site, the Mt Margaret Project area including the power and water corridor and access road, and the Monokoff Project Area respectively as generated by the QEPA Ecoaccess database.

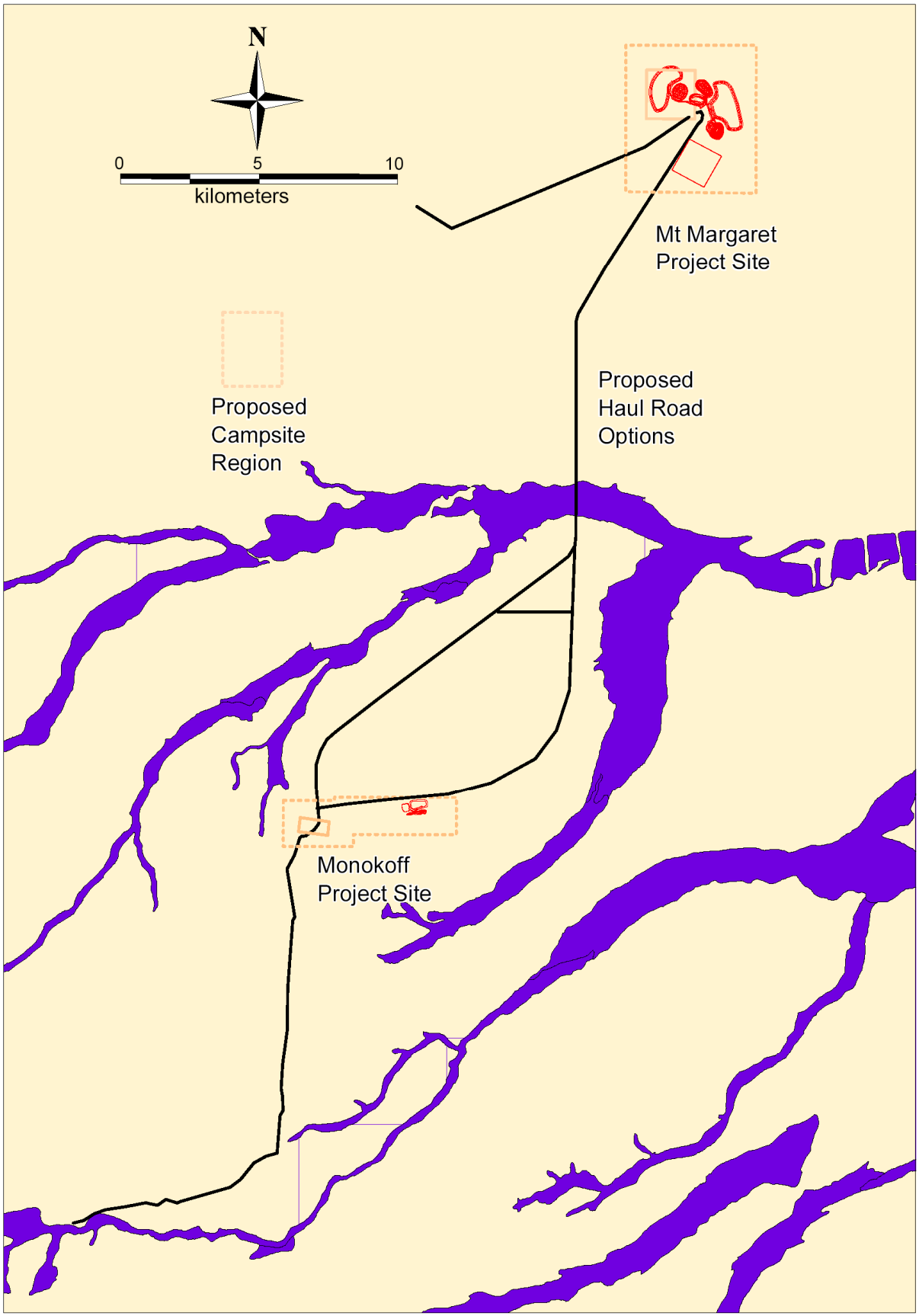


Figure 9: Endangered Regional Ecosystem Map – Whole Project Site

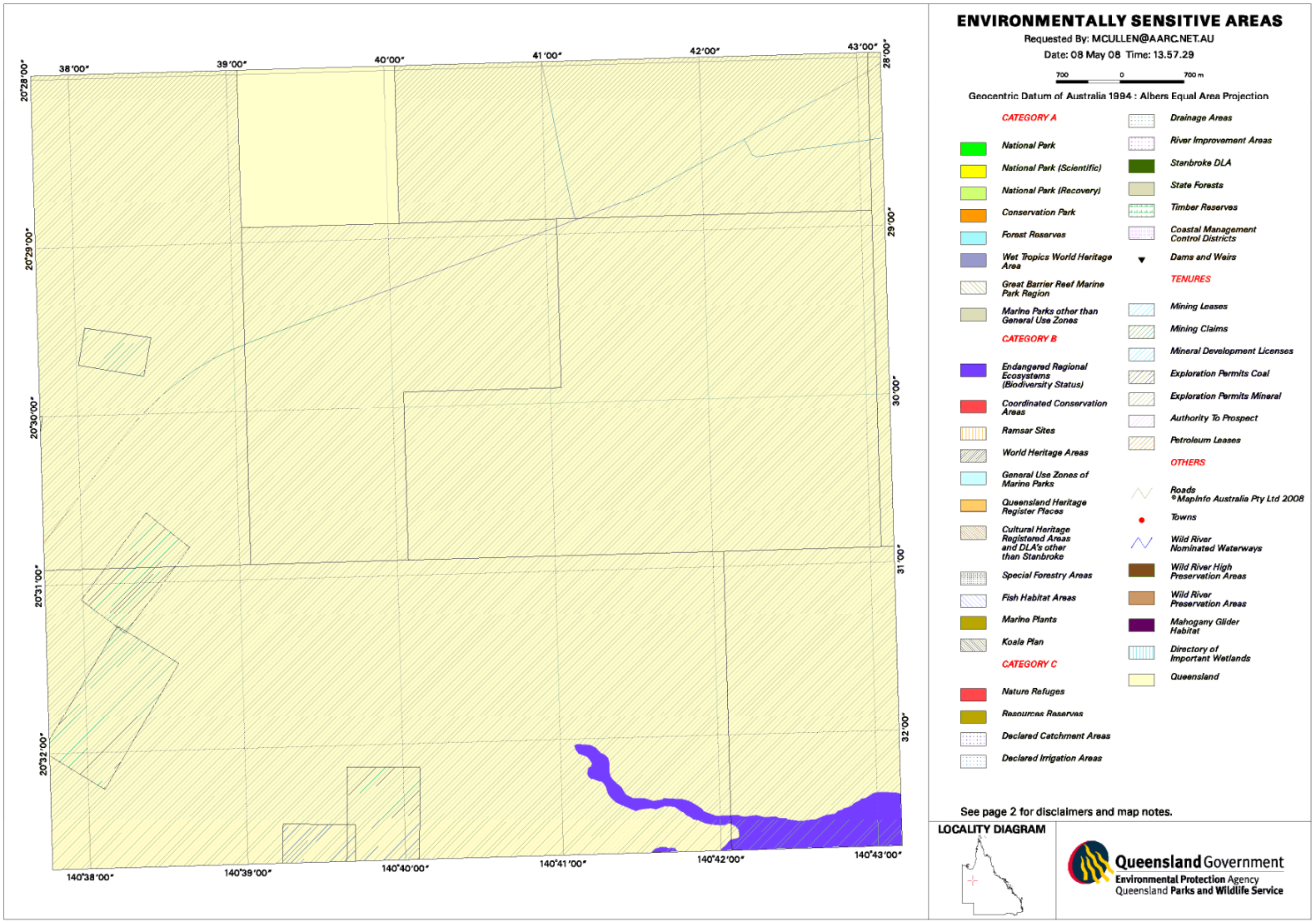


