APPENDIX C

ENGAGEMENT

From:	Jamie van Rooyen
To:	Giuliano Di Fabio; Jenny.Polich@sherpaconsulting.com.au
Subject:	FW: BIP Notification / Community
Date:	Wednesday, 5 February 2025 3:06:21 PM
Attachments:	Indorama notification of Demolition Programme.pdf

FYI

Regards,

Jamie van Rooyen
Head of Projects and Technology
IXOM
Level 10, 1 Nicholson St, East Melbourne, Victoria 3002, Australia
P: +61 3 9906 3234 | M: +61 402 890 838
jamie.van.rooyen@ixom.com | www.ixom.com

From: Ben Smith <Ben.Smith@ixom.com>
Sent: Wednesday, 5 February 2025 2:25 PM
To: Jamie van Rooyen <jamie.van.rooyen@ixom.com>
Subject: FW: BIP Notification / Community

Ben Smith
Head of Manufacturing - Botany CAP

IXOM
SOLVING OUR CUSTOMERS' CHALLENGES
WHAT'S YOUR CHALLENGE?

16-20 Beauchamp Road, Matraville, NSW, 2036
P: +61 2 9352 2254 | M: +61 456 917 739
ben.smith@ixom.com | www.ixom.com

From: Stuart Harris <stuart.harris@au.indorama.net>
Sent: Wednesday, 5 February 2025 2:24 PM
To: John Dahlenburg <john.dahlenburg@orica.com>; antony.taylor@orica.com; Malcolm Pascoe <Malcolm.Pascoe@esr.com>; Felicity Johnson <Felicity.Johnson@esr.com>
Cc: richard.benson@qenos.com; james.stening@orica.com; Samantha Aveling <samantha.aveling@orica.com>; jon.howarth <jon.howarth@specialisedbusinessservices.com>; Ben Smith <Ben.Smith@ixom.com>
Subject: BIP Notification / Community

Dear All,

Indorama herein notifies the BIP site owners/tenants regarding the pending commencement of Demolition works at Indorama Site.

Indorama's partners will be taking steps to make offsite notification to a group of proximal residents across Denison Street.

We'd also ask that you review the contents of this letter for circulation via the BIP Community Consultation Page / Distribution.

Kind regards

Stuart, Harris
Purchasing Head – Australia / India
Indorama Ventures Oxides Australia Pty Limited
61 Market Road, Brooklyn, Victoria, Australia, 3012
P: +61 3 9933 6624
F: +61 3 9933 6624
M: +61 405 543 042
www.indoramaventures.com

Our vision : To be a world-class chemical company making great products for society

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Australian Government
Civil Aviation Safety Authority

AIR NAVIGATION, AIRSPACE AND AERODROMES BRANCH

CASA Ref: F22/34219-4 F22/33039-23

Your Ref: Email 24 September enclosing letter 23 August 2024 from Mark Roberts

Mark Roberts
A/Technical Director – Environment and Planning
Element Environment
PO Box 1563 Warriewood NSW 2102

mark.roberts@elementenvironment.com.au giuliano.di.fabio@ixom.com

jacob@elementenvironment.com.au

IXOM Chlorine Liquefaction Plant – Modification to State Significant Development – CASA Plume Rise Assessment

CASA has assessed the potential plume from the proposed Chlorine Liquefaction Plant at or near 16-20 Beauchamp Road, Banksmeadow NSW 2019.

Aviation Facilities in vicinity:

The site is approximately 2.7 km offset east from the Sydney Airport runway 16L/34R centreline, approximately 3.7km offset east from the runway 16R/34L centreline and approximately 2.7km offset south from the runway 07/25 extended centreline. Regarding the Obstacle Limitation Surfaces (OLS) at the site, the site would be under the Inner Horizontal Surface approximately 45m above the level of the runways at 51m AHD.

Worst Case Scenario Parameters (from Form 1247)

Number of stacks = 1

Exit velocity = 15.6 m/s

Stack diameter = 0.5 m

Stack height = 18.71m AGL = 30m above AHD approximately

Temperature = 90°C

Using the CASA screening tool, the plume reduces to 4.3m/s at approximately 9m above the stack top (28m AGL) or approximately 39m above AHD.

And the plume reduces to 6.1m/s at approximately 8m above the stack top (27m AGL) or approximately 38m above AHD.

Discussion

The Manual of Aviation Meteorology (2003) defines the classifications of turbulence intensity as: Light (1.5 - 6.1m/s) which can cause momentary changes in altitude and attitude. The methodology is conservative and aligned to a cool calm day.

As the site is not in the approach or take off areas close to the runways, 6.1m/sec would be an appropriately conservative critical velocity in this case. Also, there would not be lot of circling by small aircraft over Banksmeadow.

The result according to the theoretical calculations is that the plume dissipates to 6.1m/sec at approximately 38m above AHD - approximately 13 m under the Inner Horizontal Surface.

Based on the information presented, the conservative nature of methodology and the height at which aircraft should be at or near the location; CASA considers that there will be an Acceptable Level of Safety regarding the plume. CASA has no objections to the proposal. No mitigations are required. No charting is required.

Also, as the stack (and plume) is under the OLS by a comfortable margin, the proposal does not need to be assessed under the Airspace Regulations and no aviation related marking or lighting is required.

Yours faithfully

David Alder

David Alder

Aerodrome Engineer

30 September 2024

From:	Steven Tan
To:	Jacob Vickers
Cc:	PR329 - Project Gemini; Neville Hattingh; Nathan Eagar; Rajesh Mottey; Amanda Mcdonald
Subject:	RE: SSD consultation - 16-20 Beauchamp Road, Banksmeadow - DSI/RAP [ref:!00D7F06iTix.!500Mn0jDBLX:ref]
Date:	Wednesday, 19 March 2025 1:24:48 PM
Attachments:	image001.png image002.png image003.png image004.png image005.png image006.png image007.png

Dear Jacob,

Thank you for the below. EPA acknowledge receipt and will provide a formal submission at EIS stage. We appreciate the early provision of reports.

Sincerely,
Steven

Steven Tan
Unit Head
Operations
NSW Environment Protection Authority
D 02 9995 6705

www.epa.nsw.gov.au @NSW_EPA

The EPA acknowledges the traditional custodians of the land and waters where we work. As part of the world's oldest surviving culture, we pay our respect to Aboriginal elders past, present and emerging.

---------- Forwarded Message ----------
From: Jacob Vickers [jacob@elementenvironment.com.au]
Sent: 21/02/2025 14:59
To: nathan.eager@epa.nsw.gov.au; amanda.mcdonald@epa.nsw.gov.au; rajesh.mottey@epa.nsw.gov.au
Cc: pr329-projectgemini@elementenvironment.com.au; neville@elementenvironment.com.au; info@epa.nsw.gov.au
Subject: SSD consultation - 16-20 Beauchamp Road, Banksmeadow - DSI/RAP

Hi Nathan and Amanda,
Element Environment Pty Ltd (Element) is writing on behalf of IXOM Operations Pty Ltd (IXOM)

to provide a summary of the recent Detailed Site Investigation (DSI) and subsequent Remedial Action Plan (RAP) undertaken at the site for the proposed New Chlorine Liquefaction Plant at IXOM's Botany Chlor-Alkali Plant (CAP) at 16-20 Beauchamp Road, Banksmeadow NSW 2019 (see attached). This follows our initial consultation letter submitted on 5 December 2024.
We would like to welcome feedback on the attached consultation letter and associated DSI / RAP, as well as the initial consultation letter – which are available for download at the following link: EPA consultation
Kind regards,

Jacob Vickers
Senior Environmental Consultant
Planning and Environment
0481 203 334 | jacob@elementenvironment.com.au

elementenvironment.com.au | Follow us on LinkedIn

Element acknowledges the Traditional Owners of Country throughout Australia. We pay our respects to Elders past and present.

---

ref:!00D7F06iTix.!500Mn0jDBLX:ref

This email is intended for the addressee(s) named and may contain confidential and/or privileged information.

PO Box1563
Warriewood
NSW 2102

ABN 45 162 835 083

21 February 2025

Attention: NSW Environment Protection Authority
IXOM Chlorine Liquefaction Plant - State Significant Development modification

PO Box 1563
Warriewood
NSW 2102

ABN 45 162 835 083

via email: info@environment.nsw.gov.au
NSW Environment Protection Authority
6 Parramatta Square, 10 Darcy Street
Parramatta
NSW 2124

Dear Development Team

IXOM Chlorine Liquefaction Plant – Modification to State Significant Development

Introduction

Element Environment Pty Ltd (Element) is writing on behalf of IXOM Operations Pty Ltd (IXOM) to provide a summary of the recent Detailed Site Investigation (DSI) and subsequent Remedial Action Plan (RAP) undertaken at the site for the proposed New Chlorine Liquefaction Plant at IXOM's Botany Chlor-Alkali Plant (CAP) at 16-20 Beauchamp Road, Banksmeadow NSW 2019. This follows our initial consultation letter submitted on 5 December 2024.

Enclosed with this letter is a copy of the Detailed Site Investigation (DSI) and Remedial Action Plan (RAP) for the EPA's review and consideration.

Findings of the Detailed Site Investigation (DSI)

The DSI, undertaken in response to the Secretary's Environmental Assessment Requirements (SEARs), involved a comprehensive assessment of soil and soil vapour conditions across the site. The key findings of the investigation are:

- **Asbestos-containing material (ACM)** was identified in surface soils in the southeastern portion of the site, posing potential occupational and aesthetic concerns.
- **Mercury and chlorinated hydrocarbons** were detected in soil vapour, with concentrations indicating a potential vapour intrusion risk to future site occupants if not appropriately managed.
- There were no identified impacts in site soils potentially contributing to groundwater impacts at the BIP.

Remedial Action Plan (RAP) Implementation

Based on the DSI results, IXOM has developed a Remedial Action Plan (RAP) to ensure the site is suitable for the proposed industrial use while mitigating environmental and human health risks. The key remedial actions include:

- **Asbestos Management:** Implementing an asbestos management strategy, including controlled removal where feasible and capping and containment of impacted soils with an engineered marker layer and clean fill where necessary.
- **Vapour Intrusion Mitigation:** Installation of a vapour barrier beneath the new warehouse structure to prevent migration of vapours into an enclosed space as well as ongoing vapour monitoring to ensure mitigation measures remain effective.
- **Site Validation and Long-Term Management:** Validation sampling to confirm effectiveness of remediation efforts and the development and implementation of a Long-Term Site Environmental Management Plan to monitor and manage residual contamination.

Next Steps

The remediation works outlined in the RAP will be undertaken in conjunction with the construction of the new chlorine liquefaction plant. We welcome any feedback from the NSW EPA regarding the proposed remedial approach and are available for further discussions if required.

Please do not hesitate to contact me on the below for any further information.

Kind Regards

Jacob Vickers
Senior Environmental Consultant– Environment and Planning

0481 203 334
jacob@elementenvironment.com.au

PO Box1563
Warriewood
NSW 2102

ABN 45 162 835 083

5 December 2024

Attention: NSW Environment Protection Authority
IXOM Chlorine Liquefaction Plant - State Significant Development modification

PO Box 1563
Warriewood
NSW 2102

ABN 45 162 835 083

via email: info@environment.nsw.gov.au
NSW Environment Protection Authority
6 Parramatta Square, 10 Darcy Street
Parramatta
NSW 2124

Dear Development Team

IXOM Chlorine Liquefaction Plant – Modification to State Significant Development

Introduction

Element Environment Pty Ltd (Element) is writing on behalf of IXOM Operations Pty Ltd (IXOM). IXOM has engaged Element to prepare the report for the modification of a State significant development (SSD) consent under Section 4.55(2) of the NSW *Environmental Planning and Assessment Act 1979* (EP&A Act) to construct and operate a chlorine liquefaction plant at IXOM's Botany Chlor-alkali Plant (CAP) at 16-20 Beauchamp Road, Banksmeadow NSW 2019 (the proposal).

IXOM is seeking consent to extend its existing chlorine plant by constructing and operating a new chlorine liquefaction and packaging plant.

