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Our reference: DOC15/470064  
Our contact: Larissa Borysko; 02 9995 6843

Ms Joanna Bakopanos  
Team Leader – Industry Assessments  
Department of Planning and Environment  
GPO Box 39  
SYDNEY NSW 2001

Attention: Pamela Morales

Dear Ms Bakopanos

**Vopak Site B4 Project (SSD 7000) – EPA review of Environmental Impact Statement**

I refer to a letter received by the Environment Protection Authority (EPA) on 20 October 2015, from the Department of Planning and Environment (DP&E) inviting comment on the publicly exhibited Vopak Site B4 Project Environmental Impact Statement (EIS). The EIS was prepared by AECOM Australia Pty Ltd (AECOM) on behalf of the proponent, Vopak Terminals Sydney Pty Ltd (Vopak). The EPA subsequently accessed a copy of the EIS from the DP&E website on 21 October 2015.

The EPA notes the proposal is being assessed as State Significant Development under Part 4 of the *Environmental Planning & Assessment Act 1979* (EP&A Act). The EPA understands the proposed B4 Project would involve the construction and operation of a liquid fuels storage terminal with construction of seven petroleum storage tanks of a total nominal capacity of 200 ML. The EPA further understands the proposed fuels storage terminal would be connected to Vopak's existing Site B Terminal and that Vopak has a concurrent Section 75W modification application for the Site B Terminal before the DP&E.

To assist the DP&E with its assessment of the proposal, the EPA has conducted a review of the EIS. The EPA's comments and recommendations are set out in Attachment A. The EPA also recommends conditions be incorporated as part of any project approval that is issued for the Project as set out in Attachment B.

If the project is approved, Vopak will require a variation to the current Site B Environment Protection Licence No. 6007 issued under the POEO Act for both the construction and operational phases. Vopak will need to make a separate application to the EPA to obtain a Licence Variation.

If you have any queries regarding this matter please contact Larissa Borysko on 9995 6843.

Yours sincerely

20/11/2015

A handwritten signature in black ink, appearing to read 'Stuart Clark'.

**STUART CLARK**  
**A/Unit Head – Sydney Industry**  
**Environment Protection Authority**

## **Attachment A: EPA comments on the EIS for Vopak's Site B4 project (SSD-7000)**

The EPA has reviewed the above EIS and provides comments on the following aspects of the proposal:

### **Environment Protection Licence**

The EIS identifies that the proposed Project will require issuing of a new Environment Protection Licence (EPL) under the POEO Act and that an application would be made to obtain a new stand-alone EPL prior to construction works for the scheduled activity commencing. The EIS does not, however, specify the scheduled activity or activities that would apply to the Project.

Vopak has expressed to the EPA an interest in incorporating the Project on the current EPL for Site B (EPL 6007). The EPA has no objection in varying the current licence to incorporate the activities at Site B4 should the Project be approved.

### **Dust**

Dust emissions from the construction phase of the project have the potential to cause environmental impact. It is therefore important that dust mitigation measures are incorporated into the proposed Construction Environmental Management plan (CEMP) and that the measures are implemented during all construction activities.

### **Air Quality and Odour**

The EPA has reviewed the document titled "*Air Quality Impact Assessment, Vopak Terminal B4 - State Significant Development*" Revision D (AECOM, October 2015).

The EIS advises that Vopak has a concurrent Section 75W modification application before the DP&E for modifications to the existing Site B Terminal (submitted on 19 June 2015) to which the proposed Project would be connected by pipe. The Section 75W application includes the product throughput of this B4 application as the flow to/from the ships and road tankers and pipelines is via the existing Site B distribution facilities.

The EPA has not reviewed the s75W assessment as the assessment documentation has not been provided. On this basis, the comments provided refer to potential cumulative impacts from chemical/fuel storage and distribution in the vicinity of the Project.

### **Assessment of additional emission sources**

The AQIA estimates VOC emissions from tank standing losses at the B4 site. The AQIA does not consider working losses from fuel distribution or any other ancillary plant and equipment operated by Vopak or other external operations undertaking activities emitting similar substances in close proximity to the Project.

