



Application for Works Approval

Division 3, Part V *Environmental Protection Act 1986*

Works Approval Number	W6394/2020/1
Applicant	IB Operations Pty Ltd
ACN	165 513 557
File Number	DER2020/000003
Premises	Iron Bridge Concentrate Handling Facility Part of Lot 6 on Reserve 50528 Utah Road, Boodarie, Port Hedland WA 6722
Date of Report	2 September 2020
Status of Report	Final

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1. Definitions of terms and acronyms

In this Decision Report, the terms in Table 1 have the meanings defined.

Table 1: Definitions

Term	Definition
ACN	Australian Company Number
Applicant	IB Operations Pty Ltd
Category/ Categories/ Cat.	Categories of Prescribed Premises as set out in Schedule 1 of the EP Regulations
Decision Report	refers to this document.
Delegated Officer	an officer under section 20 of the EP Act.
Department	means the department established under section 35 of the <i>Public Sector Management Act 1994</i> and designated as responsible for the administration of Part V, Division 3 of the EP Act.
DWER	Department of Water and Environmental Regulation As of 1 July 2017, the Department of Environment Regulation (DER), the Office of the Environmental Protection Authority (OEPA) and the Department of Water (DoW) amalgamated to form the Department of Water and Environmental Regulation (DWER). DWER was established under section 35 of the <i>Public Sector Management Act 1994</i> and is responsible for the administration of the <i>Environmental Protection Act 1986</i> along with other legislation.
EP Act	<i>Environmental Protection Act 1986 (WA)</i>
EP Noise Regulations	<i>Environmental Protection (Noise) Regulations 1997</i>
EP Regulations	<i>Environmental Protection Regulations 1987 (WA)</i>
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999 (Cth)</i>
Works Approval Holder	IB Operations Pty Ltd
m ³	cubic metres
NEPM	National Environmental Protection Measure
Noise Regulations	<i>Environmental Protection (Noise) Regulations 1997 (WA)</i>
PM	Particulate Matter

PM ₁₀	used to describe particulate matter that is smaller than 10 microns (µm) in diameter
Prescribed Premises	has the same meaning given to that term under the EP Act.
Premises	refers to the premises to which this Decision Report applies, as specified at the front of this Decision Report
Risk Event	As described in <i>Guidance Statement: Risk Assessment</i>
µg/m ³	micrograms per cubic metre

2. Purpose and scope of assessment

This Decision Report documents the assessment of potential risks to the environment and public health from emissions and discharges during the construction and time limited operation of the Premises.

2.1 Application details

On 24 December 2019, IB Operations Pty Ltd (the Applicant) applied for Works Approval W6394/2020/1 to construct and commission the Iron Bridge Concentrate Handling Facility (CHF) as new licensed premises adjacent to existing licensed premises L8194/2007/3 Anderson Point Materials Handling Facility (MHF).

The Applicant represents the Iron Bridge Joint Venture participants (FMG Magnetite Pty Ltd and Formosa Steel IB Pty Ltd) and will construct and operate the facility.

A list of documents submitted in support of the Application is provided in Table 2

Table 2: Documents and information submitted during the assessment process

Document/information description	Date received	DWER Reference
Iron Bridge Port Facility – Works Approval Application – Supporting Document	24/12/2019	DWERDT239234
Iron Bridge Port Facility – Works Approval Application – Supporting Document (Revised)	27/03/2020	A1888498
Additional Information Attachments	27/03/2020	A1888498

3. Background

The subject of this Application, the Iron Bridge CHF and associated infrastructure, is part of the supply chain from mining to shipping. It is designed to receive, dewater and outload up to 22 million (wet) tonnes per annum (Mtpa) of magnetite concentrate received via slurry pipeline from the North Star Stage 2 Magnetite Mine to be constructed in accordance with Works Approval W6322/2019/1, granted 28 April 2020. The classification of the proposed premises according to prescribed premises categories specified in the *Environmental Protection Regulations 1987* is summarised in **Error! Reference source not found.**

Table 3: Relevant prescribed premises category

Prescribed premises category description (Schedule 1, <i>Environmental Protection Regulations 1987</i>)	Assessed production capacity
Category 5: Processing or beneficiation of metallic or non-metallic ore: premises on which — (a) metallic or non-metallic ore is crushed, ground, milled or otherwise processed; or (b) tailings from metallic or non-metallic ore are reprocessed; or (c) tailings or residue from metallic or non-metallic ore are discharged into a containment cell or dam.	22 Million tonnes per annum

Once operational, the new facility will transfer de-watered concentrate to the adjacent licensed Anderson Point premises for shipping to the export market. To accommodate handling of the

magnetite concentrate, an amendment to the existing licence L8194/2007/3 Anderson Point Handling Facility is required and has been applied for concurrent to this Application.

The Premises is situated within a parcel of land previously occupied by Fortescue Metals Group Ltd (Fortescue) for the operation of the MHF. The Applicant has access to, and proposes to utilise the existing monitoring network operated by Fortescue for the purpose of dust management and review during construction and operation (FMG, 2020).

An overview of the Iron Bridge CHF in relation to the existing Anderson Point premises is presented in Figure 1.



Figure 1: Premises overview in relation to existing licensed premises for Anderson Point

Key determination: The Delegated Officer has determined that the scope of this Decision Report is limited only to the emissions and discharges that arise from within the Premises boundary depicted in Figure 1 to the Works Approval. That is, all infrastructure associated with the Iron Bridge CHF including the Concentrate Diversion Pond and up until the point where concentrate is transferred from TS301 to MHF in-load conveyors.

Emissions and discharges resulting from the handling of magnetite concentrate at the MHF are regulated via licence L8194/2007/3. There exists a small overlap of premises boundaries where Iron Bridge CHF conveyors and pipeline to the Concentrate Diversion Pond cross over conveyors that link train unloaders to the MHF. Where there is an emission from a specific piece of infrastructure, DWER will take into consideration the infrastructure specified in each instrument.

3.1 Infrastructure

The infrastructure to be constructed, as it relates to Category 5 activities, is detailed in Table 4 and with reference to the Site Plan (attached in the works approval).

Table 4: Iron Bridge Concentrate Handling Facility and associated infrastructure

	Infrastructure	Site Plan Reference
	Prescribed Activity Category 5	
Processing of magnetite ore slurry through thickening and filtration to produce a magnetite ore concentrate as exportable product.		
1.	Concentrate thickener	Figure 1: Concentrate thickener
2.	Filter feed tanks 4x	Figure 1: Filter Feed Tanks
3.	Pressure belt filters	Figure 1: Pressure belt filters
4.	Process water tank	Figure 1: Process water tank
5.	Filtered water tank	Figure 1: Filtered water tank
6.	Return water pumps	Figure 1: Return water pump
7.	Slurry pipeline on premises	Figure 1: Slurry pipeline
8.	Return water pipeline on premises	Figure 1: Return water
9.	Outload conveyors	Figure 1: CV301, CV302
10.	Belt wash stations	Figure 1: BWS301, BWS302
11.	Transfer station	Figure 1: TS301
	Directly related activities	
12.	Concentrate Diversion Pond (55,000m ³ storage volume)	Figure 1: Concentrate Diversion Pond
13.	Sediment sumps	N/A

Key determination: The Delegated Officer has determined that emissions from the infrastructure specified in Table 4 are expected to be the same during commissioning as they are during operations. Therefore the Decision Report considers commissioning activities when conducting the risk assessment for time limited operations.

3.2 Exclusions to the Premises

Infrastructure not located within the Premises boundary has not been included in the assessment. Specifically this relates to the approximately 135km of slurry and return water pipelines from the Premises to the North Star Mine Site running along the Fortescue rail corridor.

The pipelines will be buried to a depth of approximately 1.5 mbgl with minimum 600 mm of cover. Pressure monitoring stations will be established along the pipelines capable of detecting leaks through a loss in pressure and to maintain safe operation.

Key finding: Discharges from the slurry and/or dewatering pipelines that occur beyond the Premises will be regulated by the Department of Mines, Industry Regulation and Safety and/or general provisions of the EP Act.

4. Legislative context

Table 5 summarises approvals relevant to the assessment.

