

- Detail how background levels and emissions from other potential sources of the key air pollutants have been cumulatively assessed at sensitive receptor locations;
- Detail how fugitive emissions of potentially contaminated material will, essentially, be eliminated;
- Provide details of an appropriate odour impact assessment and detail how potentially offensive odour will be eliminated at any sensitive receptor location; and
- Provide details of trials to verify (before treating or disturbing contaminated materials) that the process will not create fugitive emissions and that point emissions will meet predicted levels.

Baseline conditions

The EA must provide a description of existing air quality and meteorology, using existing information and site representative ambient monitoring data. This description must include the following:

- A description of the topography and surrounding land uses;
- Details of the exact locations of dwellings, schools and hospitals;
- A perspective view of the study area such as the terrain file used in dispersion models (where appropriate); and
- A description of surrounding buildings that may effect plume dispersion.

The EA needs to include site representative data on the following meteorological parameters:

- a) temperature and humidity;
- b) rainfall, evaporation and cloud cover;
- c) wind speed and direction;
- d) atmospheric stability class;
- e) mixing height (the height that emissions will be ultimately mixed in the atmosphere);
- f) katabatic air drainage; and
- g) air re-circulation.

Assess impacts

The EA must demonstrate that Proponent has:

- Conducted an air quality and odour impact assessment in accordance with the requirements of the *Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales, August 2005* and with regard to *Assessment and Management of Odour from Stationary Sources in NSW (EPA, 2001)*, and *Technical Notes: Draft Policy: Assessment and Management of Odour from Stationary Sources in NSW (EPA, 2001)*;

- Conducted a health risk assessment acceptable to the NSW Department of Health;
- Identified all pollutants of concern and estimate emissions by quantity (and size for particles), source and discharge point;
- Estimated the resulting ground level concentrations of all pollutants. Where necessary (eg potentially significant impacts and complex terrain effects), used an appropriate dispersion model to estimate ambient pollutant concentrations. Discussed choice of model and parameters with the DEC;
- Described the effects and significance of pollutant concentration on the environment, human health, amenity and regional ambient air quality standards or goals;
- Described the contribution that the development will make to regional and global pollution, particularly in sensitive locations; and
- For potentially odorous emissions provided the emission rates in terms of odour units (determined by techniques compatible with EPA / DEC procedures).

Note: Use sampling and analysis techniques for individual or complex odours and for point or diffuse sources, as appropriate.

Note: With dust, it may be possible to use data from existing similar activities to generate emission rates.

The proponent must refer to:

1. *Approved Methods for the Modelling and Assessment of Air Pollutants in NSW* (EPA, 2005);
2. *Approved Methods for the Sampling and Analysis of Air Pollutants in NSW* (EPA, 2005);
3. *Assessment and Management of Odour from Stationary Sources in NSW* (EPA, 2001);
4. *Technical Notes: Draft Policy: Assessment and Management of Odour from Stationary Sources in NSW* (EPA, 2001); and
5. *Load Calculation Protocol for use by holders of NSW Environment Protection Licences when calculating Assessable Pollutant Loads* (EPA, 1999).

Management and mitigation measures

The EA must:

Outline specifications of pollution control equipment (including manufacturer's performance guarantees where available) and management protocols for both point and fugitive emissions. Where possible, this should include cleaner production processes.

Noise & Vibration Environmental Assessment Requirements

Description of the proposal

The EA must:

- Identify all noise sources from the remediation project (including both construction and operation phases). Detail all potentially noisy activities including ancillary activities including transport;
- Specify the times of operation for all phases of the project and for all noise producing activities; and
- For projects with a significant potential off site traffic noise impact, provide details of road alignment (include gradients, road surface, topography, bridges, culverts etc), and land use along the proposed road and measurement locations – diagrams should be to a scale sufficient to delineate individual residential blocks.

The location

The EA must:

- Identify any noise sensitive locations likely to be affected by activities at the project site, such as residential properties, schools, churches, and hospitals; and
- Identify the land use zoning of the site and the immediate vicinity and the potentially affected areas.

Note: Typically the noise assessment report should include a map of the locality showing any identified noise sensitive locations in relation to the site.