The AQIA states that "*assessments are to consider project contributions only; that is, cumulative assessment, which requires the consideration of background pollutant concentrations, is not required*".

The EPA advises that incremental assessment (project contributions only) are applicable where it can be reasonably demonstrated that existing ambient levels are low and there are no other significant emission sources in close proximity to the Project which emit the same substances. Based on other sites and activities undertaken between the Project and nearby receptors, there is likely to be other emission sources that contribute, collectively to potential localised air quality impacts.

No comprehensive assessment characterising the potential impacts from all emissions associated with all chemical/fuel storage and distribution activities in the locality of the Project is available for EPA review.

Potentially significant emission sources not included in the AQIA include, but may not be limited to:

- Ships – including ship emissions and product loading and unloading;
- Load and unloading fuel - including Vopak's Site B loading gantry;
- Tanks – including existing tanks from Vopak's adjacent sites and other operators in the vicinity of the Project; and
- Bitumen storage.

**Recommendation:** The EPA recommends that the AQIA be revised to comprehensively characterise and assess emissions associated with the Project, in conjunction with other emission sources located in close proximity to the Project. Where toxic air pollutants are emitted from other sites, in significant quantities and in close proximity to the Project, these additional emissions should be assessed on a cumulative basis.

#### Assessment of peak impacts

##### Emissions smoothed annually may under predict peak impacts

Section 5.3 of the assessment states that “*The assessment was conducted for continuous operation of the facility, assuming constant emissions occurring 24 hours per day, 7 days per week, 365 days per year*”.

Appendix C of the assessment provides a summary output of the emissions model (TANKS), which indicates emissions were estimated on an annual basis. Emissions rates applied to the dispersion model were grams per second. The method for assigning grams per second emission rates is not detailed in the assessment report. However, based on the above scenario, it is likely that annual emissions were smoothed evenly across the model year.

The EPA advises that smoothing emissions throughout the model year is not an appropriate assessment methodology when assessing peak 1-hour impacts from emissions that will vary temporally.

**Recommendation:** The assessment should be revised to ensure that peak emissions are assessed for the Project and neighbouring emission sources, without smoothing based on annualised variables.

##### Assessment does not adequately justify the adoption of 99.9<sup>th</sup> percentile model predictions

Table 6 of the air assessment provides a summary of generalised product liquid composition for diesel and unleaded petrol. The composition was sourced from the NPI generic database. The assessment does not justify the selection of chemicals as representative of proposed chemical storage at the site. The assessment does not reference site/terminal specific liquid or vapour phase data as being used to estimate VOC emissions for the Project.

The assessment compares 99.9<sup>th</sup> percentile 1-hour model predictions to impact assessment criteria for toxic air pollutants, in accordance with Approved Methods guidance for conducting a Level 2 assessment. However, the Approved Methods defines a Level 2 assessment as a refined dispersion modelling technique using *site-specific input data*. Given site specific emission data was not used, the assessment should justify the selected 99.9<sup>th</sup> percentile prediction adopted.

**Recommendation:** The AQIA should be revised to adequately justify the adoption of 99.9<sup>th</sup> percentile rather than 100<sup>th</sup> percentile criteria. The justification must specifically address the adoption of generic emissions data. Where necessary, the assessment should be revised to consider 100<sup>th</sup> percentile criteria.

#### Assessment of ozone impacts

The air quality assessment (section 3) states that: “The pollutants of prime interest in NSW are ozone and particulates, with levels of these pollutants approaching or exceeding the national standards prescribed in the National Environment Protection Measure for Ambient Air Quality (NEPM) on occasion. The Vopak facility is not expected to generate significant levels of ozone or particulates”.

The assessment correctly identifies ozone as a priority air pollutant in NSW. However, the assessment provides no justification to support the assertion that the Vopak facility is not expected to generate significant levels of ozone.

Vopak’s activities in the vicinity of the Project have the potential to emit significant quantities of ozone precursors, NO<sub>x</sub> and VOCs. The potential for these precursor emissions to contribute to increased ground level ozone impacts warrants further investigation.

**Recommendation:** The assessment should be revised to assess potential ozone impacts in accordance with the EPA’s guidance *Tiered Procedure for Estimating Ground-Level Ozone Impacts from Stationary Sources* (<http://www.epa.nsw.gov.au/resources/air/estimating-ground-level-ozone-report.pdf>).

