

5. PROJECT OBJECTIVES, ALTERNATIVES AND JUSTIFICATION

5.1 OBJECTIVES

Project objectives are to:

- Produce an iron ore product for export.
- Produce an iron ore product at a low cost while maintaining high levels of quality, safety and environmental protection.
- Ensure project flow-on benefits are shared with local communities and the Northern Territory as a whole.
- Conduct mining and processing operations in accordance with Territory Iron environmental and safety policies.

A copy of the Territory Iron Environmental Policy is in Appendix 2.

5.2 ALTERNATIVES CONSIDERED

The project described in this document is a result of careful consideration of the financial, environmental, safety, social and operations aspects associated with each component of the project.

Alternatives to proceeding with the proposed project considered include:

- Not proceeding with the project.
- Full or partial exploitation of resources.
- Alternative location of project components.
- Environmental management technologies.
- Extraction and processing technologies.
- Transport options and service corridors.

5.2.1 Not Proceed with the Project

Failure to proceed with the project would not satisfy Territory Iron's objective to produce iron ore products. This option would result in a loss of opportunity to add value to Australia's raw materials, loss of employment opportunities and economic benefit, particularly in local and regional communities. Increasing global demand would then be met by developing projects elsewhere, including overseas, with a loss of associated benefits to the Northern Territory.

5.2.2 Fully or Partially Mine the Resource

Territory Iron's objective is to fully mine the economic resource. In the long term this will minimise the impact and allow rehabilitation to begin as soon as possible. Partial mining of the resource would increase the possibility of further future mining again disturbing the area. It would create a disincentive to full rehabilitation in anticipation of future access.

5.2.3 Mining Methods

Territory Iron intends to mine the resource year round using conventional earthmoving equipment and techniques, which are industry best practice for this type of resource. This will, during the wet season, require dewatering of the resource zone to allow vehicle movement on the pit floor. Simple extraction and processing methods, mean raw materials are largely limited to water, diesel fuel and mineral resources.

The potential alternative of underground mining is not feasible given the nature of the resource, and the economic requirement of cost-effective mining of high volumes of ore.

Campaign mining during the dry season only would cause increased infrastructure cost, greater land requirements for stockpiling and reduce social benefits to the community by providing less secure full-time employment.

5.2.4 Location of Infrastructure and Process Plant

Locations of open pits, process plant, waste stockpiles, site access road and other infrastructure were selected after careful consideration of environmental factors relevant to siting each component. The chosen location and project design has considered existing disturbances from historical mining. Most infrastructure and site access roads will be in areas previously disturbed by mining to minimise new disturbance.

5.2.5 Environmental Management Technologies

The relatively common nature of mining and processing technologies proposed for Frances Creek allows use of proven industry environmental technologies. Territory Iron's Environmental Policy (Appendix 2) requires implementation of industry best management practices. Application of these practices is detailed in Sections 4 and 8 of this report and in the draft Environmental Management Plan.

5.2.6 Extraction and Processing Technologies

Iron ore mining is relatively simple in terms of mining and processing requirements. The project as described uses common, well-tested mining and processing techniques. The nature of the ore bodies does not lend itself to using anything other than progressive mining and rehabilitation techniques.

An economic alternative to diesel fuel generators to provide electricity has not been identified. The mobile plant adopted for processing has integrated diesel power so is not easily adapted to

alternative power supplies. Territory Iron will investigate the potential to use bio-diesel or bio-diesel blend fuels for mining, processing and power generation as these fuels become available.

5.2.7 Transport Options

A combination of road and rail will transport ore product to the Port of Darwin. Shipping from any other available port would make the project economically unfeasible. Negotiations are occurring with representatives of both road and rail haulage and the Port of Darwin. A number of factors need to be considered in these discussions including port and rail infrastructure as well as cost of material movement and social impacts of the different options.

5.2.8 Road Haulage to Existing Rail

Territory Iron's preferred option for transport is to use road trains to move ore to a stockpile and loading facility at a new rail siding (Roney Siding) at the closest access point to the Alice Springs-Darwin Railway. This option makes maximum use of existing rail and port infrastructure, with good economics and less environmental impact than full road transport.

