



Government of **Western Australia**
Department of **Environment Regulation**

Your ref W5815/2015/1
Our ref DER2015/000388
Enquiries Haley Brunel
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Mr Sean McGunnigle
Manager, Environmental Approvals
Chichester Metals Pty Ltd
PO Box 6915
EAST PERTH WA 6892

Dear Mr McGunnigle

ENVIRONMENTAL PROTECTION ACT 1986: WORKS APPROVAL GRANTED
Premises: Brompton Tailings Storage Facility Phase 3, MULGA DOWNS WA 6751
Works Approval Number: W5815/2015/1

A works approval under the *Environmental Protection Act 1986* (the Act) has been granted for the above premises. The Department of Environment Regulation will advertise the issuing of this works approval in the public notices section of *The West Australian* newspaper.

The works approval includes attached conditions. Under section 55(1) of the Act, it is an offence to contravene a condition of a works approval. This offence carries a penalty of up to \$125,000 and a daily penalty of up to \$25,000.

In accordance with section 102(1)(c) of the Act, you have 21 days to appeal the conditions of the works approval. Under section 102(3)(a) of the Act, any other person may also appeal the conditions of the works approval. To lodge an appeal contact the Office of the Appeals Convenor on 6467 5190 or by email at admin@appealsconvenor.wa.gov.au.

Emissions from the premises that are the subject of a works approval are not authorised until or unless a licence is issued or unless the emissions are in accordance with the works approval and while that works approval is in force.

If you have any queries regarding the above information, please contact Haley Brunel on 9182 2034.

Yours sincerely

Officer delegated under section 20
of the *Environmental Protection Act 1986*

Thursday, 4 June 2015

enc: *Environmental Protection Act 1986* Works Approval W5815/2015/1
cc. Local Government authority: Shire of East Pilbara



Works Approval

Environmental Protection Act 1986, Part V

Works Approval Holder: Chichester Metals Pty Ltd

Works Approval Number: W5815/2015/1

Registered office: Level 2
87 Adelaide Terrace
EAST PERTH WA 6004

ACN: 109 264 262

Premises address: Brampton Tailings Storage Facility Phase 3
Mining Tenements M46/356, M46/402, M46/410, M46/411, M46/357,
M46/409, M46/453, M45/1128, M46/449, M46/452, M46/451, M46/454,
M46/450, M45/1084, M45/1140, M45/1139, M46/423, M46/424,
M45/1102, M45/1105, M45/1124, M45/1103, M45/1106, M45/1125,
M45/1104, M45/1107 L46/48, L46/49, M45/1082, M45/1083, M45/1127,
M45/1138, M46/403 M46/406, M46/407, M46/408, M46/409 M46/412,
M46/413, M46/414, M46/415, L46/52, L46/99, L46/46, L46/96, L46/49,
L46/64, L45/152, L46/47, L46/48, L46/51, L46/60, L46/57, L46/62 and
Exploration Leases E45/2498, E46/590, E46/612, E46/724, E45/2499,
E45/2652
MULGA DOWNS WA 6751 as depicted in Schedule 1.

Issue date: Thursday, 4 June 2015

Commencement date: Monday, 8 June 2015

Expiry date: Thursday, 7 June 2018

The following category/s from the *Environmental Protection Regulations 1987* cause this
Premises to be a prescribed premises for the purposes of the *Environmental Protection Act 1986*:

Category number	Category description	Category production or design capacity	Approved premises production or design capacity
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; (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	50,000 tonnes or more per year	6,300,000 tonnes per annual period



Conditions

This Works Approval is subject to the conditions set out in the attached pages.

.....
Officer delegated under section 20
of the *Environmental Protection Act 1986*



Works Approval Conditions

1 General

1.1 Interpretation

1.1.1 In the Works Approval, definitions from the *Environmental Protection Act 1986* apply unless the contrary intention appears.

1.1.2 In the Works Approval, unless the contrary intention appears:

'Act' means the *Environmental Protection Act 1986*;

'annual period' means the inclusive period from 1 January to 31 December in the same year;

'CEO' means Chief Executive Officer of the Department of Environment Regulation;

'CEO' for the purpose of correspondence means;

Manager Licensing – Resources Sector (North)
Department of Environment Regulation
Locked Bag 33
CLOISTERS SQUARE
PERTH WA 6850
Telephone: (08) 9182 2000
Facsimile: (08) 9333 7550
Email: industry.regulation@der.wa.gov.au;

'code of practice for the storage and handling of dangerous goods' means document titled "Storage and handling of dangerous goods: Code of Practice" published by the Department of Mines and Petroleum, as amended from time to time;