Figure 10: Environmentally Sensitive Areas – Camp Site

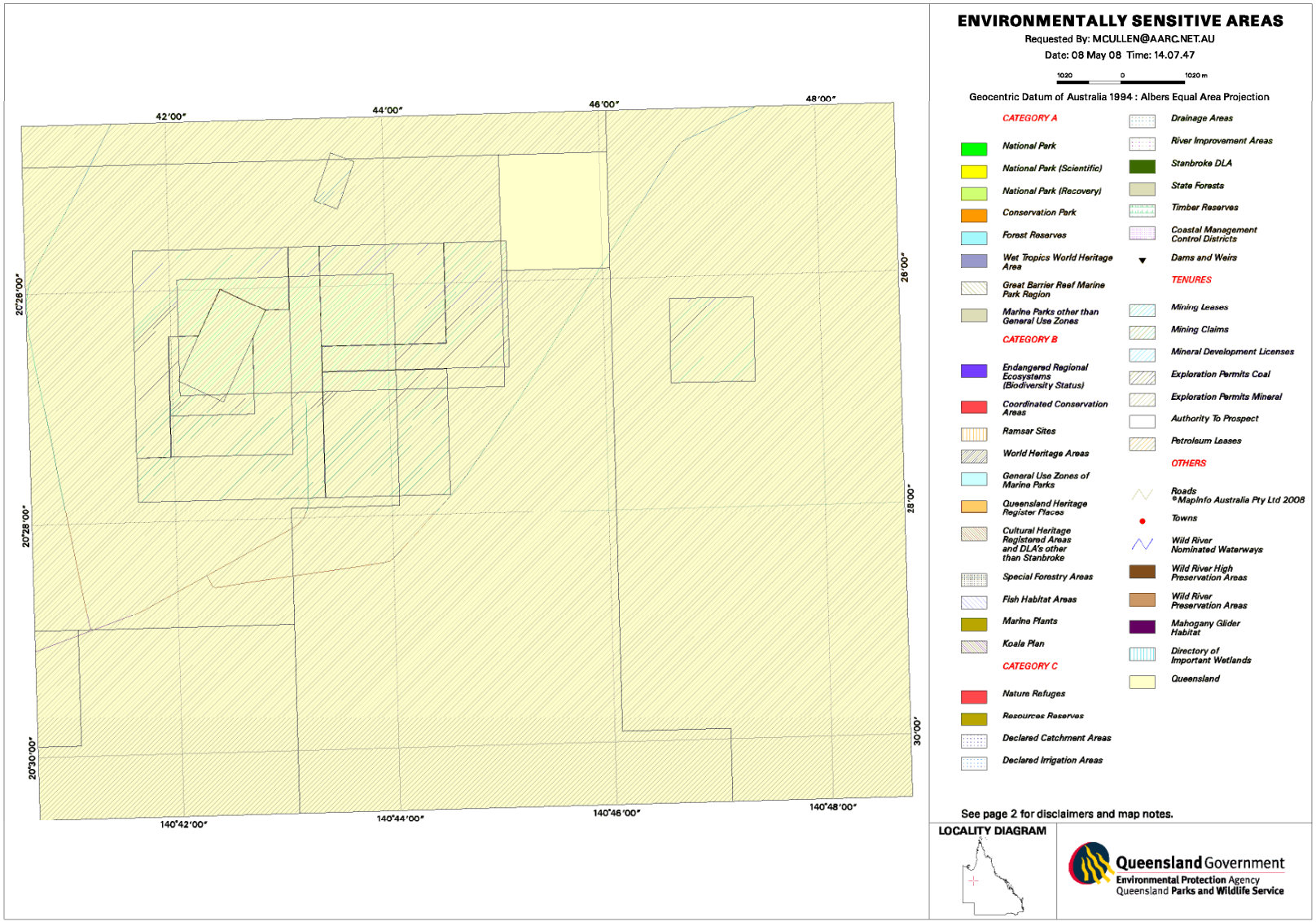


Figure 11: Environmentally Sensitive Areas – E1 Site

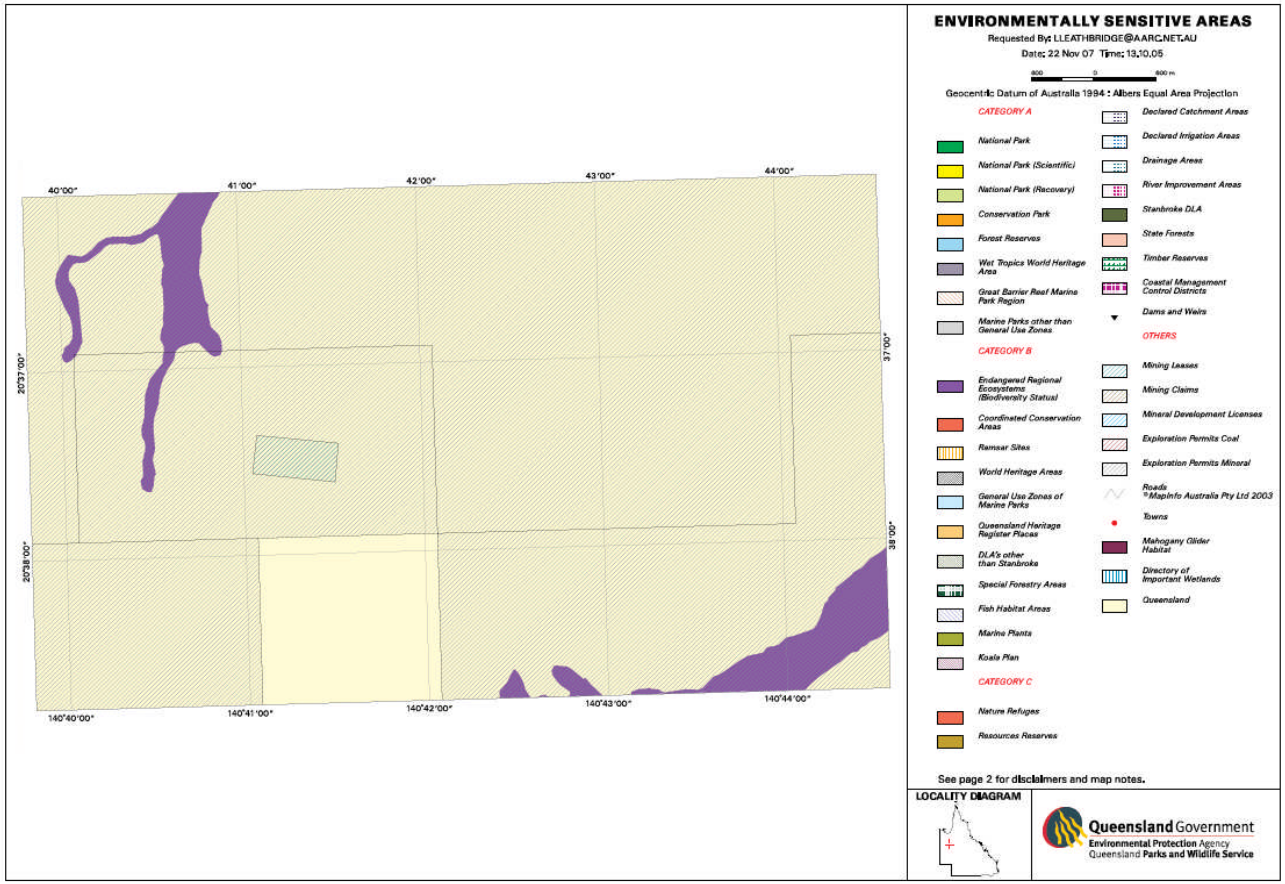


Figure 12: Environmentally Sensitive Areas – Monakoff Site

3.5 SOIL AND LAND SUITABILITY

Soil sampling will be undertaken as part of a soil and land suitability assessment of the Project site in accordance with the Department of Minerals and Energy's *Land Suitability Assessment Techniques* (1995). In following the procedures outlined in this guideline, the objectives of the study will be to:

- Compile a land resource inventory through classification, testing and mapping of soils, and description of the terrain; and
- Determine and report on the pre-mining land suitability through the process of land resource evaluation.

Full details of the study will be presented including proposed topsoil management strategies.

