

1 SOIL AND LAND MANAGEMENT

Soil and Land Management	
Potential Issues or Impacts	Potential land and soil management issues include: • Re-establishment of a root zone suitable for plant growth for rehabilitation of waste rock stockpiles and other disturbed infrastructure areas. • Compaction of soil surfaces by vehicles and mining equipment. • Erosion of rehabilitated surfaces particularly slopes of waste rock stockpiles and the consequent impacts on revegetation success. • Possible contamination of soils by hydrocarbons and other substances.
Objectives	Territory Iron objectives for soil and land management are to: • Minimise land disturbance including disturbance to soil, vegetation and watercourses. • Conserve soil to assist in the long-term rehabilitation of the site. • Minimise wind and water erosion on disturbed and constructed surfaces. • Prevent contamination of land surfaces as a result of mining activities. • Maximise use of contained seeds and microbes in topsoil. • Prevent or minimise introduction of soil borne diseases and weeds. • Minimise adverse impacts on adjacent pastoral activities.
Targets	Compliance with all management measures to achieve the objectives.
Management Strategies	• A clearing permit system will be implemented for all ground disturbance activities. • Unauthorised access to protected or sensitive areas (including rehabilitated areas) will be restricted. • Vehicles and mobile equipment will be parked only in designated parking areas. Vegetated areas will not be used for parking. • Topsoil will be stripped to a depth of approximately 100 millimetres, where practicable, from areas required to be disturbed and placed directly onto rehabilitation areas or stockpiles. Direct replacement will be undertaken wherever practicable. • Stockpiled topsoil will be placed in windrows less than two metres high to minimise loss of seed viability and soil biota • Rehabilitation will be undertaken progressively to minimise the disturbed area and minimise the topsoil stockpile storage period. • Topsoil stripping and stockpiling (where required) will be undertaken in dry and preferably still wind conditions to minimise dust generation and to assist in rapid revegetation. • Slope gradients will be controlled to minimise erosion and soil loss. • Diversion bunds and drains will be installed as necessary to control local surface water runoff to minimise overland flow and consequential erosion. • Rehabilitation areas will be ripped on the contour after placing of topsoil to remove compaction, improve soil structure and improve infiltration capacity.
Monitoring	The following monitoring requirements are applicable: • The area of land clearing will be accurately recorded. • The area of land rehabilitated will be accurately recorded. • Rehabilitated and disturbed surfaces will be routinely inspected for erosion, particularly after significant rainfall events. If soil erosion is observed

Soil and Land Management	
	during routine inspections, appropriate remediation measures will be implemented.
<i>Reporting</i>	Territory Iron shall conform with the following reporting requirements: • The area of land clearing will be accurately recorded and reported in, quarterly and annual reports. • The area of land rehabilitated will be accurately recorded and reported in quarterly and annual reports.

2 SURFACE WATER MANAGEMENT

Surface Water Management	
<i>Potential Issues or Impacts</i>	No water for the project will be obtained from ephemeral creeks occurring within the project area. The proposed mining and processing operations pose the following issues: • Temporary reduction in surface water volume to water courses as a result of diversion of runoff from operational areas. • Contamination of surface water as a result of release of contaminants associated with earthmoving, excavation, stockpiling and ore processing. Potential contaminants include sediment, turbidity and hydrocarbons. • Increased water flow to existing dams and to Frances Creek as a result of release of water from mine dewatering operations. • Contamination of surface water runoff and soils as result of flow over stockpiles and areas where ore is spilt during loading of ore product from the siding stockpile into rail containers. • Contamination of surface waters due to release of treated sewage effluent. • Flooding of operational areas including the ore product haul road.
<i>Objectives</i>	Territory Iron objective is to prevent or minimise any deterioration in surface water quality through changes in pH, sediment load, salinity, chemicals and hydrocarbons and to minimise potential adverse effect of excess mine dewatering on natural drainage systems.
<i>Targets</i>	To develop and implement a Water Management Plan incorporating the strategies below prior to operations commencing.
<i>Management Strategies</i>	• Waste rock stockpiles will be designed to a maximum height of 45 metres with gentle slopes to facilitate controlled water shedding. • Protection bunds and diversion channels will be constructed to prevent flooding of the pits, process areas, or other mine infrastructure. • Runoff from the stockpile and plant area will be directed to the Helene 11 Dam which will act as a settling pond and allow reuse of water. • Out of pit waste rock stockpiles will be constructed so that interference with natural surface water drainage is prevented or where this is not practicable, impacts are minimised. • Surface water runoff from ore product stockpile areas at the rail siding will be directed through purpose built drains to a sedimentation pond before discharge into the existing railway drains. • Release of sediments to watercourses will be prevented by installation of sediment control structures at discharge points where release of sediment is identified as a potential risk. • Culverts and/or floodways will be installed where mining haul roads and the ore product haul road cross watercourses. The majority of roads including the main haul road and the transport route to the rail siding utilise existing culverts from previous operations. These consist of corrugated steel culverts with stone and mortar embankment protection and are generally in good condition. All culverts will be inspected and repairs carried out where necessary before commencement of operations. The new haul road to Ochre Hill will require two major and several minor watercourse crossings. • In pit sumps will be built to contain stormwater and allow re-use for in pit

