Government of Western Australia
Department of Water and Environmental Regulation

Amendment Report

Application for Licence Amendment

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

Licence Number	L6951/1997/13
Licence Holder	Pilbara Iron Pty Ltd
ACN	107 216 535
File Number	INS-0001390
Premises	Dampier Port Operations BURRUP WA 6714 Legal description Lease Number L3116/3469, L3116/3807, L3116/3471, L3116/5503, L3116/5552, and L3116/4596 As defined by the premises maps attached to the issued licence
Date of Report	15/01/2026 (**FINAL**)
Choose an item.	Revised licence granted

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1. Decision summary

Licence L6951/1997/13 is held by Pilbara Iron Pty Ltd (Licence Holder) for the Dampier Port Operations (the Premises) which includes the East Intercourse Island and Parker Point, located in Dampier in the Pilbara Region of Western Australia.

This Amendment Report documents the assessment of potential risks to the environment and public health from proposed changes to the emissions and discharges during the construction and operation of the Premises. As a result of this assessment, Revised Licence L6951/1997/13 has been granted.

2. Scope of assessment

2.1 Regulatory framework

In completing the assessment documented in this Amendment Report, the department 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

On 12 June 2025, Pilbara Iron Pty Ltd (the applicant) submitted an application for a licence amendment to the department under section 54 of the *Environmental Protection Act 1986* (EP Act). The application is to undertake construction works and operations at the Dampier Port Operations (the premises) for a proposed desalination plant (up to 8GL/a).

While the proposed works and activities meet the description of Category 54 in Schedule 1 of the *Environmental Protection Regulations* (EP Regulations) (see Figure 1 below), the proposed design capacity of the plant is below threshold levels.

Category number	Description of category	Production or design capacity
54A	Water desalination plant: premises at which salt is extracted from water if — (a) waste water is discharged into marine waters; and (b) the discharged waste water has a density greater than the average ambient density of the marine water at the discharge site.	10 GL or more per year

Figure 1: Category 54 description as defined in Schedule 1 of the EP Regulations

Though the facility does not trigger the threshold for a prescribed Category 54A, the plant is required to be incorporated into the existing Part V licence due to the discharge of brine to the marine environment (to be regulated as a 'directly related activity').

The infrastructure and equipment relating to the premises category and any associated activities which the department has considered in line with *Guideline: Risk Assessments* (DWER 2020) are outlined in Licence L6951/1997/13.

2.3 Dampier Seawater Desalination Plant

The application is to undertake construction and operation of the Dampier Seawater Desalination Plant (DSDP). The premises which is currently licensed under L6951/1997/13

includes the East Intercourse Island and Parker Point, located in Dampier in the Pilbara Region of Western Australia. This licence amendment seeks to include the DSDP within the Licence L6951/1997/13 for the purposes of regulating brine discharge to the marine environment under Part V of the EP Act.

The DSDP will comprise of a sweater desalination plant and supporting plant infrastructure to deliver a potable quality water supply to existing operations at Parker Point, the Dampier Townsite and existing storage tanks on Kangaroo Hill. The location of the DSDP is as shown in Figure 2.

This project will be supported by, and tie into existing infrastructure and resources under the West Pilbara Water Supply Scheme (WPWSS). The DSDP is proposed to be a two-stage build, starting with a 4.6 GL per annum seawater desalination plant (this application), with the capacity to expand to 8 GL per annum.

The applicant has proposed this delivery strategy for supporting long-term water security. As part of this strategy, key infrastructure components have been designed and constructed with sufficient capacity to accommodate future expansion to an 8 GL plant.

Figure 2: Map of prescribed premises and the location of the DSDP

2.3.1 Process, infrastructure and equipment overview

The DSDP is designed to produce potable water through a two-stage reverse osmosis (RO) process, using seawater drawn from a tidal intake pond adjacent to the Dampier Port Operations. The DSDP is intended to operate 24 hours a day, 7 days a week and will treat the incoming seawater to a standard that meets the Australian Drinking Water Guidelines.

The DSDP infrastructure includes:

- A seawater intake system;
- Seawater desalination plant including process plant, building, tanks and all associated equipment;
- Seawater intake infrastructure;
- Raw seawater intake line and storage;
- Raw water tank and product water tank;
- Off-specification and Brine disposal pipeline;
- Product water tank, and potable water pipeline from product water tank to kangaroo hill tank;
- Chemical bulk storage;
- Common trenches for services;
- Site operations facilities
- Integration of the chemical supply, brine disposal and potable water delivery systems; and
- Electrical switch room and transformers.

Seawater will be drawn into the intake pond via existing culverts, where it will pass through a screening system to remove large debris and marine organisms (with any sediment recombined with the brine stream for discharge). From there, water will be pumped through a series of pre-treatment filters and into the reverse osmosis system, which will separate fresh water from salts and other dissolved solids. The resulting potable water will be transferred to storage and distribution infrastructure.