3.6 NATURE CONSERVATION

A terrestrial flora and fauna study will be conducted on the Project sites to provide an inventory of species which are established on or frequent the Project sites. The terrestrial flora and fauna will be surveyed during both wet and dry periods of the year to take into account seasonal occurrences of flora and fauna species. The dry season component of the survey has been conducted and occurred from the 5th to the 10th of November 2007 inclusive. Survey conditions were dry and warm and typical to that experienced in the Project region during November. During the survey the average maximum daily temperature was 35.4°C whilst the average minimum daily temperature was 19.8°C. No rain fall during the survey and no standing water was observed on either Project site.

The survey identified family groupings of the Purple-Necked Rock Wallaby *Petrogale purpureicollis* on the rocky outcrops of the Monakoff site which are listed as a vulnerable species under the *Nature Conservation and Wildlife Regulation 2006*. To date no other flora or fauna species of conservation concern have been identified on the Project sites.

The scope of the terrestrial flora and fauna survey includes:

- A literature and database search to identify species of state and national conservation significance known from the region. This enables these species to be targeted during the field survey component of the study; and
- A field survey employing standard methodologies to determine the composition of flora and fauna species inhabiting the Project sites, particularly species of conservation significance. This includes
    - Regional Ecosystem mapping;
    - Identification of flora species at representative transects;
    - Pitfall trapping with drift fences;
    - Elliott trapping;
    - Ultrasonic bat call detection using the ANABAT II bat detector;
    - Bird census;

- Track, scat and scratch searches;
- Habitat searches for reptiles and amphibians; and
- Recording of opportunistic flora and fauna sightings outside transects.

3.6.1 Database Review

A search of historical records containing recordings of flora and fauna species identified within the Project region was conducted using the QEPA Wildlife Online *Nature Conservation Wildlife Regulation 2006* (Qld) (NCWR) database and the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act) database. Table 5 contains a list of flora and fauna species of conservation significance which have been identified in the broader Cloncurry region.

Table 6: Species of Conservation Concern Potentiality Located on the Project Site

Species Identification		Conservation Status	
Scientific Name	**Common Name**	**EPBC Act (1999)**	**NCWR (2006)**
Erythrura gouldiae	Gouldian Finch	Endangered	Endangered
Ephippiorhynchus asiaticus	Black-Necked Stork	-	Rare
Grantiella picta	Painted Honeyeater	-	Rare
Kohautia australiensis	-	-	Rare
Petrogale purpureicollis	Purple-Necked Rock-Wallaby	-	Vulnerable
Pristis microdon	Freshwater Sawfish	Vulnerable	-
Rostratula australis	Australian Painted Snipe	Vulnerable	-
Sminthopsis douglasi	Julia Creek Dunnart	Endangered	-

3.7 AIR QUALITY

It is anticipated that the primary air quality issues associated with the Project would be the generation of dust from disturbed areas and haul roads, and emissions produced from the processing infrastructure. Dust deposition gauges will be installed on the Project site to collect background dust levels which are representative of the region under typical circumstances.

The Ilkley Homestead and the Mapperley Homestead are in close proximity to the both Project areas but they are thought to be currently non-operational and unoccupied. The closest occupied sensitive receivers to the Monokoff Project area are the Fishers Creek Homestead located 7.5km to the south east, and Dryburgh Homestead located approximately 15km east, of the Monokoff Project Area. The closest sensitive receiver to the Mt Margaret Project area is the Ernest Henry accommodation camp which is located approximately 15km to the south west.

Air quality impacts from the E1 site would be negligible due to the distance between the nearest sensitive receiver and the E1 site. Consequently air quality modelling would only be undertaken for activities on the Monakoff site.

3.8 NOISE AND VIBRATION

A noise and vibration assessment will be conducted to predict noise and vibration levels produced by the Project and identify any associated potential adverse impacts. The assessment will involve the deployment of background environmental noise loggers to obtain noise levels representative of the region under typical circumstances. Modelling will be undertaken to assess the impact of Project created noise and vibration levels on any identified sensitive receivers.

The noise and vibration assessment would only be required for activities conducted the Monakoff site due to the distance between the E1 site and its closest sensitive receivers.

3.9 VISUAL AMENITY

The EIS will describe landscape features, panoramas and views of the Project site that may have value to the community.

