

Our Ref: 550-EN-0044

Dr Paul Vogel
Chairman
Environmental Protection Authority
Locked Bag 33, Cloisters Square
PERTH WA 6850

21 June 2012

Dear Dr. Vogel

NYIDINGHU PROJECT – REFERRAL

Under Section 38 of the *Environmental Protection Act 1986*, Fortescue Metals Group Limited (Fortescue) wishes to refer a proposal for the development of the Nyidinghu Project. Please find enclosed the completed 'EPA Referral Form - Proponent' (NY-AP-EN-0003).

The Nyidinghu Project is located approximately 35 kilometres (km) south of Fortescue's Cloudbreak operations and approximately 100 km north-west of Newman in the Pilbara region of Western Australia. The Project consists of an iron ore mine, together with associated infrastructure and a rail spur linking the Project with Fortescue's existing mainline railway between Christmas Creek and Port Hedland.

If you have any queries regarding this matter please do not hesitate to contact Rachael Sharp on 6218 8805.

Yours sincerely

FORTESCUE METALS GROUP



SEAN MCGUNNIGLE

Manager, Environmental Approvals

Enc.

Attachment 1 EPA Referral Form – Proponent (NY-AP-EN-0003)

Office of the Environmental Protection Authority	
File:	
22 JUN 2012	
A:	<input type="checkbox"/> For Information
fa:	<input type="checkbox"/> For Discussion
Officer:	<input type="checkbox"/> For Action
<input type="checkbox"/> Dir. AC	Response please:
<input type="checkbox"/> Dir. Bus Ops	<input type="checkbox"/> GM Signature
<input type="checkbox"/> Dir. SPPD	<input type="checkbox"/> Dir for GM (copy to GM)
<input type="checkbox"/> Dir. Strat Sup	<input type="checkbox"/> Dir Signature (copy to GM)
<input type="checkbox"/>	<input type="checkbox"/> Mgr Direct (copy to GM)



Fortescue
The New Force in Iron Ore

0664 2011/000937
DANA STANLEY



Environmental Protection Authority

**EPA REFERRAL
FORM
PROPONENT**

Referral of a Proposal by the Proponent to the Environmental Protection Authority under Section 38(1) of the *Environmental Protection Act 1986*.

PURPOSE OF THIS FORM

Section 38(1) of the *Environmental Protection Act 1986* (EP Act) provides that where a development proposal is likely to have a significant effect on the environment, a proponent may refer the proposal to the Environmental Protection Authority (EPA) for a decision on whether or not it requires assessment under the EP Act. This form sets out the information requirements for the referral of a proposal by a proponent.

Proponents are encouraged to familiarise themselves with the EPA's *General Guide on Referral of Proposals* [see Environmental Impact Assessment/Referral of Proposals and Schemes] before completing this form.

A referral under section 38(1) of the EP Act by a proponent to the EPA must be made on this form. A request to the EPA for a declaration under section 39B (derived proposal) must be made on this form. This form will be treated as a referral provided all information required by Part A has been included and all information requested by Part B has been provided to the extent that it is pertinent to the proposal being referred. Referral documents are to be submitted in two formats – hard copy and electronic copy. The electronic copy of the referral will be provided for public comment for a period of 7 days, prior to the EPA making its decision on whether or not to assess the proposal.

CHECKLIST

Before you submit this form, please check that you have:

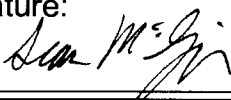
	Yes	No
Completed all the questions in Part A (essential).	<input checked="" type="checkbox"/>	
Completed all applicable questions in Part B.	<input checked="" type="checkbox"/>	
Included Attachment 1 – location maps.	<input checked="" type="checkbox"/>	
Included Attachment 2 – additional document(s) the proponent wishes to provide (if applicable).		N/A
Included Attachment 3 – confidential information (if applicable).		N/A
Enclosed an electronic copy of all referral information, including spatial data and contextual mapping but excluding confidential information.	<input checked="" type="checkbox"/>	

Following a review of the information presented in this form, please consider the following question (a response is optional).

Do you consider the proposal requires formal environmental impact assessment?	
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No <input type="checkbox"/> Not sure
If yes, what level of assessment?	
<input checked="" type="checkbox"/> Assessment on Proponent Information	<input type="checkbox"/> Public Environmental Review

PROPONENT DECLARATION (to be completed by the proponent)

I, Sean McGunnigle, (*full name*) declare that I am authorised on behalf of Fortescue Metals Group Limited (being the person responsible for the proposal) to submit this form and further declare that the information contained in this form is true and not misleading.

Signature: 	Name (print): Sean McGunnigle
Position: Manager, Environmental Approvals	Company: Fortescue Metals Group Limited
Date: 20/6/12	

PART A - PROPONENT AND PROPOSAL INFORMATION

(All fields of Part A must be completed for this document to be treated as a referral)

1 PROPONENT AND PROPOSAL INFORMATION

1.1 Proponent

Name	Fortescue Metals Group Limited (Fortescue)
Joint Venture parties (if applicable)	Not applicable
Australian Company Number (if applicable)	57 002 594 872
Postal Address (where the proponent is a corporation or an association of persons, whether incorporated or not, the postal address is that of the principal place of business or of the principal office in the State)	Fortescue Metals Group Limited PO Box 6915 East Perth WA 6892
Key proponent contact for the proposal: <ul style="list-style-type: none"> • name • address • phone • email 	Sean McGunnigle Manager, Environmental Approvals Level 2, 87 Adelaide Terrace East Perth WA 6004 (08) 6218 8415 smcgunnigle@fmgl.com.au
Consultant for the proposal (if applicable): <ul style="list-style-type: none"> • name • address • phone • email 	N/A

1.2 Proposal

Title	Nyidinghu Project (the Project)
Description	<p>Fortescue intends to expand its current operations within the Pilbara region to include the development of a new iron ore project within the Nyidinghu Project Area.</p> <p>The Project is located on Marillana Station approximately 35 kilometres (km) south of Fortescue's Cloudbreak operations and approximately 100 km north-west of Newman in the Pilbara region of Western Australia (Figure 1). The iron ore deposits found within the Project Area are greenfields discoveries, with Fortescue carrying out exploration drilling in the area since August 2010.</p> <p>The major components of the Project are detailed below:</p> <ul style="list-style-type: none"> • An open cut iron ore mine targeting Banded Iron Formation (BIF) ore, Channel Iron Deposit (CID) fines product, and Detrital Iron Deposit (DID) fines product. The mine will include pits, ramps, bunds, haul roads and a run of mine stockpile. • An ore processing facility (OPF) with an expected long term average production rate of up to 30 million tonnes (Mt) per annum, incorporating peaks in production up to 40 Mt per annum. • Waste rock landforms and tailings storage facility (TSF) for permanent disposal of overburden and tailings generated as a result of the Project. • Mine dewatering, water production and re-injection borefields for dewatering of the mine pits, production of water supply and re-injection of excess water including pipelines, bores, storage facilities, transfer ponds, evaporation basins, power supplies and control facilities. • Surface water management infrastructure including diversion of minor creek floodlines, drains and embankments. • Supporting infrastructure including an access road, construction camp and permanent accommodation village, administration offices,

	<p>magazine, fuel storage and dispensing facilities, magazine and explosives storage areas, power lines, laboratory facilities, wastewater treatment plants, workshops, warehouses, airport and power station.</p> <ul style="list-style-type: none"> • A new rail spur connecting the Mine Project Area with Fortescue's existing mainline railway and minor engineering works on the mainline railway in the vicinity of the Nyidinghu rail spur connection (Figure 3). • Product stockpiles and rail loading and unloading facilities including a rail loop. <p>The pit is expected to be approximately 5 km long, by 2.1 km wide at its widest point, and extends to approximately 270 m below ground level in at its deepest point, covering an area of approximately 500 ha (Figure 2).</p> <p>Approximately 620 Mt of waste rock material is anticipated to be generated over the 15 years of mine operation. A waste rock landform, covering approximately 580 ha will be located in close proximity to the proposed pit (Figure 2).</p> <p>The life of mine is expected to be approximately 15 years. Mine closure scenarios are currently being developed for the proposed pit, waste landforms, TSF and surface water infrastructure.</p>
Extent (area) of proposed ground disturbance.	<p>The area of disturbance for the Project is located on several tenements held by Fortescue. The area of disturbance for the Project is expected to be up to approximately 7000 ha for mine and supporting infrastructure and up to 2000 ha for rail infrastructure. This total of 9,000 ha is referred to as the Disturbance Area. The envelopes within which the disturbance is expected to occur are known as the Mine Project Area and Rail Project Area. Studies are being completed over a larger area (Study Area) to support environmental impact assessment and to establish the environmental context.</p>
Timeframe in which the activity or development is proposed to occur (including start and finish dates where applicable).	<p>Subject to regulatory approvals, it is anticipated that construction of the Project will commence in Quarter 2, 2013, with operations commencing in mid-2014.</p> <p>The life of mine of the Project is expected to be approximately 15 years plus decommissioning and closure.</p>
Details of any staging of the proposal.	Not applicable
Is the proposal a strategic proposal?	No
Is the proponent requesting a declaration that the proposal is a derived proposal? If so, provide the following information on the strategic assessment within which the referred proposal was identified: <ul style="list-style-type: none"> • title of the strategic assessment; and • Ministerial Statement number. 	No
Please indicate whether, and in what way, the proposal is related to other proposals in the region.	<p>Fortescue's Io Project (determined as 'not assessed' by the EPA on 27 March 2012, subject to a public appeal on Level of Assessment) is a stand-alone direct shipping ore (DSO) project which is situated within the Nyidinghu area. The Io Project lies within Mining Tenement M47/1461 and will include a new mine with one mine pit, one waste rock landform, a crushing and screening hub, roads, drainage, and other associated mine infrastructure. The Io Project will mine a maximum of 11.4 Mt of Bedded Iron Deposit (BID) which will be extracted at a rate of up to 6 Mtpa for</p>

