



Licence Number	L6950/1997/11
Licence Holder	Pilbara Iron Company (Services) Pty Ltd
ACN	107 210 248
File Number:	DER2014/000487
Premises	7 Mile Rail Yard Gap Ridge WA 6714 Legal description – Crown Lease GE I-123612 Lot 175 on Deposited Plan 26146
Date of Amendment	18 June 2018

Amendment

The Chief Executive Officer (CEO) of the Department of Water and Environmental Regulation (DWER) has amended the above Licence in accordance with section 59 of the *Environmental Protection Act 1986* (EP Act) as set out in this Amendment Notice. This Amendment Notice constitutes written notice of the amendment in accordance with section 59B(9) of the EP Act.

Date signed: 18 June 2018

Jarrod Abrahams

A/Manager Licensing (Waste Industries)

Regulatory Services (Environment)

Definitions and interpretation

Definitions

In this Amendment Notice, the terms in Table 1 have the meanings defined.

Table 1: Definitions

Term	Definition
ACN	Australian Company Number
Application	Refers to the Licence amendment application form and supporting documentation received by DWER from the Licence Holder on 15 January 2018, and the additional information received by DWER from the Licence Holder on 16 February 2018.
Amendment Notice	refers to this document
Category/ Categories/ Cat.	categories of Prescribed Premises as set out in Schedule 1 of the EP Regulations
CEO	means Chief Executive Officer. CEO for the purposes of notification means: Director General Department Administering the <i>Environmental Protection Act 1986</i> Locked Bag 33 Cloisters Square PERTH WA 6850 info@dwer.wa.gov.au
Delegated Officer	an officer under section 20 of the EP Act
Department	means the department established under section 35 of the <i>Public Sector Management Act 1994</i> and designated as responsible for the administration of Part V, Division 3 of the EP Act.
DWER	Department of Water and Environmental Regulation
EP Act	<i>Environmental Protection Act 1986</i> (WA)
EP Regulations	<i>Environmental Protection Regulations 1987</i> (WA)
Licence Holder	Pilbara Iron Company (Services) Pty Ltd
m ³	cubic metres
Occupier	has the same meaning given to that term under the EP Act.
Prescribed Premises	has the same meaning given to that term under the EP Act.
Premises	refers to the premises to which this Amendment Notice applies, as specified at the front of this Amendment Notice.

Term	Definition
Risk Event	as described in <i>Guidance Statement: Risk Assessment</i>

Amendment Notice

This amendment is made pursuant to section 59 of the *Environmental Protection Act 1986* (EP Act) to amend the Licence issued under the EP Act for a prescribed premises as set out below. This notice of amendment is given under section 59B(9) of the EP Act.

This notice is limited only to an amendment for Category 85. No changes to the aspects of the original Licence relating to Categories 61 and 73 have been requested by the Licence Holder.

The following guidance statements have informed the decision made on this amendment:

- *Guidance Statement: Regulatory Principles (July 2015)*
- *Guidance Statement: Setting Conditions (October 2015)*
- *Guidance Statement: Land Use Planning (February 2017)*
- *Guidance Statement: Decision Making (February 2017)*
- *Guidance Statement: Risk Assessment (February 2017)*
- *Guidance Statement: Environmental Siting (November 2016)*

Amendment description

Pilbara Iron Company (Services) Pty Ltd operates the 7 Mile Rail Yard under the Existing Licence L6950/1997/11.

The Existing Licence (L6950/1997/11) authorises the operation of a bioremediation facility (Category 61) and the bulk storage of chemicals (Category 73) within the Premises.

The Premises also includes an existing wastewater treatment plant (WWTP) which has a treatment capacity of less than 20m³ per day. The WWTP discharges treated wastewater into two evaporation ponds which are adjacent to the treatment plant.

The Licence Holder submitted an amendment application to DWER on 15 January 2018, for the replacement of the existing WWTP. The maximum treatment capacity of the proposed new WWTP will be 24m³ per day, which falls within the design capacity for a Category 85 sewage facility.

Table 2 below outlines the proposed category changes to the Licence.

Table 2: Proposed design capacity changes

Category	Current design capacity	Proposed design capacity	Description of proposed amendment
85 Sewage Facility	N/A	24 cubic meters per day	Addition of Category 85 to the Licence

The proposed WWTP will continue to accept sewage from the Railways Division including the 2 Mile, 6 Mile, 7 Mile and 8 Mile offices. The new WWTP will provide additional tertiary treatment and disinfection and is expected to achieve improved treated wastewater quality compared to the existing WWTP. The treated wastewater will continue to be discharged into the two existing evaporation ponds associated with the existing WWTP.

The new wastewater treatment plant will consist of the infrastructure set out in Table 3.

