

Territory Iron

Frances Creek Mine

Mining Management Plan

Amendment:


Elizabeth Marion Area



Territory Iron Limited

February 2014



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Contents

| | | |
|----------|---|-----------|
| 1 | Introduction | 4 |
| 2 | Operator Details | 6 |
| 2.1 | Organisational Structure and Responsibility | 6 |
| 2.2 | Title Details..... | 8 |
| 2.3 | Project Description | 8 |
| 2.3.1 | Location..... | 8 |
| 2.3.2 | Project Summary | 9 |
| 3 | Site Conditions | 13 |
| 3.1 | Physical Environment..... | 13 |
| 3.1.1 | Climate | 13 |
| 3.1.2 | Land Systems | 14 |
| 3.1.3 | Topsoil and Subsoil..... | 14 |
| 3.1.4 | Topography and Geology | 14 |
| 3.1.5 | Vegetation type | 15 |
| 3.1.6 | Flora and Fauna..... | 15 |
| 3.2 | Socio-Economic Environment | 17 |
| 3.2.1 | Current Land Use..... | 17 |
| 3.2.2 | Identified Stakeholders | 17 |
| 3.2.3 | Workforce Description and Demography..... | 17 |
| 3.2.4 | Community Affairs..... | 18 |
| 4 | Statutory Requirements | 19 |
| 4.1 | Statutory Requirements | 19 |
| 4.2 | Sacred, Archaeological and Heritage Sites | 19 |
| 4.2.1 | Sacred Sites..... | 19 |
| 4.2.2 | Indigenous Land Use Agreements | 19 |
| 4.2.3 | Aboriginal Archaeological and Historic Sites | 20 |
| 4.2.4 | Heritage work and findings specific to the Elizabeth Marion Area..... | 20 |
| 5 | Operational Activities | 22 |
| 5.1 | Mining Activities..... | 22 |
| 5.2 | Pit Design | 22 |
| 5.3 | Ore Movement..... | 24 |
| 5.4 | Waste Rock Management..... | 24 |
| 5.4.1 | PAF Waste Management..... | 24 |
| 5.4.2 | NAF Waste Rock Landform | 25 |
| 5.5 | Support Facilities..... | 27 |
| 5.5.1 | Ore Processing Operations..... | 28 |
| 5.5.2 | Tailings Storage Facility..... | 28 |

| | | |
|-----------|--|-----------|
| 5.6 | Mining Schedule..... | 28 |
| 5.7 | Exploration Activities..... | 28 |
| 6 | Environmental Management | 29 |
| 6.1 | Environmental Management Structure..... | 29 |
| 6.2 | Environmental Policy..... | 30 |
| 6.3 | Environmental Commitments..... | 31 |
| 6.3.1 | Recommendations Resulting from Formal Environmental Assessment | 31 |
| 6.4 | Environmental Training and Education | 31 |
| 6.5 | Environmental Emergency Preparedness and Response | 32 |
| 7 | Implementation, Monitoring and Review | 33 |
| 7.1 | Environmental Aspects Impacts and Risk..... | 33 |
| 7.2 | Environmental Management Plans | 36 |
| 7.2.1 | Objectives and Targets | 36 |
| 7.3 | Actions to Manage Identified Environmental Risks..... | 37 |
| 7.4 | Monitoring and Measurement | 38 |
| 7.5 | Review Effectiveness of Management and Mitigation Strategies | 38 |
| 7.6 | Non-Conformance and Corrective Action | 39 |
| 8 | Water Management Plan..... | 40 |
| 8.1 | Current Conditions | 40 |
| 8.1.1 | Surface Water | 40 |
| 8.1.2 | Groundwater | 40 |
| 8.1.3 | Impacts on receiving ecosystem..... | 40 |
| 8.2 | Surface water management..... | 41 |
| 8.3 | Mine Dewatering | 42 |
| 8.4 | Information/Knowledge Gaps..... | 44 |
| 8.5 | Water Management Aspects Impacts and Risk..... | 44 |
| 8.6 | Actions to Manage Identified Water Related Risks..... | 47 |
| 8.7 | Water Monitoring..... | 48 |
| 9 | Incident Reporting..... | 50 |
| 10 | Closure Planning..... | 51 |
| 10.1 | Security Estimate | 52 |
| 11 | References | 53 |
| 12 | Appendices | 54 |
| | Appendix 1 – Water Management Plan | |
| | Appendix 2 – Environmental Management Plan | |
| | Appendix 3 – Mine Waste Management Plan | |

Tables

| | |
|--|----|
| Table 1: Francis Creek Mine Title Details including the proposed Marion Elizabeth area | 8 |
| Table 2: Key characteristic of proposed Elizabeth Marion mining area | 9 |
| Table 3: Significant Fauna of Frances Creek area | 16 |
| Table 4: Proposed mining schedule for Elizabeth Marion mining area | 28 |
| Table 5: Environmental Commitments for the Elizabeth Marion mining area | 31 |
| Table 6: Risk assessment for proposed Elizabeth Marion mining area | 34 |
| Table 7: Environmental Management Plan Objectives and Targets | 36 |
| Table 8: Actions to manage the environmental risks arising from the mining of the Elizabeth Marion area... | 37 |
| Table 9: Water Management risk assessment for proposed Elizabeth Marion Mining area | 45 |
| Table 10: Water management actions to manage water related risk | 47 |
| Table 11: Mining Security Estimate for the Elizabeth Marion Amendment | 52 |

Figures

| | |
|--|----|
| Figure 1 – Frances Creek Mine Locality Map | 10 |
| Figure 2 – Frances Creek mining lease map showing the Elizabeth Marion area | 11 |
| Figure 3 – Layout of the proposed Elizabeth Marion mining area | 12 |
| Figure 4: Burrundie Railway Station Rainfall and Pine Creek Council Evaporation Data | 13 |
| Figure 5: Pit design plan and typical cross-section for proposed Elizabeth Marion mining area | 23 |
| Figure 6: The proposed Elizabeth Marion waste rock landform with location of cross-sections shown | 26 |
| Figure 7: Cross sections of the proposed Elizabeth Marion waste rock landform | 26 |
| Figure 8: Cross-section of a typical construction and final slope profile for the proposed Elizabeth Marion waste rock landform..... | 27 |
| Figure 9: Water management features for the proposed Elizabeth Marion mining area | 42 |
| Figure 10: Exposed PAF area in the proposed Elizabeth Marion Pit 1 | 42 |
| Figure 11: Exposed PAF area in the proposed Elizabeth Marion Pit 2 | 43 |
| Figure 12: Exposed PAF area in the proposed Elizabeth Marion Pit 3 | 43 |
| Figure 13: New water monitoring points for the proposed Elizabeth Marion mining area..... | 49 |

1 Introduction

Territory Iron Pty Ltd.'s Frances Creek Mine produces iron ore for export. Since re-opening in 2007, Frances Creek Mine has grown to be the economic and social lifeblood of the Pine Creek region which had experienced a long period of significant disadvantage due to the absence of long-term industry that supported employment and new business opportunities. Frances Creek Mine has a workforce of around 310 people, supports more than 80 Northern Territory Businesses and a budgeted expenditure of \$150m for 2014.

Approximately 20% of the Territory Iron workforce is Indigenous. Territory Iron, in partnership with the Northern Land Council, has an active Jobs and Careers Strategy aimed at increasing workforce participation by Traditional Owners and other local Indigenous people.

An extension of mining into the Elizabeth Marion area adjacent to the current operation is essential for the continuation of Frances Creek mining operation. We are seeking support from Northern Territory Department of Mines and Energy (DME) and approval under the Mining Management Act to undertake this new mining phase.

This Mine Management Plan Amendment seeks approval to add the Elizabeth Marion area to the existing approved Francis Creek Mine – Mine Management Plan (2013) (MMP). Although this document is essentially an addendum to the existing MMP, this document has been prepared using the DME template for MMPs. This has been done to give the DME a clear understanding of the proposed activity in the Elizabeth Marion area to demonstrate Territory Iron's commitment to high standards of environmental management and compliance.

The proposed mining operation at the Elizabeth Marion area represents a step change improvement in project planning and environmental management at Frances Creek Mine. The cross-disciplinary forward planning for the Elizabeth Marion area will enable Territory Iron to deliver its best environmental management outcomes to date. This is in alignment with the Territory Iron Environmental Management System that strives for continual improvement.

The proposed Elizabeth Marion mining area is considered relatively low risk. The Elizabeth Marion area will not include supporting infrastructure such as workshops, fuel storage and ore processing facilities as these already exist at Frances Creek Mine. Small volumes of potentially acid forming (PAF) waste will be removed from Elizabeth Marion and disposed of in an existing approved PAF containment cell. The potential for acid and metalliferous drainage (AMD) will be small and contained within the pits. AMD water will not be released into the environment.

The environmental commitments contained in this MMP are:

1. Manage land disturbance using the Land Disturbance Permit System
2. Prevent weed introduction using practices prescribed within the Weed Management Plan
3. Install fit for purpose sediment control structures around at the base of the waste landform and operational areas
4. Stockpile and strategically use topsoil
5. No fuel storage or workshop to be located in Elizabeth Marion area

6. Site dust will be suppressed using water trucks
7. All PAF to be disposed of at the existing PAF containment cell at Waste Dump B (Thelma/Rosemary)
8. Waste landform to be constructed according to design
9. Rehabilitation to be carried out progressively
10. Remedial rehabilitation will occur if required
11. Rehabilitation and Closure Plan to be updated to include Elizabeth Marion
12. Surface water management features such as diversion drains, protection bunds and sediment traps will be installed during construction and maintained as long as required.
13. Culverts will be installed where the mining roads crosses a significant watercourse. All culverts are inspected and repairs carried out where necessary prior to the start of each wet season.
14. New surface water and groundwater monitoring points will be established to monitor the impacts of mining at Elizabeth Marion.
15. Dewatering activities will be managed according to the Frances Creek Water Management Plan
16. Hydrocarbon spills will be managed according to the Spill Response Procedure

2 Operator Details

Territory Iron is the operator of Frances Creek Mine. Territory Iron is a wholly owned subsidiary of Perth based Territory Resources Limited (Territory Resources). Territory Resources is a wholly owned subsidiary of Noble Group Limited.

Noble Group owns and manages an array of strategic assets, sourcing from low cost commodity producers such as Brazil, Argentina, Australia and Indonesia and supplying to high growth demand markets including China, India and the Middle East. Today, Noble has interests in grain crushing facilities, coal and iron ore mines, fuel terminals and storage facilities, sugar and ethanol plants, ports, vessels and other key infrastructure.

The Noble Group Limited acquired Territory Resources in July 2011. Noble Group Limited is listed on the Singapore Stock Exchange SGX: N21. Frances Creek Mine iron ore is sold predominantly to steel mills in China.

Territory Iron and Territory Resources can be contacted at:

Mine Site Address: PO Box 109
Pine Creek NT 0847
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38 Gloucester Road, Hong Kong
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2.1 Organisational Structure and Responsibility

The General Manager – Operations is a site based role responsible for implementing the direction of the Territory Resources board. The General Manager – Operations leads a team of managers who in turn lead specialist teams. Site teams include: Administration, Health, Safety and Training, Environmental, Indigenous, Heritage and Community Affairs, Logistics, Mining, Technical Services, Processing and Exploration.

The Environmental Manager is tasked with the project's environmental management and compliance. This includes maintaining the Mine Management Plan and the Environmental Management Plan.

Key site contacts are:

Darren Gibcus General Manager-Operations
PO Box 109
Pine Creek NT 0847
Phone: (08) 8976 8000

Peter Schellenberger Environmental Manager
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Pine Creek NT 0847
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2.2 Title Details

The proposed expansion of mining into the Elizabeth Marion area will occur on tenements ML24727 and ML27226 as shown in Figure 2.

Table 1: Francis Creek Mine Title Details including the proposed Marion Elizabeth area

| Title number | Title Holder | Tenement Name | Grant Date | Expiry Date |
|---------------------|--------------------------|---------------------------|-------------------|--------------------|
| ML27227 | Frances Creek P/L | Elizabeth Marion | 26/09/2011 | 25/09/2036 |
| ML27226 | TRL | Elizabeth Marion | 21/01/2014 | 20/01/2039 |
| ML24727 | TRL | Frances Creek Mine Area | 5/04/2007 | 4/04/2032 |
| EMP276/77 | TRL | Rail Haul Road Gravel Pit | 13/05/2010 | 12/05/2014 |
| ML25087 | TRL | South Thelma Rose | 24/04/2007 | 23/04/2032 |
| ML25088 | TRL | Ochre Hill Haul Road | 24/04/2007 | 23/04/2032 |
| ML25152 | TRL | Frances Creek Dam | 24/04/2007 | 23/04/2032 |
| ML25396 | TRL | Helene 6/7 South | 24/04/2007 | 23/04/2032 |
| ML25529 | TRL | Jasmine | 22/12/2010 | 21/12/2035 |
| ML26222 | TRL | Helene 4 | 22/12/2010 | 21/12/2035 |
| ML27224 | TRL | Saddles East | 26/09/2011 | 25/09/2036 |
| ML27228 | TRL | Saddles West | 26/09/2011 | 25/09/2036 |
| ML27229 | Frances Creek P/L | Frances Creek | 20/10/2011 | 19/10/2036 |
| ML27807 | TRL | Saddles Extended | 09/02/2012 | 08/02/2037 |
| ML27808 | TRL | Saddles Extended | 09/02/2012 | 08/02/2037 |
| ML27225 | TRL | Saddles Extended | 17/08/2012 | 16/08/2037 |

2.3 Project Description

2.3.1 Location

The Frances Creek Mine is located on the previously abandoned Frances Creek Iron Ore Mining Corporation Pty Ltd (FIMCO) mine site, which operated from 1967 to 1974. Frances Creek Mine is located approximately 180 kilometres (km) southeast of Darwin and 25 km north of Pine Creek (see Figure 1)

The nearest sensitive environmental locations are Kakadu National Park (~25km to the north east of the Mine) and the Mary River National Park (~30km to the north of the Mine). The nearest resident is located approximately eight km to the west (i.e. Union Extended Mine). The site is approximately 12 km north of Esmeralda Station, which is currently unoccupied.

Iron ore from the mine is loaded onto the Alice Springs – Darwin Railway at Roney Rail Siding located approximately 11 km west-south-west of the mine.

The proposed Elizabeth Marion mining area, an extension of the currently mined Helene complex is located about 2 km north of Frances Creek Dam and directly north-west of the existing Ochre Hill mine road (see Figure 3).

2.3.2 Project Summary

This MMP Amendment covers the proposed expansion of mining activities into the Elizabeth Marion area. The proposed works will include:

- Three open pits
- A waste rock landforms (WRL)
- A run of mine stockpile are (ROM)
- A heavy machinery go-line
- A road network
- Site water drainage management works

A general arrangement of the proposed works at the Elizabeth Marion area is shown in Figure 3.

Mining will remove an estimated 1,514kt of ore at an average grade of 50.8% iron with a cut-off grade of 40%. A total 5,257kt of waste rock will be removed to allow mining of the ore. An additional of 148kt of mineralised waste (30-40%Fe) will be placed in discrete location with the WRL where it can be recovered at a later date should it become economically viable.

All other facilities required for the mining of the Elizabeth Marion area already exist within the current Frances Creek Mine. Ore will be processed at the existing crusher and beneficiation plant. Crushed ore will be transported by road train to the rail siding, then by train to the Darwin Port.