	<p>approximately four years. The mined product will be DSO with no processing conducted on site.</p> <p>Approvals for the Io and Nyidinghu projects are being progressed independently of one another.</p> <p>The Project intersects Fortescue's operating railway which runs from the mining operations at Christmas Creek and Cloudbreak to Port Hedland. The railway operates under Ministerial Statements 690 and 707.</p> <p>BHP Billiton Iron Ore's railway between Port Hedland and Newman runs across the northern part of the Mine Project Area, and is roughly parallel to the proposed Nyidinghu rail spur.</p> <p>The Mine Project Area is situated approximately 15 km from Rio Tinto Iron Ore's Yandi and Hope Downs operations, and adjacent to mining tenure held by Rio Tinto, BHP Billiton Iron Ore, Iron Ore Holdings and Brockman Resources (Figure 2).</p>
<p>Does the proponent own the land on which the proposal is to be established? If not, what other arrangements have been established to access the land?</p>	<p>Fortescue does not own the land.</p> <p>Fortescue currently holds the following mining tenure, within the Mine Project area:</p> <ul style="list-style-type: none"> • M47/1461 • E47/1320 • E47/1387 • E47/1388 • E47/2177. <p>Applications have been made for a number of Miscellaneous Leases in the Mine Project area:</p> <ul style="list-style-type: none"> • L47/628 (roads, powerlines, borefield) • L47/629 (roads, powerlines, borefield) • L47/630 (roads, powerlines, borefield) • L47/631 (roads, powerlines, borefield, conveyor, minerals storage) • L47/632 (roads, powerlines, pipelines, borefield, conveyor, minerals storage, workshop, power transmission, water management) • L47/633 (roads, powerlines, borefield) • L47/634 (roads, powerlines, borefield). <p>Additional miscellaneous licence applications will be made to allow for the following infrastructure, for which Fortescue currently holds some exploration tenure:</p> <ul style="list-style-type: none"> • airport • permanent village and construction camp • diesel/emulsion storage • reinjection pipelines • power lines. <p>Additional mining infrastructure (including tailings storage facility, turkeys nest dam, waste rock landform and ROM pad) is proposed to be located within a second mining lease tenement, to be applied for in mid-2012.</p> <p>Fortescue has applied for access to the rail corridor, under s91 of the <i>Land Administration Act 1997</i> for preliminary geotechnical and water investigations associated with railway construction.</p> <p>Fortescue will apply for the railway to be included in its current State Agreement Act (the <i>Railway and Port (The Pilbara Infrastructure Pty Ltd) Agreement Act 2004</i>) in the future.</p> <p>Fortescue currently holds the following tenure, within the Rail Project area:</p> <ul style="list-style-type: none"> • M45/1085 • M45/1084

	<ul style="list-style-type: none"> • M45/1083 • E45/2497 • E45/2499 • E45/2552 • E45/3366 • L47/0193 • L47/0197 • L47/0198. <p>Applications have been made for a number of Miscellaneous Leases in the Rail Project area:</p> <ul style="list-style-type: none"> • M45/1149 • M45/1150 • L47/653 • L47/657 • L47/660 • L47/663.
<p>What is the current land use on the property, and the extent (area in hectares) of the property?</p>	<p>The current land uses are pastoral activities (associated with the Marillana (360,000 ha), Hillside (407,000 ha), Roy Hill (400,000 ha) and Mulga Downs (360,000 ha) Pastoral Stations) and mineral exploration.</p> <p>Relevant Mine Area tenure granted to or applied for by Fortescue includes:</p> <ul style="list-style-type: none"> • M47/1461: (1,200.00 Ha) • E47/1320: (2,795.07 Ha) • E47/1387: (19,273 Ha) • E47/1388: (12,018.15 Ha) • E47/2177: (18,993 Ha) • L47/628: (20,514 Ha) • L47/629: (165 Ha) • L47/630: (67 Ha) • L47/631: (340 Ha) • L47/632: (649 Ha) • L47/633: (105 Ha) • L47/634: (105 Ha). <p>Relevant Rail Area tenure granted to or applied for by Fortescue includes:</p> <ul style="list-style-type: none"> • M45/1085: (577.00 Ha) • M45/1084: (782.00 Ha) • M45/1083: (667.00 Ha) • E45/2497: (21,000.00 Ha) • E45/2499: (17,400.00 Ha) • E45/2552: (1,500.00 Ha) • E45/3366: (10,500.00 Ha) • L47/0193: (2,627.96 Ha) • L47/0197: (2,864.00 Ha) • L47/0198: (2,847.92 Ha) • L47/653: (114.00 Ha) • L47/657: (649.00 Ha) • L47/660: (165.00 Ha) • L47/663: (4.37 Ha) • M45/1149: (734.00 Ha) • M45/1150: (681.00 Ha).

1.3 Location

Name of the Shire in which the proposal is located.	The Project is located within the Shire of East Pilbara.
For urban areas: <ul style="list-style-type: none"> • street address; • lot number; • suburb; and • nearest road intersection. 	Not applicable
For remote localities: <ul style="list-style-type: none"> • nearest town; and • distance and direction from that town to the proposal site. 	<p>The Project is located approximately 100 km north-west of Newman (Figure 1).</p> <p>The Project is located in 35 km south of Fortescue's Cloudbreak operation, and within 15 km of a number of operating iron ore mines in the Pilbara Region.</p>
Electronic copy of spatial data - GIS or CAD, geo-referenced and conforming to the following parameters: <ul style="list-style-type: none"> • GIS: polygons representing all activities and named; • CAD: simple closed polygons representing all activities and named; • datum: GDA94; • projection: Geographic (latitude/longitude) or Map Grid of Australia (MGA); • format: Arcview shapefile, Arcinfo coverages, Microstation or AutoCAD. 	Enclosed: Yes

1.4 Confidential Information

Does the proponent wish to request the EPA to allow any part of the referral information to be treated as confidential?	No
If yes, is confidential information attached as a separate document in hard copy?	Not Applicable

1.5 Government Approvals

Is rezoning of any land required before the proposal can be implemented? If yes, please provide details.	No
Is approval required from any Commonwealth or State Government agency or Local Authority for any part of the proposal? If yes, please complete the table below.	Yes

Agency/Authority	Approval required	Application lodged Yes / No	Agency/Local Authority contact(s) for proposal
EPA	This Referral is being made to the Environmental Protection Authority (EPA) under Section 38 of the <i>Environmental Protection Act 1986</i> (EP Act).	Yes	Anthony Sutton
DSEWPaC	A Referral under the <i>Environment Protection and Biodiversity Conservation Act 1999</i> (EPBC Act) will be submitted to the Commonwealth Department of Sustainability, Environment, Water, Population and Communities (DSEWPaC).	No	Lachlan Wilkinson
DEC	<p>Works Approvals and Licence will be required from the Department of Environment and Conservation (DEC) under Part V the EP Act.</p> <p>Works Approval applications will be submitted to the DEC in relation to waste discharges associated with construction of prescribed premises including ore processing, mine dewatering, tailings disposal, sewage disposal, site landfill and power generation.</p> <p>A Licence Application will be submitted to the DEC for discharges (including re-injection of groundwater) associated with operation of the above prescribed premises. The application will be submitted following construction.</p>	No	Suzanne Roworth
DoW	A Licence to Construct Boreholes (26D licence) and Licence to Take Groundwater (5C licence) will be required from the Department of Water (DoW) under the <i>Rights in Water and Irrigation Act 1914</i> (RIWI Act).	No	Hamid Mohsenzadeh
DMP	<p>The Department of Mines and Petroleum (DMP) will require Fortescue to submit a Mining Proposal, including a Mine Closure Plan, under the <i>Mining Act 1978</i> (Mining Act) for the Project.</p> <p>Fortescue will apply for mining tenure prior to construction of the Project and any required Miscellaneous Licences. A Project Management Plan will also be required to be submitted to the DMP.</p> <p>Fortescue will apply for Dangerous Goods Licences to manage the storage and handling of diesel fuel.</p> <p>Fortescue will provide a Project Management Plan as required under the <i>Mines Safety and Inspection Act 1994</i> for the approval of DMP.</p>	No	Danielle Risbey State Mining Engineer
Shire of East Pilbara	Approvals such as a Planning Development Application and a permit for the wastewater treatment plant (under the <i>Health Act 1911</i>), will be required from the Shire of East Pilbara.	No	TBA
Department of Indigenous Affairs (DIA)	Fortescue will require approval under Section 18 of the <i>Aboriginal Heritage Act 1972</i> for disturbance to heritage sites.	No	TBA
National Native Title Tribunal	Fortescue is currently liaising with the Nyiyaparli, Marty Idja Banyjima (MIB) and Palyku Native Title Claimant Groups. Fortescue is required to comply with the provisions of the <i>Native Title Act 1993</i> .	No	TBA

PART B - ENVIRONMENTAL IMPACTS AND PROPOSED MANAGEMENT

2. ENVIRONMENTAL IMPACTS

Describe the impacts of the proposal on the following elements of the environment, by answering the questions contained in Sections 2.1-2.11:

- 2.1 flora and vegetation;
- 2.2 fauna;
- 2.3 rivers, creeks, wetlands and estuaries;
- 2.4 significant areas and/ or land features;
- 2.5 coastal zone areas;
- 2.6 marine areas and biota;
- 2.7 water supply and drainage catchments;
- 2.8 pollution;
- 2.9 greenhouse gas emissions;
- 2.10 contamination; and
- 2.11 social surroundings.

These features should be shown on the site plan, where appropriate.

For all information, please indicate:

- (a) the source of the information; and
- (b) the currency of the information.

2.1 Flora and Vegetation

2.1.1 Do you propose to clear any native flora and vegetation as a part of this proposal?

[A proposal to clear native vegetation may require a clearing permit under Part V of the EP Act (Environmental Protection (Clearing of Native Vegetation) Regulations 2004)]. Please contact the Department of Environment and Conservation (DEC) for more information.

- (please tick) Yes **If yes**, complete the rest of this section.
 No **If no**, go to the next section

2.1.2 How much vegetation are you proposing to clear (in hectares)?

Fortescue proposes to clear up to approximately 7000 ha of vegetation for the mine and associated infrastructure, and 2000 ha for the railway spur and associated infrastructure.

2.1.3 Have you submitted an application to clear native vegetation to the DEC (unless you are exempt from such a requirement)?

- Yes No **If yes**, on what date and to which office was the application submitted of the DEC?

2.1.4 Are you aware of any recent flora surveys carried out over the area to be disturbed by this proposal?

Yes

No

If **yes**, please attach a copy of any related survey reports and provide the date and name of persons / companies involved in the survey(s).

If **no**, please do not arrange to have any biological surveys conducted prior to consulting with the DEC.

A Level 2 flora and vegetation survey was undertaken by Cardno for the Mine Project Area between 28 March and 27 July 2011 (Cardno 2012). This survey was conducted in accordance with the following EPA guidance and position statements:

- Environmental Protection Authority Guidance Statement 51 – *Terrestrial Flora and Vegetation Surveys for Environmental Impact Assessment in Western Australia* (EPA 2004a)
- Environmental Protection Authority Position Statement 3 – *Terrestrial Biological Surveys as an Element of Biodiversity Protection* (EPA 2002a)
- Environmental Protection Authority Position Statement 2 – *Environmental Protection of Native Vegetation in Western Australia* (EPA 2000a).

A copy of this survey report is attached in Appendix 1.

A Level 2 flora and vegetation survey was undertaken by Cardno for the Rail Project Area between 28 March and 27 July 2011 and additional areas in March 2012. Reporting for this survey is not yet available.

2.1.5 Has a search of DEC records for known occurrences of rare or priority flora or threatened ecological communities been conducted for the site?

Yes

No

If you are proposing to clear native vegetation for any part of your proposal, a search of DEC records of known occurrences of rare or priority flora and threatened ecological communities will be required. Please contact DEC for more information.

A desktop assessment of the Mine Project Area was conducted in April 2011 as part of the Level 2 flora and vegetation survey (Cardno 2012). The objectives of the desktop assessment were to identify flora and vegetation of conservation significance potentially occurring within the Mine Project Area, and provide insight into potential environmental constraints prior to undertaking field work.