Table 3: Infrastructure

Existing infrastructure	
1	Two geosynthetic clay lined evaporation ponds: <ul style="list-style-type: none"> • Primary pond (34m length, 35m width, 1m depth, 1190m³ volume) • Secondary pond (34m length, 17m width, 1m depth, 578m³ volume) (Hydraulic conductivity of liner not provided)
2	Lockable fencing around evaporation ponds
New infrastructure requiring installation	
3	Biomax wastewater recycling system consisting of: <ul style="list-style-type: none"> • Anaerobic chamber • Aerobic chamber • Clarification chamber • Disinfection chamber • Pump out chamber • In-built emergency storage of approximately two days at normal flow • Alarm providing alerts in the case of failure of any mechanical component of the plant With a Maximum treatment design capacity of 24m ³ per day.

The proposed WWTP is expected to achieve the treated wastewater quality shown in Table 4. The Australian Guidelines for Sewerage Systems, Effluent Management (ANZECC & ARMCANZ 1997) provide an indication and expected level of treatment for evaporation ponds, as shown in Table 4. As these Guidelines do not provide a level for residual free chlorine, Table 4 also includes the recommended chlorine level for low human exposure end uses within the Guidelines for the Non-potable Uses of Recycled Water in Western Australia (DoH 2011).

Table 4: Expected treated wastewater quality

Parameter	Expected discharge quality	Guideline levels ¹ ANZECC 1997 ² DoH 2011
Biological Oxygen Demand (BOD ₅)	≤ 20 mg/L	20 – 30 mg/L ¹
Total Suspended Solids	≤ 30 mg/L	25 – 40 mg/L ¹
<i>E. Coli</i>	≤ 10 organisms/100ml	10 ⁵ to 10 ⁶ organisms/100ml ¹
Residual Free Chlorine	0.5 mg/L	0.2-2 mg/L ²
pH	6.5 – 8.5	6.5-8.5 ²

Total Phosphorus	≤ 2.5 mg/L	6 – 12 mg/L ¹
Total Nitrogen	≤ 24.9 mg/L	20 – 50 mg/L

Construction and commissioning

Construction of the proposed WWTP will be completed within a short period (approximately one month), as the system comes in modular units. Construction will be undertaken during daytime hours.

A commissioning period will commence following construction, and is expected to take two to three months. During this time the electrical and mechanical installation of the WWTP will be tested, the plant will be inspected for leaks, and the treated wastewater quality will be stabilised. The treated wastewater quality will be analysed fortnightly during the commissioning period for the parameters listed in Table 4. The flow rate will also be continuously monitored.

Operation

The treated wastewater quality will be analysed quarterly during operation for the parameters listed in Table 4. The flow rate will also be continuously monitored.

Sludge from the WWTP will be disposed of at the bioremediation facility within the Premises, as currently occurs under the Existing Licence. The volume of sludge requiring disposal is expected to decrease following the installation of the new WWTP.

Other approvals

The Licence Holder did not provide any information regarding other approvals.

Amendment history

Table 5 provides the amendment history for L6950/1997/11.

Table 5: Licence amendments history

Instrument	Issued	Amendment
L6950/1997/11	3 April 2014	Amendment to include Category 73 on the Licence.
L6950/1997/1	29 April 2016	Notice of Amendment of Licence Expiry Dates; expiry date extended to 31 May 2022.

Location and receptors

Table 6 below lists the relevant sensitive land uses in the vicinity of the Prescribed Premises which may be receptors relevant to the proposed amendment.

Table 6: Receptors and distance from activity boundary

Residential and sensitive premises	Distance from Prescribed Premises
Civeo accommodation village	Approximately 2km east of the Premises boundary
Residential suburb of Karratha	Approximately 3km east of the Premises boundary

Table 7 below lists the relevant environmental receptors in the vicinity of the Prescribed Premises which may be receptors relevant to the proposed amendment.

Table 7: Environmental receptors and distance from activity boundary

Environmental receptors	Distance from Prescribed Premises
Priority ecological communities: Priority 1 - Roebourne plains coastal grasslands with gilgai microrelief on deep cracking clays Priority 4 - Horseflat land system of the Roebourne plains	Immediately surrounding the Premises
7 Mile Creek which flows to the ocean	Approximately 1.3km east of the Premises boundary
National park	Approximately 5km north of the Premises boundary
Sighting of migratory birds protected under and international agreement	Approximately 3km west of the Premises boundary
Sightings of endangered mammals	Approximately 4.6km south west of the Premises boundary and 9.6km east of the Premises
Priority 3 flora	Approximately 4km north north-west of the Premises boundary

Table 8 below lists the relevant groundwater and water source receptors in the vicinity of the Prescribed Premises which may be receptors relevant to the proposed amendment.

Table 8: Environmental receptors and distance from activity boundary

Groundwater and water sources	Distance from Prescribed Premises	Environmental value
Groundwater	Approximately 7m below ground level within the Premises (information sourced from the Application).	Groundwater salinity within the area is expected to be between 1000mg/L to 3000mg/L Total Dissolved Salts (DWER GIS system). This level of salinity is considered brackish to saline.
Public drinking water supply areas	Located over 40km from the Premises boundary.	P1 and unassigned protection level.

Consultation

The Application was referred to the Department of Health (DoH) and the City of Karratha for comment on 16 February 2018.

The DoH is assessing an application for the proposed system, and has no objections to the proposal provided that the Premises is suitable for onsite effluent disposal.