Both sites are located in very sparsely populated, rural mining areas. Additionally the E1 site is located next to the pre-existing Ernest Henry Mine which is clearly visible from all focal points on the Project site. Consequently it is not anticipated that the Project will have an adverse impact on issues related to visual amenity.

3.10 INDIGENOUS CULTURAL HERITAGE

The Mitakoodi People are the registered native title claimants for the Project area.

In accordance with the *Aboriginal Cultural Heritage Act 2003* (Qld), a Cultural Heritage Management Plan (CHMP) will be developed for the Project. Negotiations with the Mitakoodi People will be conducted during the preparation of the CHMP. Preliminary heritage surveys for the Project site are currently planned for 2008.

4.0 COMMUNITY CONSULTATION

4.1 AFFECTED PERSONS

A definition of an affected person is provided in QEPA *Guideline 12 – The EIS Process for Non-Standard Mining Projects*. This definition has been presented below:

A person is an "affected person" for a project (s38) if the person is:

(1) any of the following under the Native Title Act 1993 (Commonwealth) for the operational land or for an area that includes any of the land:

a) a registered native title body corporate;

b) a registered native title claimant;

c) a representative Aboriginal/Torres Strait Islander body; or

(2) a relevant local government for the operational land; or

(3) a person mentioned below for the operational land or any land joining it:

a) a registered proprietor - for freehold land;

b) a person recorded in the register as the registered holder of the interest - for land that is held from the State for an estate or interest less than fee simple and for which the interest is recorded in a register mentioned in the Land Act 1994 (Land Act), section 276;

c) a holder of, or an applicant for, the tenement - for land subject to a mining claim, mineral development licence or mining lease;

d) a holder of the authority; or a lessee under the lease; or a licensee under the licence - for land subject to an authority to prospect or a lease or licence under the Petroleum Act 1923;

e) a trustee of the land - for land under the Land Act or the Nature Conservation Act 1992 (NCA) for which there are trustees;

f) a grantee of the land - for Aboriginal land under the Aboriginal Land Act 1991 (ALA) that is taken to be a reserve because of section 87(2) or 87(4)(b) of that Act;

g) a trustee for the land - for DOGIT land under the ALA or the Torres Strait Islander Land Act 1991;

h) a relevant local government - for land held under a lease under the Local Government (Aboriginal Lands) Act 1978, section 6;

i) a grantee of the land - for Torres Strait Islander land under the Torres Strait Islander Land Act 1991 that is taken to be a reserve because of section 84(2) or 84(4)(b) of that Act;

j) *a trustee of the land - for land under a lease from the State under the Aborigines and Torres Strait Islanders (Land Holding) Act 1985 that has been excised from land granted in trust for Aboriginal or Torres Strait Islander purposes under the Land Act;*

k) *the State - for land that is any of the following:*

- *unallocated State land;*
- *a reserve under the Land Act for which there is no trustee;*
- *a national park, national park (Aboriginal land), national park (scientific), national park (Torres Strait Islander land), national park (recovery) or forest reserve under the NCA;*
- *a conservation park under the NCA for which there are no trustees;*
- *a State forest or timber reserve under the Forestry Act 1959;*
- *a State-controlled road under the Transport Infrastructure Act 1994;*
- *a fish habitat area under the Fisheries Act 1994.*
- *another person prescribed under a regulation to the EP Act.*

4.2 INTERESTED PERSONS

The following definition of interested persons has been taken from the QEPA *Guideline 12 – The EIS Process for Non-Standard Mining Projects*.

"Interested persons are defined as persons nominated by the proponent that have an interest in the Project. Interested persons may include a local community progress association, a local/state/national environmental action group, and affected land users other than land holders, any person who might have a substantial interest in the project or its impact".

4.3 CONSULTATION PROCESS

Affected and interested persons will be included in the community consultation program for the Project and will be provided with a copy of the Terms of Reference (TOR) Notice and EIS for public comment. The community consultation program will include meetings with affected and interested persons as required. All correspondence with interested and affected persons will be recorded in the Consultation Report as a part of the EIS.