The desktop study included database searches from:

- DEC's Declared Rare Flora (DRF) and Priority Flora Database
- Western Australian Herbarium Specimen Database for opportunistic priority flora

- DEC's Threatened Ecological Community (TEC) and Priority Ecological Community (PEC) database
- NatureMap website
- Commonwealth EPBC Act Protected Matters Database.

The desktop assessment identified 43 conservation significant species (1 DRF and 42 Priority species) that may potentially occur within the Mine Project Area (Cardno 2012). The conservation significant flora species identified in the desktop assessment are provided in Table 1 below.

Table 1: Threatened Flora Species which may occur within the Mine Project Area

Species Name	Conservation Status
<i>Lepidium catapycnon</i>	DRF and Vulnerable (EPBC Act)
<i>Brachyscome</i> sp. Wanna Munna Flats (S. van Leeuwen 4662)	P1
<i>Myriocephalus scalpellus</i>	P1
<i>Atriplex spinulosa</i>	P1
<i>Tecticornia</i> sp. Christmas Creek (K.A. Shepherd & T. Colmer et al. KS 1063)	P1
<i>Tecticornia</i> sp. Fortescue Marsh (K.A. Shepherd et al. KS 1055)	P1
<i>Acacia aphanoclada</i>	P1
<i>Acacia cyperophylla</i> var. <i>omearana</i>	P1
<i>Acacia</i> sp. Nullagine (B.R. Maslin 4955)	P1
<i>Brunonia</i> sp. Long hairs (D.E. Symon 2440)	P1
<i>Goodenia lyrata</i>	P1
<i>Goodenia</i> sp. East Pilbara (A.A. Mitchell PRP 727)	P1
<i>Peplidium</i> sp. Fortescue Marsh (S. van Leeuwen 4865)	P1
<i>Aristida jerichoensis</i> var. <i>subspinulifera</i>	P1
<i>Triodia triticoides</i>	P1
<i>Eremophila spongiocarpa</i>	P1
<i>Nicotiana heterantha</i>	P1
<i>Tribulus minutus</i>	P1
<i>Indigofera ixocarpa</i>	P2
<i>Aristida lazaridis</i>	P2
<i>Adiantum capillus-veneris</i>	P2
<i>Stylidium weeliwolli</i>	P2
<i>Rostellularia adscendens</i> var. <i>latifolia</i>	P3
<i>Amaranthus centralis</i>	P3
<i>Iotasperma sessilifolium</i>	P3
<i>Atriplex flabelliformis</i>	P3
<i>Tecticornia</i> sp. Roy Hill (H. Pringle 62)	P3
<i>Fimbristylis sieberiana</i>	P3
<i>Acacia effuse</i>	P3
<i>Acacia fecunda</i>	P3
<i>Acacia subtiliformis</i>	P3
<i>Glycine falcate</i>	P3
<i>Indigofera gilesii</i> subsp. <i>gilesii</i>	P3
<i>Tephrosia bidwillii</i>	P3
<i>Dampiera metallorum</i>	P3
<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	P3
<i>Themeda</i> sp. Hamersley Station (M.E. Trudgen 11431)	P3
<i>Eremophila magnifica</i> subsp. <i>velutina</i>	P3
<i>Nicotiana umbratica</i>	P3
<i>Acacia bromilowiana</i>	P4
<i>Rhynchosia bungarensis</i>	P4
<i>Goodenia nuda</i>	P4
<i>Eremophila youngii</i> subsp. <i>lepidota</i>	P4

Source: Adapted from Cardno (2012)

Two PECs were also identified within the vicinity of the Mine Project Area, including the Fortescue Marsh (Priority 1) and the Fortescue Valley Sand Dunes (Priority 3) (Cardno 2012). The Fortescue Marsh PEC is located approximately 25 km north of the Mine Project Area, however the Project is located within the Fortescue Marsh PEC buffer zone. The Fortescue Valley Sand Dunes buffer zone occurs in four locations within the Mine Project Area (refer to Figure 7 of Appendix 1).

A desktop assessment, incorporating searches of DEC databases has been undertaken for the Rail Project Area, and results will be reported in the Level 2 survey report, currently being compiled by Cardno. Preliminary results of the desktop assessment indicate that four PECs occur within the Rail Project Area:

- Fortescue Marsh (Marsh Land System) (Priority 1)
- Four Plant Assemblages of the Wona Land System (Priority 1, Priority 3)
- Freshwater Claypans of the Fortescue Valley (Priority 3)
- Fortescue Valley Sand Dunes (Priority 3).

The desktop assessment also identified two DRF species and 50 priority species with the potential to occur within the Rail Project Area.

2.1.6 Are there any known occurrences of rare or priority flora or threatened ecological communities on the site?

Yes

No

If yes, please indicate which species or communities are involved and provide copies of any correspondence with DEC regarding these matters.

The Level 2 flora and vegetation survey identified five Priority Flora species recorded within the Mine Project Area, comprising (Cardno 2012):

- *Calotis squamigera* (Priority 1)
- *Eremophila spongiorarpa* (Priority 1)
- *Vigna* sp. Central (M.E. Trudgen 1692) (Priority 2)
- *Eragrostis crateriformis* (S van Leeuwen 4246) (Priority 3)
- *Eremophila youngii* subsp. *lepidota* (Priority 4)
- *Goodenia nuda* (Priority 4).

No species listed as threatened under the *Wildlife Conservation Act 1950* or the EPBC Act were recorded within the Mine Project Area during the flora and vegetation survey (Cardno 2012).

No TECs were identified within the Mine Project Area during the surveys. Two PECs were recorded within the Mine Project Area survey.

The Fortescue Marsh (Marsh Land System) Priority 1 PEC, as delineated by the Marsh Land System, was identified as occurring approximately 7 km to the north of the most northern extent of the Mine Project Area (reinjection infrastructure zone). It is not proposed that the Project will result in any clearing within the Fortescue Marsh PEC for the Mine Project Area (Cardno 2012).

No instances of the Fortescue Valley Sand Dune PEC were identified within the Mine Project Area, however several instances of the associated vegetation community, SsTs shrubland community (*Stylobasium spathulatum* and *Acacia dictyophleba* sparse shrubland over *Triodia schnizii* and *Triodia basedowii* hummock grassland) (Cardno 2012), were identified within the Rail Project Area approximately 20 km north-west of the rail loop. At this stage of preliminary design, the Project does not propose any substantial clearing within the Fortescue Valley Sand Dune PEC (Cardno 2012).

The flora surveys conducted by Fortescue verified that the Weeli Wolli Spring community does not occur within the Mine Project Area and is located approximately 20 km to the south. All creek systems within the Mine Project Area were visited at numerous locations and no 'herb-rich' plant communities were observed as described for this PEC (Cardno 2012).

Survey results for the Rail Project Area are currently being compiled by Cardno and will be reported in the Level 2 survey report. Preliminary results indicate that there are occurrences of the Fortescue Marsh (Marsh Land System) PEC, Fortescue Valley Sand Dune PEC, and the Four Plant Assemblages of the Wona Land System PEC within the Rail Project Area. Preliminary results indicate that no DRF species were recorded, and eight species of Priority Flora were recorded within the Rail Project Area.

2.1.7 If located within the Perth Metropolitan Region, is the proposed development within or adjacent to a listed Bush Forever Site? (You will need to contact the Bush Forever Office, at the Department for Planning and Infrastructure)

Yes

No

If yes, please indicate which Bush Forever Site is affected (site number and name of site where appropriate).

2.1.8 What is the condition of the vegetation at the site?

The vegetation condition in the Mine Project Area was assessed as ranging from 'Excellent' to 'Good' within the Mine Project Area. Only two communities were categorised as 'Excellent' using the Vegetation Condition Scale of Trudgen (1991) including the ElGwTs1 and AaEftTe2. 'Very Poor' vegetation conditions were observed in many of the flowline communities and the major creekline community.

Pastoral activities and mineral exploration within the Mine Project Area has degraded the vegetation. Cattle grazing, particularly around Weeli Wolli Creek, has resulted in weed species such as *Cenchrus ciliaris* (Buffel Grass) being found within the flats and around creeklines (Cardno 2012).

¹ ElGwTs - *Eucalyptus leucophloia* subsp. *leucophloia* open woodland over *Grevillea wickhamii* subsp. *hispidula* and *Acacia bivenosa* sparse shrubland over *Triodia* sp. Shovelanna Hill (S. van Leeuwen 3835) and *Triodia epactia* hummock grassland.

² AaEftTe - *Acacia aneura*, *Acacia pruinoarpa* and *Acacia aptaneura* woodland over *Eremophila forrestii*, *Acacia ancistrocarpa* and *Acacia tetragonophylla* open shrubland over *Triodia epactia*, *Chrysopogon fallax* and *Solanum lasiophyllum* hummock grassland.

Ten introduced species were recorded in the Mine Project Area, none of which are listed as Declared Plants under the *Agriculture and Related Resources Protection Act 1976*.

A vegetation condition assessment for the Rail Project Area will be reported in the Level 2 survey report, currently being compiled by Cardno. Preliminary advice indicates that vegetation condition ranges from 'Excellent' to 'Completely Degraded'.

2.2 Fauna

2.2.1 Do you expect that any fauna or fauna habitat will be impacted by the proposal?

(please tick) Yes **If yes**, complete the rest of this section.

No **If no**, go to the next section.

2.2.2 Describe the nature and extent of the expected impact.

Construction and operation activities associated with the Project may potentially directly or indirectly impact fauna. Direct impacts may include the loss of fauna individuals during clearing. Fortescue proposes to clear approximately 9000 ha of vegetation as part of the Project (including both Mine and Rail Project Areas). Indirect impacts may potentially include:

- habitat loss and/or fragmentation
- altered groundwater levels and changes in surface water hydrology
- altered fire regimes
- an increased abundance of feral fauna
- alteration of vegetation composition and introduction of weed species resulting in altered feeding and breeding patterns
- impacts on habitat resulting from dust deposition
- disturbance due to noise, vibration and light
- human interaction resulting in injury, illness, death or dependence.

Invertebrate fauna may be impacted by vibration as a result of construction and operation of the Project and from changes in surface water flows that may affect vegetation condition and fauna habitat. Short Range Endemic (SRE) invertebrates may be restricted at small spatial scales, and lack the mobility of many vertebrate fauna, therefore impacts may result in the potential loss of individuals.

The Project may impact on stygofauna and troglafauna species through the loss of individuals or their habitat. The potential impact on subterranean fauna or subterranean fauna habitat relates to removal of habitat by excavation of the pit and mine dewatering.

2.2.3 Are you aware of any recent fauna surveys carried out over the area to be disturbed by this proposal?

Yes

No

If yes, please attach a copy of any related survey reports and provide the date and name of persons / companies involved in the survey(s).

If no, please do not arrange to have any biological surveys conducted prior to consulting with the DEC.

Vertebrate fauna, invertebrate fauna and subterranean fauna surveys have been conducted for the Project Area.

