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	L9417/2023/1
Applicant	Kumina Iron Pty Ltd
ACN	169 725 973
File number	DER2023/000657
Premises	Onslow Camp Dunes Shire of Ashburton Legal description - M08/488, G08/80, L08/127 and Pastoral Lease 3114/905
Date of report	13/03/2024
Proposed Decision	Licence granted

Digitally signed by
Adam Green
Date: 2024.03.13
14:23:35 +08'00'

Adam Green
A/MANAGER, WASTE INDUSTRIES
REGULATORY SERVICES
an officer delegated under section 20 of the Environmental Protection Act 1986 (WA

Table of Contents

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 L9417/2023/1 (L9417) has been granted.

2. Scope of assessment

2.1 Regulatory framework

In completing the assessment documented in this decision report (DR) , 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 5 October 2023, 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 operation of the Stage 1 and 2 Accommodation Wastewater Treatment Plants (AWWTP) at the premises. The premises is approximately 14 km south of Onslow.

Works Approval W6726/2022/1 (W6726) was granted to the Applicant on 8 December 2022 for the construction of a Category 12, 54, 57, 73 and 77 Prescribed Premises. W6726 proposed to construct three (3) sequencing batch reactors (SBR) Wastewater Treatment Plants (WWTP) with a combined Production and Design Capacity (P&DC) of 150 m^3/day to service the on-site Accommodation Village of up to 550 workers:

Stage 1

- A WWTP to accommodate 250L/person/day, producing a maximum 50 m^3/day of Treated Wastewater (TWW).
- A spray field of 1.22 ha.
- A Reverse Osmosis (RO) plant producing a maximum 24 m^3/day of RO brine wastewater to be mixed in the WWTP irrigation tank – therefore incorporated into the TWW prior to discharge at the spray irrigation field.
- A combined spray field discharge of up to 74 m^3/day.

Stage 2

- A WWTP to accommodate 250 L/person/day, producing a maximum 100m^3/day of TWW.
- A spray field of 2.5 ha.
- A RO plant producing a maximum 48 m^3/day of RO brine wastewater to be mixed in the WWTP irrigation tank.
- A combined spray field discharge of up to 148 m^3/day.

Stage 3

- A WWTP to accommodate 250L/person/day, producing a maximum 150 m^3/day of TWW.
- A spray field of 3.5 ha.
- A RO plant producing a maximum 72 m^3/day of RO brine wastewater to be mixed in the WWTP irrigation tank.
- A combined spray field discharge of up to 222 m^3/day.

TWW will be discharged onto the Accommodation Spray Field (ASF) via dedicated sprinklers.

Sludge produced by the AWWTP will be collected in the dedicated sludge tank and removed

off-site by a licensed waste carrier to an appropriate licensed facility for disposal.

The Applicant submitted an Environmental Compliance Report (ECR) for the Category 54 Stage 1 and Stage 2 AWWTP only on 28 March 2023 and advised Stage 3 AWWTP has not been constructed to date. Stage 1 and 2 comprise the following WWTP components noting minor changes in original W6726 design due to the change of installation contractor. Components consistent with an SBR WWTP have been installed including:

- 2 x 50 kL balance tank;
- 2 x 50 kL sludge tank;
- 1 x 50 kL reject storage tank;
- 2 x 40 ft SBR WWTP units including;
    - Balance pump;
    - SBR tank with heavy duty submersible aerators and floating decant weir;
    - Decant pump;
    - Sludge pump;
    - Recirculation pump with online chlorine dosing system and analyser;
    - Sodium hypochlorite dosing system;
    - Sucrose dosing system;
    - PAC dosing system;
    - Internal irrigation tank;
    - Control panel;
    - Audible and visual pump alarm fault;
    - Irrigation pump;
    - Discharge flow meter;
    - Influent screen; and
    - Solids waste bin.

This Licence Application is for operation of Stage 1 and 2 AWWTP with a P&DC of 100 m^3/day. The ASF has been constructed as a 2.88 ha spray field which includes a 5 m buffer so the total ASF area is 3.25 ha area.

As outlined in W6726, RO reject will be mixed with TWW at the AWWTP irrigation tank for a combined discharge to the respective ASF. This Licence Application will include Stage 1 and 2 RO reject brine of 66 m^3/day TWW.

