Government of Western Australia
Department of Water and Environmental Regulation

Decision Report

Application for Licence

Part V Division 3 of the *Environmental Protection Act 1986*

Licence Number	L2913/2025/1
Applicant	Fortescue Ltd
ACN	002 594 872
File number	APP-0026510
Premises	Eliwana Rail Camp CH95 wastewater treatment plant Within Mining Tenement L47/816 MOUNT SHEILA WA 6751 As defined by the premises map and coordinates in Schedules 1 and 2 of the licence
Date of report	07 April 2025 **(FINAL)**
Decision	Licence granted

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1. Decision summary

This decision report documents the assessment of potential risks to the environment and public health from emissions and discharges during the operation of the premises. As a result of this assessment, licence L2913/2025/1 has been granted.

2. Scope of assessment

2.1 Regulatory framework

In completing the assessment documented in this decision report, the Department of Water and Environmental Regulation (the department; DWER) has considered and given due regard to its regulatory framework and relevant policy documents which are available at https://dwer.wa.gov.au/regulatory-documents.

2.2 Application summary and overview of premises

On 15 November 2024, the applicant submitted an application for a licence to the department under section 57 of the *Environmental Protection Act 1986* (EP Act).

The application is to seek a licence relating to the operation of a sewage facility at the premises, comprising a wastewater treatment plant (WWTP), pipeline and irrigation field. The premises is located within mining tenement L47/816 approximately 64 km north-west of Tom Price. The sewage facility supports a railway construction camp at chainage CH 95 for the Eliwana Rail Project.

The premises relates to the category and assessed design capacity under Schedule 1 of the *Environmental Protection Regulations 1987* (EP Regulations) which is defined in licence L2913/2025/1.

2.3 Works approval compliance

On 19 March 2024 the department issued the corresponding Works Approval (W6863/2023/1) to the licence holder for the construction/installation of the sewage plant and spray field. The Work Approval also authorised commissioning of the sewage plant and time limited operations.

Assessment of the Environmental Compliance and Environmental Commissioning Reports (required under the Works Approval) identified the following non-compliances:

- Noting the lower number of persons using the associated rail camp (200 persons compared to the assessed 500 persons), the installed WWTP did not meet the 150 m^3 per day (m^3/day) sewage capacity and 3 hectare (ha) spray field specifications. *That is, a smaller 50m^3 per day capacity plant and 1.7ha sprayfield have been installed.*
- Treated effluent water quality did not meet the design specifications during commissioning of the plant (note - commissioning was undertaken for a period of 60 days);
- Treated effluent which exceeded the design parameter limits for water quality was discharged within the premises during commissioning of the plant.

On 24 December 2024, the applicant was advised of the outcome of the department's compliance review for Works Approval W6863/2023/1. The department confirmed that it would progress the licence application on the basis that the identified non-compliances should not significantly change the existing risk assessment completed for the works approval. Furthermore, treated effluent quality and management is to be regulated through appropriate licence conditions.

2.4 Summary of assessed activity

A summary of the prescribed premises activity is provided below:

2.4.1 Infrastructure

The WWTP infrastructure includes the following:

- 1 fabricated sewage treatment plant including 2x raw sewage storage tanks, 1x waste activated sludge storage tank, 1x sequential batch reactor and 2x chlorine contact / irrigation storage tanks.
- Treated wastewater pipeline and 1.7 ha irrigation sprayfield with perimeter fence.
- RO brine supply pipeline connection to WWTP irrigation tanks.

2.4.2 Operations

Wastewater treatment plant

The constructed WWTP is designed to cater for 200 persons and has a design capacity of 50 m^3 of sewage per day. The estimated operating period for the WWTP is 20 years. The sewage treatment process is arranged in an SBR (sequential batch reacting) configuration consisting of a primary tank, screen and balance tank front end. The SBR process features a combined anoxic/aerobic biological suspended growth treatment process. This relies on bacterial action to achieve the following:

- Coagulate and remove the non-settleable colloidal solids and carbonaceous organic matter;
- Convert the colloidal and dissolved carbonaceous organic matter into various gases and cell mass;
- Reduce the nutrients such as nitrogen and phosphorus and other trace organic compounds.

