


Reform and Compliance	
For information	

/Glendenning Liquid Waste Treatment Facility	DOC16/322031

Purpose

To provide Air Technical Advisory Services Unit (ATASU) comments on the assessment of air quality for proposed liquid waste facility at Glendenning NSW.

Analysis of issues / sensitivities

Air Technical Advisory Services Unit (ATASU) has reviewed the Air and Noise Assessment (ANE, 2016)¹ (the Assessment), with regards to the Air Quality Assessment only. ATASU has identified a number of issues with the Assessment. Issues identified include:

- The assessment of air toxics does not meet requirements contained in the *Approved Methods for Modelling and Assessment of Air Pollutants in NSW (the Approved Methods)*, specifically:
 - The assessment has not demonstrated that principal air toxics have been minimised to the maximum extent practicable; and
 - The assessment does not provide predicted ground level concentrations for air toxics at and beyond the site boundary.
- The assessment does not outline the inclusion of peak-to-mean ratios for the purposes of predicting potential odour impacts.
- The emissions inventory is unclear, specifically:
 - It is unclear if all potential emission sources have been included within the assessment;
 - It is unclear if adopted analytical data is appropriate, and all referenced analytical data has not been included within the assessment; and
 - It is unclear if the dispersion modelling component of the assessment has considered all potential emission sources.
- It is unclear if the adopted analytical data for proposed controls is adequate, and if proposed odour controls will be effective.
- The meteorological data used for the assessment has not been demonstrated to adequately represent the quantity of 'calm' conditions at the proposed site.

Detailed comments on the issues identified are provided as **Attachment A**.

Consultation

N/A

Recommendations

1. ATASU recommends that prior to project approval the proponent must address those issues outlined in Attachment A.
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¹ ANE, 2016 – *Air and Noise Assessment – Proposed Liquid Waste Facility, Glendenning – Final* prepared by Air Noise Environment dated 12 February 2016.

Approvals

Approved:	Anthony Savage, Manager Air Technical Advisory Services Unit	Click here to enter a date.
Contact:	Rhys Watson, Technical Policy Advisor	Click here to enter text.

Attachments

A.	ATASU comments on Air Assessment
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Background

J.J. Richards & Sons Pty Ltd are proposing to construct and operate a Liquid Waste Facility and Depot at 14 Rayben Street, Glendenning (the Facility). The proposed development is considered State Significant Development (SSD) and subject to assessment under Part 4 of the Environmental Planning and Assessment Act. The Facility proposes to:

- Store and treat grease trap liquid waste;
- Store liquid food waste;
- Store used oil (mineral oils, oil filters, non PCB transformer fluids, and waste hydrocarbons);
- Store and treat industrial oily water (waste oil / hydrocarbon mixtures / emulsions in water)

The proposal is separated into two operational areas: The Organics Building and the Used Oil building. Air emissions from storage tanks, treatment tanks and the DAF unit within the organics building are proposed to be directed to activated carbon units prior to discharge. Air emissions from the tanks and DAF unit associated with the Used Oil Building are not proposed to be treated prior to discharge.

In support of the proposed development the proponent has submitted an Environmental Impact Statement (EIS) including an Air Assessment. The EPA Hazardous Materials Unit has requested Air Technical Advisory Services Unit (ATASU) to review and comment on the Air Assessment supplied within the EIS. It is noted that the EPA have already issued General Terms of Approval (GTA) to the Department of Planning.

ATTACHMENT A – ATASU COMMENTS ON AIR ASSESSMENT (ANE, 2016)²

Assessment of Principal Air Toxics

Section 7.2 of the Approved Methods outlines that “*Principal toxic air pollutants must be minimised to the maximum extent achievable through the application of best-practice process design and/or emission controls*”.

The assessment predicts ground level concentrations of Benzene, a principal toxic air pollutant. ATASU note that controls are proposed for the Organics building, however no controls for the Used Oil Storage building. The assessment does not demonstrate that the emissions of principal toxic air pollutants have been minimised to the maximum extent achievable.

Recommendation: The Air Assessment be revised to demonstrate that the emissions of principal toxic air pollutants have been minimised to the maximum extent achievable.

Assessment of Individual and Principal Air Toxics

The assessment provides an estimate of predicted impacts from both principal air toxics (Benzene) and individual air toxics (Chloroform, Ethylbenzene, Trimethylbenzene, Tetrachloroethene), as classified in the Approved Methods. However the assessment only provides predicted ground level concentrations of these compounds at the nearest residential receptor. Section 7.2.2 of the Approved Methods outlines that the impact assessment criteria for individual and principal toxic air pollutants applies at and beyond the boundary of the facility.

Recommendation: The assessment be revised to provide predicted ground levels concentrations for air toxics at and beyond the boundary of the facility.

Assessment of Peak Odour Concentrations

Section 4.1 of the Assessment correctly identifies that the impact assessment criteria for odour is reported as peak concentration. Assessment of predicted odour concentrations must be undertaken using peak to mean ratios outlined in Section 6.6 of the Approved Methods.

