Government of Western Australia
Department of Water and Environmental Regulation

Works Approval

Works approval number	W6722/2022/1
Works approval holder	Roy Hill Iron Ore Pty Ltd
ACN	123 722 038
Registered business address	4/28-42 Ventnor Avenue WEST PERTH WA 6005
DWER file number	DER2020/000351
Duration	19/01/2023 to 18/01/2028
Date of issue	19/01/2023
Premises details	Roy Hill Mine Legal description Part of M46/518 and M46/519 NEWMAN WA 6753 As defined by the coordinates in Schedule 1 of the works approval As defined by the premises map attached to the issued works approval

Prescribed premises category description **(Schedule 1, *Environmental Protection Regulations 1987*)**	**Assessed design capacity**
Category 54: Sewage Facility: Premises – (a) On which sewage is treated (excluding septic tanks); or (b) From which treated sewage is discharged onto land or into waters	610 m^3/day

This works approval is granted to the works approval holder, subject to the attached conditions, on 19 January 2023, by:

Steve Checker
Digitally signed by Steve Checker
Date: 2023.01.19 16:29:42 +08'00'

Steve Checker
MANAGER WASTE INDUSTRIES
REGULATORY SERVICES

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

Works approval history

Date	Reference number	Summary of changes
19/01/2023	W6722/2022/1	Works approval granted.

Interpretation

In this works approval:

(a) the words 'including', 'includes' and 'include' in conditions mean "including but not limited to", and similar, as appropriate;

(b) where any word or phrase is given a defined meaning, any other part of speech or other grammatical form of that word or phrase has a corresponding meaning;

(c) where tables are used in a condition, each row in a table constitutes a separate condition;

(d) any reference to an Australian or other standard, guideline, or code of practice in this works approval:

(i) if dated, refers to that particular version; and

(ii) if not dated, refers to the latest version and therefore may be subject to change over time;

(e) unless specified otherwise, any reference to a section of an Act refers to that section of the EP Act; and

(f) unless specified otherwise, all definitions are in accordance with the EP Act.

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

Works approval conditions

The works approval holder must ensure that the following conditions are complied with:

Construction phase

Infrastructure and equipment

1. The works approval holder must:

(a) construct and/or install the infrastructure and/or equipment;

(b) in accordance with the corresponding design and construction / installation requirements; and

(c) at the corresponding infrastructure location;

as set out in Table 1.

Table 1: Design and construction / installation requirements

	Infrastructure	Design and construction / installation requirements	Infrastructure location
1.	Sequence Batch Reactor (SBR) Wastewater Treatment Plant	SBR Wastewater Treatment System must be designed and installed to meet the following specifications: a) Comprising of the following equipment items: (i) 2 x 2.5 mm bar inlet screens; (ii) 2 x 50 m^3 balance tanks; (iii) Balance pumps; (iv) Aerators; (v) 1 x 49 m^3 SBR Tanks; (vi) 2 x Decant pumps; (vii) 2 x sludge pumps; (viii) 2 x 11 m^3 irrigation tank; (ix) 50 m^3 sludge tank; (x) 2 x irrigation pump (xi) 2 x reticulation pump; and (xii) 2 x chemical dosing systems including: • 20L Poly Aluminium Chloride (PAC) (20%); • 20L Sucrose; and • 20L Sodium hypochlorite (12.5%)	Within the premises boundary indicated in Figure 1, Schedule 1

	Infrastructure	Design and construction / installation requirements	Infrastructure location
		(b) All above ground infrastructure located on an impervious, bunded hardstand; (c) Be able to receive and treat 100 m^3 of wastewater per day from accommodation camp; (d) Able to treat sewage to the following output standards: (i) 5-day biochemical oxygen demand (BOD5) of <20 mg/L (ii) pH 6.5 - 8.5 (iii) Total suspended solids (TSS) <30 mg/L (iv) Total nitrogen (TN) <30 mg/L (v) Total phosphorus (TP) <8 mg/L (vi) E.coli <1000 cfu/100 mL (vii) Residual free chlorine 0.2 - 2.0 mg/L (e) Have a sealed connection point for pumping-out sludge for offsite disposal to a licensed waste facility; (f) Flow metres to be installed to record the influent/effluent volumes that are received/sent from the WWTP. Flow metres to be located on the output line after the WWTP; (g) Incorporate an alarm system of warning beacons, as well as audible and visual pump fault alarms, which will activate in the event of: • Pump faults • High tank levels • Tank overflows (h) Allow for manual operation if necessary (i) Ensure any dust generated through construction activities is managed through the application of water for dust suppression.	
2.	Sprayfield	Irrigation sprayfield to meet the following specifications: (a) Expand existing discharge sprayfield from 16 hectares (ha) to 19.3 ha,	Within the premises boundary indicated in