#### Justification of model meteorology

##### Model meteorology not demonstrated as representative

The meteorological data used in dispersion modelling is of fundamental importance as it drives the transport and dispersion of the air pollutants in the atmosphere. The dispersion modelling was undertaken for the year 2014. The assessment does not provide adequate justification for the selection of 2014 as a representative year. The Approved Methods requires that for a detailed assessment, site representative data should be correlated against a longer duration meteorological dataset.

The AQIA provides long term climate statistics for Sydney Airport. These statistics, as presented, do not confirm 2014 as a representative year for dispersion modelling.

**Recommendation:** The proponent provide the results of the analysis demonstrating year 2014 is a representative year.

##### CALMET model evaluation not adequate

It is important to undertake an evaluation of the CALMET modelling results as the CALMET module requires careful consideration of input data, modelling domain, grid resolution and the seven critical parameters.

The AQIA presents a summary of the 2014 CALMET data. It is unclear if the CALMET data was extracted for the Project site or Sydney Airport.

A comparison of predicted and observed wind fields is provided in the AQIA as Appendix B. Appendix B shows some potentially significant differences between modelled and observed wind fields. The AQIA does not demonstrate the suitability of the CALMET generated data.

An adequate evaluation of the CALMET generated data is always important but particularly necessary where observational data assimilation requires the user to make '*several critical choices which can significantly affect the final outcome of the model runs*'<sup>1</sup>. These are: TERRAD, RMAX1, RMAX2, R1, R2, IEXTRP and BIAS. The AQIA does not present or justify the assumed value of these seven critical parameters.

**Recommendation:** The proponent provide an evaluation of the CALMET generated meteorology data to demonstrate it is suitable for use in CALPUFF. Additionally, the EPA recommends the proponent provide and justify the values assumed for these seven critical parameters.

## Soil and Water

The proposed Project has the potential to impact surface water, groundwater and soils during the construction and operational stages.

The EIS states that soil and water management will be addressed and incorporated into the proponent's CEMP through the development of a Sediment and Erosion Control Plan and a Soil and Water Management Plan. The plans should address, but need not be limited to, measures to mitigate/control sediment laden stormwater run-off, run-off from potentially contaminated fill material, spills, potential Acid Sulfate Soils and contaminated soils, including those contaminated with asbestos.

The proponent should ensure that any sediment and erosion control measures to be implemented are designed, constructed and maintained in accordance with guideline document *Managing Urban Stormwater – Soils and Construction* (Landcom, 2004).

Vopak's existing Operational Environmental Management Plan (OEMP) should also be updated to incorporate soil and water management at the project site.

The EPA understands that the B4 site will have an interceptor pit and off-site discharge point. Vopak will be required to apply to have a discharge point added to the Environment Protection Licence. Similarly, the EPA consider the requirement for the addition of groundwater monitoring wells.

## Noise and vibration

The EPA has reviewed the document titled "*Noise and Vibration Impact Assessment, Vopak Terminal B4 - State Significant Development*" Revision E (AECOM, October 2015).

The EPA notes that the impacts of noise and vibration on residential receivers during the construction and operational stages of the Project are predicted to be low. In general, most construction activities will be undertaken during standard construction hours. Mitigation measures should be developed and incorporated into the proponent's Construction Noise Management Plan, CEMP and OEMP.

## Recommended Construction Hours

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<sup>1</sup> OEH (2011) Generic guidance and Optimum Model Settings for the CALPUFF Modelling System for Inclusion into the 'Approved Methods for the Modelling and Assessment of Air Pollutants in NSW, Australia' March 2011, Prepared for NSW Office of Environment and Heritage, Prepared by Jennifer Barclay and Joe Scire, TRC Environmental Corporation

It is proposed the construction will occur, in general, during normal construction hours ie. 7:00am to 6:00pm Monday to Friday and 8:00am to 1:00pm Saturday with no construction works on Sundays or Public Holidays. The EPA supports this approach.

