Proposed iron-ore mine

Hamersley Iron Pty Ltd

Report and recommendations of the
Environmental Protection Authority

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Proposal

Hamersley Iron Pty. Ltd. proposes to mine high-grade detrital iron ore from its leases on Mt Brockman station. The deposits lie at the foot of the Brockman massif some 3km from Mt Brockman and 55 km north-west of Tom Price.

Ore will be extracted from one pit 1500 metres long by 500 metres wide and up to three smaller pits of about 500 metres by 200 metres. Open cut mining methods would be used, involving the stockpiling of topsoil and about 5 million tonnes of waste overburden per year, then drilling, blasting and mining of up to 7 million tonnes of ore. This ore would be screened and crushed on site, with about 4 million tonnes per year being transported on a new 45km rail spur to the existing Tom Price to Dampier main line. The remaining low grade ore would be stockpiled on site.

The railway design avoids the most flood prone areas. Flowlines would have culverts installed and they and the main embankment would be designed based on a one in two year rainfall event. Runoff in excess of this would flow over the embankment and any damage repaired subsequently. The rail and road routes pass under the existing SECWA powerline about 14 km east of the minesite.

A project life of three to seven years is envisaged, depending on market demand. Existing blending and loading facilities at Dampier port would be used.

An accommodation camp is planned 8km north of the site at the former exploration campsite, on the Nummaldi ridge. Up to 160 construction workers for 12 months and a permanent workforce of 60 to 80 would be accommodated there. The existing access track and air strip would be upgraded to gravel standard. Both domestic and process water supplies, totalling 5 megalitres per day, can be provided from fresh groundwaters at about 40 to 50 metres depth. Power supplies would be generated on site as the proponent believes that the cost of a connection to the SECWA line could not be justified by the short life of the mine.

Diversion banks designed to cope with a one in five year rainfall event are planned to direct runoff around the pit.

Upon the completion of mining, infrastructure not required for future use would be removed, hardstand and unwanted roads ripped, topsoil returned and reseeding carried out. Pits would have protective bunds established around them but no backfilling is proposed. Waste dumps would also have topsoil returned prior to reseeding.

Existing environment

The project area comprises the footslopes of the massif and the abutting gently sloping plain. Soils on the plain are generally well developed. Variable rainfall with occasional heavy falls is the most significant environmental factor.

The railway route traverses alluvial and colluvial plains and low rolling hills.

The project area supports a diverse flora with representatives of 25 percent of Pilbara species present. No rare or endangered species were recorded, although the flora are not particularly well known in this area. Significant areas have been degraded by previous landuses.

The Brockman area is potentially rich in native fauna due to the range of habitat types present. All species recorded are widespread in the Pilbara. The distinctive mounds of the pebble mound mouse are present in the area but no specimens of the mouse were recorded. As the mounds may persist for a long time there is no certainty whether the mouse exists in the area or not. There are no species of fauna potentially occurring or known to be present that are restricted to the general project vicinity but further research is required to better define the status of the flora and fauna of this region.

Mt Brockman station, on which the minesite and camp are located, is leased by the proponent. Hamersley station to the east is crossed by the rail spur and access road. This station supports beef cattle and the lessee also runs cattle on the proponent's station. Grazing is supported by native shrubs and pasture which is largely watered by overland flow.

There are no community facilities near the project site. The nearest occupied residence is Hamersley homestead some 40 km away. The nearest centre is Tom Price, 45 km to the south-east, with 4000 inhabitants and a full range of community services.

No sites of significance to Aboriginal people exist close to the project site. Two low density scatters of Aboriginal artefacts occur within the project boundaries.

Environmental impacts and their management

Development of the proposal will result in alterations to surface runoff but these effects are considered to be highly localised and manageable. Some impediment to overland flow will occur as a result of the railway embankment but the area affected is unlikely to be regionally significant. Management of localised effects will depend on providing sufficient culverts and water spreading banks at the outlets to prevent the impediment and channeling of overland flow Details of these structures should be provided with Works Approval documentation for the advice of the Department of Agriculture. Abstraction of groundwater from 40 metres depth is most unlikely to have impacts on vegetation or surface flow but will require licensing by the Water Authority of Western Australia.

Noise, dust and air quality impacts will be insignificant in this remote environment in view of the proponent's commitments to management in the CER.

