



# Works Approval

**Works approval number** W6435/2020/3

**Works approval holder** Greatland Pty Ltd  
**ACN** 108 498 997  
**Registered business address** Level 3, 502 Hay Street  
SUBIACO WA 6008  
**DWER file number** DER2020/000368

**Duration** 17/11/2020 to 16/11/2025

**Date of issue** 17/11/2020

**Premises details** Havieron Project  
EAST PILBARA, WA, 6760  
Legal description -  
On Mining Tenement M45/1287  
As defined by the coordinates in Schedule 2

Prescribed premises category description (Schedule 1, <i>Environmental Protection Regulations 1987</i> )	Assessed production / design capacity
Category 85: 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	75 m <sup>3</sup> per day

This works approval is granted to the works approval holder, subject to the attached conditions, on 5 March 2025, by:

Abbie Crawford  
Manager, Waste Industries

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

## Works approval history

Date	Reference number	Summary of changes
17/11/2020	W6435/2020/1	Works approval granted.
23/07/2021	W6435/2020/2	Works Approval amended to extend the Environmental Commissioning Phase
05/03/2025	W6435/2020/3	Licence transferred to Greatland Pty Ltd

## 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; unless specified otherwise, any reference to a section of an Act refers to that section of the EP Act; and
- (e) 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;
  - (b) in accordance with the corresponding design and construction / installation requirements;
  - (c) at the corresponding infrastructure location; and
 as set out in Table 1: Design and construction / installation requirements Table 1

**Table 1: Design and construction / installation requirements**

	Infrastructure	Design and construction / installation requirements	Infrastructure location
1.	Sewage Pump Station	<ul style="list-style-type: none"> <li>Prefabricated poly sewage pump station;</li> <li>Class B gatic covers;</li> <li>Duty/standby Grundfos macerator sewage pumps or equivalent;</li> <li>Visual and audible pump failure alarm;</li> </ul> <p>All vessels, valves, sumps, pumps, pipes and fittings to be impervious and free of leaks and defects.</p>	Sewer Facility
2.	Sequencing Batch Reactor (SBR)	<ul style="list-style-type: none"> <li>Duty 2.5mm inlet bar screen;</li> <li>Two External 50m<sup>3</sup> poly balance tank(s);</li> <li>Grundfos duty balance pump or equivalent;</li> <li>SBR Tank with heavy duty submersible aerators and floating decant weir. Cyclic operation of the SBR tank: 4 x 6 hr cycles per day: 0.5hr feed/1.25hr anoxic period with mixing, 3.25hr aeration, 0.75hr settle and 0.75hr decant. SBR tank operating volume can be adjusted for lower inflows. Process sequence times are adjustable based on influent/effluent concentrations;</li> <li>System to incorporate Grundfos chlorine, sodium hypochlorite, aluminium chloride and sucrose dosing systems or equivalent;</li> <li>Two 50m<sup>3</sup> PE sludge storage tanks;</li> <li>Two 11m<sup>3</sup> PE Irrigation tanks;</li> <li>Discharge flow meter;</li> <li>Control panel to include PLC and remote monitoring capabilities;</li> <li>System to incorporate Audible and visual alarm;</li> </ul> <p>All vessels, valves, sumps, pumps, pipes and fittings to be impervious and free of leaks and defects.</p>	Sewer Facility
3.	Irrigation Field	<ul style="list-style-type: none"> <li>To evenly (on basis of annual average) distribute effluent over 4 ha irrigation area, within limitations of sprinkler system described below;</li> <li>To incorporate above ground hammer type sprinklers. Capable of deliver a radius of 30 m each with 5mm nozzle reducing any element of clogging;</li> </ul>	Irrigation Field

	Infrastructure	Design and construction / installation requirements	Infrastructure location
		<ul style="list-style-type: none"> <li>• 100 m of rising main from WWTP irrigation pump to dedicated spray irrigation area;</li> <li>• Irrigation area to be fenced with 1200 mm high 2 strand steel wire fencing or equivalent;</li> <li>• 1 x vehicle access gates to spray area; and</li> <li>• Steel corner posts strainers and intermediate solid mounted posts. <ul style="list-style-type: none"> <li>• Safety signage every 50m of fencing</li> <li>• Individual branch line flush valves</li> <li>• Automated control from Tristar WWTP irrigation pump</li> </ul> </li> </ul> <p>Signage and tagging</p>	

### Compliance reporting

2. The works approval holder must within 60 calendar days of the 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.
3. The Environmental Compliance Report required by condition 2, must include as a minimum the following:
  - (a) certification by a suitably qualified and experienced 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