All Potentially Acid Forming (PAF) waste coming from the Elizabeth Marion area pits will be disposed of in the existing PAF disposal area located at Waste Dump B (Thelma Rosemary).

A total of 70 hectares of land will be disturbed on tenements ML24727 and ML27226. The area of disturbed land at Frances Creek to date is 463 hectares.

Key characteristics of proposed Elizabeth Marion mining area are shown in Table 2.

Table 2: Key characteristic of proposed Elizabeth Marion mining area

| | |
|---|---|
| Life of project (mine production) | Up to 15 months |
| Extraction quantities: | |
| • Ore | 1,514 kt |
| • Mineralised waste | 148kt |
| • Waste | 5,257 kt (2,154 kbcm) |
| • Total | 6,919 kt |
| Depth of pits: | |
| • Pit 1 | 35 m below the ground surface |
| • Pit 2 | 40 m below the ground surface |
| • Pit 3 | 48.5m below the ground surface |
| Areas of disturbance (including pits, associated infrastructure and access) | 69.83 |
| Mine operation | 24 hours, 7 days a week |
| Water supply for dust suppression | Sourced from existing Frances Creek Mine sources or dewatering from the Elizabeth Marion pits |
| Power supply for lighting plants | Diesel generator |

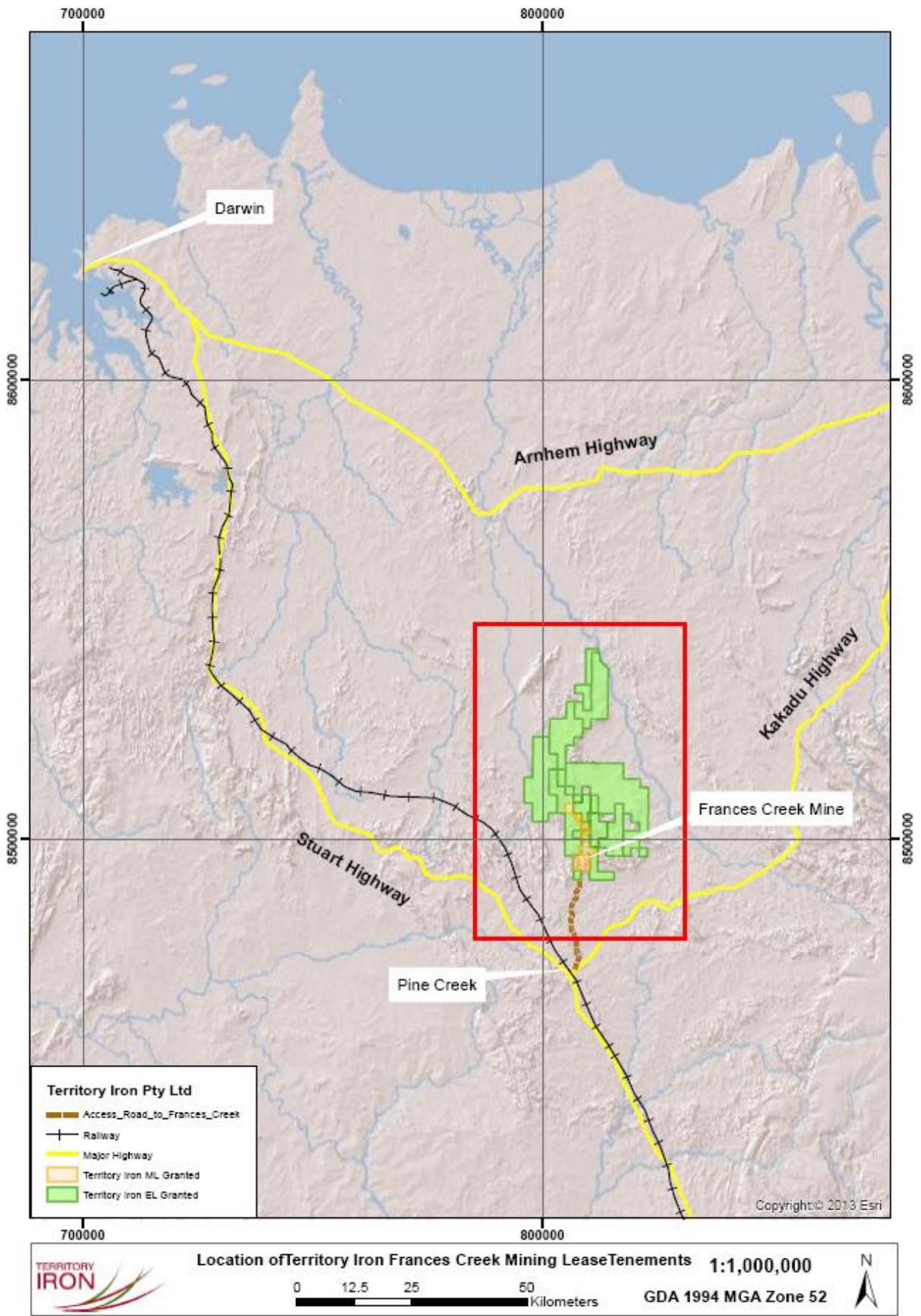


Figure 1 – Frances Creek Mine Locality Map

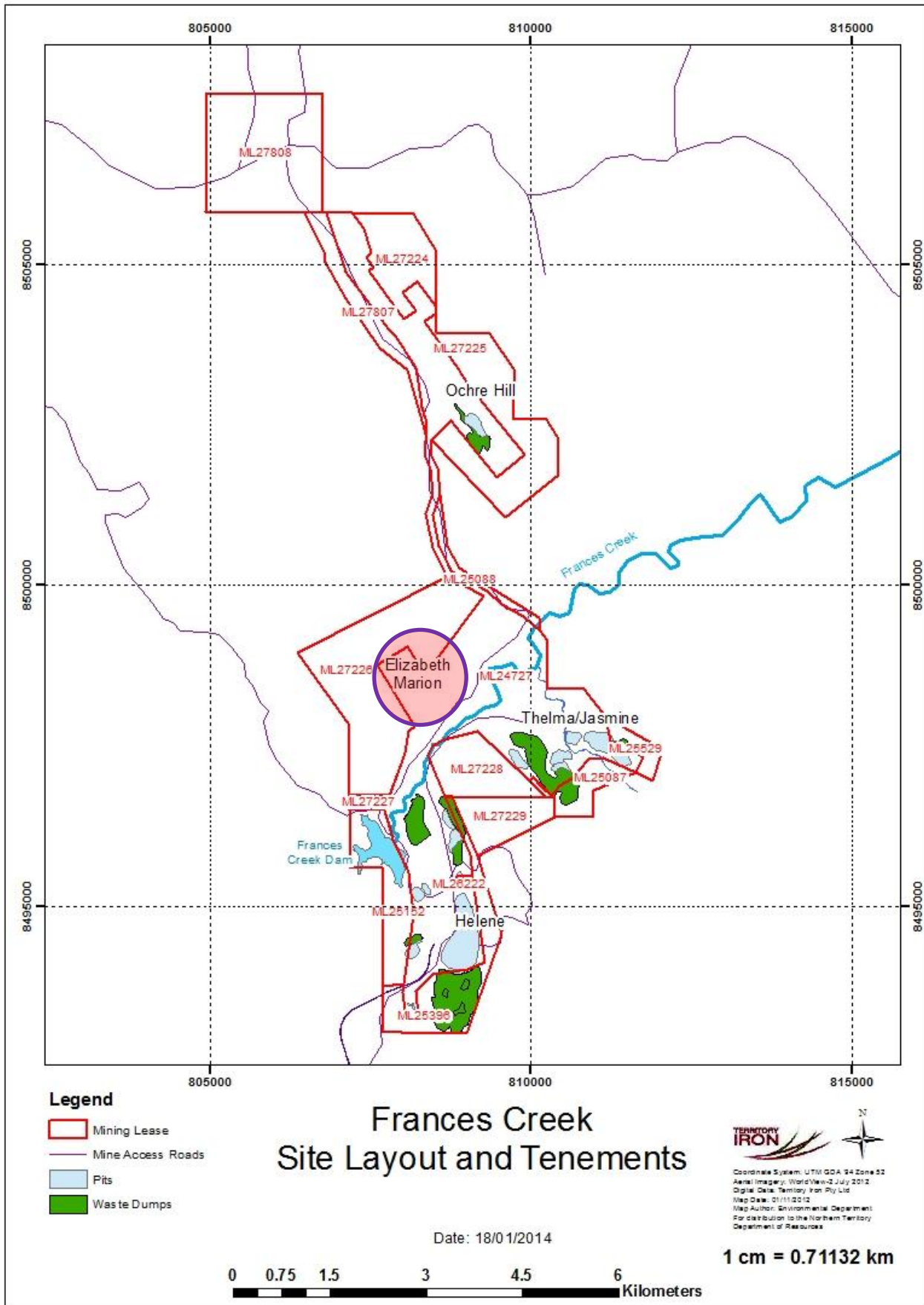


Figure 2 – Frances Creek mining lease map showing the Elizabeth Marion area

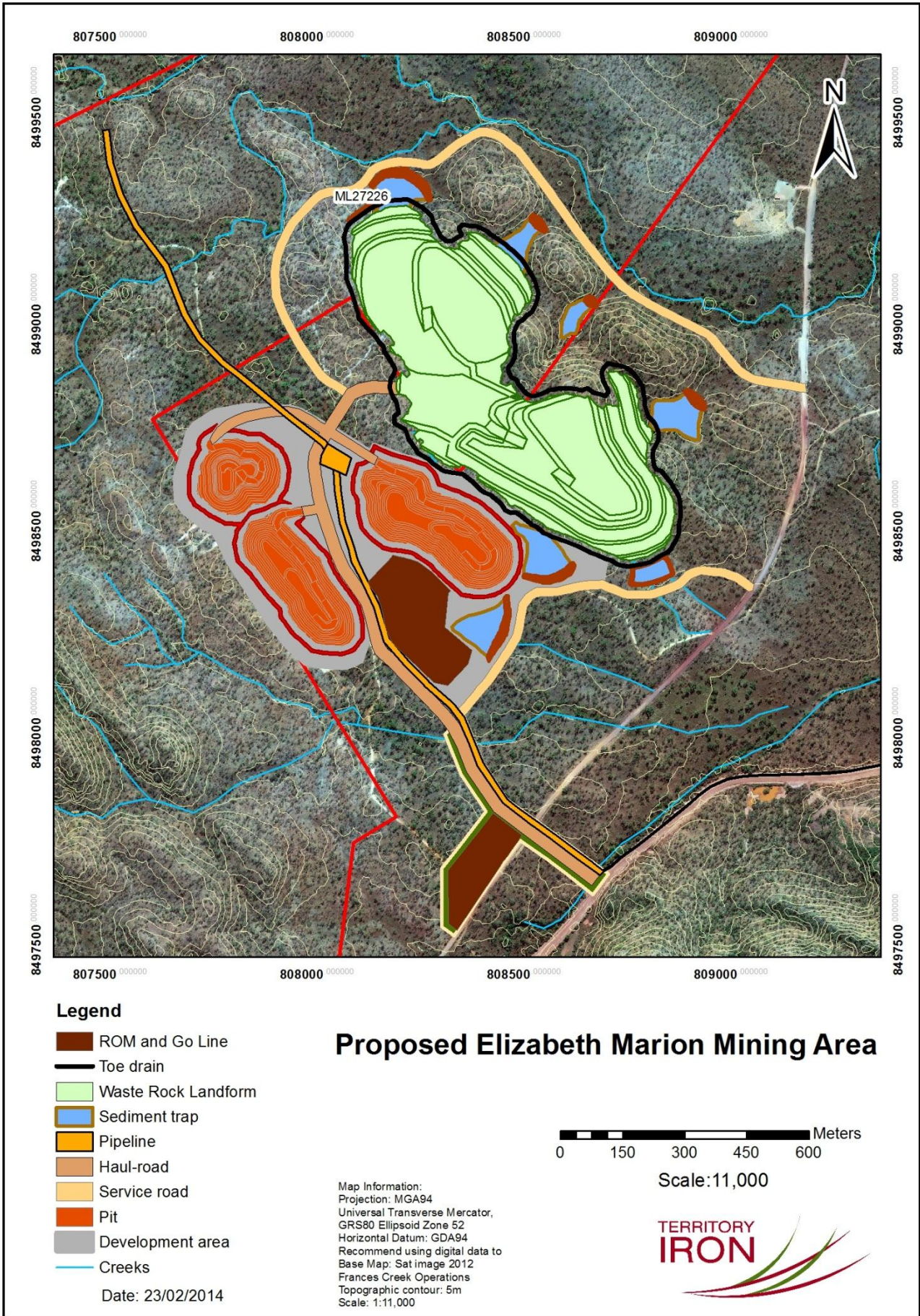


Figure 3 – Layout of the proposed Elizabeth Marion mining area

3 Site Conditions

3.1 Physical Environment

3.1.1 Climate

The Frances Creek Mine area has a tropical monsoonal climate with a pronounced wet season consisting of a hot, high rainfall, humid summer from November to March. Conditions are typically cooler and dry from May to September. October and April are transitional months with some rainfall.

The nearest long term rainfall records are from Burrundie Railway Station (15 km west of the project area, records from 1889 to 1974), and Pine Creek (25 km south of the project area, records from 1874 to 2010). Rainfall data has been collected daily from Frances Creek Mine administration office since 2007.

Long term average annual rainfall at Burrundie is 1,263 millimetres (mm) and at Pine Creek 1,138 mm. Rainfall at Frances Creek can be expected to be somewhere between these values. For planning purposes the higher rainfall at Burrundie has been assumed to be representative of the project area. Rainfall at Burrundie occurs mostly during the January to March period when the area is subject to tropical cyclones and associated tropical low pressure systems and monsoon troughs. More than 98% of the rain falls between October and April. The highest average monthly rainfall occurs in January (288 mm).

Rainfall data has been recorded from the Frances Creek mine office since 2007.

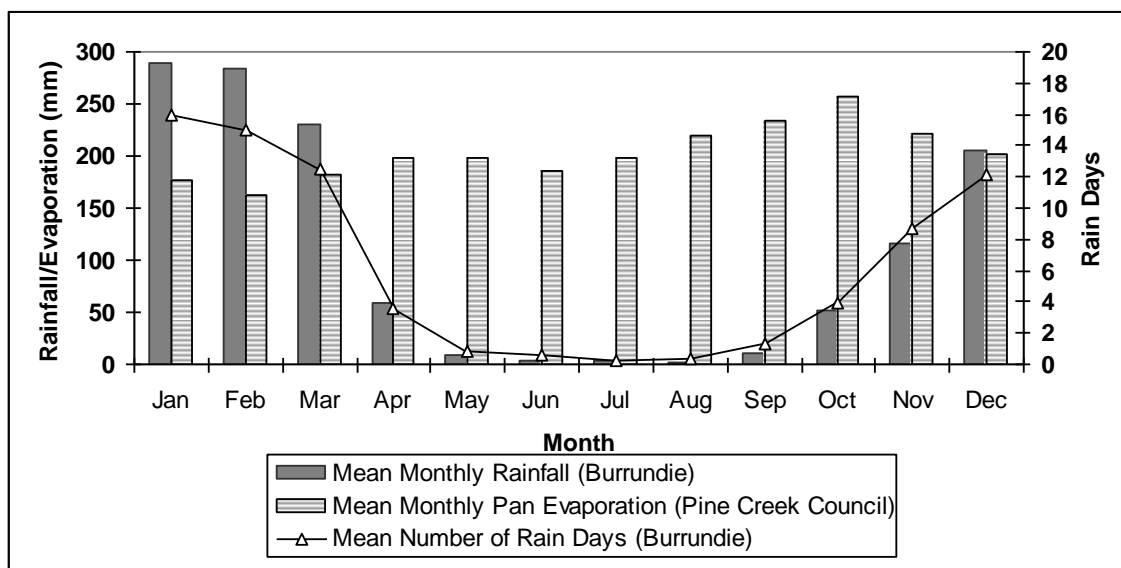


Figure 4: Burrundie Railway Station Rainfall and Pine Creek Council Evaporation Data

Air temperatures are relatively high and consistent from year to year. During the coolest time of the year (June to July), the mean monthly temperature for Pine Creek ranges from a minimum of 10 to 13 degrees Celsius to a maximum of 20 to 32 degrees Celsius. In the hottest part of the year (October to November), mean monthly minimum temperature ranges from 24 to 27 degrees Celsius and mean monthly maximum temperature ranges from 37 to 41 degrees Celsius.