Any off-specification water generated during operation will be directed to a nearby sediment pond for containment and management. The concentrated brine (a by-product of the RO process) will be mixed with the suspended solids removed by the pre-treatment filters and discharged to the marine environment via a multiport diffuser located on the Parker Point wharf, as shown in Figure 3. through a multiport diffuser designed to for rapid dilution. The process flow is shown in Figure 4.

2.3.2 Timeframes for construction and operation

The Licence Holder has informed DWER that construction has already commenced. The forecasted timelines for the construction and operation of the DSDP are listed below:

- Major civil works / preparatory works: Completed, Q2 2025
- Mechanical and electrical installation: Underway, estimated to be complete by Q1 2026
- Commissioning period: Q4 2025 – Q1 2026
- Target for first water / operational start: Q2 2026

Once operational (estimated April 2026), the facility will commence discharge of treated brine

via a multiport diffuser. Discharge volumes and water quality will be monitored in accordance with updated conditions proposed for Licence L6951/1997/13. The Licence Holder has committed to continuing to manage both proposed and ongoing operations under Rio Tinto's Health, Safety, Environment and Quality (HSEQ) system and in line with the monitoring commitments outlined in this application.

At the end of the plant's operational life, the Licence Holder has committed that all above-ground infrastructure associated with the Dampier Seawater Desalination Plant will be decommissioned and removed. Subsurface infrastructure, such as buried pipelines, will be removed to a depth of at least one metre where required. The closure and rehabilitation of the plant will be undertaken in accordance with Rio Tinto's internal closure planning framework and any relevant requirements under the *Iron Ore (Hamersley Range) Agreement Act 1963*, environmental licenses, clearing mechanisms or approvals in place at the time of closure.