Surface Water Management	
	dust suppression. All water discharged from pits will be passed through sedimentation basins. • A water release management plan will be developed for the disposal of excess mine water. Excess water will need to be discharged prior to mining below the water table. • A water discharge licence will be obtained from NRETA to permit release of water from Frances Creek Dam to Frances Creek, and from pit stormwater sumps to Maude Creek tributaries. All water releases to the environment will meet approved water quality criteria as defined in the discharge licence. • Wastewater in the form of sewage and grey water from workshop and office areas will be treated in approved waste water systems on or off site. No waste water will be discharged to any surface water for any purpose. • A sewage treatment system will be installed to service the office and workshop area in accordance with the requirements of the <i>Northern Territory Public Health Act</i> and Regulations including the Code of Practice for small onsite sewage and sullage treatment systems and the disposal or reuse of sewage effluent. In view of the proximity of this site to watercourses, it will be necessary to either pump effluent to a more suitable site, install holding tanks and truck effluent to approved disposal systems in Pine Creek, or install an aerated or composting system. • Hydrocarbons and other hazardous materials will be stored in appropriately designed self bunded tanks or bunded storage areas. • To prevent potential overflow of pit lakes in Jasmine Central and Thelma 2 pits, stormwater will only be pumped to these pits as long as there is sufficient freeboard in the pits to contain runoff from a 1 in 100 year average recurrence interval, 72 hour duration rainfall event.
Monitoring	To ensure that negative impacts to groundwater quality and level are not occurring, a comprehensive program for monitoring surface water will be undertaken. The monitoring program will be designed to record water quality upstream and downstream of operations, and will include monitoring sites downstream of all operational activities. Data from DPIFM monitoring sites located in the wider Mary River catchment will also be reviewed as part of operational impact assessment. The water monitoring program will include regular sampling of water upstream and downstream of all mining activities within the tenements and stockpiling at Roney Siding. Monitoring results will be reviewed regularly against past monitoring and ANZECC guidelines to detect any deterioration in water quality and allow action to be taken. Monitoring results will be reported to NRETA in annual environmental reporting. All dam spillways will be inspected before each wet season, and after each discharge event and repairs carried out if necessary
Reporting	Territory Iron shall conform with the following reporting requirements: • Inclusion of monitoring results in the annual environmental report.

3 GROUNDWATER MANAGEMENT

Groundwater Management	
<i>Potential Issues or Impacts</i>	Potential groundwater issues include: • Lowering of localised groundwater levels as a result of mine dewatering. • Lowering of localised groundwater levels as a result of abstraction of water for use in crushing and screening operations and other ancillary uses. • Discharge of water from mine dewatering causing localised recharge of groundwater. • Deterioration of local groundwater quality as a result of seepage of contamination from mining activities into local aquifers after mining has ceased.
<i>Objectives</i>	Territory Iron objective is to minimise the project's potential impacts on the local groundwater resources.
<i>Targets</i>	To develop and implement a Water Management Plan incorporating the measures outlined below prior to operations commencing.
<i>Management Strategies</i>	• Abstraction volumes and depth to water in production bores and monitoring bores will be monitored regularly during the life of the operation to enable Territory Iron to gain a better understanding of the behaviour of the underlying aquifer systems and the impacts of abstraction. • Groundwater monitoring bores will be installed in areas close to the Helene 11 Dam and Helene 5 and 6/7 pits to allow evaluation of changing groundwater levels and early detection of any contaminated seepage from mining related activities. • Water quality monitoring will be undertaken of water collected in pit sumps prior to re-use for ancillary uses. Water will not be re-used if analytical results indicate it is of low pH. • Water quality monitoring will be undertaken on a quarterly basis in production bores and monitoring bores during the life of the operation to enable Territory Iron to determine effects of mining. • A formal aquifer review will be undertaken every two years using all monitoring data. Results will be provided to regulatory authorities and other interested stakeholders.
<i>Monitoring</i>	To ensure that negative impacts to groundwater quality and level are not occurring, a comprehensive program for monitoring groundwater will be undertaken. Key features of the groundwater water monitoring program will include: • Designation of fixed water level and water quality sampling locations, including locations monitored for internal control purposes. The purpose, monitoring frequency, analytical parameters, trigger levels and compliance standards will be documented for each location. • Use of standardised water level monitoring and water sample collection, storage and dispatch procedures to minimise risk of sample contamination. • Implementation of quality assurance protocols such as collection of duplicate samples, inclusion of field and trip blanks and use of chain of custody forms. • Use of a NATA or similar accredited laboratory for sample analysis. • Regular review of data generated by the ground water monitoring program. • In the event that review of monitoring data indicates that trigger levels are exceeded, abnormal results are received or compliance standards could be

Groundwater Management	
	exceeded, additional samples will be collected to confirm the data and action plans developed to address the issue.
<i>Reporting</i>	Territory Iron shall conform with the following reporting requirements: • Inclusion of monitoring results in the annual environmental report. • Preparation of a formal aquifer review every two years.

4 VEGETATION MANAGEMENT

Vegetation Management	
Potential Issues or Impacts	The proposed mining and processing operations pose the following issues: • Clearing of approximately 196.5 hectares of native vegetation. Of this, 87.5 hectares is located in areas of historical disturbance that are considered to be in a degraded condition. The development of new pits and infrastructure will result in approximately 118 hectares of previously undisturbed vegetation being cleared. The Thelma Rosemary Waste Rock Stockpile will require small amounts of creek line (Riparian) vegetation to be cleared. Construction of the Helene 5 Waste Rock Stockpile will require approximately 5.5 hectares of the swamp created by the old tailings storage facility to be cleared. • Introduction/spread of weed species. • Changes in creek line vegetation due to dewatering discharges.
Objectives	Minimise loss of habitat, species diversity and abundance, and re-establish appropriate habitat through rehabilitation. Territory Iron will also endeavour to manage and control the spread of weed and pest species as a result of their operations.
Targets	Compliance with all management measures to achieve the objectives.
Management Strategies	• A Vegetation Clearing Management Procedure will be developed as part of the EMP. • Necessary licenses and permits will be obtained for the clearing of land associated to the Frances Creek project area. • The impact of clearing will be minimised by restricting clearing of vegetation to the minimum necessary for operations. • Wherever possible, operations will be located on areas already disturbed by previous mining. • The perimeter boundary of all areas approved to be cleared will be clearly delineated before clearing works commence. • The patch of Cycads located near the Ochre Hill road will be clearly marked out and will not be disturbed during road widening activities. • A Weed Management Plan will be prepared as part of the EMP. The Plan will include, but will not be limited to issues of vehicle and personal hygiene in regards to weeds, identification of weed species (including noxious weeds) and control and eradication measures. • Company vehicles will be confined to travelling on purpose built roads to minimise potential vehicle borne spread of weed species.
Monitoring	Territory Iron shall conform with the following monitoring requirements: • The area of vegetation clearance will be recorded and tracked through implementation of a Land Clearance Permit. • The Environmental Coordinator will ensure that vegetation surveys are conducted at excess water discharge points prior to discharge occurring, during discharge and after discharge ceases to determine the impacts of 1 water discharge in ephemeral creek systems. • The effectiveness of rehabilitation programs will be assessed annually.
Reporting	Territory Iron shall conform with the following reporting requirements:

Vegetation Management

- Areas of disturbance shall be reported in the Annual Environmental Report.
- Results of the vegetation assessment at water discharge points shall be reported in the Annual Environmental Report.
- The effectiveness of rehabilitation programs will be assessed and reported annually.

5 FAUNA MANAGEMENT

Fauna Management	
<i>Potential Issues or Impacts</i>	The proposed mining and processing operations pose the following issues: • Removal of approximately 185.35 hectares of habitat during the life of the mine, of which 61.32 hectares (33%) has been previously disturbed. • Disturbance of the Freshwater Crocodiles currently residing within the pit waters of Helene 4. • Removal of part of the Tailings Swamp habitat for waterbirds due to construction of the Helene 5 Waste Rock Stockpile. • Placement of waste rock stockpiles across minor creeks and over the Tailings Swamp will remove habitat available for aquatic animals. • Removal of Ghost Bat roost through burying of the existing conveyor tunnel. • Adverse impacts on species of conservation significance such as the Orange Horseshoe Bat, Arnhem Sheathtail Bat, Partridge Pigeon, Pale field-rat, Western Chestnut mouse and Calaby's Pebble-mound mouse. • Death of animals on mine roads and the haul road to the Alice Springs – Darwin Railway. • Control of feral animals such as donkeys, horses, cats and pigs. • Development of breeding habitat for biting insects. • Local transmission of mosquito carried diseases such as Malaria. • Increase in adult mosquito populations to pest proportions. • Reduction of potential mosquito and biting midge habitat through covering of the old tailings swamp by construction of the Helene 5 waste rock stockpile.
<i>Objectives</i>	Territory Iron objective is to minimise loss of species diversity and abundance, and re-establish appropriate habitat through rehabilitation. Territory Iron will also endeavour to manage and control the spread of pest species as a result of their operations.
<i>Targets</i>	Compliance with all management measures to achieve the objectives.
<i>Management Strategies</i>	• Employees and contractors will be required to attend an induction program that will include a component relating to environmental management. In particular, the induction would clearly explain employee and contractors' roles and responsibilities in terms of restricting impacts on fauna and habitat. • All employees and contractors will be educated in recognising species of conservation significance, particularly the Gouldian Finch, and will be required to report any sightings to the Mine Manager. • Sightings of species of conservation significance will be reported to the Northern Territory Parks and Wildlife Commission. • Where relocation of Freshwater Crocodiles is required, Territory Iron will liaise with the Northern Territory Parks and Wildlife Commission to ensure that appropriate relocation measures are used. • A Gouldian Finch monitoring program and Management Plan will be developed in consultation with relevant consultants and the Northern Territory Parks and Wildlife Commission. • Ghost Bats that are roosting within the old conveyor tunnel shall be disturbed at dusk two or three days prior to burying of the tunnel and the

Fauna Management	
	tunnel checked to ensure no bats remain. • Territory Iron, in consultation with relevant experts, shall investigate the possibility of constructing an alternative roost site for Ghost Bats either during mining operations or upon cessation of mining. • Haulage routes and mine roads will have speed restrictions in place to minimise fauna death on roads. • A Wildlife Rescue Procedure shall be developed to operate in conjunction with land clearing operations and where vehicle movements occur between dusk and dawn. • Territory Iron will participate in feral animal control programs on Ban Ban Springs and Mary River stations if requested by owners. • No domestic animals or firearms will be allowed on site. • Construction of the sections of waste rock stockpiles that impact on creek lines or the Tailings Swamp shall be undertaken during the dry season. • During the site specific induction all employees will be advised of the potential for seasonal problems relating to biting insects including their pest and nuisance potential and disease carrying potential. All employees will be made aware of the diseases mosquitoes may carry. • During site specific inductions, all staff will be advised on personal protection measures to protect themselves from mosquitoes and other biting insects. • If mosquito breeding reaches significant levels, Territory Iron will liaise with the MEB to determine appropriate larvicides to use to control the problem. • Following completion of the 12 month adult biting insect trapping program, Territory Iron will review the findings and recommendations of the report produced by the MEB and decide on appropriate management responses. • Where employees are sourced or returning from countries or areas where malaria is endemic these employees shall be screened for malaria prior to entering the mine site.
Monitoring	Territory Iron shall conform with the following monitoring requirements: • All water storage dams, will be observed on a regular basis for fauna mortalities. If an unacceptable number of fauna mortalities are observed, consideration will be given to methods to reduce the number. • The duration of standing water in operational areas will be recorded. Where standing water is present in any location for more than five days, measures will be implemented to prevent this occurring in the future. • Discharge points and pools of freestanding water that develop along the creek systems as a result of excess water discharged will be periodically monitored for mosquito larvae during the first 12 months after discharge commences to determine whether mosquito breeding habitat is being formed. If mosquito breeding habitat is being formed, Territory Iron will consult with the Medical Entomology Branch of NRETA to determine appropriate control strategies.
Reporting	Territory Iron shall conform with the following reporting requirements: • Sightings of species of conservation significance will be reported to the Parks and Wildlife Commission and documented in the Annual Environmental Report. • All employees will notify the Environmental Coordinator of potential or

Fauna Management

actual impacts upon native fauna and habitat areas. They will also be encouraged to report animal observations.

