



Licence Number L8194/2007/3

Licence Holder Fortescue Ltd

ACN 002 594 872

Registered business address 87 Adelaide Terrace
EAST PERTH WA 6004

Duration 16/04/2014 to 23/04/2027

Date of issue 16 April 2014

Date of Amendment 8 April 2024

Premises details Anderson Point Materials Handling Facility
PORT HEDLAND WA 6721
Legal description –
Part of Lot 1497 on Plan 404497, Part of Lot 370 on Plan 35619, Part of Lot 556 on Plan 60836, Part of Lot 321 on Plan 74344 and Lot 322 on Plan 74344
As defined by the coordinates in Schedule 2

Prescribed premises category description (Schedule 1, <i>Environmental Protection Regulations 1987</i>)	Assessed throughputs or production capacity
Category 58: Bulk material loading or unloading	210,000,000 tonnes per annual period
Category 70: Screening etc. of material	45,000 tonnes per annual period

This amended licence is granted to the licence holder, subject to the attached conditions, on 8 April 2024, by:

MANAGER, PROCESS INDUSTRIES

an officer delegated under section 20 of the *Environmental Protection Act 1986* (WA)

Licence history

Reference number	Date	Summary of changes
L8194/2007/3	24/04/2008	First licence noted in the department's Industry Licensing System (ILS).
L8194/2007/3	N/A	Several amendments to licence L8194/2007/3 have been actioned between 2008 and 2022.
L8194/2007/3	08/04/2024	DWER-initiated licence amendment to: <ul style="list-style-type: none"> - remove construction and/or installation requirements for infrastructure/equipment that has been constructed/installed in accordance with licence requirements, - refine requirements for the submission of a Dust Monitoring Report, - allow the licence holder additional options to manage potential dust emissions from stockpiles, - update outdated infrastructure tables and figures to reflect current operations, - correct administrative errors and - update licence format.

Interpretation

In this licence:

- (a) the words 'including', 'includes' and 'include' in conditions mean "including but not limited to", and similar, as appropriate;
- (b) where any word or phrase is given a defined meaning, any other part of speech or other grammatical form of that word or phrase has a corresponding meaning;
- (c) where tables are used in a condition, each row in a table constitutes a separate condition;
- (d) any reference to an Australian or other standard, guideline, or code of practice in this licence:
 - (i) if dated, refers to that particular version; and
 - (ii) if not dated, refers to the latest version and therefore may be subject to change over time;
- (e) unless specified otherwise, any reference to a section of an Act refers to that section of the EP Act; and
- (f) unless specified otherwise, all definitions are in accordance with the EP Act.

NOTE: This licence requires specific conditions to be met but does not provide any implied authorisation for other emissions, discharges, or activities not specified in this licence.

Conditions

Infrastructure and equipment

1. The licence holder must ensure that the infrastructure and equipment named and described in column 1 and column 2 of Table 10 in Schedule 7, is adequately maintained in good working order to ensure it can be operated in accordance with the requirements specified in column 3 of Table 10 in Schedule 7.
2. The licence holder must maintain an average monthly availability rate of 90% or more for all:
 - (a) water sprays on stackers, reclaimers and ship loaders;
 - (b) stockyard water cannons;
 - (c) transfer station and conveyor dust suppression sprays; and
 - (d) belt wash stations.
3. The licence holder must maintain a Dust Control Equipment Inventory, which includes an itemised list for all dust control equipment used at the premises and includes but is not limited to the equipment specified in Table 9 of Schedule 6 and Table 10 of Schedule 7.
4. The licence holder must not remove any dust control equipment from the Dust Control Equipment Inventory, without replacing that equipment with equipment that provides the same or greater level of dust mitigation.

Further Works

5. The licence holder must construct and/or install the infrastructure and equipment listed in Table 1, in accordance with:
 - (a) the corresponding design, construction and/or installation requirements;
 - (b) at the corresponding infrastructure location; and
 - (c) within the corresponding timeframe,
 as set out in Table 1.

Table 1: Design, construction and/or installation requirements

No.	Infrastructure/Equipment	Design, construction and/or installation requirements	Infrastructure location	Timeframe
1.	Sample stations	Capable of obtaining representative samples of ore product in accordance with ISO 3082.	Figure 5: <ul style="list-style-type: none"> • SS913 • SS914 • SS917 	Works must be complete prior to 2 September 2025.
2.	Belt wash stations	Capable of cleaning conveyor belts for the purpose of minimising ore carry-back.	Figure 3: <ul style="list-style-type: none"> • CV302 • CV901 • CV905 • CV906 	N/A

No.	Infrastructure/Equipment	Design, construction and/or installation requirements	Infrastructure location	Timeframe
3.	Additional dust control infrastructure	Installation of additional dust suppression controls such as ore conditioning sprays, foggers and belt cleaning infrastructure.	Not specified	N/A
4.	Surge bins	Enclosed with covers or permanent enclosure and equipped with air extraction to a baghouse filter or wet scrubber.	Figure 4: <ul style="list-style-type: none"> BN921/BN948 	Works authorised prior to 23 April 2027.
5.	Out-load conveyors	Fitted with belt scrapers for the purpose of reducing carry back ore.	Figure 5: <ul style="list-style-type: none"> CV921A CV948A 	Works authorised prior to 23 April 2027.
6.	Shiploader SHL 704	Must be fitted with spray bars on boom discharge and conveyor.	Figure 6: <ul style="list-style-type: none"> SHL704/CV940 TS954 SH953 	Works authorised prior to 23 April 2027.
7.	Shiploader SHL 704 Stockyard	Replace existing conveyor rollers with ultra-low noise idlers. All new conveyor rollers must be ultra-low noise idlers.	Figure 4 and Figure 6: <ul style="list-style-type: none"> SHL704/CV940 TS954 SH953 	Works authorised prior to 23 April 2027. Works must be completed prior to 23 April 2027.
8.		Moisture Reduction System beneath stockyard canyons. Constructed such that extracted water can be discharged to existing surface water drainage channels adjacent to the stockpile, utilised for dust suppression or returned to the CHF for use.	<ul style="list-style-type: none"> B1-B6, C1-C6, D1-D6, E1-E6, F1-F6, G1-G6 	

6. Where visible dust is generated from construction activities, the licence holder must:
- implement controls to minimise dust emissions from construction activities; and
 - ceasing all dust-generating construction activities during strong wind conditions; and

- (c) ceasing all dust-generating construction activities where average wind directions are between 201° and 231° for any three or more ten minute periods during the hour, or between 305° and 340° for any three or more ten minute periods during the hour.
- 7. The licence holder must take proactive dust management measures where possible to prevent dust generation, and at a minimum the wetting down of exposed areas prior to construction and/or clearing activities that involve ground disturbance, and as needed in accordance with condition 6.
 - 8. The licence holder must not depart from the requirements specified in Table 1 of condition 5 except where:
 - (a) such departure does not increase risks to public health, public amenity and the environment; and
 - (b) all other conditions in this licence are still satisfied.
 - 9. The licence holder must undertake an audit of compliance, prepare and submit to the CEO an Environmental Compliance Report on that compliance within 30 calendar days for design, construction and/or installation requirements as specified for:
 - (a) items 1 to 8 of Table 1.
 - 10. The Environmental Compliance Report(s) required by condition 9, must include as a minimum the following:
 - (a) certification that the infrastructure or component of infrastructure specified in Table 1 has been constructed in accordance with the relevant requirements specified in the table;
 - (b) where a departure from the requirements specified in Table 1 occurs and is of a type allowed by condition 8, the licence holder must provide to the CEO a description of, and explanation for the departure and demonstration of achievement of no increase in risk to public health, public amenity and the environment;
 - (c) supporting information on the justification for selecting the location and/or dust control infrastructure type for infrastructure specified in item 3 of Table 1, including any investigation conducted;
 - (d) the operational start date for the infrastructure installed; and
 - (e) be signed by a person authorised to represent the licence holder and contains the printed name and position of that person.

Throughputs

- 11. The licence holder must not bulk handle any iron ore at the premises from sources not specified in Schedule 6, that:
 - (a) contains asbestos in concentrations equal to or greater than 0.01% w/w for non-friable asbestos or 0.01% w/w for fibrous asbestos; or
 - (b) contains respirable silica equal to or greater than 1% w/w; or
 - (c) contains equal to or less than 10.2% of total particles with a diameter of 10 micron or smaller.
- 12. The licence holder is authorised to load not more than 210,000,000 cumulative tonnes per annual period of magnetite and/or hematite iron ore.

13. The licence is authorised to screen not more than 45,000 tonnes per annual period of rail ballast from stacker lines in the stockyard.

Moisture content monitoring and management

14. The licence holder must undertake the following actions in the event that a stockpile has become a static stockpile:
- (a) ensure, and be able to demonstrate using the method outlined in ISO 3087, that the stockpile contains a moisture content at or above the corresponding DEM level for that stockpile; or
 - (b) apply a physical barrier or chemical stabiliser to stabilise the surface of the stockpile to prevent dust emissions; or
 - (c) operate water cannons at least 2 minutes every hour.
15. The licence holder must not re-stockpile a static stockpile for the purpose of avoiding requirements of condition 14.
16. The licence holder must ensure that at least 90% of hematite iron ore in-loaded to the premises has a moisture content at or above the DEM level derived from application of AS 4156.6 and updated on an annual basis through laboratory analysis.
17. The licence holder must ensure that 100% of product received from the Iron Bridge Concentrate Handling Facility and Concentrate Diversion Pond, from the commencement of operations, has a moisture content at or above the DEM level derived from application of AS 4156.6 and updated on an annual basis through laboratory analysis.
18. The licence holder must ensure that at least 95% of product out-loaded from the premises, as averaged per cargo hold, has a moisture content at or above the DEM level derived from application of AS 4156.6 and updated on an annual basis through laboratory analysis.
19. The licence holder must obtain moisture content monitoring data for all iron ore handled at the premises:
- (a) for the parameter,
 - (b) at the locations,
 - (c) calculated as an average, over the period,
 - (d) during the frequency,
 - (e) using the method,
- specified in Table 2.