	Infrastructure	Design and construction / installation requirements	Infrastructure location
		including a 5 m perimeter spray drift buffer; (b) Ensure no ponding or pooling of effluent occurs; (c) Ensure that the discharge of effluent only occurs over the designated irrigation sprayfield; (d) Fenced with a lockable access gate; and (e) Warning signage to be installed on all sides of fencing advising the area is used for the disposal of treated wastewater.	Figure 1, Schedule 1
3.	All infrastructure and equipment	(a) All sewage storage and treatment tanks, vessels, pipework, fittings, and joints are to be constructed of impervious material and free from leaks and/or defects; (b) All sewage storage and treatment tanks, vessels, pipework, fittings, and joins must be designed and constructed to ensure that stormwater does not enter the sewage treatment system and treated wastewater storage infrastructure; (c) All pipework, fittings and pumps must be hydraulically tested to the required pressure and visually inspected for any defects to ensure infrastructure is fit for purpose prior to use; (d) All chemicals to be stored separately within an above ground vessel/s that is contained within bunds of a capacity of 110% of the total vessel/s contents; and (e) Chemicals to be stored in accordance with Australian Standards AS1940-2004, AS3780-2008 and/or AS/NZS 3833-2007 dependent on the type of chemical to be stored	Within the premises boundary indicated in Figure 1, Schedule 1

2. The works approval holder must ensure that, during construction of the works listed in Table 1:

(a) All reasonable and practicable measures are taken to ensure that no windblown waste escapes from the premises; and

(b) Any windblown waste is collected on at least a weekly basis and returned to the premises or otherwise appropriately contained.

3. The works approval holder must take all reasonable and practicable measures to prevent stormwater run-off becoming contaminated by the activities and operations undertaken at the premises.

4. The works approval holder must manage dust generation during construction of the works listed in Table 1 at the premises by:

(a) Wetting down unsealed roads and exposed areas with a water truck; and

(b) Ceasing dust-generating activities during strong wind conditions.

5. The works approval holder must immediately recover, or remove and dispose of, spills or environmentally hazardous materials including fuel, oil, or other hydrocarbons, whether inside or outside an engineered containment system.

6. The works approval holder shall ensure that all material used for the recovery, removal, and/or disposal of environmentally hazardous materials is stored in an impermeable container prior to disposal at an appropriately authorised facility.

Compliance reporting

7. The works approval holder must within 30 calendar days of an item of infrastructure or equipment required by condition 1 being constructed and/or installed:

(a) undertake an audit of their compliance with the requirements of condition 1; and

(b) prepare and submit to the CEO an Environmental Compliance Report on that compliance.

8. The Environmental Compliance Report required by condition 7, must include as a minimum the following:

(a) certification by a suitably qualified engineer that the items of infrastructure or component(s) thereof, as specified in condition 1, have been constructed in accordance with the relevant requirements specified in condition 1;

(b) as constructed plans and a detailed site plan for each item of infrastructure or component of infrastructure specified in condition 1; and

(c) be signed by a person authorised to represent the works approval holder and contains the printed name and position of that person.

Environmental commissioning phase

Environmental commissioning requirements and emission limits

9. The works approval holder may only commence environmental commissioning of an item of infrastructure listed in condition 10 once an Environmental Compliance Report has been submitted for that item of infrastructure in accordance with condition 7 of this works approval.