- Known animal mortalities attributed to the project shall be documented in the Annual Environmental Report.

6 AIR QUALITY MANAGEMENT

Air Quality Management	
Potential Issues or Impacts	Potential impacts from air emissions associated with the project are expected to be minimal. The remote location of the project and the absence of nearby residential facilities also limits any adverse impact that air emissions are expected to have on the local or regional environment or human health. Potential air quality issues include: • Generation of dust from stripping and replacement of topsoil and overburden, excavation of ore and vehicle movement on unsealed roads. • Generation of dust during transport of product from the mine site to the railway siding. The ore is classified as non-toxic, so product dust issues are equivalent to general dust issues. • Wind erosion of product during stockpiling at the siding. • Generation of dust whilst loading product for transport. • Gaseous emissions from engine exhausts of earth moving equipment and mine vehicles. This includes carbon monoxide, carbon dioxide and nitrous oxides.
Objectives	Territory Iron objectives for air quality are to minimise point and fugitive emissions and, thereby, ensure optimal onsite and offsite air quality.
Targets	Compliance with all management measures to achieve the objectives.
Management Strategies	• High pressure, low volume sprays will be installed at the crusher, on conveyors and over stockpiles for dust suppression and procedures applied in line with industry practice. • Pollution control devices, such as conveyor covers and sprinklers installed at point sources will be maintained and operated in good working order. • Generators and stationary plant will be regularly maintained to manufacturers specifications to minimise exhaust emissions. • All practicable measures will be taken to minimise energy consumption. • Vehicles travelling on unsealed roads will be required to travel at speeds that will not generate excessive dust. • Water will be applied to unsealed roads, especially haul roads to ensure dust emissions are minimised. The volume and frequency of water applied will be modified to control dust emissions in different climatic conditions. • All roads will be clearly marked to confine vehicle movements to areas where dust control methods can be used. • Movement of mobile equipment and vehicles will be limited to clearly marked routes or areas where dust control methods can be used. • Employees and contractors will participate in site inductions to ensure they are aware of site rules for permanent and temporary roads. • Vehicle access on rehabilitated surfaces will be prohibited except for management purposes. • Completed areas will be rehabilitated and revegetated as soon as practicable. • Areas will be rehabilitated progressively to minimise areas exposed to wind erosion. Vegetation established will be compatible with the post mining land use of the area. • Soil material stripped from the product ore stockpile area will be placed in a

Air Quality Management	
	windrow at the edge of the stockpile area. The stockpile will be formed to assist with reduction of ground surface winds and hence minimise wind erosion. • Territory Iron will join the Federal Government's Greenhouse Challenge program and will monitor greenhouse emissions and efficiency. • Energy efficiency will be a major consideration in the selection and design of equipment and plant. • Territory Iron shall encourage all employees to be energy efficient in their day to day activities and provide education on this matter. • Progressive rehabilitation shall be undertaken. This will increase the amount of greenhouse gases removed from the atmosphere and stored in vegetative matter.
<i>Monitoring</i>	The nature of the operation, its emissions and location do not warrant a formal air quality monitoring program. If observations during operations consistently observe that this is not the case, then Territory Iron will review its management strategies and implement a particulate monitoring program to ensure the effectiveness of the strategies.
<i>Reporting</i>	• Emissions will be reported as part of the National Pollutant Inventory.

7 NOISE AND VIBRATION MANAGEMENT

Noise and Vibration Management	
<i>Potential Issues or Impacts</i>	Potential noise issues include: • Mobile equipment noise and vibration emissions from engines. • Processing and generator noise and vibration emissions from exhausts and plant operations. • Blasting in open pits. • Transport of iron ore to the railway siding. Potential impacts on the local or regional environment or human health from noise and vibration are expected to be minimal due to the remote location of the project and the absence of nearby community residential facilities.
<i>Objectives</i>	Territory Iron objectives for noise and vibration are to minimise sources resulting in onsite and offsite impacts.
<i>Targets</i>	Compliance with all management measures to achieve the objectives.
<i>Management Strategies</i>	• Reducing the noise from equipment by installing soundproofing and/or noise abatement devices, where practicable, around/on primary sources of noise such as power generators and water pumps. • Reducing the vibration from equipment by installing shock-absorbing devices or materials around the primary sources of vibration such as the ore processing equipment and water pumps. • Maintaining, to the extent practicable, the natural acoustic barriers (for example trees and ridges) between noise sources and neighbouring communities. • Ensuring that hearing protection equipment is available and utilised in onsite areas where engineering controls are deemed inappropriate or ineffective.
<i>Monitoring</i>	The nature of the operation and location do not warrant a formal noise and vibration monitoring program. If complaints or observations during operations consistently observe that this is not the case, then Territory Iron will review its management strategies and consider undertaking a monitoring program to ensure the effectiveness of the strategies.
<i>Reporting</i>	• Details of noise or vibration related complaints will be detailed in the Annual Environmental Report.