Vertebrate Fauna Surveys

A Level 2 vertebrate fauna survey for the Mine Project Area was conducted in two phases (Bamford Consulting Ecologists 2012). Phase 1 comprised a vertebrate fauna survey conducted in accordance with EPA Guidance Statement No. 56 (EPA 2004b) between 7 and 17 April 2011. Field sampling techniques for the survey included pitfall, Elliott and funnel traps, visual bird surveying, spotlighting, motion-sensitive cameras, and searching for evidence of conservation significant species and opportunistic observations. Five survey sites were established within different habitats occurring within the Mine Project Area to sample fauna (refer to Figure 3 of Appendix 2). The general characteristics of each sampling site are listed as follows:

- Site 1 – Shrubs and Spinifex on red longitudinal sand-dunes to the west of the Project Area
- Site 2 – Open creek woodland of Eucalyptus over Buffel grass on rocky brown loam bordering Weeli Wolli Creek
- Site 3 – Open low shrubland of mixed Acacia over Spinifex on rocky/gravelly lower slopes of hills
- Site 4 – Open low shrubland of mixed Acacia over Spinifex on red sandy loam plain
- Site 5 – Mulga over Buffel grass on red clayey-loam.

Phase 2 comprised a targeted vertebrate fauna survey to search for the conservation significant vertebrate fauna species, *Dasyurus hallucatus* (Northern Quoll), *Macrotis lagotis* (Bilby) and *Dasyercus cristicauda* (Mulgara). While potential habitat for these species was identified within the Mine Project Area, none of these species were recorded during the surveys. The targeted vertebrate fauna survey was undertaken between 18 June and 24 June 2011.

The methodology used for the surveys were undertaken in accordance with the following guidelines:

- *EPBC Act Policy Statement 3.25 (DSEWPaC 2011) Referral Guidelines for the Endangered Northern Quoll, Dasyurus hallucatus.*
- *EPA Guidance Statement No. 56 Terrestrial Fauna Surveys for Environmental Impact Assessment in Western Australia (EPA 2004b).*
- *EPA Position Statement No. 3: Terrestrial Biological Surveys as an Element of Biodiversity Protection (EPA 2002a).*

The field investigations identified 162 vertebrate fauna species within the Mine Project Area, including 52 reptile species, 86 bird species, 17 native mammal species, three introduced mammal species, two fish species and two amphibious species (Bamford Consulting Ecologists 2012).

A copy of the Mine Project Area fauna survey report is provided in Appendix 2.

A Level 1 fauna assessment of the Rail Project Area was undertaken by Ecoscape incorporating site reconnaissance surveys undertaken in June and October of 2011. Results of fauna surveys on the Rail Project Area are currently being compiled by Ecoscape. Preliminary outcomes are provided in this referral for information.

The main sampling techniques for the survey included bird searches (visual and auditory), trail cameras, Anabat recording, hand searching (leaf litter, rock pile and log searches) and identification of scats, bones, tracks, diggings and burrows.

The methodology used for the surveys were undertaken in accordance with the following guidelines:

- *EPA Guidance Statement No. 56 Terrestrial Fauna Surveys for Environmental Impact Assessment in Western Australia* (EPA 2004b).
- *Technical Guide – Terrestrial Vertebrate Surveys for Environmental Impact Assessment EPA* (EPA & DEC 2010).

The investigations identified:

- three major habitat types, corresponding to creeklines/drainage lines; Spinifex grassland on hilltops and low slopes; and the Fortescue River valley floor
- habitat was in good condition throughout the study area
- a total of 65 vertebrate species recorded (8 mammals, 5 reptiles, 2 fish and 50 birds), of which two were Priority listed (P4) by DEC, and two Migratory listed under the EPBC Act
- significant species that may be present and could be impacted by the proposed activity include Pilbara Olive Python (*Liasis olivaceus barroni*, VU), Australian Bustard (*Ardeotis australis*, P4), Bush Stone-curlew (*Burhinus grallarius*, P4), Rainbow Bee-eater (*Merops ornatus*, Migratory), Western Pebble-mound Mouse (*Pseudomys chapmani*, P4), and Eastern Great Egret (*Ardea alba*, Migratory).

SRE Invertebrate Fauna Surveys

A targeted short range endemic (SRE) invertebrate fauna survey of the Mine Project Area was conducted between April and August 2011. A separate SRE survey was undertaken for the Rail Project area, with surveys conducted between July 2011 and August 2011. Several sampling methodologies were employed for the surveys based on the principles outlined in the *EPA Guidance Statement No. 20 Sampling of Short Range Endemic Invertebrate Fauna for Environmental Impact Assessment in Western Australia* (EPA 2009).

Prior to the commencement of the surveys, the DEC was consulted with regards to the sampling methodology and the use of wet pitfall traps for SRE surveys. The DEC approved the methodology proposed for the survey (Dalcon Environmental 2012a; 2012b). The survey used

several foraging methodologies intended to target SRE taxa and also included the use of wet pitfall traps.

The objectives of the surveys were to identify whether any SRE invertebrate fauna occur within the Mine and Rail Project Areas. If present, the assessment will determine the potential impacts of the Project on SRE fauna. Taxonomic identifications of species collected are currently being finalised.

Subterranean Fauna Surveys

A troglofauna survey of the Mine Project Area was undertaken between May and July 2011. The sampling was undertaken in accordance with EPA Guidance Statements 54 and 54A (EPA 2003a; 2007a), with the exception that scrape sampling, as well as trapping, was used for sampling troglofauna in impact areas. A total of 70 impact and 51 reference samples were collected. The sampling identified 15 species within the Mine Project Area. Four troglofauna species of 12 Orders are currently known only within the preliminary zone of drawdown impacts however, it is unlikely that all four species are restricted to this area. Data suggests that troglofauna habitat within and outside of the proposed mine pits is similar (Bennelongia Environmental Consultants 2011a).

Some initial stygofauna sampling was undertaken in March and July 2005 and July 2006. Sampling for the current stygofauna survey was undertaken in May 2011. Both sampling programmes were conducted in accordance with EPA Guidance Statements 54 and 54A (EPA 2003a; 2007a). A total of 74 impact and 19 reference sites were sampled. The survey identified 22 species of nine Classes/Orders (Bennelongia Environmental Consultants 2011a).

A desktop assessment of subterranean fauna has been undertaken for the Rail Project area (Bennelongia Environmental Consultants 2011b).

2.2.4 Has a search of DEC records for known occurrences of Specially Protected (threatened) fauna been conducted for the site?

Yes No (please tick)

A DEC database search and EPBC Protected Matters Search of potentially occurring conservation significant fauna species was undertaken for the Mine Project Area prior to commencing fieldwork as part of the Level 2 vertebrate fauna survey. These results are presented in Table 2 below. The database searches identified 28 conservation significant species with the potential to occur within the Mine Project Area, comprising:

- 18 bird species;
- 8 mammal species; and
- 2 reptile species.

Table 2: Conservation Significant Fauna Species Expected to Occur in the Mine Project Area

Species	Commonwealth (EPBC Act³)	State (<i>Wildlife Conservation Act 1950</i>⁴ and DEC Priority⁵)
Mammals		
Northern Quoll <i>Dasyurus hallucatus</i>	Endangered	Schedule 3
Crest-tailed Mulgara <i>Dasyercus cristicauda</i>	Vulnerable	Schedule 1
Bilby <i>Macrotis lagotis</i>	Vulnerable	Schedule 1
Pilbara Leaf-nosed Bat <i>Rhinionictis aurantius</i>	Vulnerable	-
Western Pebble-mound Mouse <i>Pseudomys chapmani</i>	-	Priority 4
Lakeland Downs Mouse <i>Leggadina lakedownensis</i>	-	Priority 4
Long-tailed Dunnart <i>Sminthopsis longicaudata</i>	-	Priority 4
Ghost Bat <i>Macroderma gigas</i>	-	Priority 4
Reptiles		
Pilbara Olive Python <i>Liasis olivaceus barroni</i>	Vulnerable	Schedule 1
Blind Snake <i>Ramphotyphlops ganei</i>	-	Priority 1
Birds		
Night Parrot <i>Pezoporus occidentalis</i>	Endangered	Schedule 1
Fork-tailed Swift <i>Apus pacificus</i>	Migratory	Schedule 3
Rainbow Bee-eater <i>Merops ornatus</i>	Migratory	Schedule 3
White-bellied Sea-Eagle <i>Haliaeetus leucogaster</i>	Marine and Migratory	-
Oriental Plover <i>Charadrius veredus</i>	Migratory wetland species	-
Common Sandpiper <i>Actitis hypoleucos</i>	Migratory	-
Cattle Egret <i>Ardea ibis</i>	Migratory terrestrial, migratory wetland and migratory marine species	-
Eastern Osprey <i>Pandion cristatus</i>	Migratory and Marine	-
Marsh Sandpiper <i>Tringa stagnatilis</i>	Migratory	-
Red-necked Stint <i>Calidris ruficollis</i>	Migratory	-
Oriental Pratincole <i>Glareola maldivarum</i>	Migratory	-
Peregrine Falcon <i>Falco peregrinus</i>	-	Schedule 4

³ EPBC Act 1999

Endangered: Taxa facing a very high risk of extinction in the wild in the near future.

Vulnerable: Taxa facing a high risk of extinction in the wild in the medium-term future.

⁴ WA Wildlife Conservation Act 1950

Schedule 1: Rare and Likely to become Extinct.

Schedule 3: Migratory species listed under international treaties.

Schedule 4: Other Specially Protected Fauna.

⁵ DEC Priority

Priority 1: Taxa with few, poorly known populations on threatened lands.

Priority 4: Taxa in need of monitoring. Taxa which are considered to have been adequately surveyed, or for which sufficient knowledge is available, and which are considered not currently threatened or in need of special protection, but could be if present circumstances change.

Species	Commonwealth (EPBC Act ³)	State (<i>Wildlife Conservation Act 1950</i> ⁴ and DEC Priority ⁵)
Eastern Great Egret <i>Ardea modesta</i>	Migratory and Marine	-
Common Greenshank <i>Tringa nebularia</i>	-	Schedule 4
Australian Bustard <i>Ardeotis australis</i>	-	Priority 4
Bush Stone-curlew <i>Burhinus grallarius</i>	-	Priority 4
Grey Falcon <i>Falco hypoleucos</i>	-	Priority 4
Star Finch <i>Neochmia ruficauda subclarescens</i>	-	Priority 4

A DEC database search and EPBC Protected Matters Search of conservation significant fauna species was undertaken for the Rail Project Area prior to commencing fieldwork as part of the Level 1 fauna survey. These results are presented in Table 3 below. The database searches identified 10 species listed as threatened under the EPBC Act and WC Act, 11 Priority species as listed by the DEC, and 6 migratory species potentially occurring within or in the vicinity of the Rail Project Area.

