



IXOM

Department of Planning, Industry and Environment

2019 Annual Report

Prepared by: Joe Nguyen

Date: January 2020

Revision: 1.0

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1 Executive Summary

1.1 The following approvals are currently held or operated under by the Ixom Botany ChlorAlkali Plant

Table 1: Current approvals and licences

| Approval No. | Date last varied | Details of any changes made during reporting period |
|---|------------------|---|
| DA 35/98 | 10-09-2018 | Mod 5, Repack Facility |
| EPL 20547 | 10-10-2019 | Variation Notice number 1564734 |
| MHF 10358-01 | 11-02-2014 | No change. Work in progress for renewal |
| DG 35/03500 (held by Botany Industrial Park) | 07-07-2019 | No change. Renewal |

IXOM Operations Pty Ltd, Botany ChlorAlkali Plant (CAP) is required to provide an Annual report to DPIE as per condition 47 and 48 of DA 35/98. The last variation of the DA 35/98 was on 10 September 2019, MOD 5 – Repack Facility. CAP is located within the Botany Industrial Park (BIP) in Sydney, New South Wales.

MOD 5 of the DA 35/98 was included in the Independent Environmental Audit (IEA) conducted by AECOM in October and the final report is due in December 2019, of which the findings of the IEA will be discussed in next year Annual report.

This Annual report covers period between 1 December 2018 to 30 November 2019 and is following the CRPAR guidelines issued June 2018. The report presents those relevant conditions pertaining to the current operations of the plant.

There was a variation update of the EPL 20547 issued on 10 October 2019, in relation to the lot number updates for the operators on the BIP site. The updated site map is attached as Appendix C.

In summary, the self-assessment Annual report as follow;

- there were no non-conformances identified during the reporting period.
- no complaints were recorded from residential or industrial neighbours.
- no issues were identified or raised in relation to environmental performance such as noise or air monitoring.
- Production and truck movements have slowed down a little but expect to pick up again next year. This is normal variation.
- Effluent discharge is continually decreasing over the years contributed by number of effluent reduction initiatives including the blowdown optimisation of the Cooling Water Towers and automatic dosing of effluent treatment before discharge to EP6.

2 Introduction

2.1 Site Overview

Table 2: Site Details

| | |
|----------------------------|--|
| Project Name and DA number | Replacement of Chlor-Alkali Plant at Botany, DA35/98 (Ref. R98/00010) |
| Site Address | 16-20 Beauchamp Road, Matraville NSW 2036 |
| Industrial Complex | Botany Industrial Park (BIP) |
| Local Government Authority | City of Sydney |
| Site Area | BIP – 70 hectares Site – 23 hectares |
| Locality Map | Appendix A |
| Site Plan | Appendix A |
| Current Use | Botany ChlorAlkali Plant |
| Lot No. | LOT 1101 DP 1227173, LOT 1102 DP 1227173, LOT 1103 DP 1227173, LOT 1104 DP 1227173, PART LOT 1115 DP 1227173 |
| Site Owner | Orica Limited owns approximately 40% of land at the BIP, including the area specific to this EMP |
| Reporting Period | 1 December 2018 – 30 November 2019 |

The facility manufactures chlorine and caustic soda from the electrolysis of salt. Hydrogen is produced as a by-product. The four main products produced are sodium hypochlorite (referred to as 'Hypo'), hydrochloric acid, caustic soda and ferric chloride.

The chlorine produced on site is used in the manufacture of hydrochloric acid, hypo and ferric chloride, with these downstream processes being collectively referred to as product plants. All chlorine produced at Ixom Botany ChlorAlkali facility is consumed in the product plants.

The plant can produce 31,200 tonnes per annum (TPA) of chlorine assuming 95% uptime. All chlorine is reacted to produce the following product range:

- HCl (~35,000 TPA)
- Hypo (~55,000 KLPA)
- Ferric chloride (~21,200 TPA)
- Sodium hydroxide (Caustic ~36,000 TPA as 50%) (co-product of chlorine manufacturing process).