On 3 June 2023 the Applicant advised DWER that an additional WWTP is to be constructed to service the Truck Maintenance Facility (TMF) and will have a P&DC of 6 m^3/day. This TMF WWTP will discharge to the dedicated TMF Dripper field via drippers and the TMF TWW quality will be consistent with existing TWW discharge criteria as stipulated in W6726. Given the small P&DC of the TMF WWTP, DWER advised that the TMF WWTP can be added to the licence application rather than a works approval amendment. The TMF WWTP will comprise the following infrastructure:

- 1 x PE B/G 7,000 L Balance Tank;
- 1 x FRP CV10 Series WWTP;
- 1 x PE B/G 7,000 L Irrigation Tank; and

- 2 x Tsurumi submersible irrigation pumps rated at 10 m^3/hr.

The TMF Dripper field has been designed in accordance with AS/NZ 1547:2012 *On-site domestic wastewater management*. It consists of below ground poly pipes spaced 600mm apart, with a total area of 0.17 ha.

Therefore, the total P&DC of the combined Stage 1 and 2 AWWTP and TMF WWTP is 106 m^3/day. The total P&DC for this Licence Application is 172 m^3/day TWW; inclusive of the 66 m^3/day RO reject. Figure 1 outlines the locations of the AWWTP, ASF, TMF WWTP and TMF Dripper field.

The Applicant submitted a Category 77 Registration Application parallel to this Licence Application, but Category 77 will not be assessed and/or considered or granted under this Licence Application as it will require a separate Registration Application and assessment process.

The premises relates to the category and assessed production / design capacity under Schedule 1 of the *Environmental Protection Regulations 1987* (EP Regulations) which are defined in licence L9417. 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 L9417.

2.3 Exclusions to the Premise

A separate (non-prescribed) 1 m^3/day septic system and leach drain area (30 m^2) will also be installed and operated for the TMF. An application to Construct or Install an Apparatus for the Treatment of Sewage will be submitted to the Department of Health (DoH) prior to construction. Approvals from the Shire of Ashburton will also be obtained where required.

2.4 Monitoring of TWW.

W6726 Table 2 provided the expected TWW for the AWWTP and is provided in Table 1.

Table 1: WWTP expected effluent discharge parameters

Parameter	Unit	Concentration
pH	N/A	6.5 to 8.5
E. Coli	cfu/100ml	<1,000
Total Nitrogen (TN)	mg/L	20 - 30
Total Phosphorus (TP)		4 – 12
Total Suspended Solids (TSS)		<30
Biochemical Oxygen Demand (BOD)		<20
Free Chlorine		0.2 to 2.0

An Environmental Commissioning Report (CR) for Stage 2 of the AWWTP was submitted to DWER on 30 June 2023. The commissioning period ran for 90 days from 2 March 2023 to 30 May 2023 and a total TWW (combined with RO brine) of 6,743 m^3 was discharged to the ASF at a daily average of 74 m^3. Weekly monitoring of parameters stipulated in Table 4 of W6726 was required. Table 2 provides the TWW data from Commissioning analysed at a National Association of Testing Authorities (NATA) laboratory. The CR advises that residual chlorine was sampled daily, and Table 2 of the CR indicates residual chlorine was above the 0.2-2

mg/L criteria on 7 of the 90 days during Commissioning.

Table 2: WWTP Commissioning discharge parameters

Week	Date	TN 20-30 mg/L	TP 4-12 mg/L	TSS <30 mg/L	BOD <20 mg/L	pH 6.5-8.5	*E. Coli* <1000 cfu/100ml
1	2/3/2023	46	4.9	150	24	8.6	<10
2	12/3/2023	35	11	50	11	8	<10
3	19/03/2023	20	7.6	-	26	-	<10
4	29/03/2023	12	12	14	14	8.1	<10
5	2/04/2023	11	12	10	9.1	8.1	60
6	No samples						
7	16/04/2023	12	11	7	9.1	8	<10
8	23/04/2023	13	14	10	12	8.3	<10
9	30/40/2023	17	13	55	6.7	7.8	<10
10	7/05/2023	18	13	150	24	7.8	<10
11	14/05/2023	18	8	<5	14	8.3	<10
12	21/05/2023	15	6.2	<5	<5	8.2	<10
13	28/05/2023	15	7.1	<5	<5	8.2	<10

The Applicant conducted Time-limited operations (TLO) under conditions 12 to 17 of W6726. The Applicant submitted a TLO Report on 25 January 2024 as required by condition 18 of W6726 for the AWWTP and SAF. TLO samples were analysed from samples from 22 June 2023 to 28 December 2023. The total discharge of TWW (treated effluent and RO Brine) to the ASF during the TLO period was 21,393.63 m^3. The daily average discharge was 118.85 m^3/day. Table 3 provides the Weekly TLO AWWTP sample results provided from Attachment 2 of the TLO Report.

Table 3 Weekly AWWTP sample results.