Settling is the main process occurring in the SBR for clarification of fluid. The clarified liquid stream leaves the SBR via the decant system as Secondary Effluent. The WWTP also provides a final chemical polish/removal of remaining phosphorous. Chlorine is used to disinfect the final polished effluent from the SBR.

The WWTP is designed to treat sewage to meet the specifications detailed in Table 1.

Table 1 - Expected effluent quality

Parameter	Concentration
BOD	<20 mg/L
Total suspended solids	<30 mg/L
Total nitrogen	<20 mg/L
Total phosphorus	<7.5 mg/L
Fecal coliforms	≤1,000 units /100 mL
Residual free chlorine	0.2-2.0 mg/L
pH	6.5 – 8.5

The expected effluent quality (for BOD, TSS, N, P and faecal coliforms) is in line with commonly required level of treatment for land application detailed in the *Australian Guidelines for Sewerage Systems (1997), Effluent Management - National Water Quality Management Strategy*.

Sludge produced by the WWTP will be collected in sludge tanks. Sludge will be removed periodically from the tanks by a licenced carrier and taken offsite for disposal at an appropriately licensed facility.

WWTP spray field

Treated effluent from the WWTP is conveyed via a pipeline to the irrigation spray field. The spray field consists of aboveground sprinkler units designed as low trajectory and large droplet sprinklers. The spray field has been located to reduce the risk of spray drift during windy conditions.

*Water Quality Protection Note 22 (*in regard to nutrient application criteria to control eutrophication risk) has been considered in sizing the spray field area. The spray field size of 1.7 ha and application rates of approximately 215 kg/ha/year nitrogen and 80 kg/ha/year phosphorus are within the published criteria.

Reverse osmosis plant brine

An additional 25 m^3/day (5-day average) of RO brine from the camp water treatment plant will be directed to the WWTP irrigation tanks and blended with treated wastewater prior to discharge at the WWTP spray field.

The blended WWTP effluent and RO brine is expected to have an average TDS concentration of 2,600-2,800 mg/L.

2.5 Part IV of the EP Act

The premises forms part of a larger proposal previously referred to the Environmental Protection Authority (EPA). On 7 July 2017 the Licence Holder referred the Eliwana Railway Project to the EPA as a significant proposal under Section 38 of the EP Act. The EPA determined to assess the proposal at the level of Public Environmental Review on 16 August 2017. EPA Report No. 1633 was prepared in relation to the proposal and provided the following recommendations to the Minister:

- The assessed proposal is for the construction and operation of a 120 km railway line and associated infrastructure;
- The key environmental factors assessed by the EPA are Flora and Vegetation, Terrestrial Fauna, Inlands Waters and Social Surroundings; and,
- The proposal may be implemented subject to conditions.

Subsequently, Ministerial Statement (MS) 1108 was issued by the Minister for Environment. MS 1108 requires the Licence Holder to prepare and implement a number of Environmental Management Plans relating to the proposal. The management plans relate to significant areas identified in Schedule 2 of MS 1108. The significant areas and their distance from the premises are shown in Table 2 below.

Table 2 - Significant areas subject to conditions and management plans within MS 1108.

