Government of Western Australia
Department of Water and Environmental Regulation

Amended Licence

Licence number	L7860/2003/5
Licence holder	Electricity Generation Retail Corporation T/A Synergy
ACN	58 673 830 106
Registered business address	Forrest Centre 219 St Georges Terrace PERTH WA 6000
DWER file number	2010/003076
Duration	15/06/2015 to 16/06/2030
Date of amendment	20/04/2022
Premises details	Cockburn No 1 Power Station Lot 22 Weston Street NAVAL BASE WA 6165 Legal description - Part of Lot 22 on Plan 72310 As defined by the map in Schedule 1

Prescribed premises category description (Schedule 1, Environmental Protection Regulations 1987)	Assessed design capacity
Category 52: Electric power generation: premises (other than premises within category 53 or an emergency or standby power generating plant) on which electrical power is generated using a fuel.	265 MW in aggregate using natural gas

This amended licence is granted to the licence holder, subject to the attached conditions, on 20 April 2022, by:

Daniel Hartnup

Digitally signed by Daniel Hartnup
Date: 2022.04.20 08:09:41 +08'00'

Daniel Hartnup
A/MANAGER, PROCESS INDUSTRIES
REGULATORY SERVICES
an officer delegated under section 20 of the *Environmental Protection Act 1986* (WA)

Licence history

Date	Reference	Summary of changes
15/06/2015	L7860/2003/5	New licence issued because of the expiry of L7860/2015/4
28/08/2015	L7860/2003/5	Licence holder-initiated amendment to allow installation Alstom EV burners to allow the gas turbine to operate at lower load under normal condition.
25/09/2015	L7860/2003/5	Licence holder-initiated amendment to allow increased NOx emissions during the commissioning of the new burners.
29/04/2016	L7860/2003/5	Licence amendment to extend the expiry date to 16 June 2030.
09/09/2016	L7860/2003/5	Amendment Notice 1: licence holder-initiated licence amendment to remove references to the commissioning of new burners and redundant improvement conditions. Changing the reporting dates and definition of annual period.
06/01/2017	L7860/2003/5	Amendment Notice 2: licence holder-initiated amendment to change occupier and address details.
19/11/2018	L7860/2003/5	Amendment Notice 3: licence holder-initiated amendment to allow alternative sampling port for stack monitoring.
17/06/2019	L7860/2003/5	Amendment Notice 4: licence holder-initiated licence amendment to change wording in point source emissions to air for operation conditions.
14/03/2022	L7860/2003/5	Licence amendment to change residual chlorine monitoring requirements.
20/04/2022	L7860/2003/5	Administrative amendment to correct unintentional errors.

Interpretation

In this licence:

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

Licence conditions

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

Infrastructure and equipment

1. The licence holder must ensure the site infrastructure and equipment listed in Table 1 and located at the corresponding infrastructure location is maintained and operated in accordance with the corresponding operational requirement set out in that table.

Table 1: Infrastructure and equipment requirements

Site infrastructure and equipment	Infrastructure and operational requirements	Infrastructure location
Natural gas-fired turbine (GT) and 185 MW generator unit	• Design capacity of generator unit must not exceed 185 MWe; • Must be fitted with dry low NOx burners; • Exhaust gases must be directed to the HRSG;	As shown in Schedule 1 Figure 1 as GT
Heat recovery steam generator (HRSG)	• Converts waste heat from the GT to steam energy;	As shown in Schedule 1 Figure 1 as HRSG
Steam turbine and 80 MW generator unit	• Design capacity of generator unit must not exceed 80 MWe; • Exhaust gases must be directed through a stack at least 60 m above as-built ground level;	As shown in Schedule 1 Figure 1 as ST
Cooling water system	• Comprises a system that uses seawater as cooling water to condense low energy steam to water, with water returned to the HRSG;	As shown in Schedule 1 Figure 1 as Cooling water canal
Sodium hypochlorite generating plant including: • Tank A with a capacity of 18 m^3 • Tank B with a capacity of 25 m^3.	• Plant that produces sodium hypochlorite from seawater using electrolysis; • Sodium hypochlorite produced must be stored within tank A and/or B. • Sodium hypochlorite must only be used to dose cooling water to prevent marine organism growth in the condenser tubes.	As shown in Schedule 1 Figure 1 as Hypochlorite plant

Emissions

Authorised emission points to air

2. The licence holder must ensure that where waste is emitted to air from the emission points specified in Table 2 and identified on the map of emission points in Schedule 1, it is done so in accordance with the conditions of this licence.