8 WASTE AND HAZARDOUS MATERIALS MANAGEMENT

Waste and Hazardous Materials Management	
<i>Potential Issues or Impacts</i>	Given the relatively low volume, type and nature of hazardous materials required for the project, the proposed operations pose the following issues: • Spillage to the environment of hydrocarbons and hazardous materials used in mining or associated activities. • Incorrect storage of hazardous materials leading to contamination of soil, surface water and ground water. • Disposal of hazardous wastes generated during construction and operations including tyres, waste oil, grease and industrial waste. • Spillage of ore product during transport to the railway siding. • Disposal of putrescible wastes in an onsite landfill. • Storage of explosives. • Acid development of soils, lack of acid neutralising capacity of waste rock. • Contamination of surface water or groundwater leading to toxic environmental effects. • Erosion of external surfaces over time. This may lead to loss of sediments to surface water drainages or in extreme cases instability of structures.
<i>Objectives</i>	Territory Iron waste and hazardous materials objective is to ensure: • The safe transport, storage and use of all potentially hazardous materials. • The potential for accidental releases is minimised. • Accidental releases that do occur are mitigated as soon as practicable. • Waste generation is minimised and the recycling of materials and wastes is maximised to the extent that commercial prudence allows. • The long-term physical and geo-chemical stability of its onsite wastes.
<i>Targets</i>	Compliance with all management measures to achieve the objectives.
<i>Management Strategies</i>	• Management of hazardous and non-hazardous material will be in accordance with statutory regulations, standard industry structures and procedures. Strict procedures will be adopted to ensure adequate records are maintained of delivery and use to ensure earliest possible detection of losses and to avoid site contamination. • A register of all hazardous materials imported to the site or generated as a result of activities undertaken at the site will be developed and maintained. This will document the hazardous material name, location, approximate volume, storage method and where applicable, disposal method for the substance and containers. • An inventory of hydrocarbon use will be maintained to allow determination of whether storage containers are leaking. • Hazardous materials will be brought to the site in bulk packaging wherever possible. This practice will minimise the number of containers and reduce the risk of spillage. • All mobile equipment and light vehicle servicing activities including wash down will be conducted on impermeable surfaces. • A wash down facility incorporating a concrete base and a triple interceptor style sediment and oil/grease removal system will be provided for the workshop facility. • Refuelling of mobile equipment will be conducted on a sealed surface at the

Waste and Hazardous Materials Management

main fuelling facility and within the open pits and siding stockpile area using a mobile refuelling vehicle.

- The mobile refuelling truck will carry spill containment and cleanup material at all times and the driver will be trained in the use of these materials.
- An explosives magazine will be constructed and operated in accordance with regulatory requirements.
- A licence to Store Dangerous Goods will be obtained for the storage of diesel fuel on site.
- The landfill onsite will only receive solid wastes classified as non-hazardous (inert and putrescible).
- Design, construction, operation and closure of the onsite landfill will conform to all applicable regulations.
- The onsite landfill will be constructed and operated in accordance with the *Guidelines for the Siting, Design and Management of Solid Waste Disposal Sites in the Northern Territory (EPA 2003)*. It will consist of a trench type facility located on the Helene 6/7 waste rock stockpile, greater than 150 metres from any watercourse, and 400 metres from the site offices and workshops. Surface runoff will be diverted around the landfill trench and wastes will be covered with 150 millimetres of waste rock at least once per month.
- Domestic waste from the workshop and offices will be properly handled, transported to and disposed of in the onsite landfill.
- Territory Iron will promote the reuse and recycling of waste packaging and construction materials, and used equipment/parts, tyres and metal to maximise resources conservation and value recovery, and minimise disposal in the onsite landfill.
- Reusable pressurised containers and vessels will be returned to suppliers. Pressurised containers and vessels that are not reusable will be punctured using suitable equipment and disposed of in the onsite landfill.
- Territory Iron staff and contractors will be trained in proper handling and disposal of waste material. Hazardous waste generated by the operation will be transported offsite to licensed waste disposal facilities. This is likely to include waste oil, grease, batteries and heavy equipment fuel filters.
- Solutions drained from punctured pressurised containers and vessels will be managed as hazardous wastes and appropriately disposed of offsite.
- Hazardous materials and wastes will be stored in appropriately labelled containers within bunded areas.
- Containment areas will be constructed in accordance with the requirements of AS1940 Storage and Handling of Flammable and Combustible Liquids and AS 1692 Tanks for Flammable and Combustible Liquids.
- An Emergency Response Plan will be developed for the project. This plan will contain information regarding appropriate response to chemical spillages, leaks, fires or explosions.
- A representative of Territory Iron will be assigned to liaise with Pine Creek emergency services regarding hazards on site and response procedures.
- Progressive rehabilitation will be undertaken wherever practicable. All rehabilitation will be performed in accordance with contemporary accepted industry best practice and conducted in accordance with an approved MMP.

Waste and Hazardous Materials Management	
	- Waste rock stockpiles will be designed to the maximum height of 45 metres with gentle slopes to facilitate controlled water shedding. - The waste rock stockpiles will be contoured so that they tie in with the surrounding topography. The maximum height will not exceed 45 metres and will be less than or equal to the height of existing ridges nearby, so that the final design is aesthetically acceptable. - The waste rock stockpiles will be constructed with gentle slopes (between 10 and 18 degrees) to facilitate controlled water shedding. - Diversion drains will be constructed wherever significant water courses are obstructed by stockpile construction. - Waste rock stockpiles will be deep ripped on the contour to assist with water absorption and minimisation of erosion. - Waste rock stockpiles will be spread with local topsoil (if available) once shaping is complete to facilitate revegetation. - Waste rock will be used to backfill pits where total sulphur values in exposed siltstone waste rock in open pits exceed 0.1%S to minimise contact between in-pit water and siltstone in final pit voids.
<i>Monitoring s</i>	Territory Iron shall conform with the following monitoring requirements: - Rehabilitated waste rock stockpiles will be routinely inspected for erosion, particularly after significant rainfall events. If soil erosion is observed during routine inspections, appropriate remediation measures will be implemented. - A surface water and groundwater monitoring program will be implemented to monitor the effectiveness of management measures in preventing contamination of surface and ground waters. - Hydrocarbon inventories will be maintained at a sufficient level to ascertain losses to the system. - A register of all hazardous materials imported to the site or generated as a result of activities undertaken at the site will be developed and maintained. This will document the hazardous material name, location, approximate volume, storage method and where applicable, disposal method for the substance and containers.
<i>Reporting</i>	Territory Iron shall conform with the following reporting requirements: Inclusion of monitoring results in the annual environmental report.