The City of Karratha advised that there is no planning/development approval required to be issued by the City for this proposal.

Risk assessment

Table 9 and Table 10 below describe the Risk Events associated with the amendment consistent with the *Guidance Statement: Risk Assessments*. Both tables identify whether the emissions present a material risk to public health or the environment, requiring regulatory controls.

Table 9: Risk assessment for proposed amendments during construction

Table of Risk Assessment for proposed amendments during construction									
Risk Event						Consequence rating	Likelihood rating	Risk	Reasoning
Source/Activities		Potential emissions	Potential receptors	Potential pathway	Potential adverse impacts				
Cat 85 Sewage Facility	Installation of sewage treatment infrastructure	Dust associated with vehicle movement	Residents – see Table 6	Air	Health and amenity impacts	Slight	Rare	Low	<p>There are no earthworks associated with the proposal. The dust emitted from vehicle movement associated with the establishment of the sewage treatment facility is expected to be minimal in volume and duration, and there is a 2km separation distance to the nearest residential receptors.</p> <p>Based on these factors, the Delegated Officer considers that:</p> <ul style="list-style-type: none">there may be minimal impact to amenity and no impact to health at a local scale; andthis impact may only occur in exceptional circumstances. <p>Low risk events are acceptable and generally not subject to regulatory controls.</p>
		Noise associated with vehicle movement and installation of equipment		Air	Amenity impacts	Slight	Rare	Low	<p>Noise emissions from the establishment of the sewage treatment facility is expected to be minimal in volume and duration, and there is a 2km separation distance to the nearest residential receptors.</p> <p>Based on these factors, the Delegated Officer considers that:</p> <ul style="list-style-type: none">there may be minimal impact to amenity at a local scale; andthis impact may only occur in exceptional circumstances. <p>Low risk events are acceptable and generally not subject to regulatory controls.</p>

Table 10: Risk assessment for proposed amendments during commissioning and operation

Risk Event						Consequence rating	Likelihood rating	Risk	Reasoning
Source/Activities		Potential emissions	Potential receptors	Potential pathway	Potential adverse impacts				
Cat 85 Sewage Facility	Sewage acceptance, treatment, storage and disposal to evaporation ponds	Odour associated with effluent treatment and disposal	Residents – see Table 6	Air/wind dispersion	Health and amenity impacts	Minor	Rare	Low	<p>It is expected that in the event that the wastewater is insufficiently treated to prevent odour emissions, the severity of the amenity impact would still only be minor due to the relatively small treatment capacity of the plant and the 2km separation distance to the nearest residential receptors.</p> <p>Based on these factors, the Delegated Officer considers that:</p> <ul style="list-style-type: none"> • there may be low level impacts to amenity at a local scale; and • this impact may only occur in exceptional circumstances. <p>Low risk events are acceptable and generally not subject to regulatory controls.</p>

Risk Event						Consequence rating	Likelihood rating	Risk	Reasoning
Source/Activities		Potential emissions	Potential receptors	Potential pathway	Potential adverse impacts				
		Seepage of treated wastewater from evaporation ponds	Groundwater	Through soil and via groundwater flow	Contamin ation of soil	Minor	Unlikely	Mediu m	Emissions of wastewater which may seep from evaporation ponds will be treated wastewater.
					Contamin ation of groundwa ter				The Licence Holder has advised that the ponds were installed several years ago and that no documentation regarding the liner specifications or installation process was maintained.
									If the geosynthetic clay lining of the ponds is not compromised, it is expected to allow only a small degree of seepage. Maintenance of the condition of the liner should minimize the potential for larger seepage volumes.
									The Licence Holder has advised that the ponds are regularly inspected for visual seepage and weed management.
									Assuming that the lining of the ponds is not compromised, and considering the relatively small treatment capacity of the facility, wider scale impacts are not expected.
									Taking these factors into consideration, the Delegated Officer considers that: <ul style="list-style-type: none">• there may be low level offsite impacts to groundwater at a local scale; and• a low level impact to groundwater will probably not occur in most circumstances.
									Medium risk events are tolerable and are likely to be subject to regulatory controls.
		Overtopping or failure of plant containment vessels	Adjoining land	Overland flow or through soil and via	Contamin ation of soil	Moderate	Rare	Mediu m	Emissions of wastewater via overtopping or containment failure could release untreated wastewater in the case of system
			7 Mile Creek		Contamin				
			Groundwater						
			Priority						