Week	Date sampled	TP 4-12 mg/L	BOD <20 mg/L	TN 20-30 mg/L	TSS <30 mg/L	*E. coli* <1000 cfu/100ml
1	22/06/2023	9.5	<5	15	12	6100
2	30/7/2023	16	9.7	28	24	<10
3	No Samples					
4	1/10/2023	4.2	-	20	91	-
5	29/10/203	6.4	<5	14	27	<10

6	30/11/2023/	8.4	7.2	13	<5	20
7	28/12/2023	4	7.9	15	24	<10

The Delegated Officer has reviewed the information regarding monitoring of TWW and has found:

1. *The Applicant submitted a CR for Stage 2 WWTP only. There is no record of Stage 1 WWTP CR or any monitoring data for the Premises. Commissioning was conducted for 90 days.*
2. *Table 2 of the DR indicates all TWW parameters, except for E. Coli, were above discharge criteria as outlined in Table 2 for part of Commissioning although the WWTP appears to have stabilised in the last three weeks of commissioning as all parameters, except pH, are below TWW criteria.*
3. *The CR advises that residual chlorine was sampled daily, and Table 2 of the CR indicates residual chlorine was above the 0.2-2 mg/L TWW discharge criteria on seven (7) of the 90 days during Commissioning and five (5) of these were within the last month of Commissioning.*
4. *The TLO monitoring data for the WWTP was submitted on 25 January 2024. date.*
5. *The TLO report indicates that sampling occurred from 1 July 2023 to 27 December 2023. One monthly laboratory analysis event and numerous daily discharge volume monitoring events were missed during the TLO period due to staff availability. Although some monitoring events were missed, the data obtained tracks to compliance requirements.*
6. *The total discharge of TWW (treated effluent and RO Brine) to the ASF during the TLO period was 21,393.63 m3. The daily average discharge was 118.85 m3/day.*
7. *Table 3 of the DR indicates three exceedances of AWWTP TWW concentrations.*
8. *Table 2 in Attachment 2 of the TLO Report indicates there was numerous missed daily sampling of pH and Residual chlorine as required by W6726 condition 15. Table 2 in Attachment 2 of the TLO Report also indicates multiple exceedances of Residual chlorine TWW criteria as outlined in Table 1 of the DR (0.2 – 2 mg/L).*
9. *Table 3 of the TLO Report provides the discharges to the ASF for TWW (combined TWW and RO Brine). Table 3 indicates there are multiple daily volumes not monitored as required by W6726 condition 18 and multiple exceedances of AWWTP P&DC volumes of 166 m^3/day (100 m^3/day TWW and 66 m^3/day RO reject) TWW discharged to the ASF.*
10. *W6726 condition 19 (d) requires a summary of environmental performance compared to emissions standards from Table 1 of W6726, condition 19 (e) requires a review of the performance and condition 19 (f) requires where these have not been met, measures proposed to meet manufacturer's design specification and timeframes. Condition 19 has not been addressed in the TLO Report.*