Table 3: Conservation Significant Fauna Species Expected to Occur in the Rail Project Area

Species	Commonwealth (EPBC Act)	State (<i>Wildlife Conservation Act 1950</i> and DEC Priority)
Mammals		
Brush-tailed Mulgara <i>Dasyercus blythi</i>	-	Priority 4
Crest-tailed Mulgara <i>Dasyercus cristicauda</i>	Vulnerable	Schedule 1
Northern Quoll <i>Dasyurus hallucatus</i>	Endangered	Schedule 3
Lakeland Downs Mouse <i>Leggadina lakedownensis</i>	-	Priority 4
Greater Bilby <i>Macrotis lagotis</i>	Vulnerable	Schedule 1
Black-footed Rock Wallaby <i>Petrogale lateralis lateralis</i>	Vulnerable	Schedule 1
Western Pebble-mound Mouse <i>Pseudomys chapmani</i>	-	Priority 4
Long-tailed Dunnart <i>Sminthopsis longicaudata</i>	-	Priority 4
Ghost Bat <i>Macroderma gigas</i>	-	Priority 4
Pilbara Leaf-nosed Bat <i>Rhinonictoris aurantius</i>	Vulnerable	-
Reptiles		
- <i>Ctenotus uber johnstonei</i>	-	Priority 2
Pilbara Olive Python <i>Liasis olivaceus barroni</i>	Vulnerable	Schedule 1
Blind Snake <i>Ramphotyphlops ganei</i>	-	Priority 1
Fish		
Fortescue Grunter <i>Leiopotherapon aheneus</i>	-	Priority 4
Birds		
Night Parrot <i>Pezoporus occidentalis</i>	Endangered	Schedule 1
Australian Bustard <i>Ardeotis australis</i>	-	Priority 4

Species	Commonwealth (EPBC Act)	State (<i>Wildlife Conservation Act 1950</i> and DEC Priority)
Bush Stone-curlew <i>Burhinus grallarius</i>	-	Priority 4
Grey Falcon <i>Falco hypoleucos</i>	-	Priority 4
Migratory Species		
Fork-tailed Swift <i>Apus pacificus</i>	Migratory	Schedule 3
Eastern Great Egret <i>Ardea modesta</i>	Migratory and Marine	-
Cattle Egret <i>Ardea ibis</i>	Migratory terrestrial, migratory wetland and migratory marine species	-
Rainbow Bee-eater <i>Merops ornatus</i>	Migratory	Schedule 3
Peregrine Falcon <i>Falco peregrinus</i>	-	Schedule 4
Oriental Plover <i>Charadrius veredus</i>	Migratory wetland species	-

2.2.5 Are there any known occurrences of Specially Protected (threatened) fauna on the site?

Yes

No

If **yes**, please indicate which species or communities are involved and provide copies of any correspondence with DEC regarding these matters.

Bamford Consulting Ecologists (2012) recorded evidence of six conservation significant fauna species during the Mine Project Area vertebrate fauna surveys, including:

- Western Pebble-mound Mouse (Priority 4; expected resident, inactive mounds recorded during fauna survey).
- Australian Bustard (Priority 4; expected resident in Project Area, tracks and remains recorded during fauna survey).
- Rainbow Bee-eater (Migratory; regular migrant to Project Area, recorded regularly during fauna survey).
- Fork-tailed Swift (Migratory; irregular visitor to the Project Area, a small flock observed during fauna survey).
- Peregrine Falcon (Schedule 4; one pair recorded during fauna survey).
- Eastern Great Egret (Migratory and Marine; recorded during fauna survey).

Northern Quoll (*Dasyurus hallucatus*) habitat was identified along the foot of the Hamersley Ranges at the extreme southern edge of the Mine Project Area and targeted searches for this species was conducted during the Phase 2 survey. The survey did not detect any evidence of the species occurring within the Mine Project Area, and there are few confirmed records of the Northern Quoll in the Hamersley Ranges south of the Fortescue Marsh (Bamford Environmental Consultants 2012).

Neither Bilby nor Mulgara were recorded during the targeted vertebrate fauna surveys of the Mine Project Area, although the broad habitat type considered suitable for Mulgara (mature spinifex

grasslands on sandy substrates across the arid zone of Western Australia) does occur within the Mine Project Area.

Preliminary results from the Rail Project Area fauna surveys indicate that the following conservation significant fauna species were recorded from within the Rail Project Area:

- Western Pebble-mound Mouse (Priority 4)
- Australian Bustard (Priority 4)
- Rainbow Bee-eater (Migratory)
- Eastern Great Egret (Migratory and Marine).

Several conservation significant species which were not recorded during the Level 1 survey could potentially occur within the Rail Project Area:

- Northern Quoll (Endangered, Schedule 3; likely an occasional visitor)
- Crest-tailed Mulgara (Vulnerable, Schedule 1; suitable habitat present, likely inhabitant)
- Greater Bilby (Vulnerable, Schedule 1; suitable habitat present, likely inhabitant)
- Bush Stone-curlew (Priority 4; may occur in grasslands and waterholes within the Rail Project Area)
- Ghost Bat (Priority 4; unlikely to roost within the Rail Project Area, though some suitable foraging habitat is present)
- Grey Falcon (Priority 4; suitable habitat present, likely inhabitant)
- Pilbara Leaf-nosed Bat (Vulnerable; unlikely to roost within the Rail Project Area, though some suitable foraging habitat is present)
- Pilbara Olive Python (Vulnerable, Schedule 1; may occur near waterholes within the Rail Project Area)

2.3 Rivers, Creeks, Wetlands and Estuaries

2.3.1 Will the development occur within 200 metres of a river, creek, wetland or estuary?

(please tick) Yes **If yes**, complete the rest of this section.

No **If no**, go to the next section.

2.3.2 Will the development result in the clearing of vegetation within the 200 metre zone?

Yes No **If yes**, please describe the extent of the expected impact.

The Project will result in disturbance of vegetation located within 200 m of the Weeli Wolli Creek (Figure 2). Riparian vegetation within the Mine Project Area, particularly around Weeli Wolli Creek, has been degraded by cattle grazing. The weed species *Cenchrus ciliaris* (Buffel Grass) was recorded around creeklines during the flora and vegetation surveys.

The proposed Rail Spur crosses the Fortescue River, adjacent to the crossing of the existing BHP Railway. The proposed Rail Spur is also likely to intersect several ephemeral drainage lines and minor creeklines.

The impact of disturbing riparian vegetation within the Mine and Rail Project Areas will be assessed as part of the environmental assessment of the Project.

2.3.3 Will the development result in the filling or excavation of a river, creek, wetland or estuary?

Yes

No

If yes, please describe the extent of the expected impact.

The CID ore extends beneath watercourses and drainage lines within the Mine Project Area. These watercourses may require diversion around the areas of disturbance. The objective during design of the surface water diversion will be to maintain downstream stream flow at a similar surface water quantity and quality to baseline conditions.

The impact of diverting watercourses within the Project Area will be assessed as part of the environmental assessment of the Project.

2.3.4 Will the development result in the impoundment of a river, creek, wetland or estuary?

Yes

No

If yes, please describe the extent of the expected impact.

Surface water management structures may result in partial impoundment of the Weeli Wolli Creek during peak flood events to protect the mine pit from flooding. Preliminary design of surface water management structures is currently underway and the extent of impoundment will be assessed once these structures have been designed.

The Rail Spur is also likely to result in impoundment of ephemeral drainage lines during flow events. Engineering design is currently underway and includes consideration of surface water flows.

2.3.5 Will the development result in draining to a river, creek, wetland or estuary?

Yes

No

If yes, please describe the extent of the expected impact.

2.3.6 Are you aware if the proposal will impact on a river, creek, wetland or estuary (or its buffer) within one of the following categories? (please tick)

Conservation Category Wetland	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Unsure*
Environmental Protection (South West Agricultural Zone Wetlands) Policy 1998	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> Unsure
Perth's Bush Forever site	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> Unsure
Environmental Protection (Swan & Canning Rivers) Policy 1998	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> Unsure
The management area as defined in s4(1) of the <i>Swan River Trust Act 1988</i>	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> Unsure
Which is subject to an international agreement, because of the importance of the wetland for waterbirds and waterbird habitats (e.g. Ramsar, JAMBA, CAMBA)	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> Unsure

* The Fortescue Marsh is listed as a 'Nationally Important Wetland'. The proposed rail corridor intersects the Marsh at the narrowest point, adjacent to the existing BHP railway crossing. Studies are currently underway to determine whether the mine dewatering and re-injection will have the potential to indirectly impact the Fortescue Marsh.

2.4 Significant Areas and/ or Land Features

2.4.1 Is the proposed development located within or adjacent to an existing or proposed National Park or Nature Reserve?

Yes No **If yes, please provide details.**

2.4.2 Are you aware of any Environmentally Sensitive Areas (as declared by the Minister under section 51B of the EP Act) that will be impacted by the proposed development?

Yes No **If yes, please provide details.**

The Fortescue Marsh is located to the north of the Mine Project Area, and the Project is located within the administrative buffer zone of the Fortescue Marsh (Marsh Land System) PEC. The northern-most extent of the Mine Project Area (the reinjection zone), is located approximately 7km south of the area delineated by the Marsh Land System. The proposed Rail Spur intersects the Marsh Land System near its western extent, adjacent to the existing BHP Railway crossing.

Mining activities are considered unlikely to have a direct impact on the Fortescue Marsh, however there is potential for indirect impact on the Fortescue Marsh through lowering of the groundwater table from mine dewatering or mounding from re-injection. Fortescue is currently undertaking hydrogeological studies to assess the potential impacts of groundwater drawdown as a result of the Project. In the event there is an indirect impact on the Fortescue March as a result of mine dewatering, Fortescue would propose to reinject excess extracted water into underlying groundwater aquifers to mitigate this impact, in a manner consistent with Fortescue's existing operations at Christmas Creek and Cloudbreak.

2.4.3 Are you aware of any significant natural land features (e.g. caves, ranges etc) that will be impacted by the proposed development?

Yes No **If yes**, please provide details.

2.5 Coastal Zone Areas (Coastal Dunes and Beaches)

2.5.1 Will the development occur within 300metres of a coastal area?

(please tick) Yes **If yes**, complete the rest of this section.
 No **If no**, go to the next section.

2.5.2 What is the expected setback of the development from the high tide level and from the primary dune?

2.5.3 Will the development impact on coastal areas with significant landforms including beach ridge plain, cusped headland, coastal dunes or karst?

Yes No **If yes**, please describe the extent of the expected impact.

2.5.4 Is the development likely to impact on mangroves?

Yes No **If yes**, please describe the extent of the expected impact.

2.6 Marine Areas and Biota

2.6.1 Is the development likely to impact on an area of sensitive benthic communities, such as seagrasses, coral reefs or mangroves?

Yes No **If yes**, please describe the extent of the expected impact.

2.6.2 Is the development likely to impact on marine conservation reserves or areas recommended for reservation (as described in *A Representative Marine Reserve System for Western Australia*, CALM, 1994)?

Yes No **If yes**, please describe the extent of the expected impact.

2.6.3 Is the development likely to impact on marine areas used extensively for recreation or for commercial fishing activities?

Yes No **If yes**, please describe the extent of the expected impact, and provide any written advice from relevant agencies (e.g. Fisheries WA).

