



<b>Works approval number</b>	W6609/2021/1
<b>Works approval holder</b>	Coogee Chlor Alkali Pty Ltd
<b>ACN</b>	ACN 009 276 635
<b>Registered business address</b>	Corner of Patterson & Kwinana Beach Roads KWINANA BEACH, WA 6167
<b>DWER file number</b>	DER2021/000563
<b>Duration</b>	11/02/2022 to 10/02/2027
<b>Date of issue</b>	11/02/2022
<b>Premises details</b>	Coogee Chlor Alkali Kemerton Plant Marriott Road KEMERTON, WA 6233 Legal description Being part of Lot 1 on Diagram 73196 and part of Lot 254 on Plan 416516 As defined by the premises maps in Schedule 1

Prescribed premises category description (Schedule 1, Environmental Protection Regulations 1987)	Assessed design capacity
Category 31: Chemical manufacturing: premises (other than premises within category 32) on which chemical products are manufactured by a chemical process.	50,500 tonnes per annual period

This works approval is granted to the works approval holder, subject to the attached conditions, on 11 February 2022, by:

**Clarrie Green**

**A/Manager, Process Industries**

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

## Works approval history

Date	Reference number	Summary of changes
11/02/2022	W6609/2021/1	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;
  - (c) at the corresponding infrastructure location; andas set out in Table 1.

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

	Infrastructure	Design and construction / installation requirements	Infrastructure location
1	Processing plant: <ul style="list-style-type: none"><li>• 60mtpd Cl<sub>2</sub> capacity electrolysis system including transformer/rectifier</li><li>• Brine purification system</li><li>• Catholyte system</li><li>• Brine dechlorination system</li><li>• Chlorine gas drying and compression</li><li>• 24mtpd Cl<sub>2</sub> equivalent capacity sodium hypochlorite production</li><li>• Caustic evaporation production</li></ul>	Installed with: <ul style="list-style-type: none"><li>• Critical control set points managed by DCS system-auto shut-down systems;</li><li>• Voltage Monitoring System with capability for continuous monitoring of cell voltage and inferred temperature;</li><li>• Nitrogen purge capability; and</li><li>• Chlorine absorption system and hydrogen vent stack in accordance with row 2 of this table.</li></ul>	As shown in Schedule 1: Map of authorised discharge points
2	X -3101 Hydrogen Stack	Installed with: <ul style="list-style-type: none"><li>• continuous temperature control monitoring and alarms;</li><li>• capable of N<sub>2</sub> injection for dilution;</li><li>• vent stack to atmosphere, height 14 metres; and</li><li>• DCS.</li></ul>	As shown in Schedule 1: Map of authorised discharge points
3	Hypochlorite system including FAN K-6101 and EJECTOR J-6101 as a backup	Installed with: <ul style="list-style-type: none"><li>• Cl<sub>2</sub> absorption tower;</li><li>• 2 x Cl<sub>2</sub> in process detectors with interlocks to shutdown plant. Interlocks triggered at Cl<sub>2</sub> ≥</li></ul>	As shown in Schedule 1: Map of authorised discharge points

	Infrastructure	Design and construction / installation requirements	Infrastructure location
		50ppm; <ul style="list-style-type: none"> <li>• vent stack to atmosphere, height 15 meters;</li> <li>• in process caustic flow transmitter in hypo-reactor and hypo-scrubber to monitor caustic flow rate is within approved range; and</li> <li>• Interlock for plant shutdown when beyond range.</li> </ul>	
4	Concrete effluent sump T-9101	Designed and installed to contain liquids without failing, collapsing, or rupturing including: <ul style="list-style-type: none"> <li>• water stops for sealing concrete joints;</li> <li>• internal lining with a vinyl ester fiberglass corrosion protective coating; and</li> <li>• HDPE membrane with leak detection monitoring bores.</li> </ul> Designed with a storage capacity to prevent overtopping. Fitted with a level control system. Capable of providing visual and audible indicators and mobile alerts of fault conditions.	As shown in Schedule 1: Map of authorised discharge points
5	60mtpd Cl <sub>2</sub> capacity chlorine gas export system and pipeline	Capable of remote shut down via DCS or manually. Capable of manual depressurisation. Capable of being automatically isolated upon detection of anomalous operating conditions.	As shown in Schedule 1: Map of chlorine export line