Risk Event						Consequence rating	Likelihood rating	Risk	Reasoning
Source/Activities		Potential emissions	Potential receptors	Potential pathway	Potential adverse impacts				
		releasing potentially untreated wastewater	ecological communities	groundwater flow	ation of surface water; adversely impacting creek ecology				malfunction.
					Adverse impact to ecosystems within priority ecological communities				The WWTP includes in-built emergency storage of approximately two days at normal flow, and an alarm to provide an alert in the case of failure of the mechanical components.
					Contamination of groundwater				Due to the relatively small treatment capacity of the facility, wider scale impacts would not be expected.
									A 400mm freeboard will be maintained in the evaporation ponds. The Licence Holder has stated that overtopping will not occur during the majority of high rainfall events and that no incidents have previously been recorded in relation to the evaporation ponds.
				Taking these factors into consideration, the Delegated Officer considers that: <ul style="list-style-type: none">there may be low-level offsite impacts to adjoining land, groundwater and ecosystems at a local scale and minimal at a wider scale; andthis impact may only occur in exceptional circumstances. Medium risk events are tolerable and are likely to be subject to regulatory controls.					
		Seepage of treated wastewater from evaporation ponds	National park	No pathway due to significant separation distance	Adversely impact flora and fauna	N/A	N/A	N/A	Risk assessment not applicable for these receptors due to the significant separation distance from the Premises.
			Migratory birds						
			Endangered mammals						
			Priority 3 flora						
		Overtopping or failure of plant containment							

Risk Event						Consequence rating	Likelihood rating	Risk	Reasoning
Source/Activities		Potential emissions	Potential receptors	Potential pathway	Potential adverse impacts				
		vessels releasing potentially untreated wastewater							

Decision

Having considered the proposed amendments to the Existing Licence, the Delegated Officer has determined that the installation of the upgraded WWTP at a design throughput of 24 cubic meters per day, with the disposal of treated wastewater to the existing evaporation ponds, is acceptable subject to the regulatory controls set out below.

Infrastructure installation

The Delegated Officer determined that the Licence Holder shall be required to install the proposed infrastructure as specified within the Application, and shall be required to provide confirmation that this was met following the completion of the works. These requirements are included as Conditions 10, 11, 12 and 13.

Commissioning

The Delegated Officer determined that the Licence Holder may undertake commissioning of the WWTP for a period not exceeding 6 months from the start of commissioning. The Application states that commissioning may take up to three months, however a six month period has been allowed within the conditions to provide DWER adequate time to assess compliance documentation following the completion of the works and processing of further Licence amendments for the operation of the WWTP. This requirement is included within Condition 14.

The Delegated Officer determined that treated wastewater quality monitoring as proposed by the Licence Holder shall be undertaken during commissioning. This requirement is included within Condition 15. The Licence currently includes a requirement (Condition 7(c)) for samples to be analysed at a NATA accredited laboratory, however the condition includes an outdated reference to Standard Methods for Examination of and Wastewater and shall be updated.

The Delegated Officer determined that a Commissioning Report shall be provided following the completion of commission. This requirement is included within Condition 16.

Emissions

The Delegated Officer determined that a condition is required specifying emissions which the Licence Holder shall not cause during the installation and commissioning of the WWTP. This is included as Condition 17.

As the seepage risk assessment assumes that the geosynthetic clay lining of the evaporation ponds is uncompromised, the Delegated Officer determined that the seepage rate from the ponds should be tested to verify this assumption. The requirement to undertake an overnight water balance test for the evaporation ponds, and to report the results of the testing, are included as Conditions 18 and 19. DWER will consider the need for additional regulatory controls relating to the seepage risk from the evaporation ponds following the receipt of the seepage rate testing results.

The Delegated Officer notes that the Licence currently includes a requirement to prevent overtopping of the evaporation ponds and maintain a 400mm freeboard within the ponds (Condition 5). This condition will remain on the Licence.

Record keeping

The Delegated Officer determined that record keeping requirements shall be added to the Licence as they are necessary for administration relevant to compliance. These requirements are included as Conditions 20 and 21.

Process monitoring of treatment

The Delegated Officer has determined that treated wastewater quality monitoring is required as part of the operation of the WWTP to oversee performance of the plant – these

requirements has been included in Condition 22. A quarterly monitoring frequency has been proposed which is consistent with that proposed in the amendment application.

The monitoring frequency will be further considered upon receipt of the seepage rate testing results which is a requirement of Conditions 18 and 19.

Administrative updates

Administrative updates have been made to the definitions and conditions 1 and 2 of the licence.

Licence Holder's comments

The Licence Holder was provided with the draft Amendment Notice on 4 May 2018. Comments received from the Licence Holder have been considered by the Delegated Officer as shown in Appendix 2.

Amendment

1. The Definitions section on the second page of the Licence is amended by the deletion of the text shown in strikethrough below and the insertion of the red text shown in underline below:

"AS/NZS 5667.10" means the Australian Standard– Sampling – Guidance on sampling of waste waters.

"CEO" means means Chief Executive Officer. CEO for the purposes of notification means:
Director General
Department Administering the Environmental Protection Act 1986
Locked Bag 33 Cloisters Square
PERTH WA 6850
info@dwer.wa.gov.au

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

~~"Director" means Director, Environmental Regulation Division of the Department of Environment Regulation for and on behalf of the Chief Executive Officer as delegated under section 20 of the *Environmental Protection Act 1986*;~~

~~"Director" for the purposes of correspondence means—~~

~~—— Regional Leader, Industry Regulation, North West Region
—— Department of Environment Regulation
—— PO Box 835
—— KARRATHA WA 6714
—— Telephone: (08) 9182 2000
—— Facsimile: (08) 9144 1118
—— Email: Industryregpilbara@dec.wa.gov.au~~

"Ham and Baum, 2009" means the document Ham, J.M. and Baum, K.A., 2009. *Measuring seepage from waste lagoons and earthen basins with an overnight water balance test*. Transactions of the American Society of Agricultural and Biological Engineers, 52(3), 835-844.