Figure 3: Discharge point map

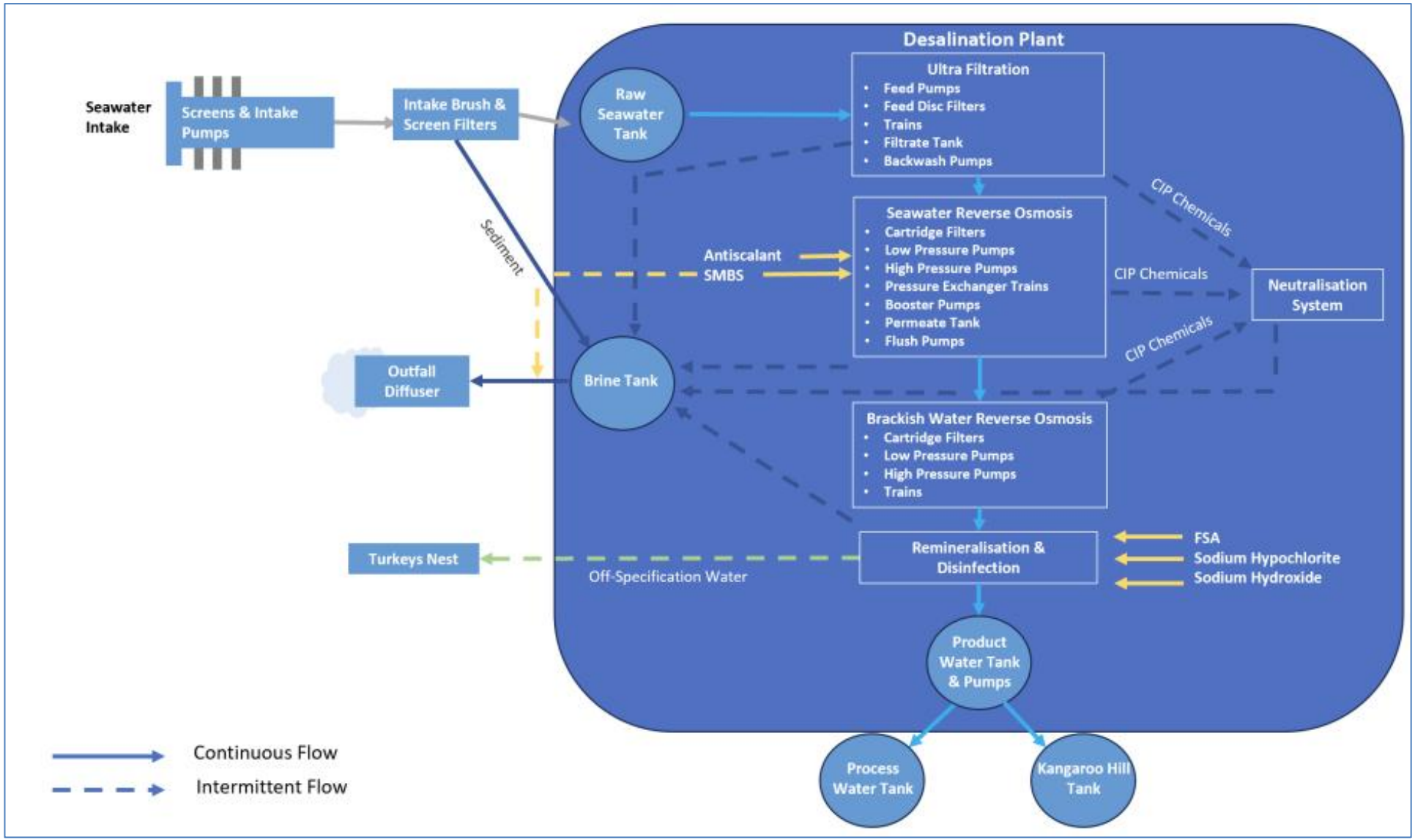

Figure 4: Process flow of DSDP

2.4 Part IV of the EP Act

The Dampier Port Operation was referred to the Environmental Protection Authority (EPA) by Hamersley Iron Pty Ltd (subsidiary of Rio Tinto Group). The proposal was to increase the capacity of the proponents iron ore operations at Dampier Port to 95 million tonnes per annum (mtpa). Hamersley Iron Pty Ltd was authorised to develop the Dampier Port Operation under Ministerial Statement (MS) 638, which was published in 2003. Subsequent throughput capacity increases were approved under MS 702 in 2005 and MS 734 in 2006.

The Licence Holder has referred a proposal to the Environmental Protection Authority (EPA) under Section 38 of the EP Act for the development of the DSDP at Parker Point.

The referral was submitted to support an alternative water supply for Dampier operations and the broader WPWSS, aiming to reduce reliance on the Bungaroo aquifer and increase water security in response to regional climate pressures. The proposal sought approval for an 8 GL/a sized desalination plant to provide flexibility for future expansion that could meet Rio Tinto's long term coastal water demands. The proposal was designed to consider impacts to the marine environment, Aboriginal heritage sites, and the adjacent Murujuga National Heritage Place. The EPA concluded that the proposal could be managed under Part V to meet its environmental objectives and decided to not formally assess the proposal under Part IV of the EP Act.

The DSDP was also referred to the Commonwealth Department of Climate Change, Energy, the Environment and Water (DCCEEW) in October 2022. DCCEEW determined the proposed action as being 'Not a Controlled Action' under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) in June 2023.

2.5 Marine Environmental Management Plan

2.5.1 Marine Management Review (Part V advice)

As part of considering the licence amendment application DWER Marine Ecosystems Branch (MEB) has reviewed the OEMP report and considers the proposed discharge scale, controls, and environmental monitoring program to be generally acceptable.

MEB notes that the proponent divided the Environmental Monitoring and Management into difference phases and has recommendations below to ensure the management plan aligns with current best practice and maintains sufficient rigor. MEB considers that the recommendations are not onerous to implement

Program 1: Contemporise Whole of Effluent Toxicity (WET) testing

The dilution requirements for the brine discharge from the Dampier Desalination Plant - necessary to meet Low, Moderate, and High Ecological Protection Area (LEPA, MEPA, HEPA) criteria, were initially derived from literature on comparable desalination facilities.

To validate these assumptions, Program 1 has been proposed to assess the actual toxicity of the brine and confirm its alignment with the parameters used in the original modelling. Since the initial submission in 2022, updated guidelines for Whole Effluent Toxicity (WET) testing have been released. The proponent should review these changes to ensure the planned WET testing aligns with current methodologies.

Recommendations:

- The proposed WET testing methodology should be revised in accordance with the most recent (in press) advice from the *Australian and New Zealand Guideline for Fresh and Marine Water Quality* (ANZG), Method for deriving Australian and New Zealand water quality guideline values for protecting aquatic ecosystems from toxicants (Warne et al, 2025). Note that this 2025 in press document is an update of the Warne et al 2018 version and should be referred to for detail. This includes:

- Increasing the test species size to minimally eight environmentally relevant species.
- Carrying out species sensitivity distributions using the ShinySSDtools which will be replacing the current Burrlioz tool.
- Commitment to minimally eight chronic environmentally relevant species tests (instead of six).
- The use of ShinySSDtools software rather than Burrlioz tool.
- The use of chronic over acute test suites.
- Applying a DGV that is one level higher than normally specified level for bioaccumulative toxicants.
- Ensuring that toxicity testing diluent water is representative of receiving environmental conditions to account for toxicity modifying factors.

- The proponent should ensure the effluent used in WET testing is representative of the discharge following descaling to account for potential toxicity from cleaning agents. For large-scale discharges, annual WET testing is typically recommended. Although this is a smaller facility, annual/periodic testing, in combination with diffuser performance monitoring, would be beneficial and provide confidence environmental outcomes continue to be met.