Element recently submitted the scoping report to the NSW Department of Planning, Housing and Infrastructure (DPHI) to gain the Secretary's environmental assessment requirements (SEARs). In accordance with the consultation requirements in the DPHI's (2024) SSD Guideline and DPHI (2024) *Undertaking engagement guidelines for State significant projects*, Element is welcoming feedback from NSW Environment Protection Authority (EPA) on the project.

This letter provides an overview of the proposal and the key environmental matters for EPAs consideration. The scoping report can be viewed in full on the NSW Major Project planning portal at the following link: Mod 6 chlorine liquefaction plant.

About IXOM

IXOM is Australia's largest manufacturer of chlor-alkali products including chlorine, caustic soda, sodium hypochlorite and hydrochloric acid. IXOM is a major supplier of these chemicals for agriculture, industry, mining, life sciences, food, hygiene and construction. Liquid chlorine is used by Australian municipalities to treat sewage and create safe drinking water for Australia.

IXOM operates globally, with offices in Europe, Australia Pacific, Asia and the USA, and its head office is in Melbourne, Australia.

IXOM is currently the only chemical manufacturer in Australia that liquefies chlorine.

IXOM Operations Pty Ltd (IXOM) operates its Botany Chlor-alkali Plant (CAP), at 16-20 Beauchamp Road, Banksmeadow NSW 2019 in the Botany Industrial Park (BIP). IXOM operates on the following lots in BIP (the site):

- Lot 1105 DP 1227173
- Lot 1101 DP 1127173
- Lot 1102 DP 1127173
- Lot 1103 DP 1127173
- Lot 1104 DP 1127173
- Lot 1115 DP 1127173

The CAP currently manufactures up to 100 tonnes per day (tpd) of chlorine and caustic soda through the electrolysis of salt using a mercury-free membrane technology. Hydrochloric acid is also produced at the CAP.

The CAP operates under Environment Protection License (EPL) 20547 which permits the scheduled activities of chemical production, chemical storage, waste processing (non-thermal treatment) and waste storage, including the:

- production of over 25,000 tonnes (t) of dangerous goods annually;
- storage of up to 100,000 kilolitres (kL) of general chemicals;
- non-thermal treatment of any amount of waste including hazardous waste; and
- storage of hazardous, restricted solid, liquid, clinical and related and asbestos waste.

The proposal

IXOM proposes to construct and operate a new chlorine liquefaction plant at its existing CAP to bolster the supply of liquid chlorine in Australia and reduce logistical costs associated with the distribution of liquid chlorine within NSW.

The chlorine liquefaction plant will provide redundancy in the event that the existing chlorine liquefaction plant at Ixom's manufacturing plant in Laverton (Victoria) becomes non-operational or is no longer able to meet market demands. The plant would operate at full capacity if a second Ixom manufacturing plant in Laverton (Victoria) becomes non-operational and would be capable of supplying national demand (currently 35 tpd). It is noted the Laverton has never needed to shut down, and full operation of the proposed plant is not expected to be required.

During this unlikely scenario, the proposed Botany chlorine liquefaction plant would produce liquified chlorine products as required to compensate for any loss of production volume at the Laverton liquefaction plant. During normal operation, the chlorine liquefaction plant will operate at a reduced rate to supply bulk liquefied chlorine throughout NSW.

Chlorine liquefaction plant

The new chlorine liquefaction plant would have a maximum production capacity of 50 tpd (in addition to the 100 tpd of chlorine derived products already manufactured at the CAP), but would operate at 10% capacity during normal operations, producing 5-6 tpd to supply liquid chlorine to the NSW region in 13 tonne tankers. The proposal will only require three trucks per week, which will result in three trips in and three trips out per week.

The new building and plant would require no additional staff during normal operations.

Most of the chlorine liquefaction plant will be in a containment building to minimise risk associated with a fugitive chlorine gas emission.

The chlorine liquefaction plant will be designed from proven equivalent IXOM processes.

The chlorine liquefaction plant would be enclosed and comprise:

- Chlorine liquefaction unit (shell and tube heat exchanger).
- Chlorine separator.
- Two 50 t chlorine storage tanks including cryogenic insulation, weighting scale and tapping gas supply.
- Two chlorine storage bunds (one for each storage tank).
- Two chlorine transfer pumps.
- Chlorine drum filling and degas station.
- Chlorine cylinder filling and degas station.
- Degas reactor and liquefaction building scrubber.
- Packaged refrigeration unit for gaseous chlorine liquefaction, including compressors, CO2 gas/liquid separator, coolant storage units, ancillary units and independent control system.
- Two-way chlorine tanker loading bay with weighing scale and flow meter.

Key traffic and transport matters

The proposed chlorine liquefaction plant at IXOM's Botany Chlor-Alkali Plant has been assessed for traffic and transport impacts, confirming the proposal will result in negligible impacts on the surrounding road network.

The site is approved under the existing consent for up to 76 truck movements per day associated with the transportation of raw materials and products. Existing traffic movements are significantly lower, averaging only 46 truck movements per day—30 fewer than the approved limit. The proposed modification will introduce a small number of additional truck movements, and even under the most conservative assumptions, the site's total traffic generation will remain well below its approved limits.

During normal operations, the modification will result in six additional truck movements per week (three trucks in and three out), which are conservatively modelled to be within the same day. In the unlikely event that the manufacturing plant in Laverton becomes non-operational (worst-case scenario), the Botany site would see a maximum of 12 additional truck movements per day (six trucks in and six out). These figures represent a highly conservative assessment, as in reality, any deliveries of liquefied chlorine will reduce overall truck movements compared to transporting chlorine in the form of other products, where it is only a minor constituent, as described below.

The proposed modification will bring operational efficiencies by producing and dispatching liquefied chlorine directly from the Botany site, thereby decreasing the logistical demand for transporting liquefied chlorine from the Laverton plant in Victoria to IXOMs NSW customers. The modification does not include any proposed increase to the existing production capacity of chlorine at the site. Rather, the production of liquefied chlorine will be balanced with the existing production of chlorine products to ensure chlorine production volumes remain below the approved production limit.

All chlorine produced at the site is currently consumed in products such as hydrochloric acid, sodium hypochlorite and ferric chloride. Therefore, any increase in the production of liquefied chlorine at the site would result in the decreased production of these other chlorine derivate products, which generally comprise of between 11-33% chlorine. The resulting impact would

mean that for each dispatched truck containing liquefied chlorine, there would be between 3 and 9 less dispatched trucks containing other chlorine products.

Notwithstanding that the proposed truck movements would be within the approved limits, traffic modelling was conservatively carried out assuming that there would be no reduction in truck numbers as described above. The assessment indicates that all key intersections in the surrounding area currently operate at a good Level of Service (LoS B or better) during peak hours. With the traffic from the proposal, there will be negligible impacts on intersection performance, with delays increasing by less than one second at the busiest locations. No intersection upgrades or road improvements will be required as a result of the proposal.

Heavy vehicles servicing the site will follow designated approved routes and access the facility via Gate 3 on Denison Street, ensuring compliance with transport safety requirements. Swept path analysis confirms that internal and external access routes are suitable for the proposed vehicle types, and the plant layout provides adequate space for truck manoeuvring, loading, and unloading.

In summary, the proposed modification will result in a negligible increase in truck movements, well within approved limits, with no significant impacts on the surrounding road network. The modification supports the efficient and safe delivery of essential chlorine supplies for NSW and broader markets while reducing the logistical complexity of chlorine transport.

Key air quality and greenhouse gas impact matters

The Air Quality and Greenhouse Gas (GHG) Impact Assessment confirms that the proposed chlorine liquefaction plant will have minimal impact on local air quality and greenhouse gas emissions. The following key points summarise the findings:

Air quality

- **Containment and Mitigation Measures:** The proposed plant will be housed in a containment building, maintained under negative pressure to prevent fugitive emissions. A caustic scrubbing system will treat any chlorine gas emissions within the building, converting them into sodium hypochlorite for storage and sale as a product. In the event of an unlikely chlorine release, treated air from the caustic scrubber is released via a stack.
- **Compliance with Air Quality Standards:** Dispersion modelling indicates that ground-level chlorine concentrations, including all site sources, will remain significantly below the NSW EPA's criterion of 50 µg/m³. For the project in isolation, the maximum boundary concentration is 1.4 µg/m³, and for all sources combined, it is 10 µg/m³, which is only 20% of the allowable limit.
- **Construction Dust:** Construction activities pose a negligible risk to air quality due to the implementation of standard dust control measures such as covering stockpiles, restricting vehicle speeds, and dampening exposed surfaces.

Greenhouse Gas Emissions

- The project will contribute only 0.001% of NSW's annual GHG emissions. This equates to 0.0002% of Australia's total annual GHG emissions.

In summary, the assessment demonstrates that the proposed plant will operate safely and sustainably without causing significant impacts on air quality or greenhouse gas emissions. The facility's design and mitigation measures ensure compliance with EPA air quality impact assessment criteria.

Key noise impact matters

The Noise and Vibration Impact Assessment confirms that the proposed chlorine liquefaction plant will meet all relevant noise criteria during both construction and operation, ensuring compliance with the EPA guidelines.

Operational Noise

- **Compliance with Noise Criteria:** Noise modelling indicates that operational noise levels from the liquefaction plant will remain within the prescribed limits outlined in the site's Environment Protection License (EPL) and the Noise Policy for Industri (EPA, 2017). Predicted noise levels at nearby residential receivers, including the most affected properties on Denison Street, are well below the established day, evening, and night thresholds of 65 dBA, 55 dBA, and 50 dBA respectively.
- **No Sleep Disturbance Impacts:** Assessments of maximum noise events, such as airbrake releases from heavy vehicles (sound power level of 112dBA), confirm that maximum noise trigger levels will not be exceeded, and sleep disturbance is not anticipated at residential receivers.
- **Containment and Mitigation Measures:** The plant will operate within a leak-tight containment building that significantly reduces external noise emissions. Quiet equipment will be selected to minimise noise generation.

Construction Noise

- **Compliance with Construction Noise Limits:** Noise levels from construction activities, including earthworks, concreting, and plant installation, will meet the relevant construction Noise Management Levels (NMLs) for all nearby receivers.
- **Standard Construction Hours:** Construction will occur within standard hours (Monday to Friday 7:00 am–6:00 pm, Saturday 8:00 am–1:00 pm), further mitigating potential disturbance.
- **Good Work Practices:** IXOM will implement measures to reduce construction noise, such as maintaining equipment in good working order and scheduling high-noise activities during less sensitive periods.

Traffic Noise

- The modification will result in a negligible increase in road traffic noise. Even in the worst-case scenario, where up to 12 additional truck movements occur weekly, the impact on road noise levels will be imperceptible (<0.1 dBA increase).

In summary, the assessment demonstrates that the project will have minimal noise impacts during construction and operation, with all activities compliant with applicable noise guidelines and EPL conditions.

Next steps

Element is currently preparing the modification report for submission to DPHI. Once complete, the modification report will be submitted to DPHI for public exhibition and consideration. The community and agencies will have the opportunity to review the modification report and make submissions to DPHI, which IXOM will need to consider after exhibition has finished.

DPHI will consider Ixom's response to the submissions and decide if the proposal should be approved.

Closing

As summarised above, IXOM and Element are seeking feedback from the EPA on the proposed development and invite the EPA to meet via a Microsoft Teams meeting to discuss the outcomes of the key matters described above and address any additional matters for consideration or questions regarding the proposal.

Please contact me for further information.

Kind Regards

Jacob Vickers
Senior Environmental Consultant– Environment and Planning

0481 203 334
jacob@elementenvironment.com.au

From: Peter Barber
To: Guy Hancock; Jacob Vickers; Luis Melim
Cc: PR329 - Project Gemini; Danny Oldfield; Frank Dion; Arianna Deer; Benedick Pagarigan; Richard Benson
Subject: RE: SSD consultation - 16-20 Beauchamp Road, Banksmeadow
Date: Tuesday, 10 September 2024 5:05:58 PM
Attachments: image001.png
image002.png
image003.png
image004.png
image005.png
image006.png

> Some people who received this message don't often get email from peter.barber@bayside.nsw.gov.au. Learn why this is important

Hi Jacob

I understand that our Strategic Planning Team provided a broader response on Council's behalf back in June, and that SEARS were subsequently issued. We will review the EIS when it is submitted and provide further comment.