Pan evaporation at Pine Creek Council has been recorded since 2000. Average annual evaporation for this period was 2,450 mm. Average monthly relative humidity recorded at Pine Creek Council varies from 61% in January to 22.5% in August.

3.1.2 Land Systems

The Frances Creek project area lies within the Brocks Creek Ridge Land System of the Katherine-Darwin Region (Christian and Stewart, 1953). A small section in the south-eastern area of the mineral lease is the Cullen Land System, however no mining activity is proposed in this granitic area. The two land systems form part of the broader geomorphologic unit referred to as the Elevated Backbone Country.

Landforms consist of rocky north–south ridges and hills with slopes between 40 and 60 degrees, moderating to gentle crests. Smaller convex hills, small alluvial flats and channels incised through sandy or loamy materials are also associated with this land system. The country is dissected by many watercourses and erosion is active (Reilly *et al.* 2006).

Due to the active erosion processes at work, there is little to no accumulation of soil on the steep slopes. Soils present are typically very gravelly sandy loams and skeletal soils (Christian and Stewart, 1953).

Reilly *et al.* (2005; 2006) describe six land unit groups that occur across the lease area. These are:

Brocks Creek Ridge Land System.

- Ridge Crests and Slopes land unit.
- Low Hills land unit.
- Riparian land unit.
- Small Alluvial Flats land unit.

Cullen Land System.

- Low Undulating Plains land unit.
- Granite Hills land unit.

3.1.3 Topsoil and Subsoil

Soils of the Brocks Creek Ridge Land System generally comprise very gravelly sandy loam and skeletal soils formed on metamorphic rocks of the Brocks Creek Group (Christian and Stewart, 1946). Alluvial flat areas contain heavy darker soils which are described as Alluvial Soils (Low, 2005).

Soils within the steep topography of the Cullen land system of large rounded granite boulders are described as very gritty, sandy skeletal soils. The undulating country is comprised of granitic sandy yellow bodsollic soils (Low, 2005).

3.1.4 Topography and Geology

The Frances Creek Mine area is within the Pine Creek Orogen, a Lower Proterozoic sequence of sediments. Iron deposits in the project area occur as semi-continuous lenses. They are haematitic ironstones with isoclinal folds in the lower member of the Wildman Siltstone. The deposits crop out as prominent, discontinuous ironstone ridges up to 50 metres (m) high over a strike length of 15 km (AGT, 2006). The largest bodies of ore occur from south to north being Helene, Thelma 2, Ochre Hill and Saddle deposits (BMR, 1987). The ironstone ridges thicken within fold hinges at the Helene pits and are continued within carbonaceous phyllite and siltstone (AGT 2006).

The ironstone lenses follow a major fold structure, which has resulted in a complex “Z” shaped pattern of outcrop. The Helene deposits, of which Elizabeth Marion is part of, are on the western limb of the structure. Various Thelma/Rosemary deposits are on the diagonal or middle limb of the “Z” and Jasmine lies on the eastern limb. Ochre Hill is five km north of Jasmine on the extended eastern limb of the structure.

3.1.5 Vegetation type

Dominant vegetation communities for the Northern Territory have been described and mapped by Willson et al. (1990). The vegetation community of the Frances Creek project area is known as vegetation type 21, which is described as *Eucalyptus tintinans* with *Corymbia dichromophloia* and *Eucalyptus miniata*, over a tall Sorghum grassland understory. *Eucalyptus tetradonta* is also a common tree in several habitats across the project area.

3.1.6 Flora and Fauna

Native flora

Of the six land units described for the Frances Creek Mine, the following 3 land units will be disturbed by the proposed works in the Elizabeth Marion area:

- Ridge crests and slopes
- Low hills
- Small alluvial flats

The ridge crests and slopes consist of open mixed woodland/forest dominated by *Eucalyptus tetradonta*, *E. miniata* and *Corymbia dicromophloia* over sparse shrubs, a mid-tall mixed grassland and a spare forbland.

The low hills consist of open mixed Eucalypt woodland dominated by *Corymbia dicromophloia*, *Erythrophleum chlorostachys* and *Eucalyptus miniata* over a mixed grass/herbland.

The small alluvial flats consist of open mixed woodland over mixed *Sorghum* species grassland. Dominant trees species of this land unit vary between sites and include *Eucalyptus minima*, *E. tetradonta*, and *Erythrophleum chlorostachys*.

The only species of noted conservation significance in the region are isolated patches of Cycad (*Cycas armstrongii*). No mapped Cycads will be disturbed in the Elizabeth Marion area.

Weeds

A total of 39 weed species were found during environmental baseline studies, seven of which are listed under Northern Territory weed legislation. The Elizabeth Marion area is relatively undisturbed with no major weed infestations recorded.

Fauna

Several fauna surveys have been completed over the Frances Creek Mine project area, with the first completed in November 2005. A total of 149 fauna species including 30 mammals, 83 birds, 22 reptiles, six amphibians, eight fish and one crustacean have been recorded. A number of fauna species of conservation significance were recorded during the November 2005 and May 2006 surveys. Surveys in nearby areas have recorded additional fauna species of conservation significance.

A summary of species that could occur within the Frances Creek area are presented in Table 3, including descriptions of the habitat requirements, mobility, threats and local distribution of each species.

Table 3: Significant Fauna of Frances Creek area

| Common Name | Scientific Name | EPBC Act 1999 Status | TPWC Act 2000 Status | Recorded at Frances Creek Mine | Land Unit of Primary Habitat |
|------------------------------------|---|----------------------|----------------------|--------------------------------|------------------------------|
| Mammals | | | | | |
| Northern Quoll | <i>Dasyurus hallucatus</i> | E | CE | no | RCS, LH, GH |
| Calaby's Pebble Mound Mouse | <i>Pseudomys calabyi</i> | | NT | yes | RCS, LH, SAF |
| Western Chestnut Mouse | <i>Pseudomys nanus</i> | | NT | yes | all |
| Pale-field Rat | <i>Rattus tunneyi</i> | | NT | yes | LH, SAF |
| Ghost Bat | <i>Macroderma gigas</i> | | NT | yes | RCS |
| Orange Horseshoe Bat | <i>Rhinonicteris aurantius</i> | | NT | yes | RCS, LH |
| Bare-rumped Sheathtail Bat | <i>Saccolaimus saccolaimus nudicluniatu</i> | CE | DD | no | LH, R, SAF |
| Arnhem Sheathtail Bat | <i>Taphozous kapalgensis</i> | | NT | yes | LH, R |
| Birds | | | | | |
| Bush Thicknee | <i>Burhinus grallarius</i> | | NT | yes | R, LH, SAF |
| Red-tailed Black Cockatoo | <i>Calyptorhynchus banksii samueli</i> | | NT | yes | SAF, LH, R |
| Red Goshawk | <i>Erythrotriorchis radiatus</i> | V | V | no | LUH, LH, SAF, R |
| Gouldian Finch | <i>Erythrura gouldiae</i> | E | E | no | LUH, LH, SAF, R, GH |
| Partridge Pigeon | <i>Geophaps smithii smithii</i> | V | V | yes | SAF, R |
| Star Finch | <i>Neochmia ruficauda clarescens</i> | | NT | yes | R, SAF |
| Masked Owl | <i>Tyto novaehollandiae kimberli</i> | V | V | no | SAF, R |

Conservation Status Abbreviations:

CE – Critically Endangered

E – Endangered

V – Vulnerable

NT – Near Threatened

Land unit Abbreviations:

RCS – Ridge Crests and Slopes

LH – Low Hills

DD – Data Deficient SAF – Small Alluvial Flats

R – Riparian

LUH – Low undulating Hills

GH – Granite

Surveys targeting the Gouldian Finch (*Erythrura gouldiae*) have been conducted in 2006, 2007, 2009, 2010, 2011, 2012 and 2013. To date, no Gouldian Finches have been observed during these surveys.

Several introduced fauna species were observed during the fauna surveys. The species observed included feral cats, donkeys, horses, pigs and the cane toads. The water buffalo and feral cattle are often sighted by field staff and were recorded in Kakadu National Park by Woinarski *et al.* (1989).

3.2 Socio-Economic Environment

3.2.1 Current Land Use

Major industries in the district around Frances Creek Mine are agriculture (beef cattle), mining and tourism. Mining has been an important land use in the Pine Creek region since the 1870s. The project area was an iron ore mine between 1967 and 1974. The current mining operation started in 2007.

The project area forms part of pastoral leases used for cattle grazing and tourism. The project area itself is not currently actively used for pastoral activity. Frances Creek Dam, which was constructed during the period of previous iron ore mining and is considered to be part of the mine infrastructure, has been used for recreation, including water skiing during the period 1975 and 2007 when no mining activities were occurring.

3.2.2 Identified Stakeholders

Stakeholders that have been contacted and consulted on the progress of the Frances Creek Mine project include, but are not limited to, the following:

- Aboriginal Areas Protection Authority (AAPA).
- Arafura Pty Ltd (underlying gold leases at Frances Creek)
- Ban Ban Springs Leasehold Owner (Ban Ban Springs Station Pty Ltd).
- Commonwealth Government.
- Crocodile Gold (Leases previously held by GBS Gold).
- Darwin Port Corporation.
- Esmeralda Farms (downstream neighbour).
- GWA (North) Pty Ltd
- Mary River East Station (Mary River Wildlife Ranch Pty Ltd).
- Mary River West Station Pastoral Leasehold Owner (Adicrest Ltd).
- Noble Group Limited
- Northern Land Council and Native Title Claimants.
- Northern Territory Government.
- Northern Territory Industry Capability Network (NTICN).
- NT Land Corporation; Union Extended Mine (I&B Genat).
- Victoria Daly Shire Council, Community and Businesses.
- Werenbun Aboriginal Corporation (BMW People).

Consultation methods vary between stakeholders but commonly include:

- Meetings (both closed and public if required);
- Official correspondence;
- Informal communication, including electronic mail (e-mail) and telephone conversations;
- Opportunities to review and comment on planning and management documents (e.g. Mining Management Plan, Water Management Plan etc.);
- Advertisements; and
- Newsletters.

3.2.3 Workforce Description and Demography

Frances Creek Mine is about 25 km north of Pine Creek, which is the nearest population centre. The Pine Creek district has a population of about 500 people, of which 41% are identified as being Aboriginal or Torres Strait Islander.

The Frances Creek Mine workforce is approximately 310 people. This comprises approximately 220 Territory Iron staff and 90 contractor staff. Whilst rostered at work, all personnel who do not live locally to Pine Creek are housed at the Company's accommodation facility which is located in Pine Creek. Approximately 70 staff live locally (Pine Creek to Katherine) 140 commute from Darwin with the remainder sourced from other states.

Approximately 20% of the workforce is female. Approximately 20% of the workforce is Indigenous, with this percentage expected to rise in the future due to the implementation of an Indigenous Traineeship program and workforce development project.

3.2.4 Community Affairs

Territory Iron, in partnership with the Northern Land Council, has implemented a Jobs and Careers Strategy aimed at increasing workforce participation by Traditional Owners and other Indigenous people.

The Jobs and Career Strategy consists of five stages, these are:

1. Preparation and Selection - where jobs and traineeships are promoted to traditional owners, local community and major stakeholders in order to attract and prepare suitable participants to undertake the program.
2. Program Introduction - provision of an introduction to the program and development of participants understanding of work requirements, specifically mining traineeships, including benefits, rights, responsibilities and consequences.
3. Mining Industry Overview - designed to provide an introduction to the industry and have participants' complete six core competencies.
4. Traineeship - participants will complete a Certificate II in Mining which is to be achieved by a registered training organisation delivering formal training and competencies, while Territory Iron rotates trainees through different departments over a six month period. Graduates of the program are offered a fulltime position on completion of their Certificate II in Mining.
5. Training Jobs and Career Development - participants are provided regular opportunities to up-skill within the workforce. All formal training is nationally recognised and accredited.

Territory Iron is committed to providing employment opportunities to successful participants of this program while Frances Creek Mine is operating.

Territory Iron also makes a valuable contribution to the Pine Creek community through the employment of local people and utilisation of local businesses where practical. Territory Iron also provides financial contributions and in-kind support towards most local community groups, services and events.

Territory Iron has worked to engage stakeholders and continues to be a positive contributor to the communities within which it operates.

4 Statutory Requirements

4.1 Statutory Requirements

Mining operations are carried out in accordance with all relevant Acts and Regulations, in particular the following:

- Mine Management Act 2012
- Minerals Title Act 2011
- Environmental Assessment Act 1992
- Environmental Protection and Biodiversity Conservation Act 1999 (Commonwealth)
- Bushfires Act 2009
- Environment Protection - National Pollutant Inventory (Commonwealth) 2004
- Waste Management and Pollution Control Act 2011;
- Environmental Offences and Penalties Act 2011;
- Heritage Act, 2012;
- Northern Territory Aboriginal Sacred Sites Act 1976 (Commonwealth);
- Native Title Act 1993 (Commonwealth);
- Weeds Management Act 2001;
- Water Act 2011;
- Soil Conservation and Land Utilisation Act 2009;
- Planning Act 2009;

4.2 Sacred, Archaeological and Heritage Sites

4.2.1 Sacred Sites

No Sacred Sites have been recorded or identified within the proposed project area. Territory Iron holds an Authority Certificate (Certificate Number: C2006/095) under Section 19 of the Northern Territory *Aboriginal Sacred Sites Act* 1989. The subject land referred to in the Authority Certificate includes ML24727 and the Elizabeth Marion Project Area. Territory Iron's Indigenous Land Use Agreement (ILUA) and related Ancillary Agreements reiterate the absence of Sacred Sites within the Elizabeth Marion project areas. This assessment has been further reinforced during subsequent meetings and cultural heritage surveys with senior Traditional Owners.

4.2.2 Indigenous Land Use Agreements

Territory Iron entered into an Indigenous Land Use Agreement (ILUA) with the Traditional Owners and their representatives on 23 February 2007. Section 8.2 of the ILUA provides for a workable and effective arrangement to avoid disputes over Sacred Sites, Sacred Objects and Aboriginal archaeological sites on the current mining and exploration leases.

4.2.3 Aboriginal Archaeological and Historic Sites

Cultural Heritage Studies were commissioned by Territory Iron Ltd and are detailed in Section 8.3 of the ILUA. The archaeological survey and report was undertaken by consultant Tim Hill and Traditional Owner representative Bessie Coleman in 2005. The survey located a number of archaeological sites on the tenements. Territory Iron subsequently commissioned a Cultural Heritage Management Plan (CHMP) in December 2006 (MBS Environmental).

