



Our reference: DOC14/94163-03, File No. EF13/8175
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NSW Department of Planning and Environment
GPO Box 39
SYDNEY NSW 2000
Attention: Mr Chris Ritchie

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Dear Mr Ritchie

RE: Stolthaven Bulk Fuel Storage Facility, Mayfield North Proposed Modification (08-0130 MOD 3)

I refer to your letter to the Environment Protection Authority (EPA) dated 5 June 2014 seeking a submission or the provision of recommended conditions from the EPA regarding the proposed modification to consent for Stolthaven Bulk Fuel Storage Facility, Mayfield North (08-0130 MOD 3).

Recommended Conditions

The EPA is unable to provide any recommended conditions to Department of Planning and Environment (DPE) as the EPA believes that the Air Quality Impact Assessment (AQIA) does not meet the required standard and contains a number of deficiencies as detailed in the comments section below.

Comments

As discussed above the AQIA appears to contain a number of deficiencies the EPA recommends the proponent address the issues listed below and submit a revised or new AQIA for the project prior to further consideration of the proposal. Specific details on the issues are explained in the following;

Pollutants Modelled

The indicator pollutant for VOCs modelled in this assessment was cumene and the maximum predicted impact at a nearby sensitive receptor was approximately 70% of the cumene assessment criteria. The contours provided for cumene indicates that there are three hot spots (i.e. the contours for the impact assessment criterion for cumene) to the east, northwest and southwest of the site.

The assessment uses cumene as an indicator of VOCs based on the EPA submission for the original AQIA dated 30 December 2011. It is noted that the 2011 advice from EPA provided a table (refer to **Table 1**) of VOCs likely to be in diesel based on vapour compositions from B.P. Cumene was highlighted as the critical substance based on the percentage present in the vapour phase of diesel and the low impact assessment criterion. However, it is noted that other VOCs besides cumene was provided in the EPA advice to the proponent that have not been assessed.

Table 1: Assessment of Emissions of Impact Assessment Criterion

Substance	Impact Assessment Criterion (mg/m ³ - 1 hour)	Estimated Emissions (kg/year)	Estimated Emissions (g/s)	Indicator
Benzene	0.029	0	0	0
Cumene	0.021	124.899	0.0040	1.0000
Ethylbenzene	8	14.9389	0.0005	0.0003
Trimethylbenzenes (all isomers)	2.2	776.0881	0.0246	0.0593
Toluene	0.36	72.2455	0.0023	0.0337
Xylenes (all isomers)	0.19	227.5121	0.0072	0.2013

From **Table 1**, cumene, toluene and xylene are classified as odorous pollutants in the Approved Methods and the criterion is applied at the nearby sensitive receptors. Ethylbenzene and trimethylbenzenes are classified as toxic air pollutants and the criterion is applied at and beyond the boundary of the site. The boundary of the site has not been assessed in the AQIA and as discussed the contours for cumene indicate that the highest impacts occur off-site.

As the contours for cumene indicate that the maximum predicted ground level concentrations occur off-site, EPA recommends that one or more of the toxic air pollutants should also be assessed to determine compliance beyond the boundary of the site.

Emission Parameters

Condition L8 of the Environment Protection Licence states that the truck loading stack must have an exit velocity of 15 m/s and a minimum height of 15 m. The stack diameter and stack height for the truck loading gantry has varied since the original AQIA. The parameters modelled for this stack are shown in **Table 2**. The differences in stack parameters may have an impact on the dispersion of pollutants and the predicted ground level concentration at receptors.

Table 2: Modelled Truck Gantry Stack Parameters

AQIA Version	Modelled Truck Filling Stack Exit Velocity (m/s)	Modelled Truck Filling Stack Height (m)	Modelled Truck Filling Stack Diameter (m)
Original AQIA – Aug 2011	2	8	0.3
Revision D – Feb 2012	2	8	0.3
Revision E – Mar 2012	15	15	0.3
Mod 1A – Dec 2012	44.9	19	0.1
Mod 3 - May 2014	15	19	0.18

The dimensions of the storage tanks used as input in the US EPA program TANKS are also different to the previous AQIA (refer to **Table 3**). The difference in tank parameters has resulted in lower emissions used as input to the air dispersion modelling for this AQIA compared to the previous AQIAs.

Table 3: Modelled Storage Tank Parameters

AQIA Version	Modelled Storage Tank Diameter (m)	Modelled Storage Tank Height (m)
Original AQIA to Mod 1A		
- Diesel Tanks	38	18
- Biodiesel Tank (small)	8	12
- Biodiesel Tank (large)	18	17
Mod 3 - May 2014		
- Diesel Tanks	36.6	17
- Biodiesel Tank (small)	7.6	12
- Biodiesel Tank (large)	18	17

The proponent should confirm that the correct tank and stack parameters have been modelled in the AQIA.

AUSPLUME CONFIGURATION FILE

A review of the AUSPLUME configuration file indicates that the initial vertical and horizontal spread and the storage tank height provided in the Table 3 of the AQIA may have been entered into the wrong fields in AUSPLUME.

The proponent should review the modelling files to ensure the correct parameters have been modelled. Although a copy of the configuration file has been provided, the text output file has been included in previous AQIAs and should be provided for reference.

If you require any further information regarding this matter please contact me on (02) 4908 6816.

Yours sincerely

19 JUN 2014

MARK HARTWELL
Head Regional Operations Unit - Hunter
Environment Protection Authority