Regards

Peter Barber
Director - City Futures
444-446 Princes Highway, Rockdale NSW 2216
T 9562 1619 **M** 0422003488
E Peter.Barber@bayside.nsw.gov.au **W** www.bayside.nsw.gov.au

Bayside Council acknowledges the Traditional Custodians, the Gadigal and Bidjigal people of the Eora Nation. The people of the Eora Nation, their spirits and ancestors will always remain with our waterways and the land, our Mother Earth.

From: Guy Hancock <Guy.Hancock@bayside.nsw.gov.au>
Sent: Tuesday, September 10, 2024 4:36 PM
To: Jacob Vickers <jacob@elementenvironment.com.au>; Peter Barber <Peter.Barber@bayside.nsw.gov.au>; Luis Melim <Luis.Melim@bayside.nsw.gov.au>
Cc: PR329 - Project Gemini <PR329-ProjectGemini@elementenvironment.com.au>; Danny Oldfield <Danny.Oldfield@bayside.nsw.gov.au>; Frank Dion <Frank.Dion@bayside.nsw.gov.au>; Arianna Deer <deer1ari@police.nsw.gov.au>; Benedick Pagarigan <benedick.pagarigan@ixom.com>; Richard Benson <richard.benson@qenos.com>
Subject: RE: SSD consultation - 16-20 Beauchamp Road, Banksmeadow

Hi Jacob,

Apologies for the delay in responding I have just returned from leave.

Regarding the attached I have included Councils Director City Futures – Peter Barber and Manager Development Services - Luis Melim, as they may have input on the attached proposal.

From an emergency management (LEMO) viewpoint, I believe IXOM operates and is licensed via SafeWork as a Major Hazard Facility (MHF). Any changes or increase in operation that would alter the existing status of the MHF license should be submitted via the required channels. This would also likely result in a review of, and changes to, emergency procedures for the site such as evacuations, shutdown protocols, decontamination etc. Typically, the key agencies to review these via SafeWork would be FrNSW, Sydney Water, Transport, etc.

The Botany Industrial Park representative for the Local Emergency Management Committee is

Richard Benson (QENOS). He can act as a liaison between Council and the companies at BIP should you or IXOM wish to present at the quarterly LEMC meetings regarding changes to the site.

The next LEMC meeting is scheduled for 2nd October at Mascot Police Station 10-11am.

Regards
Guy

Guy Hancock
Manager City Works
23A Clevedon St, Botany NSW 2019
T 9562 1528 **M** 0409654109
E Guy.Hancock@bayside.nsw.gov.au **W** www.bayside.nsw.gov.au

Bayside Council acknowledges the Traditional Custodians, the Gadigal and Bidjigal people of the Eora Nation. The people of the Eora Nation, their spirits and ancestors will always remain with our waterways and the land, our Mother Earth.

From: Jacob Vickers <jacob@elementenvironment.com.au>
Sent: Friday, August 23, 2024 11:29 AM
To: Danny Oldfield <Danny.Oldfield@bayside.nsw.gov.au>; Guy Hancock <Guy.Hancock@bayside.nsw.gov.au>
Cc: PR329 - Project Gemini <PR329-ProjectGemini@elementenvironment.com.au>
Subject: SSD consultation - 16-20 Beauchamp Road, Banksmeadow

Hi Guy and Danny,

Element Environment Pty Ltd (Element) is writing on behalf of IXOM Operations Pty Ltd (IXOM). IXOM has engaged Element to prepare a report for the modification of a State significant development (SSD) consent under Section 4.55(2) of the NSW *Environmental Planning and Assessment Act 1979* (EP&A Act) to construct and operate a chlorine liquefaction plant at IXOM's Botany Chlor-alkali Plant (CAP) at 16-20 Beauchamp Road, Banksmeadow NSW 2019 (the proposal).

As part of the SSD process, and as required by the Department of Planning, Housing and Infrastructure (DPHI), we are consulting you regarding the development and requesting any input that you may have regarding additional matters that you believe should be assessed and have not yet been addressed in the scoping report or the Secretary's environmental assessment requirements (SEARs).

Please see the attached letter for further information regarding the development and a link to the scoping letter and SEARs.

Please provide any feedback you may have by COB 6 September 2024. If you would like to arrange a meeting or require any clarifications, please don't hesitate to contact us.

Kind regards,

Jacob Vickers
Senior Environmental Consultant
Planning and Environment
0481 203 334 | jacob@elementenvironment.com.au

elementenvironment.com.au | Follow us on LinkedIn

PO Box 1563
Warriewood
NSW 2102

ABN 45 162 835 083

23 August 2024

Attention: Guy Hancock
IXOM Chlorine Liquefaction Plant - State Significant Development modification

PO Box 1563
Warriewood
NSW 2102

ABN 45 162
835 083

via email: guy.hancock@bayside.nsw.gov.au
via email: danny.oldfield@bayside.nsw.gov.au
Bayside Council Local Emergency Management Officer
PO Box 21,
Rockdale
NSW 2216

Dear Guy

IXOM Chlorine Liquefaction Plant – Modification to State Significant Development

Introduction

Element Environment Pty Ltd (Element) is writing on behalf of IXOM Operations Pty Ltd (IXOM). IXOM has engaged Element to prepare the report for the modification of a State significant development (SSD) consent under Section 4.55(2) of the NSW *Environmental Planning and Assessment Act 1979* (EP&A Act) to construct and operate a chlorine liquefaction plant at IXOM's Botany Chlor-alkali Plant (CAP) at 16-20 Beauchamp Road, Banksmeadow NSW 2019 (the proposal).

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This letter provides an overview of the proposal and the key environmental matters for CASAs consideration. The scoping report can be viewed in full on the NSW Major Project planning portal at the following link: Mod 6 chlorine liquefaction plant.

About IXOM

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agriculture, industry, mining, life sciences, food, hygiene and construction. Liquid chlorine is used by Australian municipalities to treat sewage and create safe drinking water for Australia.

IXOM operates globally, with offices in Europe, Australia Pacific, Asia and the USA, and its head office is in Melbourne, Australia.

IXOM is currently the only chemical manufacturer in Australia that liquefies chlorine.

IXOM Operations Pty Ltd (IXOM) operates its Botany Chlor-alkali Plant (CAP), at 16-20 Beauchamp Road, Banksmeadow NSW 2019 in the Botany Industrial Park (BIP). IXOM operates on the following lots in BIP (the site):

- Lot 1105 DP 1227173
- Lot 1101 DP 1127173
- Lot 1102 DP 1127173
- Lot 1103 DP 1127173
- Lot 1104 DP 1127173
- Lot 1115 DP 1127173

The CAP currently manufactures up to 100 tonnes per day (tpd) of chlorine and caustic soda through the electrolysis of salt using a mercury-free membrane technology. Hydrochloric acid is also produced at the CAP.

The CAP operates under Environment Protection License (EPL) 20547 which permits the scheduled activities of chemical production, chemical storage, waste processing (non-thermal treatment) and waste storage, including the:

- production of over 25,000 tonnes (t) of dangerous goods annually;
- storage of up to 100,000 kilolitres (kL) of general chemicals;
- non-thermal treatment of any amount of waste including hazardous waste; and
- storage of hazardous, restricted solid, liquid, clinical and related and asbestos waste.

The proposal

IXOM proposes to construct and operate a new chlorine liquefaction plant at its existing CAP to bolster the supply of liquid chlorine in Australia and reduce logistical costs associated with the distribution of liquid chlorine within NSW.

The chlorine liquefaction plant will provide redundancy in the event that the existing chlorine liquefaction plant at Ixom's manufacturing plant in Laverton (Victoria) becomes non-operational or is no longer able to meet market demands. The plant would operate at full capacity if a second Ixom manufacturing plant in Laverton (Victoria) becomes non-operational and would be capable of supplying national demand (currently 35 tpd). It is noted the Laverton has never needed to shut down, and full operation of the proposed plant is not expected to be required.

During this unlikely scenario, the proposed Botany chlorine liquefaction plant would produce liquified chlorine products as required to compensate for any loss of production volume at the Laverton liquefaction plant. During normal operation, the chlorine liquefaction plant will operate at a reduced rate to supply bulk liquefied chlorine throughout NSW.

Chlorine liquefaction plant

The new chlorine liquefaction plant would have a maximum production capacity of 50 tpd (in addition to the 100 tpd of chlorine derived products already manufactured at the CAP), but would operate at 10% capacity during normal operations, producing 5-6 tpd to supply liquid chlorine to the NSW region in 13 tonne tankers. The proposal will only require three trucks per week, which will result in three trips in and three trips out per week.

The new building and plant would require no additional staff during normal operations.

Most of the chlorine liquefaction plant will be in a containment building to minimise risk associated with a fugitive chlorine gas emission.

The chlorine liquefaction plant will be designed from proven equivalent IXOM processes.

The chlorine liquefaction plant would be enclosed and comprise:

- Chlorine liquefaction unit (shell and tube heat exchanger).
- Chlorine separator.
- Two 50 t chlorine storage tanks including cryogenic insulation, weighting scale and tapping gas supply.
- Two chlorine storage bunds (one for each storage tank).
- Two chlorine transfer pumps.
- Chlorine drum filling and degas station.
- Chlorine cylinder filling and degas station.
- Degas reactor and liquefaction building scrubber.
- Packaged refrigeration unit for gaseous chlorine liquefaction, including compressors, CO2 gas/liquid separator, coolant storage units, ancillary units and independent control system.
- Two-way chlorine tanker loading bay with weighing scale and flow meter.

Hazardous substance management

Ixom is committed to maintaining safety for its staff and the community surrounding the CAP. The development would continue to operate according to the relevant legislation and best-practice hazardous substance management.

The new plant will incorporate the latest safety designs and management measures, including a spare tank to hold liquified chlorine from the other tank if it fails, bunding around the building to contain spills and leaks, and a fully enclosed building with a scrubbing system to catch and treat any chlorine gas leaks.

We note that the proposal will reduce the existing risks at the CAP because containers of liquid chlorine and tankers that are currently stored outside onsite will be stored inside the building, such that the risk of spills and leaks is dramatically reduced.

Full details of Ixom's approach to the management of hazardous substances at the CAP will be provided in the planning submission which will be publicly exhibited by the DPHI.

Key matters and SEARs

Key matters for assessment were identified in Element Environment (2024) *Chlorine Liquefaction Plant – Modification to State Significant Development Consent – Scoping Report*, which is in Attachment 1 and was submitted to DPHI for review and distribution to agencies so that it could provide SEARs for the project.

SEARs were issued on 28 June 2024, which are in Attachment 2.

Next steps

Element is preparing the modification report for submission to DPHI.

Once complete, the modification report will be submitted to DPHI for public exhibition and consideration. The community will have the opportunity to review the modification report and make submissions to DPHI, which IXOM will need to consider after exhibition has finished.

DPHI will consider Ixom's response to the submissions and decide if the proposal should be approved.

Closing

As summarised above, the scoping report has been submitted and SEARs have been issued. IXOM and Element are seeking feedback from LEMO on the scoping report and SEARs, specifically to determine if you have any additional matters for consideration or questions regarding the proposal.

Please contact me for further information.

Kind Regards

Mark Roberts
A/Technical Director – Environment and Planning

0414 670 254
mark.roberts@elementenvironment.com.au

22 October 2024

The Hon. Ed Husic MP
Minister for Industry and Science
Parliament House
Canberra ACT 2600

Via email: brett.gale@industry.gov.au, warren.tegg@industry.gov.au

Dear Minister,

Meeting request – IXOM

I am writing to request a meeting with IXOM senior leadership to discuss chlorine supply chain resilience in Australia, as well as some of the continuing challenges faced by the Australian chemical manufacturing sector.