'Commissioning' means the process of operation and testing that verifies the works and all relevant systems, plant, machinery and equipment have been installed and are performing in accordance with the design specification set out in the works approval application;

'dangerous goods' has the meaning defined in the *Dangerous Goods Safety (Storage and Handling of Non-explosives) Regulations 2007*;

'environmentally hazardous material' means material (either solid or liquid raw materials, materials in the process of manufacture, manufactured products, products used in the manufacturing process, by-products and waste) which if discharged into the environment from or within the premises may cause pollution or environmental harm. Note: Environmentally hazardous materials include dangerous goods where they are stored in quantities below placard quantities. The storage of dangerous goods above placard quantities is regulated by the Department of Mines and Petroleum;

'Premises' means the area defined in the Premises Map in Schedule 1 and listed as the Premises address on page 1 of the Works Approval;

'Schedule 1' means Schedule 1 of this Works Approval unless otherwise stated;

'Stage 1' means construction of the eastern embankment with an elevation of between 446mRL-450mRL at the embankment crest;



'Stage 2' means construction of the final embankment lift with an approximate maximum elevation of 464mRL at the embankment crest;

'Works Approval' means this Works Approval numbered W5815/2015/1 and issued under the Act; and

'Works Approval Holder' means the person or organisation named as the Works Approval Holder on page 1 of the Works Approval.

1.1.3 Any reference to an Australian or other standard in the Works Approval means the relevant parts of the standard in force from time to time during the term of this Works Approval.

1.1.4 Any reference to a guideline or code of practice in the Works Approval means the current version of the guideline or code of practice in force from time to time, and shall include any amendments or replacements to that guidelines or code of practice made during the term of this Works Approval.

1.2 General conditions

1.2.1 The Works Approval Holder shall construct the works in accordance with the documentation detailed in Table 1.2.1:

Table 1.2.1: Construction Requirements ¹		
Document	Parts	Date of Document
Works Approval Application Form	All	3 March 2015
Supporting Information for Works Approval Application: Bampton Tailings Storage Facility Phase 3 – Cloudbreak Mine (Rev 1, CB-WA-EN-0006)	All, including Drawings and Appendices	February 2015
Letter correspondence, "Bampton Tailings Storage Facility Phase 3 Works Approval – Additional Information", Sean McGunnigle, Fortescue Metals Group Limited	All	8 April 2015

Note 1: Where the details and commitments of the documents listed in condition 1.2.1 are inconsistent with any other condition of this works approval, the conditions of this works approval shall prevail.

1.2.2 The Works Approval Holder, except where storage is prescribed in section 1.3, shall ensure that environmentally hazardous materials are stored in accordance with the Code of Practice for the Storage and handling of dangerous goods.

1.2.3 The Works Approval Holder shall commission the Bampton Tailings Storage Facility Phase 3 for a period not exceeding 3 months.

1.3 Premises operation

There are no specified conditions relating to Premises operation in this section.

2 Emissions

There are no specified conditions relating to emissions in this section.

3 Monitoring

There are no specified conditions relating to monitoring in this section.



4 Improvements

There are no specified conditions relating to improvements in this section.

5 Information

5.1 Reporting

5.1.1 The Works Approval Holder shall submit a compliance document to the CEO, following the construction of Stage 1 and Stage 2 and prior to commissioning of the same.

5.1.2 The compliance document shall:

- (a) certify that the works were constructed in accordance with the conditions of the Works Approval; and
- (b) be signed by a person authorised to represent the Works Approval Holder and contain the printed name and position of that person within the company.

5.2 Notification

5.2.1 The Works Approval Holder shall ensure that the parameters listed in Table 5.2.1 are notified to the CEO and are in accordance with the notification requirements of the table.