Table 5: Relevant approvals and tenure

Legislation	Number	Subsidiary	Approval
<i>Railway and Port (The Pilbara Infrastructure Pty Ltd) Agreement Act 2004</i>	N/A	The Pilbara Infrastructure Pty Ltd and Fortescue Metals Group Ltd	State Agreement requiring the State to provide an area of the Port Hedland Port as a lease under the <i>Port Authorities Act 1999</i> for the port facilities and additional port infrastructure.
<i>Railway and Port (The Pilbara Infrastructure Pty Ltd) Agreement Amendment Bill 2018</i>	N/A	The Pilbara Infrastructure Pty Ltd and Fortescue Metals Group Ltd	As above
<i>Pilbara Ports Authority Development Guidelines</i>	Development Application Decision Notice DA072/2019	IB Operations Pty Ltd	Approval for the development of the Iron Bridge CHF on land managed by the Pilbara Ports Authority

On advice from the Environmental Protection Authority, the Iron Bridge CHF proposal was not referred for Part IV assessment on the grounds that there would be no additional impact to mangroves or noise from the overall Anderson Point operations that surround the Premises.

The Premises is not classified as contaminated under the *Contaminated Sites Act 2003*.

4.1 Part V of the EP Act

4.1.1 Applicable regulations, standards and guidelines

The overarching legislative framework of this assessment is the EP Act and EP Regulations.

The guidance statements which inform this assessment are:

- *Guidance Statement: Regulatory Principles (July 2015)*
- *Guidance Statement: Setting Conditions (October 2015)*
- *Guidance Statement: Land Use Planning (February 2017)*
- *Guidance Statement: Licence Duration (August 2016)*
- *Guidance Statement: Decision Making (February 2017)*
- *Guidance Statement: Risk Assessments (February 2017)*
- *Guidance Statement: Environmental Siting (November 2016)*

4.1.2 Clearing

Approximately 0.64 hectares (ha) of native vegetation is proposed for clearing to allow for the construction of the Iron Bridge CHF with 0.27 ha being highly degraded. The vegetation, Hummock Grassland, is well represented in the local area and is not classed as a Threatened Ecological Community.

As less than 5 ha of non-riparian vegetation is scheduled for clearing for the purpose of constructing a building, there is no requirement to obtain a clearing permit in accordance with regulation 5 of the *Environmental Protection (Clearing of Native Vegetation) Regulations 2004*.

4.2 Port Hedland dust context

4.2.1 Ambient air quality monitoring

Ambient air quality monitoring is undertaken at Port Hedland through a number of monitoring stations within the Town of Port Hedland shown in Figure 2. Monitoring is coordinated through the PHIC and real-time monitoring is reported on the PHIC website.

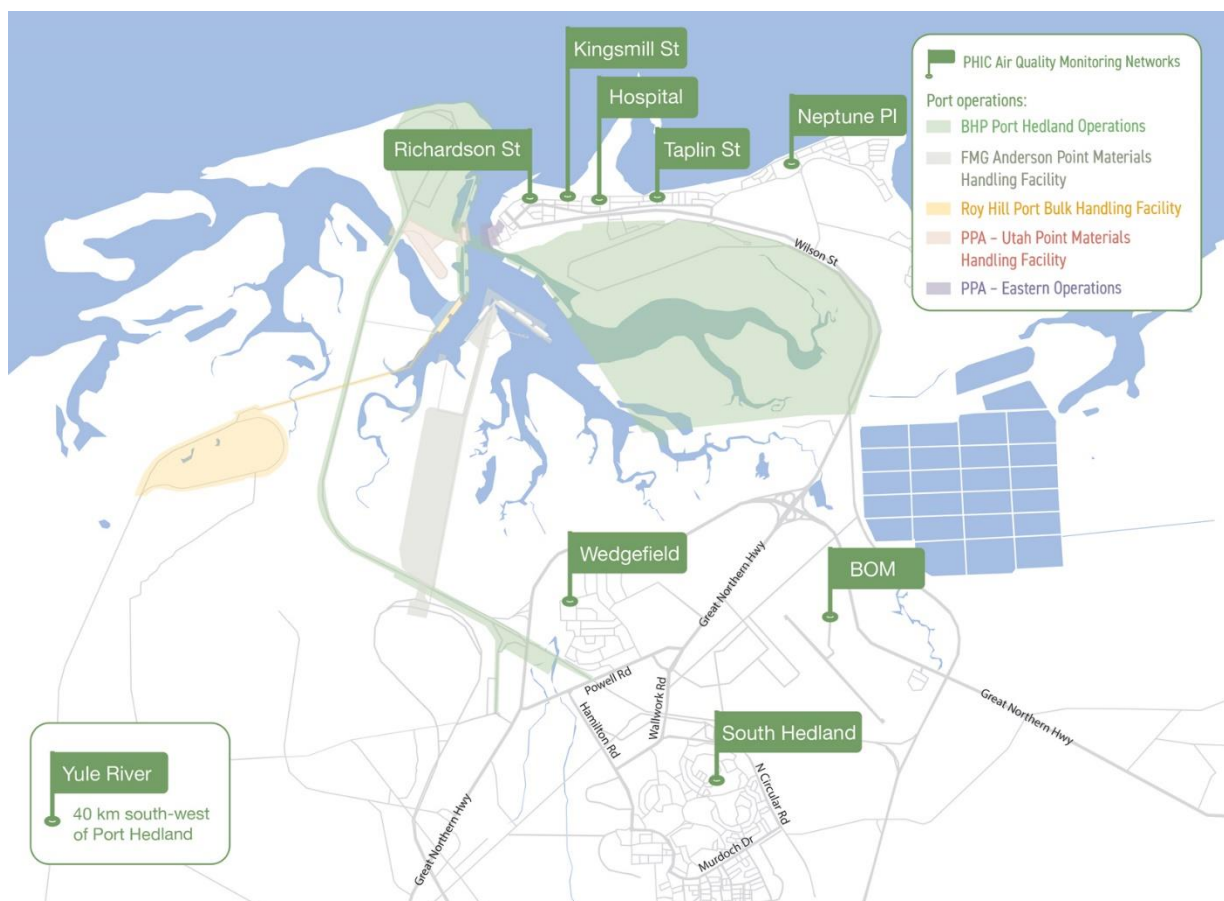


Figure 2: PHIC monitoring locations in Port Hedland

4.2.2 Air guideline value

In 2016 the Department of Health released the *Port Hedland Air Quality Health Risk Assessment for Particulate Matter* (HRA). The outcomes of the HRA were the basis for the Government-endorsed Taskforce recommendation that the air guideline value (AGV) of 24-hour PM₁₀ of 70 µg/m³ (excluding natural events) continues to apply to residential areas of Port Hedland and that measures should be introduced to cap (and if possible, reduce) the number of permanent residents in dust-affected areas of Port Hedland.

Historically the AGV has been applied to all areas east of Taplin Street, which is located approximately 3.3km east of the nearest shiploader. A summary of AGV exceedances at Taplin Street for the annual periods are provided below (PHIC Annual Reports).

- 2012-2013 period – 17 exceedances at Taplin Street monitoring station with two reported to be attributed to industry;
- 2013-2014 period – 6 exceedances at Taplin Street with three reported to be attributed to industry;
- 2014-2015 period – 10 exceedances at Taplin Street with seven reported to be attributed to industry;
- 2015-2016 period – 10 exceedances at Taplin Street with five reported to be attributed to industry;
- 2016-2017 period – 3 exceedances at Taplin Street with two reported to be attributed to industrial activity; and

- 2017-2018 period – at least 9 exceedances at Taplin Street with eight exceedance days reported to be contributed to by local industry (see below for further discussion).
- 2018-2019 period – 0 exceedances at Taplin Street (see below for further discussion).

Historically the number of exceedances of the AGV (and the Ambient Air Quality NEPM) at Port Hedland monitors typically increases with proximity to the West End. For example, in the 2014/15 annual period there were 50 occurrences at the Kingsmill Street monitor where PM₁₀ averaged greater than 70µg/m³, and 156 occurrences greater than the NEPM guideline of 50µg/m³ over a 24-hour period. By comparison at Taplin Street, there were 10 exceedances of the air guideline value (70µg/m³) and 48 exceedances of the NEPM guideline (PHIC, 2016).