In our previous meeting on 4 May 2023, we discussed IXOM's two SCRI grants: one to build a plant to manufacture MCA for Nufarm to replace imports (for agriculture); the other to build a second plant to liquefy and package chlorine gas (for drinking water treatment).

Since that meeting, despite having to terminate both SCRI grant agreements, IXOM has continued to progress plans to expand our liquefied chlorine gas capabilities at our Botany NSW manufacturing plant, which is co-located with Qenos, Indorama and Orica at the Botany Industrial Park.

We would appreciate the opportunity to update you on this critical supply chain resilience project, particularly in light of the imminent closure of Qenos and Indorama.

We would also welcome the opportunity to provide you with a tour of our Botany chlor alkali plant. However, if this is not possible, we would be grateful for an in-person meeting in either your Sydney or Canberra office at a convenient time.

IXOM is the sole Australian manufacturer and provider of liquefied chlorine gas to the water industry, critical for drinking water disinfection. We operate one of the largest bulk and packaged chemical distribution businesses in Australia and New Zealand, and the chemicals we manufacture and distribute are critical components for industries including water treatment, dairy, food processing, power generation, construction, mining, oil and gas, and agriculture.

Thank you in advance for your consideration of this request. If I can provide you with any further information, please do not hesitate to contact me.

Yours sincerely,

Sabine Wolff
Head of Corporate Affairs

Sabine Wolff
Head of Corporate Affairs
IXOM Operations Pty Ltd
Level 8, 1 Nicholson St
East Melbourne VIC 3002
+61 419 529 577
www.ixom.com

MELBOURNE

Orica Ltd
ACN 004 145 868
1 Nicholson Street East Melbourne VIC 3002 Australia
T +61 3 96657050
Email: malcolm.haack@orica.com

29 November 2024

Ms Deana Burn
Department of Planning, Housing and Infrastructure
4 Parramatta Square, 12 Darcy Street
Locked Bag 5022
PARRAMATTA 2150

Dear Deana,

Ixom Operations Pty Ltd ABN 51 600 546 512 - Modification 6 to DA35/98. Consent of the Landowner (Orica Ltd ACN 004 145 868)

I refer to the application submitted by Ixom Operations Pty Ltd (ABN 51 600 546 512) to modify DA35/98 to the NSW Department of Planning, Housing and Infrastructure (DA35/98 – Mod 6). The application relates to the construction and operation of a chlorine liquefaction plant including chlorine liquefaction processing (up to 50 tonnes per day), chlorine storage (50 tonnes at any one time) and chlorine packaging in bulk and in containerised form, located on land owned by Orica Ltd (Lot 1101 in Deposited Plan 1227173) and leased to Ixom Operations Pty Ltd, within the Botany Industrial Park ("the **Application**").

As the Landowner of Lot 1101 in Deposited Plan 1227173, Orica Ltd consents to the Application being made concerning the land described above.

Signed for an on behalf of **Orica Limited (ACN 004 145 868)** by:)))))

MALCOLM HAACK

who is authorised by Power of Attorney and registered with the office of the NSW of the NSW Registrar General (Book 4790 No. 140 dated 30 June 2021) and who declares that he has at the time of execution no notice of its revocation

Signature

In the presence of:

Paul Bryant

PRINT Name of witness

Signature of witness

PO Box1563
Warriewood
NSW 2102

ABN 45 162 835 083

5 December 2024

Attention: Randwick City Council
IXOM Chlorine Liquefaction Plant - State Significant Development modification

PO Box 1563
Warriewood
NSW 2102

ABN 45 162
835 083

via email: council@randwick.nsw.gov.au
Randwick City Council
Administration Building & Customer Service Centre
30 Frances Street
Randwick NSW 2031

Dear Development Team

IXOM Chlorine Liquefaction Plant – Modification to State Significant Development

Introduction

Element Environment Pty Ltd (Element) is writing on behalf of IXOM Operations Pty Ltd (IXOM). IXOM has engaged Element to prepare the report for the modification of a State significant development (SSD) consent under Section 4.55(2) of the NSW *Environmental Planning and Assessment Act 1979* (EP&A Act) to construct and operate a chlorine liquefaction plant at IXOM's Botany Chlor-alkali Plant (CAP) at 16-20 Beauchamp Road, Banksmeadow NSW 2019 (the proposal).

IXOM is seeking consent to extend its existing chlorine plant by constructing and operating a new chlorine liquefaction and packaging plant.

Element recently submitted the scoping report to the NSW Department of Planning, Housing and Infrastructure (DPHI) to gain the Secretary's environmental assessment requirements (SEARs). In accordance with the consultation requirements in the DPHI's (2024) SSD Guideline and DPHI (2024) *Undertaking engagement guidelines for State significant projects*, Element is welcoming feedback from Randwick City Council (Council) on the project.

This letter provides an overview of the proposal and the key environmental matters for Councils consideration. The scoping report can be viewed in full on the NSW Major Project planning portal at the following link: Mod 6 chlorine liquefaction plant.

About IXOM

IXOM is Australia's largest manufacturer of chlor-alkali products including chlorine, caustic soda, sodium hypochlorite and hydrochloric acid. IXOM is a major supplier of these chemicals for agriculture, industry, mining, life sciences, food, hygiene and construction. Liquid chlorine is used by Australian municipalities to treat sewage and create safe drinking water for Australia.

IXOM operates globally, with offices in Europe, Australia Pacific, Asia and the USA, and its head office is in Melbourne, Australia.

IXOM is currently the only chemical manufacturer in Australia that liquefies chlorine.

IXOM Operations Pty Ltd (IXOM) operates its Botany Chlor-alkali Plant (CAP), at 16-20 Beauchamp Road, Banksmeadow NSW 2019 in the Botany Industrial Park (BIP). IXOM operates on the following lots in BIP (the site):

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- production of over 25,000 tonnes (t) of dangerous goods annually;
- storage of up to 100,000 kilolitres (kL) of general chemicals;
- non-thermal treatment of any amount of waste including hazardous waste; and
- storage of hazardous, restricted solid, liquid, clinical and related and asbestos waste.

The proposal

IXOM proposes to construct and operate a new chlorine liquefaction plant at its existing CAP to bolster the supply of liquid chlorine in Australia and reduce logistical costs associated with the distribution of liquid chlorine within NSW.

The chlorine liquefaction plant will provide redundancy in the event that the existing chlorine liquefaction plant at Ixom's manufacturing plant in Laverton (Victoria) becomes non-operational or is no longer able to meet market demands. The plant would operate at full capacity if a second Ixom manufacturing plant in Laverton (Victoria) becomes non-operational and would be capable of supplying national demand (currently 35 tpd). It is noted the Laverton has never needed to shut down, and full operation of the proposed plant is not expected to be required.

During this unlikely scenario, the proposed Botany chlorine liquefaction plant would produce liquified chlorine products as required to compensate for any loss of production volume at the Laverton liquefaction plant. During normal operation, the chlorine liquefaction plant will operate at a reduced rate to supply bulk liquefied chlorine throughout NSW.

Chlorine liquefaction plant

The new chlorine liquefaction plant would have a maximum production capacity of 50 tpd (in addition to the 100 tpd of chlorine derived products already manufactured at the CAP), but would operate at 10% capacity during normal operations, producing 5-6 tpd to supply liquid chlorine to the NSW region in 13 tonne tankers. The proposal will only require three trucks per week, which will result in three trips in and three trips out per week.

The new building and plant would require no additional staff during normal operations.

Most of the chlorine liquefaction plant will be in a containment building to minimise risk associated with a fugitive chlorine gas emission.

The chlorine liquefaction plant will be designed from proven equivalent IXOM processes.

The chlorine liquefaction plant would be enclosed and comprise:

- Chlorine liquefaction unit (shell and tube heat exchanger).
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- Two-way chlorine tanker loading bay with weighing scale and flow meter.

Key traffic and transport matters

The proposed chlorine liquefaction plant at IXOM's Botany Chlor-Alkali Plant has been assessed for traffic and transport impacts, confirming the proposal will result in negligible impacts on the surrounding road network.

The site is approved under the existing consent for up to 76 truck movements per day associated with the transportation of raw materials and products. Existing traffic movements are significantly lower, averaging only 46 truck movements per day—30 fewer than the approved limit. The proposed modification will introduce a small number of additional truck movements, and even under the most conservative assumptions, the site's total traffic generation will remain well below its approved limits.

During normal operations, the modification will result in six additional truck movements per week (three trucks in and three out), which are conservatively modelled to be within the same day. In the unlikely event that the manufacturing plant in Laverton becomes non-operational (worst-case scenario), the Botany site would see a maximum of 12 additional truck movements per day (six trucks in and six out). These figures represent a highly conservative assessment, as in reality, any deliveries of liquefied chlorine will reduce overall truck movements compared to transporting chlorine in the form of other products, where it is only a minor constituent, as described below.

The proposed modification will bring operational efficiencies by producing and dispatching liquefied chlorine directly from the Botany site, thereby decreasing the logistical demand for transporting liquefied chlorine from the Laverton plant in Victoria to IXOMs NSW customers. The modification does not include any proposed increase to the existing production capacity of chlorine at the site. Rather, the production of liquefied chlorine will be balanced with the existing production of chlorine products to ensure chlorine production volumes remain below the approved production limit.

All chlorine produced at the site is currently consumed in products such as hydrochloric acid, sodium hypochlorite and ferric chloride. Therefore, any increase in the production of liquefied chlorine at the site would result in the decreased production of these other chlorine derivate products, which generally comprise of between 11-33% chlorine. The resulting impact would

mean that for each dispatched truck containing liquefied chlorine, there would be between 3 and 9 less dispatched trucks containing other chlorine products.

Notwithstanding that the proposed truck movements would be within the approved limits, traffic modelling was conservatively carried out assuming that there would be no reduction in truck numbers as described above. The assessment indicates that all key intersections in the surrounding area currently operate at a good Level of Service (LoS B or better) during peak hours. With the traffic from the proposal, there will be negligible impacts on intersection performance, with delays increasing by less than one second at the busiest locations. No intersection upgrades or road improvements will be required as a result of the proposal.

Heavy vehicles servicing the site will follow designated approved routes and access the facility via Gate 3 on Denison Street, ensuring compliance with transport safety requirements. Swept path analysis confirms that internal and external access routes are suitable for the proposed vehicle types, and the plant layout provides adequate space for truck manoeuvring, loading, and unloading.

In summary, the proposed modification will result in a negligible increase in truck movements, well within approved limits, with no significant impacts on the surrounding road network. The modification supports the efficient and safe delivery of essential chlorine supplies for NSW and broader markets while reducing the logistical complexity of chlorine transport.

Key air quality and greenhouse gas impact matters

The Air Quality and Greenhouse Gas (GHG) Impact Assessment confirms that the proposed chlorine liquefaction plant will have minimal impact on local air quality and greenhouse gas emissions. The following key points summarise the findings:

Air quality

- **Containment and Mitigation Measures:** The proposed plant will be housed in a containment building, maintained under negative pressure to prevent fugitive emissions. A caustic scrubbing system will treat any chlorine gas emissions within the building, converting them into sodium hypochlorite for storage and sale as a product. In the event of an unlikely chlorine release, treated air from the caustic scrubber is released via a stack.
- **Compliance with Air Quality Standards:** Dispersion modelling indicates that ground-level chlorine concentrations, including all site sources, will remain significantly below the NSW EPA's criterion of 50 µg/m³. For the project in isolation, the maximum boundary concentration is 1.4 µg/m³, and for all sources combined, it is 10 µg/m³, which is only 20% of the allowable limit.
- **Construction Dust:** Construction activities pose a negligible risk to air quality due to the implementation of standard dust control measures such as covering stockpiles, restricting vehicle speeds, and dampening exposed surfaces.

Greenhouse Gas Emissions

- The project will contribute only 0.001% of NSW's annual GHG emissions. This equates to 0.0002% of Australia's total annual GHG emissions.