Table 2: Moisture content monitoring

Column 1	Column 2	Column 3	Column 4	Column 5
Parameter	Location	Averaging Period	Frequency	Method
Moisture content	As measured at the Iron Bridge Concentrate Handling Facility ¹	Averaged for every 10,000 tonnes of magnetite	Continuous monitoring for all in-loaded iron ore accepted at the premises via sample station SS301	N/A
Moisture content	As measured at the Iron Bridge Concentrate Diversion Pond ¹	Averaged for every 250 tonnes of magnetite	Manual sample taken from the Concentrate Diversion Pond during each reclaim process	N/A
Moisture content	Train unloaders TUL001, TUL002, TUL003 depicted in Figure 3 of Schedule 1	Averaged for each train for hematite	At least one sample per 10,000 tonnes of material	Analyser calibrated at least every six months against: <ul style="list-style-type: none"> • ISO 3087; or • AS 5621; or • Alternative method approved by the CEO.
Moisture content	Moisture analysers located at sample stations SS903, SS944, SS945, SS913, SS914 and SS917, depicted in Figure 5 of Schedule 1	Averaged for each cargo hold	At least one sample per cargo hold, or at least one sample per 10,000 tonnes of material, obtained through automated sample station	<ul style="list-style-type: none"> • ISO 3087; or • AS5621; or • Alternative method approved by the CEO.

Note 1: Data must be obtained from the occupier of the adjacent Iron Bridge Concentrate Handling Facility, IB Operations Pty Ltd.

Dust monitoring and management

Boundary air quality monitoring

- 20.** The licence holder must undertake or obtain air quality and meteorological monitoring:
- at the monitoring stations;
 - for the parameters;
 - calculated as an average over the period;
 - at the frequency;
 - in accordance with the method;
- specified in Table 3.

Table 3: Air quality and meteorological monitoring

Monitoring Station	Parameter	Averaging Period	Frequency	Method
Wharf, End of Road, NW Corner, NE Corner, Finucane, SW Corner, Causeway South and TUL SW as depicted in Figure 7 of Schedule 3.	Particles as PM ₁₀ (µg/m ³)	10 minutes	Continuous	AS/NZS 3580.1.1
		1 hour		AS/NZS 3580.1.1 AS/NZS 3580.9.11
TUL SE as depicted in Figure 7 of Schedule 3.	Particles as PM ₁₀ (µg/m ³)	10 minutes	Continuous	AS/NZS 3580.1.1
		1 hour		AS/NZS 3580.1.1 AS/NZS 3580.9.11
Richardson St, Kingsmill St, Taplin St, Neptune Pl, BOM, Wedgefield, South Hedland, Yule River as depicted in Figure 8 of Schedule 3 ¹ .	Particles as PM ₁₀ (µg/m ³)	10 minutes	Continuous	N/A
TUL Met Station as depicted in Figure 7 of Schedule 3.	Rainfall (mm)	10 minutes	Continuous	AS 3580.14
	Wind direction (°)			
	Wind speed (m/s)			

Note 1: Provision of this data to the licence holder is from the Port Hedland Ambient Air Quality Network, managed by DWER.

Monitoring and management response

- 21.** The licence holder must maintain a record of any instances where ambient PM₁₀ concentrations:
- at the monitoring locations listed in column 1 of Table 4;
 - exceed the corresponding management trigger criteria and reportable event criteria specified in columns 2 and 3 of Table 4; and
 - when monitored in accordance with Condition 20.

Table 4: Dust management during dust events

Column 1	Column 2	Column 3
Monitoring location	Management trigger criteria	Reportable event criteria
Wharf and NE Corner	<p>≥280 µg/m³ PM₁₀ (rolling 1 hour average) when wind direction is averaged between wind arc 201 and 231° inclusive for any three or more ten minute periods during the rolling 1-hour period, as measured at the TUL Met Station.</p> <p>Unless where, BOM or Yule River monitoring stations¹ have recorded ≥100 µg/m³ PM₁₀ (rolling 1 hour average) within 3 hours prior to the trigger event.</p>	<p>≥145 µg/m³ PM₁₀ (rolling 24-hour average) when averaged wind is direction is between 201° and 231° inclusive, for any 12 or more hours (cumulative) over the rolling 24-hour averaging period.</p>
Causeway South	<p>≥300 µg/m³ PM₁₀ (rolling 1 hour average) when wind direction is averaged between wind arc 305 and 340° inclusive for any three or more ten minute periods during the rolling 1-hour period, as measured at the TUL Met Station.</p> <p>Unless where, BOM or Yule River monitoring stations¹ have recorded ≥100 µg/m³ PM₁₀ (rolling 1 hour average) within 3 hours prior to the trigger event.</p>	<p>≥120 µg/m³ PM₁₀ (rolling 24-hour average) when averaged wind is direction is between 305 and 340° inclusive, for any 12 or more hours (cumulative) over the rolling 24-hour averaging period.</p>
Taplin Street ¹	<p>≥100 µg/m³ PM₁₀ (rolling 1 hour average) when averaged wind direction is between wind arc 201 and 231° inclusive for any three or more ten minute periods during the rolling 1-hour period, as measured at the TUL Met Station.</p> <p>Unless where, BOM or Yule River monitoring stations¹ have recorded ≥100 µg/m³ PM₁₀ (rolling 1 hour average) within 3 hours prior to the trigger event.</p>	<p>≥70 µg/m³ (24 hour average measured from midnight to midnight)</p>

Note 1: Provision of this data to the licence holder is from the Port Hedland Ambient Air Quality Network, managed by DWER.

- 22.** Immediately upon being notified of management trigger criteria and/or reportable event criteria specified in condition 21 being exceeded, the licence holder must:
- (a) conduct a site investigation to identify any visible dust generation at the premises; and
 - (b) upon identification of visible dust generation during the site investigation conducted in accordance with part (a) of this condition, immediately control visible dust emissions by:
 - (i) applying additional dust suppression; and/or
 - (ii) activating dust extraction equipment, where applicable; and/or
 - (iii) stopping all activities resulting in visible dust generation.
- 23.** In the event that no visible dust can be identified within 20 minutes of the management trigger criteria and/or reportable event criteria exceedance notification,

the licence holder must undertake the following management actions:

- (a) operate all stockyard water cannons on deluge cycle; and
 - (b) apply water to all unsealed trafficable areas where vehicle movement has occurred in the previous hour.
24. The licence holder must continue actions specified in Conditions 22 and/or 23 for the duration of management trigger criteria and/or reportable event criteria being exceeded.
25. The licence holder must undertake dust deposition monitoring:
- (a) at the monitoring stations,
 - (b) for the parameters,
 - (c) calculated as an average over the period,
 - (d) at the frequency,
 - (e) in accordance with the method,
- specified in Table 5.

Table 5: Dust deposition monitoring

Monitoring station	Parameter	Averaging period	Frequency	Method
Dust Deposition Gauge 1 to 7 (inclusive), as depicted in Figure 9 of Schedule 3	Total mass (dry weight in grams) Deposition rate (g/m ²)	Monthly	Continuous	AS/NZS 3580.1.1 AS/NZS 3580.10.1
	Total crystalline material (g and % of total mass) Mineral phases present in the sample (as g and % of total crystalline material) ¹ . Combustible material/ash (g and %) Total elemental analysis: <ul style="list-style-type: none"> • Al, Ba, Ca, Fe, K, Mg, Mn, Na, Si, S, P 	Monthly	Continuous	Semi-quantitative x-ray diffraction analysis

Note 1: Including, but not limited to the identification and quantification of hematite, magnetite and goethite.

Air quality monitoring reports

26. The licence holder must investigate, undertake the actions and report in accordance with Schedule 8 for reportable events criteria as specified through condition 21.
27. The licence holder must submit to the CEO a Dust Monitoring Report prior to 30 September 2024, that incorporates the information specified in Schedule 9 for the following infrastructure and/or equipment:
- bulk ore conditioning sprays (BOC#1, BOC#2 and BOC#3); and
 - belt wash stations (CV918, CV927 and CV932).
28. The licence holder must submit the dust deposition data specified in Table 5 submitted to the CEO on a quarterly basis, by the last day of the following month in each year:
- April (for January to March),
 - July (for April to June),
 - October (for July to September); and
 - January (for October to December) in any year.

Wash water monitoring and limits

29. The licence holder must undertake wash down water monitoring:
- for the parameters;
 - at the locations;
 - at the frequency;
 - using the method,
- specified in Table 6.

Table 6: Wash water monitoring

Parameter	Location	Period	Limit	Sample	Method
Total recoverable hydrocarbons (TRH)	<ul style="list-style-type: none"> L1 L2 Post treatment water contained in the process water tanks shown in the map in Schedule 4 	Quarterly	15 mg/L	Grab sample	AS 5667.10

30. The licence holder must ensure that the parameter specified in column 1 of Table 6 of condition 29 for the discharge of wash water, do not exceed the limit specified in column 4 of Table 6.

Record-keeping

31. The licence holder must maintain accurate and auditable books including the following records, information, reports and data required by this licence:
- the calculation of fees payable in respect of this licence;
 - dust control availability monitoring undertaken in accordance with condition 2;
 - dust Control Equipment Inventory undertaken in accordance with condition 3;

- (d) monitoring undertaken in accordance with conditions 19, 20, 25 and 29 of this licence;
- (e) reportable events reported in accordance with condition 21 of this licence;
- (f) complaints received under condition 32 of this licence; and
- (g) any ores handled at the premises from mine sites not specified in Schedule 6, and all analysis conducted to demonstrate compliance with condition 11.

In addition, the books must:

- (a) be legible;
 - (b) if amended, be amended in such a way that the original and subsequent amendments remain legible and are capable of retrieval;
 - (c) be retained for at least 3 years from the date the books were made; and
 - (d) be available to be produced to an inspector or the CEO.
- 32.** The licence holder must record the number and details of any complaints received by the licence holder relating to its obligations under this licence and its compliance with Part V of the EP Act at the premises, and any action taken by the licence holder in response to the complaint. Details of complaints must include:
- (a) an accurate record of the concerns or issues raised, for example a copy of any written complaint or a written note of any verbal complaints made;
 - (b) the name and contact details of the complainant, if provided by the complainant;
 - (c) the date of the complaint; and
 - (d) the details and dates of the actions taken by the licence holder in response to the complaints.
- 33.** The licence holder must submit to the CEO no later than 1 April each year, an Annual Audit Compliance Report (AACR) indicating the extent to which the licence holder has complied with the conditions in this licence for the annual period.
- 34.** The licence holder must submit to the CEO no later than 1 April each year:
- (a) an Annual Environmental Report providing the results of monitoring and any supporting records, information, reports and data as required by:
 - (i) condition 2 for average monthly availability of controls;
 - (ii) condition 19 for moisture content and DEM level of iron ore received to, and out-loaded from the premises; and
 - (iii) condition 29 for wash water monitoring at L1, L2 and post treatment water contained in the process water tanks shown in the map in Schedule 4, as specified in Table 6.
- 35.** The licence holder must comply with a department request, within 7 calendar days from the date of the department request or such other period as agreed to by the inspector or the CEO.

Department of Water and Environmental Regulation

Definitions

In this licence, the terms in Table 7 have the meanings defined.

