ENVIRONMENTAL PROTECTION ACT –

SECTION 38 REFERRAL:

SUPPORTING INFORMATION

BALLA BALLA MAGNETITE PROJECT –

BARGE-TRANSHIPMENT PROPOSAL

February 2013

Forge Resources Ltd
ACN 139 886 187

1. Introduction

Forge Resources Swan Pty Ltd (Forge – ACN 149 783 068) is seeking approval under Part IV of the *Environmental Protection Act* (EP Act) for a barge transhipment facility near Whim Creek in the West Pilbara, Western Australia, approximately halfway between Karratha and Port Hedland.

The adjacent Balla Balla Magnetite mining and processing proposal was approved in April 2009. That approved project included a 120-km slurry pipeline to deliver magnetite concentrate product for export from the Port Hedland Utah Point common-user port facility. The Utah Point facility is now no longer available to Forge, so it has opted to export product via a barge-transhipment facility on the coast immediately west of the approved magnetite operation.

This document provides supporting information for referral of the proposal under Section 38 of the EP Act.

2. Background information

2.1 Proponent details

The proponent is Forge Resources Swan Pty Ltd, an unincorporated joint venture between Forge Resources Ltd (75%) and the Todd Corporation of New Zealand (25%). Todd Corporation is also a 20% shareholder in Forge Resources Ltd.

Primary contacts for this proposal are:

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2.2 The proposal

Location

The project area is located some 10-20km west of Whim Creek, about 100km from both Port Hedland and Karratha, and abutting the approved Balla Balla magnetite mining and processing project (Figure 1).

It will be located on Mining Act tenements and within the Balla Ball Port (administered by the Department of Transport)

3. Existing environment

3.1 Terrestrial

The project is located in the Roebourne component of the Pilbara biogeographic region, as defined in the Interim Biogeographic Regionalisation for Australia (IBRA).

There are three main vegetation categories:

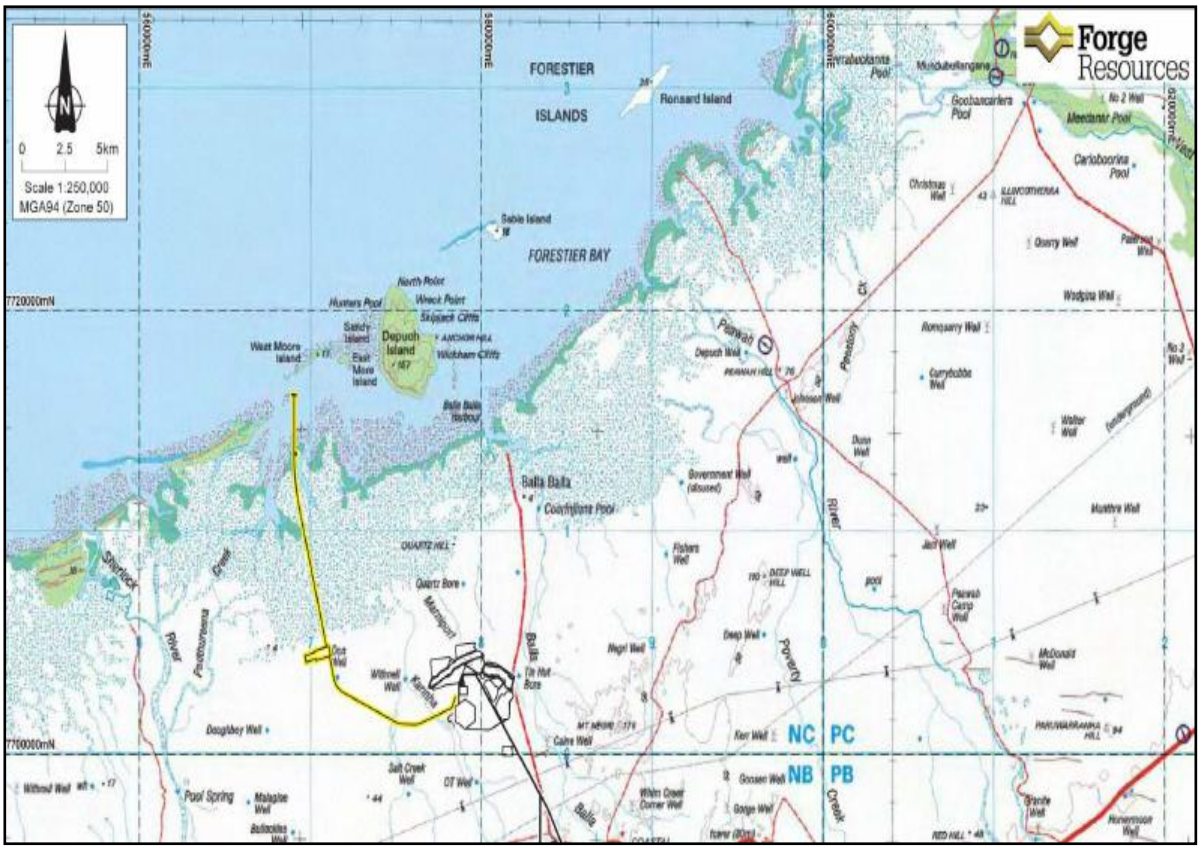

Figure 1: Proposal (yellow) adjoining approved magnetite project (black)

- Coastal plain grass savannah (bunch and hummock grasses)
- Tidal flats of samphire and algal mat
- Mangroves

Parts of the terrestrial project area were surveyed in 2006/7 for assessment of the approved magnetite project. Other parts will be survey in the winter of 2013, when plant identification will be much more accurate than is the case in summer.

Fauna surveys were conducted by Phoenix Environmental in November and December 2013. Phoenix report little likelihood of significant direct or indirect impacts on conservation-significant vertebrate fauna. Importantly, targeted survey for *Lerista nevinae* produced no observations, and the likelihood of occurrence is considered to be low.

Four potential Short-Range Endemics (SREs) were collected during the surveys, but none was observed within the project footprint, and they are all well represented elsewhere.

The Little North-western Mastiff Bat (*Mormopterus loriae cobourgiana*; DEC Priority 1) was found commonly within mangrove areas. As only small areas of mangrove will be disturbed, and much larger habitat will remain undisturbed, impacts on this species are unlikely to be significant.

3.2 Marine environment

Le Provost Environmental has prepared an assessment of likely project impacts on Basic Primary Producer Habitats, and concluded compliance with the EPA's Environmental Assessment Guidance No. 3. A copy of Le Provost's assessment is included with this referral package. Detailed characterisation of marine ecosystems and fauna are scheduled for the autumn – after the cyclone season.

Of the BPPH impacts, that on mangroves is perhaps the most sensitive. Le Provost has estimated an 0.86% loss, based on a 70km^2 LAU, but this could be significantly reduced if the conveyor alignment can be moved to the west. Its currently-shown, worst-case, alignment is constrained by an Aboriginal Site listed by the Department of Indigenous Affairs (DIA), but it is believed by DIA that the co-ordinates of midden site, determined prior to GPS use in surveys, are erroneous. A currently-planned Aboriginal Heritage survey aims in part at determining the precise location of this Site; if, as suspected, the Site and its buffer are wrongly shown on the DIA database, and its true designation can be moved westwards, the conveyor alignment can be moved out of some mangrove areas.

Pendoley Environmental in January 2013 completed an aerial survey of turtle activity in the Forestier Bay area, and determined that the beach within the 25-km long bay, of which the proposal will directly impact only a 30-metre wide section, is unimportant for turtle nesting. It is considered rather to provide an inter-nesting habitat for juveniles and sub-adults. This will be further investigated in March or April 2013, when targeted searching for turtles within mangrove areas will be undertaken as an adjunct to a new-moon light survey to be undertaken by Pendoley; the light survey is aimed at facilitating the lighting design and management plan for the project.

Dugongs (17) were also observed during Pendoley's five-day survey, as were 15 dolphins and some rays. There is also anecdotal evidence of winter occurrence in Forestier Bay of Indo-Pacific Dolphin. Whales are rarely observed in Forestier Bay; they are concentrated much further offshore, along well-recognised migratory corridors.

Global Environmental Modelling Systems (GEMS) has carried out a coastal processes investigation to determine possible impacts of the conveyor causeway on water levels and flows in the vicinity of the proposed structure. The modelling clearly demonstrated no impact on water levels, with small flow variations at shallow locations but no significant change in speed or direction. Significant alteration of coastal processes because of the presence of the causeway is thus considered unlikely. A copy of the GEMS report is included in this package.