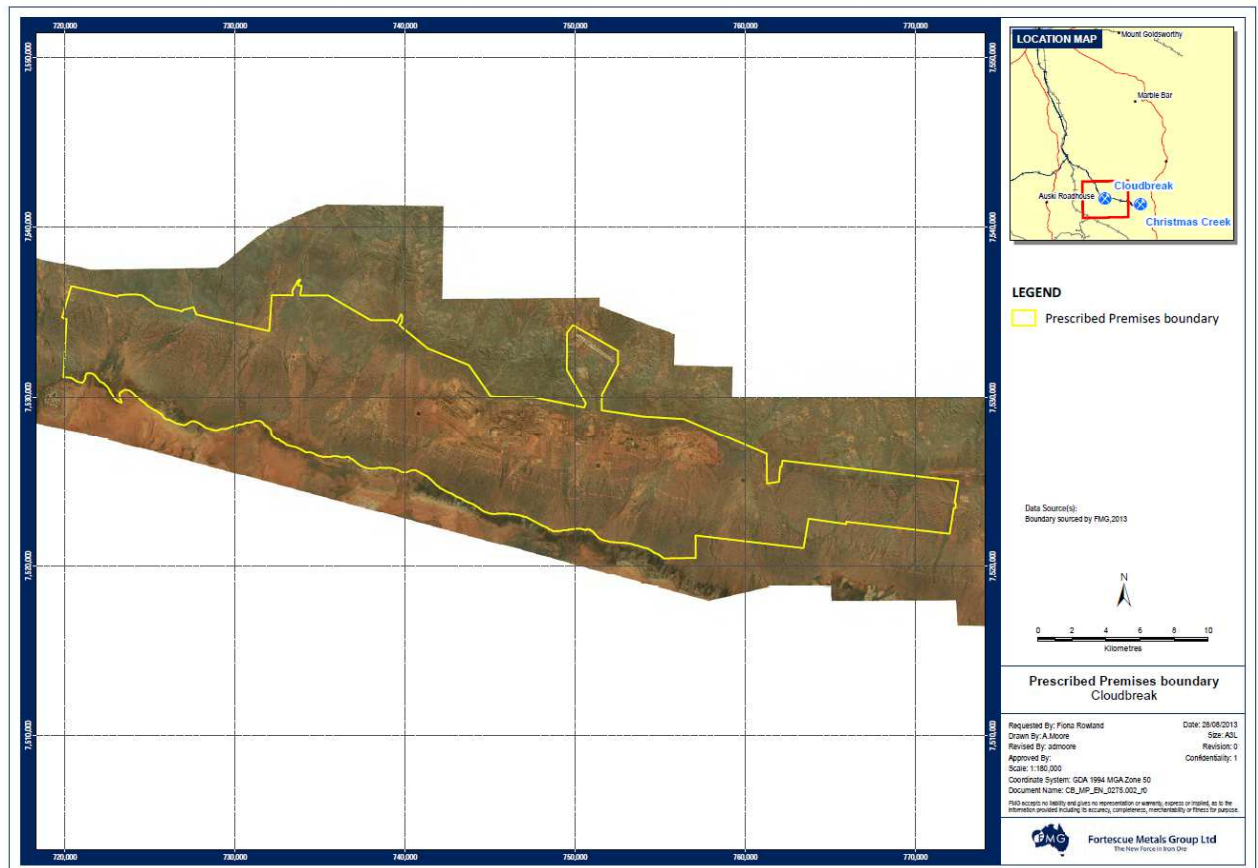
Table 5.2.1: Notification requirements			
Condition or table (if relevant)	Parameter	Notification requirement	Format or form
1.2.4	Commencement of commissioning of Stage 1 and Stage 2	7 days prior to start	None specified
	Completion of commissioning of Stage 1 and Stage 2	7 days after completion	



Schedule 1: Maps

Premises map

The Premises is shown in the map below. The yellow line depicts the Premises boundary.





Decision Document

Environmental Protection Act 1986, Part V

Proponent: Chichester Metals Pty Ltd

Works Approval: W5815/2015/1

Registered office: Level 2
87 Adelaide Terrace
EAST PERTH WA 6004

ACN: 109 264 262

Premises address: Brompton Tailings Storage Facility Phase 3
Mining Tenements M46/356, M46/402, M46/410, M46/411, M46/357,
M46/409, M46/453, M45/1128, M46/449, M46/452, M46/451, M46/454,
M46/450, M45/1084, M45/1140, M45/1139, M46/423, M46/424, M45/1102,
M45/1105, M45/1124, M45/1103, M45/1106, M45/1125, M45/1104,
M45/1107 L46/48, L46/49, M45/1082, M45/1083, M45/1127, M45/1138,
M46/403 M46/406, M46/407, M46/408, M46/409 M46/412, M46/413,
M46/414, M46/415, L46/52, L46/99, L46/46, L46/96, L46/49, L46/64,
L45/152, L46/47, L46/48, L46/51, L46/60, L46/57, L46/62 and Exploration
Leases E45/2498, E46/590, E46/612, E46/724, E45/2499, E45/2652
MULGA DOWNS WA 6751

Issue date: Thursday, 4 June 2015

Commencement date: Monday, 8 June 2015

Expiry date: Thursday, 7 June 2018

Decision

Based on the assessment detailed in this document the Department of Environment Regulation (DER), has decided to issue a works approval. DER considers that in reaching this decision, it has taken into account all relevant considerations and legal requirements and that the Works Approval and its conditions will ensure that an appropriate level of environmental protection is provided.