In 2018/19 there was a universal increase in PM₁₀ concentrations at both ambient and background monitors with the single exception of Taplin Street. On 10 February 2020, DWER was advised by PHIC that the Taplin Street monitor had been inaccurate and under-reporting actual dust levels and that it is possible that there may have been issues with the Taplin Street data from as early as April 2018. It is possible that AGV exceedance counts for both 2017/18 and 2018/19 monitoring periods underestimate the actual number of exceedances. PHIC has advised that new monitoring equipment has been installed at Taplin Street in January 2020 and recent monitoring results are now accurate.

4.2.3 Seasonal variation

In order to demonstrate seasonal variation of average daily PM₁₀ concentration at Taplin Street each month, the 2017/18 annual period is shown in Figure 3. Monthly data from the Taplin Street monitor for 2018/19 was reported as being 23.8 µg/m³ in PHIC's annual report, which was later identified as inaccurate due to equipment fault. Taplin Street data from the 2018/19 period is not presented the figure below.

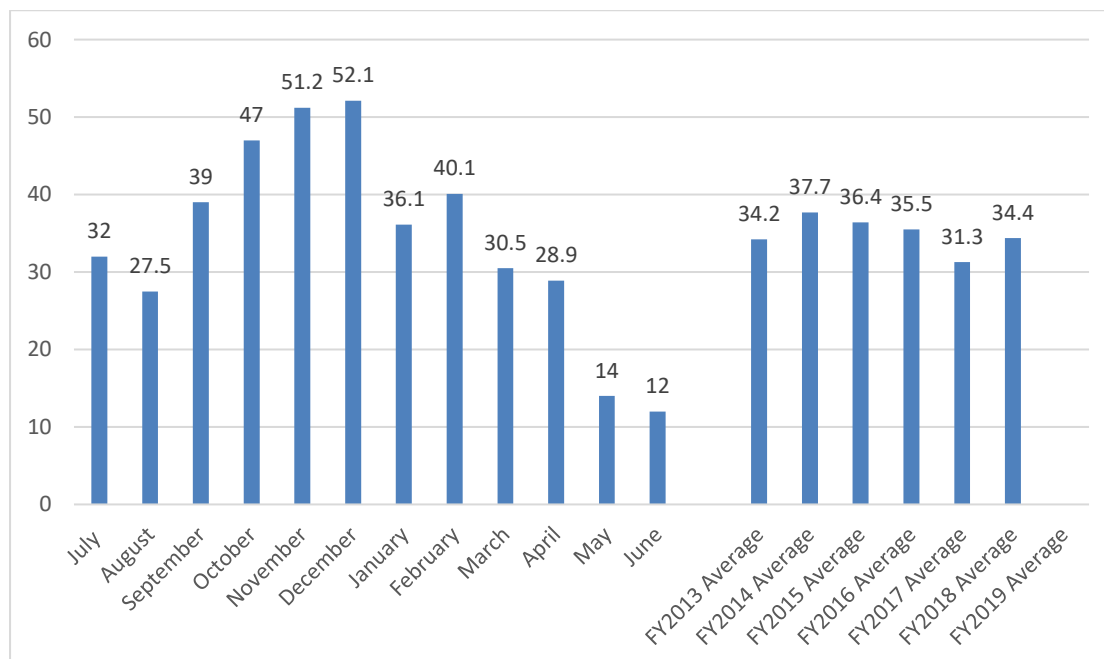


Figure 3: Average daily PM₁₀ concentration at Taplin Street (BHP 2018; PHIC 2018)

4.2.4 Government response to the 2016 Taskforce Report

On 15 October 2018, the McGowan Government released its response to the 2016 Port Hedland Dust Taskforce Report endorsing recommendations made in the Taskforce Report.

In doing so the Government endorsed multiple strategies to both reduce ambient dust impacts

and minimise receptor exposure in the West End of Port Hedland. This includes the Government's position that an AGV of 24-hour PM₁₀ of 70 µg/m³ (excluding natural events) applies where people live on a permanent basis; and that measures should be introduced to cap (and if possible, reduce) the number of permanent residents in dust-affected areas.

The Port Hedland AGV was derived using established human health risk assessment techniques and assumptions, and is considered to be protective of the health of a 'general population' within the defined area, provided that the number of permanent residents remains largely unchanged into the future.

For its part, DWER is responsible for implementing two key Government-endorsed recommendations, including:

- Developing and implementing a dust management guideline for bulk handling port premises; and
- Taking over control of the operation and maintenance of the Port Hedland ambient air quality monitoring network.

Dust emissions from ore and concentrate handling at the MHF are beyond the scope of this Decision Report.

4.2.5 Dust source determination

It is possible to characterise ore types based on their composition. A key characteristic of ore types handled at Port Hedland is the differentiation of hematite, goethite and magnetite. Goethite (FeO·OH), hematite (Fe₂O₃) and magnetite (Fe₃O₄) are iron oxides. Some ores contain mainly hematite or magnetite while others have varying proportions of hematite and goethite. Marra Mamba ores, for example, are characterised by ochreous hematite goethite mineralogy and occur in the Marra Mamba Iron Formation in the Pilbara. They are surface enriched with a brown colour due to the goethite content. Ores from the Christmas Creek and Cloudbreak deposits are of this type.

If ore types can be clearly distinguished and characterised, dust derived from specific ore types could be assumed to carry the ore type specific signature of composition. A dust speciation analysis would be able to reveal the dust composition and thus identify the source of the dust, specifically the ore type. In a scenario where it is known where specific ore types are handled, at which premises, theoretically dust speciation results could then help identify the source or sources of dust according to those premises.

Whether dust generated from a specific ore type is in its composition identical to the ore type material it is derived from depends on various factors, for instance, dust consists of particulates that can become airborne and travel over a distance. The source material consists of particles of different sizes and weights. Lighter particles are more likely to be lifted off and transported in dust plumes over greater distances than heavier particles. For this reason, the particle fraction represented in a dust sample may not be identical to the particle composition of the source material and therefore there is less certainty in source identification.

Another complicating factor to consider is the cumulative airshed over Port Hedland in which dust particles from different sources mix, so that the combined dust sample analysed no longer represents only one but multiple sources, which then adds further difficulty to the attribution of dust to specific sources. As most of the iron ore types currently handled at the port contain similar elements, dust speciation as a method of dust attribution is unlikely to be successful in most scenarios. A scenario where dust speciation could be successfully employed for source attribution is one where a distinctive material is being handled at specific premises only, so dust derived from this source can be clearly distinguished from other dust sources at the port. Currently this is the case for magnetite concentrate at Port Hedland, which will only be handled at Iron Bridge CHF (the Premises) and the Anderson Point Materials Handling Facility.

4.3 Port Hedland noise context and noise modelling

The Applicant commissioned noise modelling to determine the likely impact of the operation of the Iron Bridge CHF on noise levels at sensitive receptors in Port Hedland and South Hedland. Table 6 provides an indication of the night-time noise levels during operations in comparison to assigned levels, specified in the Noise Regulations for highly sensitive areas. These assigned levels are currently exceeded in Port Hedland and there is an anticipated slight increase in noise levels at sensitive receptors when the Iron Bridge CHF is operating alongside other noise generating activities in Port Hedland.

Table 6: Noise modelling results (Source: The Application¹)

Sensitive receiver	Cumulative scenario (dBA)			In isolation scenario (dBA)
	Assigned level	Base case	Model result	Model result
Police Station	47	54.8	55.0	15.2
Brearley Street	32	40.7	40.8	10
Hospital	32	48.5	48.5	14.2
Pretty Pool	30	29.7	29.7	3.6
South Hedland	30	27.0	27.1	10.4

Note 1: Data summarised from Tables 5-1 and 6-1 of Appendix 5 to The Application.

Key finding: Sensitive noise receptors in Port Hedland are already experiencing cumulative noise levels above the Assigned Levels.