2.2 Key Contacts for Environmental Management

Table 3: Environmental Contacts for Ixom Botany ChlorAlkali Plant

| Name | Position | Contact Details |
|------------------|---|---|
| Steven Barclay | IXOM CAP Site Manager | 02 9352 2118 0447 216 265 Steven.barclay@ixom.com |
| Joe Nguyen | Ixom Botany Systems & Compliance Specialist | 02 9352 2123 0422 403 901 joe.nguyen@ixom.com |
| Lauren Sibigroth | BIP Environmental Advisor | 02 8336 1339 lauren.sibigroth@genos.com |

3 Compliance Status Summary

Compliance Status Descriptors

Compliant Sufficient verifiable evidence to demonstrate that all elements of the requirements have been complied with.

Non-compliant A non-compliant with one or more elements of the requirements

Not triggered A requirement has an activation or timing trigger that has not been met at the phase of the development when the compliance assessment is undertaken, therefore an assessment of compliance is not relevant.

Table 4: current relevant approvals and licences

| Approval No. | Date last varied | Details of any changes made during reporting period |
|--------------|------------------|--|
| DA 35/98 | 10-09-2018 | Mod 5, Repack Facility – report next year, after IEA report finalised. |
| EPL 20547 | 10-10-2019 | Variation Notice #1564734, site lot numbers updated |

3.1 Compliance Table

Table 5: Status of compliance (Relevant Conditions)

| Approval No. | Conditions | Monitoring Methodology | Evidence and Comments |
|--------------|------------|--|--|
| DA 35/98 | 11 | Ongoing Hazards Management – Hazard Analysis due every 3 years | Compliant – Last completed update 2017 |
| | 12 | Incident Reporting | Compliant - Refer to Section 6 |
| | 13 | Hazard Audit – Required 3 every 3 years | Compliant - Last audit completed 2018 |
| | 24 | Independent Environmental Audit – Required every 3 years | Compliant - One is being completed by AECOM – Dec 2019 |
| | 47 | Annual report - commercial traffic Movements | Compliant - See Appendix A |
| | 48 | Annual report - Environmental performance | Compliant - See Appendix B |
| | 48 | Annual report - Community Complaints | Compliant - Refer to section 7 |
| | | | |

4 Non-Compliances

No non-compliance was identified during the reporting period, 1 December 2018 – 30 November 2019.

Table 6: non-compliances during the reporting period

| Approval No./ Conditions | Conditions | Comments |
|--------------------------|------------|-------------------|
| DA 35/98 | | No non-compliance |
| | | |
| | | |

5 Previous report actions

Previous report actions which have been undertaken during the reporting period.

Table 7: Actions required from previous Annual Review

| Actions required | Source | Progress | Comments |
|--|--------|----------|----------|
| No actions required from previous report | | | |

6 Incidents

During the reporting period there were no incidents or non-compliances against the conditions of any relevant permit, license or approval for the Ixom Botany ChlorAlkali Plant

6.1 Incidents Register

Table 8: Incidents Register

| Nature of incident | Relevant conditions | Date of incidents | Status of Report |
|---|---------------------|-------------------|--|
| Chlorine pressure indicator on the Chlorine line to the HCl burner leaked triggered SRA boundary detectors. | DA35/98, Cond 12 | 10/03/2019 | The issue was reported. 5 corrective actions were identified, completed and closed. This incident did not constitute a non-compliant |

7 Complaints

During the reporting period there were no incidents or non-compliances against the conditions of any relevant permit, license or approval for the Ixom Botany ChlorAlkali Plant

The Botany Industrial Park (BIP) maintains an up to date website for the public that provides the following information:

- Minutes of the BIP Community Consultative Committee (BIPCC)
- Community Hotline
- Contacts for Regulators
- Items of interest including updates where appropriate. Currently information on PFAs is being shared.
- Commitments to Safety

Ixom maintains an up to date public website that provides the following information:

- Information about the Botany ChlorAlkali plant
- Details of Licence conditions
- Contact details for more information on the facility
- Map of licensed discharge points
- Results of monthly air quality monitoring
- Safety Management system
- Emergency Response including PIRMP
- Actions for the public to take in the event of an emergency
- Pollution Notification Process

There were three BIPCC meetings held throughout the reporting period, on 10 December 2018, 20 March 2019, 24 July 2019, and 27 November 2019. Ixom representatives were involved in the meetings.