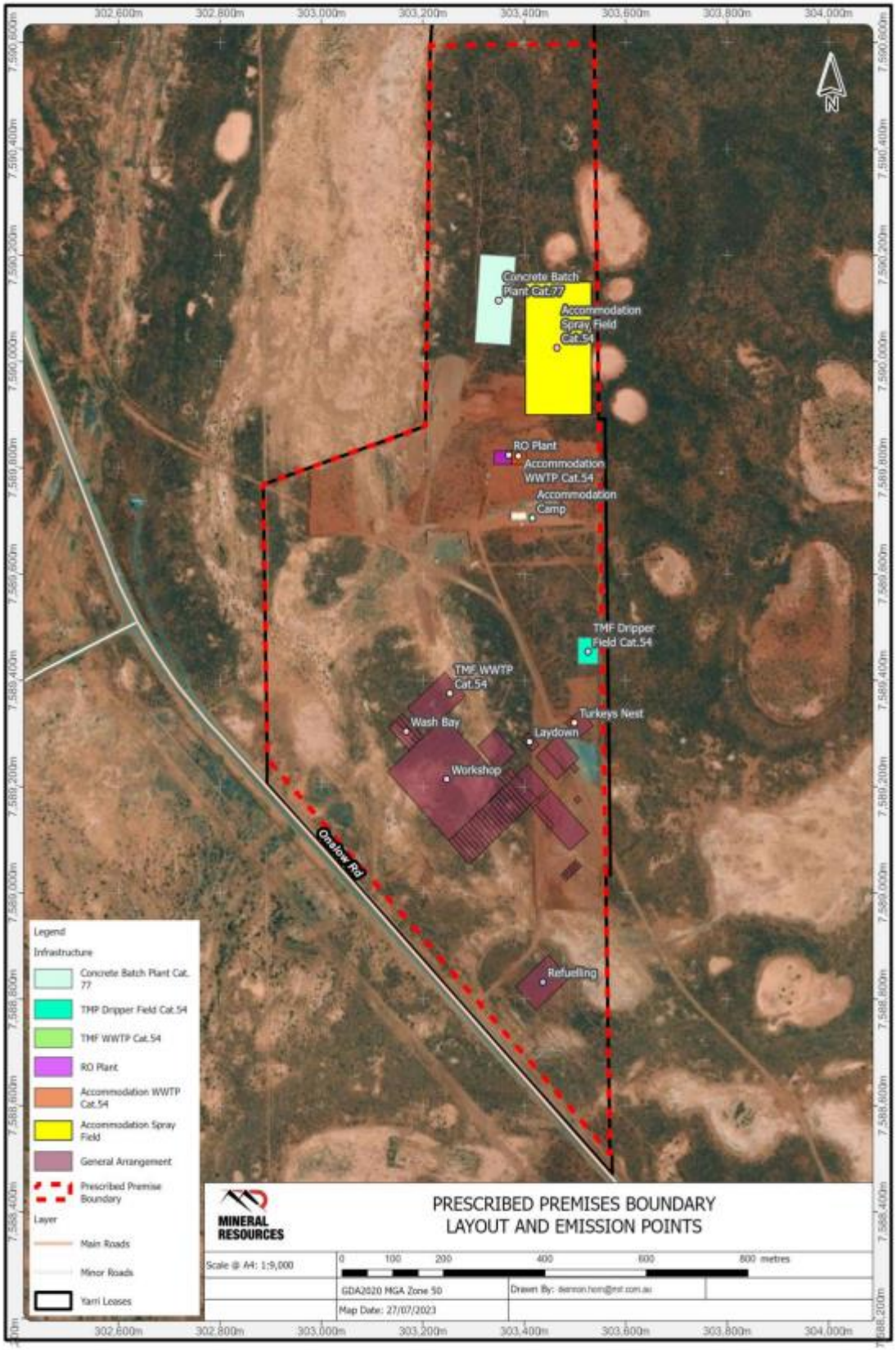

Figure 1 Location of AWWTP and ASF, TMF WWTP and Dripper irrigation location

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 4 below. Table 4 also details the control measures the applicant has proposed to assist in controlling these emissions, where necessary.

Table 4: Proposed applicant controls

Emission	Sources	Potential pathways	Proposed controls
Operation			
Dust	WWTP and Irrigation of TWW Vehicle movements	Air / windborne pathway	There will be very limited vehicle movements at the WWTPs or respective Irrigation spray fields. Siting. Terrestrial Environmental Management Plan.
Noise	WWTP operation	Air / windborne pathway	WWTP units are enclosed. Siting. Compliance with *Environmental Protection (Noise) Regulations 1997* (Noise Regs).
Odour	WWTP and Irrigation of TWW	Air / windborne pathway	WWTP units are enclosed. Siting. Regular maintenance checks. Irrigation spray fields are fenced and includes buffer distance.
Discharges to Land	Irrigation of TWW	Seepage to soil and groundwater	WWTP units are enclosed. Siting. Regular maintenance checks. The WWTPs are designed to discharge TWW to a pre-determined quality prior to use in irrigation: • pH 6.5-8.5 • E. coli <10 cfu/10o0ml

Emission	Sources	Potential pathways	Proposed controls
			• BoD <20 mg/L • TN 20-30mg/L • TP 4-12mg/L and • Free Chlorine 0.2-2mg/L. Irrigation will not occur during significant rainfall events. Storage capacity of TWW – WWTP Balance tank has capacity of 1 day if maintenance issues arise. Irrigation spray field are fenced and includes buffer distance.
Spill / Leaks	WWTP	Seepage to soil, surface water and groundwater	WWTP units are enclosed. Storage of chemicals in accordance with AS 1940: The Storage and Handling of Flammable and Combustible Liquids. Chemical spill kits. Alarms. Siting. Regular maintenance checks. Irrigation spray field is fenced and includes buffer distance. WWTP constructed onto concrete and/or compacted earth pads.

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 5 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 5: Sensitive human and environmental receptors and distance from prescribed activity

Human receptors	Distance from prescribed activity
Town of Onslow	14 km north of the premises
Peedamulla Station (N050350)	Premises is within the Peedamulla Station pastoral lease
Chevron Wheatstone Accommodation Camp	5 km west of the premises

Environmental receptors	Distance from prescribed activity
Ashburton North Strategic Industrial Area (ANSIA) Industry Protection Zone	Premises is within ANSIA Industrial Protection Zone
Pilbara Surface Water Area (SWA30)	Premises is within SWA30 boundary
Localised groundwater	3.58 to 7.47 mbgl
Aboriginal and other heritage site: THALANYJI Native Title Determination area (WC 1999/045)	80 m from premises

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 6.