2.7 Water Supply and Drainage Catchments

2.7.1 Are you in a proclaimed or proposed groundwater or surface water protection area?

(You may need to contact the Department of Water (DoW) for more information on the requirements for your location, including the requirement for licences for water abstraction. Also, refer to the DoW website)

Yes No **If yes**, please describe what category of area.

2.7.2 Are you in an existing or proposed Underground Water Supply and Pollution Control area?

(You may need to contact the DoW for more information on the requirements for your location, including the requirement for licences for water abstraction. Also, refer to the DoW website)

Yes No **If yes**, please describe what category of area.

2.7.3 Are you in a Public Drinking Water Supply Area (PDWSA)?

(You may need to contact the DoW for more information or refer to the DoW website. A proposal to clear vegetation within a PDWSA requires approval from DoW.)

Yes No **If yes**, please describe what category of area.

2.7.4 Is there sufficient water available for the proposal?

(Please consult with the DoW as to whether approvals are required to source water as you propose. Where necessary, please provide a letter of intent from the DoW)

Yes No (please tick)

Preliminary assessment indicates that there will be significantly more water available from mine dewatering than water demand for construction or operations. Mine dewatering will be used preferentially in the Ore Processing Facility and for dust suppression. Additional water supply for the Project, if required, is proposed to be abstracted from groundwater via a production borefield. Potable water is proposed to be sourced from treated raw extracted water, via a reverse osmosis plant (or similar).

Fortescue is currently undertaking a hydrogeological assessment as part of the environmental assessment of the Project to identify the risks and impacts of the Project on groundwater quantity and quality, and to quantify the baseline hydrogeological characteristics of the Project area.

Preliminary investigations indicate that there are five aquifers located within the Mine Project Area from which groundwater is likely to be sourced:

- an alluvial aquifer;
- a shallow detrital aquifer (limited);
- a CID aquifer associated with the palaeochannel(s) of Weeli Wolli Creek;
- a mineralised bedrock aquifer that exists within the Brockman Iron Formation and occurs in 'pods' (and which may be in contact with the CID aquifer); and
- a fractured rock aquifer in the unmineralised Brockman Iron Formation.

Fortescue is seeking licences to Construct Boreholes (26D licence) and to Take Groundwater (5C licence) from the DoW under the RIWI Act. These licence applications will be submitted to DoW for construction of groundwater bores and for the abstraction of groundwater for the proposed operations.

Construction and operational water supply along the proposed railway will be met by groundwater abstraction via a series of production borefields. This abstraction will be undertaken subject to appropriate licencing under the RIWI Act.

2.7.5 Will the proposal require drainage of the land?

Yes

No

If yes, how is the site to be drained and will the drainage be connected to an existing Local Authority or Water Corporation drainage system? Please provide details.

2.7.6 Is there a water requirement for the construction and/ or operation of this proposal?

(please tick)

Yes

If yes, complete the rest of this section.

No

If no, go to the next section.

2.7.7 What is the water requirement for the construction and operation of this proposal, in kilolitres per year?

The estimated water requirement for the construction of the Mine is expected to be between 2,000,000 and 5,000,000 kilolitres (kL) per annum. Water usage at the Mine during the operation of the Project is expected to be up to approximately 10,000,000 kL per annum.

The estimated total water requirement for construction of the Rail is expected to be approximately 1,600,000 kL over the total duration of construction activities.

2.7.8 What is the proposed source of water for the proposal? (e.g. dam, bore, surface water etc.)

Water supply for the construction phase and operation of the OPF and for dust suppression will utilise excess mine dewatering (from aquifers located within the Mine Project Area). If required, additional water supply for the Project will be abstracted from groundwater via a production

borefield. Potable water may be sourced from treated raw mine extracted water or dedicated potable water bores, via a reverse osmosis plant (or similar).

Fortescue is currently undertaking a hydrogeological assessment as part of the environmental assessment of the Project to identify the risks and impacts of the Project on groundwater quantity and quality, and to quantify the baseline hydrogeological characteristics of the Project.

Fortescue will undertake bore construction and groundwater abstraction activities in accordance with the RIWI Act.

2.8 Pollution

2.8.1 Is there likely to be any discharge of pollutants from this development, such as noise, vibration, gaseous emissions, dust, liquid effluent, solid waste or other pollutants?

(please tick) Yes **If yes**, complete the rest of this section.
 No **If no**, go to the next section.

2.8.2 Is the proposal a prescribed premise, under the Environmental Protection Regulations 1987?

(Refer to the EPA's *General Guide for Referral of Proposals to the EPA under section 38(1) of the EP Act 1986* for more information)

Yes No **If yes**, please describe what category of prescribed premise.

A Works Approval to construct, and Licence to operate the Project under Part V of the EP Act will be required for:

- Ore Processing and TSF (Category 5).
- Mine Dewatering and Re-injection (Category 6).
- Mobile Crusing and Screening (Category 12).
- Electricity Generation (Category 52/84).
- Site Sewage Facility (Category 54/85).
- Putrescible Landfill (Category 89).

A prescribed premises boundary will be defined within the Part V Works Approval and Licence applications.

2.8.3 Will the proposal result in gaseous emissions to air?

Yes No **If yes**, please briefly describe.

Greenhouse gas emissions will be the only significant gaseous emissions generated as a result of construction and operation of the Project. The majority of greenhouse gas emissions would be associated with power generation for the Project, including operation of the OPF, trains, vehicles and associated mining machinery. Greenhouse gases are discussed in Section 2.9.

2.8.4 Have you done any modelling or analysis to demonstrate that air quality standards will be met, including consideration of cumulative impacts from other emission sources?

Yes No **If yes**, please briefly describe.

Dust will be generated from the construction and operation of the Project in areas that will be cleared of vegetation. Dust may also be associated with vehicle movements, stockpiles and crushing and screening operations.

No modelling or analysis has as yet been undertaken for the Project. An air quality assessment will be undertaken by Fortescue for the Project, as required, during the environmental assessment of the Project.

2.8.5 Will the proposal result in liquid effluent discharge?

Yes No **If yes**, please briefly describe the nature, concentrations and receiving environment.

The Project is likely to result in:

- the storage and transport of tailings decant water
- disposal of treated sewage effluent
- treated hydrocarbon wastes from maintenance facilities
- re-injection of excess groundwater produced through mine dewatering.

Tailings generated from the Project will be stored in a TSF within the Mine Project Area. Decant return water from the TSF is proposed to be returned to the OPF for re-use. This water will not be discharged to the environment and controls will be put in place to manage the risk and consequences of any spillage or leakage.

All sewage and wastewater generated as a result of the Project will be treated in wastewater treatment plants in accordance with the Environmental Protection (Controlled Waste) Regulations 2004 (EPA 2004c).

The characteristics of the tailings and sewage effluent and design of the disposal structures for these discharges will be determined as the Project progresses.

Hazardous materials and wastes (hydrocarbons) generated from servicing of machinery and equipment will be collected and stored on-site in a segregated banded hazardous waste area. These will be removed off-site by licensed contractors for recycling or disposal to an approved waste disposal facility.

Excess groundwater produced as part of mine dewatering activities is likely to be managed through re-injection into the aquifer downstream of the mine.

2.8.6 If there is likely to be discharges to a watercourse or marine environment, has any analysis been done to demonstrate that the State Water Quality Management Strategy or other appropriate standards will be able to be met?

Yes No **If yes**, please describe.

2.8.7 Will the proposal produce or result in solid wastes?

Yes No **If yes**, please briefly describe the nature, concentrations and disposal location/ method.

The Project will result in the production of solid waste including:

- construction wastes
- overburden (mine waste)
- tailings
- putrescible waste associated with the accommodation village and administrative buildings.

Fortescue will employ the principles of reduce, reuse and recycle for the management of construction, general and putrescible waste generated as a result of the Project. The Project will have an on-site landfill for general domestic and putrescible waste generated from the accommodation village and administration buildings. The on-site landfill will be managed in accordance with the Environmental Protection (Controlled Waste) Regulations 2004 (EPA 2004c).

Overburden and mine waste will be generated over the life of the Project. Fortescue is commencing mine planning and scheduling to determine the volume, characteristics and location for placement of mine waste and overburden. Due to the nature of the mine plan, opportunities for backfill of waste into depleted mine voids will be restricted. The majority of overburden and waste rock will therefore be stored in waste rock landforms within the Mine Project Area.

Fortescue is currently undertaking a waste geochemistry assessment. A high level assessment, incorporating sulphur assays, has been completed. Results from this high level assessment indicate that the majority of the waste material has a low risk of being classified as 'potentially acid forming'. Detailed metallurgical testwork for acid metalliferous drainage characterisation (including both static and kinetic testing) is currently underway. No asbestos has been detected in any samples analysed to date.

2.8.8 Will the proposal result in significant off-site noise emissions?

Yes No **If yes**, please briefly describe.

2.8.9 Will the development be subject to the Environmental Protection (Noise) Regulations 1997?

Yes No **If yes**, has any analysis been carried out to demonstrate that the proposal will comply with the Regulations?

Please attach the analysis.

The Project is located in a remote area, adjacent to existing and proposed iron ore mines. Noise will be generated from the operation of vehicles, plant and equipment. Noise will also be created by blasting in the mine pit. A noise assessment for the Project will be undertaken during the environmental assessment of the Project.

2.8.10 Does the proposal have the potential to generate off-site, air quality impacts, dust, odour or another pollutant that may affect the amenity of residents and other "sensitive premises" such as schools and hospitals (proposals in this category may include intensive agriculture, aquaculture, marinas, mines and quarries etc.)?

Yes No **If yes**, please describe and provide the distance to residences and other "sensitive premises".

2.8.11 If the proposal has a residential component or involves "sensitive premises", is it located near a land use that may discharge a pollutant?

Yes No Not Applicable

If yes, please describe and provide the distance to the potential pollution source

Accommodation villages and construction camps will accommodate personnel during the construction and operation of the Project. The accommodation villages will be located at an appropriate distance from the mine operations and landfill to minimise any potential noise or pollution impacts on personnel.

Temporary construction camps will be required for construction of the rail spur, at locations to be determined along the proposed railway line.

2.9 Greenhouse Gas Emissions

2.9.1 Is this proposal likely to result in substantial greenhouse gas emissions (greater than 100 000 tonnes per annum of carbon dioxide equivalent emissions)?

Yes

No

If yes, please provide an estimate of the annual gross emissions in absolute and in carbon dioxide equivalent figures.

Greenhouse gas emissions will occur as a result of operating vehicles and machinery, ore processing and power generation. The greenhouse gas emissions for the Project are estimated to be approximately 15 Mt per annum (carbon dioxide equivalent emissions). This estimate has been derived from other Fortescue mining operations and is indicative only of the expected greenhouse gas emissions for this Project. Greenhouse gas emissions will be assessed during the environmental assessment of the Project.

2.9.2 Further, if yes, please describe proposed measures to minimise emissions, and any sink enhancement actions proposed to offset emissions.