10. Any environmental commissioning activities undertaken for an item of infrastructure specified in Table 2 may only be carried out:

(a) In accordance with the corresponding commissioning requirements; and

(b) For the corresponding authorised commissioning duration as set out in Table 2

Table 2: Environmental commissioning requirements

Infrastructure	Commissioning requirements	Authorised commissioning duration
WWTP and pipeline	(a) Not more than 100 m^3/day wastewater to be treated by the new WWTP; (b) Volumetric flow metres are maintained on the WWTP inlet and outlet to the irrigation sprayfield; (c) Sludge is contained within the sealed sludge tanks prior to removal by a licensed waste carrier for disposal to a licensed disposal facility; (d) Screenings are contained within a sealed bin prior to removal for disposal to a licensed disposal facility; (e) Spills of wastewater or chemicals outside of a vessel/container are cleaned up immediately	A period not exceeding 60 calendar days in aggregate
Irrigation sprayfield	(a) Not more than 610 m^3/day effluent to be applied to the designated spray irrigation area; (b) Irrigation via impact sprinklers spaced for even distribution; (c) Irrigation to be managed to prevent ponding and pooling of effluent on the ground surface of the irrigation sprayfield; (d) No effluent is permitted to run off or discharge beyond the irrigation sprayfield.	

11. During environmental commissioning, the works approval holder must ensure that the emission(s) specified in Table 3, are discharged only from the corresponding discharge point(s) and only at the corresponding discharge point location(s).

Table 3: Authorised discharge points during commissioning

Emission	Discharge point	Discharge point location
Treated wastewater	Sprinklers within the irrigation sprayfield	Irrigation sprayfield as shown in Schedule 1

Monitoring during environmental commissioning

12. The works approval holder must monitor emissions during environmental commissioning in accordance with Table 4.

Table 4: Emissions and discharge monitoring during environmental commissioning

Discharge point	Monitoring location	Parameter	Frequency	Averaging period	Unit
Irrigation sprayfield	WWTP outlet	*E.coli*	Weekly	Spot sample	Cfu/100ml
		BOD_5			mg/l
		Total suspended solids			
		Total nitrogen			
		Total phosphorus			
		pH[1]	Daily or continuous	N/A	pH units
		Residual chlorine[1]			mg/l
		Cumulative flow volume	Continuous		m^3

Note 1: in-field non-NATA accredited analysis is permitted

13. For the monitoring activity required by condition 12, the works approval holder must:

(a) Record the results;

(b) Handle and preserve all water samples collected during monitoring of the WWTP in accordance with AS/NZS 566.7.1-1998 *Water Quality – Sampling*; and

(c) Have analyses conducted by a laboratory with current National Association of Testing Authorities (NATA) accreditation for the parameters specified.

Environmental commissioning report

14. The works approval holder must submit to the CEO an Environmental Commissioning Report within 30 calendar days of the completion date of environmental commissioning for each item of infrastructure specified in Table 1.

15. The works approval holder must ensure the Environmental Commissioning Report required by condition 14 of this works approval includes the following:

(a) A summary of the environmental commissioning activities undertaken, including date(s) for commencement of commissioning, timeframes, and amount of wastewater produced.

(b) A summary of treated wastewater monitoring results recorded in accordance with condition 12;

(c) Copies of laboratory reports for treated wastewater monitoring results recorded in accordance with condition 12;

(d) A summary of the environmental performance of each item of infrastructure or equipment as installed, which at a minimum includes:

(i) A comparison of the treated wastewater monitoring results against discharge limits in condition 20; and

(ii) Assessment of the irrigation sprayfield performance against operational requirements of condition 10.

(e) A review of the works approval holder's performance and compliance against the conditions of the works approval; and

(f) Where they have not been met, measures proposed to meet the manufacturers' design specifications and the conditions of this works approval, together with the timeframes for implementing the proposed measures.

Time limited operations phase

Commencement and duration

16. The works approval holder may only commence time limited operations for an item of infrastructure in condition 17 where the Environmental Commissioning Report for that item of infrastructure as required by condition 14 has been submitted by the works approval holder.

17. The works approval holder may conduct time limited operations for an item of infrastructure specified in condition 18:

(a) For a period not exceeding 180 calendar days from the day the works approval holder meets the requirements of condition 16 for that item of infrastructure; or

(b) Until such time as a licence for that item of infrastructure is granted in accordance with Part V of the *Environmental Protection Act 1986*, if one is granted before the end of the period specified in condition 17(a)

Time limited operations requirements and emission limits

18. During time limited operations, the works approval holder must ensure that the premises infrastructure and equipment listed in and located at the corresponding infrastructure locations maintained and operated in accordance with the corresponding operational requirements set out in Table 5.