Table 7: Definitions

Term	Definition
ACN	Australian Company Number
Annual Audit Compliance Report (AACR)	means a report submitted in a format approved by the CEO (relevant guidelines and templates may be available on the department's website).
air guideline value	refers to the Government-endorsed 24-hour PM ₁₀ air guideline value for Port Hedland of 70 µg/m ³ .
annual period	means a 12-month period commencing from 1 January until 31 December in that year.
AS/NZS 3580.1.1	means the Australian Standard AS/NZS 3580.1.1 <i>Methods for sampling and analysis of ambient air - Guide to siting air monitoring equipment</i>
AS/NZS 3580.9.11	means the Australian Standard AS/NZS 3580.9.11 <i>Methods for sampling and analysis of ambient air – Determination of suspended particulate matter – PM₁₀ beta attenuation monitors</i>
AS/NZS 3580.10.1	means the Australian Standard AS/NZS 3580.10.1 <i>Methods for sampling and analysis of ambient air – Determination of particulate matter—Deposited matter— Gravimetric method</i>
AS 3580.14	means the Australian Standard AS3580.14-2014 <i>Methods for sampling and analysis of ambient air – Meteorological monitoring for ambient air quality monitoring applications.</i>
AS/NZS 4156.6	means the Australian Standard AS/NZS 4156.6-2000 <i>Coal preparation, Part 6: Determination of Dust/moisture Relationship for Coal.</i>
AS 5621	means the Australian Standard AS 5621 <i>Iron ores – rapid moisture determination.</i>
AS 5667.10	means the Australian Standard AS 5667.10 <i>Water Quality – Sampling – Guidance on sampling of waste waters.</i>
average monthly availability	means the combined average percentage availability of equipment, calculated for each calendar month by dividing the time that the equipment is operating, by the time the equipment is required to be operating. Equipment is considered 'unavailable' when it is not operating, despite being required to operate in accordance with conditions of this licence.
belt wash stations	Devices or infrastructure equipped with water sprays and scrapers that are designed to minimise the carry back of ore stuck to the underside of return conveyors.
books	has the same meaning given to that term under the EP Act.

Department of Water and Environmental Regulation

Term	Definition
CEO	means Chief Executive Officer of the department. “submit to / notify the CEO” (or similar), means either: Director General Department administering the <i>Environmental Protection Act 1986</i> Locked Bag 10 Joondalup DC WA 6919 or: info@dwer.wa.gov.au
condition	means a condition to which this licence is subject under section 62 of the EP Act.
continuous	means a data recovery rate of at least 90% per quarter.
deluge cycle	means the targeted operation of water cannons to stockpiles for no less than two minutes out of every 15 minutes.
DEM level	means the dust extinction moisture. It is the moisture content of the product at which the dust number is 10 derived from the Australian Standard AS 4156.6 or alternative standard as approved by the CEO.
department	means the department established under section 35 of the <i>Public Sector Management Act 1994</i> (WA) and designated as responsible for the administration of the EP Act, which includes Part V Division 3.
department request	means a request for books or other sources of information to be produced, made by an inspector or the CEO to the licence holder in writing and sent to the licence holder’s address for notifications, as described at the front of this licence, in relation to: (a) compliance with the EP Act or this licence; (b) the books or other sources of information maintained in accordance with this licence; or (c) the books or other sources of information relating to emissions from the premises.
discharge	has the same meaning given to that term under the EP Act.
Dust Control Equipment Inventory	means an itemised list for all dust control equipment used at the premises including but not limited to the equipment described in column 2 of Table 10 in Schedule 7.
DWER	Department of Water and Environmental Regulation
emission	has the same meaning given to that term under the EP Act.
EP Act	<i>Environmental Protection Act 1986</i> (WA)-
EP Regulations	<i>Environmental Protection Regulations 1987</i> (WA)-
hematite	means iron ore composed of predominantly hematite and/or goethite mineral phase.
inspector	means an inspector appointed by the CEO in accordance with s.88 of the EP Act.
iron ore	means a type of iron ore produced from a mine site or blended iron ore from multiple

Department of Water and Environmental Regulation

Term	Definition
	mine sites.
ISO 3082	means International Organization for Standardization ISO 3082 <i>Iron ores – Sampling and sample procedures</i>
ISO 3087	means International Organization for Standardization ISO 3087 <i>Iron ores – Determination of the moisture content of a lot</i>
licence	refers to this document, which evidences the grant of a licence by the CEO under section 57 of the EP Act, subject to the specified conditions contained within.
licence holder	refers to the occupier of the premises, being the person specified on the front of the as the person to whom this licence has been granted.
magnetite	means magnetite iron ore from the Iron Bridge Concentrate Handling Facility and Concentrate Diversion Pond constructed in accordance with works approval W6394/2020/1.
No.	typographic abbreviation of the word number(s).
ore handling activities	means activities occurring within the premises which involve the movement and/or disturbance of iron ore, including, but not limited to, in-loading, stacking, reclaiming, transferring and out-loading of iron ore.
OWS	oily water separator
premises	refers to the premises to which this licence applies, as specified at the front of this licence and as shown on the premises maps (Figure 1, Figure 3, Figure 4, Figure 5 and Figure 6) in Schedule 1 to this licence.
prescribed premises	has the same meaning given to that term under the EP Act.
quarterly	means the 4 inclusive periods from 1 January to 31 March, 1 April to 30 June, 1 July to 30 September and 1 October to 31 December in that year.
reportable event	means an exceedances of the reporting trigger level specified in condition 21.
static stockpile	refers to any stockpile that has been stacked and not reclaimed for a period of six weeks or more.
strong wind conditions	means wind speeds of 14 metres per second or greater.
TRH	total recoverable hydrocarbons
TUL	train unloading facility
waste	has the same meaning given to that term under the EP Act.
works	refers to the works described in condition 5 of this licence to be carried out at the premises, subject to the conditions.

Schedule 1: Maps

Premises maps

The boundary of the prescribed premises is shown in the map below (Figure 1).

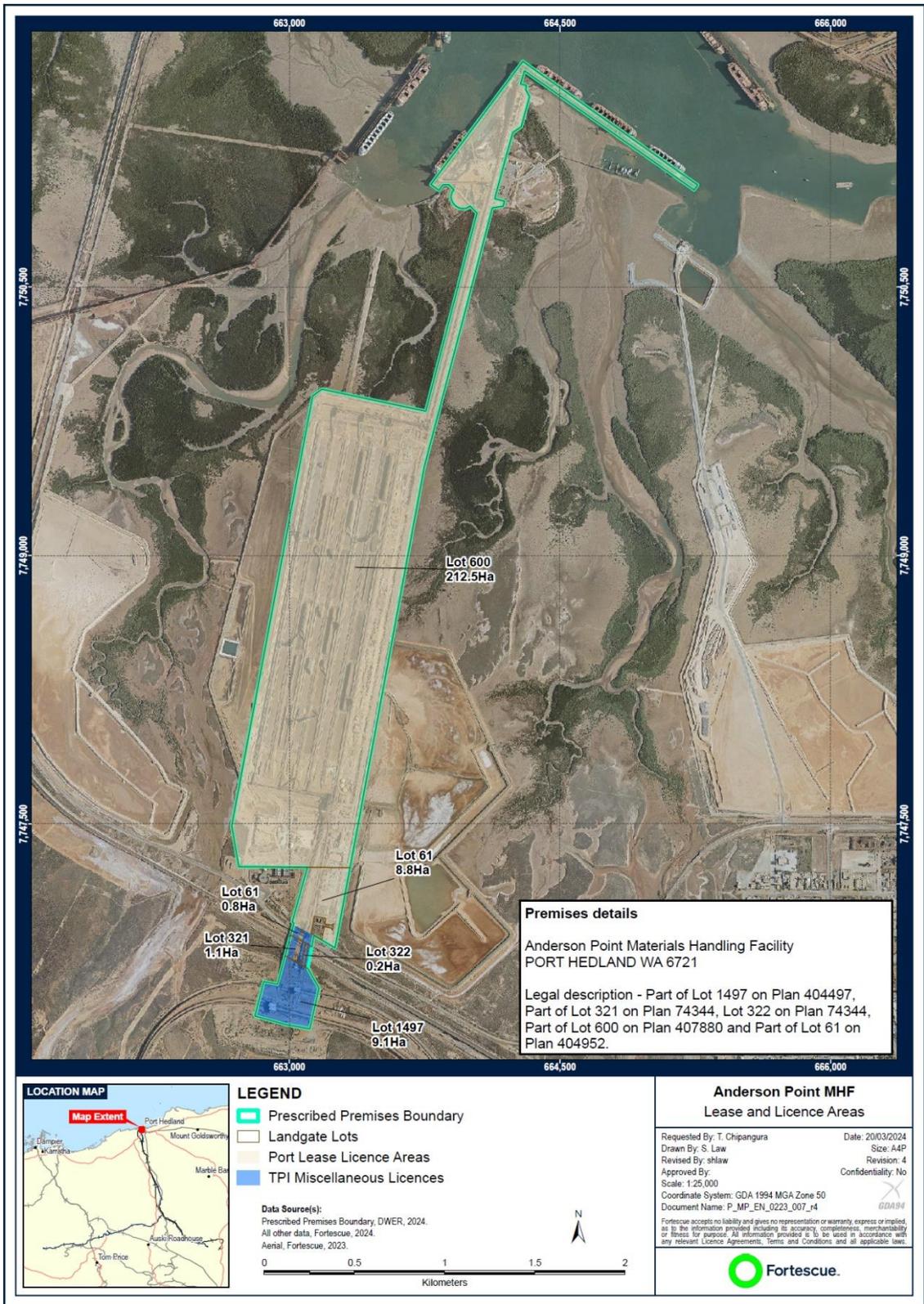


Figure 1: Boundary of the prescribed premises (including lot numbers)



Figure 2: Boundary of the prescribed premises (including site infrastructure)