In summary, the assessment demonstrates that the proposed plant will operate safely and sustainably without causing significant impacts on air quality or greenhouse gas emissions. The facility's design and mitigation measures ensure compliance with EPA air quality impact assessment criteria.

Key noise impact matters

The Noise and Vibration Impact Assessment confirms that the proposed chlorine liquefaction plant will meet all relevant noise criteria during both construction and operation, ensuring compliance with the EPA guidelines.

Operational Noise

- **Compliance with Noise Criteria:** Noise modelling indicates that operational noise levels from the liquefaction plant will remain within the prescribed limits outlined in the site's Environment Protection License (EPL) and the Noise Policy for Industri (EPA, 2017). Predicted noise levels at nearby residential receivers, including the most affected properties on Denison Street, are well below the established day, evening, and night thresholds of 65 dBA, 55 dBA, and 50 dBA respectively.
- **No Sleep Disturbance Impacts:** Assessments of maximum noise events, such as airbrake releases from heavy vehicles (sound power level of 112dBA), confirm that maximum noise trigger levels will not be exceeded, and sleep disturbance is not anticipated at residential receivers.
- **Containment and Mitigation Measures:** The plant will operate within a leak-tight containment building that significantly reduces external noise emissions. Quiet equipment will be selected to minimise noise generation.

Construction Noise

- **Compliance with Construction Noise Limits:** Noise levels from construction activities, including earthworks, concreting, and plant installation, will meet the relevant construction Noise Management Levels (NMLs) for all nearby receivers.
- **Standard Construction Hours:** Construction will occur within standard hours (Monday to Friday 7:00 am–6:00 pm, Saturday 8:00 am–1:00 pm), further mitigating potential disturbance.
- **Good Work Practices:** IXOM will implement measures to reduce construction noise, such as maintaining equipment in good working order and scheduling high-noise activities during less sensitive periods.

Traffic Noise

- The modification will result in a negligible increase in road traffic noise. Even in the worst-case scenario, where up to 12 additional truck movements occur weekly, the impact on road noise levels will be imperceptible (<0.1 dBA increase).

In summary, the assessment demonstrates that the project will have minimal noise impacts during construction and operation, with all activities compliant with applicable noise guidelines and EPL conditions.

Next steps

Element is currently preparing the modification report for submission to DPHI. Once complete, the modification report will be submitted to DPHI for public exhibition and consideration. The community and agencies will have the opportunity to review the modification report and make submissions to DPHI, which IXOM will need to consider after exhibition has finished.

DPHI will consider Ixom's response to the submissions and decide if the proposal should be approved.

Closing

As summarised above, IXOM and Element are seeking feedback from Council on the proposed development and invite Council to meet via a Microsoft Teams meeting to discuss the outcomes of the key matters described above and address any additional matters for consideration or questions regarding the proposal.

Please contact me for further information.

Kind Regards

Jacob Vickers
Senior Environmental Consultant– Environment and Planning

0481 203 334
jacob@elementenvironment.com.au

From:	David Ongkili
To:	Jacob Vickers
Cc:	Stella Agagiotis; Roman Wereszczynski; Oscar Guillen; Tony Lehmann; Meryl Bishop
Subject:	IXOM Chlorine Liquefaction Plant – Proposed Modification to State Significant Development
Date:	Friday, 20 December 2024 6:37:13 PM
Attachments:	image001.png
Importance:	High

Dear Jacob

Thank you for the opportunity to comment on the proposed Modification to the existing State Significant Development (SSD) to construct and operate a new chlorine liquefaction plant at IXOM Operations Pty Ltd's existing Chlor-alkali Plant (CAP) at 16-20 Beauchamp Road, Banksmeadow NSW 2019. The proposal is to bolster the supply of liquid chlorine in Australia and reduce logistical costs associated with the distribution of liquid chlorine within NSW. Below are Randwick Council's comments, which are not exhaustive and are based on the brief details provided in your letter dated 5 December 2024.

Planning concerns

Council is concerned that the installation of a new chlorine liquefaction plant may represent a substantial departure from the terms and content of the original development consent. Any modification to a development application in NSW must meet the "substantially the same" development test as provided under the Environmental Planning and Assessment Regulation 2017. The Department of Planning should be consulted and satisfied that the proposal can be undertaken as a modification application. Additionally, establishment of a new chlorine liquefaction plant may give rise to cumulative impacts of associated emissions (see relevant comments below) that may need to be fully considered in a development application rather than a modification application especially given potential existing emissions from Port Botany and the adjacent Botany Industrial Park. Furthermore, there may be deficiencies in the proposed modification application that, otherwise, would be subject to a more in-depth and comprehensive assessment under a development application. Listed below are Randwick Council's environmental, safety, risk, amenity and traffic concerns regarding the proposal, which cumulatively suggest that these issues are best addressed through a new development application rather than a modification application.

Air Quality Concerns

While containment and mitigation measures are proposed in your letter, there remains a risk of fugitive chlorine emissions. Any accidental release, even in minor concentrations, could have significant health impacts to nearby residential receptors (Denison Street and Beauchamp Road), within the Bayside Council jurisdiction and Randwick City Council residents on Perry Street. Another area of concern is the impact of construction dust. If not effectively controlled, dust generated during construction could temporarily affect air quality for nearby residents.

In this regard the following questions may need to be addressed in any future proposal: Are there contingency plans or additional redundancy measures to manage fugitive emissions in case of containment system failure? Additionally, how frequently will air quality monitoring occur, and will the results be shared with the public to ensure transparency? In relation to construction, will detail plans for dust control be provided with any future application, and how will compliance with these measures be enforced.

Noise Impact Concerns

The proposed plant's operations may add to the cumulative noise burden in the area, particularly for nearby residents, even though noise levels are modelled to meet limits. Similarly, construction noise poses a risk of disruption, particularly from activities such as earthworks and heavy equipment operation.

Feedback will be required for the following questions: Will ongoing noise monitoring be conducted after the plant is operational? Additionally, what steps will be taken if residents report noise disturbances, especially during nighttime hours? Although construction will occur during standard hours, it is important to ask if there are provisions for notifying residents before high-noise activities

take place. Furthermore, could alternative methods be used to minimise particularly noisy phases of construction?

Traffic and Transportation Concerns
While the proposal suggests that additional truck movements will have a negligible impact, even small increases in traffic could affect road safety and congestion, particularly during peak hours. Clarification is required as to whether the community will be notified about the exact timing of truck movements to avoid conflicts with residential or school traffic. Additionally, are there plans to reassess traffic impacts if operations ramp up to full capacity?

As described in your letter, the worst-case scenario involves a situation where the Victoria Chlorine facility becomes non-operational. In such a situation, truck movements could exceed the current projections. It is important to inquire if there are mitigation plans in place to manage higher truck volumes under these circumstances. Council would emphasise that in these situations, road tankers should not traverse surrounding residential areas in a holding pattern waiting to load/unload chlorine. All road tanker vehicles waiting to be loaded / unloaded and queuing of all road tanker vehicles shall be accommodated within the subject site. Accordingly, Council requests that traffic mitigation measures be included in any future proposal for the facility.

In New South Wales (NSW), the applicant would be aware that there are strict regulations governing the transportation of liquid chlorine by road tanker trucks. These regulations are part of broader safety measures to protect people, property, and the environment. The Environmental Protection Authority (EPA) and SafeWork NSW are responsible for overseeing the transport of dangerous goods, including liquid chlorine. Key regulations include the designation of specific hazardous goods routes, which are essential for several reasons:

- Safety: Designated routes are selected to reduce the risk of accidents in densely populated or environmentally sensitive areas.
- Emergency Response: These routes are chosen to ensure that emergency services can respond quickly and effectively to any incidents.
- Infrastructure: The routes are designed to accommodate the unique needs of hazardous goods transport, including the strength and width of roads suitable for heavy tanker trucks.
- Minimising Exposure: By using designated routes, the exposure of the general public to potential hazards is minimized.

These measures help ensure that the transportation of dangerous goods, such as liquid chlorine, is carried out as safely as possible.

Any future application must provide details as to how and to what extent the proposal accords with relevant state regulation including dangerous goods routes to ensure safety for people, property, and the environment.

Hazardous Materials and Emergency Preparedness
Given that chlorine is a highly hazardous substance, chlorine handling risks remain a significant concern. Any accidental release could pose serious health and safety risks to the surrounding area. Feedback to address these concerns include: Is there a detailed emergency response plan for potential chlorine leaks, and are local emergency services adequately equipped to respond? Moreover, will the community receive information and training on what to do in case of such an incident?

The proposal also includes an increase in storage capacity for liquefied chlorine, which raises additional safety concerns. It is essential to ask how the plant will ensure the safety of storage tanks against extreme weather events or potential sabotage.

Dangerous Goods Threshold Compliance
The Operator must ensure that the quantities of Dangerous Goods (DG) Classes stored on-site do not exceed the thresholds outlined under the State Environmental Planning Policy (Resilience and Hazards) 2021, however exceeding these thresholds will classify the site as a potentially hazardous industry or hazardous storage facility, triggering the need for a Preliminary Hazard Analysis (PHA).

Environmental Impacts
The project's long-term air quality impacts must also be considered. While greenhouse gas emissions from the proposal are projected to be low, even minimal contributions add to climate change and may not align with broader sustainability goals. Are there plans to offset the greenhouse gas emissions from this project? How will the project align with local and national emissions reduction targets?

Additionally, robust environmental monitoring and accountability systems are necessary to ensure compliance with all environmental standards. It is important to ask what systems will be in place to ensure transparent reporting of environmental performance, including emissions, noise, and traffic. Further, how will the community be involved in ongoing monitoring and accountability to ensure their concerns are addressed?

Community and Public Health Concerns
The facility is located in an industrial area; however, its operations could still have a cumulative impact on nearby residents and workers in the industrial area. Has a comprehensive health impact assessment been conducted to address the potential long-term effects on the local community?

Community Engagement
Engagement with the community should be a priority. The consultation process should include participation from residents and stakeholders.
In this regard, will the feedback from residents be directly incorporated into decision-making? Additionally, what mechanisms will be in place for addressing ongoing community concerns post-approval?

Council looks forward to the above comments being considered in the application process for the proposed development. If you have any questions regarding the above content, feel free to contact me on my contact details below.

Kind regards

David Ongkili
Coordinator Strategic Planning |Strategic Planning | Randwick City Council
T 02 9093 6793 | M 0405 324 940 | E David.ongkili@randwick.nsw.gov.au | W www.randwick.nsw.gov.au

I acknowledge the Traditional Owners of the lands on which I work, the Gadigal and Bidjigal peoples who traditionally occupied the Sydney coast. I pay my respects to Elders past, present and emerging.

Keep up to date with everything happening in Randwick City through Randwick News, a short weekly email about living in our great city.

NSW Police Force

Deana Burn
Department of Planning and Environment
Locked Bag 5022
PARRAMATTA NSW 2124

Dear Ms Burn,

Re Request for Advice - SEARs – MOD 6 Chlorine Liquefaction Plant (DA35/98-Mod-6) at 16-20 Beauchamp Road, Banksmeadow NSW 2019 [DA35/98-Mod-6].

Thank you for the opportunity to provide comments on the Request for Planning Secretary's Environmental Assessment Requirements (SEARs) for the proposed Modification 6 'Chlorine Liquefaction Plant' to the Part 4 Application 'Orica Chlor-Alkali Plant' in the Botany Industrial Park (BIP) at 16-20A Beauchamp Road, Banksmeadow.

The Proposal

NSW Police was notified on 23rd August 2024 of the Request for SEARs for the State Significant Development (SSD) Modification Application which seeks to modify the original development consent (issued 6 November 1998 – Reference: DA35/98). The Sydney Metropolitan Region Emergency Management Officer has reviewed the accompanying Scoping Report that has been prepared by Element Environment on behalf of IXOM Operations Pty Ltd (the Applicant) to support this application.

