

and other principal contaminants of concern is conducted in accordance with best practice measures with consideration to the USEPA *Best Management Practices for Soils Treatment Technologies – Suggested Operational Guidelines to Prevent Cross-Media Transfer of Contaminants During Cleanup Activities – EPA530-R-97-007* and the DEC's *Environmental Guidelines: Assessment, Classification & Management of Liquid & Non-liquid Wastes*.

- **Remediation Criteria** – the Environmental Assessment must clearly indicate the proposed remediation criteria to be applied to the site, including details of how these criteria have been derived. The Environmental Assessment must demonstrate how treatment will achieve:
 - a statistical average dioxin, furan and dioxin-like PCB WHO-TEQ of less than $1\mu\text{gkg}^{-1}$ (1000ppt) determined with a methodology acceptable to the DEC;
 - an aggregate concentration of scheduled chemical waste constituents of less than 2mgkg^{-1} ;
 - a polychlorinated biphenyl concentration of less than 2mgkg^{-1} ;
 - the relevant requirements of the HCB Waste Management Plan 1996; and
 - best practice limits as demonstrated within the technology assessment application to the DEC for other principal contaminants of concern.
- **Air Quality Impacts** – the Environmental Assessment must include a comprehensive air quality impact prepared in accordance with assessment and modelling of air quality and odour impacts in accordance with the *Approved Methods for Modelling and Assessment of Air Pollutants in NSW* (EPA, 2005) and having relevant regard to *Assessment and Management of Odour from Stationary Sources in NSW* (EPA, 2001), *Technical Notes: Draft Policy: Assessment and Management of Odour from Stationary Sources in NSW* (EPA, 2001) and *Load Calculation Protocol for use by holders of NSW Environment Protection Licences when calculating Assessable Pollutant Loads* (EPA, 1999). The Environmental Assessment must:
 - describe baseline conditions at the site and surroundings including existing air quality (using existing information and site ambient monitoring data), meteorology, topography, surrounding landuses and description of surrounding structures that may effect plume dispersion;
 - provide details of all air discharge points and characteristics (eg. number and height of stacks, discharge velocities, residence time, etc) and of fugitive emissions;
 - include all identified emissions and pollutants of concern, assessed additively with background levels, cumulatively with other potential emission sources at the time of remediation (eg. HCB repacking, GWTP), and considering the effects and significance of estimated pollutant concentrations on the environment, human health, amenity and regional ambient air quality and goals;
 - provide details of the proposed air quality and odour control equipment and management for point and fugitive emissions and the proposed monitoring program (ambient and point discharge monitoring);
 - include contingency plans for air emission controls in the event of loss of power or other incident or upset that may affect air emissions performance;
 - include a detailed dust impact assessment from soil disturbance and other remediation activities, and must consider cumulative dust impacts from other relevant activities in the area;
 - include dust management controls with particular attention to the management of contaminated material outside the encapsulation in the eastern embankment and near the Corish Circle.
- **Human Health Impacts** – the Environmental Assessment must include an assessment of the human health impacts of the project, undertaken in accordance with the risk assessment approach outlined in *Environmental Health Risk Assessment – Guidelines for Assessing Human Health Risk from Environmental Hazards*. The Assessment must include:
 - justification for the exclusion/ inclusion of specific chemicals, along with toxicological profiles of chemicals;
 - exposure parameters/ scenarios including the development of a multi-exposure pathway risk assessment model to account for inhalation and