Program 2: LEP validation monitoring

LEP validation monitoring includes (a) daily in-line brine monitoring to ensure that salinity concentration before discharge remains below 69 ppt and (b) LEPA/MEPA water quality profiling whereby monthly monitoring (for 6 months) will occur at the LEPA/MEPA boundary (35 m from the diffuser). Parameters to be monitored as part of the LEPA/MEPA water quality profiling includes temperature, salinity and turbidity.

Recommendations:

- It is recommended to extend the duration of the LEP validation monitoring to at least 1 year to ensure that the proposed LEP boundaries and the corresponding EQS (at the boundaries) can be met during operations under a broad range of environmental and operational conditions. Fundamentally, extending the validation monitoring allows varying brine discharge volumes (i.e., ramping up of brine output from start to maximum operational volume) and changing environmental conditions (i.e., seasonality, tidal conditions – slack and flood tides) to be adequately assessed.
- It is important the proponent commits to conduct LEP validation monitoring whenever the discharge volume or the composition of brine changes.
- Noting that the proponent has committed to conducting monthly water column profiling at the LEPA/MEPA boundary as part of the LEP validation process – which is appropriate – it is important to ensure profiling is extended to as close to the seabed as is practically feasible, given that the brine plume is denser than seawater.
- The proponent should expand the daily in-line brine monitoring program to include temperature and turbidity alongside salinity. Monitoring these parameters both in-brine and at the LEPA/MEPA boundary supports attribution of observed changes to project activities (i.e., project attributability / line of evidence).
- It is recommended that LEP validation monitoring reports are provided to DWER, and consultation with DWER occurs prior to discontinuing any monitoring activities.

Program 3: Operational Marine Environmental Quality Monitoring (ongoing)

This Operational Marine Environmental Quality Monitoring is proposed to be implemented once the Program 2 - LEP validation monitoring is completed and will continue throughout the life cycle of the proposal.

Recommendations:

- Under the proposed EQG, in-brine salinity must not exceed 69 ppt. This interim threshold is based on modelled results during the proposal phase and should be revised to a conservative value informed by diffuser performance validation once the plant is in operation. Any changes to the salinity criterion, based on validated data, should be discussed with the Department of Water and Environmental Regulation (DWER) prior to formal amendment.
- In the event of an EQG exceedance, it is important to ensure that salinity and other parameter criteria are achieved at the LEPA/MEPA boundary at the first instance. Hence, the appropriate management response to an EQG exceedance of in-pipe brine criteria would entail implementing monitoring at the LEPA/MEPA boundary.
- It is recommended that the proponent considers reducing the permissible duration of EQS exceedance at the LEPA/MEPA boundary from 10 consecutive days to 5 consecutive days. If an EQS exceedance occurs, the CEO of the DWER should be notified within 24 hours wherever possible, and an investigation report should be submitted within 30 days.
- Lastly, the proposed bi-annual (twice a year) monitoring site should be relocated to the LEPA/MEPA boundary, rather than the MEPA/HEPA boundary, to better reflect compliance at the critical interface.

Key Findings:

1. The recommendation to carry-out validation monitoring for at least 12 months has been conditioned in the revised licence – further details are provided in Section 3 and 5.
2. Proposed daily in-line brine monitoring program to include temperature and turbidity alongside salinity has been included in proposed licence conditions.
3. Monitoring results and an interpretive summary are to be included in the Annual Environmental Report for the premises – further details are provided in Section 3 and 5.
4. Exceedances of Environmental Quality Standards (EQS) are to be reported to DWER in accordance with the *Operational Environmental Management Plan - Dampier Seawater Desalination Plant*, 28 February 2023 Hamersley Iron Pty Limited – further details are provided in Section 3 and 5.

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 construction and operation which have been considered in this Amendment Report are detailed in

Table 1 below.

Table 1 also details the proposed control measures the Licence Holder has proposed to assist in controlling these emissions, where necessary.

Table 1: Licence Holder controls

Emission	Sources	Potential pathways	Proposed controls
Seawater Intake	Intake pipeline	Intake of seawater through tidal pond and culverts	• Intake via existing tidal pond • Low intake velocity (<0.15 m/s) • Bar screens (150 mm)
Brine Discharge	Discharge from DSDP into the environment (Brine Discharge Sample Point – BDSP1).	Discharge into the marine environment	• High velocity diffuser (3–6 m/s) to enhance dispersion • Environmental Quality Management Framework (EQMF) in place • Monitoring of discharge volume, salinity, pH, temperature, dissolved oxygen, and residual chlorine at the discharge point • Neutralisation of chemicals prior to discharge • Filtered marine suspended sedimentation is mixed back into the brine outfall stream
Off-specification water	Operation of DSDP	Seepage to soils and groundwater	• Water reuse via turkeys nest as part of existing dust management practices • Inline constant water analysis • Automatic system shut off when ADWG parameters are exceeded
Chemical Spills or leaks	Operation of DSDP	Seepage to soils and groundwater	• Bunded storage • Spill response kits (including absorbent materials) will be located in proximity to all chemical dosing areas and refuelling points to enable rapid response to any accidental release Inspections and maintenance • Emergency response plans • All chemical storage containers