Phoenix has conducted surveys of shorebird surveys along Forestier Bay, noting high abundance and diversity. However, construction activity will not take place during the cyclone season, when the shorebirds utilise the bay. In operations, the project will occupy only a 30-40m wide section of the 25-km bay, and it is considered probable that shorebirds will quickly adapt to the presence of the project facility – a conveyor built partly on a causeway and partly on a trestle structure, crossing the bay almost perpendicularly.

4. The proposal

From the already-approved magnetite project site, slurried magnetite concentrate product will be piped ~10km above ground to a dewatering facility and stockyard (Figure 1). Dewatered and stockpiled product will be re-won and conveyed 10.9km on an earthen causeway and 3.6km on a trestle structure, to a jetty from which barge loading will occur. The barge will then transport the product to ocean-going vessels anchored some 20km offshore. Each barge-load is some 15,000 tonnes, with 1-2 barge movements per day; 35-40 shiploads are required for the planned 6Mtpa operation.

The conveyor causeway will include a light-vehicle road, with passing zones. The trestle section will be equipped for movement of small, golf-buggy-sized maintenance vehicles.

No dredging will be required.

No hydrocarbons will be stored in the port area; the barge will travel to Karratha to refuel.

Power to the proposal will be supplied from infrastructure at the approved magnetite plant. The power requirement for the proposal will be less than that for the slurry pipeline to Port Hedland that it effectively replaces.

Operating personnel will access the facility from the approved magnetite operation; no significant additional infrastructure will be required.

5. Potential environmental impacts and proposed additional assessment

5.1 Significant potential impacts

As evidenced in Section 3 above, only marine fauna and coastal zones are considered to be key environmental factors. Terrestrial flora and fauna impacts are considered to be secondary factors. Other factors (air quality, waste management, surface water management, heritage, rehabilitation and closure) are considered to be manageable in large part by application of environmental management plans developed for the approved magnetite mining and processing project.

It is considered that the preliminary marine studies already carried out by Le Provost have clearly identified the marine ecosystems, particularly the BPPHs, that will be or could be impacted by this proposal. Of these, mangroves are considered to be the most critical; no seagrass will be impacted. To provide a rigorous, quantitative baseline against which impacts can be managed, it is proposed in the second or third quarters of 2013 to conduct a marine ecology survey to identify species and communities in the project area. The survey will involve divers or submersible cameras, and will permit detailed mapping of marine communities, as well as an assessment of species diversity and abundance. Sites for future monitoring will also be selected, and a marine ecosystems management plan developed.

Similarly, a marine sediment and water chemistry survey is scheduled for 2013. This survey will provide a baseline against which project impacts can be monitored in operations, with monitoring sites to be selected both near the project area and at remote “control” sites in Forestier Bay.

To facilitate development of a lighting management plan, a new-moon light survey will be conducted in the project area. Additionally, mangrove areas will be surveyed during daylight hours for juvenile and sub-adult turtles, to provide at least semi-quantitative information against which impacts can later be monitored.

During construction, noise from piling operations has the potential to impact marine fauna, especially dugongs and turtles. Using the underwater noise assessment (SKM) and the advice of experienced ecologists (Pendoley), a marine noise management plan will be developed. The plan will address slow and low-impact start-ups, as well as protocols for cessation of piling operations when sensitive marine fauna approach the workings. Based on SKM's underwater noise assessment, a buffer of 600m is indicated as the threshold for ceasing operations. The plan will also provide for qualified marine fauna observers for detection of proximate marine fauna.

5.2 Other environmental factors

Terrestrial air quality and noise impacts have been assessed by SKM (reports included in this package). The assessment indicates that, with judicious selection of equipment and adjustment of operating times, application of the air quality and noise management plans developed for the approved magnetite project can produce environmentally acceptable outcomes.

Similarly, waste management poses no challenges that cannot be met by application of the management plans for the approved project.

6. Stakeholder consultation

Extensive consultation with interested and affected parties has already been undertaken for this project. A summary table is included in the package of attachments to this referral.

7. Conclusion

It is suggested that marine ecosystems and fauna are the only key environmental factors for this project. Impacts on marine fauna, particularly during construction, are a significant risk, and marine ecosystems, particularly mangroves, require dedicated management plans. The relevant studies are scheduled for the second or third quarters of 2013.

Terrestrial fauna surveys have identified no conservation-sensitive species or communities, and terrestrial noise and air quality can easily be managed by spatial extension of the management plans developed for the approved magnetite mining and processing project.

On this basis, it is considered that the proposal can be adequately assessed at the level of Assessment on Proponent Information (API).