9 ETHNOGRAPHICAL AND ARCHAEOLOGICAL MANAGEMENT

Ethnographical and Archaeological Management	
<i>Potential Issues or Impacts</i>	The cultural heritage survey undertaken in October 2005 indicated that the Frances Creek railway was the only European heritage object of value. The survey concluded that the heritage value of the railway would not be affected, as the proposed use is consistent with the historical use of the area. Potential Aboriginal cultural impacts include: • Un-authorised destruction or damage to identified sites. • Identification of additional Aboriginal sites or artefacts during the mining process. • Increased levels of employment among the local indigenous population.
<i>Objectives</i>	Territory Iron ethnographic and archaeological objective is to avoid unnecessary disturbance to any identified ethnographical or archaeological site.
<i>Targets</i>	Compliance with all management measures to achieve the objectives.
<i>Management Strategies</i>	• An archaeological study of the Haul Route section from the mine to Roney siding will be completed before commencement of new road construction. • All employees and contractors will be required to participate in a general site induction before starting work. The induction will include: • Information on the importance of the cultural environment and protecting artefacts and archaeological sites. • Information on the correct procedure if items of potential Aboriginal or heritage significance (including bones) are discovered during construction or mining activities. • The coordinates of artefact and archaeological site locations shall be stored in a suitable database by Territory Iron and be made assessable to project design, construction and operations personnel. • Archaeological sites close to disturbances (e.g. Ochre Hill 2 and 3) will be fenced off to protect them during operations. • The Northern Land Council and owners of the pastoral stations will be kept informed of planned operations. • In the event that an Aboriginal site or Aboriginal artefact is discovered, Territory Iron will immediately advise the Northern Land Council, Aboriginal Areas Protection Authority (AAPA) and NRETA. • No archaeological site will be disturbed unless approval has been obtained from AAPA, Northern Land Council and/or NRETA. • No isolated artefacts will be disturbed without approval from Territory Iron Operations Manager. • Mining shall not commence until the AAPA Authority Certificate has been obtained. All conditions attached to the certificate shall be complied with. • Territory Iron shall consider all applications for employment from the local indigenous population and in consultation with local Aboriginal groups shall investigate opportunities to provide assistance in training and mentoring.
<i>Monitoring</i>	Territory Iron shall conform with the following monitoring requirements: • The Environmental Coordinator shall ensure that ground disturbance activities do not disturbed ethnographical and Archaeological sites.

Ethnographical and Archaeological Management***Reporting s***

Territory Iron shall conform with the following reporting requirements:

- All employees and contractors will stop work immediately and advise the Environmental Coordinator upon identifying any items of potential Aboriginal or heritage significance. The Aboriginal Areas Protection Authority and Northern Land Council will be contacted immediately in the advent of items of potential Aboriginal significance being discovered during mining.

10 SOCIO-ECONOMIC MANAGEMENT

Socio-Economic Management	
<i>Potential Issues or Impacts</i>	Potential social and economic impacts include: • Increased local employment in the Pine Creek area. • Increased use of Alice Springs-Darwin Railway. • Increased use of Darwin Port. • Increased traffic movements as material is imported and exported from the project area. • Increased contribution to the Northern Territory and Federal economies as a result of royalties and payroll taxes. • Increased pressure on Pine Creek accommodation and medical services. • Increased business opportunities for local business. • Temporary change of land use from pastoral to mining. • Potentially negative impact on tourism within the area.
<i>Objectives</i>	The Territory Iron socio-economic objective is to minimise negative socio-economic impacts and enhance positive ones.
<i>Targets</i>	Compliance with all management measures to achieve the objectives.
<i>Management Strategies</i>	• On final decommissioning plant and infrastructure will be dismantled, made safe and unless requested otherwise by project stakeholders, removed from the site. • Compensation agreements will be reached with landowners for loss of use of land used by Territory Iron Limited for mining or associated infrastructure. • Employment opportunities will be advertised locally and preference will be given to suitable local candidates. • Provision of goods and services will be advertised locally and preference will be given to local businesses demonstrating competitive pricing. • First aid facilities will be established onsite for the duration of the project. • First aid training will be provided to a wide cross section of employees. • A liaison will be established between onsite Emergency Response and First Aid personnel and providers of equivalent services in Pine Creek, Katherine and Darwin.
<i>Reporting</i>	Socio economic issues, including any complaints, will be reported in the Annual Environmental Report.

11 AESTHETIC AND VISUAL MANAGEMENT

Aesthetic and Visual Management	
<i>Potential Issues or Impacts</i>	Potential aesthetic and visual impacts include: • Visibility of operations from Stuart and Kakadu Highways, Mt Wells Road, and Alice Springs to Darwin Railway. • Increased use of Mt Wells public road. • Visibility of permanent features after closure of operations. • Distraction of highway users by lights.
<i>Objectives</i>	The Territory Iron aesthetic and visual management objective is to minimise the impact of the project site on the visual amenity.
<i>Targets</i>	Compliance with all management measures to achieve the objectives.
<i>Management Strategies</i>	• The impact of clearing will be minimised by restricting clearing of vegetation to the minimum necessary for operations. • Wherever possible, operations will be located on areas already disturbed by previous mining operations. • Progressive rehabilitation will be undertaken wherever practicable. All rehabilitation will be performed in accordance with contemporary accepted industry best practice and conducted in accordance with an approved MMP. • Access to the project site will be limited to employees and authorised visitors. All project access will be well signposted to control traffic movement in and out of the project area. • The waste rock stockpiles will be contoured so that they tie in with the surrounding topography. The maximum height will not exceed 45 metres and will be less than or equal to the height of existing ridges nearby, so that the final design is aesthetically pleasing.
<i>Reporting</i>	Aesthetic or visual issues, including any complaints, will be reported in the Annual Environmental Report.