Licence L9417 that accompanies this decision report authorises emissions associated with the operation of the premises i.e. Sewage facility.

The conditions in the issued licence, as outlined in Table 6 have been determined in accordance with *Guidance Statement: Setting Conditions* (DER 2015).

Table 6: 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								
WWTP, TWW and spray field and associated vehicle movements	Dust	Air / windborne pathway causing impacts to health and amenity	Chevron Wheatstone Accommodation Camp 5km west	Refer to Section 3.1	C = Slight L = Rare **Low Risk**	Y	N/A	The Delegated Officer has considered the scale of the works and the separation distance between the source and receptors as indicating that the risk of dust emission impacts is not foreseeable.
	Noise			Refer to Section 3.1	C = Slight L = Rare **Low Risk**	Y	N/A	Noise emissions are adequately regulated under the Noise Regulations.
	Odour			Refer to Section 3.1	C = Slight L = Unlikely **Low Risk**	Y	Condition 1, 2, 3 and 10	The Delegated Officer has considered the scale of the works and the separation distance between the source and receptors as indicating that the risk of odour emission impacts is not foreseeable.
	Discharges to Land	Seepage to soil, surface water runoff and groundwater	Soils and flora Groundwater is 3.58 to 7.47 mbgl.	Refer to Section 3.1	C = Moderate L = Possible **Medium Risk**	Y	Condition 1, 2, 3, 6, 7, 8, 11 and 12 Refer to section 3.3 risk assessment	The Delegated Officer considers that the applicant's proposed controls are generally sufficient, however additional regulatory

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**				
								controls are required for monitoring of the discharges of TWW and RO brine to the spray field to ensure sustainable nutrient loading rates..
	Spills / Leaks of untreated wastewater, TWW and Chemicals			Refer to Section 3.1	C = Minor L = Unlikely **Low Risk**	Y	Condition 4 and 5	Spill / Leak emissions are adequately regulated under the Environmental Protection (Unauthorised Discharge) Regulations 2004.

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.

3.3 Detailed risk assessment for nutrients and RO reject effluent discharge

3.3.1 Description of emissions risk event

The Applicant intends to discharge TWW (combined with RO reject) from the AWWTP to the ASF. The volume of TWW discharged to the ASF will be up to 100 m^3/day TWW and up to 66 m^3/day RO reject; a total discharge of 166 m^3/day to the ASF.

The TMF will discharge TWW to the dedicated Dripper field at a separate location. The volume of TWW will be up to 6 m^3/day.

Irrigation of nutrient rich water combined with RO reject has the potential to cause contamination of soil (salts) and health impacts (degradation) to native vegetation in the ASF.

3.3.2 Identification and general characterisation of emission

The Applicant proposes to discharge up to 166 m^3/day of TWW from the AWWTP to the 3.25 ha ASF. The expected parameter concentrations within the AWWTP TWW are outlined in Table 1 above.

Table 2 above provides some TWW sample analysis for the WWTP over 90 day of Commissioning of Stage 2 WWTP.

Table 3 above provides the Weekly TLO AWWTP sample results provided from Attachment 2 of the TLO Report.

3.3.3 Description of potential adverse impact from the emission

Excess nutrient (TP and TN) may impact native vegetation health (growth) within the ASF.

RO reject can contain high concentrations of salt (TDS) causing soil contamination and health impacts (degradation) on vegetation. Irrigation using blended effluent has the potential to modify major cation ratios in the receiving soil, causing loss of soil structure and dispersion. This can occur where the irrigation water being discharged has a high proportion of sodium ions in relation to calcium and magnesium ions (commonly referred to as the Sodium Adsorption Ratio (SAR), as well as a low electrical conductivity (EC).

If irrigation water with a high SAR relative to EC is applied to a soil, overtime the sodium in the water can displace bound calcium and magnesium ions and increase the exchangeable sodium proportion within the receiving soil. This will affect soil behavior by decreasing permeability and increasing dispersibility, with the potential to impact flora and surface water receptors at and near the irrigation area.

Decreased permeability of the receiving soil reduces root penetration and air availability for plants as soils become waterlogged at the root zone. Waterlogged soils may become saline as salts are unable to leach through the profile and accumulate in the topsoil and root zone. A reduction in root penetration, air availability and increased soil salinity can lead to reduced plant growth or death.