Table 5: Infrastructure and equipment requirements during time limited operations

Site infrastructure and equipment	Operational requirements	Infrastructure locations
Irrigation sprayfield	a) Not more than 610 m^3 per day of treated wastewater to be applied to the designated irrigation sprayfield area b) Irrigation via low drift fan-spray nozzles spaced for even distribution	As shown in Schedule 1, Figure 2: Premises layout

	c) Irrigation to be managed to prevent ponding and pooling d) No treated wastewater is permitted to runoff or discharge beyond the irrigation sprayfield	
WWTP and pipeline	a) Not more than 100 m^3/day wastewater to be treated by the new WWTP b) Volumetric flow metres are maintained on the WWTP inlet and outlet to the irrigation sprayfield c) Sludge is contained within sealed sludge tanks prior to removal by a licensed waste carrier for disposal to a licensed disposal facility d) Screenings are contained within a sealed bin prior to removal for disposal to a licensed disposal facility e) Spills of wastewater, reverse osmosis brine or chemicals outside of a vessel/container to be cleaned up immediately	As shown in Schedule 1, Figure 2: Premises layout
Chemical storage	a) All chemicals to be stored separately within an above ground vessel/s that is contained within bunds of a capacity of 110% of the total vessel contents.	As shown in Schedule 1, Figure 2: Premises layout

19. During time limited operation, the works approval holder must ensure that the emission specified in Table 6 is discharged only from the corresponding discharge points and only at the corresponding discharge location.

Table 6: Authorised discharge points during time limited operations

Emission	Discharge point	Discharge point location
Treated wastewater	Sprinklers within the irrigation sprayfield	Irrigation sprayfield as shown in Schedule 1, Figure 2: Premises layout

Monitoring during time limited operations

20. During time limited operations, the works approval holder must compare the emissions from the discharge point listed in Table 7 with the corresponding level(s) when monitored in accordance with condition 21.

Table 7: Emission and discharge levels during time limited operations

Discharge point	Parameter	Concentration level

Irrigation sprayfield	BOD_5	<20 mg/L
	Total suspended solids	<30 mg/L
	Total nitrogen	<30 mg/L
	Total phosphorus	<8 mg/L
	Escherichia coli	<1,000 cfu/100 ml
	Total dissolved solids	<30mg/L
	Residual chlorine	0.2 - 2.0 mg/L
	pH	6.5 – 8.5

21. The works approval holder must monitor emissions during time limited operations in accordance with table 8.

Table 8: Emissions and discharge monitoring during time limited operations

Discharge point	Monitoring location	Parameter	Frequency	Averaging period	Unit
Irrigation sprayfield	WWTP outlet	*E.coli*	Weekly	Spot sample	Cfu/100ml
		BOD_5			mg/l
		Total suspended solids			
		Total nitrogen			
		Total phosphorus			
		pH[1]	Daily or continuous	N/A	pH units
		Residual chlorine[1]			mg/l
		Cumulative flow volume discharged to the irrigation sprayfield[1]	Continuous		m^3

Note 1: In-field non-NATA accredited analysis is permitted

22. For the monitoring activity required by condition 21, the works approval holder must:

(a) Record the results;

(b) Handle and preserve all water samples during the monitoring of the WWTP in accordance with Australian Standard 5667.1:1998: *Water Quality – Sampling*; and

(c) Have analysis conducted by a laboratory with current National Association of Testing (NATA) accreditation for the parameters specified.

Compliance reporting

23. The works approval holder must submit to the CEO a report on the time limited operations within 30 calendar days of the completion date of time limited operations or 30 calendar days before the expiration date of the works approval, whichever is the sooner

24. The works approval holder must ensure that the report required by condition 23 includes the following:

(a) A summary of the time limited operation, including date(s) for commencement of time limited operation, timeframes and amount of wastewater processed;

(b) A summary of monitoring parameter results obtained during the time limited operations under condition 21;

(c) Copies of laboratory reports for blended effluent monitoring results recorded in accordance with condition 21;

(d) A summary of the environmental performance of each item of infrastructure or equipment as installed, which at minimum includes:

(i) A comparison of the treated wastewater monitoring results against discharge parameters specified in condition 20;
(ii) Assessment of the irrigation sprayfield performance against operational requirements in condition 21.

(e) A review of performance and compliance against the conditions of the works approval and the Environmental Commissioning Report; and

(f) Where the specifications and the conditions of the works approval have not been met, what measures will the works approval holder take to meet them, and what timeframes will be required to implement those measures.