Decision Document prepared by: Haley Brunel
Licensing Officer

Decision Document authorised by: Alana Kidd
Manager Licensing – Resources Sector (North)



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1 Purpose of this Document

This decision document explains how DER has assessed and determined the application and provides a record of DER's decision-making process and how relevant factors have been taken into account. Stakeholders should note that this document is limited to DER's assessment and decision making under Part V of the *Environmental Protection Act 1986*. Other approvals may be required for the proposal, and it is the proponent's responsibility to ensure they have all relevant approvals for their Premises.

Works approval and licence conditions

DER has three types of conditions that may be imposed on works approvals and licences. They are as follows;

Standard conditions (SC)

DER has standard conditions that are imposed on all works approvals and licences regardless of the activities undertaken on the Premises and the information provided in the application. These are included as the following conditions on works approvals and licences:

Works approval conditions: 1.1.1-1.1.4, 1.2.1, 1.2.2, 5.1.1 and 5.1.2.

Licence conditions: 1.1.1-1.1.4, 1.2.1-1.2.4, 5.1.1-5.1.4 and 5.2.1.

For such conditions, justification within the Decision Document is not provided.

Optional standard conditions (OSC)

In the interests of regulatory consistency DER has a set of optional standard conditions that can be imposed on works approvals and licences. DER will include optional standard conditions as necessary, and are likely to constitute the majority of conditions in any licence. The inclusion of any optional standard conditions is justified in Section 4 of this document.

Non standard conditions (NSC)

Where the proposed activities require conditions outside the standard conditions suite DER will impose one or more non-standard conditions. These include both premises and sector specific conditions, and are likely to occur within few licences. Where used, justification for the application of these conditions will be included in Section 4.



2 Administrative summary

Administrative details		
Application type	Works Approval <input checked="" type="checkbox"/> New Licence <input type="checkbox"/> Licence amendment <input type="checkbox"/> Works Approval amendment <input type="checkbox"/>	
Activities that cause the premises to become prescribed premises	Category number(s)	Assessed design capacity
	5	6,300,000 tonnes per annual period
Application verified	Date: 9 March 2015	
Application fee paid	Date: 16 March 2015	
Works Approval has been complied with	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input checked="" type="checkbox"/>	
Compliance Certificate received	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input checked="" type="checkbox"/>	
Commercial-in-confidence claim	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Commercial-in-confidence claim outcome	N/A	
Is the proposal a Major Resource Project?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Was the proposal referred to the Environmental Protection Authority (EPA) under Part IV of the <i>Environmental Protection Act 1986</i> ?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Referral decision No: 1848 Managed under Part V <input checked="" type="checkbox"/> Assessed under Part IV <input type="checkbox"/>
Is the proposal subject to Ministerial Conditions?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Ministerial statement No: 899 EPA Report No: 1429
Does the proposal involve a discharge of waste into a designated area (as defined in section 57 of the <i>Environmental Protection Act 1986</i>)?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Department of Water consulted Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Is the Premises within an Environmental Protection Policy (EPP) Area Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> If Yes include details of which EPP(s) here.		
Is the Premises subject to any EPP requirements? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> If Yes, include details here, eg Site is subject to SO ₂ requirements of Kwinana EPP.		



3 Executive summary of proposal and assessment

Chichester Metals Pty Ltd (Chichester Metals), a wholly owned subsidiary of the Fortescue Metals Group Limited (FMG), proposes to construct the Brampton Phase 3 Tailings Storage Facility (TSF) at the Cloudbreak Mine (Cloudbreak). Cloudbreak is operated under Licence L8199/2007/2, issued under Part V of the *Environmental Protection Act 1986* (the Act).

Cloudbreak has four TSFs at capacity and is currently operating its fifth. Two of these TSFs are within the Brampton pit area. Brampton Phase 1 in-pit TSF (B1TSF) is located in the northern end of the Brampton pit. Brampton Phase 2 in-pit TSF (B2TSF) is located directly south of the B1TSF. The proposed phase 3 TSF, which is subject to this Works Approval, is a combined in-pit/above ground TSF to be located directly above the existing B1TSF and B2TSF footprint.

Tailings from the beneficiation of iron ore will be contained within existing mine waste dumps to the north, south and west and an embankment to the east. The embankment will be constructed in a number of stages and will be above natural ground level, but below the level of the waste dumps on the northern side of the TSF. Stockpiled and stripped overburden waste rock material suitable for embankment dam construction will be used to construct the embankment.