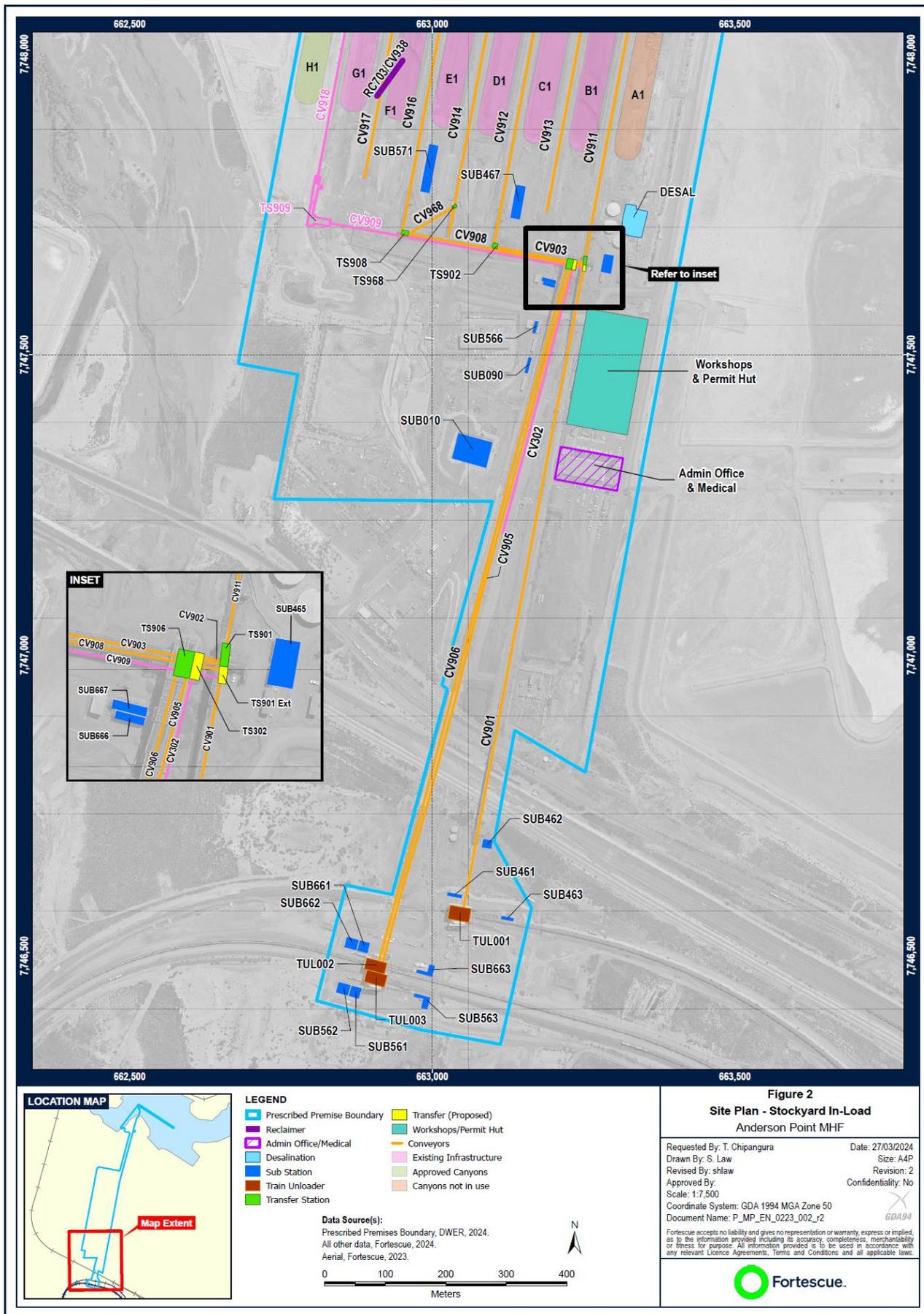


Figure 3: Site plan – stockyard in-load

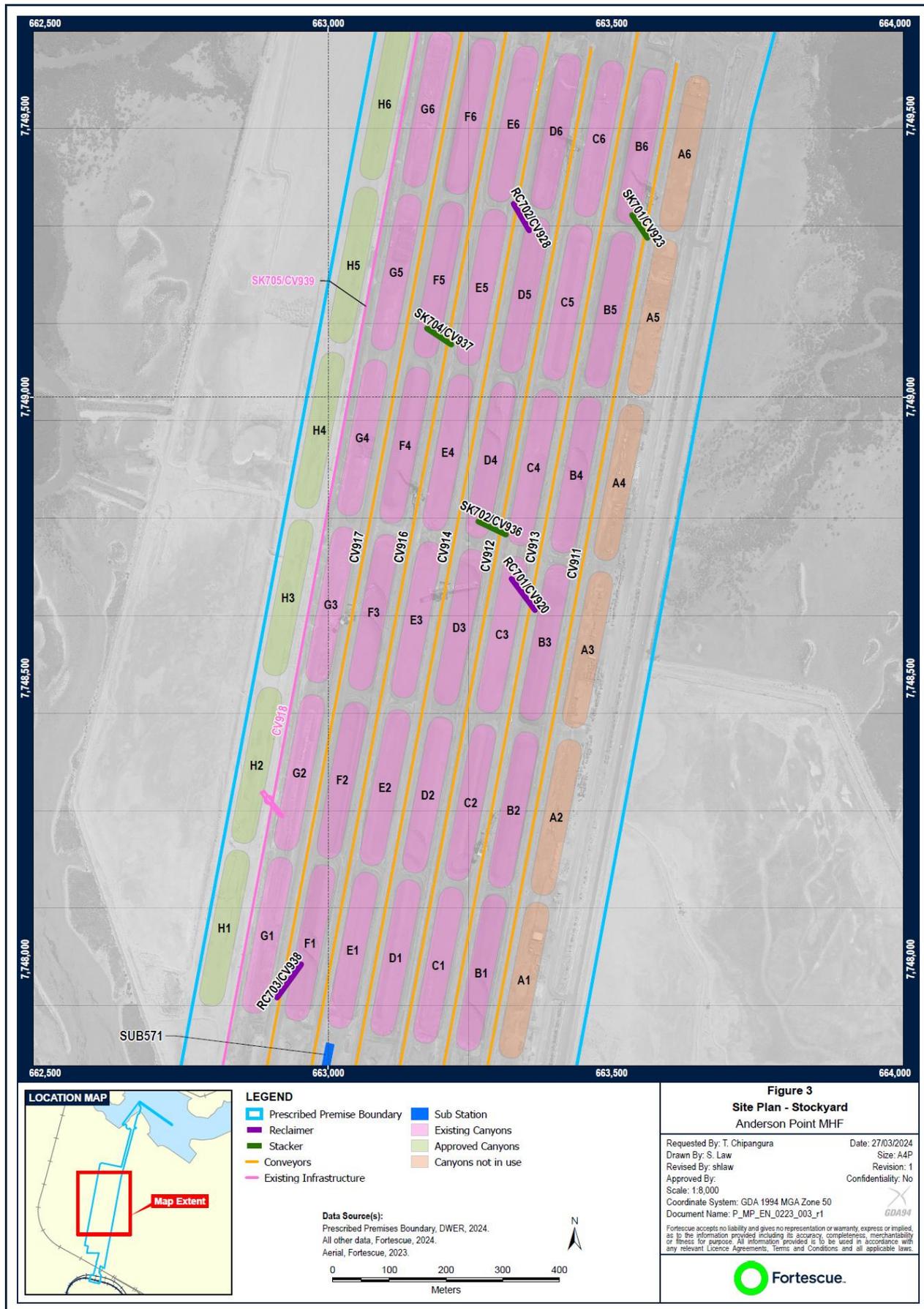


Figure 4: Site plan – stockyard

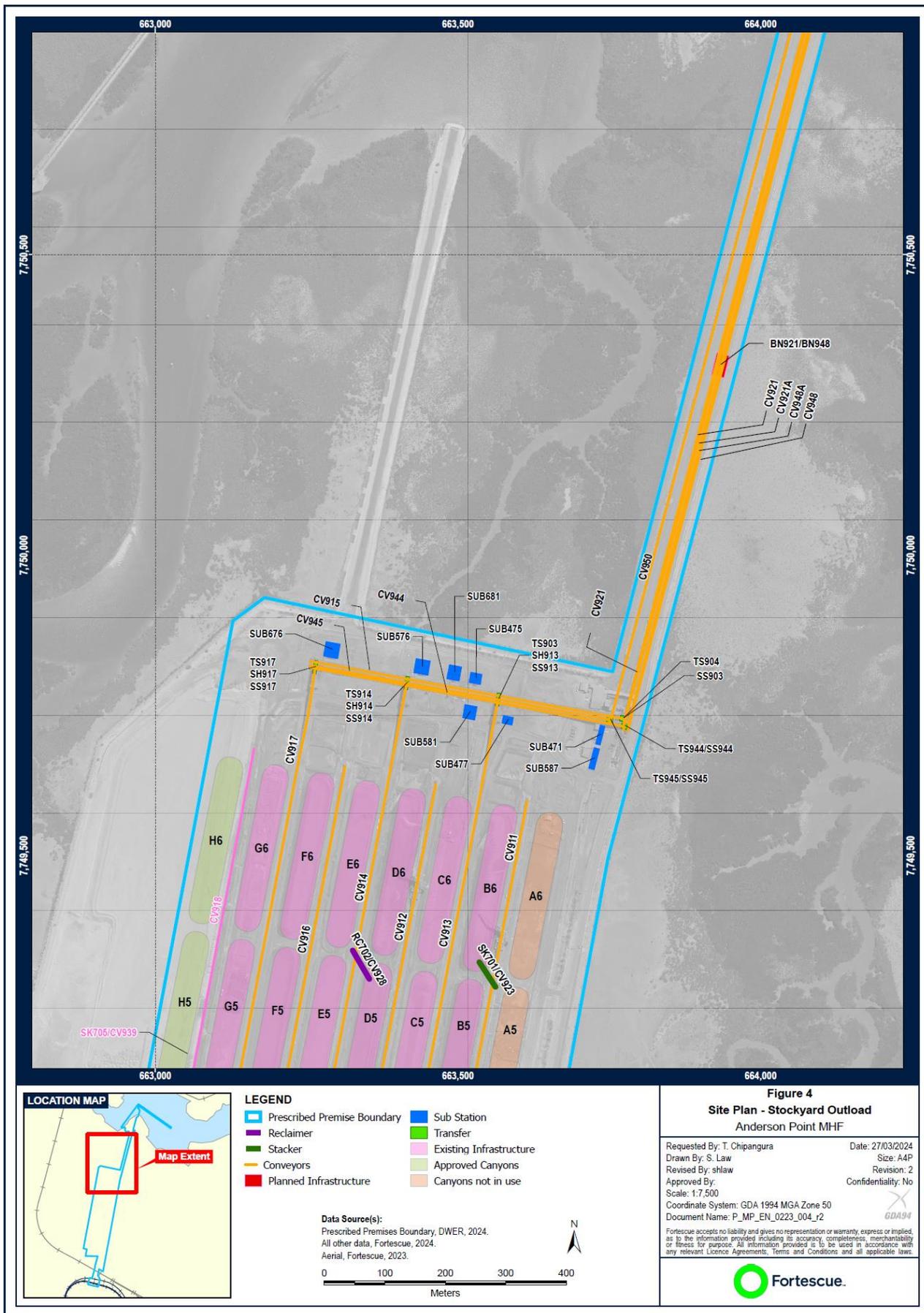


Figure 5: Site plan – stockyard outload

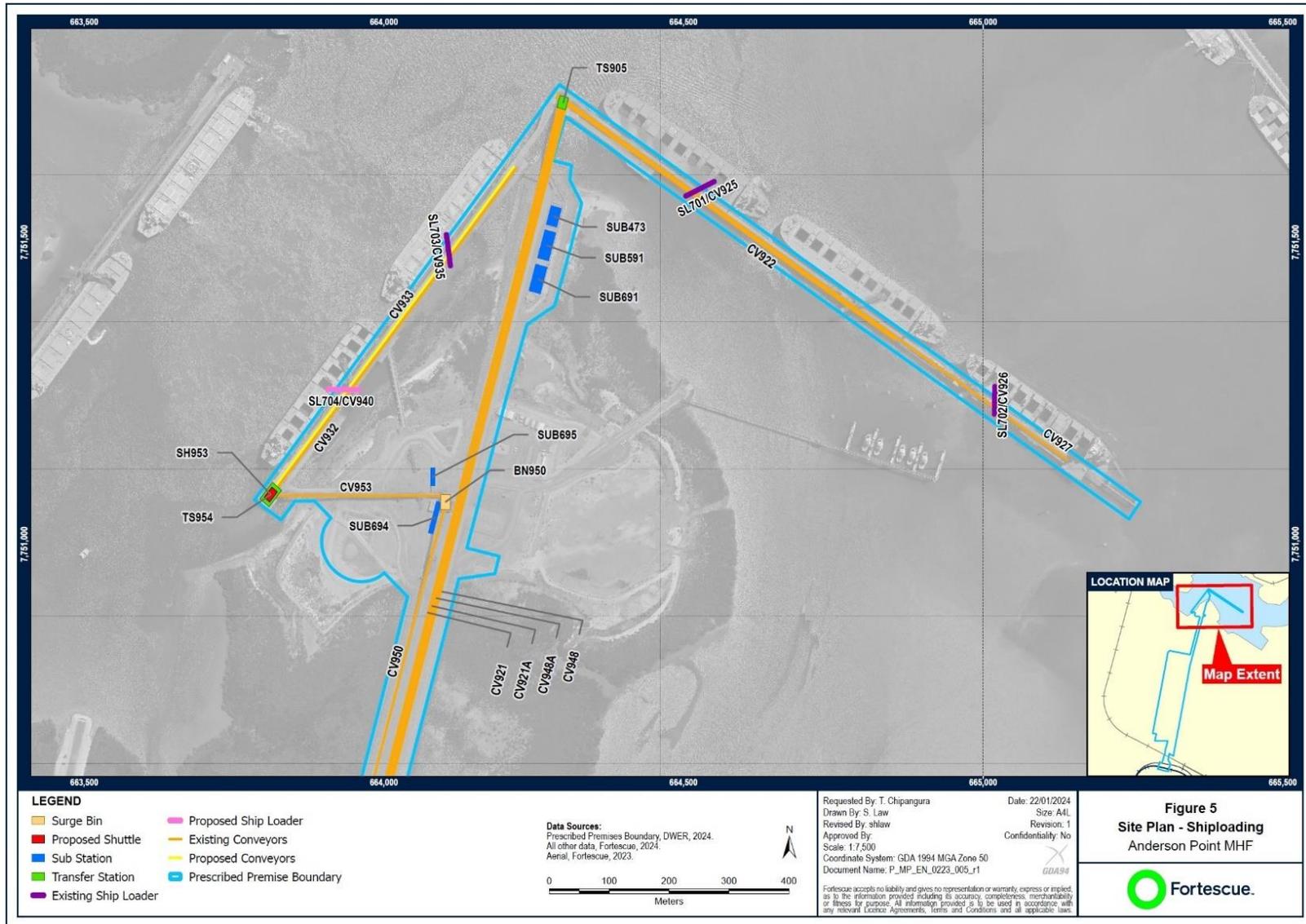


Figure 6: Site plan – shiploading

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Schedule 2: Premises boundary

The corners of the premises boundary are the coordinates listed in Table 8.

Table 8: Premises boundary coordinates (MGA94)

Reference Point	Northing	Easting
0	663015.974	7746950.757
1	663099.4574	7747255.851
2	662738.8544	7747259.847
3	662719.1457	7747259.485
4	662679.6994	7747487.69
5	663128.2181	7749890.306
6	663180.1003	7749929.26
7	663755.4703	7749805.97
8	664039.5832	7750912.963
9	664039.7716	7750913.698
10	664039.2861	7750913.267
11	664037.5359	7750915.057
12	664000.4598	7750952.967
13	663996.2638	7750949.29
14	663991.6822	7750946.083
15	663986.759	7750943.379
16	663981.5418	7750941.202
17	663976.0806	7750939.575
18	663970.4282	7750938.512
19	663964.6389	7750938.024
20	663958.7685	7750938.116
21	663952.8736	7750938.786
22	663947.0108	7750940.028
23	663941.2368	7750941.831
24	663935.607	7750944.177
25	663930.1757	7750947.043
26	663924.9953	7750950.401
27	663920.1155	7750954.22
28	663915.5834	7750958.463
29	663911.4427	7750963.088
30	663907.7332	7750968.052
31	663904.4906	7750973.306

Reference Point	Northing	Easting
32	663901.7462	7750978.799
33	663899.5263	7750984.48
34	663897.8525	7750990.293
35	663896.7407	7750996.182
36	663896.2018	7751002.09
37	663896.2408	7751007.961