The assessment does not discuss or outline what peak to mean ratios have been adopted (if any) or how they have been adopted to predict ground level odour concentrations for comparison against the impact assessment criteria.

Recommendation: The Assessment be revised to include information on the application of peak to mean ratios as required by the Approved Methods.

Emissions Inventory

The assessment outlines two operational areas: the grease trap and food waste tank farm (Organics Building) and the Used Oil Storage Area.

The proposed Organics Building includes a number of receival tanks, treatment tanks and a Dissolved Air Flotation (DAF) system. The tank vents located within the Organics Building are proposed to be

² ANE, 2016 – *Air and Noise Assessment – Proposed Liquid Waste Facility, Glendenning – Final* prepared by Air Noise Environment dated 12 February 2016.

interconnected and vented via an activated carbon filter. The DAF unit is proposed to be fully enclosed and vented via a separate carbon filter.

The proposed Used Oil Storage Area includes a number of used oil receipt and storage tanks and a DAF unit. Section 2.2 outlines 11 storage tanks, hence there is potential for up to 11 tank vent sources. Section 6.3.3 outlines the estimated emission rates. Emission rates are estimated for the two emission sources from the Organics Building: the tank vent discharge and the DAF unit discharge. Emission rates for six sources are highlighted for the Used Oil Storage Area. Presumably the emission rates presented account for the 11 tank vent sources, however this isn't clear within the assessment.

Recommendation: The Air Assessment be revised to clarify that all emission sources have been considered. A clear Emissions Inventory outlining all emission sources as required under Section 3.6 of the Approved Methods must be included.

Analytical Data Referenced for Emission Estimation

Section 6.3.2 of the assessment outlines that analytical data utilised for estimating emissions from the Used Oil Storage Area was obtained from similar facilities. However no detailed information, discussion or the test reports referenced for the assessment have been included. Hence it is unclear:

- If the adopted data is obtained from a similar process that handles similar waste streams. No discussion on the composition of waste streams between the facilities is included;
- If the adopted data is from similar sources;
- If the adopted emission concentrations for individual compounds are maximums; and
- If the adopted odour concentrations represent a reasonable worst case.

Recommendation: The assessment be revised to include a demonstration on the appropriateness of the analytical data adopted for the assessment, and include referenced analytical test reports.

Dispersion Modelling of Emission Sources

Section 6.4 of the assessment outlines the source parameters used in the dispersion modelling stage of the assessment. The assessment outlines two sources for the Organics Building: the point source discharge from the interlocked tank vents discharged above the building, and a single volume source representing emissions from the building, as a result of the DAF discharge venting inside the building. However Section 2.2 of the assessment outlines the inclusion of 6 roller doors included within the design, which indicates there is potential for up to 6 volume sources. A single volume source is also outlined for modelling the used oil storage area, however as outlined above there is potential for more than one volume source.

Table 6.6 outlines the VOC emissions during tank filling, however no VOC emissions have been estimated for the DAF unit discharges or natural venting of tanks. Additionally the emission rates as input into the dispersion modelling stage of the assessment have not been tabulated.

Recommendation: The assessment be revised to clarify that the dispersion modelling stage has adequately represented the proposed design of the facility and include the emission rates as input into the modelling stage of the assessment, including supporting calculations as to how the emission rates used within the modelling have been estimated.

Analytical Data for Proposed Emission Controls

The assessment outlines that odour concentration data from a liquid waste management facility at Seven Hills has been referenced. Table 6.2 outlines that odour samples “*post filter system*” were collected during filling of storage tanks. Table 6.3 outlines odour concentrations up to 12,400 OU during tank filling. ATASU considers that the odour concentration data is unusually high for a source that operates with proper and efficient controls.

Recommendation: The assessment be revised to include:

- ***A demonstration that the proposed odour controls will achieve a high control efficiency;***
- ***The control efficiencies the proposed odour controls will achieve, including a demonstration supported by appropriate analytical data.***

Meteorological Data Used For Dispersion Modelling

The assessment has adopted an approach of utilising TAPM generated meteorological data for use in the CALMET/CALPUFF dispersion modelling package. Section 6.1.3.1 outlines that TAPM data has been used to validate against 5 years of meteorological data for the nearest Bureau of Meteorology station at Horsley Park. Section 6.2.1 provides a comparison of predicted meteorological data against data from Horsley Park. Whilst section 6.2.1 shows similar wind rose diagrams between the data sets there is significant difference between the predicted quantity of ‘calm’ conditions (~16% from the Horsley Park data set as compared with the ~3% predicted). ‘Calm’ conditions can have significant impacts on predicted odour impacts.

Recommendation: The meteorological data used for dispersion modelling (i.e. the CALMET data) be demonstrated to adequately predict the quantity of ‘calm’ conditions.