Significant areas referred to in MS 1108	Distance from premises
Brockman Iron Cracking Clays PEC	Approximately 36.6 km east-northeast
Hamersley Homestead	Approximately 43.6 km east-northeast
Themeda Grasslands on Cracking Clays TEC	Approximately 37.0 km east-northeast
Pools within Groundwater Impact Assessment Area	Nearest is approximately 1.1 km south-east (*up hydraulic gradient)*
Groundwater Dependent Ecosystems (vegetation)	Approximately 436 m east along unnamed ephemeral creek (tributary of Duck Creek).
Potential Groundwater Dependent Ecosystem (vegetation)	Approximately 890 m north
Kumpanha Dancing Ground	Approximately 35.6 km east
Nharraminju Wuntu Rock Art Complex	Approximately 3.08 km northeast

Key Findings:

1. The premises is located within the Development Envelope listed for MS 1108.
2. The licence application relates to associated infrastructure for the construction and operation of the Eliwana railway line, being services for a construction camp.
3. Where relevant and applicable, key environmental factors and significant areas requiring management under MS 1108 have been considered in the assessment of the licence application.
4. MS 1108 significant areas (listed in Table 2) that are located at distances likely to preclude them as potential receptors, have been omitted from the licence risk assessment.
5. Groundwater dependent vegetation in the vicinity and down-hydraulic gradient of the sprayfield may be potential receptors to emissions from the premises as detailed in the risk assessment within this report (Section 3).

3. Risk assessment

The department assesses the risks of emissions from prescribed premises and identifies the potential source, pathway and impact to receptors in accordance with the *Guideline: Risk Assessments* (DWER 2020).

To establish a risk event there must be an emission, a receptor which may be exposed to that emission through an identified actual or likely pathway, and a potential adverse effect to the receptor from exposure to that emission.

3.1 Source-pathways and receptors

3.1.1 Emissions and controls

The key emissions and associated actual or likely pathway during premises operation which have been considered in this decision report are detailed in Table 3.

Table 3 also details the control measures the applicant has proposed to assist in controlling these emissions, where necessary.

Table 3: Proposed applicant controls

Emission	Sources	Potential pathways	Proposed controls
Operation			
Odour	Incorrect wastewater chemical treatment balance Storage of wastewater/solids	Air/windborne pathway causing impacts to health and amenity	The WWTP is designed and operated to mitigate the risk of odour emissions. Containerised WWTP with enclosed tanks. Regular inspection of equipment by a certified technician. Computerised monitoring system of the WWTP with an alarm that will raise an alert if malfunctioning. Wastewater is treated prior to irrigation.
Raw/untreated sewage	Spills/leaks from WWTP	Discharge to land and migration to ephemeral watercourses	WWTP is designed to treat sewage from 200 persons with a design capacity of 50 m^3/day. WWTP is a closed/containerised system not subject to the elements (i.e. rainfall inputs). Alarm system installed to notify the operator of pump fails; high tank levels; and tank overflows. Screenings are contained within a sealed bin prior to removal for disposal to a licensed facility. Earthen bund constructed around WWTP.
Waste sludge	WWTP	Discharge to land	Sludge tanks. Periodic removal of sludge from tanks for disposal to licensed facility offisite.
Treated wastewater blended with RO plant brine	Treated wastewater and brine blend discharged from WWTP	Discharge to land at spray field Infiltration to groundwater Spray drift Migration from spray field to watercourses	Sited to reduce risks associated with water tables, waterlogging and flooding. WWTP expected effluent quality (for BOD, TSS, N, P and faecal coliforms) is in line with commonly required level of treatment for land application detailed in the *Australian Guidelines for Sewerage Systems (1997) - Effluent Management.* Irrigation sprayfield sized to control

Emission	Sources	Potential pathways	Proposed controls
			eutrophication risk. Low trajectory large droplet impact sprinklers. Perimeter fence around sprayfield, with 5 m buffer area between sprinkler radius and fence. Warning signage fitted to sprayfield fence to discourage access. Sprayfield designed to prevent ponding of water on the ground surface (and potential runoff).

3.1.2 Receptors

In accordance with the *Guideline: Risk Assessment* (DWER 2020), the Delegated Officer has excluded the applicant's employees, visitors, and contractors from its assessment. Protection of these parties often involves different exposure risks and prevention strategies, and is provided for under other state legislation.