Table 2: Authorised discharge points

Emission point ref	Emission point description	Emission point height (m)	Source, including any abatement
A1 – as shown in Schedule 1, Figure 1	Power Station stack (Stack 1)	60	Gas turbine/Heat recovery steam generator (GT/HRSG)

Emissions to air – limits

3. The licence holder must not cause or allow point source emissions to air greater than the limits specified in Table 3.

Table 3: Emission to air limits

Emission point ref	Parameter	Operating condition	Limit	Averaging period
A1 As shown in Schedule 1 Figure 1	NOx	Gas turbine above switchover	70 mg/m^3	30 minutes
		Gas turbine below switchover	113 mg/m^3	
		Frequency control mode		

Note 1: All units are referenced to STP.
Note 2: Concentration units for A1 are referenced to 15% O_2. Correction for continuous monitoring should be made continuously.
Note 3: Limits are applicable to normal operating conditions.

Authorised discharge points to surface water

4. The licence holder must ensure that where waste is discharged to surface water from the discharge points specified in Table 4 and identified on the map of emission points in Schedule 1, it is done so in accordance with the conditions of this licence.

Table 4: Authorised discharge points to surface water

Discharge point ref	Discharge point description	Source
W1	Kwinana Power Station 'Stage C' cooling water outfall, discharge to Cockburn Sound	Cooling water

Discharges to surface water – limits

5. The licence holder must not cause or allow point source discharges to surface water greater than the limits specified in Table 5.

Table 5: Discharges to surface water limits

Discharge point ref	Monitoring point ref[1]	Parameter	Limit	Averaging period
W1	I1 (seawater intake)	Temperature variation between I1 & I2	9° Celsius for six consecutive averaging periods	Continuous (60-minute average)
	I2 (discharge point)			
	I2 (discharge point)	Total residual chlorine	0.5 ppm	

Note 1: Monitoring locations are depicted in Schedule 1: map of monitoring locations and site infrastructure.

Monitoring

General

6. The licence holder must ensure that:

(a) all water samples are collected and preserved in accordance with AS/NZS 5667.1;
(b) all surface water sampling is conducted in accordance with AS/NZS 5667.4, AS/NZS 5667.6 or AS/NZS 5667.9, as relevant;
(c) all wastewater sampling is conducted in accordance with AS/NZS 5667.10;
(d) all groundwater sampling is conducted in accordance with AS/NZS 5667.11; and
(e) all laboratory samples are submitted to and tested by a laboratory with current NATA accreditation for the parameters being measured.

7. The licence holder must ensure that six-monthly monitoring is undertaken at least 5 months apart.

8. The licence holder must record production or throughput data and any other process parameters relevant to any non-continuous or CEMS monitoring undertaken.

9. The licence holder must ensure that all monitoring equipment used on the premises to comply with conditions of this licence is calibrated in accordance with the manufacturer's specifications.

10. The licence holder must, where the requirements for calibration cannot be practicably met, or a discrepancy exists in the interpretation of the requirements, bring these issues to the attention of the CEO accompanied with a report comprising details of any modifications to the methods.

Air emissions monitoring

11. The licence holder must undertake the monitoring in Table 6 according to the specifications in that table.

Table 6: Monitoring of air emissions

Monitoring point ref	Parameter	Frequency	Averaging period	Unit	Method[4]
A1 As shown in Schedule 1 Figure 1	NOx	Six monthly	Stack test (minimum 30-minutes)	mg/m^3, g/s	USEPA Method 7E

Note 1: All units are referenced to STP dry.
Note 2: Monitoring shall be undertaken to reflect normal operating conditions and any limits or conditions on inputs or production.
Note 3: Concentration units for A1 are referenced to 15% O_2.
Note 4: Sampling must occur at the "NOx cross" sampling location.