Fortescue will minimise greenhouse gas emissions as far as practicable and will comply with all relevant inventory and reporting regulations. Energy efficient technology and improvements in process energy efficiency will be incorporated into Project design where practicable. For example, the use of rail to transport ore to the port is more energy efficient than road transport. Greenhouse gas emissions will be considered in the selection of equipment for the power station.

During the construction and operation of the Project Fortescue will minimise vegetation cleared to safely implement the Project. Fortescue will ensure that areas disturbed are rehabilitated progressively throughout the mine life, where practicable. Greenhouse gas emissions will be monitored on site to reduce emissions and improve energy efficiency.

2.10 Contamination

2.10.1 Has the property on which the proposal is to be located been used in the past for activities which may have caused soil or groundwater contamination?

Yes

No

Unsure

If yes, please describe.

2.10.2 Has any assessment been done for soil or groundwater contamination on the site?

Yes

No

If yes, please describe.

2.10.3 Has the site been registered as a contaminated site under the *Contaminated Sites Act 2003*? (on finalisation of the CS Regulations and proclamation of the CS Act)

Yes

No

If yes, please describe.

2.11 Social Surroundings

2.11.1 Is the proposal on a property which contains or is near a site of Aboriginal ethnographic or archaeological significance that may be disturbed?

Yes No Unsure **If yes**, please describe.

Aboriginal heritage surveys are currently being undertaken for the Project Area and Fortescue will comply with the requirements of the *Aboriginal Heritage Act 1972*.

2.11.2 Is the proposal on a property which contains or is near a site of high public interest (e.g. a major recreation area or natural scenic feature)?

Yes No **If yes**, please describe.

2.11.3 Will the proposal result in or require substantial transport of goods, which may affect the amenity of the local area?

Yes No **If yes**, please describe.

The Project will involve the transport of iron ore from the Mine Project Area, along the proposed Rail Spur, to Fortescue's existing railway and port operations.

3. PROPOSED MANAGEMENT

3.1 Principles of Environmental Protection

3.1.1 Have you considered how your project gives attention to the following Principles, as set out in section 4A of the EP Act? (For information on the Principles of Environmental Protection, please see EPA Position Statement No. 7, available on the EPA website)

1. The precautionary principle. Yes No

Technical and biological surveys and investigations have been used to assess preliminary potential impacts and management for this referral. An environmental risk assessment for the Project will be undertaken following the completion of all of the detailed baseline and technical studies. Technical studies and models will adopt realistic assumptions and where knowledge is limited will consider conservative assumptions to address "worst case scenarios" as part of their scopes where appropriate. Key risks and specific mitigation/management measures will be identified during the risk assessment for inclusion in the environmental impact assessment document.

2. The principle of intergenerational equity. Yes No

The Project will be managed so that the health, diversity and productivity of the environment is maintained and/or enhanced for the benefit of future generations. In addition, a rehabilitation programme utilising the knowledge gained from Fortescue's rehabilitation experience at its existing operations will be implemented. Fortescue will include mine closure planning over the life of the Project.

3. The principle of the conservation of biological diversity and ecological integrity. Yes No

A range of biological studies have been undertaken or planned for the Project and a preliminary impact assessment has commenced. Studies that have commenced include a Level 2 flora and vegetation, a Level 2 vertebrate fauna survey, a subterranean fauna survey and a short-range endemic invertebrate fauna survey. The results of these studies will be used to develop mitigation and management measures to minimise impacts to the biological diversity of the area.

4. Principles relating to improved valuation, pricing and incentive mechanisms. Yes No

Objectives for each of the relevant environmental factors for the Project will be established and addressed during the environmental impact assessment process.

5. The principle of waste minimisation. Yes No

Fortescue will integrate a waste hierarchy (i.e. avoid, reuse, reduce, recycle, treat, dispose) for waste minimisation related to the Project.

Each of the Principles have been considered at this stage of the Project and will be addressed in detail in the environmental impact assessment for the Project.

3.1.2 Is the proposal consistent with the EPA's Environmental Protection Bulletins/Position Statements and Environmental Assessment Guidelines/Guidance Statements (available on the EPA website)?

Yes No

The following EPA position and guidance statements are relevant to this Project and have been considered in this referral document and/or will be considered in further detail during the environmental assessment of the Project:

- EPA Position Statement No. 2 – Environmental Protection of Native Vegetation in Western Australia (EPA 2000a).
- EPA Position Statement No. 3 – Terrestrial Biological Surveys as an Element of Biodiversity Protection (EPA 2002a).
- EPA Position Statement No. 4 – Environmental Protection of Wetlands (EPA 2004d).
- EPA Position Statement No. 5 – Environmental Protection and Ecological Sustainability of the Rangelands in Western Australia (EPA 2004e).
- EPA Position Statement No. 7 – Principles of Environmental Protection (EPA 2004f).
- EPA Position Statement No. 8 – Environmental Protection in Natural Resource Management (EPA 2005).
- EPA Position Statement No. 9 – Environmental Offsets (EPA 2006).
- EPA Draft Guidance Statement No. 8 – Environmental Noise (EPA 2007b).
- EPA Guidance Statement No. 12 – Minimising Greenhouse Gas Emissions (EPA 2002b).
- EPA Guidance Statement No. 18 – Prevention of Air Quality Impacts from Land Development Sites (EPA 2000b).
- EPA Guidance Statement No. 19 – Environmental Offsets – Biodiversity (EPA 2008a).
- EPA Guidance Statement No. 20 – Sampling of Short Range Endemic Invertebrate Fauna for Environmental Impact Assessment in Western Australia (EPA 2009).
- EPA Guidance Statement No. 33 – Environmental Guidance for Planning and Development (EPA 2008b).
- EPA Guidance Statement No. 41 – Assessment of Aboriginal Heritage (EPA 2004g).
- EPA Guidance Statement No. 51 – Terrestrial Flora and Vegetation Surveys for Environmental Impact Assessment in Western Australia (EPA 2004a).
- EPA Guidance Statement No. 54 – Consideration of Subterranean Fauna in Groundwater and Caves during Environmental Impact Assessment in Western Australia (EPA 2003a).
- EPA Draft Guidance Statement No. 54a – Sampling Methods and Survey Considerations for Subterranean Fauna in Western Australia (Technical Appendix to Guidance Statement 54 (EPA 2007a).

- EPA Guidance Statement No. 55 – Implementing best practice in proposals submitted to the environment impact assessment process (EPA 2003b).
- EPA Guidance Statement No. 56 – Terrestrial Fauna Surveys for Environmental Impact Assessment in Western Australia (2004b).
- EPA and DEC Technical Guide – Terrestrial Vertebrate Fauna Surveys for Environmental Impact Assessment (EPA & DEC 2010).
- EPA Environmental Assessment Guideline No. 1 – Defining a Proposal (EPA 2012).

3.2 Consultation

3.2.1 Has public consultation taken place (such as with other government agencies, community groups or neighbours), or is it intended that consultation shall take place?

Yes

No

If yes, please list those consulted and attach comments or summarise response on a separate sheet.

Fortescue has undertaken preliminary consultation with numerous government bodies. Consultation to date has included:

- site visit for regulatory authorities including OEPA, DMP, DoW, DSD and DEC
- monthly meetings with the OEPA for all Fortescue development projects including the Nyidinghu Project
- discussions with DEC regarding survey methodology for various baseline environmental studies
- introducing the Project to the DoW.

An additional site visit is currently being planned for DSEWPC and OEPA in June 2012.

Ongoing consultation will continue to take place, with the following stakeholders:

- State and Federal Government departments
- traditional owners and native title groups
- local Government
- pastoral leaseholders
- neighbouring tenement holders.

Outcomes of consultation will be used to inform aspects of Project development where possible, and will be presented within future EIA documentation.

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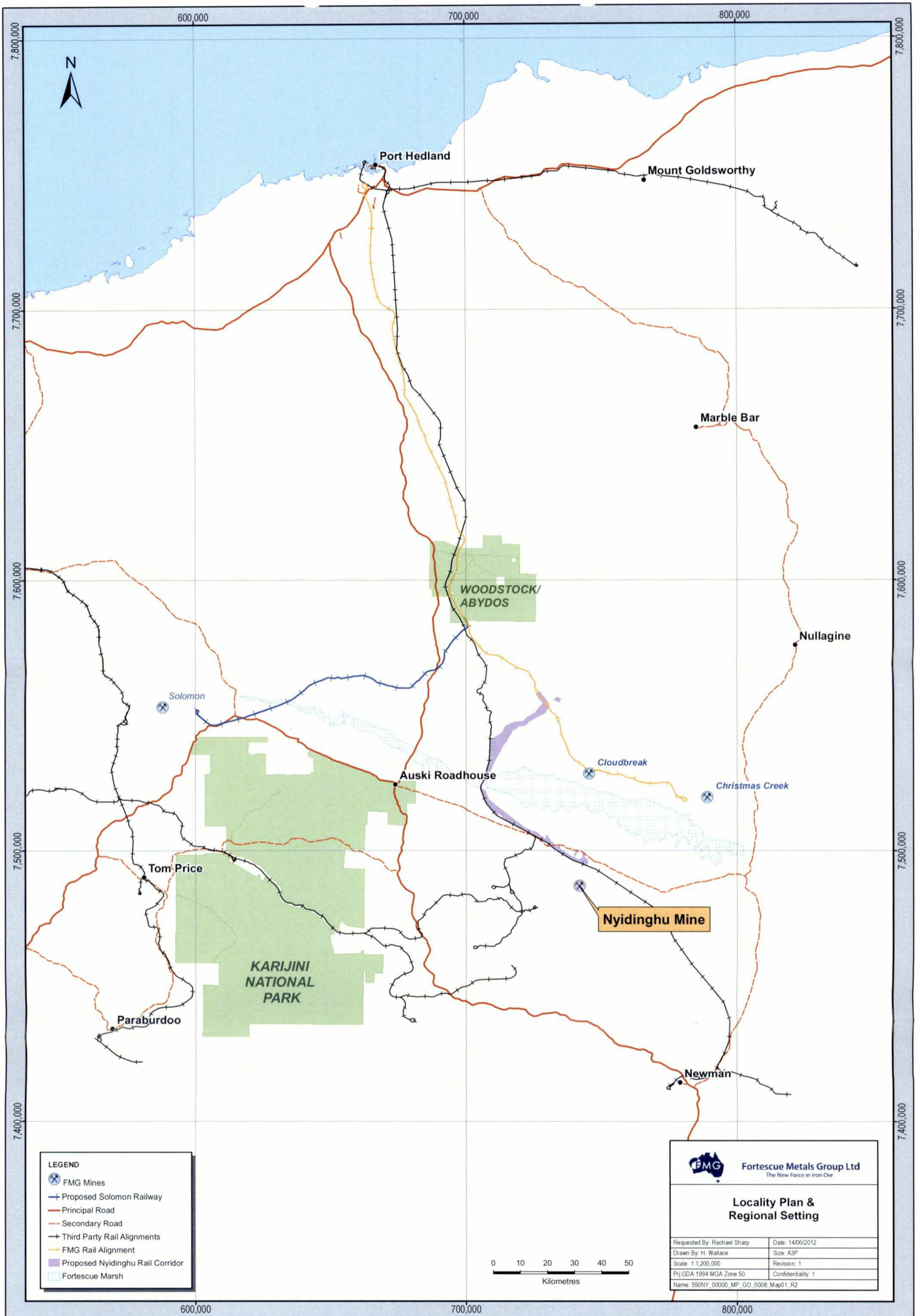
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Figure 1: Locality Plan and Regional Setting