Emission	Sources	Potential pathways	Proposed controls
			and areas will be clearly labelled in accordance with applicable Australian Standards and relevant legislation • Safety Data Sheets (SDS) will be made available and accessible to all personnel handling or exposed to chemicals • Chemical dosing and handling activities will be undertaken at designated, controlled locations within the site, including areas with appropriate spill containment infrastructure
Noise	Operation of DSDP	Air/Windborne	• Equipment designed to minimise noise • No sensitive receptors nearby • Maintenance of plant equipment

3.1.2 Receptors

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

Table 2 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 2: Sensitive human and environmental receptors and distance from prescribed activity

Human receptors	Distance from activity / prescribed premises
Town of Dampier	There are several residential, commercial, and industrial premises within the vicinity of the boundary. The proposed location of the plant will be past the north-east corner of the town. With the nearest proposed infrastructure being the pipelines which is 980m north-east from the nearest residential strata.
Environmental receptors	**Distance from activity / prescribed premises**
Marine Environment	The Dampier Archipelago and the beach is adjacent to the premises and to the proposed activity. The applicant intends to discharge the brine into Mermaid Sound which is the marine environment directly adjacent to the north of the premises.

Priority and Threatened Flora	One Priority 3 (P3) flora species, Eragrostis surreyana, was recorded within a borrow area inside the Premises; and One Priority 3 flora is located 2.6 km south-east of the proposed activity. Clearing of vegetation for the proposed plant is managed under Native Vegetation Clearing Permit CPS 10309/1
Priority and Threatened Fauna	A specially protected migratory bird species is located 1.1km south-west of the proposed intake point; and A Priority 4 specially protected migratory mammal species is located 1.1km north-west of the proposed discharge point. Adjacent marine areas support foraging and movement corridors for marine turtles (Green, Flatback, Hawksbill), Dugongs, and migratory whales such as Humpback Whales.
Cultural receptors	**Distance from activity / prescribed premises**
Aboriginal heritage site	The proposed development is within and adjacent to numerous aboriginal heritage sites, these are the sites directly adjacent or within the proposed development: • PP-06/21 – Engraving • Parker Point 57 – Engraving • DP-287 – Engraving • DP-285 – Engraving • PP-03 – Engraving, Grinding Areas • PP-19 - Engraving
Murujuga National Park	Murujuga National Park is located 2.5 km south-east of the proposed activity. The Government of Western Australia recognises Murujuga as a unique ecological and archaeological area containing one of the largest collections of Aboriginal engraved rock art in the world.