Table 4 below provides a summary of potential human and environmental receptors that may be impacted as a result of activities upon or emission and discharges from the prescribed premises *(Guideline: Environmental Siting* (DWER 2020)).

Table 4: Sensitive human and environmental receptors and distance from prescribed activity

Human receptors	Distance from prescribed activity
Native Title Holders of Eastern Guruma Native Title Determination area	The Premises is located within the Eastern Guruma Native Title Determination area. Native Title Holders visiting this area are considered a potential human receptor to activities on the Premises.
Environmental receptors	**Distance from prescribed activity**
Soils	Within the Premises
Unnamed non-perennial watercourses (tributaries of Duck Creek)	Approx 225 m south-east of WWTP. Approx 10 m east and 350 m north of sprayfield.
Pilbara Surface Water Area - proclaimed under the *Rights in Water and Irrigation Act 1914*	Premises falls within the broad Pilbara Surface Water Area.
Underlying groundwater	Groundwater levels in the region of the premises are expected to be approximately greater than 2 m below ground level. Main aquifers in the region of the premises are expected to be fractured rock aquifers or minor alluvial aquifers in surface creeks.
Pilbara Groundwater Area - proclaimed under the	Premises falls within the broad Pilbara

Rights in Water and Irrigation Act 1914	Groundwater Area.
Native vegetation	Within the sprayfield area. Down hydraulic gradient of sprayfield. Within non-perennial creek lines 10 m east and 350 m north of sprayfield.
Groundwater dependent vegetation	Approximately 436 m east of spray field along unnamed ephemeral creek (tributary of Duck Creek).

3.2 Risk ratings

Risk ratings have been assessed in accordance with the *Guideline: Risk Assessments* (DWER 2020) for each identified emission source and takes into account potential source-pathway and receptor linkages as identified in Section 3.1. Where linkages are in-complete they have not been considered further in the risk assessment.

Where the applicant has proposed mitigation measures/controls (as detailed in Section 3.1), these have been considered when determining the final risk rating. Where the delegated officer considers the applicant's proposed controls to be critical to maintaining an acceptable level of risk, these will be incorporated into the licence as regulatory controls.

Additional regulatory controls may be imposed where the applicant's controls are not deemed sufficient. Where this is the case the need for additional controls will be documented and justified in Table 5.

Licence L2913/2025/1 that accompanies this decision report authorises emissions associated with the operation of the premises. The conditions in the issued licence, as outlined in Table 5 have been determined in accordance with *Guidance Statement: Setting Conditions* (DER 2015).

Table 5: Risk assessment of potential emissions and discharges from the premises during operation