Records and reporting (general)

25. The works approval holder must record the following information in relation to complaints received by the works approval holder (whether received directly from a complainant or forwarded to them by the Department or another party) about any alleged emissions from the premises:

(a) the name and contact details of the complainant, (if provided);

(b) the time and date of the complaint;

(c) the complete details of the complaint and any other concerns or other issues raised; and

(d) the complete details and dates of any action taken by the works approval holder to investigate or respond to any complaint.

26. The works approval holder must maintain accurate and auditable books including the following records, information, reports, and data required by this works approval:

(a) the works conducted in accordance with condition 1;

(b) any maintenance of infrastructure that is performed in the course of complying with condition 10 and 18;

(c) monitoring programmes undertaken in accordance with condition(s) 12 and 21; and

(d) complaints received under condition 25.

27. The books specified under condition 26 must:

(a) be legible;

(b) if amended, be amended in such a way that the original version(s) and any subsequent amendments remain legible and are capable of retrieval;

(c) be retained by the works approval holder for the duration of the works approval; and

(d) be available to be produced to an inspector or the CEO as required.

Definitions

In this works approval, the terms in Table 1 have the meanings defined.

Table 1: Definitions

Term	Definition
books	has the same meaning given to that term under the EP Act.
CEO	means Chief Executive Officer. CEO for the purposes of notification means: Director General Department administering the *Environmental Protection Act 1986* Locked Bag 10 Joondalup DC WA 6919 info@dwer.wa.gov.au
Department	means the department established under section 35 of the *Public Sector Management Act 1994* and designated as responsible for the administration of Part V Division 3 of the EP Act.
discharge	has the same meaning given to that term under the EP Act.
emission	has the same meaning given to that term under the EP Act.
environmental commissioning	means the sequence of activities to be undertaken to test equipment integrity and operation, or to determine the environmental performance, of equipment and infrastructure to establish or test a steady state operation and confirm design specifications.
Environmental Commissioning Report	means a report on any commissioning activities that have taken place and a demonstration that they have concluded, with focus on emissions and discharges, waste containment, and other environmental factors.
Environmental Compliance Report	means a report to satisfy the CEO that the conditioned infrastructure and/or equipment has been constructed and/or installed in accordance with the works approval.
EP Act	*Environmental Protection Act 1986* (WA).
EP Regulations	*Environmental Protection Regulations 1987* (WA).
premises	the premises to which this licence applies, as specified at the front of this licence and as shown on the premises map in Schedule 1 to this works approval.
prescribed premises	has the same meaning given to that term under the EP Act.
time limited	refers to the operation of the infrastructure and equipment identified under this works approval that is authorised for that

Term	Definition
operations	purpose, subject to the relevant conditions.
waste	has the same meaning given to that term under the EP Act.
works approval	refers to this document, which evidences the grant of the works approval by the CEO under section 54 of the EP Act, subject to the conditions.
works approval holder	refers to the occupier of the premises being the person to whom this works approval has been granted, as specified at the front of this works approval.