High dispersibility increases the erodibility of soil, as clay platelets become detached from larger clay aggregates. This may cause a reduction in water quality at surrounding watercourses due to the increased nutrient and sediment transported through surface runoff. There are no localised or significant surface water bodies or creeks located within 1km of the ASF.

3.3.4 Criteria for assessment

Department of Water and Environmental Protection Water Quality Protection Note 22 (WQPN22): Irrigation with nutrient rich wastewater. The Applicant advises that the soil type

within the ASF is considered to be risk Category D as detailed in WQPN22, noting that the soil is fine grained silty sand, Emerson class value of 5 in the vicinity of the spray field area, and not within 500 m of any surface waters.

Using WWTP the upper end of ranges of expected treatment values from Table 1, the irrigation loading rates could be up to 337 kg/ha/year for TN and 135 kg/ha/year for TP. Category D nutrient loading rates for WQPN22 for TN and TP are 480 kg/ha/year and 120 kg/ha/year respectively. However using the average concentration data for TN and TP in Table 3 as monitored during the TLO period, and applying an irrigation area of 3.25 ha, and an effluent (AWWTP P&DC) volume of 100 m^3/day, then the irrigation loading rates will be 196 kg/ha/year for TN and 91 kg/ha/year for TP which are within Category D loading rates. This indicates that the plant is capable of treating wastewater to a standard which supports the sustainable irrigation across the irrigation area.

Soil salinity refers to the amount of dissolved salts in the soil. Excessive sodium levels relative to calcium and magnesium can adversely affect plant growth, soil structure and permeability. 'Use of effluent by irrigation – Department of Environment and Conservation (NSW) – October 2004' (NSW 2004).

SAR is an indicator of the suitability of water for use in irrigation. Generally, the higher the SAR the less suitable the water is for irrigation, depending on the water's electrical conductivity. The NSW 2004 utilise a SAR calculation in section 3.8 which can be used to describe a relationship between SAR and EC that can be used to determine the suitability of an effluent for irrigation, whereby a high SAR may be tolerable if effluent also has a high electrical conductivity. The relationship between SAR, EC and soil structural impacts is shown in Figure 2 (*Figure 3.1 of the NSW 2004*) below.

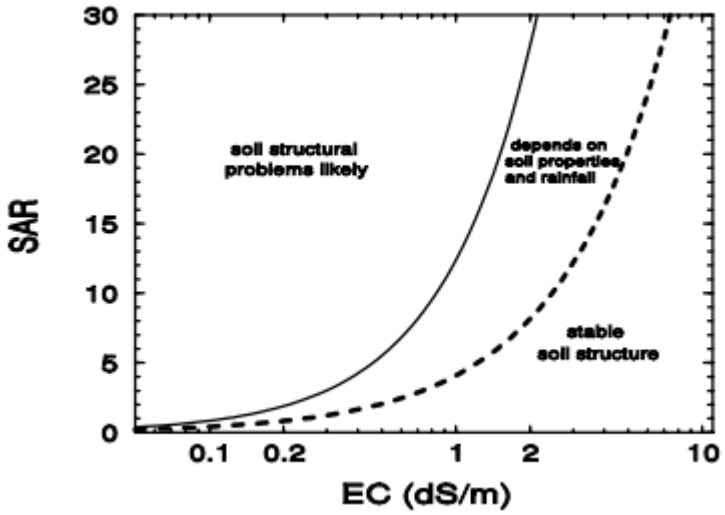

Figure 2: Relationship between SAR and EC of irrigation water for prediction of soil structural stability. Note that 1 dS/m = 1,000 µS/cm

RO Brine was sampled on 30 January 2024 and analysed for SAR and EC. Laboratory results indicated:

- SAR = 7.3
- EC = 4,900 µS/cm (4.9 dS/m)

Additionally, the combined treated effluent and RO Brine was sampled on 18 January 2024, laboratory results indicated:

- SAR = 6.2 and 6.1 respectively
- EC = 3,100 µS/cm (3.1 dS/m) and 3,700 µS/cm (3.7 dS/m) respectively.

The NSW 2004 indicates that a SAR greater than 6 is likely to raise exchangeable sodium percentage (ESP) of soils. The EC of the RO Brine and the EC of the combined TWW are considered high water salinity rating, however the relationship between SAR and EC of irrigation water are considered satisfactory for irrigation purposes for prediction of soil structural stability as per Figure 2.

In the response letter to a request for further information dated 12 February 2024, the Applicant advise they may use RO reject as dust suppression water. Therefore, there may be periods of TWW discharges to the ASF that do not contain RO brine.