Although the geometry of the embankment may change depending on operation filling rates, the design, construction and operation will continue to be carried out in compliance with the Department of Mines and Petroleum's Code of practice: Tailings Storage Facilities in Western Australia (2013) and the Australian National Committee on Large Dams Incorporated 'Guidelines on Tailings Dams' (2012).

Tailings will be delivered to the TSF from the ore processing facility (OPF) using the existing tailings delivery pipeline route. Supernatant water will be returned to the OPF also using the existing tailings return pipeline route. Both the existing disposal and decant pipelines will be realigned and/or upgraded to suit the operational arrangement of the new TSF. The tailings distribution pipeline around the perimeter of the TSF will incorporate valves and spigots spaced at approximately 100 m intervals to allow targeted tailings deposition (beaching).

The footprint of the facility will be approximately 250 hectares (ha) and have a total storage capacity of approximately 33.3 million tonnes. At the average forecasted tailings production rate of 6.3 million tonnes per annum, the facility has an estimated operational life of approximately 8 years.

It is proposed that the TSF will be constructed in stages, with the first stage of works commencing in June 2015 and scheduled to be complete by December 2015. The additional lift (stage2) of the TSF embankment is anticipated to commence in December 2017.

The construction and operation of the Brampton Phase 3 TSF is within the scope of Ministerial Statement 899. In correspondence dated 11 November 2013 the Office of the Environmental Protection Authority confirmed that no further approvals under Part IV of the Act would be required for construction of the Brampton Phase 3 TSF.



4 Decision table

All applications are assessed in line with the *Environmental Protection Act 1986*, the *Environmental Protection Regulations 1987* and DER's Operational Procedure on Assessing Emissions and Discharges from Prescribed Premises. Where other references have been used in making the decision they are detailed in the decision document.

Note that the existing operating Licence for Cloudbreak Iron Ore Mine, L8199/2007/2, is not the updated format. Given that the Cloudbreak operating Licence is likely to be amended and converted to a new format Licence in the near future, condition numbers have not been referred to in the decision table.

DECISION TABLE				
Works Approval / Licence section	Condition number W = Works Approval L = Licence	OSC or NSC	Justification (including risk description & decision methodology where relevant)	Reference documents
General conditions	W1.2	OSC	Under condition 1.2 of the Works Approval, Chichester Metals is required to construct the works in accordance with the supporting documentation submitted with the Works Approval application. OSC 1.2.3 has also been included on the Works Approval, allowing a three month commissioning period for the TSF. The Cloudbreak operating Licence will require a minor amendment to update the monitoring bore locations and include the requirement to maintain an appropriate operating freeboard.	Application supporting documentation
Emissions general	W2	N/A	There is not expected to be any point source emissions associated with construction of the TSF. No specified conditions relating to emissions have been included in the Works Approval.	N/A
Point source emissions to air including monitoring	W2 and W3	N/A	Construction and Operation There is not expected to be any significant emissions to air during construction or operation of the TSF. No specified conditions relating to emissions to air or the monitoring of such emissions are required to be included on the Works Approval or Licence.	Application supporting documentation
Point source emissions to	W2 and W3	N/A	Construction and Operation There is not expected to be any point source emissions to surface water during	Application supporting



DECISION TABLE				
Works Approval / Licence section	Condition number W = Works Approval L = Licence	OSC or NSC	Justification (including risk description & decision methodology where relevant)	Reference documents
surface water including monitoring			construction or operation of the TSF. No specified conditions relating to point source emissions to surface water or the monitoring of such emissions are required to be included on the Works Approval or Licence.	documentation General provisions of the <i>Environmental Protection Act 1986</i> <i>Environmental Protection (Unauthorised Discharges) Regulations 2004</i>
Point source emissions to groundwater including monitoring	W2 and W3	N/A	Construction and Operation There is not expected to be any point source emissions to groundwater during construction or operation of the TSF. No specified conditions relating to point source emissions to groundwater or the monitoring of such emissions are required to be included on the Works Approval or Licence.	Application supporting documentation General provisions of the <i>Environmental Protection Act 1986</i> <i>Environmental Protection (Unauthorised Discharges) Regulations 2004</i>
Emissions to land including	W2 and W3	N/A	Construction There is not expected to be any emissions to land during construction of the	Application supporting