'Works' means the construction/installation and commissioning of the wastewater treatment plant, at the location shown in Attachment 4 of this Licence.

2. The *Environmental Protection Regulations 1987* Classification(s) of Premises stated on the first page of the Licence is amended by the insertion of the red text shown in underline below:

Category 85: Sewage Facility

3. Table 1 is amended by the insertion of the red text shown in underline below:

Category Number	Category Name
61	Liquid waste facility
73	Bulk storage of chemicals, etc.
<u>85</u>	<u>Sewage facility</u>

4. Condition 1 the Licence is amended by the deletion of the text shown in strikethrough below and the insertion of the red text shown in underline below:

The Licensee shall by 30 April each year, provide to the ~~Director~~ CEO an Annual Environmental Report containing the monitoring results and data collected as a requirement of any condition of this licence during the period beginning 1 January and ending on 31 December in that year.

5. Condition 2 the Licence is amended by the deletion of the text shown in strikethrough below and the insertion of the red text shown in underline below:

The Licensee shall by 30 April each year, provide to the ~~Director~~ CEO an Annual Audit Compliance Report ~~in the form of Attachment 2 to this Licence, signed and certified in the manner required by Section C of the form,~~ indicating the extent to which the licensee has complied with the conditions of this Licence, and any previous licence issued under Part V of the Act for the premises, during the period beginning 1 January and ending on 31 December in that year.

6. Condition 7(c) the Licence is amended by the deletion of the text shown in strikethrough below and the insertion of the red text shown in underline below:

The Licensee shall ensure that all parameters requiring laboratory analysis are conducted by an organisation with NATA accreditation for the ~~specified parameters in accordance with the current Standard Methods for Examination of Water and Wastewater-APHA-AWWA-WEF~~ parameters being measured unless indicated otherwise in the relevant table.-

7. The conditions of the Licence are amended by the insertion of conditions 10 to 22 shown in red underlined text below:

10. The Licence Holder must complete the Works for the infrastructure and equipment specified in Column 1 of Table 3 to the requirements specified in Column 2 of Table 3.

Table 3: Infrastructure and equipment requirements table

<u>Column 1</u>	<u>Column 2</u>
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<u>Infrastructure / equipment</u>	<u>Requirements</u>
<u>Biomax wastewater recycling system (WWTP)</u>	<p><u>The treatment system must be designed and constructed to meet the following specification:</u></p> <ul style="list-style-type: none"> <u>Able to receive and treat a maximum of 24m³ per day of sewage.</u> <u>Designed to achieve the following treated wastewater quality:</u> <ul style="list-style-type: none"> <u>(a) Biological Oxygen Demand less than or equal to 20 mg/L</u> <u>(b) Total Suspended Solids less than or equal to 30 mg/L</u> <u>(c) E. Coli less than or equal to 10 organisms/100mL</u> <u>(d) Residual Free Chlorine less than or equal to 0.5 mg/L</u> <u>(e) pH between the range of 6.5 to 8.5</u> <u>(f) Total Phosphorus less than or equal to 2.5 mg/L</u> <u>(g) Total Nitrogen less than or equal to 24.9 mg/L.</u> <u>Able to continuously monitor the outflow of treated wastewater to the evaporation ponds.</u> <u>Contain an alarm system which provides alerts in the case of failure of any mechanical component of the treatment plant.</u> <u>Contain in-built emergency storage with the capacity to store approximately two days of effluent inflow at normal flow.</u>

11. The Licence Holder must not depart from the requirements specified in Column 2 of Table 3 except:
 - (a) where such departure does not increase risks to public health, public amenity or the environment; and
 - (b) all other conditions in this Licence are still satisfied.
12. The Licence Holder must, within 30 days of the completion of the Works, provide to the CEO a report from a suitably qualified professional confirming each item of infrastructure or component of infrastructure specified in Column 1 of Table 3 has been constructed with no material defects and to the requirements specified in Column 2 of Table 3.
13. Where a departure from the requirements specified in Column 2 of Table 3 occurs and is of a type allowed by Condition 11, the Licence Holder must provide to the CEO, within 30 days of the completion of the Works, a description of, and explanation for, the departure.
14. The Licence Holder may begin commission following the completion of the Works and may continue commissioning for a maximum period of six months from the start of commissioning.
15. The Licence Holder must undertake during Commissioning the monitoring

specified within Table 4:

- (a) at the locations specified in Column 1;
- (b) for the parameters specified in Column 2;
- (c) at the frequency specified in Column 4; and
- (d) using the methods specified in Column 7.