3.3.5 Consequence

If irrigation of excessive nutrients (TP and TN) and DO reject effluent results in increased vegetation degradation and soil sodicity, then the Delegated Officer has determined that low-level on-site impacts and minimal off-site impacts with Specific Consequence Criteria are exceeded. Therefore, the Delegated Officer considers the consequence excessive nutrients (TP) and RO reject effluent discharge and land to be **Minor**.

3.3.6 Likelihood of Risk Event

TP irrigation loading rates are currently within Category D WQPN22 loading rates as per section 3.3.4, however the Delegated Officer notes that extended periods of discharge at the upper limits of the plant's expected treated wastewater quality may lead to exceedances of these loading rates.

TTW sample data required under Commissioning and TKO during the Works Approval activities is provided in Table 2 and 3 above. Sample data indicates TN and TP are below proposed discharge quality provided in Table 1. It is noted RO reject may be used in dust suppression and therefore not discharged to the SAF.

Taking in to account the above TWW quality data for irrigation of nutrients and SAR date for RO brine the Delegated Officer has determined that the risk event could occur at some time. Therefore, the Delegated Officer considers the likelihood of the risk event to be **Possible.**

3.3.7 Overall risk rating of discharge of nutrients and RO reject effluent discharge

The Delegated Officer has compared the consequence and likelihood ratings described above with the risk rating matrix contained in Guidance Statement: Risk Assessment (DER 2017) and determined that the overall rating for the risk of excessive nutrients (TP and TN) and RO reject effluent discharge and soil salinity is **Medium.**

4. Consultation

Table 7 provides a summary of the consultation undertaken by the department.

Table 7: Consultation

Consultation method	Comments received	Department response
Application advertised on the department's website on 7/12/2023	No comments received.	N/A
Local Government Authority advised of proposal on 15/12/023	Shire of Ashburton replied on 9 January 2024 advising:	Noted

	Having considered the referred application and associated documentation, the Shire of Ashburton raises no objection to the proposal, ensuring the Department of Health Wastewater Unit is advised for further requirements.	
Department of Energy, Mines, Industry Regulation and Safety (DEMIRS) advised of proposal 15/12/2023	DEMIRS replied on 22/12/2023 stating that an officer from the Resource and Environmental Compliance Division, DEMIRS has reviewed the application supporting information and can confirm that there are no further comments in relation to the proposed sewage treatment facility.	Noted
Applicant was provided with draft documents on 6 March 2024	Applicant submitted comments on 11 March 2024. 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. 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.

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

Condition	Summary of applicant's comment	Department's response
Condition 3 Table 3	Deletion of (c) and (d) from the WWTP and Pipeline row. *c) Integrity of the bunded hardstand is maintained.* *d) Chemicals must be stored separately within an above ground vessel/s located on a hardstand enclosed by bunds with a holding capacity of 110% of the total vessel/s contents.*	Sub-condition (c) and (d) removed from the Licence. The applicant advises that the WWTP is on earthen bunding, all dosing containers are bunded and that all chemicals will be stored in accordance with Australian Standards.
Condition 3 Table 3	Accommodation WWTP Spray Field row. Note that 3.25 ha includes access and spray drift buffer. Actual spray field area is 2.88 ha.	Condition wording updated to reflect the 2.88 ha irrigation area plus a 5 m spray drift buffer. The updated reference to the sizing of the accommodation spray field is consistent with the nutrient application criteria to control eutrophication risk (minimum irrigation area required 2.44 ha). Loading rates for TN and TP are required to be submitted in the Annual Environmental Report.
Comments Cover Letter dated 11 March 2024.	The Applicant notes that the Draft Decision Report mentions that Reverse Osmosis (RO) reject water may be used as dust suppression water, however this hasn't transferred to the Licence. For completeness and to assist with operational compliance we seek to have this detailed on the Licence please.	Not actioned as requested. The proposed 66 m^3/day RO reject discharge has been assessed as part of the TWW discharges to the Accommodation Spray Field. Any brine discharged to the Accommodation Spray Field is regulated by the licence and a definition of blended brine has been included for clarification of discharges as per condition 3 Table 3 and Condition 6 Table 4.

