

# Assessment and dispersion modelling checklist

## Assessment and dispersion modelling details

Site name and location

Date of assessment and modelling review

Reviewed by (council officer)

Work prepared by (consultant name)

Checklist item	Yes	No	N/A
<b>General</b>			
Have the consultants demonstrated competency and experience in air quality assessment and dispersion modelling?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are the consultants Certified Air Quality Professionals?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Does the report make reference to and comply with the <i>Approved methods for modelling and assessment of air pollutants in New South Wales</i> (EPA 2022)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
For odour, does the report consider the:			
<ul style="list-style-type: none"> <li><i>Technical Framework: Assessment and management of odours from stationary sources in NSW</i> (DEC 2006a)?</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li><i>Technical Notes: Assessment and management of odours from stationary sources in NSW</i> (DEC 2006b)?</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Project description and scenarios</b>			
Has the project been defined?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Has a worst-case operational scenario been defined and assessed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Assessment criteria</b>			
Have impact assessment criteria from the <i>Approved methods for modelling and assessment of air pollutants in New South Wales</i> (EPA 2022) been used?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have criteria been provided for relevant pollutants and averaging periods?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Existing environment</b>			
Has a BoM or DCCEEW weather station been referenced for meteorological parameters?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Checklist item	Yes	No	N/A
Has the TAPM or WRF meteorological model been used to provide some or all of the meteorological parameters?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have 5 years of meteorological data been reviewed and evaluated to select a representative meteorological year?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Has sufficient justification been provided to determine a representative year?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Has a DCCEEW monitoring station (or other nearby monitoring site) been used to estimate background air quality parameters?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Has sufficient justification been provided to determine a representative year?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Has sufficient justification been provided for the choice of monitoring station for estimation of background concentrations?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
For particulates (PM <sub>10</sub> and PM <sub>2.5</sub> ), have all exceedance days been included in the data?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Modelling</b>			
Which of the following dispersion models have been used? See the Local Government Air Quality Toolkit – Module 1 for guidance on which models are appropriate for the industry and location being assessed.			
• CALPUFF	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• AERMOD	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• CALINE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• TRAQ	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Ausplume (the use of this model should be queried, refer to Module 1)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• GRAL (the use of this model should be queried, refer to Module 1)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are assumptions/limitations and uncertainties of the modelling provided?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Do the surroundings complicate the dispersion modelling? For example:			
• Is the facility in a narrow valley or influenced by some other terrain feature?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Are high buildings or clumps of high trees in proximity?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Is steeply rising land nearby?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are there several point / stack sources that may need to be optimised to determine the most effective dispersion?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are the building heights used accurate?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Odour sampling</b>			
Was the odour emission testing at source completed by a suitably qualified consultant?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Were odour samples analysed using a laboratory with NATA accreditation for this method (according to AS/NZS 4323.3)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Checklist item	Yes	No	N/A
Was the odour sampling completed during representative operating conditions?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are these representative conditions likely to vary over time?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are there other odour sources that may have been missed in the sampling?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Emission estimation</b>			
Have all emission sources been identified?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have all equations, tables and figures been provided for review of emission sources?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Has the consultant referred to National Pollutant Inventory emission estimation technique manuals (Cth DCCEEW 2023) and/or <i>AP-42: Compilation of air emissions factors from stationary sources</i> (US EPA 2024)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Mitigation measures</b>			
Have mitigation measures been provided with proposed percentage control efficiencies?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have all reasonable measures been adopted to minimise emissions?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Is the control equipment suitable for achieving the predicted emissions? (e.g. low-efficiency cyclones or low-energy scrubbers are not usually adequate for collecting fine particles; and food processing odours are unlikely to be removed by wet scrubbing) The cross-reference tables and the descriptions of air pollution control techniques contained in the Local Government Air Quality Toolkit – Modules 3 and 4 can provide further guidance.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Is the management likely to have the capability to operate and monitor any complex control equipment proposed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Is adequate monitoring for performance assessment proposed or required?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Has a management plan for the site been proposed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Impact assessment</b>			
Have results tables and contour plots been provided?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are all results compared with assessment criteria?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Notes:** Cth DCCEEW = Australian Government Department of Climate Change, Energy, the Environment and Water; BoM = Bureau of Meteorology; DCCEEW = NSW Department of Climate Change, Energy, the Environment and Water; DEC = NSW Department of Environment and Conservation; EPA = NSW Environment Protection Authority; N/A = not applicable; NATA = National Association of Testing Authorities; TAPM = The Air Pollution Model; US EPA = United States Environmental Protection Agency; WRF = Weather Research and Forecasting Model.