There were no public complaints recorded against Ixom via the community hotline during the reporting period.

7.1 Complaints Register

Table 8: Complaints Register

| Nature of complaints | Relevant conditions | Date of complaint | Status of Report |
|--------------------------|---------------------|-------------------|------------------|
| No recorded against Ixom | | | |

8 Appendixes

8.1 Appendix A – Production and Truck Movements

8.1.1 Production Metrics

The period covered by this report saw a slight decrease in output compared to the previous year and slightly lower than forecast. The plant achieved an uptime rate of approximately 92% which indicates consistent operation throughout the year.

Truck movements (figures reported below include both inwards and outwards movements – ie one truck entering the facility to load then exiting is counted as two truck movements), the number of truck movements have slightly decreased in 2019 as with slightly lower in production in the 2019 reporting period. Table 9 and Figure 1 show a summary of key metrics for the facility over this reporting period compared to previous years.

Table 9: Production Metrics Summary

| Reporting Requirement | Limit | Previous reporting period (2018 actual) | This reporting period (2019 actual) | Next reporting period (forecast) |
|---|-------|---|-------------------------------------|----------------------------------|
| Traffic movements into and out of site | N/A | 21,848 | 19,146 | 20,100 |
| Hours spent by loaded chlorine road tankers on site | 4380 | 0 | 0 | 0 |
| Production (100% caustic) | N/A | 28,312 | 27418 | 28,790 |

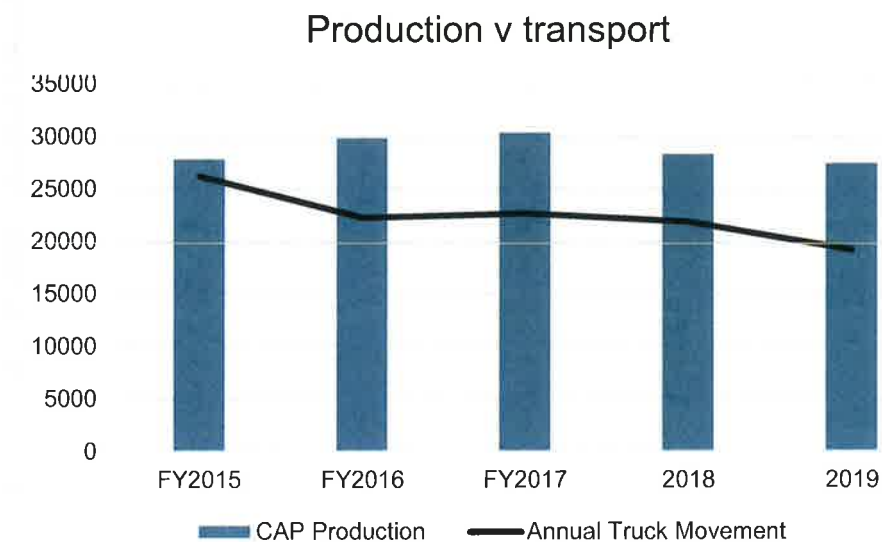


Figure 1: Truck Movements vs Production

Note: Financial year (FY) data provided in Figure 1 is for the October to September period each year. However, data for 2018 and 2019 are for reporting period between 1 December and 30 November in the year.

8.2 Appendix B – Environment performance

8.2.1 Environmental Performance table

Table 10 details the key environmental performance parameters for the Ixom Botany ChlorAlkali Plant.