### Compliance reporting - construction

2. The works approval holder must within 30 calendar days of all items 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.
3. The Environmental Compliance Report required by condition 2, must include as a minimum the following:
  - (a) certification by an Engineer that the infrastructure, 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 listed in condition 5 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 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.

**Table 2: Environmental commissioning requirements**

Infrastructure	Commissioning requirements	Authorised commissioning duration
Hypochlorite production unit vent stack	Isokinetic stack testing Audible alarms testing	For a period not exceeding 90 calendar days in aggregate.
Electrolysis area hydrogen gas vent	Emergency shutdown interlocks testing	

6. 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).
7. During environmental commissioning, the works approval holder must, in the event of an emission in condition 6 exceeding the corresponding trigger value specified in Table 3, undertake the management action that corresponds with the relevant emission and corresponding discharge point.

**Table 3: Emission limits and authorised discharge points during commissioning**

Emission	Discharge point	Trigger value	Management action	Discharge point location
Effluent air (Cl <sub>2</sub> , N <sub>2</sub> and O <sub>2</sub> )	Hypochlorite production unit vent stack	Cl <sub>2</sub> ≥50 ppm	Interlock	As shown in Schedule 1: Map of authorised discharge points

### Monitoring during environmental commissioning

8. 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	Parameter	Frequency	Averaging Period	Unit	Method
Hypochlorite production unit vent stack, as shown in Schedule 1	Volumetric flow rate	Continuous (at least every 10 seconds a result)	1 minute	m <sup>3</sup> /s	N/A
	Cl <sub>2</sub>	Continuous (at least every 10 seconds a result)	1 minute	ppm and mg/m <sup>3</sup>	N/A
		Once within 3 weeks after the start of environmental commissioning	At least 60 minutes	g/s and mg/m <sup>3</sup> , both at STP dry	USEPA Method 26 or USEPA SW-846 Test Method 0050

9. The works approval holder must ensure that the continuous monitoring as required in condition 8 is undertaken at a sampling location compliant with the requirements of AS4323.1-2021.

### Compliance reporting – environmental commissioning

10. 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 2.
11. The works approval holder must ensure that all non-continuous sampling and analysis undertaken pursuant to condition 8 is undertaken by a holder of a current accreditation of the National Association of Testing Authorities (NATA) for the methods of sampling and analysis relevant to the corresponding parameter.
12. The works approval holder must ensure the Environmental Commissioning Report required by condition 10 of this works approval includes the following:
- a summary of the environmental commissioning activities undertaken including, timeframes and amount of each output generated;
  - the emissions monitoring results recorded in accordance with condition 8;
  - a review of the works approval holder's performance and compliance against the conditions of this works approval including verification that all alarms and interlocks are working effectively; and
  - where they have not been met, measures proposed to meet the manufacturer's design specifications and the conditions of this works approval, together with timeframes for implementing the proposed measures.

### Time limited operations phase

#### Commencement and duration

13. The works approval holder may only commence time limited operations for an item

of infrastructure identified in condition 1:

- (a) where the 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 the item of infrastructure is authorised to undertake environmental commissioning under condition 5, the Environmental Commissioning Report for that item of infrastructure as required by condition 10 has been submitted by the works approval holder.
- 14.** The works approval holder may conduct time limited operations for an item of infrastructure specified in condition 1 (as applicable):
- (a) for a period not exceeding 180 calendar days from the day the works approval holder meets the requirements of condition 12 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 13(a).