DECISION TABLE				
Works Approval / Licence section	Condition number W = Works Approval L= Licence	OSC or NSC	Justification (including risk description & decision methodology where relevant)	Reference documents
monitoring	Licence conditions	OSC	<p>TSF. No specified conditions relating to emissions to land or the monitoring of such emissions are required to be included in the Works Approval.</p> <p>Operation DER's assessment and decision making is detailed in Appendix A.</p>	<p>documentation</p> <p>General provisions of the <i>Environmental Protection Act 1986</i></p> <p><i>Environmental Protection (Unauthorised Discharges) Regulations 2004</i></p>
Fugitive emissions	W2	N/A	<p>Construction <u>Emission description</u> <i>Emission:</i> Minor dust emissions, generated through handling of construction materials and vehicle movements, are expected during construction of the TSF. <i>Impact:</i> Dust emissions can be harmful to human health and the environment. Elevated total suspended particles (TSP) impacts ambient environmental quality which can result in amenity impacts and smother vegetation. <i>Controls:</i> Chichester Metals will manage dust during construction of the TSF in accordance with the <i>Mine and Rail Dust Management Plan</i>. Dust suppression measures, including the use of water carts and vehicle speed restrictions, will be implemented in high risk areas to minimise potential for dust deposition on vegetation or a reduction in amenity.</p> <p>While dust emissions are possible, impacts to vegetation will be minimised due to the proposed location of the TSF within a previously disturbed area which has been cleared of native vegetation.</p> <p><u>Risk Assessment</u></p>	<p>Application supporting documentation</p> <p>General provisions of the <i>Environmental Protection Act 1986</i></p> <p>Mine and Rail Dust Management Plan (45-PL-EN-0030)</p>



DECISION TABLE				
Works Approval / Licence section	Condition number W = Works Approval L = Licence	OSC or NSC	Justification (including risk description & decision methodology where relevant)	Reference documents
	Licence conditions	OSC	<p><i>Consequence:</i> Insignificant <i>Likelihood:</i> Possible <i>Risk Rating:</i> Low</p> <p><u>Regulatory Controls</u> No specified conditions relating to the management of fugitive dust emissions have been included on the Works Approval. Chichester Metals has committed to implementing appropriate dust mitigation measures to minimise dust emissions during construction.</p> <p><u>Residual Risk</u> <i>Consequence:</i> Insignificant <i>Likelihood:</i> Possible <i>Risk Rating:</i> Low</p> <p>Operation There is not expected to be any fugitive emissions during operation of the TSF.</p> <p>The existing operating Licence has conditions relating to the management of fugitive dust emissions. No additional conditions relating to fugitive emissions are required to be included on the Licence.</p>	
Odour	W2 Licence conditions	N/A	<p>Construction and Operation There is not expected to be any odour emissions during construction or operation of the TSF. No specified conditions relating to odour emissions are required to be included on the Works Approval or Licence.</p>	<p>Application supporting documentation</p> <p>General provisions of the <i>Environmental Protection Act 1986</i></p>



DECISION TABLE				
Works Approval / Licence section	Condition number W = Works Approval L = Licence	OSC or NSC	Justification (including risk description & decision methodology where relevant)	Reference documents
Noise	W2 Licence conditions	N/A	Construction and Operation There is not expected to be any significant noise emissions during construction or operation of the TSF. No specified conditions relating to noise emissions are required to be included on the Works Approval or Licence.	Application supporting documentation General provisions of the <i>Environmental Protection Act 1986</i> <i>Environmental Protection (Noise) Regulations 1997</i>
Monitoring general	W3	N/A	Monitoring will not be required during construction of the TSF, therefore, no general monitoring conditions have been applied to the Works Approval.	N/A
Monitoring of inputs and outputs	W3	N/A	Construction and Operation Monitoring of inputs and outputs will not be required during construction or operation of the TSF. No specified conditions relating to the monitoring of inputs and outputs are required to be included on the Works Approval or Licence.	Application supporting documentation
Process monitoring	W3 Licence conditions	N/A OSC	Construction No conditions relating to process monitoring have been included on the Works Approval. Operation During operation of the TSF, Chichester Metals will need to maintain adequate vertical freeboard on the TSF. This will be required through a condition applied	Application supporting documentation