The CHMP undertook to mitigate impacts on archaeological sites in accordance with Sections 29 and 39 of the NT *Heritage Conservation Act* 1991 (now replaced by the NT *Heritage Act* 2012). These sites were managed in consultation with senior Jawoyn Traditional Owners and the Northern Land Council. At all times at least one senior Jawoyn Traditional Owner and a number of other Jawoyn people have worked on heritage management in the project area. Heritage management work has included site surveys, site salvages and artefact analysis and curation. All heritage management activities were supervised by professional archaeologists in consultation with senior Jawoyn Traditional Owners.

In March 2011, Territory Iron established an internal Heritage Department. The Department currently employs two archaeologists on a fulltime basis and up to three Traditional Owners/representatives to effectively manage archaeological sites across the tenements. To date, the Cultural Heritage management at the Frances Creek tenements has resulted in the recording of more than 600 archaeological sites. The location, contents and significance levels of these sites have been incorporated in the NT Archaeological Database.

4.2.4 Heritage work and findings specific to the Elizabeth Marion Area

The Elizabeth Marion prospect hosts 75 known archaeological sites of Aboriginal origin, covering approximately 10% of the surface area of the prospect. Combined artefact numbers in these sites are estimated to be over 500,000 not including debitage and sub-surface artefacts into account. Spatially, the sites tend to occur on low rises, ridge lines and along some watercourses.

Some of these sites are significant to the Traditional Owning group due to their links to country and the activities of the 'old people', who lived on Jawoyn lands for an unknown length of time. The archaeological sites also hold varied scientific significance due to the information that may be held in the archaeological record.

All archaeological sites of Aboriginal origin are defined as Heritage Places under the NT *Heritage Act* 2012 and are protected by that legislation against accidental or deliberate damage. However, a regional permit to conduct works on archaeological places and objects, including those in the Elizabeth Marion Project Area, was obtained from the Minister for the Environment on 5 December 2013.

It is anticipated that the planned mining operations will disturb a number of archaeological sites with an estimated artefact load of between 10,000 and 20,000 artefacts. Therefore, Territory Iron is currently developing a Cultural Heritage Management Plan specifically for Elizabeth Marion (CHMP - EM) to guide the salvage operation and the subsequent analysis of sites and materials.

The objective of the CHMP-EM will be to minimise the disturbance of the archaeological resource outside of the main impact areas, plan for effective salvage, study and storage of artefacts disturbed and ensure prompt return of artefacts to country at the conclusion of mining operations. The Management Plan will allow for on-going consultation with the Traditional Owner group, the Native Title Party and/or designated representatives. Jawoyn Traditional Owners and their representatives

are already part of the heritage team, participating in the survey and salvage of sites whilst passing on their knowledge of country to archaeologists, younger members of the Bolmo-Matjba-Wurrbarrarr (northern Jawoyn) clan groups other interested employees. Senior Traditional owners will continue to meet with Mine Managers 2-3 times a year to act as a consultative committee on cultural heritage, Indigenous employment and land management issues (i.e. weed control).

The plan and its successful execution will ensure that Territory Iron's due diligence obligations are met in terms of regulation and the existing land use agreement with the NLC and Jawoyn. It will also continue to build the successful business and community partnership with the Jawoyn people and ensure a continuation of corporate good governance.

5 Operational Activities

5.1 Mining Activities

The Elizabeth Marion mining area is an extension of the Helene series of deposits to the south.

Mining will be via conventional open cut drill and blast methods with ore and waste extraction by hydraulic excavators and diesel haul trucks. NAF waste material will be disposed of in a waste rock landform (WRL) at the site, PAF waste material will be disposed of in the existing PAF disposal cell at Waste Dump B (Thelma Rosemary). Mineralised waste will be placed in discrete location with the WRL where it can be recovered at a later date should it become economically viable. Ore will be stockpiled accordingly i.e. low grade, medium grade and high grade on the ROM pad. Road trains will be used to transfer the ore from the ROM to the processing plant via a new section haul road that will intersect with the existing haul road network.

Material proposed to be mined from the Elizabeth Marion area will be:

| | |
|-----------------------------|-------------------------|
| Ore | 1,514,510 tonnes |
| Mineralised waste | 148,186 tonnes |
| PAF waste | 185,722 tonnes |
| NAF waste | 5,071,262 tonnes |
| Total material mined | 6,919,680 tonnes |

The pits will have a final depth of 35, 40 and 48.5m for Pits 1, 2 and 3 respectively. Pit 1 will have a final floor level of 132.5 m AHD. Pit 2 and 3 will have a final floor level of 150 metres AHD.

Due to the small size of the pits, multiple pits are planned to be mined simultaneously during the period. This plan will allow the mining to continue in one or more pits while other pits are under different stages of activities such as drilling and blasting.

The topsoil collected as the site is cleared will be stockpiled and used for rehabilitation.

5.2 Pit Design

Mine design parameters have been derived from geotechnical slope design of similar open pits in Frances Creek Mine such as Thelma and Rosemary. The geotechnical slope design review was carried out in 2012 by the independent geotechnical consultants and subject to on-going review. The reports are documented as follow: GCPL-TTY-TH1-090412 & GCPL-TTY-220212.

The pit design process took place after pit optimisation was carried out. Pits are designed around the base case Whittle shell using the parameters described below.

Pit Geometry:

| | |
|----------------------------|-----------------------|
| Batter angle | 45 degrees |
| Berm width | 5m |
| Berm interval | 15m |
| Bottom of pit 1, 2 and 3 | 132.5; 150 and 150mRL |
| Toe of ramp pit 1, 2 and 3 | 181.0; 186 and 188mRL |
| Ramp gradient | 1 in 10 |

Ramp width 15m

The pit design plan view and cross sections view are shown in Figure 5.

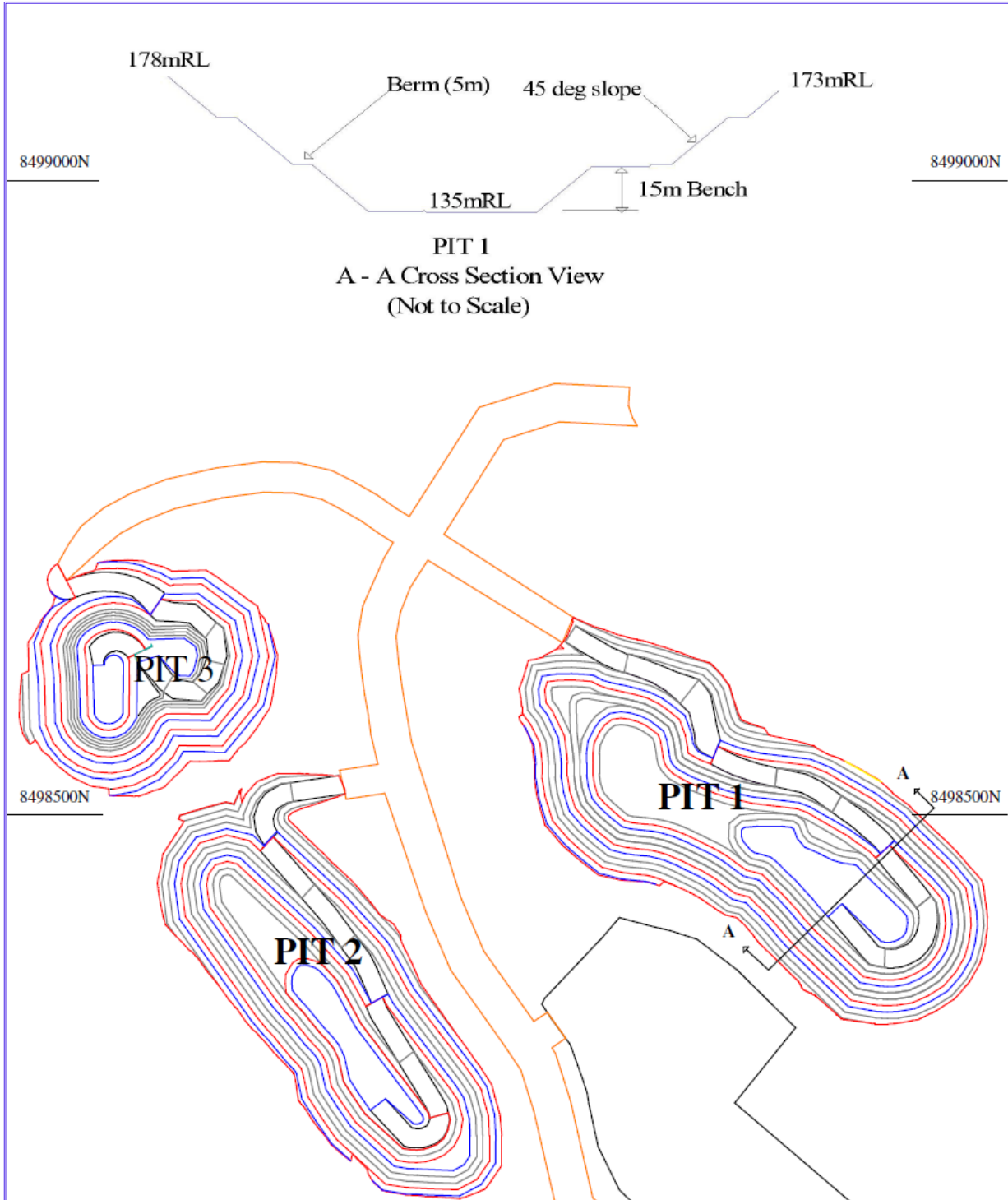


Figure 5: Pit design plan and typical cross-section for proposed Elizabeth Marion mining area

5.3 Ore Movement

Ore (iron content greater than 40%) will be stockpiled on the Elizabeth Marion ROM pad. From the ROM pad, the ore will be hauled to the ore processing plant approximately 2 km southwest of the mining area.

Mineralised waste (iron content between 30% and 40%) Mineralised waste will be placed in discrete location with the WRL where it can be recovered at a later date should it become economically viable.

The process flow of ore material, equipment and parameters are in accordance to the MMP January 2013 to July 2014 – Part B section 4.2.

5.4 Waste Rock Management

The quantity of waste rock and the mineralised waste to be removed as part of the Elizabeth Marion project is estimated to be 5.4 million tonnes equivalent to 2.2Mm³ in-situ or 2.9Mm³ loose using estimated swell factor of 1.35.

The geological resource model indicated the NAF (sulfur less than 0.2% and iron less than 30%) material composition is 97.3% (5,071,262 tonnes) and PAF material composition is 2.7% (185,722 tonnes) respectively. The rock type of NAF found at Frances Creek is summarised below:

- Hematite Breccia – can be low to medium grade Iron Ore and appears to be of a very low erodibility. Provides a growth medium that appears to be conducive to the establishment of vegetation, based on the successful colonisation of the waste rock dumps formed in the 1960s and 1970s.
- Dolerite – resistant to erosion, with crushed material often forming productive soils.
- Dolomite – a good source of material for neutralising acid, this rock type is identified in the Pit 1 and 3 immediately below the pit floor.
- Carbon shale - this material can be compacted to form low permeability cover material.

5.4.1 PAF Waste Management

PAF waste is classified as material being assayed at greater than 0.2% sulfur and less than 40% iron. At Frances Creek all PAF material has been in the form of black shales. There is also non-acid forming (NAF) black shale that is classified as less than 0.2% sulfur and less than 40% iron.

A total of 148kt of PAF material is predicted from all three pits, of which 89.2% is expected from Pit 2. All PAF waste rock material will be hauled to the existing PAF cell at Waste Dump B (Thelma Rosemary), which is active and is receiving PAF waste material from the existing operating pit.

PAF has been predicted in the block model and its occurrence will be forecast within the mine schedule on a weekly and monthly basis. PAF recovery is scheduled into daily mining plans, and these plans are discussed at two daily production meetings. Mining Geologists will monitor the bench drilling to clearly delineate PAF zones within the pit and these will be identified by the use of tape. The PAF will then be mined and trucked to the existing PAF containment cell in Waste Dump B, with this work controlled by the Mine Superintendent. Regular inspections over each shift by the Mining Supervisors and Mine Superintendent will be completed on the dumping areas to ensure no misallocations of materials occur. Regular pickups of the waste dump areas for record keeping and future use also occur.

PAF is predicted in the block model. PAF occurrence is forecast on a weekly and monthly basis and scheduled in to material movements. Mining Geologists monitor the bench drilling to identify PAF zones which are then flagged and trucked to the existing PAF containment cell in Waste Dump B. Regular inspections are completed on the dumping areas to ensure no misallocations of materials occur. Regular pickups occur of the waste dump areas for record keeping and future use.

Once the dumped landforms approach the final dumping design limits, the rehabilitation construction design is implemented for finalisation. This will be managed by the Frances Creek projects team in future which will have more appropriate skills for the detailed rehabilitation work.

The management of the PAF material will be in accordance to the approved MMP January 2013 to July 2014 – Part B section 4.1.6.

5.4.2 NAF Waste Rock Landform

The proposed waste rock landform (WRL) at Elizabeth Marion (see Figures 6 and 7) will only contain NAF waste material. No PAF material will be dumped on the proposed WRL at Elizabeth Marion. Any metals that may be mobilised in the non-acidic WRL will be at levels similar to receiving environment.

The proposed WRL will have a total capacity of 5.2 million tonnes. The WRL will be constructed to have two final high points at a maximum height of 28 and 25 m above ground level (crest level 200 m AHD). The total area of the WRL will be 30.5ha. These high points are just below corresponding high points of the adjacent natural hills and will thus enable the constructed landforms to blend in.

The proposed Elizabeth Marion WRL represents a progression in mine design at Frances Creek. The final WRL profile, with two high points seeks to mimic the local low undulating hill in both height and in the WRL northwest-southeast orientation. The goal is to create a landform that ultimately appears to be a natural feature.

The WRL will be located on a natural watershed between two Frances Creek sub-catchments creating the maximum distance between stabilising WRL faces and the creek lines and therefore minimising the likely disturbance to the stream environment.

Waste Rock Landform Geometry:

| | |
|----------------------------|--------------------|
| Waste rock capacity, total | 5.2 million tonnes |
| Batter angle, final rehab | 20 - 22 degrees |
| Berm width | 6 – 8 m |
| Berm interval | 10 m |
| Maximum height | 200mRL both |
| Ramp gradient | 1 in 10 |
| Ramp width | 25 m |

The WRL design plan and cross section view are shown in Figure 6 and Figure 7.