Table 10: Environmental Performance

| Aspect | Approval criteria / EIS prediction | Performance during the reporting period | Trend / key management implications | Implemented/proposed management actions |
|--------------|---|--|---|---|
| Noise | <p>Day – 65 LAeq Evening – 55 LAeq Night - 50 LAeq</p> <p>(Limits from EPL 20547, Section L4.2).</p> <p>Monitoring location 8 in the noise report, is the only location the receiver is impacted by Ixom Operations</p> | <p>Compliant.</p> <p>Noise monitoring for December 2018 was undertaken by Stephenson Environmental Management Australia, and noise monitoring from January 2019 to November 2019 was undertaken by Wolfpeak Pty Ltd</p> <p>From the reports for Jan 2019 to Nov 2019, the samplings at location 8 recorded high readings between 60.4 – 68.5, higher than 50 db (A).</p> | <p>Based on the report comments the high results were dominated by sources not related to site Ixom operations. The main contributors were passing traffic (mostly dominant) – between 50 - 86, fauna between 46 - 49, distant, works at Botany port, distant thunder, and wind in trees.</p> | No action required |
| Air quality | <p>There are 3 licenced discharge points at the Ixom Botany ChlorAlkali plant:</p> <p>Point 1 (Figure 2) Hypochlorite Backing Tower. Discharge limit = 200mg/m³ Chlorine, Monitored Continuously</p> <p>Point 2 Absorption Tail Tower. Discharge limit = 30mg/m³ Hydrogen Chloride. Measured quarterly</p> <p>Point 3 (Figure 3) Emergency Chlorine Vent. No discharge limit in EPL, statutory limit from Schedule 4 of the POEO act of 200mg/m³ used for reference. Monitored Continuously</p> | <p>Compliant.</p> <p>Air quality data is reported on the Ixom website each month and is included as the weblink in this section of the report.</p> | <p>Results are consistent with that of previous years. See graphs below.</p> <p>Monitoring results for Point 2 have been consistently below monitoring thresholds, and therefore have not been graphed.</p> | No action required |
| Water | See Section 8.1.4 of this report | | | |
| Biodiversity | The EIS identified that there was no expected impact on Biodiversity from the operation of the Ixom Botany ChlorAlkali Plant | No impact | None identified | No action required |

| | | | | |
|-----------------|--|---|-----------------|--------------------|
| Heritage | The EIS identified that there was no expected impact on Aboriginal, Natural or Urban Heritage items, relics or places from the operation of the Ixom Botany ChlorAlkali Plant | No impact | None identified | No action required |
| Flora and Fauna | The EIS indicated that no flora or fauna were expected to be directly affected by the operation of the Ixom Botany ChlorAlkali Plant | No impact | None identified | No action required |
| Amenity | <p>The premises and operations shall be conducted in such a manner as not to interfere with, or materially affect, the amenity of the neighbourhood by reason of noise, vibration, smell, fumes, vapour, steam, soot, ash, dust, waste water, waste products, grit, oil, or otherwise.</p> <p>The occupier of the premises shall not cause, permit, or allow the emission of any odorous air impurity from the development such that it can be detected outside the property boundaries by its odour.</p> <p>(DA 35/98 conditions 37 and 38)</p> | <p>Compliant.</p> <p>There were no instances of material harm affecting the amenity of the neighbourhood by reason of noise, vibration, smell, fumes, vapour, steam, soot, ash, dust or waste products.</p> <p>There were no reports of odorous material from the development detected outside the property boundaries.</p> <p>There were no community complaints received in the reporting period related to the Ixom Botany ChlorAlkali Plant or its operation.</p> | None identified | No action required |