DECISION TABLE				
Works Approval / Licence section	Condition number W = Works Approval L = Licence	OSC or NSC	Justification (including risk description & decision methodology where relevant)	Reference documents
			<p>to the Licence.</p> <p>Conditions will also be included on the Licence requiring daily visual inspections of the tailings pipelines, return water pipelines and daily checks of the embankment freeboard.</p>	
Ambient quality monitoring	<p>W3</p> <p>Licence conditions</p>	<p>N/A</p> <p>OSC</p>	<p>Construction Ambient quality monitoring will not be required during construction of the TSF.</p> <p>Operation – Groundwater monitoring Under existing conditions on the Cloudbreak operating Licence, Chichester Metals is required to undertake biannual samples from four groundwater monitoring bores in the vicinity of the existing Brampton below ground TSFs. The existing groundwater monitoring programme will continue to be implemented to determine if seepage from the existing and proposed TSF is impacting on groundwater levels and quality. Groundwater levels are measured and samples collected and analysed for the following parameters:</p> <ul style="list-style-type: none"> • pH (field); • electrical conductivity (µAS/cm); • Total Dissolved Solids; • Major cations and anions – Na, K, Ca, Mg, Cl, SO⁴; and • Dissolved elements – Ag, Al, As, B, Cd, Cu, Cr, Fe, Hg, Ni, Pb, Nn. <p>The existing monitoring program detailed above is considered adequate considering the benign nature of the tailings and should identify impacts to groundwater contributable to the operation of the TSF. Chichester Metals will be required to report the results of the monitoring carried out in the Annual Environmental Report, submitted to DER for assessment.</p> <p>The existing Licence conditions will need to be updated to reflect minor</p>	Application supporting documentation



DECISION TABLE				
Works Approval / Licence section	Condition number W = Works Approval L = Licence	OSC or NSC	Justification (including risk description & decision methodology where relevant)	Reference documents
			modifications to the bore IDs and locations.	
Meteorological monitoring	W3 Licence conditions	N/A	Construction and Operation Meteorological monitoring is not required during construction or operation of the TSF. No specified conditions relating to meteorological monitoring are required to be included on the Works Approval or Licence.	N/A
Improvements	W4 Licence conditions	N/A	Construction and Operation There is no requirement to include improvement conditions on the Works Approval or Licence.	N/A
Information	W5	OSC	Construction and Operation Standard conditions have been included on the Works Approval requiring the submission of a compliance document following construction of the TSF, certifying that the works have been constructed in accordance with the Works Approval. OSC 5.2 has been included on the Works Approval requiring Chichester Metals to notify DER seven days prior to the commencement of commissioning and seven days after the completion of commissioning.	Application supporting documentation
	Licence conditions	OSC	The existing Licence includes conditions requiring Chichester Metals to submit an Annual Environmental Report to DER, with the results of all monitoring conducted under the conditions of the Licence.	
Licence Duration	N/A	N/A	N/A	N/A

5 Advertisement and consultation table

Date	Event	Comments received/Notes	How comments were taken into consideration
23/03/2015	Application advertised in West Australian (or other relevant newspaper)	No comments received in response to the advertising carried out	N/A
30/04/2015	Proponent sent a copy of draft instrument	<p>A summary of the comments received from the proponent is provided below:</p> <ul style="list-style-type: none"> • can the Licence amendment to include the TSF be undertaken within converting the Licence to the REFIRE format?; • the suite of parameters sampled during groundwater monitoring listed in the Works Approval is more relevant than what is currently listed in the Licence; and • FMG will submit partial compliance documentation following construction of each stage of works. 	<ul style="list-style-type: none"> • DER advised FMG that the timing of submission of the Licence amendment application will determine if the Licence is converted as it will depend whether version 3 is available for use; • The suite of groundwater monitoring parameters can be updated at the next Licence amendment; and • The Works Approval conditions were updated to include the requirement to submit compliance documentation following the completion of each stage of works.



6 Risk Assessment

Note: This matrix is taken from the DER Corporate Policy Statement No. 07 - Operational Risk Management

Table 1: Emissions Risk Matrix

Likelihood	Consequence				
	Insignificant	Minor	Moderate	Major	Severe
Almost Certain	Moderate	High	High	Extreme	Extreme
Likely	Moderate	Moderate	High	High	Extreme
Possible	Low	Moderate	Moderate	High	Extreme
Unlikely	Low	Moderate	Moderate	Moderate	High
Rare	Low	Low	Moderate	Moderate	High



Appendix A

Emissions to land including monitoring

Normal operation

Emission description

Emission: Tailings produced through the beneficiation of iron ore will be deposited into the Brampton Phase 3 TSF. Seepage from the TSF into the surrounding groundwater may occur. Acidic and/or metalliferous drainage from the proposed embankment construction materials and tailings could also occur.

Impact: Contamination of groundwater and deterioration of water quality from tailings seepage and acidic and/or metalliferous drainage.

Controls:

Chichester Metals has demonstrated that tailings seepage and acidic and/or metalliferous drainage can be adequately managed during normal operation of the TSF. The TSF has been designed and will be operated to minimise seepage. The periodic removal (decant) of supernatant water will encourage consolidation of tailings to minimise seepage. Further to this, minimal seepage is expected as the proposed TSF is located above existing low-permeability tailings, with an horizontal hydraulic conductivity of 5×10^{-8} to 1×10^{-7} m/s and vertical hydraulic conductivity of 1×10^{-10} to 5×10^{-9} m/s. Supernatant water has a neutral pH and brackish salinity which is comparable to the local groundwater quality.