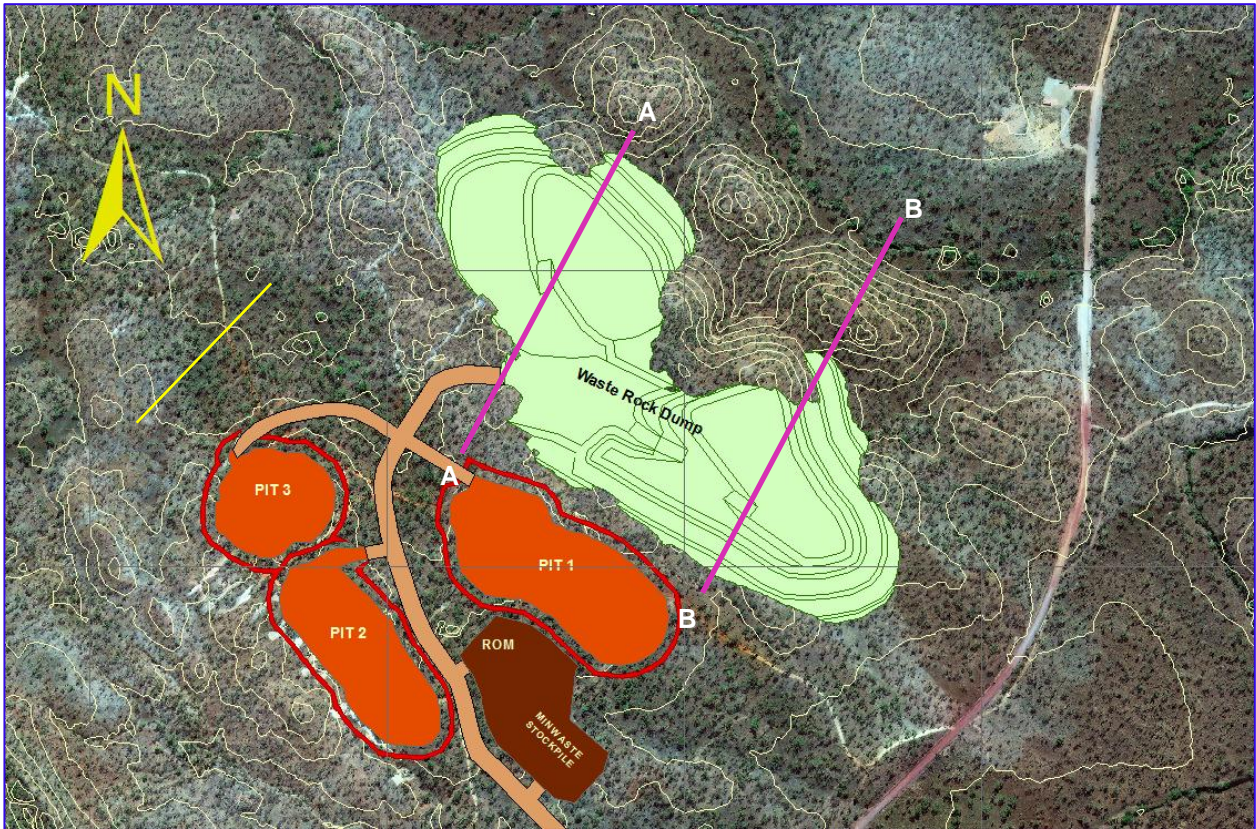
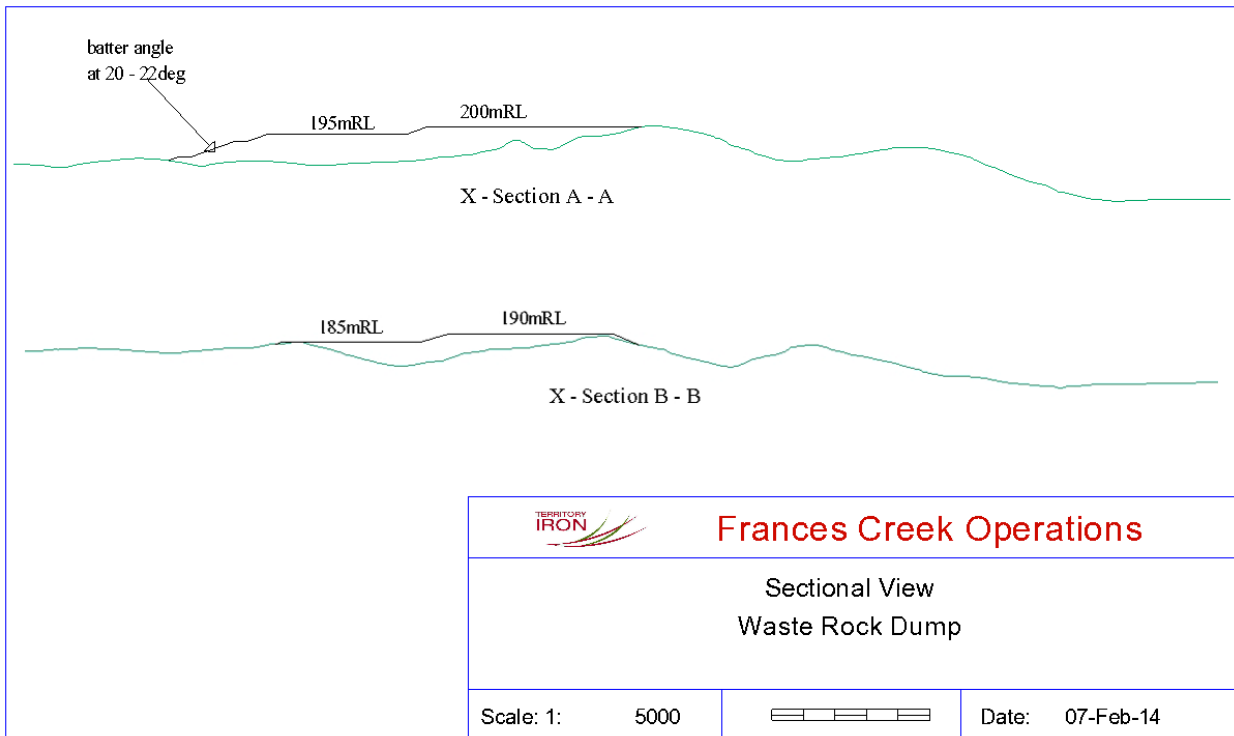


Figure 6: The proposed Elizabeth Marion waste rock landform with location of cross-sections shown



SURPAC - Territory Iron Pty Ltd - Pine Creek, NT

Figure 7: Cross sections of the proposed Elizabeth Marion waste rock landform

Consistent with the current approved MMP – Part B – section 4.1.5 the WRL will be constructed with slope angles of 20 - 22 degree with 6 – 8m berms. This geometry will allow for a final continuous slope to be pushed out at an angle of 18 - 20 degrees. This is shown in Figure 8.

Using coarse and blocky cover materials, stable slopes have been established at Frances Creek (including legacy waste dumps from the 1970s) on very steep angles. For the proposed Elizabeth Marion WRL, a conservative 18 - 20 degree final slope angle has been selected.

There is some evidence that steeper final slope angles may be preferable at this site because they are more erosion resistant, they minimise the WRL footprint and they better reflect the natural hillside angles. This knowledge gap will be recognised in the 2014 Frances Creek Closure Plan and studied further. Any change from the proposed 18 to 20 degree final slope angle for the waste landform at Elizabeth Marion will be done in consultation with the DME.



Figure 8: Cross-section of a typical construction and final slope profile for the proposed Elizabeth Marion waste rock landform

Suitable materials to cover the WRL will be selected as mining progresses and reserved for final rehabilitation. The skeletal topsoil resource at Elizabeth Marion will also be reserved for final rehabilitation.

A seed mix comprising of locally occurring plant species will be derived based on the desired final species composition and probable vegetation development trajectory of the seeded species. The rehabilitation areas will be direct seeded at a time where the germinating seedlings derive maximum benefit from the wet season.

Should monitoring indicate it is required, Territory Iron will undertake remedial works to ensure the long-term integrity of the WRL.

Territory Iron is rapidly increasing its rehabilitation capacity to align with regulator, community and industry expectations for post mining. The 2014 Frances Creek Closure Plan will provide the pathways and steps required to achieve the rehabilitation and closure outcomes that will lead to security bond release and site relinquishment. The Closure Plan will highlight areas of knowledge gaps that may require landform evolution modelling amongst other research priorities.

5.5 Support Facilities

As stated in the key characteristics of this project, the Elizabeth Marion mining area will provide additional ore to the Frances Creek Mine, hence there will be no additional support facilities required. The mine will make use of existing roads, camps, offices, workshops, fuel storage and beneficiation

plant infrastructure. No additional support facilities will be required to those already existing at the mine site.

5.5.1 Ore Processing Operations

Ore from the Elizabeth Marion open pits will be hauled to the processing plant, where it will be crushed, screened and stockpiled onto the product pad before transported to the rail siding. France Creek ore processing operations are approved under the existing MMP January 2013 to July 2014.

5.5.2 Tailings Storage Facility

The tailings produced from the beneficiation of the ore mined from the Elizabeth Marion project will be stored in the existing approved Tailing Storage Facility (TSF).

Tailings from the Frances Creek beneficiation circuit report to the Valley Tailings Storage Facility (TSF). Frances Creek tailings disposal is approved under the existing MMP. An MMP amendment to raise the wall of the Valley TSF was submitted to DME on 9th December 2013.

5.6 Mining Schedule

Mining of the Elizabeth Marion pits in this project is scheduled to commence in May 2014, subject to approvals, and will take approximately 15 months to complete. An indicative schedule is provided in Table 4.

Table 4: Proposed mining schedule for Elizabeth Marion mining area

| Description | Jan-14 | Feb-14 | Mar-14 | Apr-14 | May-14 | Jun-14 | Jul-14 | Aug-14 | Sep-14 | Oct-14 | Nov-14 | Dec-14 | TOTAL |
|--------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|
| Ore (t) | | | | | 48 | 139 | 139 | 118 | 121 | 118 | 99 | 96 | 878 |
| Waste (t) | | | | | 152 | 386 | 403 | 424 | 379 | 380 | 342 | 351 | 2,817 |
| TOTAL | | | | | 200 | 525 | 542 | 542 | 500 | 498 | 441 | 447 | 3,695 |

| Description | Jan-15 | Feb-15 | Mar-15 | Apr-15 | May-15 | Jun-15 | Jul-15 | Aug-15 | Sep-15 | Oct-15 | Nov-15 | Dec-15 | TOTAL |
|--------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|
| Ore (t) | 84 | 78 | 109 | 115 | 85 | 115 | 25 | | | | | | 611 |
| Waste (t) | 358 | 319 | 356 | 371 | 401 | 354 | 439 | | | | | | 2,598 |
| TOTAL | 442 | 397 | 465 | 486 | 486 | 469 | 464 | | | | | | 3,209 |

5.7 Exploration Activities

Frances Creek Mine's ongoing viability is dependent on exploring and developing its iron ore resources. It is believed that the existing iron ore resources adjacent to Frances Creek Mine can be developed further and that blind (non-outcropping) deposits may exist close to present mine infrastructure, given the complexity of the regional geology.

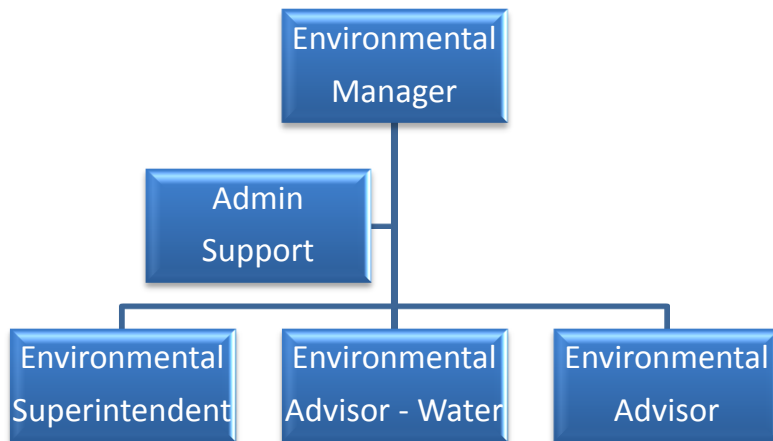
In addition, new exploration drilling targets are being developed assisted by the completion of a detailed geophysical (ground) gravity survey and subsequent interpretation of the data to identify blind (non-outcropping) deposits of iron ore.

Should further viable ore bodies be identified in the Elizabeth Marion area, a further MMP Amendment will be submitted to the DME to enable development of the deposits.

6 Environmental Management

6.1 Environmental Management Structure

Within the Territory Iron Environmental Department the following structure and accountabilities are in place for full time employees. Over the wet season additional resources will be engaged to assist in implementing the monitoring program.



The **Environmental Manager** is accountable for ensuring all business outcomes pertaining to Environmental Performance and Management are met. That role reports directly to the General Manager – Operations.

The **Environmental Superintendent** is tasked with the preparation of statutory documentation, overseeing the monitoring programs including data management and leading environmental improvement projects. The Environmental Superintendent is also responsible for day to day team management during the Environmental Manager’s absence.

The **Environmental Advisor – Water** is tasked with ensuring all monitoring requirements are met, data storage and analysis is completed, statutory and internal reporting requirements are achieved and that any required changes to water management strategies are identified and developed for assessment and possible implementation.

The **Environmental Advisor** role is responsible for delivering advice and implementing actions across the operation for non-direct water related issues. This includes waste management, hydrocarbon management, rehabilitation, low level closure planning, internal audits and inspections.

6.2 Environmental Policy



Territory Iron Environmental Policy

Territory Iron Limited believes that protection of the environment is a key responsibility. Company management recognises that environmental management is an integral part of all activities, from exploration and mining to processing and exporting. Maintaining a high level of environmental performance at our operations will benefit all stakeholders, including shareholders, employees, Traditional Owners and the broader community.

In order to achieve and maintain high environmental standards, Territory Iron Limited and its employees undertake to:

- *Comply with all applicable environmental laws, regulations and standards;*
- *Implement systems to identify, control and monitor environmental risks arising from our operations;*
- *Cooperate with regulators and stakeholders in the development of standards that improve protection of the environment and the community;*
- *Implement strategies, methods and technologies to prevent pollution, minimise waste and conserve natural resources;*
- *Ensure that all company employees and contractors are aware of their environmental responsibilities and conduct operational activities, including appropriate environmental controls, with a high level of competence;*
- *Promote cross cultural awareness and where possible, protect sites of cultural and heritage significance;*
- *Engage in timely and effective communication with landowners, relevant Indigenous people and others who may be directly affected by Company operations;*
- *Communicate regularly with employees, suppliers, contractors and customers about the objectives of the Company environmental policy and its implied responsibilities;*
- *Provide information to the community, shareholders and regulatory authorities regarding the environmental performance of the Company; and*
- *Continually seek to improvement Company environmental performance.*

Authorised by: Darren Gibcus
 General Manager - Operations
 10 August 2013

6.3 Environmental Commitments

Based on the risk assessments and management actions identified in Sections 7 and 8 of this MMP Amendment for mining in the Elizabeth Marion area, Territory Iron makes the following commitments to manage the environmental aspects of the project.