### Time limited operations requirements and emission limits

- 15.** During time limited operations, the works approval holder must operate and maintain all pollution control and monitoring equipment to the manufacturer's specification or any relevant and effective internal management system.
- 16.** During time limited operations, the works approval holder must ensure that the emission(s) specified in Table 5, are discharged only from the corresponding discharge point(s) and only at the corresponding discharge point location(s).

**Table 5: Emission limits and authorised discharge points**

Emission	Discharge point	Limit	Permitted time period	Discharge point location
Effluent air (Cl <sub>2</sub> , N <sub>2</sub> and O <sub>2</sub> )	Hypochlorite production unit vent stack	>5 ppm Cl <sub>2</sub>	Rolling 60 minute average	As shown in Schedule 1: Map of authorised discharge points

- 17.** During time limited operations, the works approval holder must ensure that the emissions from the discharge point listed in Table 5 do not exceed the corresponding limit(s) when monitored in accordance with condition 16.

### Monitoring during time limited operations

- 18.** The works approval holder must monitor emissions during time limited operations in accordance with Table 6.

**Table 6: Emissions and discharge monitoring during time limited operations**

Discharge point	Parameter	Frequency	Averaging Period	Unit
Hypochlorite production unit vent stack, as shown in Schedule 1	Cl <sub>2</sub>	Continuous (at least every 10 seconds a result)	1 minute	ppm and mg/m <sup>3</sup>

### Compliance reporting – time limited operations

19. 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.
20. The works approval holder must ensure the report required by condition 19 includes the following:
  - (a) a summary of the time limited operations, including timeframes and amount of each output generated;
  - (b) a summary of Cl<sub>2</sub> results obtained during time limited operations under condition 18.
  - (c) a review of performance and compliance against the conditions of the works approval and the Environmental Commissioning Report; and
  - (d) where the manufacturer's design specifications and the conditions of this 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)

21. 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.
22. 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 13;
  - (c) monitoring programmes undertaken in accordance with conditions 8 and 18; and



- (d) complaints received under condition 21.
- 23.** The books specified under condition 22 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 7 have the meanings defined.

**Table 7: Definitions**

Term	Definition
annual period	means the inclusive period from 1 July until 30 June in the following year.
AS 4323.1—2021	means Australian Standard AS 4323.1-1995 Stationary source emissions.
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 <i>Environmental Protection Act 1986</i> Locked Bag 10 Joondalup DC WA 6919 <a href="mailto:info@dwer.wa.gov.au">info@dwer.wa.gov.au</a>
condition	a condition to which this works approval is subject under section 62 of the EP Act.
Cl <sub>2</sub>	means chlorine gas
DCS	means Distributed Control System
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.
engineer	means a person holding current certification from the Institution of Engineers Australia (IEAust) or Institute of Chemical Engineers (IChemE).
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	means a report on any commissioning activities that have taken place and a demonstration that they have concluded, with focus

Term	Definition
Report	on emissions and discharges 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>
H <sub>2</sub>	means hydrogen gas
HDPE	means High Density Polyethylene
L/s	means litres per second
µg/m <sup>3</sup>	means micrograms per cubic metre
m <sup>3</sup> /day	means cubic metres per day
N <sub>2</sub>	means nitrogen gas
O <sub>2</sub>	means oxygen gas
ppm	means parts per million
premises	the premises to which this works approval applies, as specified at the front of this works approval and as shown on the premises map (Figure 1) in Schedule 1 to this works approval.
prescribed premises	has the same meaning given to that term under the EP Act.
rolling 60 minute average	means an average of any consecutive 60 minutes
time limited operations	refers to the operation of the infrastructure and equipment identified under this works approval that is authorised for that 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.