38	663896.8575	7751013.738
39	663898.0458	7751019.365
40	663899.7944	7751024.789
41	663902.0864	7751029.957
42	663904.8997	7751034.818
43	663908.2072	7751039.327
44	663911.9771	7751043.441
45	663884.6781	7751071.354
46	663851.7799	7751071.399
47	663829.4115	7751041.582
48	663828.3979	7751040.231
49	663814.7289	7751050.508
50	663784.6116	7751073.152
51	663784.069	7751073.661
52	664246.2404	7751696.36
53	664293.2603	7751761.03
54	664354.9803	7751716.67
55	665206.6503	7751110.64
56	665262.4903	7751070.31
57	665243.4404	7751041.94
58	664302.9804	7751707.97
59	664281.6203	7751635.27
60	664313.3705	7751627.361
61	664310.2746	7751603.339
62	664330.252	7751564.663
63	664311.5346	7751490.448

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Reference Point	Northing	Easting
64	664284.9731	7751394.848
65	664238.8856	7751363.926
66	664205.4797	7751246.493
67	664138.6446	7750993.926
68	664192.5615	7750980.092
69	664185.1898	7750951.361
70	664125.1404	7750942.894
71	664122.4404	7750932.69
72	663747.8603	7749495.2
73	663416.2803	7747690.02
74	663381.7503	7747499.99
75	663252.9616	7746805.601
76	663136.2716	7746875.129
77	663102.1845	7746690.535
78	663164.0174	7746580.324
79	663112.5934	7746353.076
80	662982.6375	7746376.951
81	662808.7196	7746425.635
82	662857.5403	7746617.77
83	662933.7504	7746602.43
84	663024.6691	7746943.684

Schedule 3: Dust monitoring network



Figure 7: Premises dust monitoring network

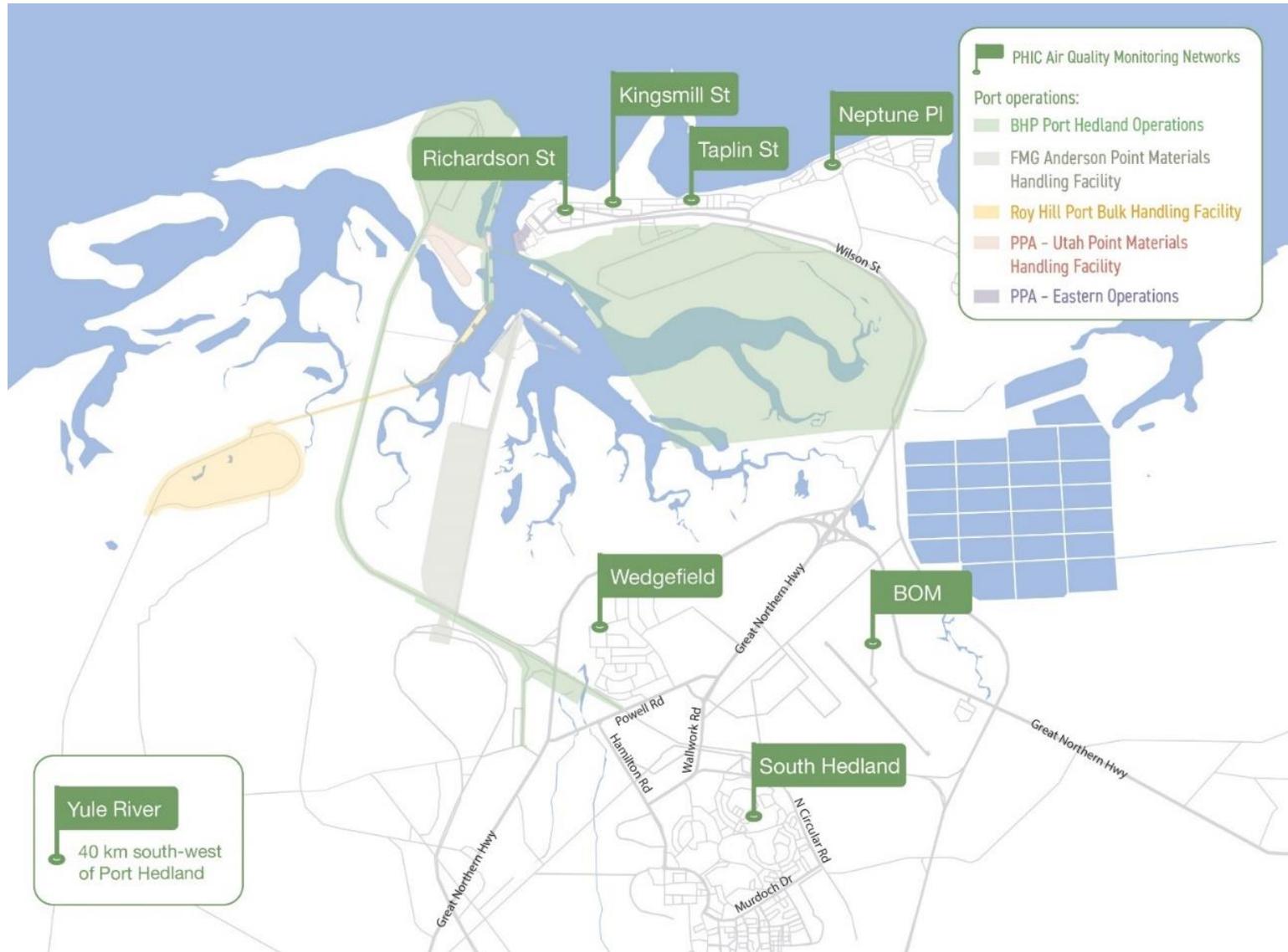


Figure 8: Ambient air quality monitoring network

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Figure 9: Dust deposition monitoring locations