Risk events					Risk rating [1] C = consequence L = likelihood	Applicant controls sufficient?	Conditions [2] of licence	Justification for additional regulatory controls
Sources / activities	**Potential emission**	**Potential pathways and impact**	**Receptors**	**Applicant controls**				
Operation of WWTP								
Operation of WWTP and spray field	Odour	**Pathway:** Air/windborne **Impact:** Impacts to amenity and human health	Native title holders that may visit surrounding areas	Refer to Table 3 of this report	C = Slight L = Unlikely **Low risk**	No	Waste acceptance – condition 1 Waste processing – condition 2 Infrastructure operational requirements – condition 3 **Monitoring of inputs to WWTP and discharged effluent – condition 6** Reporting conditions 12 and 13	Monitoring of inputs (sewage and RO brine) to the WWTP is to verify that the design/expected volumes are being processed and to mitigate risk. Monitoring of discharged effluent and associated emission limits is to verify that design volumes are being processed, suitable treatment is being achieved, and that risk is mitigated.
Operation of WWTP and spray field	Spill/leaks of raw/untreated sewage Spill/leaks of wastewater sludge	**Pathway:** Surface run-off and/or infiltration to land and groundwater **Impact:** Soil/sediments contaminated by raw sewage and impacts to underlying groundwater	Soils/sediments in the vicinity of any incident. Underlying groundwater	Refer to Table 3 of this report	C = Moderate L = Unlikely **Medium risk**	Yes	Waste acceptance – condition 1 Infrastructure operational requirements – condition 3	Not applicable.
Irrigation of treated wastewater	Direct discharge of treated wastewater blended with RO plant brine	**Pathway:** Surface run-off and/or infiltration to land and groundwater Lateral migration of impacted groundwater. **Impact:** - Soil contamination - Native vegetation health decline or loss (within spray field) - Deterioration of sediment/surface water quality and vegetation in ephemeral creeks - Deterioration to local groundwater quality (from infiltration) - Deterioration and/or decline of groundwater dependent vegetation (from groundwater migration)	Soils and native vegetation within the spray field area. Nearby ephemeral watercourse/s and associated vegetation. Underlying groundwater (premises is within the Pilbara Groundwater Area)	Refer to Table 3 of this report	C = Minor L = Unlikely **Medium risk**	No	Waste acceptance – condition 1 Waste processing – condition 2 Infrastructure operational requirements – condition 3 Authorised discharge point – condition 4 **Emission limits – condition 5** **Monitoring of inputs to WWTP and discharged effluent – condition 6** Reporting conditions 12 and 13	Monitoring of inputs (sewage and RO brine) to the WWTP is to verify that the design/expected volumes are being processed and to mitigate risks. Monitoring of discharged effluent and associated emission limits is to verify that design volumes are being processed, suitable treatment is being achieved and that risks are mitigated.

Note 1: Consequence ratings, likelihood ratings and risk descriptions are detailed in the *Guideline: Risk Assessments* (DWER 2020).

Note 2: Proposed applicant controls are depicted by standard text. **Bold and underline text** depicts additional regulatory controls imposed by department.

4. Consultation

Table 6 provides a summary of the consultation undertaken by the department.

Table 6: Consultation

Consultation method	Summary of comments received	Department response
Application advertised on the department's website on 13 January 2025	No comments received.	Noted.
Department of Health (DoH) advised of proposal on 14 January 2025	DoH responded on 22 January 2025 stating the following: DoH received an Application to Construct / Install an Apparatus for the Treatment of Sewage. DoH has granted approval for the installation (approval number: 76.24). The approval is granted to install 250 SBR Hybrid WWTP. The wastewater treatment system is approved to receive 50 kL/day and the irrigation system is approved to receive a maximum wastewater volume of 75 kL/day. The maximum allowable wastewater volume is different from the details provided in the licence application submitted to DWER (APP-0026510).	DoH comments noted. The licence assessment is for operation of a WWTP designed to receive 50 m^3/day of sewage and 25 m^3/day (averaged over a 5-day period) of excess RO brine from a separate water treatment plant. It is the applicant's responsibility to ensure they have DoH approval for this WWTP.
Applicant was provided with draft documents on 27 February 2025	The applicant responded on 18 March 2025. Refer to Appendix 1.	Refer to Appendix 1.

5. Conclusion

Based on the assessment in this decision report, the delegated officer has determined that a licence will be granted, subject to conditions commensurate with the determined controls and necessary for administration and reporting requirements.

References

1. Agriculture and Resource Management Council of Australia and New Zealand, and the Australian and New Zealand Environment and Conservation Council (1997) *Australian Guidelines for Sewerage Systems, Effluent Management - National Water Quality Management Strategy*.
2. Department of Water (2008) *Water Quality Protection Note 22 - Irrigation with nutrient-rich wastewater.* Government of Western Australia.

Appendix 1: Summary of applicant's comments on risk assessment and draft conditions and department response.