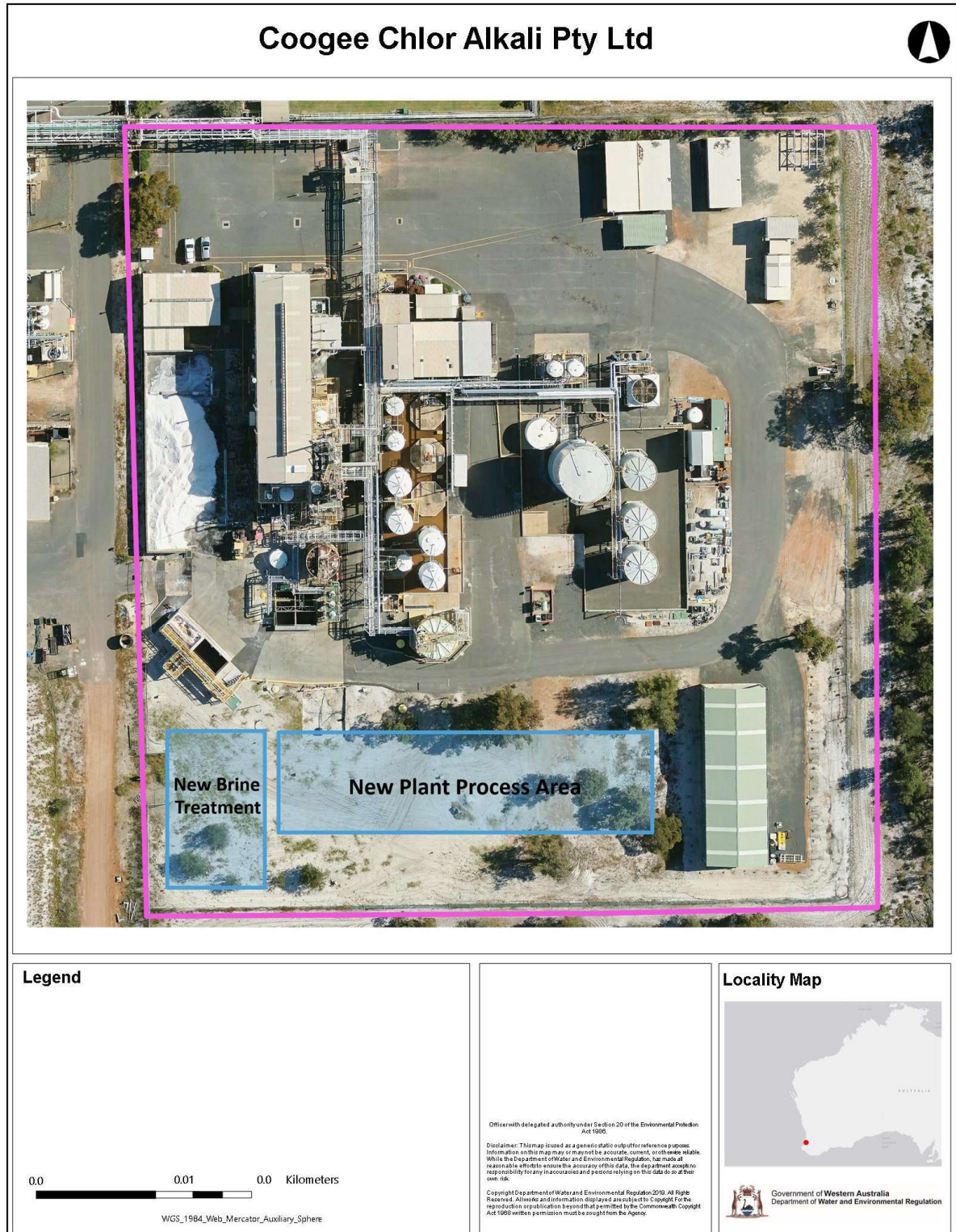
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## END OF CONDITIONS