Outlined within the Scoping Report lodged to the Department of Planning, Housing and Infrastructure (DPHI), NSW Police understands the proposed modification consists of the following:

Construct and operate a new chlorine liquefaction and packaging plant at the site which will be integrated into existing site operations with all chlorine material being sourced from existing chlorine liquefaction plant processes. The chlorine liquefaction plant will have a maximum production capacity of 50 tonnes per day.

Central Metropolitan Police Region
151 Goulburn St Surry Hills
T 0419 618 644 **F** 02 92654726 **W** www.police.nsw.gov.au
TTY 02 9211 3776 for the hearing and speech impaired ABN 43 408 613 180

NSW Police Force

The proposed Chlorine Liquefaction Plant is to be located in the Block L, which is legally described as Lot 1101 DP 1227173. Block L contains an existing Hypochlorite loading bay which will be re-located to Block Q, requiring construction of a new driveway and hardstand.

Police support the requests from Bayside Council, EPA including but not limited to the points listed below;

Strategic and Statutory Planning Framework

Port Botany Industrial area is a critical component of the international trade gateway and key employment land within the Eastern City District. The employment opportunities associated with the proposed development are consistent with the Greater Sydney Region Plan, Eastern City District Plan, and Future Transport 2056. The EIS or any Modification Report must demonstrate that the development proposal is generally consistent with all relevant planning strategies, plans and Environmental Planning Instruments, including:

1. Greater Sydney Region Plan – A Metropolis of Three Cities;
2. Eastern City District Plan;
3. Future Transport 2056;
4. Chapter 2 Infrastructure: SEPP (Transport and Infrastructure) 2021;
5. Chapter 3 Hazardous and offensive development: SEPP (Resilience and Hazards)2021; and
6. Chapter 4 Remediation of land: SEPP (Resilience and Hazards) 2021.

Traffic

A Traffic Report shall be provided for the development in accordance with the RTA guide to traffic generating developments and Bayside Development Control Plan 2022 (BDCP 2022) Section 3.5.2. The traffic generation from the development and any impacts it has on the surrounding road network and intersections is to be assessed.

Central Metropolitan Police Region
151 Goulburn St Surry Hills
T 0419 618 644 **F** 02 92654726 **W** www.police.nsw.gov.au
TTY 02 9211 3776 for the hearing and speech impaired ABN 43 408 613 180

NSW Police Force

Floodplain and Environmental Impacts Management

Bayside Council advise that the site is flood affected. A flood advice letter needs to be obtained from Bayside Council Section 3.10 and Section 9.5 flood related controls. The habitable and non Habitable areas (including hazardous material storage) of the development will need to be physically protected from inundation during the flooding event. A suitably qualified Civil Engineer is to be engaged to demonstrate no adverse flood impacts of this development on the existing floodplain in this area and, shall demonstrate compliance with relevant guidelines and requirements including BDCP 2022 Section 3.10 and Section 9.5, NSW Government's Flood Prone Land Policy, Flood Risk Management Manual as well as any other relevant policy or guideline.

Excess flows will have to comply with Fisheries Management Act 1994 and not cause any harm to the conservation of Key Fish Habitat in Kamay (Botany Bay) located 1km south of the site. Additional information is required on excess flows (event frequency, volume, contents chemical/physical/biological).

Protection of the Environment Operations Act 1997 (POEO Act), an EPL is required from the EPA for the premises-based activities in Schedule 1 of the Act". Accordingly, EPL 20547 has been issued for the site and IXOM will consult EPA on the need to amend this licence in accordance with the proposal. Excess flows (event frequency, volume, contents chemical/physical/biological) into Kamay (Botany Bay) will have to comply with the POEO Act.

The proposal must demonstrate it will not interfere with the operations of Sydney Airport. Potential interferences include building height, wildlife strike regions, and lighting and reflectivity.

Building Height

The proposed building exceeds 15.24m above existing ground level and therefore, the structure will require referral and approval by Sydney Airport Corporation Limited (SACL) and Civil Aviation Safety Authority (CASA) for concurrence with the building height control regulation. The Applicant is encouraged to engage with SACL and CASA at an early stage.

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T 0419 618 644 **F** 02 92654726 **W** www.police.nsw.gov.au
TTY 02 9211 3776 for the hearing and speech impaired ABN 43 408 613 180

NSW Police Force

The subject site is located within the BIP Risk Referral zone. As such, any future development requires a referral to the DPHI's Hazards branch and may require the preparation of a Hazards and Risk Assessment Report.

NSW Police notes that the site is identified as a Major Hazard Facility (MHF) as defined under Schedule 15 of the Work Health and Safety Regulation 2017. We strongly recommend that the applicant consult closely with Safework NSW and Fire Rescue NSW to ensure that risks and mitigations under the MHF framework are taken into consideration and adequately addressed.

NSW Police suggest that the Botany Bay Precinct Emergency Subplan and IXOM Management Plan MCW-BOT-MGT-SHE-0003 be updated to reflect changes. This would also likely result in changes to, emergency procedures for the site such as evacuations, shutdown protocols, decontamination etc.

NSW Police requests the Department of Planning and Environment be satisfied that the modification is largely the same development for which consent was originally approved, with minimal environmental impact.

Carl Dyson

Sydney Metropolitan Region Emergency Management Officer

13/09/2024

Central Metropolitan Police Region
151 Goulburn St Surry Hills
T 0419 618 644 **F** 02 92654726 **W** www.police.nsw.gov.au
TTY 02 9211 3776 for the hearing and speech impaired ABN 43 408 613 180

PO Box 1563
Warriewood
NSW 2102

ABN 45 162 835 083

23 August 2024

Attention: Carl Dyson
IXOM Chlorine Liquefaction Plant - State Significant Development modification

PO Box 1563
Warriewood
NSW 2102

ABN 45 162
835 083

via email: dyso2car@police.nsw.gov.au
NSW Police Regional Emergency Management Officer
Locked Bag 5102,
Parramatta
NSW 2124

Dear Guy

IXOM Chlorine Liquefaction Plant – Modification to State Significant Development

Introduction

Element Environment Pty Ltd (Element) is writing on behalf of IXOM Operations Pty Ltd (IXOM). IXOM has engaged Element to prepare the report for the modification of a State significant development (SSD) consent under Section 4.55(2) of the NSW *Environmental Planning and Assessment Act 1979* (EP&A Act) to construct and operate a chlorine liquefaction plant at IXOM's Botany Chlor-alkali Plant (CAP) at 16-20 Beauchamp Road, Banksmeadow NSW 2019 (the proposal).

IXOM is seeking consent to extend its existing chlorine plant by constructing and operating a new chlorine liquefaction and packaging plant.

Element recently submitted the scoping report to the NSW Department of Planning, Housing and Infrastructure (DPHI) to gain the Secretary's environmental assessment requirements (SEARs). In accordance with the consultation requirements in the DPHI's (2024) SSD Guideline and DPHI (2024) *Undertaking engagement guidelines for State significant projects*, Element is welcoming feedback from the NSW Police Regional Emergency Management Officer (REMO) on the project.

This letter provides an overview of the proposal and the key environmental matters for CASAs consideration. The scoping report can be viewed in full on the NSW Major Project planning portal at the following link: Mod 6 chlorine liquefaction plant.

About IXOM

IXOM is Australia's largest manufacturer of chlor-alkali products including chlorine, caustic soda, sodium hypochlorite and hydrochloric acid. IXOM is a major supplier of these chemicals for agriculture, industry, mining, life sciences, food, hygiene and construction. Liquid chlorine is used by Australian municipalities to treat sewage and create safe drinking water for Australia.

IXOM operates globally, with offices in Europe, Australia Pacific, Asia and the USA, and its head office is in Melbourne, Australia.

IXOM is currently the only chemical manufacturer in Australia that liquefies chlorine.

IXOM Operations Pty Ltd (IXOM) operates its Botany Chlor-alkali Plant (CAP), at 16-20 Beauchamp Road, Banksmeadow NSW 2019 in the Botany Industrial Park (BIP). IXOM operates on the following lots in BIP (the site):

- Lot 1105 DP 1227173
- Lot 1101 DP 1127173
- Lot 1102 DP 1127173
- Lot 1103 DP 1127173
- Lot 1104 DP 1127173
- Lot 1115 DP 1127173

The CAP currently manufactures up to 100 tonnes per day (tpd) of chlorine and caustic soda through the electrolysis of salt using a mercury-free membrane technology. Hydrochloric acid is also produced at the CAP.

The CAP operates under Environment Protection License (EPL) 20547 which permits the scheduled activities of chemical production, chemical storage, waste processing (non-thermal treatment) and waste storage, including the:

- production of over 25,000 tonnes (t) of dangerous goods annually;
- storage of up to 100,000 kilolitres (kL) of general chemicals;
- non-thermal treatment of any amount of waste including hazardous waste; and
- storage of hazardous, restricted solid, liquid, clinical and related and asbestos waste.

The proposal

IXOM proposes to construct and operate a new chlorine liquefaction plant at its existing CAP to bolster the supply of liquid chlorine in Australia and reduce logistical costs associated with the distribution of liquid chlorine within NSW.

The chlorine liquefaction plant will provide redundancy in the event that the existing chlorine liquefaction plant at Ixom's manufacturing plant in Laverton (Victoria) becomes non-operational or is no longer able to meet market demands. The plant would operate at full capacity if a second Ixom manufacturing plant in Laverton (Victoria) becomes non-operational and would be capable of supplying national demand (currently 35 tpd). It is noted the Laverton has never needed to shut down, and full operation of the proposed plant is not expected to be required.

During this unlikely scenario, the proposed Botany chlorine liquefaction plant would produce liquified chlorine products as required to compensate for any loss of production volume at the Laverton liquefaction plant. During normal operation, the chlorine liquefaction plant will operate at a reduced rate to supply bulk liquefied chlorine throughout NSW.

Chlorine liquefaction plant

The new chlorine liquefaction plant would have a maximum production capacity of 50 tpd (in addition to the 100 tpd of chlorine derived products already manufactured at the CAP), but would operate at 10% capacity during normal operations, producing 5-6 tpd to supply liquid chlorine to the NSW region in 13 tonne tankers. The proposal will only require three trucks per week, which will result in three trips in and three trips out per week.

The new building and plant would require no additional staff during normal operations.

Most of the chlorine liquefaction plant will be in a containment building to minimise risk associated with a fugitive chlorine gas emission.

The chlorine liquefaction plant will be designed from proven equivalent IXOM processes.

The chlorine liquefaction plant would be enclosed and comprise:

- Chlorine liquefaction unit (shell and tube heat exchanger).
- Chlorine separator.
- Two 50 t chlorine storage tanks including cryogenic insulation, weighting scale and tapping gas supply.
- Two chlorine storage bunds (one for each storage tank).
- Two chlorine transfer pumps.
- Chlorine drum filling and degas station.
- Chlorine cylinder filling and degas station.
- Degas reactor and liquefaction building scrubber.
- Packaged refrigeration unit for gaseous chlorine liquefaction, including compressors, CO2 gas/liquid separator, coolant storage units, ancillary units and independent control system.
- Two-way chlorine tanker loading bay with weighing scale and flow meter.

Hazardous substance management

Ixom is committed to maintaining safety for its staff and the community surrounding the CAP. The development would continue to operate according to the relevant legislation and best-practice hazardous substance management.

The new plant will incorporate the latest safety designs and management measures, including a spare tank to hold liquified chlorine from the other tank if it fails, bunding around the building to contain spills and leaks, and a fully enclosed building with a scrubbing system to catch and treat any chlorine gas leaks.

We note that the proposal will reduce the existing risks at the CAP because containers of liquid chlorine and tankers that are currently stored outside onsite will be stored inside the building, such that the risk of spills and leaks is dramatically reduced.

Full details of Ixom's approach to the management of hazardous substances at the CAP will be provided in the planning submission which will be publicly exhibited by the DPHI.

Key matters and SEARs

Key matters for assessment were identified in Element Environment (2024) *Chlorine Liquefaction Plant – Modification to State Significant Development Consent – Scoping Report*, which is in Attachment 1 and was submitted to DPHI for review and distribution to agencies so that it could provide SEARs for the project.