Geochemical characterisation of the embankment construction materials and tailings has been undertaken and indicates that there is a low risk of generation of acidic and/or metalliferous drainage from these materials. Under both the Australian Mineral Industries Research Association and Division of International Training and Research classification systems, the acid generating potential of the embankment construction materials and tailings at Cloudbreak has been classified as non-acid forming (NAF). If material with the potential to generate acid and/or metalliferous drainage is exposed or encountered during operations, a strategy will be developed to determine and adopt suitable management actions. Geochemical testing has also shown the tailings and tailings water to be benign, minimising the risk of groundwater contamination.

A detailed risk assessment included total element and leaching tests on a tailings sample which indicated that no elements are above the Cloudbreak site specific trigger values. Chichester Metals has established site specific trigger values in accordance with the Australian and New Zealand Environment and Conservation Council (ANZECC) and Agriculture and Resources Management Council of Australia and New Zealand (ARMCANZ) guidelines. These guidelines outline that water quality data should be collected and compared to the ANZECC 95% of species limit of protection (SLP) for fresh water systems to determine the relevance of these limits. If the water quality exceeds the 95% SLP, then site specific limits can be established. In the Pilbara, groundwater can be of marginal to saline quality and does not meet the 95% SLP trigger values.

The site specific trigger levels were developed in response to Condition 12-1 of Ministerial Statement 899, which allows alternative guidelines as approved in the Acid and/or Metalliferous Drainage (AMD) Plan. Whilst the AMD Plan references the use of the site specific trigger values, the site specific trigger values are listed in the report titled "Life of Mine Geochemistry Programme Site Specific Trigger Values". This report will be submitted to the Environmental Protection Authority (EPA) for approval in mid-2015. The site specific trigger values will be adopted following EPA approval.

As detailed in the ambient monitoring section, Chichester Metals will continue to monitor groundwater to determine if it is being impacted from operation of the facility. In the event of a confirmed water



quality exceedance a strategy will be developed to determine suitable management actions and measures, while ensuring that any contaminants are contained and reduced or removed to an approved level. Monitoring of down gradient groundwater and natural drainage lines will be increased in catchments where water quality has been compromised.

Risk Assessment

Consequence: Minor

Likelihood: Possible

Risk Rating: Moderate

Regulatory Controls

Chichester Metals has demonstrated that impacts to groundwater will be minimised through adequate management of the TSF. Analysis of the tailings has shown it to be benign and therefore unlikely to affect groundwater quality in the area. Adequate design and operational controls should manage seepage and mitigate any associated environmental impacts.

The Cloudbreak operating Licence requires ongoing monitoring of groundwater to ascertain if water levels and quality is being effected as a result of the operation of the TSF. This monitoring program will continue to be implemented to identify impacts to groundwater.

Residual Risk Assessment

Consequence: Minor

Likelihood: Possible

Risk Rating: Moderate

Abnormal operation

Emission description

Emission: Overflow of tailings from the TSF and release of tailings and supernatant water to the surrounding environment. Tailings will be conveyed to the TSF via pipelines. Emissions will occur if the pipelines were to rupture and/or leak.

Impact: Contamination of surface water drainage channels, soil and groundwater quality, and causing vegetation stress or even death if exposure is for a prolonged period.

Controls: A number of design and operating controls are proposed to prevent the release of surface water and tailings from the facility. These design measures include:

- Spacing of valves and spigots at regular intervals around the perimeter of the facility to allow targeted tailings deposition (beaching) to enable control of the supernatant water pond;
- Maintenance of a minimum 0.3m operational tailings beach freeboard; and
- Ongoing surveillance and monitoring, including daily inspections and the use of trigger levels to ensure that the TSF will not be overtopped even in the event of an extreme rainfall event.

In accordance with the *Safe Design and Operating Standards for Tailings Storage* (DME 1999), the TSF will be inspected daily by site personnel. Tailing pipelines will also be inspected daily to identify leaks and areas requiring maintenance.

Risk Assessment

Consequence: Minor

Likelihood: Unlikely

Risk Rating: Moderate

Regulatory Controls

The Cloudbreak operating licence will be amended to include a condition requiring the maintenance of the minimum 0.3m operational freeboard to accommodate extreme rainfall events and prevent overtopping.



A condition requiring daily inspections of the tailing and return water pipelines will also be included on the Licence.

Residual Risk Assessment

Consequence: Minor

Likelihood: Rare

Risk Rating: Low