Condition	Summary of applicant's comment	Department's response
Front page of draft licence Condition 1, Table 1 Condition 2, Table 2 Condition 3, Table 3 In relation to the volume of RO brine inputs to the WWTP from the camp water treatment plant	The applicant has stated the following: During the time-limited operations period, it was acknowledged that there were instances where the waste brine limit of 25 m^3 per day was exceeded. Therefore, to ensure better compliance outcomes and/or reduce the likelihood of potential non-compliance, the applicant requests that the waste brine value of 25 m^3 be averaged over a 5-day period. The proposed minor addition of the wording will not change the department's outcomes and/or intended purpose of the condition. The applicant will continue to monitor and ensure that the WWTP is functioning and operating in accordance with the manufacturer's specifications.	The department has made the requested change and included 'averaged over a 5-day period' for the waste brine.
13	The applicant has stated: They note that the biennial report is a copy of the two preceding annual periods. Therefore, it is not necessary for the licence to state 'biennial reporting' and 'two annual periods', as they suggest the same meaning. Therefore, to remove any duplication and ambiguity and/or provide additional clarity, the applicant requests for the removal of repetitive wording 'for the preceding two annual periods'. The minor removal of the wording will ensure better consistency and Environmental reporting requirements across existing Fortescue Ltd operational licences.	The department has not made the requested change. This is the current wording applied to licences for biennial reporting requirements.

Condition	Summary of applicant's comment	Department's response
Condition 13, Table 7 environmental reporting requirements	The applicant notes that the additional requirements mentioned in Conditions 2, 5, 6 and 8 are inconsistent and not in alignment with the existing wording in other Fortescue Ltd operational licences. Therefore, to ensure consistency and better compliance outcomes and consistency across Fortescue Ltd operations, the applicant requests for the entire removal of these requirements. The minor removal of these additional requirements will not change the department's intended outcome and purpose of the condition.	Edits have been made to reflect the correct condition numbering.
Condition 12 and 13 The department requested clarification from the applicant on 27 March 2025 on their response to the wording for conditions 12 and 13 The applicant responded on 31 March 2025	The applicant stated that their concern was not that the condition was unclear. Rather, the concern was due to the repetition in the provision of monitoring data. The two reports required by Condition 12 and 13 provide the same data, as outlined below: • Condition 12 refers to the submission of the annual AACR • Condition 13 refers to the submission of the biennial Environmental Report. In accordance with Condition 13, every second year, the monitoring data is provided twice (in two different report formats). The applicant notes that this requirement is inconsistent with the reporting requirements on other Fortescue Ltd Operational Licences. Therefore, to ensure consistency and reduce the administrative burden of reporting, Fortescue requests that Condition 13 be removed from the Licence. The minor removal of the Condition will still align with the department's outcome and purpose.	The applicant should note the following: • Condition 12 of the licence requires that an Annual Audit Compliance Report (AACR) is submitted annually to provide a statement of actual production and details of any non-compliances with the licence conditions; while • Condition 13 requires an Environmental Report to be submitted every 2 years. The Environmental Report requires provision of monitoring data, interpretation of the data, summary of non-compliance matters and any complaints etc. Therefore, the AACR and Environmental Report requirements are not considered to be duplication of reporting. The department has not removed Condition 13.
Schedule 1, Figure 3	The applicant has removed the annotation on the map, which previously stated that the total sprayfield area is 3.94 ha. The applicant has updated the map to show that the irrigation sprayfield area is ~ 1.7 ha (as outlined in the blue line). Therefore, to provide some operational flexibility, the applicant	Accepted the updated illustration of the spray field area (Figure 3 of the Licence) which corresponds with the assessed location and area of 1.7 hectares. It is noted that the fence line and cleared works area polygons take into account future modification of the WWTP/sprayfield

Condition	Summary of applicant's comment	Department's response
	requests that the fence line area and the edge of cleared works be left as is. This is to future-proof the camp when it is sized up to full capacity in the near future. This will be addressed through the submission of the Environmental Compliance Report and subsequent amendment to the Licence.	which will require future and separate approval/s from the department.