12. The licence holder must ensure all non-continuous sampling and analysis undertaken pursuant to condition 11 is undertaken by a holder of NATA accreditation for the relevant methods of sampling and analysis.

Monitoring of discharges to surface water

13. The licence holder must undertake the monitoring in Table 7 according to the specifications in that table.

14. For any parameter in Table 7 requiring continuous monitoring, the licence holder must ensure the CEMS is available for at least 90% of operational time in a calendar month and 95% of the operational time in the preceding 12 months.

Table 7: Monitoring of discharges to surface water

Monitoring point ref	Parameter	Unit	Frequency	Averaging period
I2 As shown in Schedule 1 Figure 2	Total residual chlorine	ppm	Continuous for the duration of the discharge during, and for 60 minutes after the cessation of, sodium hypochlorite dosing[1]	Instantaneous
	Temperature	°Celsius	Continuous for the duration of the discharge[2].	

Note 1: Monitoring must be undertaken at intervals less than or equal to 3 minutes
Note 2: Monitoring must be undertaken at intervals less than or equal to 60 minutes.
Note 3: In-field, non-NATA accredited analysis permitted.

Ambient environmental quality monitoring

15. The licence holder must undertake the monitoring in Table 8 according to the specifications in that table.

Table 8: Monitoring of ambient groundwater quality

Monitoring point ref	Parameter	Unit	Frequency	Averaging period
MW1, MW2, MW3R As shown in Schedule 1 Figure 2	pH	No unit	Six monthly	Spot sample
	Colour			
	Total dissolved solids	mg/L		
	Total suspended solids			
	5-day BOD			
	Total nitrogen			
	Total phosphorus			

Process monitoring

16. The licence holder must undertake the monitoring in Table 9 according to the specifications in that table.

Table 9: Process monitoring

Input / output	Parameter	Unit	Averaging period	Frequency
I1 Stage C Cooling water inlet	Temperature	°C	Instantaneous	Continuous for the duration of the discharge[1]
I1 and I2 Stage C cooling water inlet and outlet	Temperature variation between inlet and outlet	°C	60 minutes	Continuous
Power output	Time operating below 145 MW (excluding start up and shutdown)	Hours	-	
Dosing of cooling water with sodium hypochlorite	Operation of sodium hypochlorite dosage system[2]	Binary (on/off)	-	

Note 1: Monitoring must be undertaken at intervals less than or equal to 60 seconds.
Note 2: If no data is available, sodium hypochlorite dosing must be assumed to be occurring.

Records and reporting

17. All information and records required by the licence must:

(a) be legible;
(b) if amended, be amended in such a way that the original and subsequent amendments remain legible and are capable of retrieval;
(c) except for records listed in condition 17(d), be retained for at least 6 years from the date the records were made or until the expiry of the licence or any subsequent licence; and
(d) for those following records, be retained until the expiry of the licence and any subsequent licence:
    (i) off-site environmental effects; or
    (ii) matters which affect the condition of the land or waters.

18. The licence holder must:

(a) undertake an audit of their compliance with the conditions of this licence during the preceding annual period; and
(b) prepare and submit to the CEO, by no later than 1 October in each year, an Annual Audit Compliance Report in the approved form.

19. The licence holder must implement a complaints management system that as a minimum, records the number and details of complaints received concerning the environmental impact of the activities undertaken at the premises and any action taken in response to the complaint.

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

(a) the calculation of fees payable in respect of this licence;
(b) the maintenance of infrastructure required to ensure that it is kept in good working order in accordance with condition 1;
(c) monitoring undertaken in accordance with conditions 11, 14 & 15; and 16, and
(d) complaints received under condition 19.

21. The licence holder must submit to the CEO, by no later than 1 October in each year, an annual environmental report containing the information listed in Table 10 for preceding annual period.