Construction activities at night have the potential to result in further exceedances of Assigned Levels. The Applicant may conduct construction activities at night time, only if works are carried out in accordance with an approved Construction Noise Management Plan. The Applicant has committed to monitoring during noisy construction activities to determine compliance with the Noise Regulations.

Noise levels from the Premises in isolation of cumulative influences are well below Assigned Levels specified in the Noise Regulations. Therefore the Delegated Officer has determined that the Premises is not expected to be a significant contributor to cumulative noise in Port Hedland, as defined by regulation 7(2) of the Noise Regulations during operations.

Based on the implementation of proposed noise controls, an overall change to noise levels was predicted to increase by up to 0.2 decibels (dB), which is considered not to be perceptible.

5. Consultation

DWER referred the Application on 18 May 2020, to a number of interested parties including community stakeholders and government agencies. The Application was also publicly advertised in *The Northwest Telegraph* newspaper on 13 May 2017. The Application was made available for review at the Department's website.

Comments received and DWER responses to these comments are provided in Appendix 3.

6. Location and siting

6.1 Residential and sensitive receptors

The distances to residential and sensitive receptors are detailed in Table 7.

Table 7: Receptors and distance from prescribed activity

Sensitive Land Uses	Approximate distance from prescribed activity
The Esplanade Hotel and Pier Hotel (zoned town centre – retail/business in Town of Port Hedland Planning Scheme No. 5)	6.0km to the north of the Premises
Port Hedland Visitors Centre (zoned town centre – retail/business in Town of Port Hedland Planning Scheme No.5)	6.3km to the north of the Premises
Closest residential zoned premises South Hedland (zoned residential and community: education in Town of Port Hedland Planning Scheme No. 5)	5.0km to the south-east of the Premises
Closest residential zoned premises in Port Hedland (zoned residential in Town of Port Hedland Planning Scheme No. 5)	6.6km to the north of the Premises
Port Hedland Police Station (nearest noise sensitive receiver for the purposes of noise modelling detailed in section 4.3)	6.0km to the north of the Premises
Taplin Street (zoned residential in Town of Port Hedland Planning Scheme No. 5)	7.5km to the north of the Premises
Other Land Uses	Distance from prescribed activity
Wedgefield Industrial Estate (zoned industry – industrial zone in Town of Port Hedland Planning Scheme No. 5)	2.3km to the east of the Premises

6.2 Specified ecosystems

Specified ecosystems are areas of high conservation value and special significance that may be impacted as a result of activities at or Emissions and Discharges from the Premises. The distances to specified ecosystems are shown in Table 8. Table 7 also identifies the distances to other relevant ecosystem values which do not fit the definition of a specified ecosystem.

The table reflects the approach outlined in *Guidance Statement: Environmental Siting*.

Table 8: Environmental values

Specified ecosystems	Distance from Prescribed Premises
Port Hedland Harbour – marine ecosystem	Within and directly adjacent to the Premises boundary. Moderate level of ecosystem protection*
Public Drinking Water Source Area (PDWSA)	The Premises is not located within a PDWSA
RAMSAR wetland	No RAMSAR wetlands are located within a 30km radius of the Premises.
Geomorphic Wetlands	No geomorphic wetlands are located within a 30km radius of the Premises.
Parks and Wildlife tenure	No Parks and Wildlife managed lands are located within a 30km radius of the Premises.
Threatened Ecological Communities and Priority Ecological Communities	There are no threatened ecological communities and priority ecological communities within a 30km radius of the Premises.
Declared Rare flora	There are no declared rare flora species recorded within a 30km radius of the Premises.
Other relevant ecosystem/biological values	Distance from Prescribed Premises
Mangrove community (high value ecosystem) [#]	There are six species of mangroves found in the Port Hedland Harbour. The occurrence of mangrove communities within the Premises is considered to be consistent with distribution patterns observed in similar environments in the Pilbara region. The intertidal mangrove communities provide habitat to a wide range of bird and bat species and marine invertebrates. The intertidal zone is located approximately 330m from the western boundary of the Premises.
Turtle nesting grounds (listed under the EPBC Act)	Nesting grounds are located at Cemetery Beach and Pretty Pool, approximately 8.2km from the nearest shiploader.
Migratory birds (listed under the EPBC Act)	Migratory birds have been sited near to the Premises boundary.

*Department of Environment, 2006

[#] Environmental Protection Authority, 2001

6.3 Meteorology

6.3.1 Wind direction and strength

The following wind rose (Figure 4) provides the annual wind direction and strength averaged over the past five years. Wind vectors from the south-southwest to west-southwest place residential receptors in the West End downwind of Premises bulk handling activities at approximately 13% of the time. Winds between the north, east and south vectors are expected to remove the pathway for noise and dust emissions to West End receptors for the majority of

the time.

Five year averaged wind directions (2014 to 2019) from the northwest and north-northwest place residents in South Hedland downwind of Premises activities approximately 16.01% of the time although these residents are at greater distance to Premises activities.

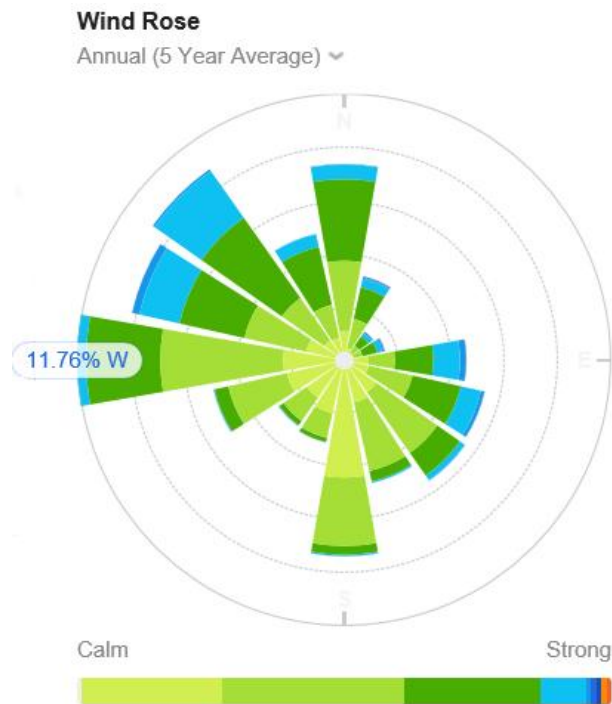


Figure 4: Annual average wind direction and strength in Port Hedland (WillyWeather, 2019)

Key note: Average wind directions offer only an indication of the likelihood of pathways to receptors. As wind direction and speed changes frequently it is possible for dust lift-off from a strong westerly wind to be transported to receptors northeast in the West End, or southeast in South Hedland.

It is important to note that these wind roses show historical wind speed and wind direction data for the Bureau of Meteorology weather station at Port Hedland Airport and should not be used to predict future data.

7. Risk assessment

7.1 Consequence and likelihood of risk events

A risk rating will be determined for risk events in accordance with the risk rating matrix set out in Table 9 below.

Table 9: Risk rating matrix

Likelihood	Consequence				
	Slight	Minor	Moderate	Major	Severe
Almost certain	Medium	High	High	Extreme	Extreme
Likely	Medium	Medium	High	High	Extreme
Possible	Low	Medium	Medium	High	Extreme
Unlikely	Low	Medium	Medium	Medium	High
Rare	Low	Low	Medium	Medium	High

DWER will undertake an assessment of the consequence and likelihood of the Risk Event in accordance with Table 10 below.