The draft TOR will be released for public comment, and to interested and affected persons and advisory bodies for at least 30 business days. Anyone can make comments on the draft TOR to the QEPA. At the end of the comment period, copies of all comments received by the QEPA will be given to the proponent. Exco Resources will then prepare the following:

- A written summary of the comments;
- A response to the comments; and
- Proposed amendments to the TOR as a result of the comments received.

The above information must be provided by Exco Resources to the QEPA within 20 business days of receiving copies of the documents. However, a longer period of time can be agreed between Exco Resources and the QEPA. The QEPA will then prepare and publish the final TOR based on the responses from Exco Resources within 20 business days.

Exco Resources will then undertake the necessary assessments, research and consultations to prepare the EIS, in accordance with the TOR. The EIS will support an application for Project approvals, in particular an Environmental Authority (EA).

Exco Resources will submit the completed EIS to the QEPA. The QEPA will then assess the EIS and decide whether or not it adequately addresses the published TOR. If it does, Exco Resources must then publish an EIS Notice and give a copy of the EIS Notice to each affected and interested person. The submission period for public comment will be set by the QEPA and must be at least 20 business days. Copies of the EIS will be made available to all interested and affected persons and Advisory Bodies. The QEPA will accept all properly-made submissions received during the submission period. The QEPA will provide Exco Resources with a copy of all the submissions received on the EIS. Exco Resources must then prepare a response to the submissions and make any necessary amendments to the submitted EIS.

The QEPA will prepare and give an EIS Assessment Report to Exco Resources. This Assessment Report will consider the final TOR, the submitted EIS, all properly made submissions, Exco Resources responses to submissions and the standard criteria in preparing the EIS Assessment Report. The Assessment Report will, among other things, recommend any relevant conditions that will be necessary for the Project to proceed.

5.0 ASSESSMENT OF EIS TRIGGER CRITERIA

Table 9 contains an assessment of the Project against the QEPA's EIS Trigger Criteria as set out in *Guideline 4 – Deciding the Level of Impact Assessment for the Mining Industry*.

Table 9: EIS Trigger Criteria

EIS Trigger Criteria	Triggered	Comments
1. Significant Impact on Category A or B environmentally sensitive areas	No	-
2. Involve any mining in a marine area	No	-
3. Involve any mining less than 500m landward from the highest astronomical tide	No	-
4. Require the construction of more than 150 new dwelling units	Yes	A camp is proposed to accommodate a maximum of 250 personnel.
5. Include any activity that would otherwise be a Level 1 ERA with an annual fee greater than $4000	Yes	Mineral Processing; Power Generation. (refer to Table 4)
6. Involve the mining of more than 2 million tonnes of mineral or run of mine ore per annum	Yes	Mining rate of 2mtpa of ROM ore.
7. Involve the abstraction of more than 2 million m^3 of water per annum from natural surfaces and/or groundwater sources	Yes	Annual water requirements of 1 million m^3 per annum sourced from de-watering, local bores and Lake Julius .
8. Result in more than 25ha remaining post mining in a non-beneficial land capability where an acceptable alternative may be feasible	Yes	Voids could be used as water storages whilst other disturbance areas could be returned to low intensity grazing.
9. Involve any non-standard mining activity less than 2 km from a town	No	-
10. Contain a dam that requires a dam failure assessment under the *Water Act 2000*	No	Hazardous dams only
11. Include mining for uranium or asbestos	No	-

6.0 REFERENCES

Department of Minerals and Energy. (1995). *Technical Guidelines for the Environmental Management of Exploration and Mining in Queensland – Land Suitability Assessment Techniques*. Queensland Government: Brisbane.

Queensland Environmental Protection Agency. (2000). *Guideline 4 – Deciding the Level of Impact Assessment for the Mining Industry*, Version 1. Queensland Government: Brisbane.

Queensland Environmental Protection Agency. (2003). *Guideline 8 – Preparing an EMOS for Non-Standard Mining Projects,* Version 1.1. Queensland Government: Brisbane.

Queensland Environmental Protection Agency. (2003). *Guideline 12 – The EIS Process for Non-standard Mining Projects*. Queensland Government: Brisbane.