Table 10: Annual environmental report

Condition or table	Requirement
-	Summary of any failure of any pollution control equipment and any environmental incidents that have occurred during the annual period and any action take.
Table 6	Point source emissions to air monitoring results
Table 7	Residual chlorine monitoring results
	Annual total quantity of sodium hypochlorite used for seawater dosing
Table 8	Ambient groundwater monitoring results
Table 9	Summary of process monitoring
18	Compliance (AACR)
19	Complaint's summary

Definitions

In this licence, the terms in Table 11 have the meanings defined.

Table 11: Definitions

Term	Definition
above switchover	means the gas turbine premix burner group is in operation exclusively
Annual Audit Compliance Report (AACR)	means a report submitted in a format approved by the CEO (relevant guidelines and templates may be available on the Department's website)
annual period	a 12 month period commencing from 1 July to 30 June in the following year
AS 4323.1	means the Australian Standard AS4323.1 Stationary Source Emissions Method 1: Selection of sampling positions
AS/NZS 5667.1	means the Australian Standard AS/NZS 5667.1 Water Quality – Sampling – Guidance of the Design of sampling programs, sampling techniques and the preservation and handling of samples
AS/NZS 5667.9	means the Australian Standard AS/NZS 5667.9 *Water Quality – Sampling – Guidance on sampling from marine waters*
AS/NZS 5667.11	means the Australian Standard AS/NZS 5667.11 Water Quality – Sampling – Guidance on sampling of groundwaters
averaging period	means the time over which a limit is measured or a monitoring result is obtained
below switchover	means the gas turbine pilot burner group are in operation either exclusively or in conjunction with the premix burner group
books	has the same meaning given to that term under the EP Act
CEMS	means continuous emissions monitoring systems
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: info@dwer.wa.gov.au
Department	means the department established under section 35 of the *Public Sector Management Act 1994* (WA) and designated as responsible for the administration of the EP Act, which includes Part V Division 3
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
EP Act	*Environmental Protection Act 1986* (WA)
licence	refers to this document, which evidences the grant of a licence by the CEO under section 57 of the EP Act, subject to the specified conditions contained within
licence holder	refers to the occupier of the premises, being the person specified on the front of the licence as the person to whom this licence has been granted
magl	metres above ground level
MW	megawatts
MWe	means power output (electricity generated) in megawatts

Term	Definition
NATA	means the National Association of Testing Authorities, Australia
NATA accredited	means in relation to the analysis of a sample that the laboratory is NATA accredited for the specified analysis at the time of the analysis
normal operating conditions	means any operation of a particular process (including abatement equipment, excluding start-up, shutdown, and upset conditions, in relation to stack sampling or monitoring
NOx	means oxides of nitrogen, calculated as the sum of nitric oxide and nitrogen dioxide, and expressed as nitrogen dioxide
premises	refers to the premises to which this licence applies, as specified at the front of this licence and as shown on the premises map (Figure 1 and 2) in Schedule 1 to this licence
prescribed premises	has the same meaning given to that term under the EP Act
shut-down	means the period when plant or equipment is brought from normal operating conditions to inactivity
six monthly	means the 2 inclusive periods from 1 January to 30 June and 1July to 31 December in that year
spot sample	means a discrete sample representative at the time and place at which the sample is taken
stack test	means a discrete set of samples taken over a representative period at normal operating conditions
start-up	means the period when plant or equipment is brought from inactivity to normal operating conditions
STP dry	means standard temperature and pressure 0^0 Celsius and 101.325 kilopascals respectively), dry
USEPA	means United States (of America) Environmental Protection Agency
USEPA Method 7E	means the *Test Method 7E – Determination of Nitrogen Oxides Emissions from Stationary Sources (Instrument Analyser Procedure)*
USEPA PS 16	means *Performance Specification 16 – Predicative Emissions Monitoring Systems*

END OF CONDITIONS

Schedule 1: Maps

Premises map and map of emission points

The prescribed premises is shown in the map below. The red line depicts the premises boundary. The green dots depict emission points referred to in conditions of this licence.