Table 10: Risk criteria table

Likelihood		Consequence		
The following criteria has been used to determine the likelihood of the Risk Event occurring.		The following criteria has been used to determine the consequences of a Risk Event occurring:		
			Environment	Public health* and amenity (such as air and water quality, noise, and odour)
Almost Certain	The risk event is expected to occur in most circumstances	Severe	- onsite impacts: catastrophic - offsite impacts local scale: high level or above - offsite impacts wider scale: mid-level or above - Mid to long-term or permanent impact to an area of high conservation value or special significance^ - Specific Consequence Criteria (for environment) are significantly exceeded	- Loss of life - Adverse health effects: high level or ongoing medical treatment - Specific Consequence Criteria (for public health) are significantly exceeded - Local scale impacts: permanent loss of amenity
Likely	The risk event will probably occur in most circumstances	Major	- onsite impacts: high level - offsite impacts local scale: mid-level - offsite impacts wider scale: low level - Short-term impact to an area of high conservation value or special significance^ - Specific Consequence Criteria (for environment) are exceeded	- Adverse health effects: mid-level or frequent medical treatment - Specific Consequence Criteria (for public health) are exceeded - Local scale impacts: high level impact to amenity
Possible	The risk event could occur at some time	Moderate	- onsite impacts: mid-level - offsite impacts local scale: low level - offsite impacts wider scale: minimal - Specific Consequence Criteria (for environment) are at risk of not being met	- Adverse health effects: low level or occasional medical treatment - Specific Consequence Criteria (for public health) are at risk of not being met - Local scale impacts: mid-level impact to amenity
Unlikely	The risk event will probably not occur in most circumstances	Minor	- onsite impacts: low level - offsite impacts local scale: minimal - offsite impacts wider scale: not detectable - Specific Consequence Criteria (for environment) likely to be met	- Specific Consequence Criteria (for public health) are likely to be met - Local scale impacts: low level impact to amenity
Rare	The risk event may only occur in exceptional circumstances	Slight	- onsite impact: minimal - Specific Consequence Criteria (for environment) met	- Local scale: minimal to amenity - Specific Consequence Criteria (for public health) met

^ Determination of areas of high conservation value or special significance should be informed by the *Guidance Statement: Environmental Siting*.

* In applying public health criteria, DWER may have regard to the Department of Health's *Health Risk Assessment (Scoping) Guidelines*.

"onsite" means within the Prescribed Premises boundary.

7.2 Acceptability and treatment of Risk Event

DWER will determine the acceptability and treatment of Risk Events in accordance with the Risk treatment table 11 below:

Table 11: Risk treatment table

Rating of Risk Event	Acceptability	Treatment
Extreme	Unacceptable.	Risk Event will not be tolerated. DWER may refuse application.
High	May be acceptable. Subject to multiple regulatory controls.	Risk Event may be tolerated and may be subject to multiple regulatory controls. This may include both outcome-based and management conditions.
Medium	Acceptable, generally subject to regulatory controls.	Risk Event is tolerable and is likely to be subject to some regulatory controls. A preference for outcome-based conditions where practical and appropriate will be applied.
Low	Acceptable, generally not controlled.	Risk Event is acceptable and will generally not be subject to regulatory controls.

7.3 Determination of emission, pathway and receptor

In undertaking its risk assessment, DWER will identify all potential emissions pathways and potential receptors to establish whether there is a Risk Event which requires detailed risk assessment.

To establish a Risk Event there must be an emission, a receptor which may be exposed to that emission through an identified actual or likely pathway, and a potential adverse effect to the receptor from exposure to that emission. Where there is no actual or likely pathway and/or no receptor, the emission will be screened out and will not be considered as a Risk Event. In addition, where an emission has an actual or likely pathway and a receptor which may be adversely impacted, but that emission is regulated through other mechanisms such as Part IV of the EP Act, that emission will not be risk assessed further and will be screened out through Table 12.

The identification of the sources, pathways and receptors to determine Risk Events are set out in Tables 12 and 13 below.

Table 12: Identification of emissions, pathway and receptors during construction

Risk Events				Consequence rating	Likelihood rating	Risk	Reasoning	Regulatory controls (refer to conditions of the Works Approval)
Sources/Activities		Potential emissions	Potential receptors	Potential pathway and receptor (impact)				
Construction of the Iron Bridge CHF and Concentrate Diversion Pond	Construction of the Iron Bridge CHF, earthworks and vehicle movements on roads	Dust	Closest residential receptor located 5.0km to the south-east of the Premises in South Hedland and 6.6km.	Air / wind dispersion causing health and amenity impacts	Specific consequence criteria for public health are exceeded Major	Could occur at some time Possible	High	High current dust levels, dust generating activities during the construction period will be limited, but contribution may result in AGV exceedances. <i>Conditions: Proactive management to minimise the risk of dust including through the use of speed limits and application of water and dust suppressant chemicals.</i> <i>The works approval holder will also be required to respond to visible dust being generated and cease all dust generating activities where winds are strong or place sensitive receptors downwind.</i> <i>The works approval holder will be required to frequently report visible/high dust events during construction to allow for appropriate regulatory oversight.</i> <i>Condition: Dust monitoring to be conducted throughout construction and time limited operations.</i>
				Dust deposition on mangroves located directly adjacent to/nearby shiploading and surrounding Port Hedland Inner Harbour.	Minimal off-site impacts at a local scale. Minor	The risk event will probably not occur in most circumstances. Rare	Low	The nearest mangrove community is located approximately 700m from the western boundary of the Premises. Dust emissions from vehicle movement and earthworks are expected to be of short duration allowing for low concentrations of deposited dust to be removed naturally. Contributions to the deposition of dust on mangrove foliage are expected to be insignificant in comparison to other nearby sources. These include operations at the MHF, other bulk materials handling facilities (ports) and regional dust sources.

Table 13: Identification of emissions, pathway and receptors during commissioning and time limited operation

Risk Events					Consequence rating	Likelihood rating	Risk	Reasoning	Regulatory controls (refer to conditions of the Works Approval)
Sources/Activities		Potential emissions	Potential receptors	Potential pathway and receptor (impact)					
Operation of the Iron Bridge CHF	Material handling using Iron Bridge CHF conveyor system and vehicle movements on access roads	Dust	Closest residential receptor located 5.0km to the south-east of the Premises in South Hedland and 6.6km from nearest receptors in the West End.	Air / wind dispersion causing health and amenity impacts	Specific consequence criteria for public health are exceeded Major	Could occur at some time Possible	High	High current dust levels, dust generating activities during the operation period will be limited as the plant is mostly enclosed and/or handling wet product. There may be some contribution to dust levels from dried ore on the underside of return conveyors (carry back). A contribution to dust concentrations at community receptor locations in South Hedland and the West End may result in elevated dust levels.	The following conditions have been applied to the Works Approval that are in addition to controls proposed by the Applicant. The Applicant will be able to test and adjust infrastructure specified in Table 4 of this report during the commissioning phase. Condition: Installation of a belt wash station on conveyor CV301 designed to reduce the carry back of ore stuck to the underside of the return conveyor. Condition: Routine removal of sediment from the belt wash station sump. Applicant-proposed controls for the management of dust are also required: Condition: Installation of an enclosed skirting system and dust spray bar fitted to the boom end of the transfer station TS301. Condition: Moisture content monitoring to be conducted at sample station SS301. All ore from the CHF must be moisture conditioned for the purpose of minimising dust along transport routes at the Premises and the Anderson Point MHF. Condition: Dust monitoring to be conducted throughout construction and time limited operations. Dust monitoring techniques applied include PM ₁₀ monitoring and dust deposition and speciation monitoring, allowing for the identification of mineral phases, such as magnetite.
				Dust deposition on mangroves located directly adjacent to/nearby shiploading and surrounding Port Hedland Inner Harbour.	Minimal off-site impacts at a local scale. Minor	The risk event will probably not occur in most circumstances. Rare	Low	The nearest mangrove community is located approximately 700m from the western boundary of the Premises. Dust from the conveyor and transfer station is expected to disperse to low concentrations at the distance to mangroves. Contributions to the deposition of dust on mangrove foliage are expected to be insignificant in comparison to other nearby sources. These include operations at the MHF, other bulk materials handling facilities (ports) and regional dust sources.	No additional conditions. Management of dust for the protection of public health will also serve to reduce environmental impacts. Dust deposition monitoring and analysis will be used to further inform the risk assessment for ongoing operations under a licence.