L8194/2007/3

Schedule 4: Discharge locations

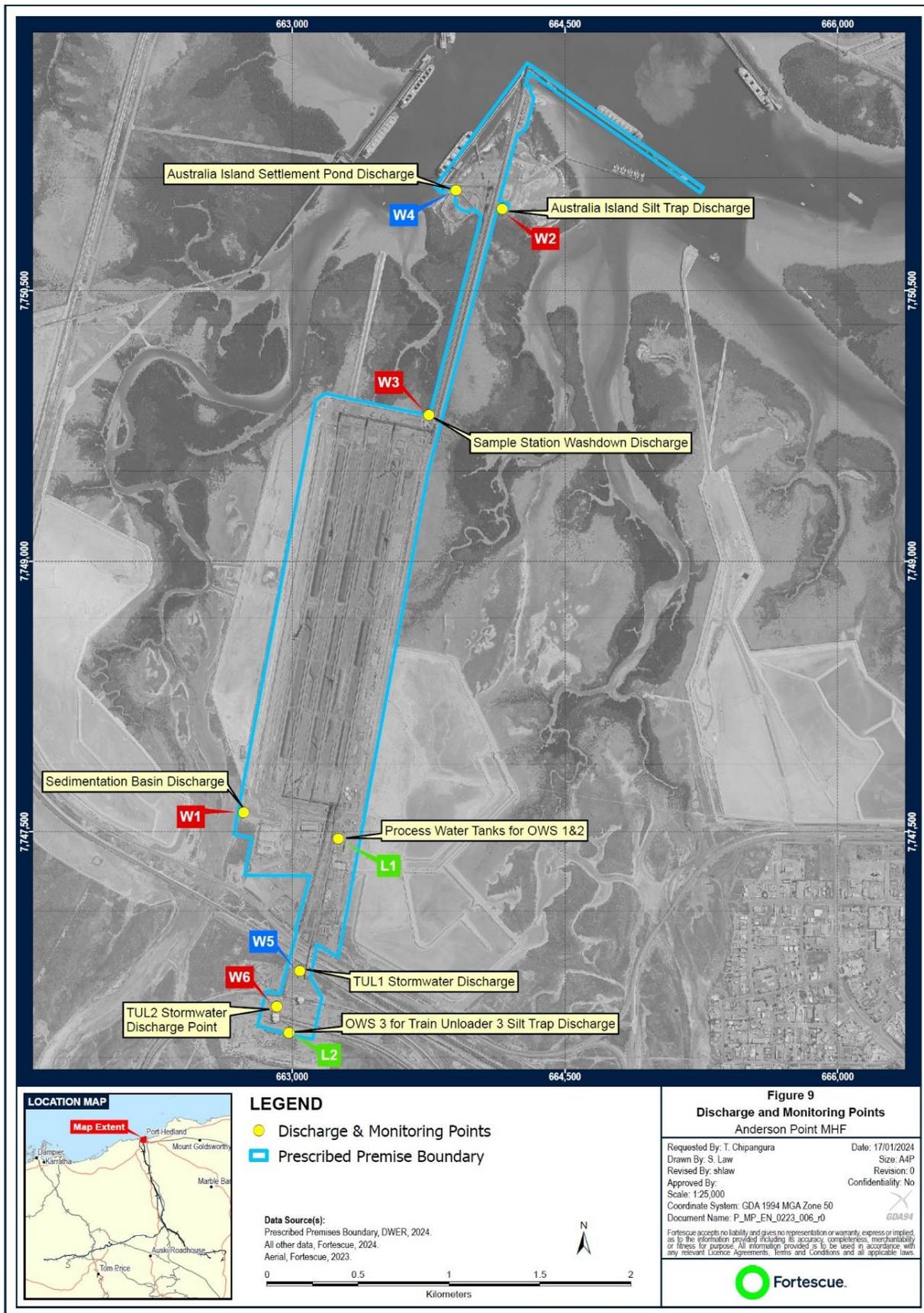


Figure 10: Stormwater and wash water discharge locations

Schedule 5: Schematic for the moisture reduction system (stockyard canyon)

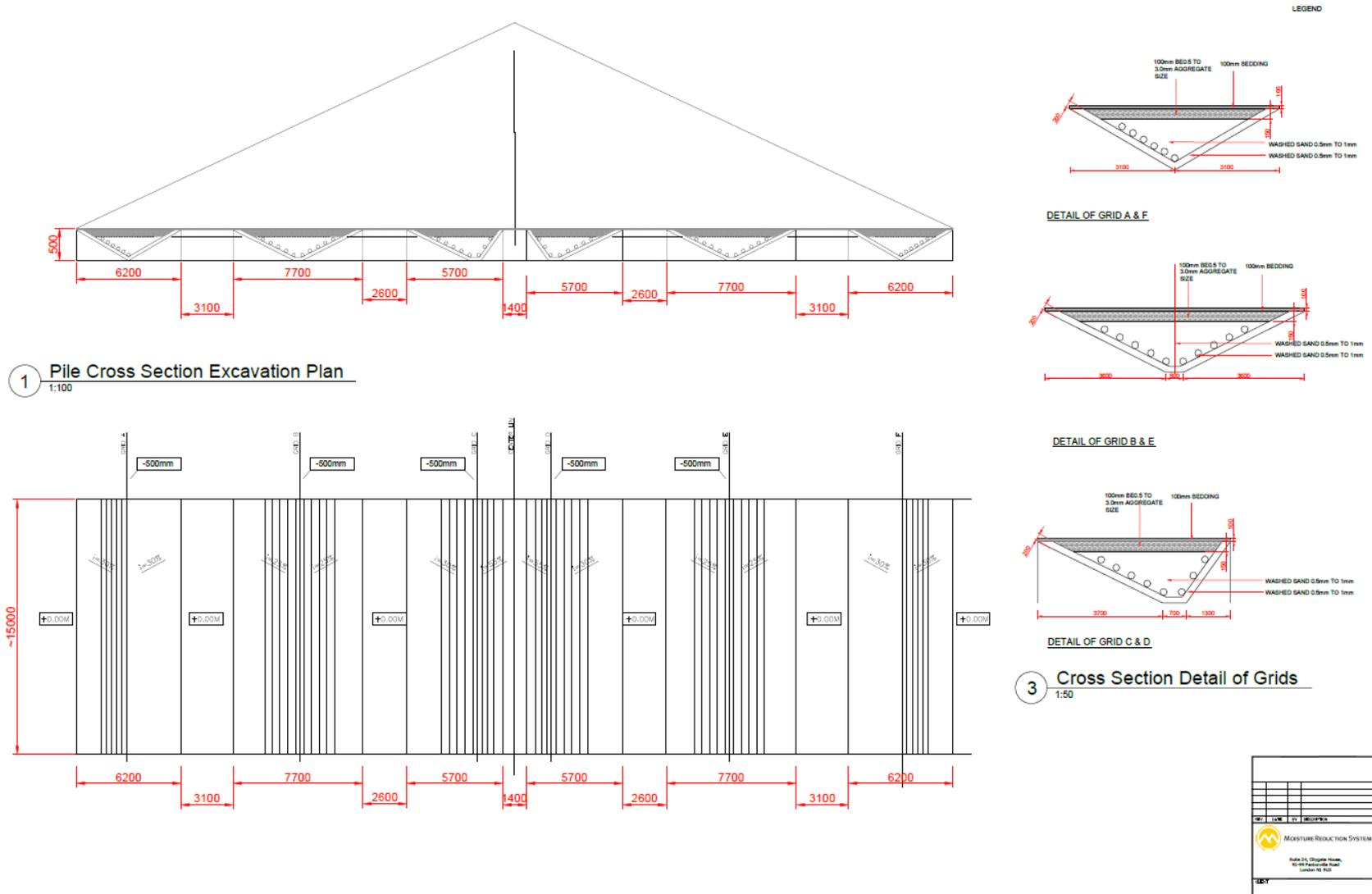


Figure 11: Layout of the moisture reduction system beneath stockyard canyon

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Schedule 6: Premises infrastructure and equipment

The following infrastructure and equipment are either situated or authorised for installation at the premises:

Table 9: Infrastructure and equipment

No.	Infrastructure/Equipment	Site plan reference
1.	3x Train unloaders	Figure 3: <ul style="list-style-type: none"> • TUL001 • TUL002 • TUL003
2.	4x Stackers	Figure 4: <ul style="list-style-type: none"> • SK701/CV923 • SK702/CV936 • SK704/CV937 • SK705/CV939
3.	3x Reclaimers	Figure 4: <ul style="list-style-type: none"> • RC701/CV920 • RC702/CV928 • RC703/CV938
4.	Stockpiles: <ul style="list-style-type: none"> • 6 rows of live stockpiles • 2 rows of bulk-out stockpiles 	Figure 4: <ul style="list-style-type: none"> • B1-B6 • C1-C6 • D1-D6 • E1-E6 • F1-F6 • G1-G6
5.	In-load conveyors	Figure 3 and Figure 4: <ul style="list-style-type: none"> • CV302 • CV901 • CV902 • CV903 • CV905 • CV906 • CV908 • CV909 • CV911 • CV912 • CV916 • CV918 • CV923 (stacker in-load) • CV936 (stacker in-load) • CV937 (stacker in-load) • CV939 (stacker in-load) • CV968 (not in service)

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No.	Infrastructure/Equipment	Site plan reference
6.	Outload conveyors	Figure 4 and Figure 5: <ul style="list-style-type: none"> • CV913 • CV914 • CV915 • CV917 • CV921 • CV921A* • CV922 • CV927 • CV932 • CV944 • CV945 • CV948 • CV948A* • CV950 • CV953 • CV920 (reclaimer out-load) • CV925 (reclaimer out-load) • CV926 (reclaimer out-load) • CV928 (reclaimer out-load) • CV935 (reclaimer out-load) • CV938 (reclaimer out-load)
7.	Transfer stations	Figure 3, Figure 5 and Figure 6: <ul style="list-style-type: none"> • TS302 • TS901 • TS902 • TS903 • TS904 • TS905 • TS906 • TS908 • TS909 • TS914 • TS917 • TS944/SS944 • TS945/SS945 • TS954
8.	Shuttle conveyors	Figure 5 and Figure 6: <ul style="list-style-type: none"> • SH913 • SH914 • SH917 • SH906 • SH953

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No.	Infrastructure/Equipment	Site plan reference
9.	Surge and blending bins	Figure 5 and Figure 6: <ul style="list-style-type: none"> • BN921/BN948 • BN950
10.	Sample stations	Figure 5: <ul style="list-style-type: none"> • SS903 • SS913 • SS914 • SS917 • SS944 • SS945
11.	5x Berths	Figure 6
12.	Ship loaders	Figure 6: <ul style="list-style-type: none"> • SL701/CV925 • SL702/CV926 • SL703/CV935
13.	Mobile screening plant	N/A
14.	Maintenance workshop	N/A
15.	Wash bay	N/A
16.	Stormwater and wash water discharge locations	Figure 10: <ul style="list-style-type: none"> • W1 • W2 • W3 • W4 • W5 • W6
17.	Oily water separators (OWS)	Figure 10: <ul style="list-style-type: none"> • Process Water Tanks for OWS 1&2 • OWS 3 for Train Unloader 3 Silt Trap Discharge
18.	Discharge location for OWS 1&2	Figure 10: <ul style="list-style-type: none"> • L1
19.	Discharge location for OWS 3	Figure 10: <ul style="list-style-type: none"> • L2
Other Infrastructure		
20.	Desalination plant	N/A
21.	Desalination plant emission point	N/A
22.	Fuel farm (1x 52,400 L tank)	N/A

Note 1: Only required if surge bins BN921 and BN948 are installed.