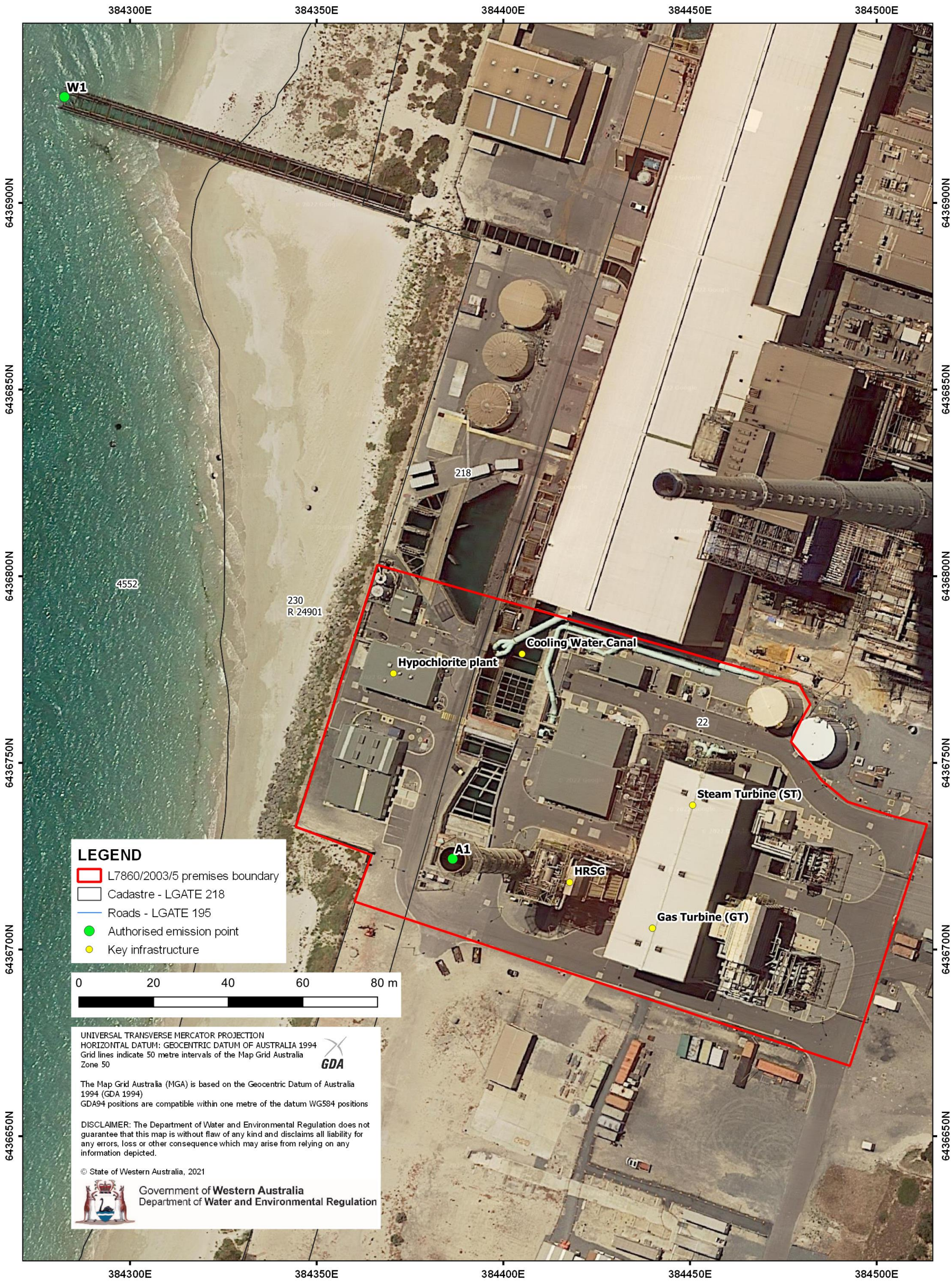

Figure 1: Premises boundary and key infrastructure.

Monitoring point map and site infrastructure

The monitoring points and site infrastructure referred to in conditions of this licence are depicted in the below map.