Risk Events					Consequence rating	Likelihood rating	Risk	Reasoning	Regulatory controls (refer to conditions of the Works Approval)
Sources/Activities		Potential emissions	Potential receptors	Potential pathway and receptor (impact)					
		Noise		Air / wind dispersion causing amenity impacts	High-level impact to amenity Major	May only occur in exceptional circumstances Rare	Medium	Assigned Levels specified in the Noise Regulations are currently exceeded in Port Hedland. Modelling demonstrates that in isolation, noise levels from the Premises as received at sensitive receptors, will be well below Assigned Levels. When considered in the cumulative noise context there will be no perceptible increase in noise (refer to section 4.3). The Applicant has committed to using low noise equipment where practicable and conducting annual noise monitoring to measure compliance against the EP Noise Regulations.	Perceptible noise levels are not anticipated at sensitive receptors due to existing cumulative noise levels and proposed Applicant infrastructure controls. These controls are specified in the works approval as described in the <i>Fortescue Noise Management Procedure</i> (FMG, 2019), referred to in the <i>Contractor Construction Environmental Management Plan - Iron Bridge Port Facility</i> (IB, 2015). Condition: <i>The Applicant will be required to install noise absorbing baffles and plant exhaust mufflers at the Iron Bridge CHF for the purpose of ensuring noise is minimised during operations.</i> The Applicant will be required to comply with the Noise Regulations and maintain noise mitigating equipment to ensure ongoing effectiveness.
Discharges to the Concentrate Diversion Pond	Discharges of process water and/or magnetite concentrate slurry to the Concentrate Diversion Pond in emergency scenarios	Discharges beyond the Concentrate Diversion Pond to land and the marine environment	Nearby mangrove community located 1km to the north east. Native vegetation (disturbed) adjacent to the Concentrate Diversion Pond.	Marine impacts: No pathway	Off-site impacts to nearby native vegetation at a local scale are expected to be minimal Minor	May only occur in exceptional circumstances Rare	Low	Based on Applicant controls to construct the Concentrate Diversion Pond with a volume capable of storing a large discharge.	The following infrastructure and equipment condition has been applied to the Works Approval, consistent with Applicant-proposed controls for the prevention of discharges beyond the Concentrate Diversion Pond. Condition: <i>Constructed with a storage capacity equivalent to the magnetite slurry pipeline (approximately 55,000m³ in volume).</i>

8. Determination of Works Approval conditions

The conditions in the issued Works Approval in Attachment 1 have been determined in accordance with the *Guidance Statement: Setting Conditions*.

The *Guidance Statement: Licence Duration* has been applied and the issued licence expires in 5 years from date of issue.

Table 14 provides a summary of the conditions to be applied to this Works Approval.

Table 14: Summary of conditions to be applied

Condition Ref	Grounds
Infrastructure and equipment 1	This condition is valid, risk-based and authorises the construction of the Iron Bridge CHF and associated infrastructure.
Dust management – construction 2 to 4	These conditions are valid, risk-based and contain appropriate controls for the minimisation of dust during construction.
Compliance reporting – construction 5 to 10	These conditions are valid, risk-based and ensure that infrastructure is constructed and/or installed as proposed and assessed. Further that infrastructure installed will have adequate controls in place to ensure dust and noise can be managed to acceptable levels during operation.
Environmental commissioning 11	This condition is valid, risk-based and authorises the commissioning of the Iron Bridge CHF and associated infrastructure.
Time limited operating conditions 12 to 15	These conditions are valid, risk-based and allow for time limited operation of the Iron Bridge CHF. Conditions are required for the management and prevention of dust and discharges to land. Moisture content monitoring conditions are necessary to inform management actions at the MHF.
Monitoring 16 to 18	These conditions are valid, risk-based and consistent with the EP Act. Monitoring data is required for the purpose of assessing impacts following construction and during operations. Due to the unique properties of the ore concentrate compared to other ores handled in Port Hedland, it may be possible to determine the level of impact from the operation of the Premises. As the same ore (magnetite concentrate) will be handled in bulk at the Anderson Point MHF, magnetite may also be sourced from dust generated during stacking, reclaiming, shiploading and other ore transport activities at this site. Dust deposition monitoring required on the Part V approvals for both the Premises and MHF will inform future risk assessments associated with magnetite concentrate handling, including for ongoing operations of the Premises under a licence.
Limits – time limited operations 19	This condition is valid, risk-based and consistent with the EP Act. Maintaining moisture content above the Dust Extinction Moisture Level is a key control for minimising dust generation when transporting ore using open and semi-open handling infrastructure.

Reporting – time limited operations 20	These conditions are valid, risk-based and ensure that infrastructure and monitoring is operated/conducted as proposed and assessed.
Records and reporting (general) 21 to 23	This condition is valid, risk-based and consistent with the EP Act.

DWER notes that it may review the appropriateness and adequacy of controls at any time and that, following a review, DWER may initiate amendments to the works approvals under the EP Act.

9. Applicant's comments

The Applicant was provided with the draft Decision Report and draft Works Approval on 23 June 2020 and 27 July 2020. The Applicant provided comments which are summarised, along with DWER's response, in Appendix 2.

10. Conclusion

This assessment of the risks of activities on the Premises has been undertaken with due consideration of a number of factors, including the documents and policies specified in this Decision Report (summarised in Appendix 1).

Based on this assessment, it has been determined that the Works Approval will be granted subject to conditions commensurate with the determined controls and necessary for administration and reporting requirements.

Christine Hass
Manager Licensing
Resource Industries (Port Hedland)

Delegated Officer
under section 20 of the Environmental Protection Act 1986

Appendix 1: Key documents

	Document title	In text ref	Availability
1.	Licence L4432/1989/14 – Port Hedland Port	L4432/1989/14	accessed at www.der.wa.gov.au
2.	Works Approval W4520/2009/1–Utah Point Berth Project	W4520/2009/1	DWER records (A124233)
3.	Works Approval W5201/2012/1 – Utah Point Berth Facility Stockyard 2 Interim Solution	W5201/2012/1	DWER records (A438273)
4.	Ministerial Statement 914	MS 914	accessed at www.epa.wa.gov.au/
5.	DER, July 2015. <i>Guidance Statement: Regulatory principles</i> . Department of Environment Regulation, Perth.	DER 2015a	accessed at www.dwer.wa.gov.au
6.	DER, October 2015. <i>Guidance Statement: Setting conditions</i> . Department of Environment Regulation, Perth.	DER 2015b	
7.	DER, August 2016. <i>Guidance Statement: Licence duration</i> . Department of Environment Regulation, Perth.	DER 2016a	
8.	DER, November 2016. <i>Guidance Statement: Risk Assessments</i> . Department of Environment Regulation, Perth.	DER 2016b	
9.	DER, November 2016. <i>Guidance Statement: Decision Making</i> . Department of Environment Regulation, Perth.	DER 2016c	
10.	Fortescue (2020) Email correspondence 27 March 2020: Application for a works approval – Fortescue response to DWER request for additional information.	N/A	DWER records (A1888498)
11.	Fortescue (2020) Email correspondence 17 July 2020: Applicant response - W6394/2020/1 Iron Bridge Concentrate Handling Facility - application for a works approval - draft instrument and decision report.	N/A	DWER records (DWERDT309128)
12.	Fortescue (2020) Letter to DWER: Provision of data from the TPI Anderson Point boundary dust monitoring network to	FMG, 2020	DWER records (DWERDT309128)

	IB Operations Pty Ltd, received 17 July 2020.		
13.	Fortescue (2019) Occupational Noise Management Procedure (100-PR-SA-1043)	FMG 2019	DWER records (A1881440)
14.	Iron Bridge (2019) Iron Bridge Concentrate Handling Facility: Works Approval Application – Supporting Document. 662NS-4000-AP-EN-0005, submitted 23 December 2019	The Application	DWER records (DWERDT239234)
15.	Talis (2019) North Star Stage Two Export Facility – Environmental Noise Impact Assessment. Prepared for Iron Bridge Operations Pty Ltd.	Appendix 5 to the Application	DWER records (DWERDT239234)
16.	Iron Bridge (2015) Contractor Construction Environmental Management Plan -Iron Bridge Port Facility. 662PO-4000-PL-EN-0005	IB 2015	DWER records (A1855660)

Appendix 2: Summary of applicant's comments on risk assessment and draft conditions