Table 4: Monitoring during commissioning

<u>Column 1</u>	<u>Column 2</u>	<u>Column 3</u>	<u>Column 4</u>	<u>Column 6</u>	<u>Column 7</u>
<u>Sampling point</u>	<u>Parameter</u>	<u>Units</u>	<u>Frequency</u>	<u>Averaging period</u>	<u>Method</u>
<u>Point of discharge to evaporation ponds</u>	<u>Volume</u>	<u>kL/day</u>	<u>Continuous</u>	<u>Cumulative daily</u>	<u>Flow meter</u>
	<u>Biological Oxygen Demand (BOD₅)</u>	<u>mg/L</u>	<u>Fortnightly</u>	<u>Spot sample</u>	<u>AS/NZS 5667.10</u>
	<u>Total Suspended Solids</u>	<u>mg/L</u>	<u>Fortnightly</u>		
	<u>E. Coli</u>	<u>organisms/100ml</u>	<u>Fortnightly</u>		
	<u>Residual Free Chlorine</u>	<u>mg/L</u>	<u>Fortnightly</u>		
	<u>pH *</u>	<u>pH units</u>	<u>Fortnightly</u>		
	<u>Total Phosphorus</u>	<u>mg/L</u>	<u>Fortnightly</u>		
	<u>Total Nitrogen</u>	<u>mg/L</u>	<u>Fortnightly</u>		

*In field non-NATA accredited analysis permitted.

16. The Licence Holder must provide to the CEO a Commissioning report within 30 days of the completion of the Commissioning including:

- (a) a summary of monitoring results recorded under Condition 15;
- (b) a list of any original monitoring reports submitted to the Licence Holder from third parties for the Commissioning period;
- (c) a summary of the environmental performance of the WWTP as installed, against the treated wastewater quality levels set out in Table 3.

17. The Licence Holder must not cause any Emissions from the Works authorised through this Licence except for general Emissions described in Column 1 of Table 5, subject to the exclusions, limitations or requirements specified in Column 2, of Table 5.

Table 5: Authorised emissions table

<u>Column 1</u>	<u>Column 2</u>
<u>Emission type</u>	<u>Exclusions/Limitations/Requirements</u>
<u>General Emissions</u>	
<u>Emissions which arise from undertaking the Works</u>	<u>Emissions excluded from General Emissions are:</u> <ul style="list-style-type: none"> • <u>Unreasonable Emissions; or</u> • <u>Emissions that result in, or are likely to result in, Pollution, Material Environmental Harm or Serious</u>

<u>Column 1</u>	<u>Column 2</u>
<u>Emission type</u>	<u>Exclusions/Limitations/Requirements</u>
	<u>Environmental Harm; or</u> <ul style="list-style-type: none"> <u>Discharges of Waste in circumstances likely to cause Pollution; or</u> <u>Emissions that result, or are likely to result in, the Discharge or abandonment of Waste in water to which the public has access; or</u> <u>Emissions or Discharges which do not comply with an Approved Policy; or</u> <u>Emissions or Discharges which do not comply with prescribed standard; or</u> <u>Emissions or Discharges which do not comply with the conditions in an Implementation Agreement or Decision; or</u> <u>Emissions or Discharges the subject of offences under regulations prescribed under the EP Act, including materials discharged under the Environmental Protection (Unauthorised Discharges) Regulations 2004.</u>

18. The Licence Holder must test the seepage rate of the evaporation ponds:

- (a) for the parameter specified in Column 1 of Table 6;
- (b) at the locations specified in Column 2 of Table 6;
- (c) by the completion date specified in Column 3 of Table 6; and
- (d) using the method specified in Column 4 and Column 5 of Table 6.

Table 6: Pond seepage rate testing requirements

<u>Column 1</u>	<u>Column 2</u>	<u>Column 3</u>	<u>Column 4</u>	<u>Column 5</u>
<u>Parameter</u>	<u>Location as shown in Attachment 5</u>	<u>Completion date</u>	<u>Test</u>	<u>Method</u>
<u>Seepage rate (mm/day and m/s)</u>	<u>Pond 1</u> <u>Pond 2</u>	<u>1 October 2018</u>	<u>Overnight water balance test</u>	<u>Ham and Baum, 2009</u>

19. The Licence Holder must, within one month of the completion of the seepage rate testing specified in Condition 18, submit to the CEO a report which provides the results of the seepage rate testing.

20. The Licence Holder must maintain accurate Books including information, reports and data in relation to the Works and the Books must:

- (a) be legible;
- (b) if amended, be amended in such a ways that the original and subsequent amendments remain legible or are capable of retrieval;
- (c) be retained for at least 3 years from the date the Books were made;
- (d) be available to be produced to an Inspector or the CEO.

21. The Licence Holder must comply with a Department Request within 14 days from the date of the Department Request or such other period as agreed to by the Inspector or the CEO.

22. The Licence Holder must undertake during operation the process monitoring as specified within Table 4:

- (a) at the locations specified in Column 1;
- (b) for the parameters specified in Column 2;
- (c) at the frequency specified in Column 4; and
- (d) using the methods specified in Column 7.