12 EMERGENCY PREPAREDNESS AND RESPONSE

Emergency Preparedness and Response	
Potential Issues or Impacts	Natural disasters and operational emergencies beyond routine operational control that threaten life, property and/or the environment.
Objectives	Territory Iron objectives for Emergency Preparedness and Response are to ensure: • A safe environment for all employees, contractors and visitors. • The identification and management of all significant environmental risks. • The existence of a system for managing emergencies and an appropriate degree of emergency preparedness. • That the response to emergencies is based primarily on the preservation of human life and the safety of emergency response personnel. • The containment of emergencies and their effects within the project boundaries. • Cooperation with external emergency response organisations. • A safe return to normal operations.
Targets	To develop and implement an Emergency Preparedness and Response Plan (EPRP) incorporating measures satisfactory to DPIFM prior to operations commencing.
Management Strategies	• As part of the design, construct and operate contracts let by Territory Iron for the ore processing and mining, HAZOP style risk assessments will be conducted for operational aspects. • Territory Iron will endeavour to develop and maintain a suitably qualified and trained Emergency Response Team for the duration of the project. • Specific procedures will be developed to ensure appropriate and effective response will be provided for a range of potential emergency situations. This will include response to: – Fire – bush, equipment or plant. – Floods. – Explosions. – Medical emergencies. – Chemical spillages. – Pit wall failure. – Vehicle accidents. • Procedures will detail the roles and responsibilities of personnel at each stage of the response plan. Training will be provided to all personnel identified within the Emergency Response Plan to ensure they understand their individual responsibilities with regard to implementation of the plan. • Territory Iron will establish a relationship with emergency response organisations and operators of medical facilities within Pine Creek, Katherine and Darwin. • Territory Iron will ensure that people with appropriate First Aid and medical training are employed at all times. A dedicated First Aid facility will be constructed and maintained for the duration of the project. First Aid kits will be maintained in all office buildings and light vehicles • To minimise the risks associated with bushfire, firebreaks will be installed

Emergency Preparedness and Response	
	and maintained around key pieces of infrastructure. This will include generators and process plant. • Fire extinguishers will be maintained in operational areas in accordance with regulatory requirements. Extinguishers will also be fitted in all light vehicles and mobile equipment • Mobile equipment such as water carts, graders and bulldozers will be used for fire suppression activities where necessary. • In common with all mining and processing operations, the mine will present hazards and risks. A Safety Management System will be developed for the project. Details of the system will be included in the Mining Management Plan provided to DPIFM.
<i>Monitoring</i>	Details of EPRP training and equipment maintenance shall be recorded.
<i>Reporting</i>	Territory Iron shall conform with the following reporting requirements: • The status and effectiveness of the EPRP shall be recorded within the annual Environmental Report. Details on training shall also be included. • Environmental incidents shall be recorded and a summary reported within the Annual Environmental Report.

13 ENVIRONMENTAL TRAINING

Environmental Training	
<i>Potential Issues or Impacts</i>	Increased risk of environmental impacts from the project as a result of lack of environmental awareness or understanding of appropriate management practices to reduce or remove an impact on the environment.
<i>Objectives</i>	Territory Iron objectives for environmental training are to raise Territory Iron employee and contractor awareness of relevant project environmental issues and their environmental responsibilities.
<i>Targets</i>	To develop and implement an Environmental Training Program suitable for the construction and operation phase to ensure an appropriate level of environmental awareness amongst the workforce.
<i>Management Strategies</i>	- On commencement of employment, all personnel will be required to participate in a site specific induction. The occupational hazards, environmental requirements and social/community issues associated with the project will be addressed within the induction. - Ongoing training and meetings for review of work practices and safety issues will be conducted on a regular basis under the auspices of the Mine Manager. Regular operational meetings will be held to cover immediate requirements.
<i>Monitoring</i>	Annually review the environmental training program and materials to ensure that it remains effective and operational or other changes have not occurred that necessitate their revision.
<i>Reporting</i>	Territory Iron shall conform with the following reporting requirements: Prepare an environmental training summary incorporating training hours conducted, percentage of work force trained and compliance with training program for incorporation into the Annual Environmental Report.

14 REHABILITATION

Rehabilitation	
<i>Potential Issues or Impacts</i>	Territory Iron will prepare a Rehabilitation Plan as part of the Mining Management Plan. Failure to appropriately identify rehabilitation strategies may result in costly implementation of perpetual care and maintenance strategies to prevent long term impacts to environment. The Rehabilitation Plan will be a dynamic document that is reviewed regularly to ensure the Plan remains relevant to the activities undertaken. Implementation of the Plan will be based on results derived from progressive rehabilitation activities. This will involve the identification of post-closure impacts, the development and implementation of inspection and monitoring programs to verify acceptable performance, and the development and implementation of corrective actions plans, as appropriate.
<i>Objectives</i>	The primary objectives of Territory Iron Rehabilitation Plan will be: • Ensure the physical and geochemical stabilisation of all project components in the short and long-term. • Undertake progressive rehabilitation of Territory Iron disturbed areas and habitat using local, native species. • Protect the public, domestic animals and wildlife from injuries. • Allow the pre-mining land use (pastoral) to be restored once full decommissioning of operations has been completed
<i>Targets</i>	Compliance with all management measures to achieve the objectives.
<i>Management Strategies</i>	• Progressive rehabilitation will be undertaken wherever practicable. All rehabilitation will be performed in accordance with contemporary accepted industry best practice and conducted in accordance with an approved MMP. • As part of obtaining all permissions necessary to commence mining, Territory Iron will submit to DPIFM a security bond in case of any unplanned failure of the project. The size of this security bond will be regularly reviewed in conjunction with DPIFM to ensure it remains consistent with the level of disturbance caused by the Territory Iron project at any specific time. • Waste rock stockpiles will be designed to the maximum height of 45 metres with gentle slopes to facilitate controlled water shedding. • The waste rock stockpiles will be contoured so that they tie in with the surrounding topography. The maximum height will not exceed 45 metres and will be less than or equal to the height of existing ridges nearby, so that the final design is aesthetically pleasing. • The waste rock stockpiles will be constructed with gentle slopes (between 10 and 18 degrees) to facilitate controlled water shedding. • Diversion drains will be constructed wherever significant water courses are obstructed by stockpile construction. • Waste rock stockpiles will be deep ripped on the contour to assist with water absorption and minimisation of erosion. • Waste rock stockpiles will be spread with local topsoil once shaping is complete to facilitate revegetation. • Waste rock will be used to backfill pits where total sulphur values in exposed siltstone waste rock in open pits exceed 0.1%S to minimise contact