A number of conditions dictated the chosen site for Roney Siding:

- FreightLink required a minimum two-kilometre long passing loop to allow full length trains travelling on the main line to pass each other, as well as loading of iron ore trains.
- Passing loops need to be on straight sections of railway line as much as possible.
- Flat rail gradient required for safety reasons.
- The proposed passing loop needs to be in an area with sympathetic topography to provide efficient earthworks.

Two alternative road routes to the rail siding are under consideration. Route 1 is Territory Iron's preferred option and requires a new haul road along the former rail spur route. The alternative option, Route 2 uses the existing Frances Creek and Mt Wells Roads, with some upgrading. Both routes require a 2.4-kilometre section of new road linking the Mt Wells Road, near the old railway alignment, to Roney Siding.

The siding is 15 kilometres from the mine along Route 1. Haulage along Route 2 (existing roads) would be 19.3 kilometres, approximately 4.3 kilometres or 28.7% further. Route 1 also has fewer watercourse crossings, reducing potential flooding issues. Using Route 1 would also mean that a single road crossing would be the only interaction between haul trucks and public road traffic, reducing potential traffic and road maintenance issues on the Mt Wells Road.

Routes 1 and 2 are the only available options to use existing transport infrastructure. Any alternatives have been ruled out as they would require substantial additional clearing of natural vegetation and additional costs.

5.2.9 All Rail

An alternative to combined road/rail transport is to construct a spur rail line from the current railroad to Frances Creek processing/stockpile area. This was the transport method adopted by previous operations at Frances Creek. A new rail spur would follow alignment of the previous line. Although it would have some advantages, this option is not economically viable with the current proved resources. It may be reconsidered in future if exploration substantially extends the mine life.

5.2.10 All Road

Road transport of ore to the Port of Darwin is a possible alternative which was ruled out early in the assessment. This option would cause undesirable traffic impacts on Stuart Highway and in Darwin. It would also involve higher costs (making the project economically unfeasible), greater greenhouse emissions and additional port infrastructure requirements compared with rail transport.

5.3 JUSTIFICATION AND BENEFITS

Territory Iron has carefully considered financial, environmental, safety, social and operations aspects associated with each component of the project.

Benefits expected from the project include:

- Territory Iron taking a proactive approach to indigenous employment, training and building business capacity in the local indigenous community. Employees will be sourced locally as far as practicable and will reside locally. This means the Frances Creek operations will provide a substantial boost to the Pine Creek economy.
- Territory Iron providing direct employment for about 73 people during construction and operation, of which 28 will be contractors. Additional indirect employment is expected from supplying goods and services to the project.
- Territory Iron spending more than 10 million dollars on construction and more than 65 million dollars per year operating the mine, including wages. Almost all this money will be spent in the Northern Territory.
- Territory Iron, through paying company tax, payroll tax and royalties, will contribute directly to economies of federal and territory governments.
- Potential exists to examine a range of alternative uses for the land, the haul road corridor and the new railway siding in future, or when mining stops. Construction of haul roads will provide Ban Ban Springs and Mary River West stations with improved access to part of their pastoral operations. Repair and maintenance of existing surface water dams will extend their lifespan for recreational uses after mining ceases.
- Upgraded accommodation in Pine Creek, which will have potential future use for tourism or other mining operations after mining stops at Frances Creek.
- Much fuller occupation of housing in Pine Creek (there are currently several houses unoccupied), and substantial increases in local purchasing (wet goods, groceries, food).

- Territory Iron giving preference to local businesses to provide goods and services to the project.
- Opportunities for local industry to participate in construction of some facilities including road access, site office and workshop facilities and clearing and grubbing of site.
- Potential for locals (including the indigenous work force) to be offered positions as unskilled labourers or operators, if they are suitably trained. In addition, skilled electricians, plumbers, or carpenters based in Pine Creek will be called on an ad hoc basis for their services.
- Territory Iron has an agreement for the Northern Land Council's (NLC) jobs and careers unit to provide an indigenous employment and training service to the mine.
- Territory Iron will fund business mentoring to help establish indigenous business entities to provide contract services to the mine.