SEARs were issued on 28 June 2024, which are in Attachment 2.

Next steps

Element is preparing the modification report for submission to DPHI.

Once complete, the modification report will be submitted to DPHI for public exhibition and consideration. The community will have the opportunity to review the modification report and make submissions to DPHI, which IXOM will need to consider after exhibition has finished.

DPHI will consider Ixom's response to the submissions and decide if the proposal should be approved.

Closing

As summarised above, the scoping report has been submitted and SEARs have been issued. IXOM and Element are seeking feedback from REMO on the scoping report and SEARs, specifically to determine if you have any additional matters for consideration or questions regarding the proposal.

Please contact me for further information.

Kind Regards

Mark Roberts
A/Technical Director – Environment and Planning

0414 670 254
mark.roberts@elementenvironment.com.au

PO Box1563
Warriewood
NSW 2102

ABN 45 162 835 083

23 August 2024

Attention: Planning Approvals Team - Sydney Airport Corporation Limited
IXOM Chlorine Liquefaction Plant - State Significant Development modification

PO Box 1563
Warriewood
NSW 2102

ABN 45 162 835 083

via email: plan.approvals@syd.com.au
Sydney Airport Corporation Limited
10 Arrivals Court,
Sydney International Airport
NSW 2020

Dear Planning Approvals Team

IXOM Chlorine Liquefaction Plant – Modification to State Significant Development

Introduction

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This letter provides an overview of the proposal and the key environmental matters for CASAs consideration. The scoping report can be viewed in full on the NSW Major Project planning portal at the following link: Mod 6 chlorine liquefaction plant.

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DPHI will consider Ixom's response to the submissions and decide if the proposal should be approved.

Closing

As summarised above, the scoping report has been submitted and SEARs have been issued. IXOM and Element are seeking feedback from SACL on the scoping report and SEARs, specifically to determine if you have any additional matters for consideration or questions regarding the proposal.

Please contact me for further information.

Kind Regards

Mark Roberts
A/Technical Director – Environment and Planning

0414 670 254
mark.roberts@elementenvironment.com.au

From:	Ted Plummer
To:	Airspace Protection; Nihal Rao; Elizabeth Atton
Cc:	SYD Planning Approvals; Jacob Vickers
Subject:	Re: Final follow-up: SSD consultation - 16-20 Beauchamp Road, Banksmeadow
Date:	Friday, 4 October 2024 4:07:04 PM
Attachments:	image001.png image002.png image003.png image004.png image005.png image006.png image007.png image008.png image009.png image010.png image011.png

---

Hi Robert, looks ok to me, no plumes from what I can see.
cheers,
Ted

Get Outlook for iOS

SYD Classification: Confidential

From: Airspace Protection <AirspaceProtection@syd.com.au>
Sent: Friday, October 4, 2024 2:58:24 PM
To: Nihal Rao <Nihal.Rao@syd.com.au>; Elizabeth Atton <Elizabeth.Atton@syd.com.au>; Ted Plummer <Ted.Plummer@syd.com.au>
Cc: SYD Planning Approvals <plan.approvals@syd.com.au>; jacob@elementenvironment.com.au <jacob@elementenvironment.com.au>
Subject: FW: Final follow-up: SSD consultation - 16-20 Beauchamp Road, Banksmeadow

Good afternoon team,

Element Environment are seeking feedback for the proposed SSD at 16-20 Beauchamp Road, Banksmeadow.

"Element Environment Pty Ltd (Element) is writing on behalf of IXOM Operations Pty Ltd (IXOM). IXOM has engaged Element to prepare a report for the modification of a State significant development (SSD) consent under Section 4.55(2) of the NSW Environmental Planning and Assessment Act 1979 (EP&A Act) to construct and operate a chlorine liquefaction plant at IXOM's Botany Chlor-alkali Plant (CAP) at 16-20 Beauchamp Road, Banksmeadow NSW 2019 (the proposal).

As part of the SSD process, and as required by the Department of Planning, Housing and Infrastructure (DPHI), we are consulting you regarding the development and requesting any input that you may have regarding additional matters that you believe should be assessed and have not yet been addressed in the scoping report or the Secretary's environmental assessment requirements (SEARs).

Please see the attached letter for further information regarding the development and a link to the scoping letter and SEARs".

Airspace Protection have completed an assessment of this location and have no issues, would you mind casting your eyes over this and provide any additional feedback please?

All feedback should be directed to Jacob Vickers (jacob@elementenvironment.com.au).

Regards,

Robert King

Senior Airspace Protection Officer

T **+61 2 9667 9845** **M +61 466 529 401**
E robert.king@syd.com.au

logo

Sydney Airport acknowledges the Traditional Custodians of the lands waterways and skyways where we work and in which we live. We pay respect to Elders past, present and emerging and recognise the continuation of cultural spiritual and educational practices of First Nation peoples throughout Australia.

SYD Classification: Confidential

From: Jacob Vickers <jacob@elementenvironment.com.au>
Sent: Friday, October 4, 2024 2:28 PM
To: Airspace Protection <AirspaceProtection@syd.com.au>; SYD Planning Approvals <plan.approvals@syd.com.au>
Cc: PR329 - Project Gemini <PR329-ProjectGemini@elementenvironment.com.au>
Subject: RE: Final follow-up: SSD consultation - 16-20 Beauchamp Road, Banksmeadow

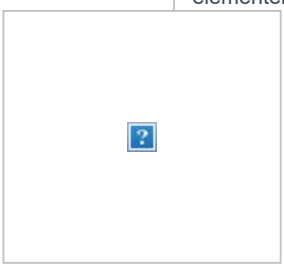
Hi Robert,

Will there be any other feedback from SACL on the project at this stage?

Kind regards,

Jacob Vickers
Senior Environmental Consultant
Planning and Environment
0481 203 334 | jacob@elementenvironment.com.au

elementenvironment.com.au | Follow us on LinkedIn



SYD Classification: Confidential

From: Jacob Vickers
Sent: Thursday, 19 September 2024 2:57 PM
To: 'Airspace Protection' <AirspaceProtection@syd.com.au>; SYD Planning Approvals <plan.approvals@syd.com.au>
Cc: PR329 - Project Gemini <PR329-ProjectGemini@elementenvironment.com.au>
Subject: RE: Final follow-up: SSD consultation - 16-20 Beauchamp Road, Banksmeadow

Hi Robert,

Thanks for getting back to me.

This consultation is in relation to a new State Significant Development at the site regarding the construction of a chlorine liquefaction plant. Please see attached.

We are consulting you to give you an opportunity to provide any feedback that you may have.

Kind regards,

Jacob Vickers
Senior Environmental Consultant
Planning and Environment
0481 203 334 | jacob@elementenvironment.com.au

elementenvironment.com.au | Follow us on LinkedIn

From: Airspace Protection <AirspaceProtection@syd.com.au>
Sent: Thursday, 19 September 2024 2:44 PM
To: Jacob Vickers <jacob@elementenvironment.com.au>; SYD Planning Approvals <plan.approvals@syd.com.au>; Airspace Protection <AirspaceProtection@syd.com.au>
Cc: PR329 - Project Gemini <PR329-ProjectGemini@elementenvironment.com.au>
Subject: RE: Final follow-up: SSD consultation - 16-20 Beauchamp Road, Banksmeadow

Good afternoon Jacob,

The Sydney Airport (SYD) Airspace Protection team assessed a proposed property development at this address in 2022 which was approved by the Federal Government Department of Infrastructure, Transport, Regional Development, Communications and the Arts (DITRDCA). This document is addressing the proposed developments construction not any operation to happen within.

I've attached the approval document, is this what you are after?

Regards,

Robert King
Senior Airspace Protection Officer

T **+61 2 9667 9845** **M** **+61 466 529 401**
E **robert.king@syd.com.au**

Sydney Airport acknowledges the Traditional Custodians of the lands waterways and skyways where we work and in which we live. We pay respect to Elders past, present and emerging and recognise the continuation of cultural spiritual and educational practices of First Nation peoples throughout Australia.

SYD Classification: Confidential

From: Jacob Vickers <jacob@elementenvironment.com.au>
Sent: Wednesday, September 18, 2024 12:58 PM
To: SYD Planning Approvals <plan.approvals@syd.com.au>; Airspace Protection <AirspaceProtection@syd.com.au>
Cc: PR329 - Project Gemini <PR329-ProjectGemini@elementenvironment.com.au>
Subject: Final follow-up: SSD consultation - 16-20 Beauchamp Road, Banksmeadow

Hello,

This is a final follow-up on the below consultation. I have included the airspace.protection email address in case the previously used plan.approovals address is not regularly monitored.

Kind regards,

Jacob Vickers
Senior Environmental Consultant
Planning and Environment
0481 203 334 | jacob@elementenvironment.com.au

elementenvironment.com.au | Follow us on LinkedIn

From: Jacob Vickers
Sent: Friday, 6 September 2024 3:43 PM
To: plan.approvals@syd.com.au
Cc: PR329 - Project Gemini <PR329-ProjectGemini@elementenvironment.com.au>
Subject: FW: SSD consultation - 16-20 Beauchamp Road, Banksmeadow

Hi,

We have not heard back from you. I am following up to check whether you would like to provide a response or need additional time?

Kind regards,

Jacob Vickers
Senior Environmental Consultant
Planning and Environment
0481 203 334 | jacob@elementenvironment.com.au

elementenvironment.com.au | Follow us on LinkedIn

From: Jacob Vickers
Sent: Friday, 23 August 2024 11:30 AM
To: plan.approvals@syd.com.au
Cc: PR329 - Project Gemini <PR329-ProjectGemini@elementenvironment.com.au>
Subject: SSD consultation - 16-20 Beauchamp Road, Banksmeadow

Hi Planning Approvals Team,

Element Environment Pty Ltd (Element) is writing on behalf of IXOM Operations Pty Ltd (IXOM). IXOM has engaged Element to prepare a report for the modification of a State significant development (SSD) consent under Section 4.55(2) of the NSW *Environmental Planning and Assessment Act 1979* (EP&A Act) to construct and operate a chlorine liquefaction plant at IXOM's Botany Chlor-alkali Plant (CAP) at 16-20 Beauchamp Road, Banksmeadow NSW 2019 (the proposal).

As part of the SSD process, and as required by the Department of Planning, Housing and Infrastructure (DPHI), we are consulting you regarding the development and requesting any input that you may have regarding additional matters that you believe should be assessed and have not yet been addressed in the scoping report or the Secretary's environmental assessment requirements (SEARs).

Please see the attached letter for further information regarding the development and a link to the scoping letter and SEARs.

Please provide any feedback you may have by COB 6 September 2024. If you would like to arrange a meeting or require any clarifications, please don't hesitate to contact us.

Kind regards,

Jacob Vickers
Senior Environmental Consultant
Planning and Environment
0481 203 334 | jacob@elementenvironment.com.au

elementenvironment.com.au | Follow us on LinkedIn

Client Choice Award _ Black.png

PO Box1563
Warriewood
NSW 2102

ABN 45 162 835 083

22 November 2024

Attention: Transport for NSW
IXOM Chlorine Liquefaction Plant - State Significant Development modification

PO Box 1563
Warriewood
NSW 2102

ABN 45 162 835 083

via email: development.sydney@transport.nsw.gov.au
Transport for NSW
231 Elizabeth Street,
Sydney
NSW 2000

Dear Development Team

IXOM Chlorine Liquefaction Plant – Modification to State Significant Development

Introduction

Element Environment Pty Ltd (Element) is writing on behalf of IXOM Operations Pty Ltd (IXOM). IXOM has engaged Element to prepare the report for the modification of a State significant development (SSD) consent under Section 4.55(2) of the NSW *Environmental Planning and Assessment Act 1979* (EP&A Act) to construct and operate a chlorine liquefaction plant at IXOM's Botany Chlor-alkali Plant (CAP) at 16-20 Beauchamp Road, Banksmeadow NSW 2019 (the proposal).

IXOM is seeking consent to extend its existing chlorine plant by constructing and operating a new chlorine liquefaction and packaging plant.