Rehabilitation	
	between in-pit water and siltstone in final pit voids Land surfaces disturbed by burying of water pipelines will be rehabilitated progressively as part of the construction process. Rehabilitation will involve: • Placement of subsoil over the pipe to completely fill the trench. • Compaction of sub soil material to prevent future subsidence along the trench area. • Re-spreading of stockpiled topsoil (if available) over disturbed areas. • Ripping of disturbed area across the contour. This will promote water infiltration into the soil and provide microhabitats for seed germination. • Installation of cross drains where required to direct surface runoff into adjacent areas. Disturbed surfaces will be rehabilitated after removal of infrastructure. This will involve: • Treating any localised contamination (i.e. hydrocarbon spillages). Depending on the contaminant type and concentration, contaminated material may be removed or treated onsite. • Spreading topsoil on deep ripped and reshaped surfaces. • Contour ripping to help water infiltration and surface water control if required. • Seed will be applied to ripped surfaces if natural revegetation has not established satisfactorily within two years of rehabilitation
<i>Monitoring</i>	Territory Iron shall conform with the following monitoring requirements: • Rehabilitated waste rock stockpiles will be routinely inspected for erosion, particularly after significant rainfall events. If soil erosion is observed during routine inspections, appropriate remediation measures will be implemented. • Monitoring will be conducted on an annual basis to establish the effectiveness of rehabilitation. Monitoring will include consideration of physical stability, erosion, minimisation, vegetation establishment (species diversity, density, cover) and weed presence
<i>Reporting</i>	Territory Iron shall conform with the following reporting requirements: • The area of land rehabilitated will be accurately recorded and reported in monthly, quarterly and annual reports • Report on any rehabilitation research and field-testing within the Annual Environmental Report.

15 CLOSURE

Closure	
<i>Potential Issues or Impacts</i>	Territory Iron will develop and implement a Closure Plan. Failure to appropriately identify closure strategies may result in costly implementation of perpetual care and maintenance strategies to prevent long-term impacts to environment. The Closure Plan will be a dynamic document that is reviewed regularly to ensure the Plan remains relevant to the activities undertaken. Implementation of the Plan will be based on results derived from progressive rehabilitation activities; and will involve the identification of post-closure impacts, the development and implementation of inspection and monitoring programs to verify acceptable performance, and the development and implementation of corrective actions plans, as appropriate.
<i>Objectives</i>	The primary objectives of Territory Iron Closure Plan will be: • To ensure the physical and geochemical stabilisation of all project components in the short and long term. • The protection of the public, domestic animals and wildlife from injuries. • To allow the pre mining land use (pastoral) to be restored once full decommissioning has been completed.
<i>Targets</i>	Compliance with all management measures to achieve the objectives.
<i>Management Strategies</i>	Territory Iron Limited will prepare a Closure Plan within the first year of operations. The Closure Plan will be reviewed every three years. Implementation of the Closure Plan will be based on results derived from progressive rehabilitation activities. This will involve identifying post-closure impacts, develop and implement inspection and monitoring programs to verify acceptable performance, and develop and implement corrective actions plans, as appropriate. Territory Iron installed infrastructure will be removed from the site as it becomes redundant. This will include administrative offices, workshops, fuel storage tanks, generators, water diversion structures, power lines and water pipes. On final decommissioning, Territory Iron plant and infrastructure will be dismantled, made safe and removed from the site. Infrastructure such as bores and roads will not be decommissioned if post-mining land users request their retention. An assessment of the heritage value of the old rail corridor/haul route will be undertaken at the time of closure before any demolition of the historic railway formation is undertaken.
<i>Monitoring</i>	Short, medium and long term monitoring requirements will be detailed within the Closure Plan. As a minimum, the following monitoring measures will be implemented where appropriate. <i>Groundwater:</i> Post closure groundwater monitoring will be conducted in accordance with the requirements of the regulatory Authority until it can be shown by Territory Iron that there will be no long-term impacts from the operation. <i>Surface Water:</i>

Closure	
	Post closure surface water monitoring will be conducted in accordance with the requirements of the regulatory Authority until it can be shown by Territory Iron that there will be no long-term impacts from the operation. <i>Vegetation:</i> Annually inspect revegetated areas until the regulatory authority agrees that they are self-sustaining and that habitat restoration objectives have been achieved. Inspections will determine additional actions necessary to achieve the objectives such as providing water, fertiliser, reseeding, replanting and/or protecting (e.g. by fencing) areas that have been damaged by drought, fire or over-grazing by wildlife. <i>Physical Stability:</i> Annually assess the following and, as appropriate and necessary, take corrective action: • The integrity of waste rock stockpile rehabilitation, particularly the slopes. • The stability of the embankments of the TSF. <i>Relinquishment, and Long Term Care and Maintenance:</i> Once it is established that revegetated areas are self-sustaining, habitat restoration objectives have been achieved, and there is no risk of: • Groundwater contamination due to waste rock stockpiles or open pits. • The accumulation of water of unacceptable quality in the open pit. • The drainage of water of unacceptable quality from the waste rock stockpiles. Territory Iron will negotiate the complete relinquishment of the lease to DPIFM. Prior to any negotiation to relinquish the lease and obtain bond money, Territory Iron shall consult with and obtain approval from the Northern Land Council. As appropriate, the relinquishment will occur either in stages for portions of the lease or at one time for the entire property.
Reporting	Territory Iron shall conform with the following reporting requirements: • Report on any closure activities within the Annual Environmental Report.