Provisions by the proponent for waste disposal, workforce induction and the protection of flora and fauna are likely to adequately protect these aspects of the environment provided that details of waste material disposal and recycling are addressed in the Works Approval documentation. Oily wastes should not be burnt but should be recycled or landfarmed.

Provisions for rehabilitation should be adequate provided a rolling rehabilitation plan is produced and reviewed annually via the environmental monitoring provisions of the Iron Ore (Hamersley Range) Agreement Act. Careful topsoil conservation and an on-going rehabilitation plan should be developed with the aim of replacing self sustaining native vegetation. Permanent changes to the landscape of the scale resulting from the pits and dumps will be substantial, but are regarded as being in context with the grand scale of natural landforms in the region and consequently are acceptable.

The proponent's commitment to conform with the requirements of the Aboriginal Heritage Act with respect to those artefact scatters which would need to be disturbed is noted.

The proponent's commitments to mitigate severance of Hamersley Station are noted.

Reporting, auditing and decommissioning

The commitments by the proponent to submit an annual environmental report to government and to undertake environmental auditing following completion of decommissioning and rehabilitation is noted. Monitoring the status of worker accommodation and any social and environmental impacts on Hamersley Station should also occur. The Environmental Protection Authority believes that specified completion criteria should be developed by the proponent, with appropriate consultation, prior to the completion of mining, or within seven years of the commencement of mining, whichever is the sooner.

The Environmental Protection Authority is aware that the proponent may wish to retain and extend the rail spur after completion of the proposal. Design details or alternatively decommissioning and rehabilitation plans should be submitted at least 12 months before the completion of the current proposal.

Recommendations

Recommendation 1

The Environmental Protection Authority concludes that the proposal is environmentally acceptable and recommends that it could proceed subject to:

- **the proponent's commitments; and**
- **the recommendations in this report.**

Recommendation 2

The Environmental Protection Authority recommends that, within 12 months of the commencement of production, the proponent develop a rolling rehabilitation plan to include details of topsoil conservation, objectives for establishing self-sustaining native vegetation following site rehabilitation and completion criteria for rehabilitation success in consultation with the Department of Mines to the satisfaction of the Environmental Protection Authority.

Recommendation 3

The Environmental Protection Authority recommends that the proponent commission further surveys of the flora and fauna of the Mt Brockman area within 12 months of the commencment of production, to the satisfaction of the Environmental Protection Authority, on the advice of the Department of Conservation and Land Management.

Recommendation 4

The Environmental Protection Authority recommends that detailed plans for the retention or alternatively the decommissioning and rehabilitation of the rail spur should be developed to the satisfaction of the Environmental Protection Authority at least 12 months before the proposed mining is completed.

The Environmental Protection Authority is aware of concerns about the establishment of satellite communites in the Pilbara, access road standards and water quality issues at Camp Anderson but is of the view that such issues can be properly managed by the mechanisms other government agencies and the local authority, provided suitable provisions for the protection of the environment are in place.

The Environmental Protection Authority believes that any approval for the proposal based on this assessment should be limited to five years. Accordingly, if the proposal has not been substantially commenced within five years of the date of this report, then such approval should lapse. After that time, further consideration of the proposal should occur only following a new referral to the Authority.

The Authority notes that during the detailed implementation of proposals, it is often necessary or desirable to make minor and non-substantial changes to the designs and specifications which have been examined as part of the Authority's assessment. The Authority believes that subsequent statutory approvals for this proposal could make provision for such changes, where it can be shown that the changes are not likely to have a significant effect on the environment.