# Schedule 1: Maps

## Premises map

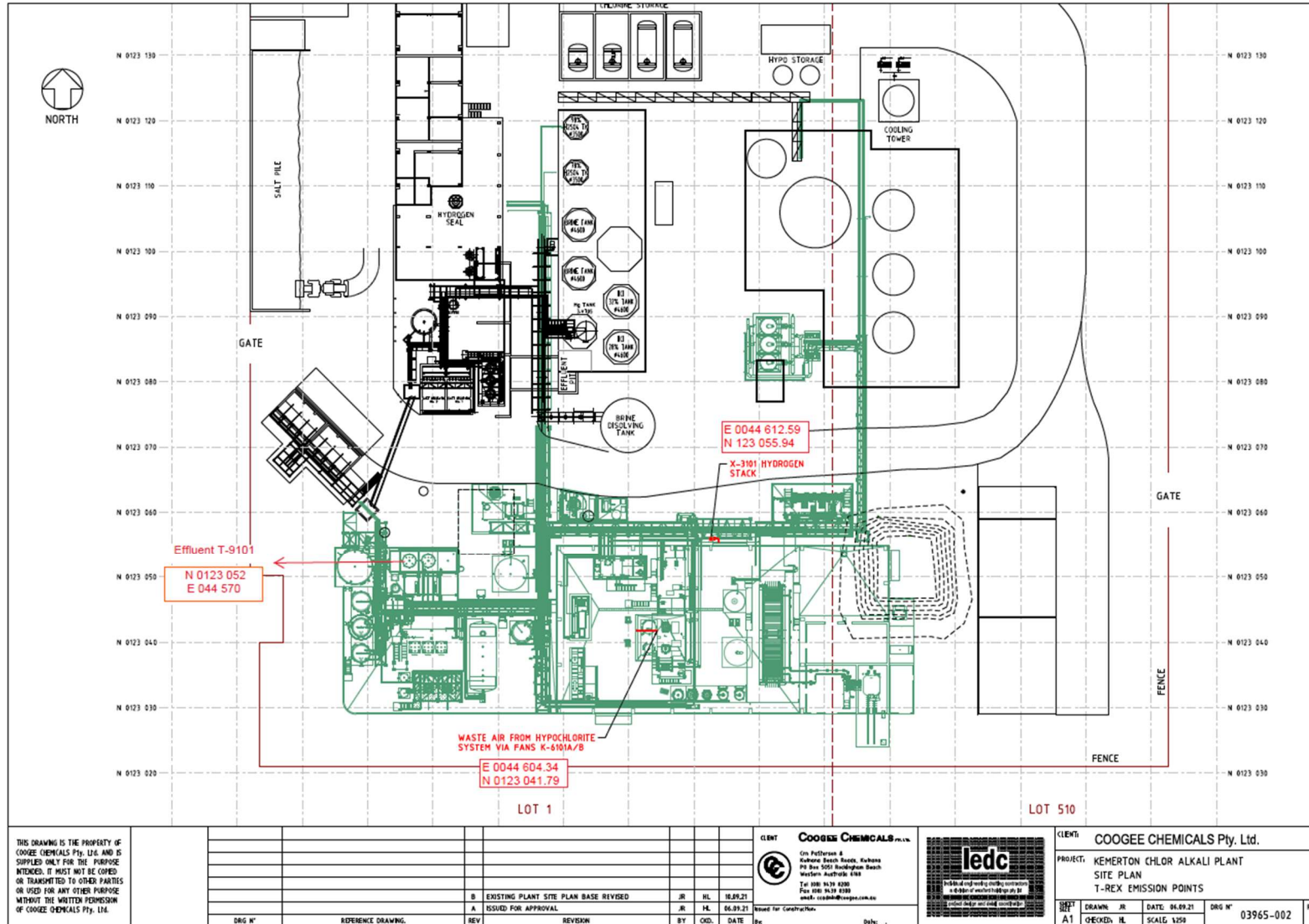
The boundary of the prescribed premises is shown in the map below (Figure 1).