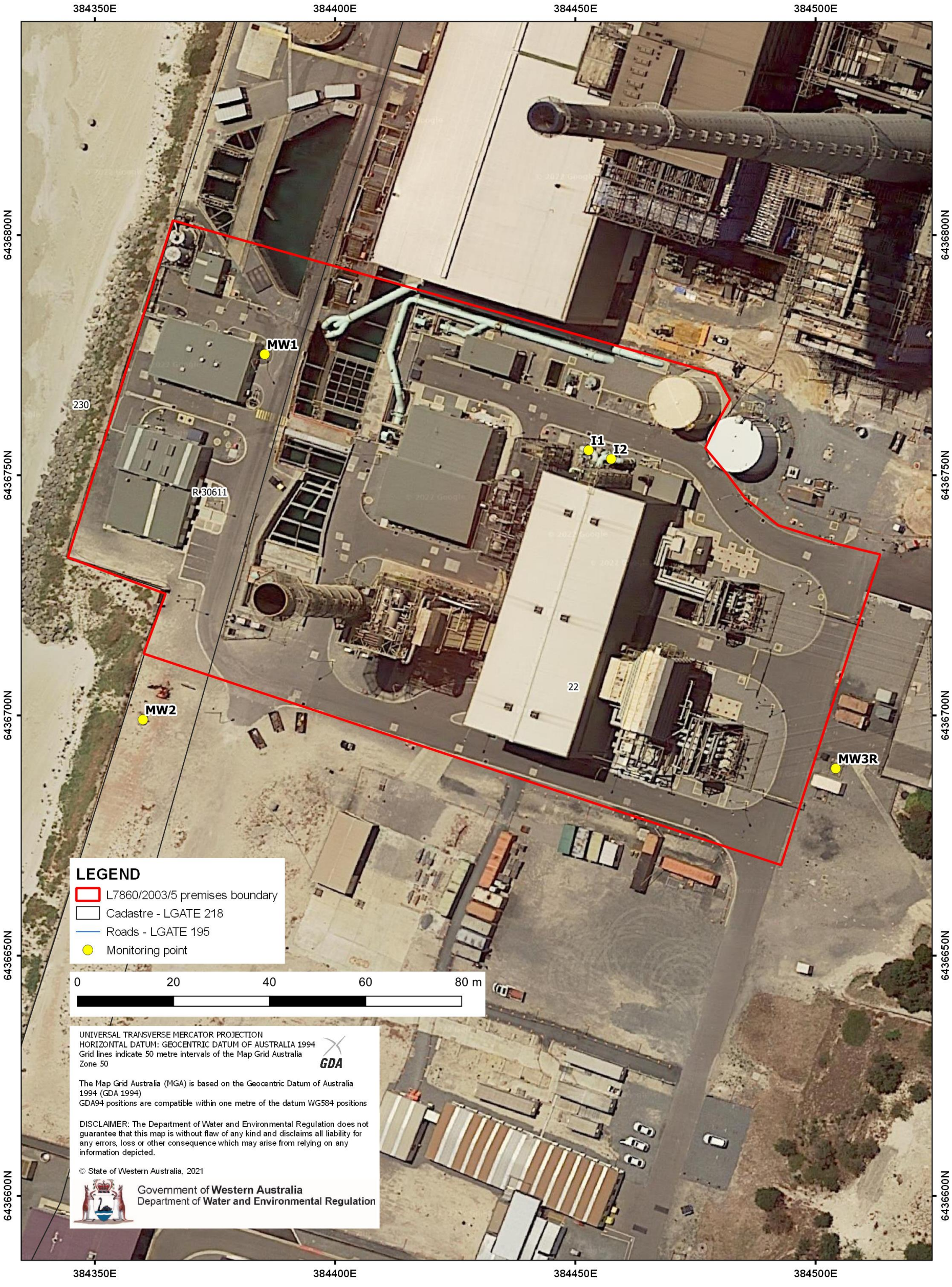

Figure 2: Map of monitoring points and site infrastructure.