8.2.2 Air Monitoring

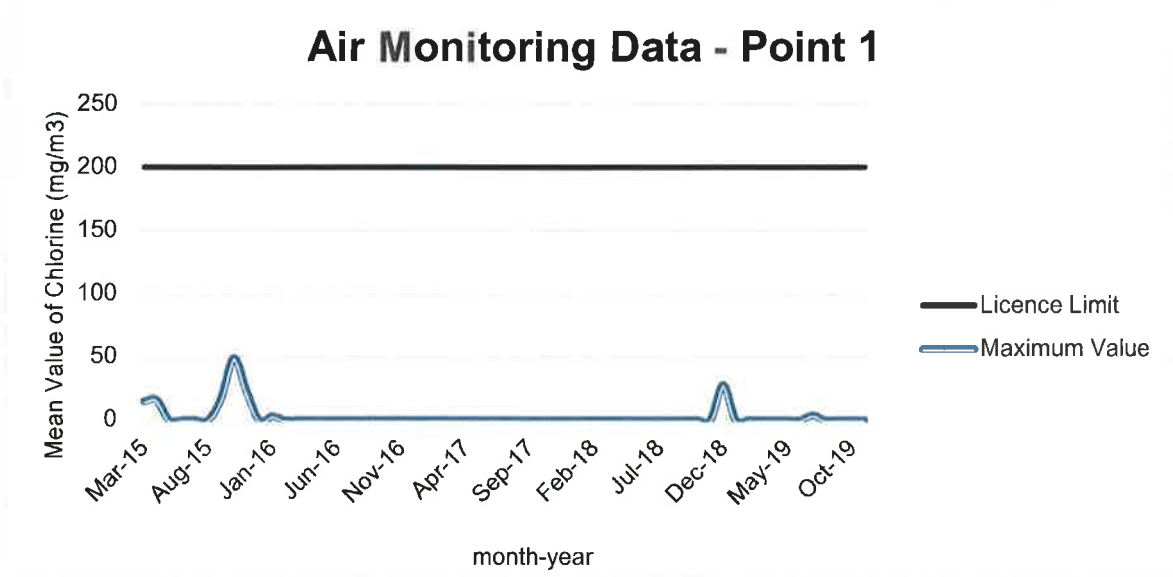


Figure 2: Point 1 Air Monitoring Data March 2015 - November 2019

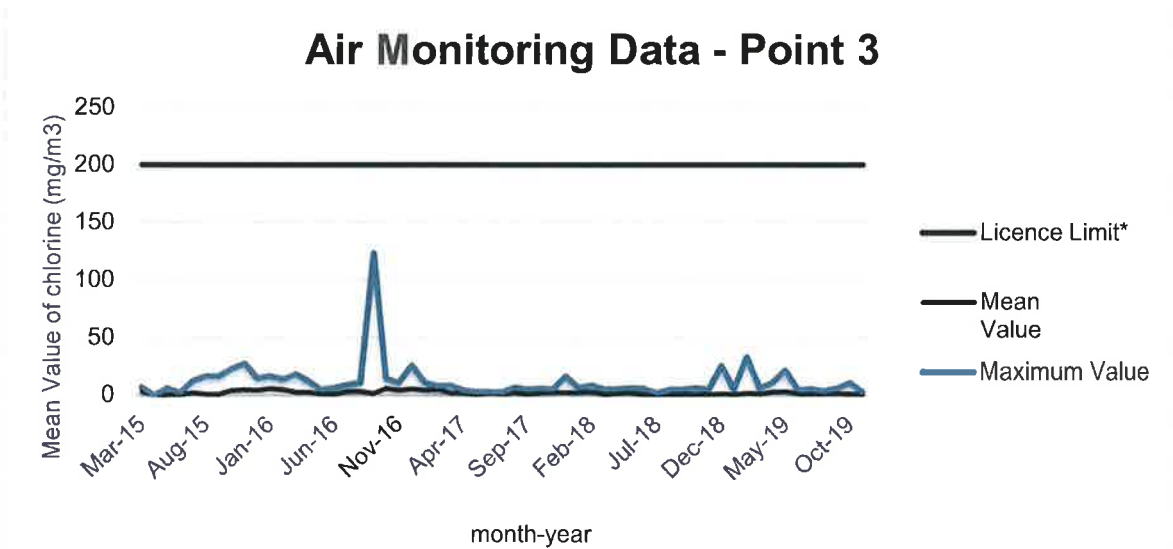


Figure 3: Point 3 Air Monitoring Data March 2015 - November 2019

* Statute limit as per Schedule 4 of POEO (Clean Air) Regulation

Note: Historical data is available through the Ixom website: <https://www.ixom.com/being-responsible/environmental-monitoring-data/botany>

8.2.3 Water Usage

Potable water is supplied to the Ixom Botany site through the BIP Site Utilities. Water usage for the reporting period is shown in Table 11.

The potable water consumption was higher than previous period due to some production issues that portable had to be used in place of recycled water in order to resolve the

production issue, namely the HCl burner performance fluctuations. Recycled water was coincidentally was consumed less.

Table 11: Water Usage

| | Previous Reporting Period (Dec 2017 – Nov 2018) | Current Reporting Period (Dec 2018 – Nov 2019) |
|--|--|---|
| Potable Water Consumed (KL) | 32,547 | 67,640 |
| Recycled Water Consumed (KL) | 167,838 | 145,808 |
| Water Incorporated in Product (KL) | 129,684 | 128,959 |
| Effluent Discharged to BIP Trade-Waste System (KL) | 64,235 | 63,203 |

The Site Stormwater and Effluent System are managed by BIP Site Utilities.