LEGEND

-  FMG Mines
-  Proposed Solomon Railway
-  Principal Road
-  Secondary Road
-  Third Party Rail Alignments
-  FMG Rail Alignment
-  Proposed Nyidinghu Rail Corridor
-  Fortescue Marsh

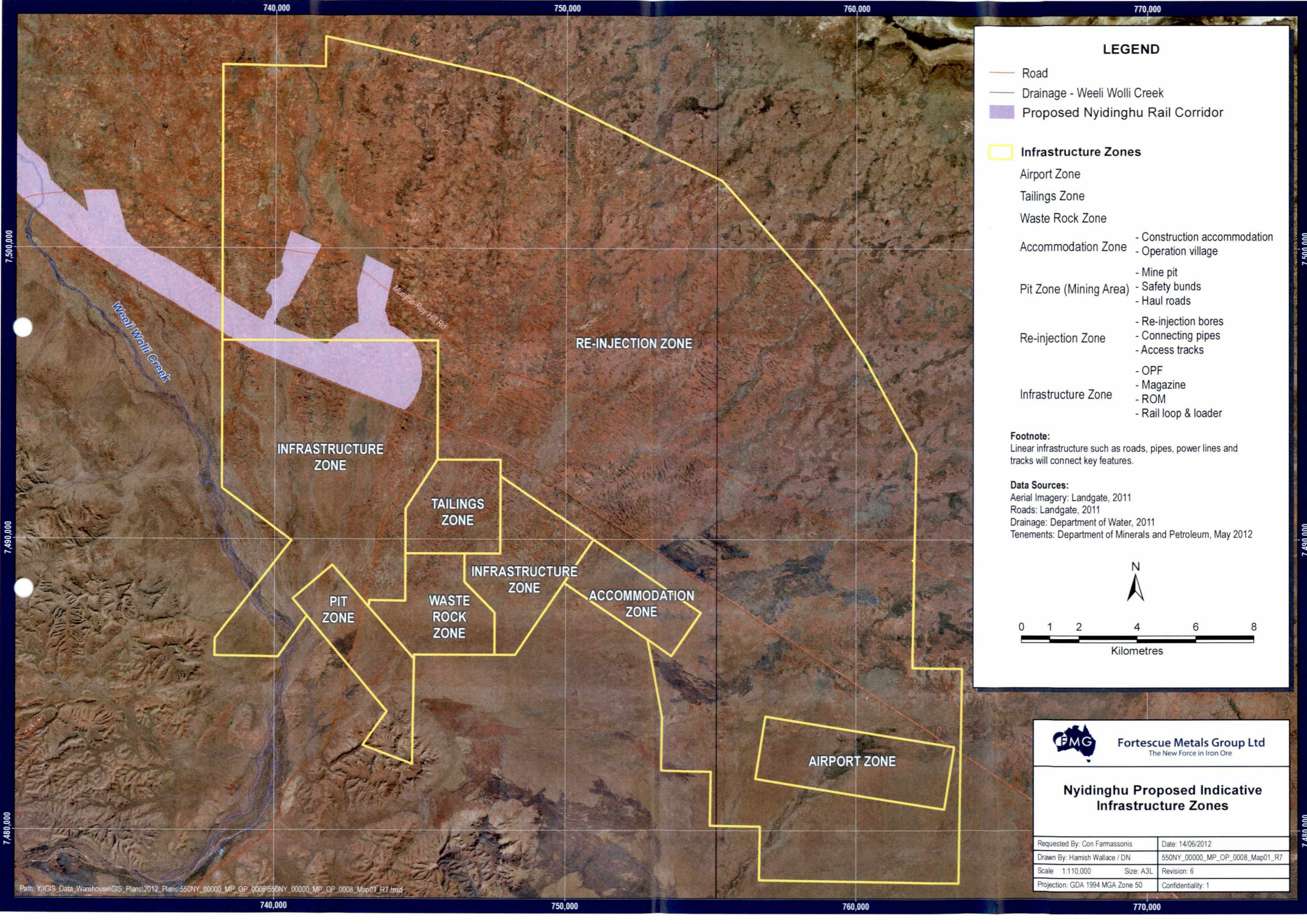


Fortescue Metals Group Ltd
The New Force in Iron Ore

Locality Plan & Regional Setting

Requested By: Rachael Sharp	Date: 14/06/2012
Drawn By: H. Wallace	Size: A3P
Scale: 1:1,200,000	Revision: 1
Prj: GDA 1994 MGA Zone 50	Confidentiality: 1
Name: 550NY_00000_MP_GO_0008_Map01_R2	

Figure 2: Nyidinghu Proposed Indicative Infrastructure Zones



LEGEND

- Road
- Drainage - Weeli Wolli Creek
- Proposed Nyidinghu Rail Corridor

Infrastructure Zones

- Airport Zone
- Tailings Zone
- Waste Rock Zone
- Accommodation Zone
 - Construction accommodation
 - Operation village
- Pit Zone (Mining Area)
 - Mine pit
 - Safety bunds
 - Haul roads
- Re-injection Zone
 - Re-injection bores
 - Connecting pipes
 - Access tracks
- Infrastructure Zone
 - OPF
 - Magazine
 - ROM
 - Rail loop & loader

Footnote:
Linear infrastructure such as roads, pipes, power lines and tracks will connect key features.

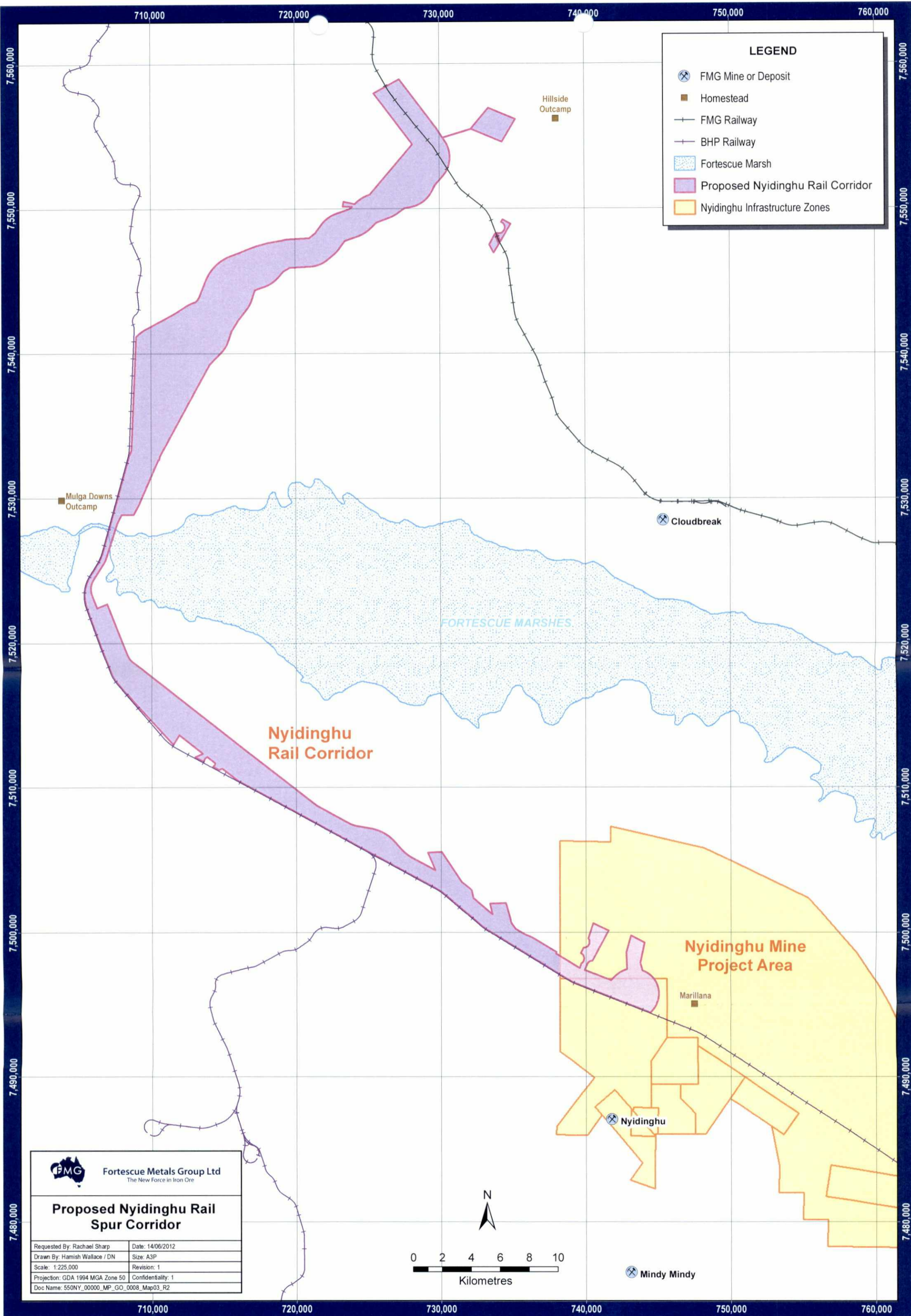
Data Sources:
Aerial Imagery: Landgate, 2011
Roads: Landgate, 2011
Drainage: Department of Water, 2011
Tenements: Department of Minerals and Petroleum, May 2012



Nyidinghu Proposed Indicative Infrastructure Zones

Requested By: Con Farmassonis	Date: 14/06/2012
Drawn By: Hamish Wallace / DN	550NY_00000_MP_OP_0008_Map01_R7
Scale 1:110,000	Size: A3L
Revision: 6	Confidentiality: 1

Figure 3: Proposed Nyidinghu Rail Corridor



LEGEND

- FMG Mine or Deposit
- Homestead
- FMG Railway
- BHP Railway
- Fortescue Marsh
- Proposed Nyidinghu Rail Corridor
- Nyidinghu Infrastructure Zones

Fortescue Metals Group Ltd
The New Force in Iron Ore

Proposed Nyidinghu Rail Spur Corridor

Requested By: Rachael Sharp	Date: 14/06/2012
Drawn By: Hamish Wallace / DN	Size: A3P
Scale: 1:225,000	Revision: 1
Projection: GDA 1994 MGA Zone 50	Confidentiality: 1
Doc Name: 550NY_00000_MP_GO_0008_Map03_R2	

N

0 2 4 6 8 10
Kilometres

**Appendix 1: Nyidinghu Study: Flora and
Vegetation Assessment (100-RP-
EN-0560)**

Please see enclosed data CD

Appendix 2: Fauna Assessment: Nyidinghu Iron Ore Project (100-RP-EN-9552)

Please see enclosed data CD