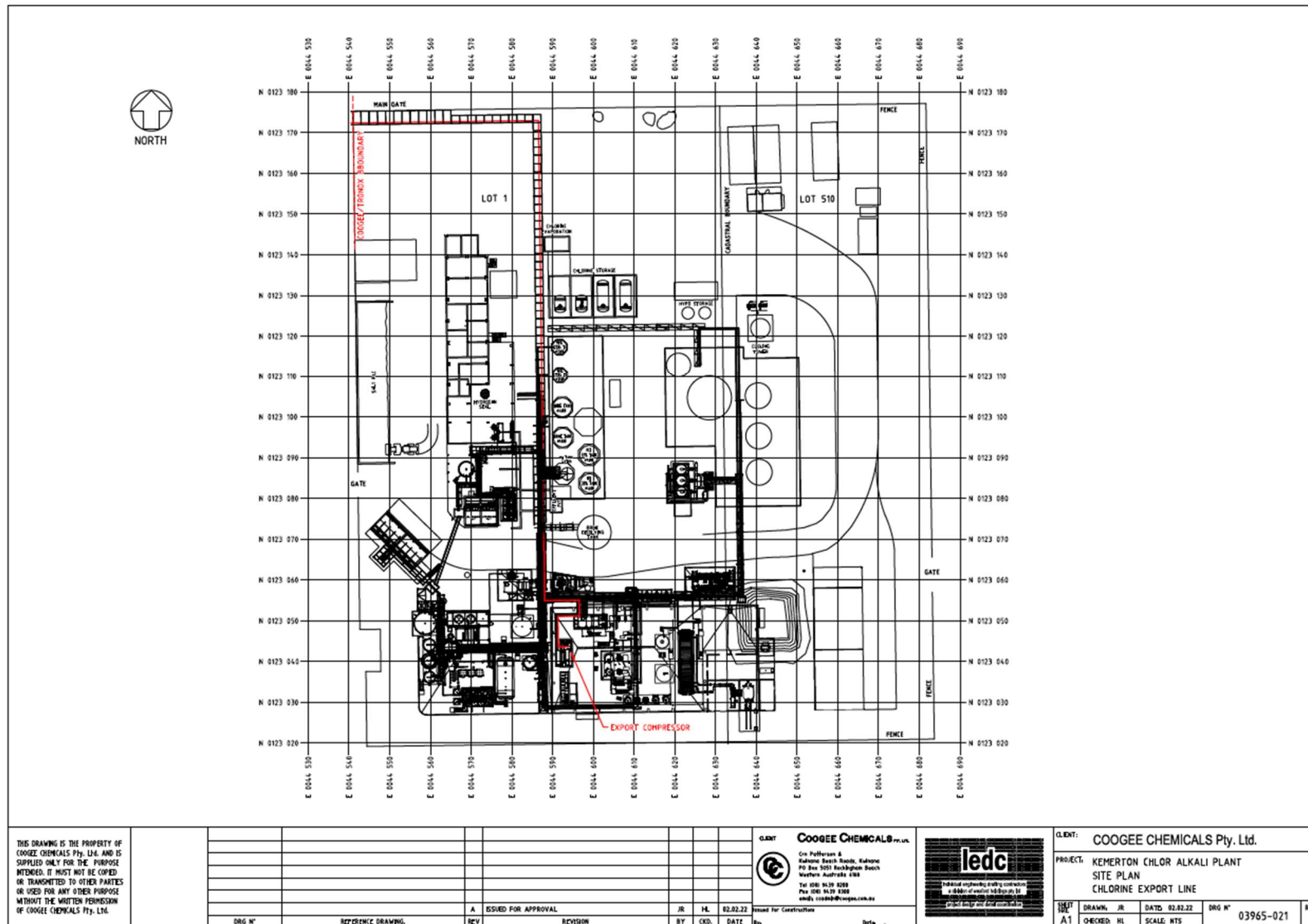
**Figure 1: Map of the boundary of the prescribed premises**

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IR-T05 Works approval template (v5.0) (February 2020)





W6609/2021/1 (11/02/2022)  
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**Figure 3: Map of chlorine export line**

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IR-T05 Works approval template (v5.0) (February 2020)