#### Recommended inclusions in a Construction Noise Management Plan

The Construction Noise Management Plan should be developed prior to commencement of construction activities, and include, but need not be limited to:

- a) Identification of each work area, site compound and access route (both private and public)
- b) Identification of the specific activities that will be carried out, and the associated noise sources at the premises and access routes,
- c) Identification of all potentially affected sensitive receivers,
- d) The construction noise and vibration objectives identified in accordance with the *NSW Interim Construction Noise Guideline* and *Assessing Vibration: A Technical Guideline*,
- e) Assessment of potential noise and vibration from the proposed construction methods (including noise from construction traffic) against the objectives identified in (d),
- f) Where the objectives are predicted to be exceeded an analysis of feasible and reasonable noise mitigation measures that can be implemented to reduce construction noise impacts, and
- g) Description of management methods and procedures and specific noise mitigation measures that will be implemented to control noise and vibration during construction.

#### **Waste Management**

The proponent should identify, characterise and classify all waste that will be generated onsite through excavation or construction activities and document procedures and protocols to ensure that any waste leaving the site is transported and disposed of lawfully.

The Proponent must ensure that any waste generated and/or stored at the premises through the construction and operational stages of the Project is assessed and classified in accordance with the EPA's *Waste Classification Guidelines*. The Proponent must retain all sampling and classification results for the life of the Project to demonstrate compliance with EPA's *Waste Classification Guidelines*.

## **Attachment B: EPA recommended conditions of consent for Vopak's Site B4 project (SSD-7000)**

### **Environment Protection Licence**

1. An application to the EPA for an Environment Protection Licence, or a variation of licence, under the *Protection of the Environment Operations Act 1997* for the facility must be submitted prior to the commencement of any scheduled activity being undertaken at the site. Additional information on licensing is available in the *EPA Guide to Licensing* documents ([www.epa.nsw.gov.au/licensing/licenceguide.htm](http://www.epa.nsw.gov.au/licensing/licenceguide.htm)).

### **Dust**

2. All operations and activities occurring at the premises must be carried out in a manner that will minimise or prevent the emission of dust from the premises.
3. The premises must be maintained in a condition which minimises or prevents the emissions of dust from the premises.

### **Air Quality and Odour**

4. Vopak must update the Air Quality Impact Assessment to address the recommendations provided in Attachment A of this document and provide to the EPA for its review.
5. The proponent must not cause or permit the emission of offensive odour beyond the boundary of the premises.

Note: Section 129 of the *Protection of the Environment Operations Act 1997*, provides that the applicant must not cause or permit the emission of any offensive odour from the premises but provides a defence if the emission is identified in the relevant environment protection licence as a potentially offensive odour and the odour was emitted in accordance with the conditions of a licence directed at minimising odour.

### **Soil and Water**

6. The proponent must prepare and incorporate a Sediment and Erosion Control Plan and a Soil and Water Management Plan to the CEMP, to be approved by the Director General, before commencement of works. The Plans should be prepared in consultation with relevant stakeholders.
7. The proponent must amend its Operational Environmental management Plan (OEMP) to accommodate soil and water management at the project site. The Plan should be prepared in consultation with relevant stakeholders.

### **Noise and Vibration**

8. The proponent should prepare and implement a detailed Construction Noise and Vibration Management Plan (CNVMP), to be approved by the Director General, before commencement of works.
9. All construction work/activities at the premises must be conducted between 7am and 6pm Monday to Friday and between 8am and 1pm Saturdays and at no time on Sundays and Public Holidays. Work outside these hours is not permitted except as explicitly specified below or in other conditions and include:

- a) the delivery of materials which is required outside these hours as requested by Police or other authorities for safety reasons;
  - b) emergency work to avoid the loss of lives, damage to property and/or to prevent environmental harm;
  - c) other works expressly approved by the Director General; and
  - d) out of standard hours works identified in a CNVMP approved by the Director General.
10. The proponent should make amendments to the current OEMP to incorporate noise management measures. The OEMP is to be approved by the Director General prior to commencing operations at the premises.

### **Waste Management**

11. The proponent must assess, classify and manage any waste generated at the premises in accordance with the NSW Environment Protection Authority (EPA) *Waste Classification Guidelines Part 1: Classifying Waste*, November 2014.