Element recently submitted the scoping report to the NSW Department of Planning, Housing and Infrastructure (DPHI) to gain the Secretary's environmental assessment requirements (SEARs). In accordance with the consultation requirements in the DPHI's (2024) SSD Guideline and DPHI (2024) *Undertaking engagement guidelines for State significant projects*, Element is welcoming feedback from Transport for NSW (TfNSW) on the project.

This letter provides an overview of the proposal and the key environmental matters for TfNSWs consideration. The scoping report can be viewed in full on the NSW Major Project planning portal at the following link: Mod 6 chlorine liquefaction plant.

About IXOM

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IXOM Operations Pty Ltd (IXOM) operates its Botany Chlor-alkali Plant (CAP), at 16-20 Beauchamp Road, Banksmeadow NSW 2019 in the Botany Industrial Park (BIP). IXOM operates on the following lots in BIP (the site):

- Lot 1105 DP 1227173
- Lot 1101 DP 1127173
- Lot 1102 DP 1127173
- Lot 1103 DP 1127173
- Lot 1104 DP 1127173
- Lot 1115 DP 1127173

The CAP currently manufactures up to 100 tonnes per day (tpd) of chlorine and caustic soda through the electrolysis of salt using a mercury-free membrane technology. Hydrochloric acid is also produced at the CAP.

The CAP operates under Environment Protection License (EPL) 20547 which permits the scheduled activities of chemical production, chemical storage, waste processing (non-thermal treatment) and waste storage, including the:

- production of over 25,000 tonnes (t) of dangerous goods annually;
- storage of up to 100,000 kilolitres (kL) of general chemicals;
- non-thermal treatment of any amount of waste including hazardous waste; and
- storage of hazardous, restricted solid, liquid, clinical and related and asbestos waste.

The proposal

IXOM proposes to construct and operate a new chlorine liquefaction plant at its existing CAP to bolster the supply of liquid chlorine in Australia and reduce logistical costs associated with the distribution of liquid chlorine within NSW.

The chlorine liquefaction plant will provide redundancy in the event that the existing chlorine liquefaction plant at Ixom's manufacturing plant in Laverton (Victoria) becomes non-operational or is no longer able to meet market demands. The plant would operate at full capacity if a second Ixom manufacturing plant in Laverton (Victoria) becomes non-operational and would be capable of supplying national demand (currently 35 tpd). It is noted the Laverton has never needed to shut down, and full operation of the proposed plant is not expected to be required.

During this unlikely scenario, the proposed Botany chlorine liquefaction plant would produce liquified chlorine products as required to compensate for any loss of production volume at the Laverton liquefaction plant. During normal operation, the chlorine liquefaction plant will operate at a reduced rate to supply bulk liquefied chlorine throughout NSW.

Chlorine liquefaction plant

The new chlorine liquefaction plant would have a maximum production capacity of 50 tpd (in addition to the 100 tpd of chlorine derived products already manufactured at the CAP), but would operate at 10% capacity during normal operations, producing 5-6 tpd to supply liquid chlorine to the NSW region in 13 tonne tankers. The proposal will only require three trucks per week, which will result in three trips in and three trips out per week.

The new building and plant would require no additional staff during normal operations.

Most of the chlorine liquefaction plant will be in a containment building to minimise risk associated with a fugitive chlorine gas emission.

The chlorine liquefaction plant will be designed from proven equivalent IXOM processes.

The chlorine liquefaction plant would be enclosed and comprise:

- Chlorine liquefaction unit (shell and tube heat exchanger).
- Chlorine separator.
- Two 50 t chlorine storage tanks including cryogenic insulation, weighting scale and tapping gas supply.
- Two chlorine storage bunds (one for each storage tank).
- Two chlorine transfer pumps.
- Chlorine drum filling and degas station.
- Chlorine cylinder filling and degas station.
- Degas reactor and liquefaction building scrubber.
- Packaged refrigeration unit for gaseous chlorine liquefaction, including compressors, CO2 gas/liquid separator, coolant storage units, ancillary units and independent control system.
- Two-way chlorine tanker loading bay with weighing scale and flow meter.

Key traffic and transport matters

The proposed chlorine liquefaction plant at IXOM's Botany Chlor-Alkali Plant has been assessed for traffic and transport impacts, confirming the proposal will result in negligible impacts on the surrounding road network.

The site is approved under the existing consent for up to 76 truck movements per day associated with the transportation of raw materials and products. Existing traffic movements are significantly lower, averaging only 46 truck movements per day—30 fewer than the approved limit. The proposed modification will introduce a small number of additional truck movements, and even under the most conservative assumptions, the site's total traffic generation will remain well below its approved limits.

During normal operations, the modification will result in six additional truck movements per week (three trucks in and three out), which are conservatively modelled to be within the same day. In the unlikely event that the Laverton plant becomes non-operational (worst-case scenario), the Botany site would see a maximum of 12 additional truck movements per day (six trucks in and six out). These figures represent a highly conservative assessment, as in reality, any deliveries of liquefied chlorine will reduce overall truck movements compared to transporting chlorine in the form of other products, where it is only a minor constituent, as described below.

The proposed modification will bring operational efficiencies by producing and dispatching liquefied chlorine directly from the Botany site, thereby decreasing the logistical demand for transporting liquefied chlorine from the Laverton plant in Victoria to IXOMs NSW customers. The modification does not include any proposed increase to the existing production capacity of chlorine at the site. Rather, the production of liquefied chlorine will be balanced with the existing production of chlorine products to ensure chlorine production volumes remain below the approved production limit.

All chlorine produced at the site is currently consumed in products such as hydrochloric acid, sodium hypochlorite and ferric chloride. Therefore, any increase in the production of liquefied chlorine at the site would result in the decreased production of these other chlorine products, which are comprised of 11-33% chlorine. The resulting impact would mean that for each

dispatched truck containing liquefied chlorine, there would be between 3 and 9 less dispatched trucks containing other chlorine products.

Notwithstanding that the proposed truck movements would be within the approved limits, traffic modelling was conservatively carried out assuming that there would be no reduction in truck numbers as described above. The assessment indicates that all key intersections in the surrounding area currently operate at a good Level of Service (LoS B or better) during peak hours. With the traffic from the proposal, there will be negligible impacts on intersection performance, with delays increasing by less than one second at the busiest locations. No intersection upgrades or road improvements will be required as a result of the proposal.

Heavy vehicles servicing the site will follow designated approved routes and access the facility via Gate 3 on Denison Street, ensuring compliance with transport safety requirements. Swept path analysis confirms that internal and external access routes are suitable for the proposed vehicle types, and the plant layout provides adequate space for truck maneuvering, loading, and unloading.

In summary, the proposed modification will result in a negligible increase in truck movements, well within approved limits, with no significant impacts on the surrounding road network. The modification supports the efficient and safe delivery of essential chlorine supplies for NSW and broader markets while reducing the logistical complexity of chlorine transport.

Next steps

Element is currently preparing the modification report for submission to DPHI. Once complete, the modification report will be submitted to DPHI for public exhibition and consideration. The community and agencies will have the opportunity to review the modification report and make submissions to DPHI, which IXOM will need to consider after exhibition has finished.

DPHI will consider Ixom's response to the submissions and decide if the proposal should be approved.

Closing

As summarised above, IXOM and Element are seeking feedback from TfNSW on the proposed development and invite TfNSW to meet via a Microsoft Teams meeting to discuss the outcomes of the traffic impact assessment and address any additional matters for consideration or questions regarding the proposal.

Please contact me for further information.

Kind Regards

Jacob Vickers
Senior Environmental Consultant– Environment and Planning

0481 203 334
jacob@elementenvironment.com.au

From: James Hall
To: Jacob Vickers
Cc: PR329 - Project Gemini; Andrew Lissenden
Subject: RE: SSD consultation - 16-20 Beauchamp Road, Banksmeadow
Date: Wednesday, 4 December 2024 6:19:48 PM
Attachments: image006.png
image007.png
image008.png
image009.png
image010.png
image011.png

> You don't often get email from james.hall@transport.nsw.gov.au. Learn why this is important

Hi Jacob,

Thank you for your email.

TfNSW has reviewed the documents provided in your email of 22 November 2024, including the preliminary Transport and Traffic Assessment dated 19 November and advises that the Agency does not have any additional assessment requirements for inclusion in the SEARs.

Kind Regards,

James Hall
Senior Land Use Planner
Land Use Assessment Eastern
Transport Planning, Integration and Passenger
Transport for NSW

M: 0418962609 E: james.hall@transport.nsw.gov.au

transport.nsw.gov.au
Level 4, 4 Parramatta Square
12 Darcy Street
Parramatta NSW 2150

NSW GOVERNMENT | Transport for NSW

OFFICIAL

From: Jacob Vickers <jacob@elementenvironment.com.au>
Sent: Friday, November 22, 2024 4:54 PM
To: Development Sydney <Development.Sydney@transport.nsw.gov.au>
Cc: PR329 - Project Gemini <PR329-ProjectGemini@elementenvironment.com.au>
Subject: SSD consultation - 16-20 Beauchamp Road, Banksmeadow

> You don't often get email from jacob@elementenvironment.com.au. Learn why this is important

Hi Sydney Development Team,

Element Environment Pty Ltd (Element) is writing on behalf of IXOM Operations Pty Ltd (IXOM). IXOM has

engaged Element to prepare a report for the modification of a State significant development (SSD) consent under Section 4.55(2) of the NSW *Environmental Planning and Assessment Act 1979* (EP&A Act) to construct and operate a chlorine liquefaction plant at IXOM's Botany Chlor-alkali Plant (CAP) at 16-20 Beauchamp Road, Banksmeadow NSW 2019 (the proposal).

As part of the SSD process, and as required by the Department of Planning, Housing and Infrastructure (DPHI), we are consulting you regarding the development and requesting any input that you may have regarding any additional key traffic and transport matters that you believe should be assessed and have not yet been addressed in the transport impact assessment (attached).

Please see the attached letter for further information regarding the development and a link to the scoping letter and SEARs.

Please provide any feedback you may have by COB 6 December 2024. If you would like to arrange a meeting or require any clarifications, please don't hesitate to contact us.

Kind regards,

Jacob Vickers
Senior Environmental Consultant
Planning and Environment
0481 203 334 | jacob@elementenvironment.com.au

elementenvironment.com.au | Follow us on LinkedIn

629 Newcastle Street
Leederville WA 6007

PO Box 100
Leederville 6902

T (08) 9420 2420

Enquiries: Ron Silvestri
Direct Tel: (08) 9420 2550

14th January 2022

Ms Tania Franco
Key Account Manager SA
IXOM
15 Erudina Avenue,
Edwardstown SA 5039
Australia

Dear Ms Franco

RE: Australian Government's Supply Chain Resilience Initiative (SCRI).

Water Corporation is the principal supplier of water services to Western Australia and is one of the largest water suppliers in the world. To consistently meet water quality health standards set by the Department of Health, we require a reliable, sustainable supply of critical chemicals.

Water Corporation welcomes the inclusion of water treatment chemicals within the Sovereign Manufacturing Capability Plan and the identification of chlorine gas as a critical product and therefore a focus for the Supply Chain Resilience Initiative.

Ixom's proposal to build a second liquefaction and packaging plant in Australia at Ixom's Botany chlor alkali plant would support the resilience of Water Corporation's water operations by:

- Providing a local manufacturing and packaging contingency option for liquefied chlorine gas, capable of supplying 100% of the Australian market at short notice, in the event of a catastrophic failure of the Ixom Laverton plant; and,
- Removing the reliance on imports, therefore mitigating risk arising from international shipping disruptions, international chlorine production levels or Australia's access to international supply chains.

The Water Corporation supports the initiative by Ixom to significantly de-risk Australia's bottled chlorine supply chain by providing an alternative contingency for this critical Water Treatment Chemical.

Yours faithfully

Ron Silvestri
Lead
Strategic Procurement
PROCUREMENT AND PROPERTY
WATER CORPORATION
WESTERN AUSTRALIA