Bulk materials loaded and unloaded

Iron ore (hematite iron) arrives at the premises' rotary car dumpers via trains from the licence holder's four inland mines (Cloudbreak, Christmas Creek, Solomon and Eliwana mines). Iron ore (magnetite ore) is also received from the Iron Bridge North Star Mine via the Iron Bridge

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Concentrate Handling Facility and Concentrate Diversion Pond.

The ore is then conveyed to a stockpile by a stacker for stockpiling at the stockyard area.

Ore is then removed from the stockpiles by reclaimers and transferred to the ship loading section of the premises via conveyor.

Schedule 7: Operational requirements (infrastructure and equipment)

Table 10: Operational requirements of premises infrastructure and equipment

No.	Column 1 Site Infrastructure /equipment	Column 2 Description	Column 3 Operational requirements	Column 4 Site plan reference
Dust control infrastructure				
1.	Stackers	Water sprays fitted to the conveyor boom of the stackers	a. Stacker water sprays operated at all times while stacking material, unless when: <ol style="list-style-type: none"> it is raining; or stacking Cloudbreak super special fines, Cloudbreak blended fines, Christmas Creek special fines or Iron Bridge magnetite iron ore; dust control equipment is unavailable, in accordance with condition 2. b. Drop height from stacker minimised to as low as reasonably practicable for the purpose of reducing dust.	Figure 4: <ul style="list-style-type: none"> SK701/CV923 SK702/CV936 SK704/CV937 SK705/CV939
2.	Reclaimer	Water sprays fitted to the reclaimer wheel bucket	a. Sprays on bucket wheels and boom conveyor operated whenever ore is being reclaimed, unless when: <ol style="list-style-type: none"> it is raining; or reclaiming unblended Cloudbreak super special fines, Cloudbreak blended fines or Christmas Creek special fines; or dust control equipment is unavailable, in accordance with condition 2. b. Sprays mounted close to the bucket toward the digging face to provide a misting curtain.	Figure 4: <ul style="list-style-type: none"> RC701/CV920 RC702/CV928 RC703/CV938
3.	Stockyard	Water cannons adjacent to stockpiles	a. Water cannons routinely operated to prevent visible dust lift off. b. Weather forecasting is utilised to maximise effectiveness of dust suppression by cannon operation.	Figure 4: <ul style="list-style-type: none"> B1-B6 C1-C6 D1-D6 E1-E6 F1-F6 G1-G6
4.	Train unloaders	In-loading iron ore from trains and	a. Partially enclosed structure with dry dust extraction system (bag	Figure 3: <ul style="list-style-type: none"> TUL001

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	Column 1	Column 2	Column 3	Column 4
No.	Site Infrastructure /equipment	Description	Operational requirements	Site plan reference
		onto conveyors	<p>house) operating at all times during unloading.</p> <p>b. Water sprays activated when receiving iron ore with a moisture content below the DEM level for that iron ore, as determined under condition 19.</p>	<ul style="list-style-type: none"> • TUL002 • TUL003
5.	Conveyors	Transport of ore from the car dumper to the stockyard and then to the ship loading facility	<p>a. Belt scrapers automatically operate when the conveyor is running to remove material carried back from the belt.</p> <p>b. Belt wash stations activated at each conveyor CV302, CV902, CV903, CV909, CV911, CV912, CV913, CV914, CV915, CV916, CV917, CV918, CV920, CV921, CV922, CV925, CV926, CV927, CV928, CV932, CV935, CV936, CV937, CV938, CV939, CV944, CV945, CV948, CV950, CV953 and/or SH906 when the conveyor is running to remove material carried back from the belt.</p> <p>c. Belt wash stations activated at each conveyor CV901, CV905, CV906, CV921A and/or CV948A once installed and when the conveyor is running to remove material carried back from the belt.</p> <p>d. Water sprays (bulk ore conditioning sprays) at each conveyor CV901 (BOC#2), CV905 (BOC#3) and CV917 (BOC#1) must be activated when handling iron ore with a moisture content below the DEM level for that iron ore, as determined under condition 19, unless when dust control equipment is unavailable, in accordance with condition 2.</p> <p>e. Spillage from under the conveyors is removed regularly to prevent material lift off.</p>	<p>Figure 3, Figure 4, Figure 5 and Figure 6:</p> <ul style="list-style-type: none"> • CV302 • CV901 • CV902 • CV903 • CV905 • CV906 • CV908 • CV909 • CV911 • CV912 • CV913 • CV914 • CV915 • CV916 • CV917 • CV918 • CV920 • CV921 • CV921A • CV922 • CV923 (stacker in-load) • CV925 • CV926 • CV927 • CV928 • CV932 • CV933 (proposed to be installed) • CV935 • CV936 • CV937 • CV938 • CV939

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No.	Column 1	Column 2	Column 3	Column 4
	Site Infrastructure /equipment	Description	Operational requirements	Site plan reference
				<ul style="list-style-type: none"> • CV944 • CV945 • CV948 • CV948A • CV950 • CV953 • SH913 • SH914 • SH917 • SH906A • SH953 (proposed to be installed)
6.	Transfer stations	Transport of ore from one conveyor to another	<p>a. Transfer stations enclosed.</p> <p>b. Water sprays operated for dust and/or product moisture control at all times when handling iron ore with a moisture content below the DEM level for that iron ore, as determined under condition 19, unless when dust control equipment is unavailable, in accordance with condition 2.</p> <p>c. Water sprays and rubber skirts fitted to the exit of transfer points.</p>	<p>Figure 3, Figure 4, Figure 5 and Figure 6:</p> <ul style="list-style-type: none"> • TS302 • TS901 • TS902 • TS903 • TS904 • TS905 • TS906 • TS908 • TS909 • TS914 • TS917 • TS944/SS944 • TS945/SS945 • TS954
7.	Ship loading	Transfer of ore from stockpiles to the vessel via surge bins	<p>a. Sprays operated on boom discharge and conveyor during loading unless when:</p> <ul style="list-style-type: none"> iv. it is raining; or v. unblended Cloudbreak super special fines, Cloudbreak blended fines or Christmas Creek special fines are being loaded into the vessel; or vi. dust control equipment is unavailable, in accordance with condition 2. <p>b. Shiploaders lowered into the hatch to minimise drop height.</p>	<p>Figure 6:</p> <ul style="list-style-type: none"> • SL701/CV925 • SL702/CV926 • SL703/CV935 • SL704/CV940 (proposed to be installed)

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No.	Column 1	Column 2	Column 3	Column 4
	Site Infrastructure /equipment	Description	Operational requirements	Site plan reference
8.	Surge and blending bins	Storage of ore to feed shiploading conveyors	a. Dust extraction operated at all times during ore handling. b. Covers in place to enclose surge bins at all times during ore handling.	Figure 6: <ul style="list-style-type: none"> • BN921/BN948 • BN950
9.	Mobile screening plant	Removal of fines from lump ore using vibrating feeders and screens	Enclosed screens with dry dust extraction and collection (baghouse).	N/A – mobile
10.	Unsealed roads and trafficable areas	Watercarts and dust suppressants	a. Travel at 40 km/hr or less. b. Use of watercarts on all unsealed roads and/or maintenance of dust suppressant chemicals (e.g. hydro-mulch) on all unsealed roads and trafficable areas.	N/A
11.	Wharf	Road sweeper	Manual dry sweep area at the wharf undertaken at least daily whenever shiploading occurs.	N/A
12.	Boundary monitoring equipment	Dust monitoring stations	a. PM ₁₀ dust monitoring network operated at the premises boundary. b. Alarm system with internal trigger values and response procedure in place. If a trigger value is exceeded, an email notification is sent to the licence holder's staff and an investigation is implemented. If investigation finds operational related exceedance, contingency action is taken.	Figure 7: <ul style="list-style-type: none"> • Wharf • End of Road • NW Corner • NE Corner • Finucane • SW Corner • Causeway South • TUL SW • TUL SE
Stormwater and wastewater management				
13.	Stormwater discharge points	Sedimentation ponds, silt traps and discharge points	a. Stormwater runoff from areas other than those areas handling or storing hydrocarbons (specifically workshop, vehicle washdown bay, train unloader, conveyor transfer points, refuelling areas and fuel storage tanks) is directed to sedimentation ponds. b. Stormwater is retained within the sedimentation ponds/silt traps for a sufficient period for the majority of suspended particles to settle prior to discharge from the following	Figure 10: <ul style="list-style-type: none"> • W1 • W2 • W3 • W4 • W5 • W6 • L2