Appendix 2: Application validation summary

<table>
<tr><th colspan="6">SECTION 1: APPLICATION SUMMARY (as updated from validation checklist)</th></tr>
<tr><td colspan="6">Application type</td></tr>
<tr><td rowspan="5">Licence</td><td rowspan="5">☒</td><td>Relevant works approval number:</td><td>W6726/2022/1</td><td>None</td><td>☐</td></tr>
<tr><td colspan="3">Has the works approval been complied with?</td><td colspan="2">Yes ☒ No ☐</td></tr>
<tr><td colspan="3">Has time limited operations under the works approval demonstrated acceptable operations?</td><td colspan="2">Yes ☐ No ☒ N/A ☐</td></tr>
<tr><td colspan="3">Environmental Compliance Report / Critical Containment Infrastructure Report submitted?</td><td colspan="2">Yes ☒ No ☐</td></tr>
<tr><td>Date report received:</td><td colspan="3">25/7/23 (A2191157)</td></tr>
<tr><td colspan="2">Date application received</td><td colspan="4">5/101/23</td></tr>
<tr><td colspan="6">Applicant and premises details</td></tr>
<tr><td colspan="2">Applicant name/s (full legal name/s)</td><td colspan="4">Kumina Iron Pty Ltd</td></tr>
<tr><td colspan="2">Premises name</td><td colspan="4">Onslow Camp Dunes</td></tr>
<tr><td colspan="2">Premises location</td><td colspan="4">M08/488, G08/80, L08/127 and Pastoral Lease 3114/905</td></tr>
<tr><td colspan="2">Local Government Authority</td><td colspan="4">Shire of Ashburton</td></tr>
<tr><td colspan="6">Application documents</td></tr>
<tr><td colspan="2">HPCM file reference number:</td><td colspan="4">DER2023/000657 L9417/2023/1</td></tr>
<tr><td colspan="2">Key application documents (additional to application form):</td><td colspan="4">Application Form
Supporting Document</td></tr>
<tr><td colspan="6">Scope of application/assessment</td></tr>
<tr><td colspan="2">Summary of proposed activities or changes to existing operations.</td><td colspan="4">Licence
Operation of WWTP.
• 100 m³/day from AWWTP
• 66m³ /day of reverse osmosis (RO) brine – mixed in with the AWWTP TWW prior to disposal.
• Discharge of 166 m³/day TWW from the AWWTP to the ASF.
• 6 m³ /day from Truck Maintenance Facility WWTP
Total: 106m³ per day of treated effluent and 66m³ RO brine so a Licence P&DC of 172m³/day.</td></tr>
<tr><td colspan="6">Category number/s (activities that cause the premises to become prescribed premises)
Table 1: Prescribed premises categories
<table>
<tr><th>Prescribed premises category and description</th><th>Assessed production or design capacity</th><th>Proposed changes to the production or design capacity (amendments only)</th></tr>
<tr><td>Category 54: sewage facility.</td><td>172 m³/day</td><td>N/A</td></tr>
</table></td></tr>
<tr><td colspan="6">Legislative context and other approvals</td></tr>
</table>

SECTION 1: APPLICATION SUMMARY (as updated from validation checklist)		
Has the applicant referred, or do they intend to refer, their proposal to the EPA under Part IV of the EP Act as a significant proposal?	Yes ☐ No ☒	N/A
Does the applicant hold any existing Part IV Ministerial Statements relevant to the application?	Yes ☐ No ☒	N/A
Has the proposal been referred and/or assessed under the EPBC Act?	Yes ☐ No ☒	N/A
Has the applicant demonstrated occupancy (proof of occupier status)?	Yes ☒ No ☐	Mining lease / tenement
Has the applicant obtained all relevant planning approvals?	Yes ☐ No ☐ N/A ☒	N/A – Mining lease
Has the applicant applied for, or have an existing EP Act clearing permit in relation to this proposal?	Yes ☒ No ☐	CPS No: CPS No:9495/1
Has the applicant applied for, or have an existing CAWS Act clearing licence in relation to this proposal?	Yes ☐ No ☒	N/A
Has the applicant applied for, or have an existing RIWI Act licence or permit in relation to this proposal?	Yes ☒ No ☐	Application reference No: GWL207192(1)
Does the proposal involve a discharge of waste into a designated area (as defined in section 57 of the EP Act)?	Yes ☐ No ☒	N/A
Is the Premises situated in a Public Drinking Water Source Area (PDWSA)?	Yes ☐ No ☒	N/A
Is the Premises subject to any other Acts or subsidiary regulations (e.g. *Dangerous Goods Safety Act 2004, Environmental Protection (Controlled Waste) Regulations 2004, State Agreement Act xxxx*)	Yes ☒ No ☐	*Mining Act 1978* *Dangerous Goods Safety Act 2004* *Environmental Protection (Unauthorised Discharge) Regulations 2004.*
Is the Premises within an Environmental Protection Policy (EPP) Area?	Yes ☐ No ☒	N/A
Is the Premises subject to any EPP requirements?	Yes ☐ No ☒	N/A
Is the Premises a known or suspected contaminated site under the *Contaminated Sites Act 2003*?	Yes ☐ No ☒	N/A