- ingestion pathways;
 - consideration acute/chronic and carcinogenic impacts of chemical exposures for children and adults including users of Hensley Field and nearby residences;
 - consideration of existing background exposure levels of criteria chemicals, and cumulative risks of any known or expected sources of the chemicals of concern during the remediation process that may contribute to acute or lifetime exposure (eg. any emissions from the HCB repackaging plant or the GWTP);
 - chemicals present at low concentrations but with similar mode of action of other chemicals present at the site must be retained in the risk assessment and a cumulative toxicological effect estimated;
- **Noise and Vibration Impacts** – the Environmental Assessment must include an assessment of the noise impacts of the project in accordance with the *NSW Industrial Noise Policy* (EPA 2000) and the *Environmental Criteria for Road Traffic Noise* (EPA, 1999). The Assessment shall include consideration of noise impacts resulting from all noise sources associated with the project including (but not necessarily limited to) excavation works, noise emissions from the DTD Plant and pre-treatment building, any activities proposed to be undertaken during evening or night time periods and traffic noise. The Environmental Assessment must include consideration of cumulative noise impacts from other expected contributors to noise during the remediation process (this may include noise from the HCB repackaging proposal or other new activities that are likely to commence in the area during remediation). With respect to potential vibration impacts, the Environmental Assessment must include consideration in accordance with the DEC's *Environmental Noise Management – Assessing Vibration: a Technical Guideline*.
- **Water Quality Impacts** – the Environmental Assessment must assess impacts of the project on water quality and the water cycle during each phase of the project, including environmental assessment and management of surface water, stormwater, groundwater and leachate(s). The Environmental Assessment must
 - provide an accurate representation of the extent of the HCB "hot spot" in the groundwater adjacent to the CPWE and how this groundwater will be managed/remediated;
 - describe how contaminated water held in the hypalon membrane will be removed and managed;
 - details of how nearby production bores will be managed so as not to exacerbate migration of contaminants from the disturbed area;
 - provide detail of the proposed monitoring of groundwater and surface water and include effective management strategies to manage the risk of water contamination;
 - provide details of sediment and erosion controls.
- **Land Use Safety** – the Environmental Assessment must include a Preliminary Hazard Analysis prepared in accordance with the Department's Hazardous Industry Planning Advisory Paper No.6, Guidelines for Hazard Analysis and Multi-Level Risk Assessment. The Preliminary Hazard Analysis must include:
 - a full description of the treatment process, together with process flow diagrams and other relevant information at various points in the process, such as temperatures, pressures, flow rates and contaminants with their physical state;
 - full descriptions and operating details of emission control systems such as water treatment, gas scrubbing, gas treatment and monitoring of exhaust to atmosphere;
 - details of the ventilation system proposed for the excavation and pre-treatment building. If the building is not intended to be maintained at negative pressure, the systems proposed to control fugitive emissions to the atmosphere must be outlined;
 - quantitative evaluation of the irritation and injury risks at surrounding residential areas and assessment of these risks against the criteria set out in the Department's *Hazardous Industry Planning Advisory Paper No. 4 - Risk Criteria for Land Use Safety Planning*. Failure modes of both detection and safe shutdown systems must be taken into consideration when evaluating risks;

	◦ details of safe shutdown systems in the event of process malfunction including estimates of (quality and quantity) off-spec emissions prior to reaching a safe/stable condition; and ◦ the impacts on any food related industries in the area. • General Environmental Risk Analysis – notwithstanding the above key assessment requirements, the Environmental Assessment must include an environmental risk analysis to identify potential environmental impacts associated with the project (construction and operation), proposed mitigation measures and potentially significant residual environmental impacts after the application of proposed mitigation measures. Where additional key environmental impacts are identified through this environmental risk analysis, an appropriately detailed impact assessment of these additional key environmental impacts must be included in the Environmental Assessment.
Consultation Requirements	You must undertake an appropriate and justified level of consultation with the following parties during the preparation of the Environmental Assessment: • NSW Department of Environment and Conservation; • NSW Department of Health; • Botany Bay City Council; • Randwick City Council; • Department of Natural Resources; • the Community Participation and Review Committee; and • the local community and relevant community groups The EA must clearly indicate issues raised by stakeholders during consultation, and how those matters have been addressed in the EA.
Deemed refusal period	Under clause 8E(2) of the <i>Environmental Planning and Assessment Regulation 2000</i>, the applicable deemed refusal period is 60 days from the end of the proponent's environmental assessment period for the project.