Table 4: Monitoring during operation

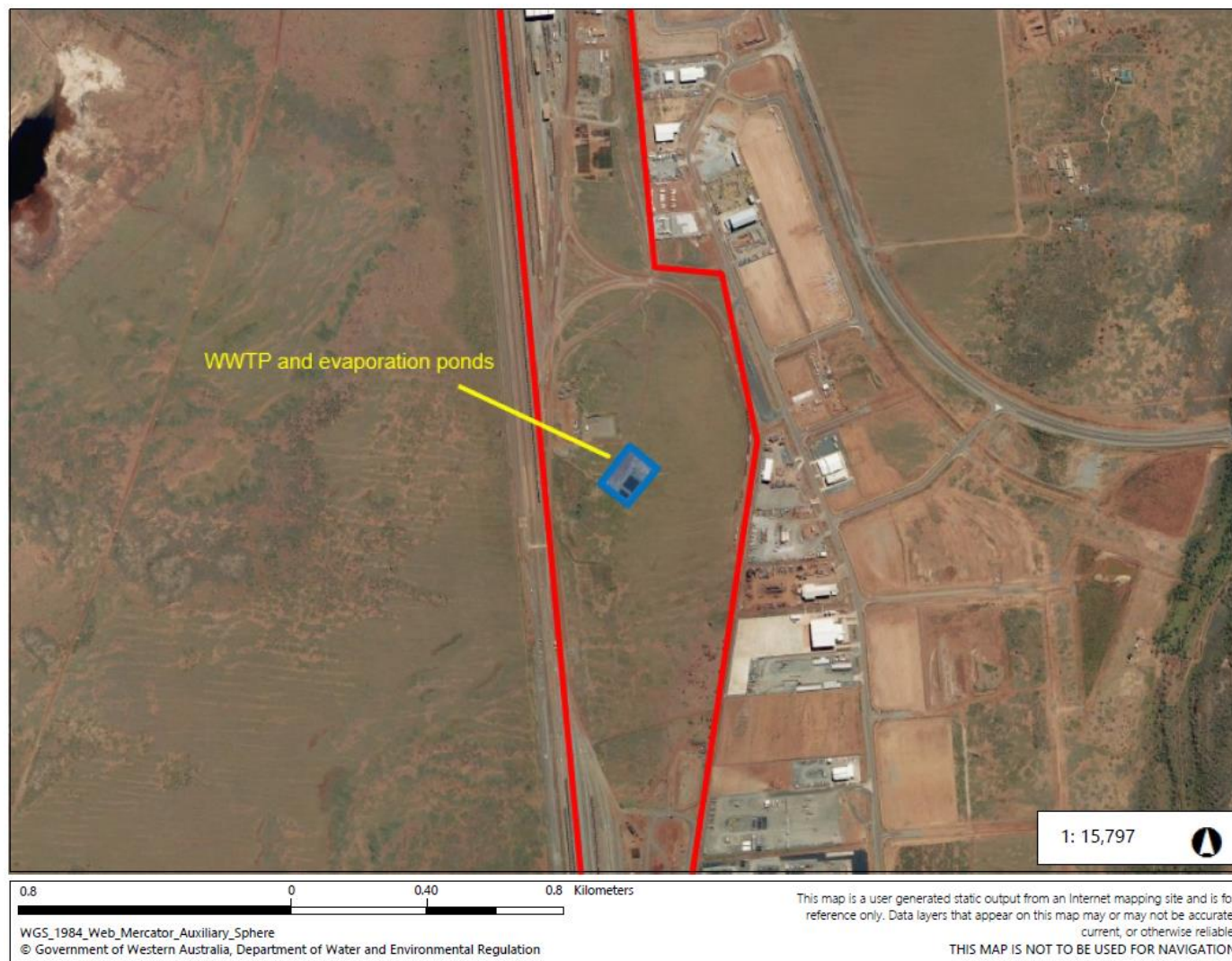
<u>Column 1</u> <u>Sampling point</u>	<u>Column 2</u> <u>Parameter</u>	<u>Column 3</u> <u>Units</u>	<u>Column 4</u> <u>Frequency</u>	<u>Column 6</u> <u>Averaging period</u>	<u>Column 7</u> <u>Method</u>
<u>Point of discharge to evaporation ponds</u>	<u>Volume</u>	<u>kL/day</u>	<u>Continuous</u>	<u>Cumulative daily</u>	<u>Flow meter</u>
	<u>Biological Oxygen Demand (BOD₅)</u>	<u>mg/L</u>	<u>Quarterly</u>	<u>Spot sample</u>	<u>AS/NZS 5667.10</u>
	<u>Total Suspended Solids</u>	<u>mg/L</u>			
	<u>E. Coli</u>	<u>organisms/100ml</u>			
	<u>Residual Free Chlorine</u>	<u>mg/L</u>			
	<u>pH *</u>	<u>pH units</u>			
	<u>Total Phosphorus</u>	<u>mg/L</u>			
	<u>Total Nitrogen</u>	<u>mg/L</u>			

*In field non-NATA accredited analysis permitted.

8. The following attachment is inserted after Attachment 3 within the Licence.

Attachment 4: Location of wastewater treatment plant

The location of the WWTP is indicated by the blue outline within the below map. The Premises boundary is indicated by the red outline.