Table 5: Environmental Commitments for the Elizabeth Marion mining area

| No. | Commitment | Environmental Management Issue | Section in MMP Amendment |
|-----|--|-------------------------------------|--------------------------|
| 1 | Manage land disturbance using the Land Disturbance Permit System | Protect heritage, flora and fauna | 5.1.3 -Table 7 |
| 2 | Prevent weed introduction using the Weed Management Plan | Weed hygiene | 5.1.3 -Table 7 |
| 3 | Install fit for purpose sediment control structures at base of WRL and other open mine areas | Erosion control | 5.1.3 -Table 7 |
| 4 | Stockpile and strategically use topsoil | Rehabilitation | 5.1.3 -Table 7 |
| 5 | No fuel storage or workshop to be located in Elizabeth Marion area | Hydrocarbon/chemicals | 5.1.3 -Table 7 |
| 6 | Site dust will be suppressed using water trucks | Dust | 5.1.3 -Table 7 |
| 7 | All PAF to be disposed of at the existing PAF containment cell at Waste Dump B (Thelma/Rosemary) | Managing acid generating mine waste | 5.1.3 -Table 7 |
| 8 | WRL to constructed according to design | Rehabilitation | 5.1.3 -Table 7 |
| 9 | Rehabilitation to be carried out progressively | Rehabilitation | 5.1.3 -Table 7 |
| 10 | Remedial rehabilitation will occur where required | Rehabilitation | 5.1.3 -Table 7 |
| 11 | Rehabilitation and Closure Plan to be updated to include Elizabeth Marion | Rehabilitation and Closure | 5.1.3 -Table 7 |
| 12 | Surface water management features such as diversion drains, protection bunds and sediment traps will be installed during construction and maintained as long as required. | Water management | 8.6 – Table 10 |
| 13 | Culverts will be installed where the mining roads crosses a significant watercourse. All culverts are inspected and repairs carried out where necessary prior to the start of each wet season. | Water management | 8.6 – Table 10 |
| 14 | New surface water and groundwater monitoring points will be established to monitor the impacts of mining at Elizabeth Marion | Water monitoring | 8.6 – Table 10 |
| 15 | Dewatering activities will be managed according to the Frances Creek Water Management Plan | Water management | 8.6 – Table 10 |
| 16 | Hydrocarbon spills will be managed according to the Spill Response Procedure | Hydrocarbon spills | 8.6 – Table 10 |

6.3.1 Recommendations Resulting from Formal Environmental Assessment

There are 176 mostly environmental commitments contained in the Frances Creek Mining Project Public Environmental Report (2006) and 23 recommendations contained Assessment Report 57. In addition further conditions are contained in EPBC Approval 2006-1221 under the Commonwealth EPBC Act. Territory Iron remains committed to applying these commitments in the Elizabeth Marion project as it does for the entire Frances Creek Project.

6.4 Environmental Training and Education

All personnel are required to participate in a site specific induction when they commence work at Frances Creek Mine. Occupational hazards, environmental requirements and social/community issues associated with the project are addressed in the induction. On-going training and meetings to review work practices

and safety issues are held regularly under direction of the General Manager - Operations. Regular operational meetings cover immediate requirements.

6.5 Environmental Emergency Preparedness and Response

Mine personnel are trained with the necessary skills and resources to deal with all reasonably foreseeable emergency scenarios. Detail on the site emergency procedures can be found in the Emergency Management Plan which forms a component of both the Safety Management System and the Environmental Management System.

7 Implementation, Monitoring and Review

7.1 Environmental Aspects Impacts and Risk

Environmental aspects and potential impacts for Frances Creek Mine were identified in the Public Environmental Report and are captured in the Frances Creek Mine Risk Register

Aspects and potential impacts for the proposed Elizabeth Marion mining area were considered and are presented in Table 6. This table will form part of the Frances Creek Risk Register which an element of the Territory Iron Environmental Management System. The mitigation strategies identified here form the basis of the commitments contained in this MMP Amendment.

Water related aspects and impacts are dealt with separately in Section 7 - Water Management Plan of this document.

Table 6: Risk assessment for proposed Elizabeth Marion mining area

| Aspect | Potential Impact | Initial Risk | Mitigation | Residual Risk |
|---------------------|--|--------------|---|---------------|
| Aboriginal heritage | Loss of Archaeological/Cultural sites | C3 High | The Cultural Heritage Plan has been adhered to and a Heritage Survey has been conducted with exclusion zones established. The Land Disturbance Permit system will be used before areas are cleared. | D4 Low |
| Vegetation clearing | Loss of significant habitat/ecosystem | C3 High | Flora and fauna surveys have been conducted. Clearing is kept to an absolute minimum. The Land Disturbance Permit system will be used before areas are cleared. The site will be rehabilitated and ecological values reinstated. | D4 Low |
| Weed hygiene | Introduction/spread of weeds | C4 Medium | Weeds will be monitored and controlled in accordance with the Weed Management Plan. | D4 Low |
| Hydrocarbon spill | Soil/water contamination | C4 Medium | Hydrocarbon spills will be responded to according to the Spill Response Procedure. Spill kits will be kept at Elizabeth Marion. No bulk fuel will be stored at Elizabeth Marion. | D4 Low |
| Dust | Dust from mining impacting surrounding environment | B4 High | Dust will be suppressed by water carts running continuously when required in operating areas. | D4 Low |
| Landform and soils | Uncontrolled erosion of WRL | C3 High | WRLs will be built to an erosion resistant design. Bunds will be installed at the foot of WRLs to capture eroding sediment. Erosion will be remediated when required | D4 Low |
| Landform and soils | Insufficient topsoil to cover site rehabilitation | C3 High | Topsoil will be stockpiled and used in rehabilitation. | D4 Low |

| Aspect | Potential Impact | Initial Risk | Mitigation | Residual Risk |
|---------------------------------|---|--------------|--|---------------|
| | | | Other waste material suitable to be used as a WRL cover and growth medium will be identified and reserved. | |
| Waste rock management | PAF waste placed in a waste dump causes AMD seepage issues. | C2 High | No PAF will be placed in the waste dumps at Elizabeth Marion. All PAF will be sent to the existing PAF cell at Waste Dump B (Thelma/Rosemary). | E5 Low |
| Waste Dump Construction | WRL is not safe and stable | C2 High | WRL will be constructed to engineered design. Regular monitoring for erosion will be conducted and remedial works carried out as required. Suitable cover material will be identified and used on the WRL Ongoing research to improve WRL rehabilitation will occur. | D3 Medium |
| Site Rehabilitation and Closure | Unsuccessful stabilisation, revegetation and site closure | C4 Medium | Rehabilitation and Closure work will be carried out in accordance with the Closure Plan. Remedial works, if required, will be undertaken to ensure the long-term integrity of the WRL. | D4 Low |

7.2 Environmental Management Plans

The management plans that make up the Territory Iron Environmental Management System (EMS) have been pulled together a variety of internal and external parties and as a result they do not necessarily currently have the structure being sought by the DME. As each document enters its review cycle, as part of the continual improvement process required by the Territory Iron EMS, there will be opportunities to harmonise their structure in alignment with the DME's preferences.

Environmental Management Plans relevant to proposed mining in the Elizabeth Marion area have already been submitted to the DME appendices to the approved MMP. The relevant plans are:

- Frances Creek Environmental Management Plan (2011)
- Frances Creek Water Management Plan (2013)
- Frances Creek Mine Waste Management Plan (2010)

The Frances Creek Closure Plan is currently being revised and will be submitted to the DME in the coming months.

These plans have been included as appendices to this MMP Amendment as requested by the DME.

7.2.1 Objectives and Targets

The objectives and targets of the management plans referred in this MMP Amendment are summarised in Table 7.

Table 7: Environmental Management Plan Objectives and Targets

| Management Plan | Objectives | Targets |
|--|--|---|
| Frances Creek Environmental Management Plan | <ul style="list-style-type: none"> • To capture environmental issues associated with the Frances Creek Mine project • To describe the elements of the Territory Iron EMS | <ul style="list-style-type: none"> • All Legal compliance requirements met • Drive continual improvement in environmental performance |
| Frances Creek Water Management Plan | <ul style="list-style-type: none"> • To minimise impacts on local creeks, rivers and groundwater • To minimise any deterioration of surface water quality • Manage onsite water containment facilities. • Monitor surface and groundwater for impacts from mining. | <ul style="list-style-type: none"> • All water leaving tenements within Waste Discharge Licence limits. • All turbid sediment runoff is managed in sediment control structures. • Groundwater and surface water monitoring and reporting as per the Waste Discharge Licence and the approved 2013 MMP. |
| Frances Creek Mine Waste Management Plan | <ul style="list-style-type: none"> • Ensure that mine waste is managed so that it does not pollute the environment | <ul style="list-style-type: none"> • All legal compliance requirements met • Bring in expertise and conduct mine waste related research |
| 2014 Frances Creek Closure Plan (to be written) | To leave the site: <ul style="list-style-type: none"> • Safe, stable and non-polluting • Without any future liability to the stakeholders • In conformance with agreed post-mining land use | <ul style="list-style-type: none"> • All legal requirements met and relinquishment of security bonds • Bring expertise and conduction closure related research. |

7.3 Actions to Manage Identified Environmental Risks

Based on the existing environmental values and risk assessment completed as part of this MMP Amendment the following actions (Table 8) have been identified to be managed the potential risks arising from mining the Elizabeth Marion area.

Table 8: Actions to manage the environmental risks arising from the mining of the Elizabeth Marion area

| Issue | Action | Project Stage | Responsibility |
|--|--|--------------------------------|----------------------------|
| Accounting for Aboriginal Heritage | Develop Cultural Heritage Management Plan and conduct heritage surveys prior to land disturbance | Design | Heritage Manager |
| | Plan mining activities around heritage sites | Design | Technical Services Manager |
| | Apply the Land Disturbance Permit system | Construction | Mine Operations Manager |
| | Confine disturbance to within approved clearing boundaries. | Construction Operations | Mine Operations Manager |
| Vegetation clearing leading to loss of significant flora and fauna | Conduct flora and fauna surveys prior to land disturbance. | Design | Environmental Manager |
| | Plan mining activities around heritage sites | Design | Technical Services Manager |
| | Apply the Land Disturbance Permit system | Operation | Mine Operations Manager |
| | The site will be rehabilitated and ecological values will be restored | Closure | Environment Manager |
| Weeds spreading into Elizabeth Marion area | Undertake weed surveys and control programs if required. | Construction Operation | Environmental Manager |
| Uncontrolled erosion on WRLs | WRLs to be constructed as designed | Operation | Mine Operations Manager |
| | Install fit for purpose sediment control structures around WRLs | Design | Technical Services Manager |
| Insufficient topsoil to cover rehabilitation | Stockpile and strategically use limited topsoil | Design Operation | Environmental Manager |
| | Identify and reserve suitable sub-soil to serve as a rehabilitation growth medium | Design Operation | Environmental Manager |
| Oil/chemical spill | No fuel or workshop at Elizabeth Marion area | Design | Technical Services Manager |
| | Implement Spill Response Standard Operating Procedure with contaminated soil reporting to the bioremediation pad | Construction Operation Closure | All |
| Dust impacts | Ongoing dust suppression using water trucks | Construction Operations | Mining Superintendent |
| Managing PAF waste | No PAF will be placed in the waste dumps at Elizabeth Marion. All PAF will be sent to the existing PAF containment cell at Waste Dump B (Thelma/Rosemary). | Operations | Mining Superintendent |
| | Implement Geochemical Waste Identification and Sampling Procedure. | Operations | Technical Services Manager |

| Issue | Action | Project Stage | Responsibility |
|-----------------------------------|--|----------------------|----------------------------|
| | Material identified as PAF is encapsulated in cells of compacted inert waste rock. | Operations | Technical Services Manager |
| | Dispose of PAF according to the Waste Rock Management Plan | Operations | Technical Services Manager |
| Constructing fit for purpose WRLs | WRLs to be constructed as designed | Operation | Mine Operations Manager |
| | WRLs to be progressively rehabilitated | Operation | Environmental Manager |
| | WRLs to be monitored and remedial works carried out | Operation Closure | Environmental Manager |
| | Ongoing research to improve WRL rehabilitation | Operation Closure | Environmental Manager |
| Site rehabilitation and closure | Rehabilitation and closure to occur according to the Rehabilitation and Closure Plan Rehabilitation and Closure Plan to be reviewed and updated to include Elizabeth Marion area in accordance with the EMS | Operation Closure | Environmental Manager |
| | Rehabilitation to occur progressively | Operation Closure | Environmental Manager |
| | Rehabilitation to be monitored and remedial works carried out | Operation Closure | Environmental Manager |
| | Ongoing research to improve site rehabilitation and closure | Operation Closure | Environmental Manager |

7.4 Monitoring and Measurement

The following specific items will be measured in the proposed Elizabeth Marion Mining area:

- Conformance with the Territory Iron Land Disturbance Permit system
- Auditing against the Weed Management Plan
- Ongoing inspections to assess any erosion.
- Ongoing inspections to ensure that site sediment control structures remain fit for purpose.
- Preparation of a topsoil/ growth medium balance to ensure that suitable and adequate material is available for revegetation
- Auditing against the Spill Response Standard Operating Procedure
- Auditing WRL construction against design
- Auditing PAF disposal against the Mine Waste Management Plan
- Monitoring rehabilitation development using a range of agreed indices.

Water related monitoring and measurement is addressed in Section 7 Water Management Plan of this document.

7.5 Review Effectiveness of Management and Mitigation Strategies

The effectiveness of the management and mitigation strategies proposed here will be reviewed according to the Territory Iron Environmental Management System as described in the Frances Creek Environmental

Management Plan. The Environmental Management Plan and all subsidiary documents are routinely reviewed and improved as required.

7.6 Non-Conformance and Corrective Action

The Frances Creek Environmental Management Plan outlines the process to be followed to respond to non-conformances.

Typically, environmental non-conformances are treated as an incident and managed using the site incident management system. This system is used for investigating, reporting and rectifying production, environmental, health and safety matters at the mine.

All incident reports must be signed off by the General Manager – Operations before they can be considered closed out.

8 Water Management Plan

This Water Management Plan summarises the detail contained in the existing Frances Creek Water Management Plan already submitted to the DME plus information specific to the Elizabeth Marion area.

8.1 Current Conditions

8.1.1 Surface Water

The Frances Creek Mine is located in the Mary River catchment about 150 km upstream of the river mouth. Most of the mine lease is located within the catchment of Frances Creek, a tributary of the Mary River. The northern portion drains east into Mary River via Maude Creek and part of the haul route drains into Mary River via Nellie Creek to the east and McKinlay River to the west, either directly or via Watts Creek (MBS 2006a).

Three large dams are located on the upper part of Frances Creek. These were built for the previous Frances Creek mining operation and were completed in approximately 1971 (Barrie 1999).

Watercourses in the France Creek Mine area are ephemeral and cease to flow during the dry season, but have regular flows during the wet season, although some of which higher in the catchments are temporal and cease flowing shortly after a rainfall event. Several seasonal and some semi-permanent natural waterholes are present in the Frances Creek Mine area.

The proposed Elizabeth Marion mine area is situated on an elevated ground and surrounded by hills on the east and west side. The surface topography showing slight downhill from the centre of mine area to the north and south, no creeks traverse on the mining area.

There are two main watercourses in the Elizabeth Marion area; Frances Creek to the south and Frances Creek North to the north. An ephemeral drainage line, henceforth to be referred to as Elizabeth Marion Creek, lies directly to the south of the mining area and will be crossed by the haul road.

Frances Creek Mine operates under Water Discharge Licence WDL 191.

8.1.2 Groundwater

Regionally, the complex stratigraphic and structural setting results in a complex hydrogeological environment. The hydrogeology of the Frances Creek Mine area, including Elizabeth Marion, is characterised by short groundwater flow paths. The resulting topographical controlled groundwater flows systems are likely to discharge to local hydrological boundaries that include tributaries/headwaters of Frances Creek.

The complex structural relationship of rocks at the site means that the aquifer cannot be readily described in terms of stratigraphic correlated ground-water bearing strata. Groundwater flow through any given formation is likely to connect with groundwater in adjacent formations.

Depth to groundwater and groundwater yields at Elizabeth Marion are highly variable from wet to dry season and across the site.

The waste material to be mined is analogous to the ground surface material across the wider mine site for which no naturally occurring neutral metalliferous drainage has been recorded in the past six years of water quality monitoring. Conditions for neutral metalliferous drainage will not occur in the proposed NAF WRL at Elizabeth Marion.