Condition	Summary of applicant's comment	DWER response
Throughout	IB Operations Pty Ltd (IBO) requests that the term "Emergency Overflow Pond" be replaced with "Concentrate Diversion Pond" throughout the Works Approval and Decision Document.	Amended.
1	IBO requests 'Capable of storing at least 55,000 m3' be replaced with "Capable of storing entire concentrate pipeline contents" as the diameter of the pipeline has yet to be confirmed and therefore volume of the pipeline (and the concentrate diversion pond) could potentially change.	Amended.
1	IBO requests the addition of one Dust Monitor to Table 1.	Added.
3	IBO considers the wind arcs noted in this Condition to be excessive, and request that these be further refined so as to avoid potential influences from activities outside of the CHF footprint and outside of the control of IBO. IBO also notes that the monitors detailed in Table 2 do not correspond to the wind arcs in this Condition. b) The SW monitor will not be influenced by the IB CHF within this arc as it is located NW of the CHF and not within this arc. The TUL SW monitor will not be influenced by the IB CHF as it is upwind of the IB CHF in this wind arc. c) The SE monitor will not be influenced by the IB CHF as it is located northwest of the IB CHF and is not within this wind arc. The SW monitor will not be influenced by the IB CHF as it is upwind of the IB CHF in this wind arc. IBO requests that this Condition be provided as a table similar to Table 7 in the L8194 Licence. This will present the information in	Noted. The condition has been amended to further refine trigger criteria for: - monitors located between the Premises and sensitive receptors; and - when wind conditions place the Premises upwind of sensitive receptors. Note that the same required management actions apply during strong wind conditions, which are defined in the works approval as wind speeds 14 metres per second or greater.

Condition	Summary of applicant's comment	DWER response
	a better format to understand requirements. IBO also requests that the proposed CHF dust monitor be included in the table to align with Condition 1. Please see suggested Condition 3 Table in Attachment 3.	
3	<i>Supplementary comment submitted 13 August 2020:</i> IBO notes that the wind arcs have not been reduced as requested in proposed Condition 3 table (table 2 in current revision) submitted to DWER on 17/07. Please advise if DWER accepts the reduction in the dust management trigger criteria wind arcs of 210° to 220° (previously 201° to 231°) and 310° to 320° (previously 305° to 340°). These suggested wind arcs aim to provide a more targeted trigger for the IB CHF activities rather than the wider arcs which will capture activities outside of the IB CHF boundary over which IBO has no control. The revised condition also does not take into account background dust levels as monitored at BOM or Yule River locations. This may result in triggering dust management trigger criteria when background levels are high ($\geq 100 \mu\text{g}/\text{m}^3$ PM10 (rolling 1-hour average) within 3 hours prior to the trigger event). IBO requests that the suggested Table provided in the initial response be reconsidered.	Noted. Wind direction is not constant over the averaging period and the arc of influence must incorporate the fluctuations in direction during the travel time between source and receptor. It is for this reason that the arc of influence appears greater than the premises boundary. The measure of fluctuation in wind direction is called sigma theta and can also be used by air quality models to estimate growth of the pollutant plume. Sigma theta also changes with time and the arc of influence must also take into consideration the variation of sigma theta. Dust trigger levels during construction are not likely to be easily triggered by regional events unless those events also have the potential to generate dust on site i.e. high wind events. In these circumstances it is incumbent on the works approval holder to manage dust generated from the premises to minimise any further contribution to already high dust levels. Therefore the condition presented in the works approval draft has not been amended.
3	<i>Supplementary comment submitted 13 August 2020:</i> IBO also notes there is no duration for the management actions required under Condition 3. IBO requests that a Condition be added in alignment with the Anderson Point MHF Licence, which	Noted. Condition 4 inserted to place a time limit on the implementation of additional dust controls.

Condition	Summary of applicant's comment	DWER response
	states. <i>'The Licence Holder must continue actions specified in Condition 3 for the duration of management trigger criteria and/or Reportable Event criteria being exceeded'</i>	
6	IBO requests that the Condition be revised to read. <i>The works approval holder must within 90 calendar days of the infrastructure or equipment required by condition 1 being constructed and installed.</i> This will allow for the timeline and complexity of the installation of multiple infrastructure and reduce the number of submissions required to be submitted to DWER. This is also consistent with Fortescue's comments on Condition 12 of the Draft L8194 Licence.	Noted. Condition has been amended to require submission of written notification of final installation or construction of each row of infrastructure specified in Table 1, within 14 days. Notification may be by email or letter and may be in addition to the submission of the final Environmental Compliance Report. This amendment allows DWER to be notified of major milestones in a suitable timeframe and for the Applicant to prepare the Environmental Compliance Report, which is to be submitted within 30 calendar days of constructing/installing all infrastructure in Table 1.
9(b)	<i>Supplementary comment submitted 13 August 2020:</i> Condition 9 (b) reads '...as specified in Condition 14...' Should this be Condition 16?	Amended.
Former draft condition	<i>Supplementary comment submitted 13 August 2020:</i> IBO notes the addition of Condition 9 and 10 regarding noise management during construction. IBO notes Condition 9 refers to regulation 2, these are the Terms used in the Environment Protection (Noise) Regulations. Does DWER mean regulation 3 which notes the sources exempt from these regulations?	Noted. Based on the temporary nature of construction noise and distance to receptors, the works approval has been revised to remove noise monitoring requirements. Note that the works approval holder will be required to comply with the EP Noise Regulations during construction (and operation) of the Iron Bridge CHF. This includes compliance with regulation 7 and 8 for any construction works carried out other than between the hours of 0700 to 1900 on any day which is not a Sunday or public holiday, unless that work is carried out in accordance with a construction noise

Condition	Summary of applicant's comment	DWER response
		management plan in accordance with regulation 13(3)(c). The works approval holder will also be required to refer any community complaints received during construction to DWER under condition 10.
Former draft condition	<i>Supplementary comment submitted 13 August 2020:</i> As per regulation 13 of the Environment Protection (Noise) Regulations, the works being undertaken under this Works Approval meet the definition of 'Construction Work'. As such, regulation 7 and 8 do not apply. IBO requests the removal of Condition 9 and 10 from the Works Approval as IBO are legally required to comply with all applicable legislation, including the Environmental Protection Act 1986, and subsequently the Environmental Protection (Noise) Regulations 1997 and with Australian Standard AS 2436 2010. Alternatively, IBO suggests the following wording. 'The works approval holder will comply with the Environment Protection (Noise) Regulations, regulation 13 for any construction works carried out other than between the hours of 0700 to 1900 on any day which is not a Sunday or public holiday.'	As above.
12	Currently submission and approval of this Works Approval and amendment to L8194 has extended past 180 days. As such, IBO requests that the Condition be revised to read. <i>'for a period not exceeding 270 calendar days'</i> This will allow time for both the commissioning phase of the construction project and time to obtain a Licence to operate under Part V of the EP Act allowing for any potential delays in the process.	Noted. A commissioning period has been applied to allow for 90 days within which the works approval holder will be required to achieve operating standards that comply with time limited operating conditions. This is in addition to the 180 days allowable for time limited operations and commences from the first delivery of ore to the Anderson Point MHF. As the risk assessment has been completed for both construction and operation, and that operating conditions are likely to closely resemble time limited

Condition	Summary of applicant's comment	DWER response
		operating conditions on the works approval, 180 days is sufficient to issue a licence. This is on the assumption that all compliance documentation is submitted and is sufficient to verify the risks assessed in this Decision Report. In the unlikely event that the determination of risk needs to be reassessed and will take longer than 180 days, DWER will initiate an amendment to the works approval to extend the duration of time limited operations. Furthermore, 180 calendar days of time limited operation is consistent with maximum allowance provided in DWER's <i>Guideline: Industry Regulation Guide to Licensing</i>. No changes made to condition.
14	No Comment - as long as change to definition of 'availability' is accepted. See suggested change below. <i>Equipment is considered 'available' when product average moisture content is below DEM and equipment is in compliance with Condition 1.</i>	Noted. Dust generation along conveyors may occur when wet ore is handled as it can stick to the underside of conveyors, drop off and later dry out and become suspended in air. Where ore is handled dry, there is less risk of dust emissions as a result of ore carry-back. It is expected that following commissioning all ore from the Iron Bridge CHF will have a moisture level greater than DEM. No change to the definition or condition.
16	IBO requests the removal of the TUL SE monitor location from column 1, as the TUL SE monitoring station listed is an E-Sampler, which does not comply with AS3580.9.11 as required by column 5. There is no applicable Australian Standard for light scattering method of sampling PM10, as such IBO requests this monitor be removed from this Works Approval. An updated	Noted. Although E-Samplers cannot comply with Australian Standards for beta attenuation monitors, they can still provide valuable information/data. Changes have been made to acknowledge that TUL SE monitoring station must only comply with Australian Standards for monitoring equipment siting.