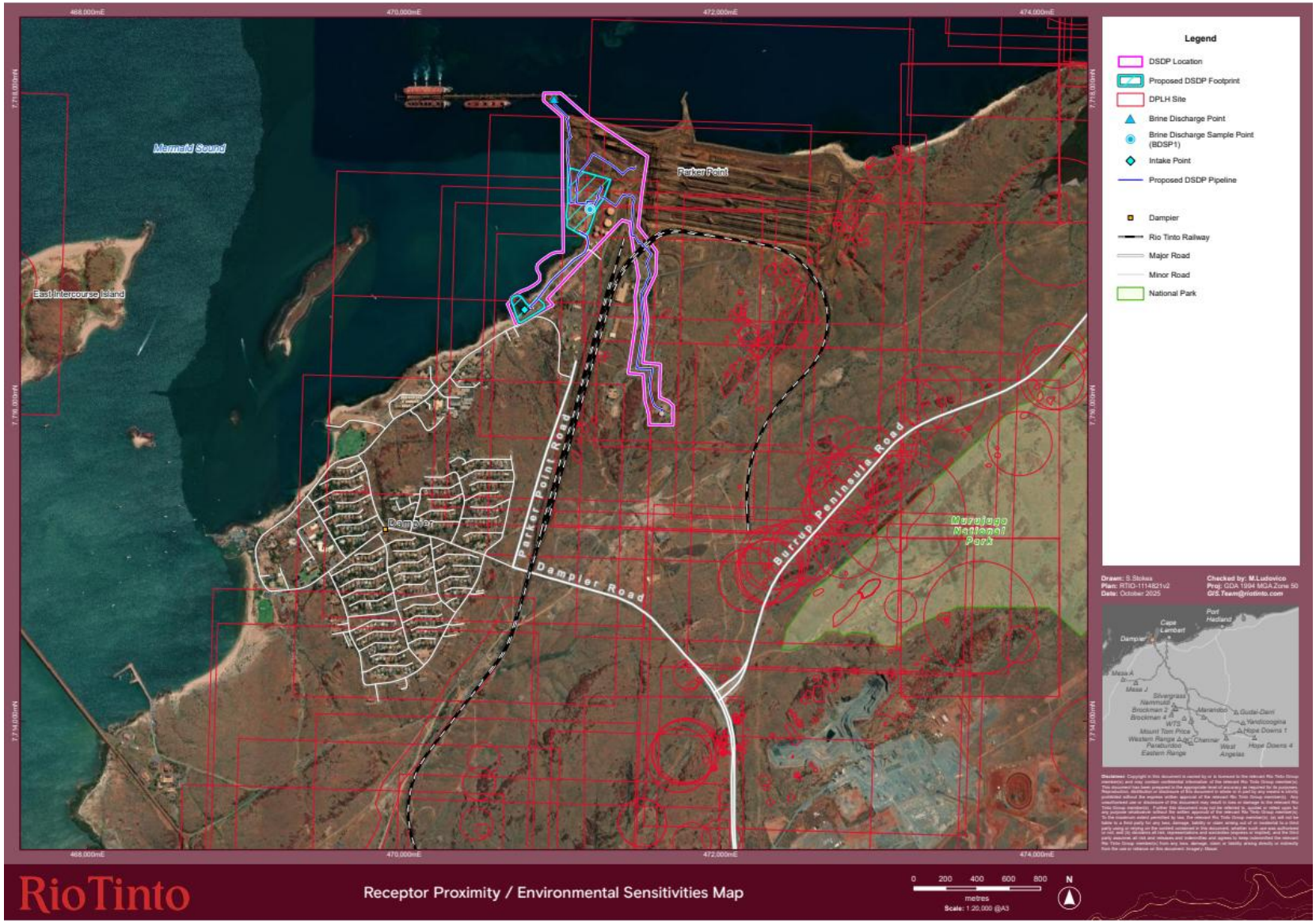

Figure 5: Distance to sensitive receptors

3.2 Risk ratings

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

Where the Licence Holder 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 Licence Holder'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 Licence Holder's controls are not deemed sufficient. Where this is the case the need for additional controls will be documented and justified in Table 3.

The Revised Licence L6951/1997/13 that accompanies this Amendment Report authorises emissions associated with the operation of the Premises i.e. Category 54A activities.

The conditions in the Revised Licence have been determined in accordance with *Guidance Statement: Setting Conditions* (DER 2015).

Table 3. Risk assessment of potential emissions and discharges from the Premises during construction and operation

Risk events					Risk rating [1] C = consequence L = likelihood	Applicant controls sufficient?	Conditions [2] of licence	Justification for additional regulatory controls / DWER comments
Sources / activities	**Potential emission**	**Potential pathways and impact**	**Receptors**	**Applicant controls**				
Construction								
Construction of desalination plant and associated infrastructure or equipment including vehicle movements (reversing beepers)	Dust	**Pathway:** Air/windborne pathway **Impact** Reduction in amenity and health	Marine Environment Fauna Residential Aboriginal Heritage sites	N/A	C = Slight L = Unlikely **Low Risk**	N	N/A	Construction works have already commenced for the project; therefore, retrospective construction requirements will not be specified in conditions of the licence. Refer to Section 2.3.2 for timeframes associated with construction and operation. The Delegated Officer considers the existing controls in managing dust emissions are sufficient. Dust emissions are managed under MS770.
	Noise	**Pathway:** Air/windborne pathway **Impact:** Reduction in amenity and health		Refer to Section 3.1	C = Slight L = Unlikely **Low Risk**	Y	N/A	Construction works have already commenced for the project; therefore, retrospective construction requirements will not be specified in conditions of the licence. Refer to Section 2.3.2 for timeframes associated with construction and operation. The Delegated Officer considers the controls proposed by the applicant including the maintenance of plant equipment to be sufficient. The *Environmental Protection (Noise) Regulations 1997* apply. Noise emissions are also managed under MS770.
Operation – Category 54A								
Operation of desalination plant and associated infrastructure	Spills or leaks of chemicals	**Pathway:** Chemical discharge as a result of	Marine Environment	Refer to Section 3.1	C = Minor L = Possible	Y	Condition 5 and 6 – Spills of environmentally hazardous materials	All spills and leaks of chemicals should be immediately cleaned up by the licence Holder Controls have already been conditioned in