Baseline conditions

The EA must demonstrate how the proponent will:

- Determine the existing background (LA90) and ambient industrial (LAeq) noise levels in accordance with the NSW Industrial Noise Policy, inclusive of industrial noise from BIP. The determination of 'existing industrial noise level' shall consider known or reasonably foreseeable changes likely to occur to existing industrial noise levels during the project timeline (other than the project under consideration); and
- Determine the existing road traffic noise levels in accordance with the NSW Environmental Criteria for Road Traffic Noise, where road traffic noise impacts may occur.

The noise impact assessment report should provide details of all monitoring of existing ambient noise levels including:

- Details of equipment used for the measurements;
- A brief description of where the equipment was positioned;
- A statement justifying the choice of monitoring site, including the procedure used to choose the site, having regards to the definition of 'noise sensitive location(s)' and

'most affected location(s)' described in Section 3.1.2 of the NSW Industrial Noise Policy;

- Details of the exact location of the monitoring site and a description of land uses in the surrounding areas;
- A description of the dominant and background noise sources at the site;
- Day, evening and night assessment background levels for each day of the monitoring period;
- The final RBL value;
- Graphs of the measured noise levels for each day should be provided;
- A record of periods of affected data (due to adverse weather and extraneous noise), methods used to exclude invalid data and a statement indicating the need for any re-monitoring under Step 1 in Section B1.3 of the NSW Industrial Noise Policy; and
- Determination of LAeq noise levels from existing industry.

Assess environmental impacts

The EA must demonstrate how the Proponent will:

- Determine the INP project specific noise levels for the site. For each identified potentially affected receiver, this should include:
 - determination of the intrusive criterion for each identified potentially affected receiver;
 - selection and justification of the appropriate amenity category for each identified potentially affected receiver;
 - determination of the amenity criterion for each receiver; and
 - determination of the appropriate sleep disturbance limit.

Note: Maximum noise levels during night-time period (10pm-7am) should be assessed to analyse possible effects on sleep. Where LA1(1min) noise levels from the site are less than 15 dB above the background LA90 noise level, sleep disturbance impacts are unlikely. Where this is not the case, further analysis is required.

Additional guidance is provided in the INP Policy Application Notes at www.environment.nsw.gov/noise/applicnotesindustnoise.htm

- Determine expected noise level and noise character (eg: tonality, impulsiveness, vibration, etc) likely to be generated from noise sources during
 - site establishment
 - construction
 - operational phases
 - transport including traffic noise generated by the proposal
 - other services.

Note: The noise impact assessment report should include noise source data for each source in 1/1 or 1/3 octave band frequencies including methods or references used to determine noise source levels.

The EA must demonstrate how the Proponent will:

Determine the noise & vibration levels likely to be received at the most sensitive locations (these may vary for different activities at each phase of the development). Potential impacts should be determined for any identified significant adverse meteorological conditions. Predicted noise levels under calm conditions may also aid in quantifying the extent of impact where this is not the most adverse condition. $L_{Aeq,15minute}$ and $L_{Aeq,period}$ predicted noise levels should be provided.

Potential vibration impacts should be assessed using the DEC guideline titled: "Environmental Noise Management – Assessing Vibration: a technical guideline".
<http://www.environment.nsw.gov.au/noise/vibrationguide.htm>

The noise impact assessment report should include:

- A plan showing the assumed location of each noise source for each prediction scenario;
- A list of the number and type of noise sources used in each prediction scenario to simulate all potential significant operating conditions on the site;
- Any assumptions made in the predictions in terms of source heights, directivity effects, shielding from topography, buildings or barriers, etc;
- Methods used to predict noise impacts including identification of any noise models used. Where modelling approaches other than the use of the ENM or SoundPlan computer models are adopted, the approach should be appropriately justified and validated;
- An assessment of appropriate weather conditions for the noise predictions including references to any weather data used to justify the assumed conditions;
- The predicted noise impacts from each noise source as well as the combined noise level for each prediction scenario under any identified significant adverse weather conditions as well as calm conditions where appropriate;
- For developments where a significant level of noise impact is likely to occur, noise contours for the key prediction scenarios should be derived; and
- An assessment of the need to include modification factors as detailed in Section 4 of the NSW Industrial Noise Policy.

The noise impact assessment report should discuss the findings from the predictive modelling and, where relevant noise criteria have not been met, recommend additional mitigation measures; and should include details of any mitigation proposed including the attenuation that will be achieved and the revised noise impact predictions following mitigation.