

PCU004043

Our reference: DOC10/13689
Contact: Deanne Pitts, (02) 9995 5739

Ms Ann-Maree Cuthers
Senior Environmental Planning Officer
Mining and Industry
Department of Planning
PO Box 39
SYDNEY NSW 2001

Department of Planning
Received
01 APR 2010
Scanning Room

EMAIL & STANDARD POST

Dear Ms Cuthers

**Proposed remediation of contaminated soils - Orica Australia Pty Ltd
2 Christina Rd, Villawood NSW 2163 - MP09_0147**

I refer to your request received on 4 March 2010 for the Department of Environment, Climate Change and Water's ("DECCW") requirements for the Environmental Assessment ("EA") in regard to the above proposal.

Please note that, although the Environment Protection Authority ("EPA") is now a part of the DECCW, certain statutory functions and powers continue to be exercised in the name of the EPA.

DECCW has considered the details of the proposal as provided by the Department of Planning ("DoP") and has identified the information required to be included in the EA to assess the project (Attachment A). The proponent should ensure that the EA is sufficiently comprehensive and detailed to allow the DECCW to determine the extent of the impact(s) of the proposal.

The proponent should be aware that any commitments made in the EA may be formalised as approval conditions. Consequently, pollution control measures should not be proposed if they are impractical, unrealistic or beyond the financial viability of the development. It is important that all conclusions are supported by adequate data.

Due to the complexity of this proposal, DECCW recommends that the proponent consults with the DECCW during the assessment period.

Based upon the information provided to DECCW, the proponent will need to apply to the EPA to vary Environment Protection Licence No. 2149 in regard to carrying out scheduled activities. The proponent will need to make a separate application to DECCW to obtain this variation if planning project approval is given.

DECCW would also like to advise that the site is currently subject to a Management Order No. 23019 under the *Contaminated Lands Management Act 1997*.

DECCW requests that the proponent provides five copies of the EA for assessment. These documents should be sent to the Manager Waste Operations, PO Box A290, Sydney South NSW 1232.



If you have any queries regarding this matter, please contact Deanne Pitts on 9995 5739.

Yours sincerely

 26/3/10

JULIE CURREY
Unit Head Waste Operations
Environment Protection and Regulation

Encl. Attachment A - DECCW DGRs

**ATTACHMENT A: ENVIRONMENTAL ASSESSMENT REQUIREMENTS FOR THE
REMEDiation OF CONTAMINATED SOILS AT 2 CHRISTINA RD, VILLAWOOD NSW
PROPOSER: ORICA AUSTRALIA PTY LTD
MARCH 2010**

ENVIRONMENTAL IMPACTS OF THE PROJECT

The following environmental impacts of the project need to be assessed, quantified and reported on:

1. Air
2. Noise and vibration
3. Water
4. Waste and chemicals
5. Threatened Species
6. Aboriginal Cultural Heritage
7. Other site specific issues
8. References

General

The EA must include:

- An executive summary;
- A description of the overall remediation strategy for the site, including the:
 - objectives of the remediation strategy;
 - proposed staging of the strategy; and
 - relationship between the various stages of the strategy;
- A detailed description of the project, including the:
 - need for the project;
 - alternatives considered;
 - Remedial Action Plan, validation and ongoing site monitoring for the project prepared in accordance with the NSW EPA *Guidelines for Consultants Reporting on Contaminated Sites 1997* and to the satisfaction of the NSW EPA accredited Site Auditor and DECCW. This should include, but is not limited to:
 - Details of the proposed remediation process;
 - Justification of all proposed remediation criteria; and
 - Details of compliance with the *Contaminated Land Management Act 1997* and Management Order No. 23019 (dated 2/11/05).
 - Final landform following remediation and the suitability of fill material;
 - On going management of the site following remediation works;

- Risk assessment of the potential environmental impacts of the project, identifying the key issues for further assessment;
- A detailed assessment of the key issues specified below, and any other significant issues identified in the risk assessment (see above), which includes:
 - a description of the existing environment, using sufficient baseline data;
 - an assessment of the potential impacts of all stages of the project, including any cumulative issues arising from other sites in the area; and
 - a description of the measures that would be implemented to avoid, minimise, mitigate, rehabilitate/remediate, monitor and/or offset the potential impacts of the project, including detailed contingency plans for managing any potentially significant risks to the environment.
- A statement of commitments, outlining all the proposed environmental management and monitoring measures;
- A conclusion justifying the project on economic, social and environmental grounds, taking into consideration whether the project is consistent with the objects of the *Environmental Planning & Assessment Act 1979*;
- A signed statement from the author of the Environmental Assessment, certifying that the information contained within the document is neither false nor misleading; and
- Detailed descriptions and specifications of the:
 - Emission Control System (ECS) in the Pre-Treatment Building (PTB);
 - The Water Treatment Plant; and
 - The DTD Plant.