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No.	Column 1	Column 2	Column 3	Column 4
	Site Infrastructure /equipment	Description	Operational requirements	Site plan reference
			locations: <ul style="list-style-type: none"> • W1 – Sedimentation basin discharging to South West Creek; • W2 – Australia Island Silt Trap Discharge; • W3 – Sample laboratory silt trap discharged via overflow pipe into South West Creek; • W4 – Australia Island Settlement Pond Discharge; • W5 – TUL1 stormwater discharge point; and • W6 – TUL2 stormwater discharge point; • L2 – Train Unloader 3 silt trap discharge to rail loop. 	
14.	Train unloading infrastructure area sump and OWS	Impermeable concrete sump and OWS	a. Area of the train unloading facilities to drain into sump for treatment through the OWS. TUL001 has a concrete containment area and OWS TUL002 and TUL003 have their own discharge point through L2. b. Treated water stored within the process water tanks prior to use including dust suppression.	Figure 3: <ul style="list-style-type: none"> • TUL001 • TUL002 • TUL003
15.	Workshop, light vehicle refuelling area, vehicle washdown bays, fuel farm and OWS	Impermeable concrete sump and OWS	a. Area workshop, light vehicle refuelling area, vehicle washdown bays and fuel farm drain to sump for treatment through the OWS. b. Treated water stored within the process water tanks prior to use for dust suppression.	Figure 10: <ul style="list-style-type: none"> • Process Water Tanks for OWS 1&2 • OWS 3 for Train Unloader 3 Silt Trap Discharge
16.	Moisture reduction system	Moisture reduction system beneath stockyard canyons, once constructed in accordance with condition 5	Discharges of extracted water to be retained within drainage channel to allow suspended particles to settle prior to discharge through W1 discharge point.	Figure 10: <ul style="list-style-type: none"> • W1 Figure 11: <ul style="list-style-type: none"> • Moisture reduction system beneath B1-B6, C1-C6, D1-D6, E1-E6, F1-F6, G1-G6

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	Column 1	Column 2	Column 3	Column 4
No.	Site Infrastructure /equipment	Description	Operational requirements	Site plan reference
Spill control infrastructure				
17.	Conveyor	Concave conveyor design	Conveyor sides concave to prevent spillage of ore.	N/A
18.		Enclosed conveyor transfer points	Transfer points covered to prevent spillage of ore onto the ground.	N/A
19.	Wharf (berths)	Concrete flooring	<ul style="list-style-type: none"> a. Inspections undertaken on regular basis (minimum daily) to determine whether ore has spilt and requires clean-up and removal. b. Manual dry sweep area at the wharf undertaken at least daily whenever shiploading occurs. c. Undertake clean-up of ore built under conveyors and transfer stations on daily basis whenever shiploading occurs. 	Figure 6
20.	Spill kits	Equipped with hydrocarbon spill kit equipment.	Equipment deployed in the event of hydrocarbon spills and leaks.	N/A

Schedule 8: Quarterly reporting

The following schedule outlines the investigation and reporting requirements triggered as a result of condition 21.

Reporting Frequency

Reports for the above mentioned must be submitted to the CEO on a quarterly basis, by the last day of the following months in each year:

- April (for January to March);
- July (for April to June);
- October (for July to September); and
- January (for October to December) in any year.

Contents of Report

The quarterly report must contain:

- all validated boundary air quality and meteorological monitoring data for the quarterly period as recorded at those monitoring stations specified in Table 3 of condition 20 and provided in the format specified in Schedule 10;
- ore moisture monitoring data as a comparison against the DEM level for each respective ore, in accordance with condition 19; and
- the following details for the period(s) in which reportable events occurred, as specified in condition 21:
 - date(s), time and duration of event;
 - type(s) and total amount (in wet tonnes) of bulk material in-loaded and out-loaded at the premises for the 24-hour periods before, during and after the reportable event;
 - the monitoring data, in tabulated form, recorded at those monitoring stations, listed in column 1 of Table 2 as specified in condition 19, in the format specified in Schedule 10;
 - time series graphical plots for the monitoring stations referred to above on the day/s on which the event occurred;
 - a summary of how each boundary monitor is, or is not compliant with Australian Standard AS/NZS 3580.1.1;
 - details and findings of an investigation into the reportable event including, but not limited to the following:
 - confirmation that data received is correct (no instrument fault);
 - determination of the source of the reportable event through:
 - review of PM₁₀ concentrations at the Yule and BoM background monitors;
 - review of meteorological data (including temperature, wind speed, rainfall and direction);
 - review of the dust scatter plots to determine dust concentrations recorded as coming from the offsite sector;
 - review of background dust levels recorded at an upwind boundary monitor;
 - moisture content of materials received at the time of the exceedance with a comparison against the DEM level;

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- comparison of boundary dust levels against dust levels recorded at Richardson St, Kingsmill St, Taplin St and South Hedland ambient dust monitoring stations (24-hour average);
 - review of boundary dust data to identify premises dust sources that may have contributed to the exceedance; and
 - availability rates for all dust control equipment.
- a description of all ore handling activities which had occurred at the premises during the reportable event and the 24 hours preceding the reportable event;
 - a description of actions taken by site personnel as a response to the any high level alarms with reference to the specific dust sources identified;
- for reportable events at the Taplin Street monitor, a comparison of PM₁₀ concentrations against boundary monitor peaks (including peak times) and 24-hour averaged levels recorded during the 24-hour period; and
 - all corrective and management actions undertaken for reportable events.

Schedule 9: Dust monitoring report

The following schedule specifies the contents for the Dust Monitoring Report required by Condition 27.

Contents of Report

The report must contain at a minimum, but not be limited to the following information for the purpose analysing how dust concentrations at the premises are reflected by the boundary monitoring network. Specifically to assess the:

- effects of dust control interventions;
- extent to which the network is capturing dust emissions from premises' sources;
- connection between elevated dust levels at boundary monitors and at the receptor sites of Kingsmill St, Richardson St, Taplin St and South Hedland, as depicted in Figure 8 of Schedule 3; and
- difference between background dust and premises' emissions,

the licence holder must provide:

- a review and analysis of PM₁₀ data from the monitoring stations:
 - Wharf, End of Road, NW Corner, NE Corner, Finucane, SW Corner, Causeway South, TUL SW and TUL SE, as depicted in Figure 7 of Schedule 3,
 for a period of at least 12 months prior to, and 12 months after installation of the following infrastructure and/or equipment:
 - (a) bulk ore conditioning sprays (BOC#1, BOC#2 and BOC#3); and
 - (b) belt wash stations (CV918, CV927 and CV932).
- an analysis of PM₁₀ monitoring station data with associated weather data and spatial data (location of monitor and locations of dust sources);
- an analysis of PM₁₀ monitoring station data in comparison with concentrations at ambient monitors Richardson St, Kingsmill St, Taplin St and South Hedland where there are:
 - exceedances of the air guideline value at Richardson St, Kingsmill St and Taplin St monitors; and
 - Reportable events as specified in column 3 of Table 4,
 using suitable timeframes to account for plume travel from the premises to the sensitive receptors;
- meaningful graphs, such as line graphs, polar plots and radial graphs to visualise the analysis findings;
- all validated, computer readable and editable data used for the report are to be provided as part of the report with the monitoring data meeting the specified format outlined in Schedule 10.

Schedule 10: File format for monitoring data

The licence holder must ensure that validated (particle, gas and meteorological instrument data) results of air monitoring are provided as a comma delimited time series listing on a suitable computer readable medium in the following format:

```
SITE NAME:XXXXXXXXX
column description
ddmmyyyy HHMM, x, x, x, ...
ddmmyyyy HHMM, x, x, x, ...
↓
↓
↓
ddmmyyyy HHMM, x, x, x, ...
```

where: **dd** is the two digit day of the month i.e. 01, 02,...,31
mm is the two digit month of the year i.e. 01, 02,...,12
yyyy is the four digit year i.e. 2009, 2010, ...
HH is the two digit hour code i.e. 00, 01,...,23
MM is the two digit minute code i.e. 00, 10, 15,...,55
x,x,x is the comma delimited decimal data.

The time period for comma delimited time series listing must represent the end of the data period. Hence the first time stamp for any day must be 0005 hours and the data associated with this time stamp must be the averaged data for the period up to this time i.e. from midnight to 0005 hours. The last time for any day must be 2400 and the data associated with this time stamp must be the averaged data for the period up to this time i.e. from 2355 hours to midnight.

If the above method of timestamping is not achievable by your system, then the time series listing can be timestamped at the **start** of the period with the first timestamp of each day being 0000 hours which represents data from midnight to 00:05 and ends at 2355 hours which represents data from 23:55 to midnight on the same day.

Erroneous or invalid data must be denoted as a blank (**not** a space) or a numeric error code such as -99.0 within the data set. There should be no spaces in the data lines other than that between the date and time.

The covering documentation will indicate if the data timestamp is at the start of the data averaging period or the end of the data averaging period.

An example five minute averaged data set comprising eight parameters is provided below.

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SITE NAME:- GENERIC AQMS

Date_Time,CO_ppm,NO_ppb,NO2_ppb,NOx_ppb,SO2_ppb,O3_ppb,PM10_ug_m3,PM2.5_ug_m3

26/04/2013 2325,0.2,31.4,11.4,42.8,,0.2,10.0,5.3

26/04/2013 2330,0.2,26.6,12.6,39.3,,0.1,8.6,4.7

26/04/2013 2335,0.1,14.8,14.6,29.4,,0.1,8.2,5.1

26/04/2013 2340,,,,,,,,,

26/04/2013 2345,,,,,,,,,

26/04/2013 2350,0.2,25.7,16.2,42,,0.5,14.6,13.4

26/04/2013 2355,0.2,,15.8,36,,0.6,14.2,11.3

26/04/2013 2400,0.2,,15.1,35,,0.5,14.3,9.7

27/04/2013 0005,0.2,24.8,15.3,40.1,,0.5,12.8,9

27/04/2013 0010,0.3,27.1,14.6,41.8,,0.4,12.7,9.2

27/04/2013 0015,0.4,33.2,14.5,47.7,,0.4,13.0,8.9

27/04/2013 0020,0.5,26.5,12.6,39.1,,0.2,12.0,7.9

The following units must be used for data submitted as a comma delimited time series listing:

Pollutant	Units	Minimum precision
Carbon monoxide	parts per million	X.X (tenth of a ppm)
all other gases	parts per billion	X (tenth of a ppb)
particles	micrograms per cubic metre	X.X (tenth of a $\mu\text{g}/\text{m}^3$)
wind speed	metres per second	X.X (tenth of a m/s)
wind direction	degrees from north	X.X (tenth of a degree)
sigma	degrees	X.X (tenth of a degree)
air temperature	degrees Celsius	X.X (tenth of a degree)
relative humidity	%	X.X (tenth of a %)
pressure	hectopascals	X.X (tenth of a hPa)
solar radiation	watts per square metre	X.X (tenth of a watt/m^2)

These units must be used unless approval has been obtained from the Senior Manager, Air Quality Services to use alternative units.

The licence holder must provide:

- Data as five or 10 minute averages. If these are not available, then at shortest available averaging period;
- Site name, instrument manufacturer and model number;
- Site location (Latitude/Longitude GPS coordinates);
- Data validation procedure used to validate data; and
- all reported data must be time-stamped with the actual time to which the measurement refers. This means that the 1 hour offset inherent in BAMs must be corrected so that both the 1-hour and 10-minute data presented in reports represent the conditions existing at the time of the measurement.