Licence: L6950/1997/11

IR-T08 Amendment Notice (Major) template v2.0 (July 2017)

Attachment 5: Evaporation ponds associated within wastewater treatment plant

The two evaporation ponds which receive treated wastewater from the wastewater treatment plant are labelled Pond 1 and Pond 2 in the below map.



Licence: L6950/1997/11

Appendix 1: Key documents

	Document title	In text ref	Availability
1	ANZECC & ARMCANZ, 1997. <i>Australian Guidelines for Sewerage Systems, Effluent Management 1997.</i>	(ANZECC & ARMCANZ 1997)	http://www.agriculture.gov.au
2	City of Karratha (1 March 2018), <i>Referral of a Licence Amendment</i> [Email]	N/A	DWER records (A1628244)
3	Department of Health, 2011. <i>Guidelines for the Non-potable Uses of Recycled Water in Western Australia.</i>	(DoH 2011)	http://ww2.health.wa.gov.au
4	Department of Health (8 March 2018), <i>Licence Amendment (L6950/1997/11)</i> – <i>Pilbara Iron Company (Services) Pty Ltd</i> [Letter]	N/A	DWER records (A1633911)
5	Ham, J.M. and Baum, K.A., 2009. <i>Measuring seepage from waste lagoons and earthen basins with an overnight water balance test.</i> Transactions of the American Society of Agricultural and Biological Engineers, 52(3), 835-844	Ham and Baum, 2009	DWER records

Appendix 2: Summary of Licence Holder comments

The Licence Holder was provided with the draft Amendment Notice on 4 May 2018 for review and comment. The Licence Holder responded on 25 May 2018. The following comments were received on the draft Amendment Notice.

Condition	Summary of Licence Holder comment	DWER response
Location and receptors	Comment noting the Civeo camp is located in an industrial area and should not be considered a sensitive receptor	The City of Karratha's Town Planning Scheme lists the premises zoned for Urban Development. The Department considers accommodation villages to be sensitive receptors and as such, the Delegated Officer will list the Civeo premises as a sensitive receptor.
Location and receptors	Change Threatened ecological communities of Roebourne plains coastal grasslands and horseflat land system to Priority ecological communities	Noted; Threatened ecological communities changed to Priority ecological communities.
Risk assessment – Table 9	Request to amend risk assessment for consequence of "Moderate" changed to 'Slight' and likelihood changed from "Unlikely" to "Rare" for 'Seepage of treated wastewater from evaporation'. Pilbara Iron Company (Services) Pty Ltd (PICS) outline that treated wastewater discharged into the evaporation ponds is of high quality, exceeding the Australian and New Zealand Guidelines for Sewage systems. PICS also state that there are no beneficial uses of groundwater in the area.	<p>The Delegated Officer has reviewed the risk assessment notes that the discharge criteria for treated wastewater meets the Australian and New Zealand Guidelines for Sewage systems and also notes the groundwater quality underlying the premises. While treated wastewater may meet the above guidelines it is important to note that these only relate to treatment performance and have no bearing on likely impacts to underlying groundwater.</p> <p>The Delegated Officer has however reconsidered the associated risk assessment and has amended the consequence of the risk from Moderate to Minor, noting that that onsite impacts would be low level and offsite impacts would be minimal. The overall risk rating still remains as Medium, based on the unknown seepage rate from the two evaporations ponds.</p>

Condition	Summary of Licence Holder comment	DWER response
Risk assessment – Table 9	Request to amend risk assessment consequence of “Overtopping or failure of plant containment vessels releasing potentially untreated wastewater” from “Major” to “Minor” based on the distances to Priority Ecological Communities (PEC) in the vicinity to the WWTP.	The Delegated Officer has reviewed the risk assessment notes the pathway and receptor distance to the PEC and the receiving environment and has amended the consequence of the risk event to “Moderate”.
Decision	Request to include operational conditions in the current Amendment Notice, as opposed to an additional Amendment Notice being issued for operational conditions upon completion of commissioning.	<p>The Delegated Officer has agreed to place operational conditions in this Amendment Notice as requested by PICS.</p> <p>Condition 22 has been placed on the Licence for PICS to monitor the WWTP performance on a quarterly basis, consistent with that proposed in the amendment application.</p>
Amendment Decision	Request to correct licence expiry date amended in April 2016 in this Amendment Notice.	<p>The Department amended most active licences in April 2016, via Notice of Amendment, based on the Guidance Statement: <i>Licence Duration</i>.</p> <p>No further changes are required as part of this Amendment notice.</p>
Condition 5	Request to remove the requirement of maintaining integrity of containment infrastructure.	<p>The Delegated Officer has removed the requirement to maintain the containment infrastructure in accordance with DWER Guidance Statement ‘<i>Setting Conditions</i>’</p> <p>No changes are therefore proposed for Condition 5.</p>
Condition 18	Request to move seepage rate testing as the test is not suited to high evaporation and wind environments.	Correspondence was received from PICS on 14 June 2018 outlining their intention to retain the condition on the licence. As such, The Delegated Officer will not remove the condition.