1. Air Environmental Assessment Requirements

The EA must:

- Identify all sources of air emissions from the development;

Note: emissions can be classed as either:

- *point (e.g. emissions from stack or vent) or*
 - *fugitive (from wind erosion, leakages or spillages, associated with loading or unloading, conveyors, storage facilities, plant and yard operation, vehicle movements (dust from road, exhausts, loss from load), land clearing and construction works).*
- Provide details of the project that are essential for predicting and assessing air impacts including:
 - the quantities and physio-chemical parameters (eg concentration, moisture content, bulk density, particle sizes etc) of materials to be used, transported, produced or stored;
 - an outline of procedures for handling, transport, production and storage; and
 - the management of solid, liquid and gaseous waste streams with potential for significant air impacts.

- Include clear diagrams illustrating;
 - the physical layout of the plant and pollution control equipment; and
 - the material and air flows through the plant and any pollution control equipment, including structures or enclosures for controlling air and odour emissions.
- Establish existing background levels of the key air pollutants in the ambient air at potentially affected sensitive receptor locations;
- Detail how background levels and emissions from other potential sources of the key air pollutants have been cumulatively assessed at sensitive receptor locations;
- Details 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 locations; 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:

- temperature and humidity;
- rainfall, evaporation and cloud cover;
- wind speed and direction;
- atmospheric stability class;
- mixing height (the height that emissions will be ultimately mixed in the atmosphere);
- katabatic air drainage; and
- 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 (e.g. potentially significant impacts and complex terrain effects), used an appropriate dispersion model to estimate ambient pollutant concentrations. Discussed choice of model and parameters with DECCW;
- 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 / DECCW 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:

- *Approved Methods for the Modelling and Assessment of Air Pollutants in NSW (EPA, 2005);*
- *Approved Methods for the Sampling and Analysis of Air Pollutants in NSW (EPA, 2005);*
- *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).*

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.

2. Noise & Vibration Environmental Assessment Requirements

The EA must:

- Identify, assess and model 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. 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 affects 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; and
 - 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 DECCW 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.
 - Where relevant noise/vibration criteria cannot be met after application of all feasible and reasonable mitigation measures the residual level of noise impact needs to be quantified by identifying:
 - locations where the noise level exceeds the criteria and extent of exceedence;
 - numbers of people (or areas) affected;
 - times when criteria will be exceeded;
 - likely impact on activities (speech, sleep, relaxation, listening, etc);
 - change on ambient conditions; and
 - the result of any community consultation or negotiated agreement.
 - For the assessment of existing and future traffic noise, details of data for the road should be included such as assumed traffic volume; percentage heavy vehicles by time of day; and details of the calculation process. These details should be consistent with any traffic study carried out in the EA. Alternatively, measured noise levels can be used provided the traffic volume during the period of measurement is demonstrated to be typical of normal volumes etc

Management and mitigation of environmental impacts

The EA must demonstrate how the Proponent will:

- Determine the most appropriate noise mitigation measures and expected noise reduction including noise controls and management of impacts for both construction and operational noise. This will include selecting quiet equipment and construction methods, noise barriers or

acoustic screens, location of stockpiles, temporary offices, compounds and vehicle routes, scheduling of activities, etc. In particular, the EA must address:

- Specific noise mitigation measures for the DTD Plant, including consideration of physical barriers to reduce noise emissions from the site; and
 - Specific noise mitigation measures for the DTD Plant Stack, including consideration of a muffler device on the Stack to reduce noise emissions.
- For traffic noise impacts, provide a description of the ameliorative measures considered (if required), reasons for inclusion or exclusion, and procedures for calculation of noise levels including ameliorative measures. Also include, where necessary, a discussion of any potential problems associated with the proposed ameliorative measures, such as overshadowing effects from barriers. Appropriate ameliorative measures may include:
 - Use of alternative transportation modes, alternative routes, or other methods of avoiding the new road usage;
 - Control of traffic (eg: limiting times of access or speed limitations);
 - Resurfacing of the road using a quiet surface;
 - Use of (additional) noise barriers or bunds;
 - Treatment of the façade to reduce internal noise levels buildings where the night-time criteria is a major concern;
 - More stringent limits for noise emission from vehicles (i.e. using specially designed “quiet” trucks and/or trucks to use air bag suspension);
 - Driver education;
 - Appropriate truck routes;
 - Limit usage of exhaust breaks;
 - Use of premium mufflers on trucks;
 - Reducing speed limits for trucks;
 - Ongoing community liaison and monitoring of complaints; and
 - Phasing in the increased road use.