8.1.3 Impacts on receiving ecosystem

The receiving ecosystem in the Frances Creek area has evolved to meet the demands of a bi-seasonal climate with highly variable water quality such as high turbidity and sedimentation in the wet season as the

region floods, and an accumulation of metals and other “contaminants” resulting from stagnant dry season pools leading to system first flush events as the dry season breaks. Territory Iron’s comprehensive water monitoring program has demonstrated that there has been no discernible impact on the receiving environment downstream of the mine site over the last six years.

8.2 Surface water management

The primary surface water issue at Elizabeth Marion will be turbidity caused by water flowing over open ground and erosive surfaces. There will be no AMD drainage from the proposed Elizabeth Marion WRL and no bulk fuel stored at Elizabeth Marion.

Seasonal runoff water from the proposed Elizabeth Marion mining area, particularly from the WRL and the ROM pad, will be controlled by constructing the sediment traps to entrap the ‘silts’ and minimise water turbidity. The sediment traps will be built with loader access point to allow regular cleaning to ensure they function as intended. Location of the sediment traps (shown in Figure 9) are planned to minimise tree clearing by constructing cross walls at gully tight points as shown in. V-drains will be constructed to direct runoff water into sediment traps as required.

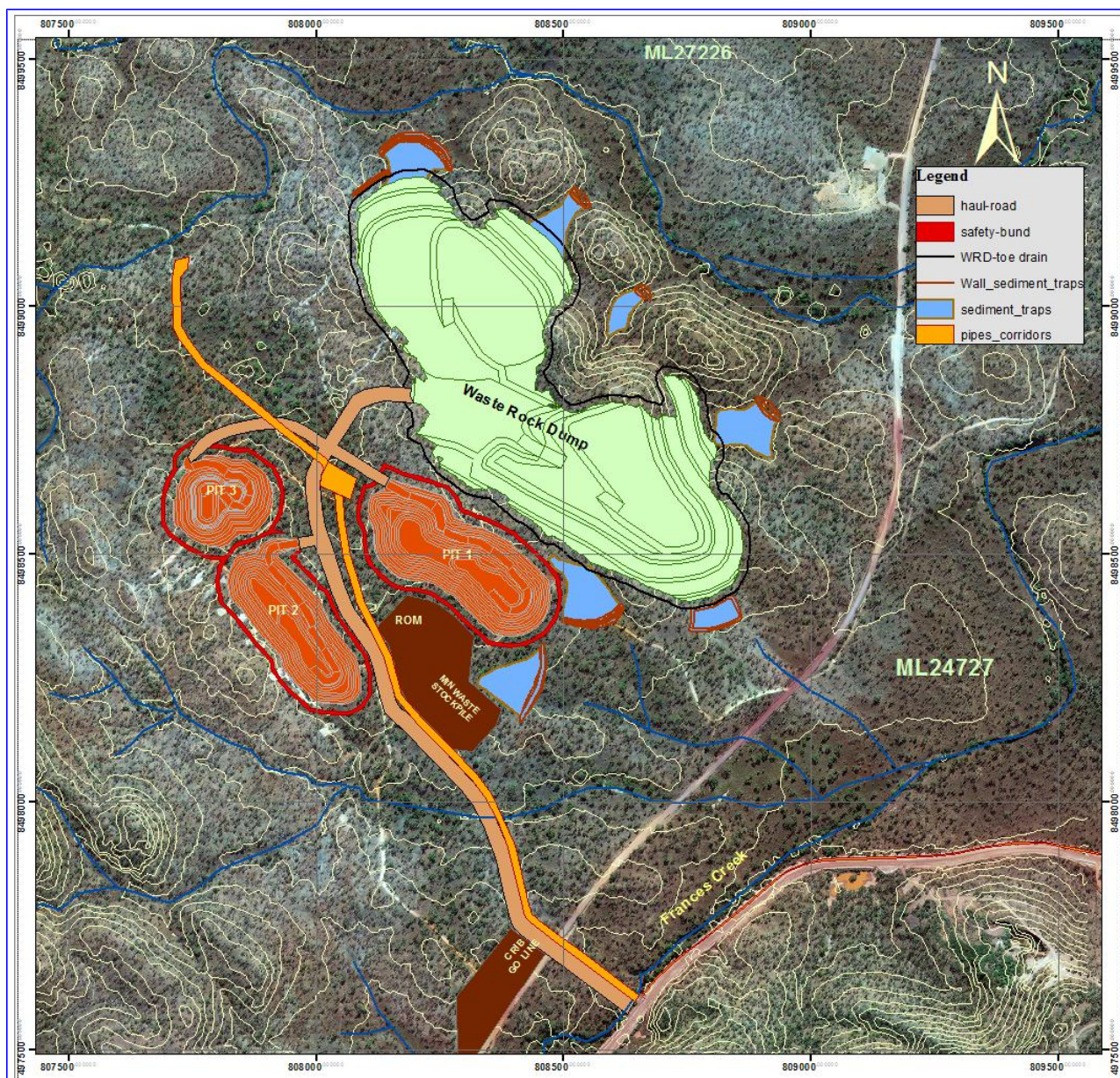


Figure 9: Water management features for the proposed Elizabeth Marion mining area

The proposed main haul road leading to the existing haul road will cross Elizabeth Marion Creek and Frances Creek. Several rows of culverts will be installed on the. No creek diversions will be required.

8.3 Mine Dewatering

The proposed Elizabeth Marion pits may require dewatering at times. The geology block model for the proposed Elizabeth Marion pit indicates that only Pit 2 is likely to yield poor quality pit water as defined in WDL 191.

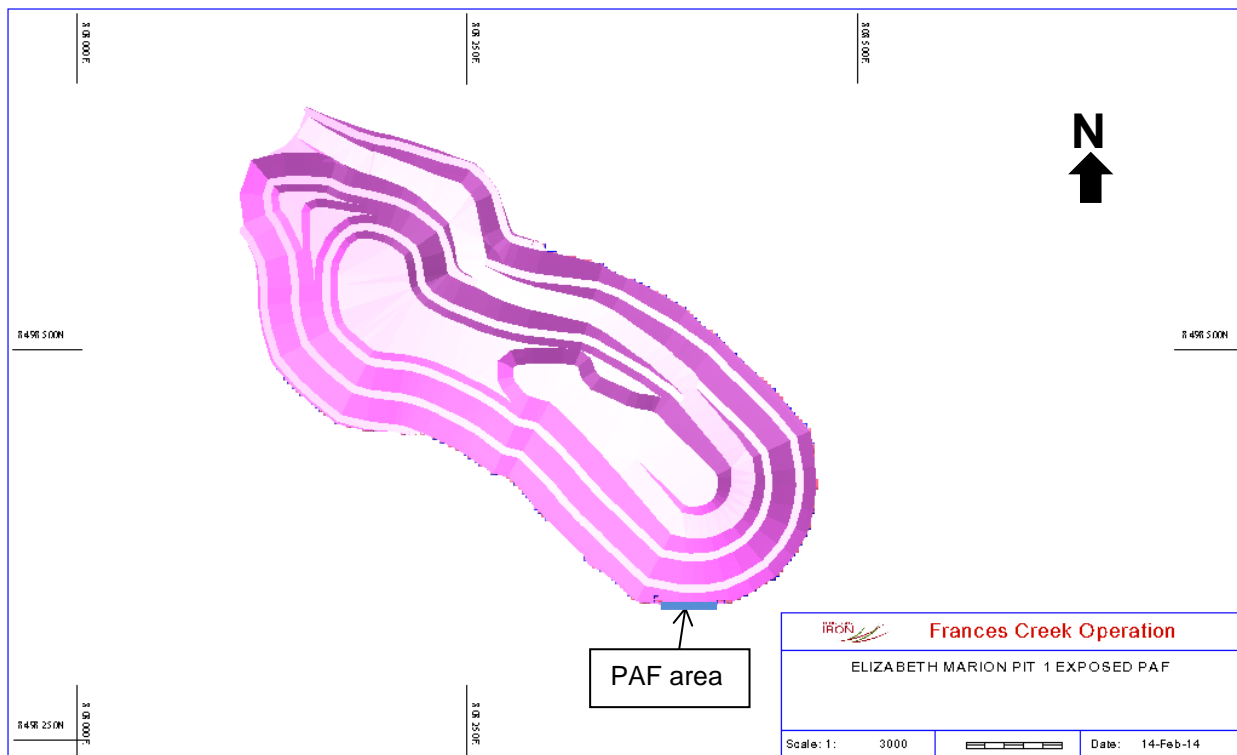


Figure 10: Exposed PAF area in the proposed Elizabeth Marion Pit 1

Pit 1 (Figure 10) will have an estimated 100m² of exposed PAF which is less than 1% of the total surface area of the final pit. The average sulfur level in Pit 1 PAF is 0.23%. All water from this pit is expected to be of neutral pH due to the small amount of exposure and the dilution rate within the rest of the pit.

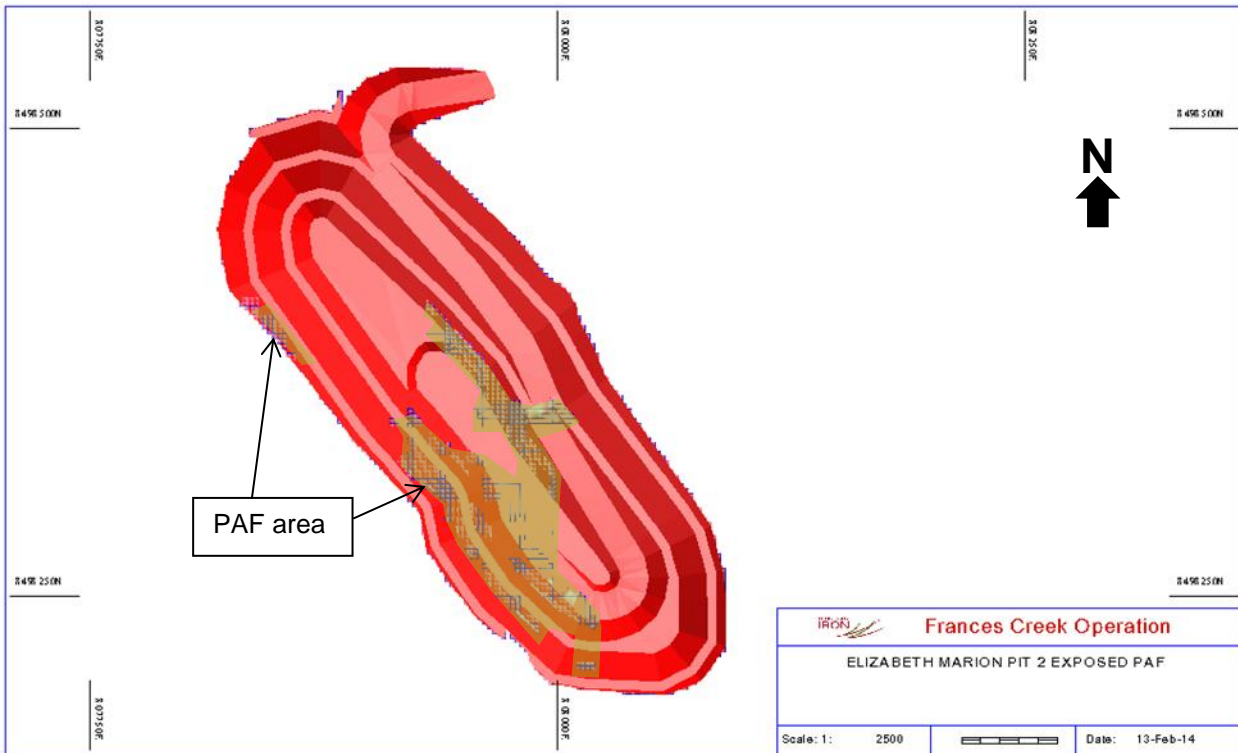


Figure 11: Exposed PAF area in the proposed Elizabeth Marion Pit 2

Pit 2 (Figure 11) will have an estimated 8,800m² of exposed PAF which is 15% of the total surface area of the final pit. The average sulfur level in Pit 2 PAF is 0.18%.

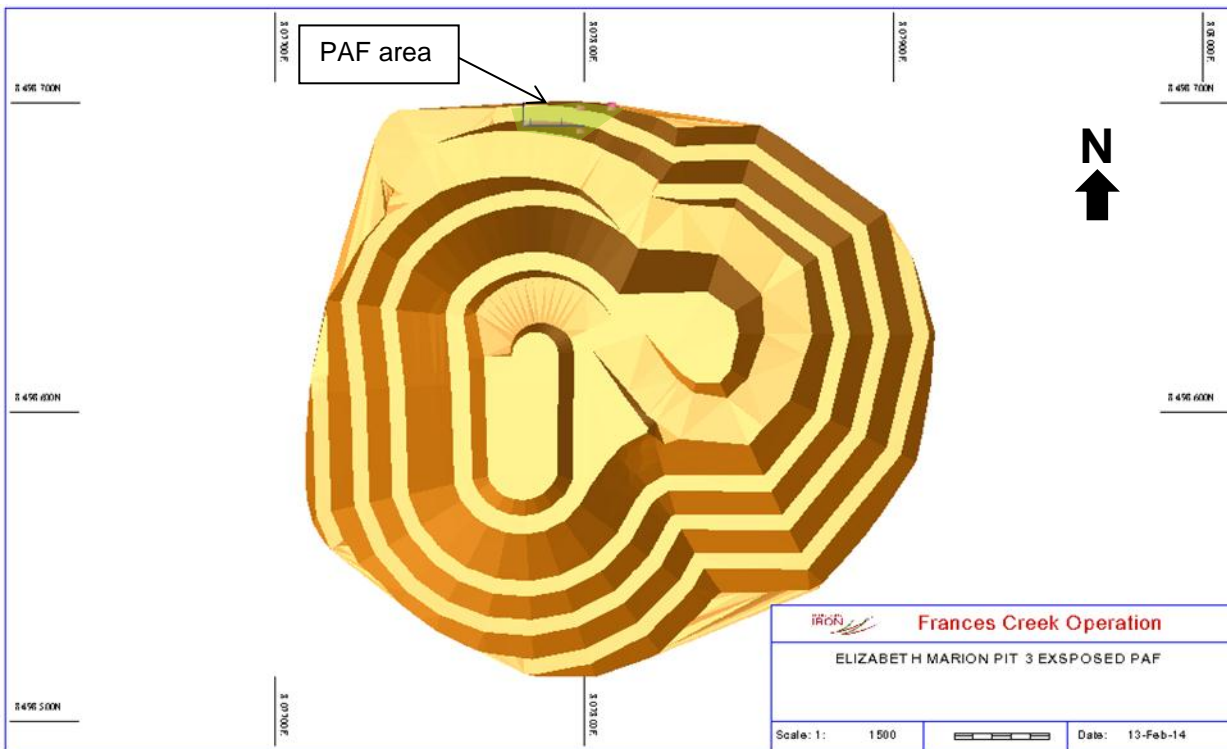


Figure 12: Exposed PAF area in the proposed Elizabeth Marion Pit 3

Pit 3 (Figure 12) will have an estimated 400m² exposed PAF in the walls based on our current resource model, this is 1% of the total surface area of the final pit. The average sulfur level in Pit 3 PAF is 0.15%. All water from this pit is likely to be of neutral pH due to the small amount of exposure and the dilution rate within the rest of the pit.