Effluent from the Ixom ChlorAlkali Plant is collected and processed in one of two automated effluent treatment tanks. These tanks each accumulate the plant effluent then dose acid or caustic into the tanks to control the pH to a consistent and acceptable level. When the target pH is achieved, the tanks are discharged to the EP6 effluent collection pit where flow and pH are continuously measured and recorded. The effluent then joins the other effluent streams from the other facilities at the Botany Industrial Park and flows to the Site Utilities effluent system. In this facility, the effluent is monitored, and the pH adjusted where required to achieve permissible effluent standards before discharge from site.

The stormwater from the facility is collected through clearly labelled stormwater drains and flows to the Site Utilities stormwater system. The stormwater is continuously monitored for flow and pH. If the pH of the stormwater exceeds the permissible limits, the stormwater is automatically diverted to the Site Utilities effluent system where is it further treated through a pH adjustment in order to meet the required specifications prior to discharge.

Figure 4 shows the monthly effluent discharge for the reporting period. There were 3 spikes of the line which were due to number of days having heavy rainfalls. It shows a slight increase in average in the month, but in the year average it is less than the previous year.

During the reporting period Ixom Botany CAP has implemented the following key environmental improvement initiatives: better managing of purging by stalling the feed forward of the Brine system during shutdown and optimised the blowdown on both Cooling Water Towers. Ixom CAP has also implemented the automatic Alkaline and Acid dosing systems which are to accurately dose the pH to the required level then discharge to EP6 Effluent Pit. This process has provided precise dosing of the required amount of effluent and therefore seen a reduction in effluent discharge.

Figure 5 shows the impact that these, along with other improvement projects have had on the overall effluent volume discharged from the site over the 2015 to 2019 period.