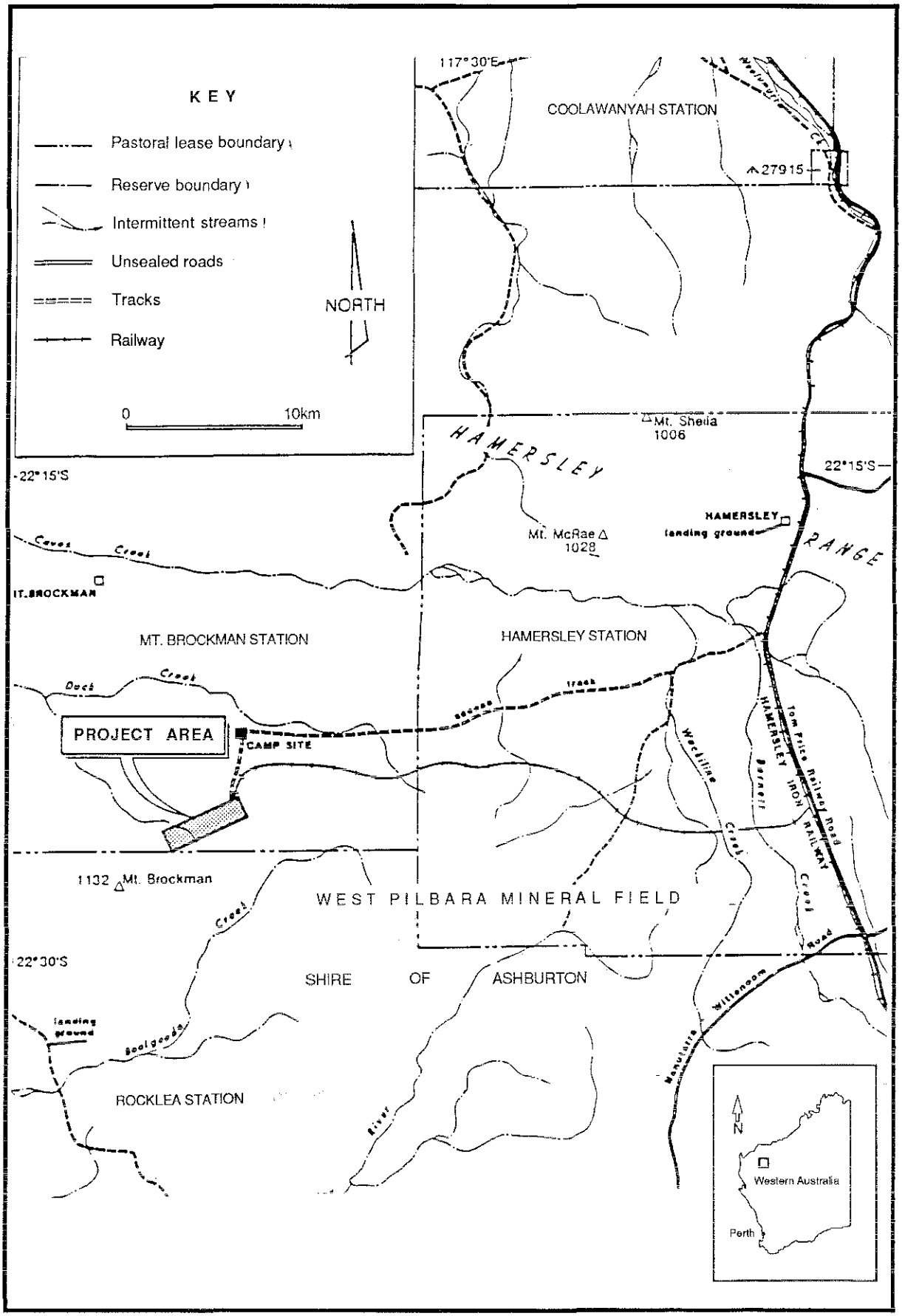

Figure 1: Brockman project - Regional map

Appendix

Proponents commitments

Major commitments by Hamersley Iron Pty Limited for environmental protection and management are summarised as follows:

- A continuous programme will be carried out to determine the effectiveness of measures taken for protection and rehabilitation of the environment. Reports will be submitted to the Minister responsible when reasonably required by the Minister.
- Areas disturbed in project construction and operations will be stabilised as soon as practicable and appropriate erosion control works installed wherever necessary.
- Dust control measures and work place monitoring will be carried out in accordance with the Mines Regulations Act during operations.
- An induction programme will be conducted during construction and operations to promote environmental awareness among employees and contractors.
- Wherever practicable topsoil will be removed from larger building sites, borrow areas and other disturbed areas for use in rehabilitation works.
- Rehabilitation methods will be determined on a site-specific basis following assessment of each disturbed area.
- All rehabilitation sites will be periodically assessed for establishment of vegetation.
- Sewage will be treated in a packaged plant and refuse will be disposed of in sanitary landfill sites which will be selected to minimise possible contamination of groundwater or aquifer systems.
- Mine pits and waste dumps will be suitably rehabilitated as final profiles are determined.
- The provisions of the Rights in Water and Irrigation Act will be complied with in regard to water requirements.