4. The works approval holder may only commence environmental commissioning of an item of infrastructure identified in condition 1 once the Environmental Compliance Report has been submitted for that item of infrastructure in accordance with condition 2 of this works approval.
5. Any environmental commissioning activities undertaken for an item of infrastructure listed in condition 1 may only be carried out:
  - (a) in accordance with the corresponding commissioning requirements; and
  - (b) for the corresponding authorised commissioning duration, as detailed in Table 2

**Table 2: Environmental commissioning requirements**

	Infrastructure	Commissioning requirements	Authorised commissioning duration
1.	Sewage pump station	Only irrigate treated wastewater from the WWTP to the designated irrigation field, as specified by Schedule 1, Figure 2	For a period not exceeding 180 calendar days in aggregate.
2.	Sequencing Batch Reactor (SBR)		
3.	Irrigation Field		

**Monitoring during environmental commissioning**

6. The works approval holder must monitor emissions during environmental commissioning in accordance with Table 3.
7. The works approval holder must record the results of all monitoring activity required by condition 6 and submit the results as an Environmental Commissioning Report to the CEO by no later than 30 days after the end of the commissioning period during which irrigation to land has occurred.

**Table 3: Emissions monitoring during environmental commissioning**

Discharge point	Monitoring location	Parameter	Frequency	Averaging period	Unit	Method
Irrigation field – as depicted in Schedule 1, Figure 2 – premises layout map	Pipeline leading to the Sprayfield	Flow volume to sprayfield	Continuous	24 hours	kL/day	-
		Biochemical Oxygen Demand (BOD)	Fortnightly	Spot sample	mg/L	AS/NZS 5667.10 - 1998  Measurement of pH with a serviced and calibrated field water quality meter is permitted.  Measurement of residual free chlorine with field based equipment is permitted.
		Total Suspended Solids (TSS)				
		Total Nitrogen (TN)				
		Total Phosphorus (TP)				
		<i>E.coli</i>			cfu/100ml	
		Total dissolved solids (TDS)			mg/L	
		Residual Free Chlorine	Daily		N/A	For all other parameters samples must be submitted to and tested by a laboratory with NATA accreditation.
		pH			mg/L	

## Time limited operations phase

### Commencement and duration

8. The works approval holder may only commence time limited operations for an item of infrastructure identified in condition 1:
  - (a) Where an item of infrastructure is not authorised to undertake environmental commissioning, the Environmental Compliance Report as required by condition 2 has been submitted by the works approval holder for that item of infrastructure; and
  - (b) Where an item of infrastructure is authorised to undertake environmental commissioning under condition 4, the Environmental Commissioning Report for that item of infrastructure as required by condition 7 has been submitted by the works approval holder.
9. The works approval holder may conduct time limited operations for an item of infrastructure specified in condition 1:
  - (a) For a period not exceeding 180 calendar days from the day the works approval holder meets the requirements of condition 8 for that item of infrastructure.

### Monitoring during time limited operations

10. The works approval holder must monitor treated wastewater emissions during time limited operations in accordance with Table 4
11. The works approval holder must record the results of all monitoring activity required by condition 10. Within 30 days of the end of the time limited operations period, the works approval holder shall submit a report to the CEO detailing the monitoring records.

**Table 4: WWTP emissions monitoring during time limited operations**

Discharge point	Monitoring point	Parameter	Frequency	Averaging period	Unit	Method	
Irrigation field – as depicted in Schedule 1, Figure 2	Pipeline leading to the irrigation field	Flow volume to irrigation field	Continuous	24 hours	kL/day	-	
		BOD	Monthly	Spot Sample	Mg/L	AS/NZS 5667.10 – 1998  Measurement of pH with a serviced and calibrated field water quality meter is permitted.	
		TSS					
		TN					
		TP					
		<i>E.coli</i>	Daily		Cfu/100ml	Measurement of residual free chlorine with field based equipment is permitted.	
		Residual Free Chlorine			Mg/L		
		pH	Daily		N/A		

Discharge point	Monitoring point	Parameter	Frequency	Averaging period	Unit	Method
		TDS	Monthly		Mg/L	For all other parameters samples must be submitted to and tested by a laboratory with NATA accreditation.

## Records and reporting (general)

- 12.** 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.
- 13.** 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 1;
  - (c) monitoring programmes undertaken in accordance with conditions 6, 7, 10 and 11; and
  - (d) complaints received under condition 12.
- 14.** The books specified under condition 13 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 5 have the meanings defined.