8.2.4 Effluent Discharge

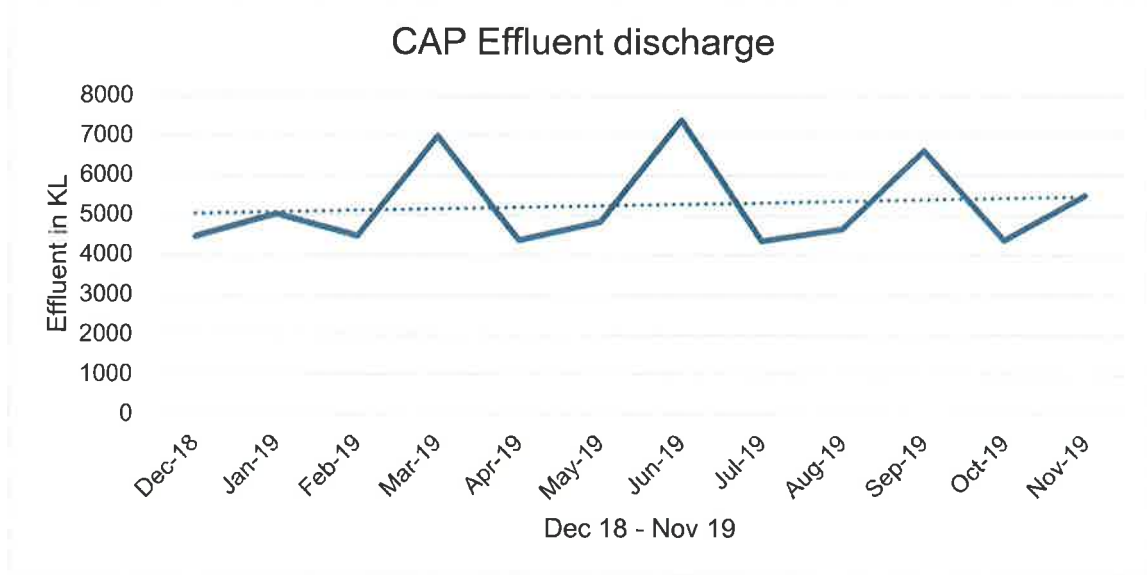


Figure 4: Effluent Discharged from Ixom CAP - Monthly

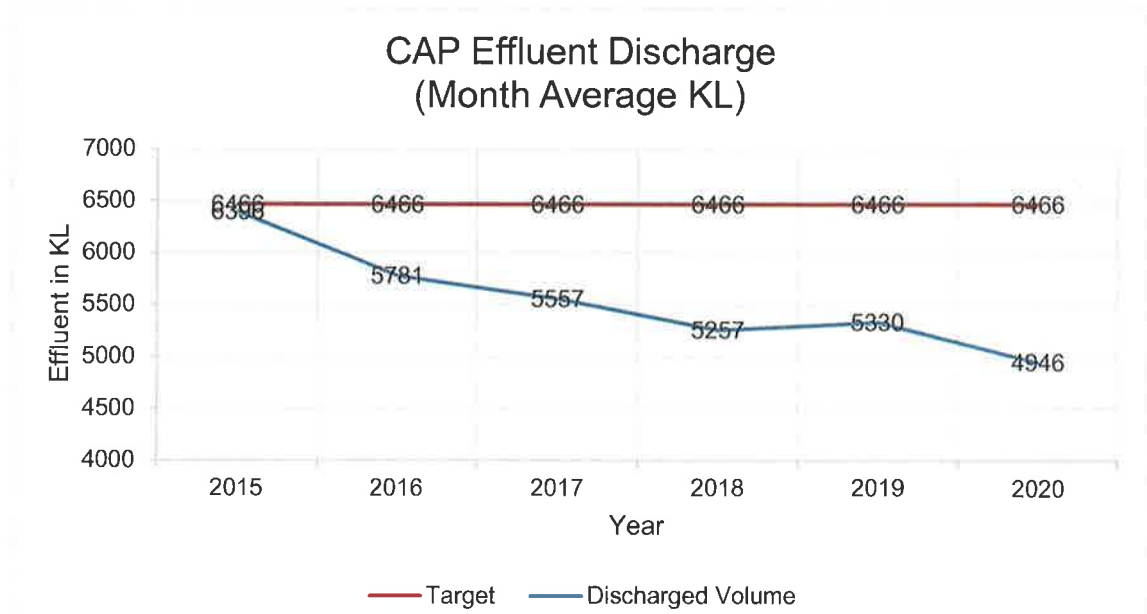
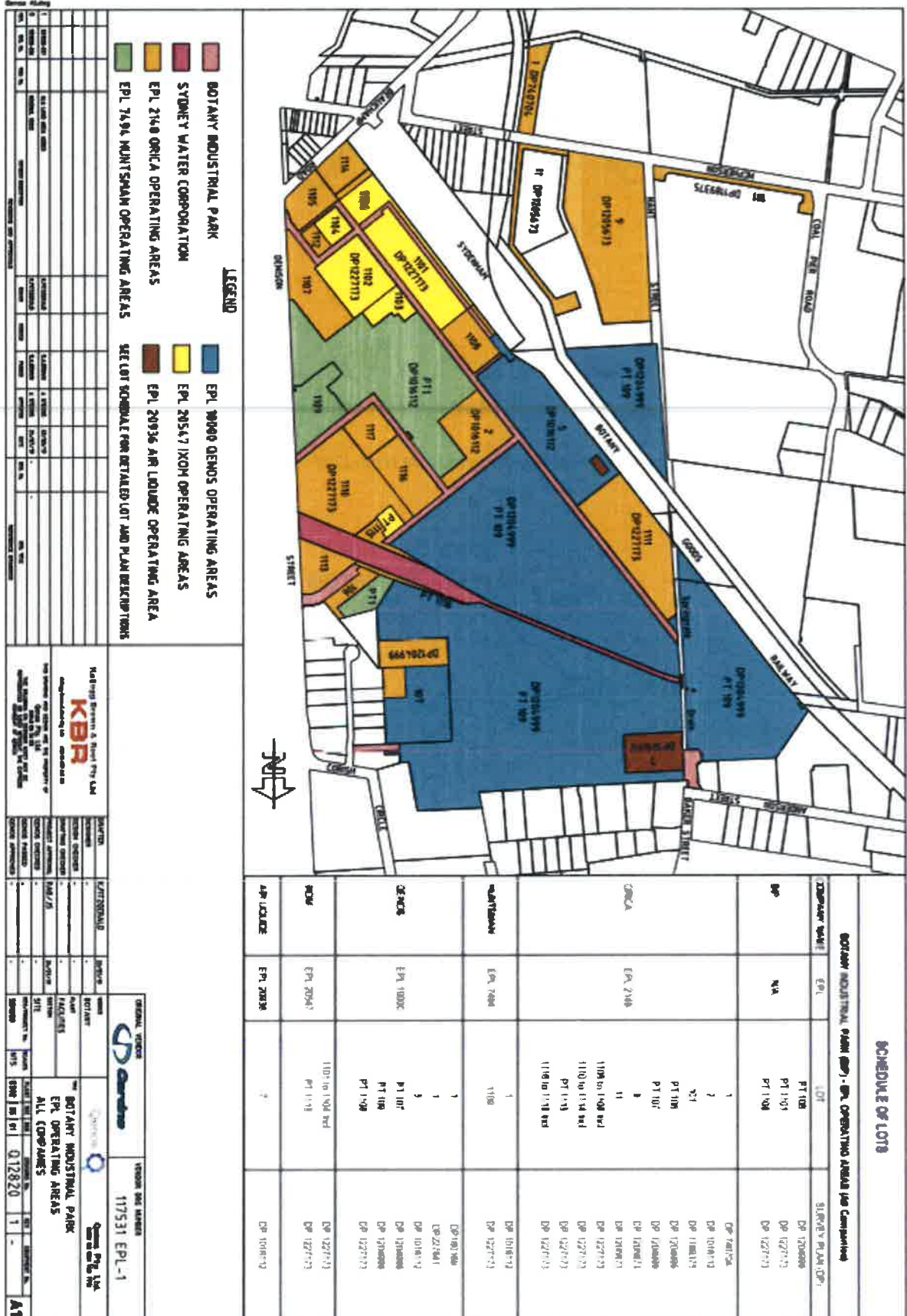