Condition	Summary of applicant's comment	DWER response															
	Figure 2 has been provided to reflect this change.	No changes made.															
16	IBO requests the removal of this row from the table as Dust Deposition monitoring is being managed under Condition 23 of the amended L8194 Anderson Point MHF Licence under Part V of the EP Act. This will remove duplication of monitoring and reporting requirements. Dust emissions from the construction of the IB CHF will be monitored in accordance with Row 1 of Table 2, Condition 3 and the proposed new condition regarding boundary dust monitoring as requested below.	Noted. As the occupiers of both premises are different it is necessary for each to maintain access to data that is in connection with each premises activity. This also assists DWER in identifying relevant information pertaining to each premises. No changes made.															
16	IBO requests the addition of the following row to Table 3. Also see Figure 3. <table><tr><th>Column 1</th><th>Column 2</th><th>Column 3</th><th>Column 4</th><th>Column 5</th></tr><tr><th>Monitoring Station</th><th>Parameter</th><th>Averaging Period</th><th>Frequency</th><th>Method</th></tr><tr><td>CHF</td><td>Particles as PM10 (µg/m3)</td><td>1 hour</td><td>Continuous</td><td>AS3580.1.1 AS3580.9.11</td></tr></table> This monitor will be installed to contribute to the TPI boundary dust monitoring network. A new monitor will be installed to the south east of the IB CHF to monitor dust emissions during construction and operation which may have a potential impact on South Hedland. See Figure 2. The existing SE corner monitor, part of the Anderson Point MHF boundary dust monitoring network, will be used to monitor dust emissions which may impact on the West End during	Column 1	Column 2	Column 3	Column 4	Column 5	Monitoring Station	Parameter	Averaging Period	Frequency	Method	CHF	Particles as PM10 (µg/m3)	1 hour	Continuous	AS3580.1.1 AS3580.9.11	Noted. The Iron Bridge CHF monitor has been added to the table requiring the monitor to have a real-time add on (10-minute averaged data). The purpose of this is to ensure compliance with management trigger criteria, which requires PM₁₀ monitoring against a one hour rolling average. A row has also been added to Table 1 for the installation of this monitor prior to the commencement of other construction activities.
Column 1	Column 2	Column 3	Column 4	Column 5													
Monitoring Station	Parameter	Averaging Period	Frequency	Method													
CHF	Particles as PM10 (µg/m3)	1 hour	Continuous	AS3580.1.1 AS3580.9.11													

Condition	Summary of applicant's comment	DWER response
	construction and operation of the IB CHF.	
17	IBO considers the 14-day timeframe in this Condition to be unachievable. This data is managed by a third party. The data is validated and provided to TPI by the 12th of the following month. This timeframe does not allow for the required validation and/or any potential delays in receiving data. As such, IBO requests the timeframe stipulated in the Condition be revised to read. The works approval holder must obtain validated air quality and meteorological monitoring data specified in condition 13 within 45 days of data collection.	Noted. To ensure compliance with dust management triggers (condition 3), the applicant will be required to maintain access to real-time boundary monitoring data (PM₁₀ and meteorological data). DWER notes that this access has been granted by the owners of the data and that there is also no restriction to the transfer of validated data to the applicant. The request to receive validated data within 45 days has been accepted.
18	<i>Supplementary comment submitted 13 August 2020:</i> IBO have consulted with the engineering firm which conducts the calibration of the NIR equipment installed at the Anderson Point MHF. Based on their knowledge, experience and recommendation, IBO requests that calibration be revised to read '6-monthly'. The NIR equipment which will be installed in the IB CHF will be calibrated to measure magnetite product prior to being installed. With a follow-up calibration scheduled 6-monthly as per the proposed operations practice. The NIR are required to be sent offsite for calibration and turnaround time cannot be guaranteed within the timeframe required in Condition 18, Table 4. This method also reflects the operations scenario and will align with the existing operations practice for the 6 analysers installed at the Port. Calibration will be undertaken in accordance with AS5621 or ISO3087 or alternative method approved by the CEO.	Amended.

Condition	Summary of applicant's comment	DWER response
16, 18	No Comment as long as Dust Deposition Monitoring is removed from Condition 16	Noted. The definition of 'average monthly availability' has not been changed. See DWER response to applicant comments on condition 16.
Definition – Average Monthly Availability	IBO request additional wording in the definition as per below. <i>Equipment is considered 'available' when product average moisture content is below DEM and equipment is in compliance with Condition 1.</i> This will align with the L8194 Part V Licence for the Anderson Point MHF.	As above.
Schedule 1: Maps	IBO requests maps be updated to reflect IBO's comments on Condition 3, Table 2.	Noted. Further amendments as requested.
Decision Report Section 3.3	Decision report states <i>'Pressure monitoring stations will be established along the pipelines capable of detecting corrosion to maintain safe operation'</i> IBO requests wording be changed to read <i>'Pressure monitoring stations will be established along the pipelines capable of detecting leaks through a loss in pressure, to maintain safe operation'</i> As it is not accurate that pressure monitoring stations can detect corrosion.	Amended.

Appendix 3: Summary of stakeholder submissions on the Application

Submitter	Summary of stakeholder comments	DWER response
Pilbara Ports Authority	PPA notes that Section 7 of the works approval application form refers to a Development Application for the Iron Bridge Concentrate Handling Facility (submitted on 29 January 2020 and approved on 14 April 2020) and a Development Application for 'additional infrastructure (including the diversion pond) at the Herb Elliot Port' and notes that they have not yet been submitted to PPA. Should DWER accept the works approval, this submission should not be construed to mean that PPA accedes to the infrastructure being built. This is a separate matter that will require review and agreement between PPA and Fortescue/IBO. PPA has no further comment or concern in relation to the proposed project at this time.	Noted.
Department of Health	The DOH has no objection to the proposed works approval on the condition that the proposal demonstrates no net increase in emissions to the Port Hedland air-shed. In particular, the guideline of 70µg/m³ for PM₁₀ should be met at the regulatory monitors in the community. The guideline allows for 10 exceedances to accommodate exceptional circumstances. Should Fortescue not meet Industry Best Practice for dust management now and against the pending 2020/2021 Best Practice Guidelines e.g. stockpiling, handling, blending at Port, then alternative methods of materials handling would need to be sought.	Noted. DWER notes the Department of Health's comments in regard to the application of the AGV. The State Government as a whole is progressing with multiple strategies to both reduce ambient dust impacts and minimise receptor exposure in the West End of Port Hedland. DWER's current regulatory approach is to require applications for expansion to demonstrate that emissions and discharges will not increase as a result of the proposal, and the current risk is not increased. Where this cannot be demonstrated, or there is uncertainty in the effectiveness of dust controls, DWER may apply additional regulatory controls. In this instance, DWER has required the Applicant to proactively manage dust emissions during construction and time limited operations, install additional dust

Submitter	Summary of stakeholder comments	DWER response
		control equipment and undertake boundary dust monitoring. Existing industry best practice guidelines developed on behalf of PPA were considered as part of this assessment. Although CHF meets the requirements for existing guidelines, it is possible that in the time since the development of these guidelines leading practice in bulk material handling and dust management has evolved. DWER has commissioned a Third Party Specialist Consultant to develop alternative dust management guidelines for port operators according to a government-endorsed dust Taskforce recommendation. Once developed, industry will be required to implement the guidelines.
Town of Port Hedland	After due consideration, the Town has determined to support the application.	Noted.
Department of Primary Industries and Regional Development	Provision of support for the proposal as it will facilitate an expansion of the local economy and create the opportunity for more local jobs.	Noted.

Attachment 1: Issued Works Approval W6394/2020/1