Water dewatered from the proposed Elizabeth Marion pits will report to a central water holding dam shown in yellow on Figure 9. High quality water will be discharged directly into Frances Creek North in accordance with the Waste Discharge Licence. Low quality water will be piped to the existing low quality water store at Jasmine Central pit where there is substantial water storage capacity. Pumping of water will only occur over a short duration. Based on the indicative mining schedule pumping will only be required over one wet season. The pipeline corridors are shown in yellow on Figure 9.

8.4 Information/Knowledge Gaps

Water quality management is a high priority environmental issue at Frances Creek Mine and Territory Iron has a corresponding comprehensive water monitoring regime.

In terms of managing water issues the Territory Iron EMS requires the implementation of a process of continuous improvement. The knowledge gaps that exist at Frances Creek Mine revolve around more effectively managing water related issues. The cross-disciplinary forward planning for the Elizabeth Marion area promises to deliver Territory Iron's best water management outcomes to date.

In terms of the Elizabeth Marion area the state of water knowledge is as follows:

- Surface water quality – New and reinstated surface monitoring locations will ensure that surface water data relevant to the Elizabeth Marion area is collected as a baseline and compared to data taken from monitoring sites within the receiving environment.
- Groundwater levels – Are understood to be highly variable based on drill holes records and similar locations on site. The installation of two new ground monitoring bores will ensure that groundwater levels data relevant to the Elizabeth Marion area is collected to fill this knowledge gap.
- Groundwater quality – Two new ground monitoring bores will ensure that groundwater quality data relevant to the Elizabeth Marion area is collected to fill this knowledge gap.

8.5 Water Management Aspects Impacts and Risk

Water management aspects and potential impacts for Frances Creek Mine were identified in the Public Environmental Report and are captured in the Frances Creek Mine Risk Register

Water related aspects and potential impacts for the proposed mining of Elizabeth Marion were considered and are presented in Table 9. This table forms part of the Frances Creek Risk Register which is an element of the Territory Iron Environmental Management System. The mitigation strategies identified here form the basis of the commitments contained in this MMP Amendment.

The risk assessment of water issues arising from the mining of the Elizabeth Marion area identified three significant risks, they are:

- Acid and metalliferous water created from contact with oxidising forming minerals. These conditions can occur within mine pits as water comes in contact with exposed PAF rock and in waste dumps as PAF material is removed from pits and permanently disposed of in custom designed WRLs. All PAF waste rock at Elizabeth Marion will report to the existing PAF WRL at B Dump (Thelma Rosemary). All low quality water pit water will report to the existing low quality water store at Jasmine Central mine pit.
- Sedimentation and turbidity from surface runoff. This has potential to occur on all disturbed and constructed surfaces but is particularly pertinent on the WRL's.
- Hydrocarbon and chemical spills. This is relatively minor as there will be no workshops or chemicals stored in the Elizabeth Marion area.

Table 9: Water Management risk assessment for proposed Elizabeth Marion Mining area

| Aspect | Potential Impact | Initial Risk | Control | Residual Risk |
|----------------------------|---|--------------|---|---------------|
| Hydrocarbon/chemical spill | Soil/water contamination | C4 Medium | <ul style="list-style-type: none"> •Spill response procedure in place, spill kits kept on site, no bulk fuel stored in the project area. Contaminated soil will report to the site bioremediation pad. •Incident Report Procedure. • No fuel storage or workshop in Elizabeth Marion area. | D4 Low |
| Groundwater | Groundwater quality decline as a result of mine dewatering | C3 High | <ul style="list-style-type: none"> •Quarterly water quality monitoring of production and monitoring bores will occur •Pits will be backfilled above the water table where possible •Groundwater will be managed according to the Water Management Plan | D3 Medium |
| Surface water | Increased turbidity and sedimentation degrading the receiving environment | C3 High | <ul style="list-style-type: none"> •Progressive rehabilitation to minimise non-vegetated areas. •Sediment containment structures and diversion drains will be constructed and maintained. •WRL to be built as designed. | D3 Medium |
| Surface water | Acid and metalliferous water dewatered from pits degrades the receiving environment | C3 High | <ul style="list-style-type: none"> •AMD water will be sent to the existing water treatment train. This includes raising pH with caustic soda dosing and using a series of settling ponds to allow metals to precipitate out. •Where practicable, backfill pits according to the Mine Waste Management Plan to re-cover PAF •Dewatering activities will occur according to the Water Management Plan. •If required water discharge will occur according to the Water Discharge Licence issued by the NT EPA. | D3 Medium |

| Aspect | Potential Impact | Initial Risk | Control | Residual Risk |
|-------------------------------|---|--------------|--|---------------|
| Surface water/ groundwater | PAF from Elizabeth Marion leads to AMD from the containment cell at Thelma Rosemary | C3 High | <ul style="list-style-type: none"> •The PAF management plan will be completed and submitted to the DME for comment. •The PAF management plan for the Thelma Rosemary Pad containment cell will be implemented. | D3 Medium |

8.6 Actions to Manage Identified Water Related Risks

Table 10 summarises the actions that Territory Iron will take to manage water in the Elizabeth Marion area. The table includes the project stage and identifies the responsible role.

Table 10: Water management actions to manage water related risk

| Issue | Action | Project Stage | Responsibility |
|--------------------------------|---|---------------------------------------|----------------------------|
| WRL runoff | WRLs will be located to prevent interference with natural surface water drainage. | Design | Technical Services Manager |
| | Surface water management features such as diversion drains, protection bunds and sediment traps will be installed during construction and maintained as long as required. | Design, Construction, Operation | Technical Services Manager |
| | Waste rock landforms will be progressively rehabilitated to minimise the area of erodible surfaces. Manage erosion and remediate if required | Operation Closure | Environmental Manager |
| Stormwater runoff | Surface water management features such as diversion drains, protection bunds and sediment traps will be installed during construction and maintained as long as required | Operation | Technical Services Manager |
| | Culverts are installed where the mining roads crosses a significant watercourse. All culverts are inspected and repairs carried out where necessary prior to the start of each wet season. | Operation | Technical Services Manager |
| | New surface water monitoring points relating to Elizabeth Marion will be included in the existing water monitoring regime. | Operation Closure | Environmental Manager |
| Decline in groundwater quality | New groundwater monitoring bores relating to Elizabeth Marion will be included in the existing water monitoring regime. | Construction Operations Closure | Environmental Manager |
| | Groundwater will be managed according to the Water Management Plan | Construction Operations | Environmental Manager |
| Acid and metalliferous water | Operate according to the site Waste Discharge Licence | Operations Closure | Environmental Manager |
| | Dewatering activities will be managed according to the Water Management Plan | Operations Closure | Environmental Manager |
| | Send low pH water to through the existing water treatment train. This includes raising pH with caustic soda dosing and using a series of settling ponds to allow metals to precipitate out. | Operations | Technical Services Manager |
| Hydrocarbon spills | Petroleum hydrocarbons will be cleaned up according to the Spill Response Procedure | Construction Operation | Mining Superintendent |
| | Petroleum hydrocarbon product contaminated soil from spillage will be recovered and placed in the mine site bioremediation area. | Construction Operation | Mining Superintendent |

8.7 Water Monitoring

Territory Iron has a comprehensive surface water and groundwater monitoring program this includes:

- Routine monitoring of surface and groundwater. This includes monitoring locations at lease boundaries in accordance the Waste Discharge Licence and previously approved MMPs.
- Annual Limnology and aquatic ecosystem assessment made up of:
 - Fish community surveys
 - Periphyton production and composition
 - Fish tissue metal concentrations
- Sediment quality monitoring.

The Elizabeth Marion area will require an extension of the existing monitoring program. This will specifically include:

- One new upstream surface water monitoring point to collect control surface water data.
- Reinstating three existing downstream monitoring points to collect surface water data at points downstream of Elizabeth Marion.
- Two new monitoring bores, one above the predicted groundwater inflow into the proposed pits and below the potential pit outflows of the proposed Elizabeth Marion pits.
- In addition in-pit water will be monitored.

Collected data will be interpreted according to the existing Frances Creek Water Management Plan prescriptions and reported as required to the DME. Figure 13 shows the location of the proposed new monitoring points.

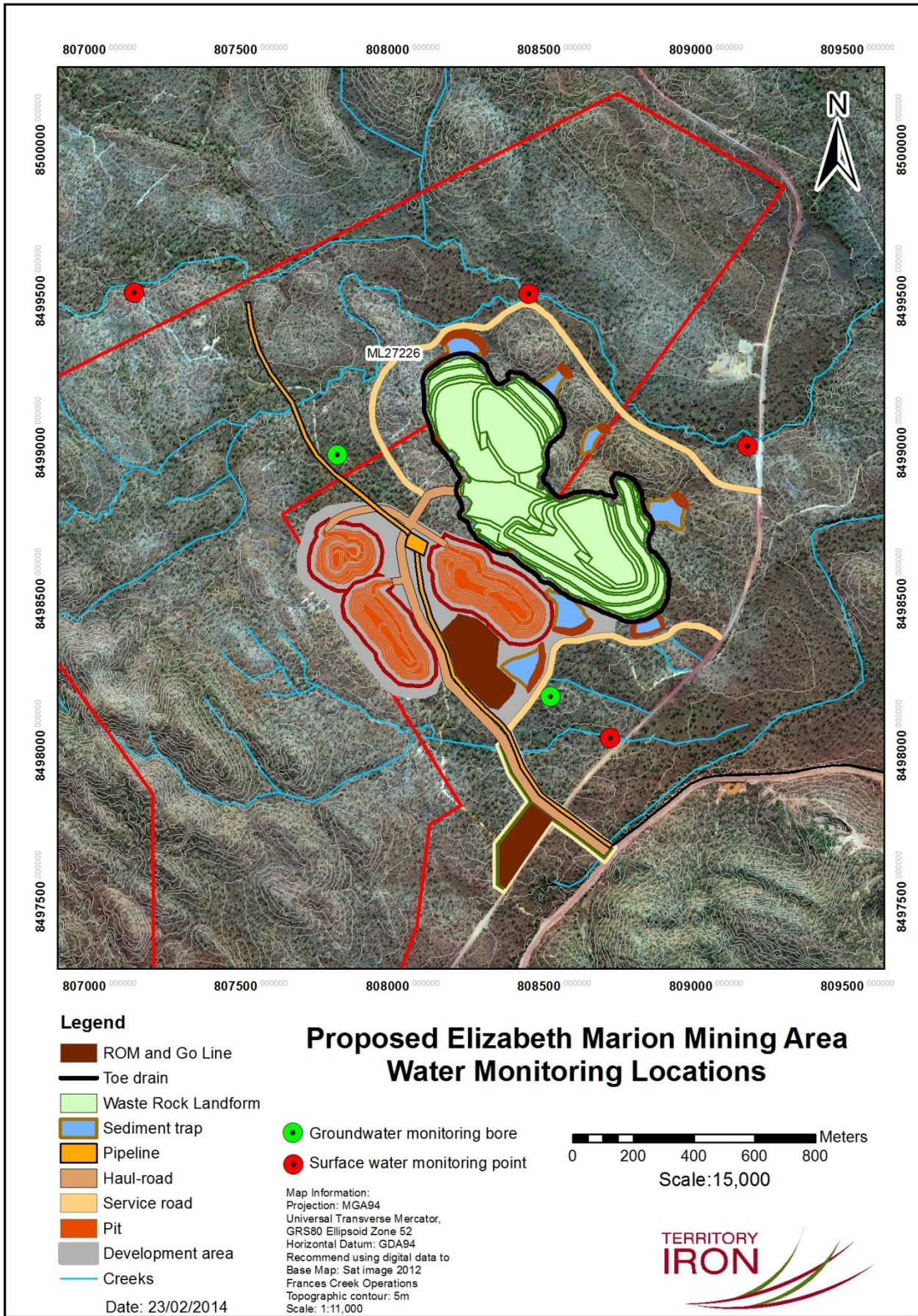


Figure 13: New water monitoring points for the proposed Elizabeth Marion mining area

9 Incident Reporting

All hazards, accidents, incidents, including those having an environmental impact, property damage and near miss shall be reported and investigated.

All accidents / incidents shall be recorded on the approved 'Accident/Incident Report Form'. Incident information is collated, analysed and communicated to the management team on both a daily and monthly basis

The Site Incident Report Form is to be used for the reporting of all injuries to personnel, damage to property and the environment and those incidents, which have potential to cause. This includes all contractors or visitors to the mine. Territory Iron encourages open and active incident reporting.

The Incident Report may initiate a complete cycle inquiry, from the conduct of the analysis, review of the accident or incident, corrective action implementation and follow-up.

The nature and extent of the analysis should reflect the actual outcome and potential significance of the incident. It is open to management at any time to initiate a higher level of analysis. The analyses are to include OHS&E representatives.

10 Closure Planning

The current closure plan for Frances Creek Mine was completed in January 2011. The plan is now in revision and will be submitted to the DME in 2014. The proposed Elizabeth Marion mining area will be included in the 2014 France Creek Closure Plan. Territory Iron understands that the DME favours the Western Australian Department of Mines and Petroleum Guidelines for Preparing Mine Closure Plans (2011). Territory Iron agrees with this approach and the forthcoming Frances Creek Mine Closure Plan will reflect this.

The closure requirements for the Elizabeth Marion area are already being considered. For example; the disturbance envelope has been made as small as is practical, the WRL is designed to blend into the surrounding landscape and pits are to be backfilled where possible.

Guiding principles for the Elizabeth Marion area at closure are that the site is:

- Safe, stable and non-polluting;
- Without any future liability to the stakeholders; and
- In conformance with agreed post-mining land use.

In order to achieve a satisfactory closure outcomes Territory Iron will:

- Prepare a new Closure Plan that considers the WA DMP Guidelines for Preparing Mine Closure Plans.
- Work with stakeholders, including the DME, to determine an agreed final land use.
- Work with stakeholders, including the DME, to determine closure objectives and closure criteria.
- Identify and manage closure issues, notably acid and metalliferous drainage and waste landform rehabilitation.
- Manage closure related information and data.
- Prepare for closure implementation, including unexpected closure.
- Make financial provision for closure. Included in the financial provision is the Security Estimate calculated using the DME Security Calculation spread sheet.

10.1 Security Estimate

The Mining Security proposed in the 2013 Frances Creek MMP is \$23,830,206. The security for the proposed changes at Elizabeth Marion has been calculated using the DME tool. The additional estimated new security amount is \$631,698, summarised in Table 11.

Table 11: Mining Security Estimate for the Elizabeth Marion Amendment

| Domains | Calculated Cost |
|---|------------------------|
| 1: Site Infrastructure | \$46,474.20 |
| 2: Extractive Workings - Sand, Clay & Gravel | \$0.00 |
| 3: Hard Rock Pits & Quarries | \$87,300.00 |
| 4: Underground Workings | \$0.00 |
| 5: Tailings Storage Facilities and Dams | \$0.00 |
| 6: Stockpiles & Waste Rock Dumps | \$181,745.00 |
| 7: Exploration | \$0.00 |
| 8: Access and Haul Roads | \$75,150.00 |
| 9: River Diversions | \$0.00 |
| Decommissioning & Post Closure Management | \$219,667.00 |
| Sub-Total - All Domains | \$610,336.20 |
| CONTINGENCY @15% | \$91,550.43 |
| TOTAL COST | \$701,886.63 |
| 10% Discount | \$70,189 |
| Amended amount | \$631,698 |
| 1% levy | \$6,317 |

11 References

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12 Appendices

Appendix 1 – Water Management Plan

Appendix 2 – Environmental Management Plan

Appendix 3 – Mine Waste Management Plan