Risk events					Risk rating [1] C = consequence L = likelihood	Applicant controls sufficient?	Conditions [2] of licence	Justification for additional regulatory controls / DWER comments
Sources / activities	Potential emission	Potential pathways and impact	Receptors	Applicant controls				
		spillage or containment failure **Impact:** adverse effects on local soils and groundwater and surface water quality Reduction in amenity and health of local fauna.	Fauna		**Medium Risk**		Condition 12 and 13 – Stormwater management	the licence with respect to managing spills and leaks of environmentally hazardous materials and managing potentially contaminated stormwater. Requirements under the *Environmental Protection* (Unauthorised Discharges) Regulations 2004 also apply.
	Brine discharges to the marine environment	**Pathway:** Direct discharge by via a multiport diffuser located on the Parker Point **Impact:** Reduction in marine water quality.	Marine Environment	Refer to Section 3.1	C = Moderate L = Almost Certain **High Risk**	Y	Condition 15, 16, 17 and 27 – Marine discharge specifications and related monitoring and reporting requirements	DWER is requiring that the validation monitoring be carried out for at least 1 year to ensure that the proposed LEP boundaries and the corresponding EQS (at the boundaries) can be met during operations under a broad range of environmental and operational conditions (included in consideration of advice from MEB). Fundamentally, extending the validation monitoring allows varying brine discharge volumes (i.e., ramping up of brine output from start to maximum operational volume) and changing environmental conditions (i.e., seasonality, tidal conditions – slack and flood tides) to be adequately assessed.

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

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

4. Consultation

Table 4 provides a summary of the consultation undertaken by the department.

Table 4: Consultation

Consultation method	Comments received	Department response
Application advertised on the department's website 06 August 2025	*None received*	N/A
Local Government Authority advised of proposal 06 August 2025	*None received*	N/A
Murujuga Aboriginal Corporation (MAC) advised of proposal 06 August 2025	MAC notes that Rio Tinto has previously presented the proposal for the DSDP. MAC are supportive of the DSDP considering it will reduce pressure on the Millstream Aquifer, and noting Rio Tinto's commitment to manage the site under the Cultural Heritage Management Plan. MAC expresses its expectation to be made aware of any significant changes to design of the DSDP in both stages of operation. MAC would require more spatial information for the footprint and design of the plan to be able to properly assess if other sites that are unregistered will be impacted by the DSDP.	The Department has noted the comments from MAC
Licence Holder was provided with draft amendment on 20 October 2025 and with a second draft on 23 December 2025	*Comments received on first draft on 11 December 2025 - refer to Appendix 1* *Commenting period waived for the second draft on 15 January 2026*	*Refer to Appendix 1*

5. Conclusion

Based on the assessment in this Amendment Report, the Delegated Officer has determined that a Revised Licence will be granted, subject to conditions commensurate with the determined controls and necessary for administration and reporting requirements.

5.1 Summary of amendments

Table 5 provides a summary of the proposed amendments and will act as record of implemented changes. All proposed changes have been incorporated into the Revised Licence as part of the

amendment process.

Table 5: Summary of licence amendments

Condition no.	Proposed amendments
15	Specifies the marine discharge point and related requirements
16	Specifies the marine environmental monitoring program for Part V purposes
17	Specifies reporting requirements from EQS exceedances
18 - 30	Conditions re-numbered

References

1. Department of Environment Regulation (DER) 2015, *Guidance Statement: Setting Conditions*, Perth, Western Australia.
2. Department of Water and Environmental Regulation (DWER) 2020, *Guideline: Environmental Siting*, Perth, Western Australia.
3. DWER 2020, *Guideline: Risk Assessments*, Perth, Western Australia.
4. Khaled Elsaid, Mohammed Kamil, Enas Taha Sayed, Mohammad Ali Abdelkareem, Tabbi Wilberforce, A. Olabi (2020), *Environmental impact of desalination technologies: A review,* Science of The Total Environment, Volume 748. Accessed on 08 July 2025.
5. Argyris Panagopoulos, Katherine-Joanne Haralambous (2020), *Environmental impacts of desalination and brine treatment - Challenges and mitigation measures,* Marine Pollution Bulletin, Volume 161, Part B. Accessed on 08 July 2025.
6. Rio Tinto, *Operational Environmental Management Plan - Dampier Seawater Desalination Plant* (OEMP), 28 February 2023, Rev 2.