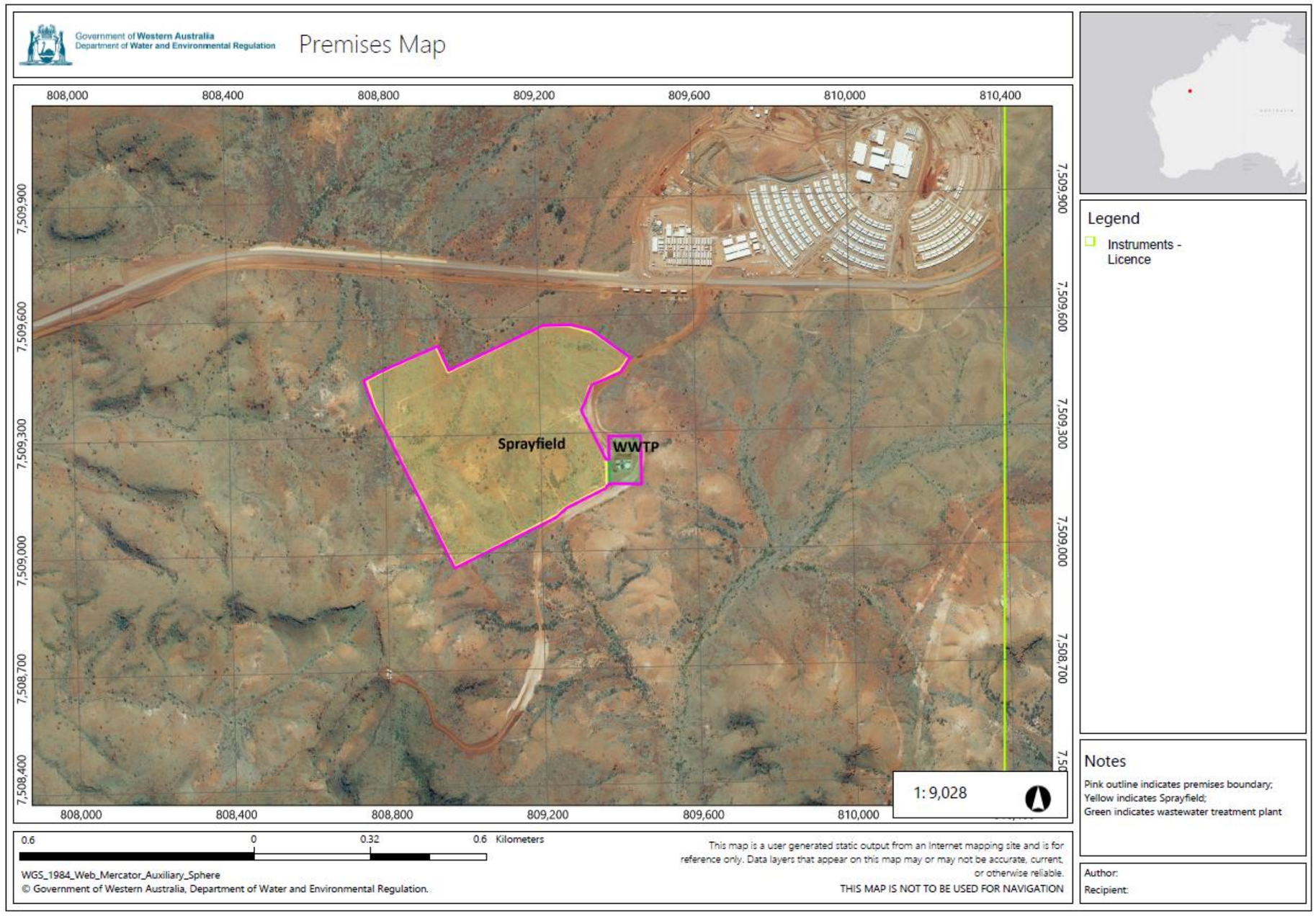
END OF CONDITIONS

Schedule 1: Maps

Premises map

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

Figure 1: Map of the boundary of the prescribed premises



Schedule 2: Premises boundary

The corners of the premises boundary are the coordinates listed in Table 2.

Table 2: Premises boundary coordinates (GDA2020)

	Latitude	Longitude	GDA2020
1.	-22.49597434	120.0067399	Zone 50
2.	-22.49648934	120.0056849	Zone 50
3.	-22.49663034	120.0055219	Zone 50
4.	-22.49748134	120.0037559	Zone 50
5.	-22.49784134	120.0029509	Zone 50
6.	-22.49709234	120.0025329	Zone 50
7.	-22.49672134	120.0023259	Zone 50
8.	-22.49473834	120.0012319	Zone 50
9.	-22.49434834	120.0010439	Zone 50
10.	-22.49427434	120.0010089	Zone 50
11.	-22.49412734	120.0009349	Zone 50
12.	-22.49371634	120.0008019	Zone 50
13.	-22.49355234	120.0007459	Zone 50
14.	-22.49338834	120.0010669	Zone 50
15.	-22.49323234	120.0014199	Zone 50
16.	-22.49315034	120.0016139	Zone 50
17.	-22.49277734	120.0024729	Zone 50
18.	-22.49333734	120.0027859	Zone 50
19.	-22.49233934	120.0050019	Zone 50
20.	-22.49230134	120.0051339	Zone 50
21.	-22.49228934	120.0057749	Zone 50
22.	-22.49244234	120.0063919	Zone 50

23.	-22.49299934	120.0072989	Zone 50
24.	-22.49327534	120.0070879	Zone 50
25.	-22.49368334	120.0063149	Zone 50
26.	-22.49392034	120.0062319	Zone 50
27.	-22.49424334	120.0061079	Zone 50
28.	-22.49536234	120.0067269	Zone 50
29.	-22.49597434	120.0067399	Zone 50