**Table 5: Definitions**

Term	Definition
books	has the same meaning given to that term under the EP Act.
CEO	means Chief Executive Officer of the Department. “submit to / notify the CEO” (or similar), means either: Director General Department administering the Environmental Protection Act 1986 Locked Bag 10 Joondalup DC WA 6919 or: <a href="mailto:info@dwer.wa.gov.au">info@dwer.wa.gov.au</a>
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.
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	<i>Environmental Protection Act 1986 (WA)</i> .
EP Regulations	<i>Environmental Protection Regulations 1987 (WA)</i> .
premises	means the premises to which the works approval applies, as specified on the front of the works approval and in Schedule 2.
prescribed premises	has the same meaning given to that term under the EP Act.
time limited operations	refers to the operation of the infrastructure and equipment identified under this works approval that is authorised for that



Term	Definition
	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.

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**END OF CONDITIONS**

## Schedule 1: Maps

### Premises map

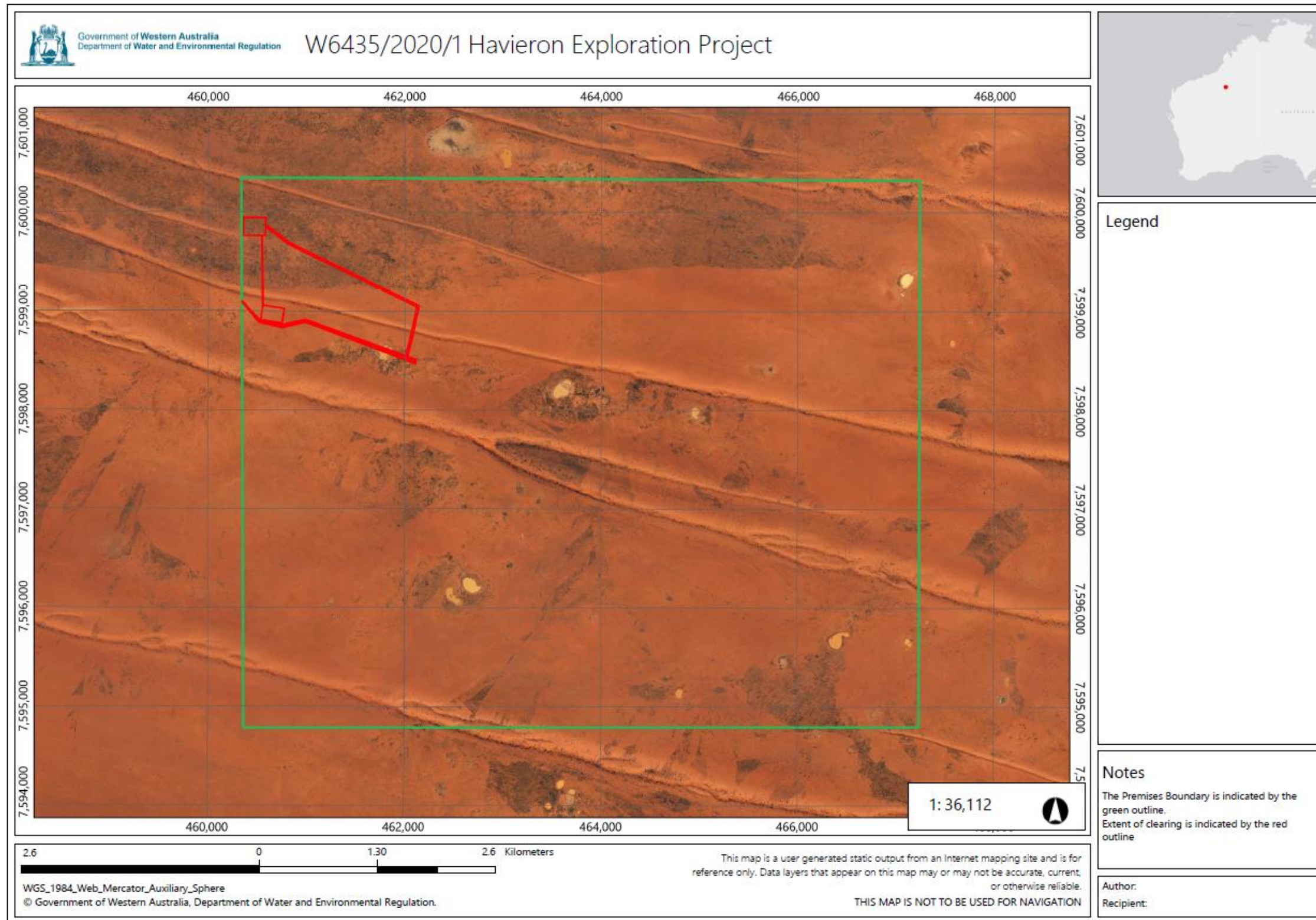


Figure 1: Map of the boundary of the prescribed premises



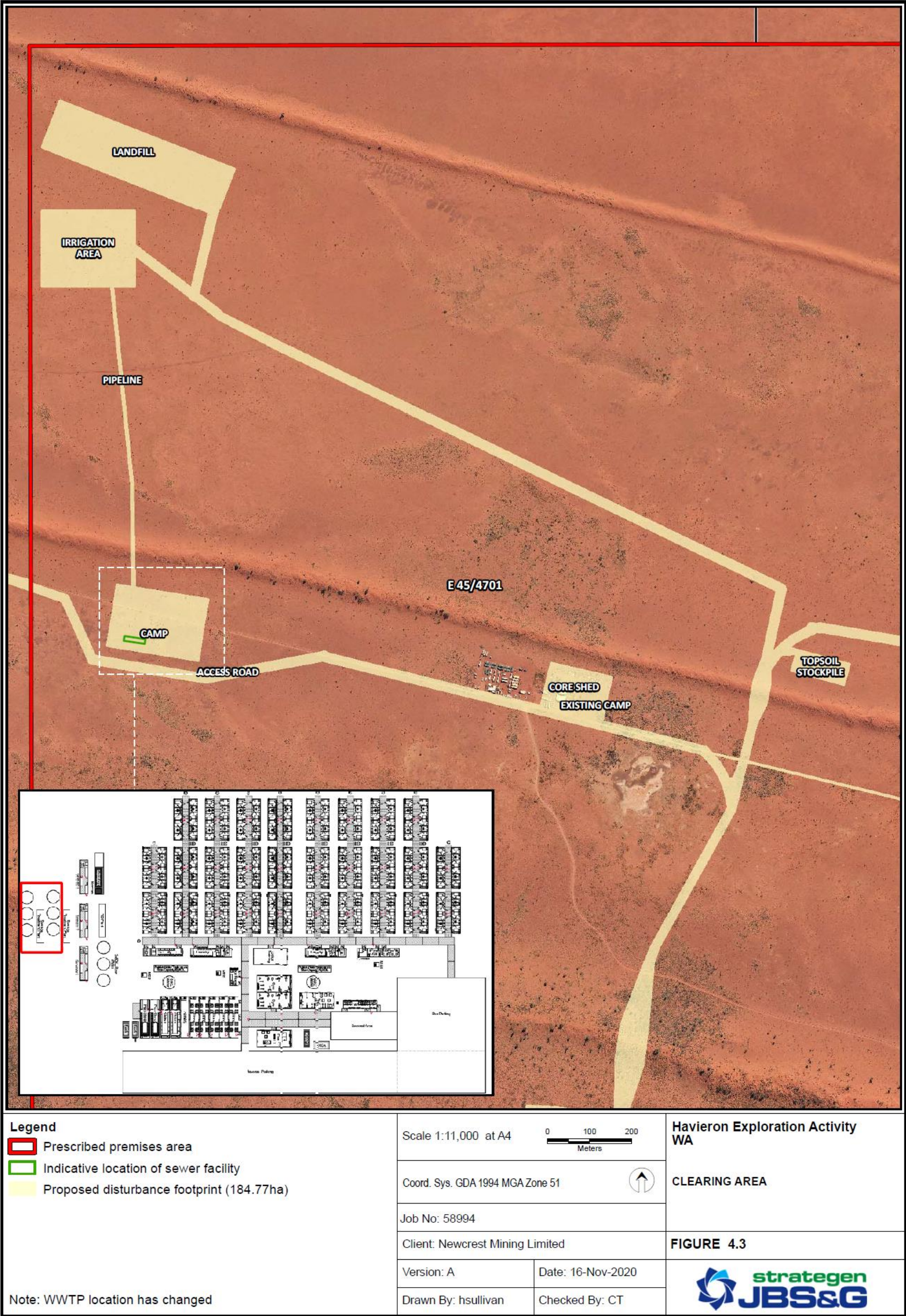


Figure 2: Premises layout indicating the extent of clearing activities



## Schedule 2: Premises boundary

The corners of the premises boundary are the coordinates listed in Table 6.

**Table 6: Premises boundary coordinates (GDA2020)**

	<b>Easting</b>	<b>Northing</b>	<b>Zone</b>
1.	60349 7600329	60349 7600329	51
2.	467245 7600345	467245 7600345	51
3.	467256 7594811	467256 7594811	51
4.	460363 7594795	460363 7594795	51