Figure 5: Year on year decrease in effluent discharged from site

8.3 Appendix C – Site Map



8.4 Appendix D – Declaration

Compliance Report Declaration form

| Table 12: Declaration | |
|--|---|
| Name of operation/ project | Ixom Botany ChlorAlkali Plant |
| Development consent / project approval # | DA35/98 (ref R98/00010) |
| Description of consent/ project | Replacement of Chlor-Alkali plant at Botany |
| Development consent / project address | 16-20 Beauchamp Road, Matraville NSW 2036 |
| Name of Operator | Ixom Operations Pty Ltd |
| Compliance Report | Annual Report 2019 |
| Annual Review End Date | 30 November 2019 |
| <p>I declare that I have reviewed relevant evidence and prepared the contents of the attached Compliance Report and to the best of my knowledge:</p> <ul style="list-style-type: none"> • the Compliance Report has been prepared in accordance with all relevant conditions of consent; • the Compliance Report has been prepared in accordance with the Compliance Reporting Post Approval Requirements; • the findings of the Compliance Report are reported truthfully, accurately and completely; • due diligence and professional judgement have been exercised in preparing the Compliance Report; and • the Compliance Report is an accurate summary of the compliance status of the development. <p><i>Note.</i></p> <p>a) Under section 10.6 of the Environmental Planning and Assessment Act 1979 a person must not include false or misleading information (or provide information for inclusion in) a report of monitoring data or an audit report produced to the Minister in connection with an audit if the person knows that the information is false or misleading in a material respect. The proponent of an approved project must not fail to include information in (or provide information for inclusion in) a report of monitoring data or an audit report produced to the Minister in connection with an audit if the person knows that the information is materially relevant to the monitoring or audit. The maximum penalty is, in the case of a corporation, \$1 million and for an individual, \$250,000; and</p> <p>b) The Crimes Act 1900 contains other offences relating to false and misleading information: section 307B (giving false or misleading information – maximum penalty 2 years' imprisonment or 200 penalty units, or both).</p> | |
| Name of Authorising reporting officer | Ian Parker |
| Title of Authorised Reporting Officer | Botany Operations Lead |
| Signature of Authorised Reporting Officer | <i>Ian Parker</i> 21/01/20 |
| Company and Address | Ixom Operations Pty Ltd 1 Nicholson Street, East Melbourne, VIC 3002 |