Appendix 1: Summary of Licence Holder's comments on risk assessment and draft conditions

Condition	Summary of Licence Holder's comment	Department's response
16 Brine discharge and marine environmental monitoring (Table 2)	**In-line brine monitoring:** The OEMP establishes a salinity criterion of 69 parts per thousand (ppt) for the in-line brine stream prior to discharge, rather than at the Low Ecological Protection Area (LEPA) or Moderate Ecological Protection Area (MEPA) boundary. Specifically, it defines a non-compliance event as occurring when "the salinity of the brine discharge stream before discharge exceeds 69 ppt for more than 10 consecutive days," with compliance assessed using the daily median derived from continuous automated logging. Rio Tinto requests that this existing in-line salinity threshold be adopted directly into the Part V Licence to maintain consistency with the monitoring and management framework already established through the OEMP. To further support consistent interpretation by both the Regulator and the Licence holder, Rio Tinto also requests that the Licence specify the intended meaning of "continuous" monitoring, being defined as automated in-line data logging at approximately 10–15 minute intervals, with compliance determined using the daily median salinity value. **Measured parameter (salinity):** Operationally, salinity is not measured directly but is calculated from in-line electrical conductivity (EC) measurements recorded by the automated monitoring system. This EC-to-salinity conversion methodology is already outlined within the OEMP. To ensure alignment with existing monitoring processes, and maintain consistency between the OEMP and the Part V Licence, Rio Tinto requests that the Licence explicitly reference and adopt the same EC-to-salinity conversion approach. Validation and operational monitoring Rio Tinto understands DWER intends to incorporate MEB's recommendations for validation and operational monitoring: **Validation phase and operation monitoring:**	**In-line brine monitoring:** • Continuous" monitoring, being defined as automated in-line data logging at approximately 10–15 minute intervals, with compliance determined using the daily median salinity value; supported and incorporated into the licence. • Brine salinity not to exceed 69 ppt for more than 5 consecutive days. This is in-line with the OEMP (see Table 2-6 and Section 5). A lag time of 10 days is considered too long before management actions can be implemented to avoid adverse impact to the environment / ecosystem. **Measured parameter (salinity):** • EC-to-salinity conversion supported and incorporated into the licence. **Validation phase and operation monitoring:** • Monitoring at LEPA/MEPA boundary retained in licence conditions for both the validation and operational phases (in-line with advice from DWER's Marine Ecosystems Branch) • Boundary profiling using 'depth-averaged median': inconsistent with MEB's advice and is not considered appropriate. The best practice is to take measurements close to the seabed where the saline plume is expected to sit and where salinity is expected to be highest. Requirement to monitor as close as possible to the seabed floor has been retained in licence conditions.

Condition	Summary of Licence Holder's comment	Department's response

	Rio Tinto understands DWER intends to incorporate MEB's recommendations for validation and operational monitoring:
	
	Validation phase: Monthly LEPA/MEPA boundary profiling for 12 months (flood and slack tides; depth profiles of salinity, temperature and turbidity), in conjunction with continuous in-line monitoring.
	
	Operational phase: Biannual (MEPA/HEPA) boundary profiling (summer and winter) together with continuous in-line monitoring and annual interpretive reporting through the AER.
	
	Rio Tinto suggests updates for Table 2 for DWER's consideration, summarised as follows:
	
	• In-line brine (BDSP1):
	  ○ Salinity (ppt, via direct measurement or EC-to-salinity conversion), continuous logging at 10– 15 minute intervals; assessment metric: daily median; threshold (EQS): >69 ppt for >10 consecutive days.
	  ○ Outfall water-quality parameters (pH, temperature, dissolved oxygen, residual chlorine): sampled quarterly.
	• Boundary profiling (validation): Monthly for 12 months at LEPA/MEPA boundary: salinity, temperature and turbidity (depth-averaged medians).
	• Boundary profiling (operations): Biannual (summer/winter) at MEPA/HEPA boundary: salinity, temperature and turbidity (depth-averaged medians).	

17 Environmental Quality Standards exceedance reporting	Rio Tinto proposes the following: • Notification of an identified exceedance within seven (7) days of confirmation, and • Submission of a detailed investigation / rectification report within 30 days. While the DSDP is monitored continuously via the Operations Centre, on-site environmental personnel are not rostered on a 24/7 basis. The proposed seven-day notification timeframe ensures timely notification while allowing operational staff to review and validate monitoring data prior to formal reporting. The DSDP is continuously monitored through the	The Delegated Officer is satisfied with the proposed changes and has updated condition requirements to reflect.

Condition	Summary of Licence Holder's comment	Department's response
	operations centre with alarms configured; however, the environmental personnel are not on site on a 24/7 basis. The seven-day window enables accurate data verification and meaningful reporting without reducing regulatory transparency.	
General	**Consistency in terminology** Rio Tinto requests that consistent terminology be maintained across the Licence documentation, including alignment of terms used in the site map and Table 2 (e.g., Brine Discharge Sample Point – BDSP1). **Update to Figure 5** Please note that Figure 5 has been updated to reflect a minor realignment of the brine pipeline to avoid existing operational infrastructure. This adjustment does not alter the location of the discharge point, which remains within the prescribed premises boundary and is unchanged for modelling or assessment purposes.	The Delegated Officer is satisfied with the proposed changes and has updated the documents to reflect.