3. Water Environmental Assessment Requirements

Groundwater

DECCW is concerned about groundwater contamination which may be disturbed by the remediation and remain at the site after the remediation. The EA needs to address:

- An accurate representation of the extent and nature of the plumes underneath the site including details of location and extent of Dense Non Aqueous Phase Liquids (DNAPLs);
- How groundwater in the surrounding area will be monitored;
- How contaminated groundwater that is encountered during excavation will be treated and disposed of;
- Remediation of contaminated groundwater at the site and provision of justification for otherwise;

- Details of any contaminated soil management arrangements; and
- Details of the installation, operation and maintenance of the sediment and erosion controls associated with the construction works.

In development of the EA and carrying out the works, the proponent should also refer to DECCW's *Guidelines for the Assessment and Management of Groundwater Contamination* 2007.

Surface Water

- A detailed Surface Water Management Plan must be developed that includes:
 - All erosion and sediment controls to be used during excavation, stockpiling and backfilling;
 - Details of how surface water from "clean" areas will be directed and stored away from surface water from contaminated areas; and
 - Details of how the contaminated water will be treated and its final disposal location i.e. sewer or liquid waste treatment facility.

Note: A trade waste agreement with Sydney Water may be need be sought for any waste going to sewer

In development of the EA and carrying out the works, the proponent should also refer to the Department of Housing Document titled "*Managing Urban Stormwater: Soils and Construction*".

4. Waste & Chemicals Environmental Assessment Requirements

Statutory Requirements Under the Environmentally Hazardous Chemicals Act 1985

The EA must demonstrate how the Proponent will manage all materials and wastes containing scheduled chemical waste, dioxin and/or polychlorinated biphenyls (PCBs) in accordance with the applicable Chemical Control Order, National Management Plan or in accordance with a licence under the Environmentally Hazardous Chemicals Act 1985.

Note: The proposed treatment of scheduled chemicals including DDTs using direct thermal desorption is deemed "processing" in accordance with the Scheduled Chemical Waste Chemical Control Order 2004 made under the Environmentally Hazardous Chemicals Act 1985 and must be done in accordance with an EPA licence.

Prior to the issue of any variation of the existing Environmental Protection Licence and Environmentally Hazardous Chemicals Act Licence to permit the proposed works, the proponent must provide the EPA with sufficient and appropriate documentation for a technology assessment to be undertaken by the EPA, in accordance with the following:

- 'National Protocol - Approval/Licensing of Trials of Technologies for the Treatment/Disposal of Schedule X Wastes - July 1994'; and
- 'National Protocol for Approval/Licensing of Commercial Scale Facilities for the Treatment/Disposal of Schedule X Wastes - July 1994'.

The applicant will be expected to operate in accordance with the procedures outlined in the technology assessment documents provided to the EPA, unless otherwise agreed by the EPA.

Assessment of technologies for treatment of Schedule X Wastes

Note: Technologies for treating or destroying scheduled chemicals are initially assessed in accordance with the 'National Protocols for Approval/Licensing of Trials of Technologies for the Treatment/Disposal of Schedule X Wastes 1994' developed as part of the National Strategy for the Management of Scheduled Waste. If trial data demonstrates the technology can meet specified environmental outcomes for a particular feedstock, the proponent can apply to proceed with commercial-scale treatment. In this case, the proposal would be assessed against the 'National Protocol for Approval/Licensing of Commercial-Scale Facilities for the Treatment/Disposal of Schedule X Wastes 1994'.

Assessment in accordance with such protocols requires a technology that:

- is a viable option meeting best practice standards;
- will not create any additional problematic waste streams;
- will minimise any transfer of POPs or other contaminants of concern to the environment; and
- will meet the strictest air emission criteria.

Within the technology assessment application, the applicant must develop a Commissioning and Proof of Performance Program (CPoP) to demonstrate the technology's capability to meet best practice emission and treatment levels. The CPoP must include the proposed staging of treatment consistent with the requirements of the 'National Protocols'. Consideration should also be given to the Basel General technical guidelines for the environmentally sound management of wastes consisting of, containing or contaminated with persistent organic pollutants (POPs) and Stockholm BAT BEP guidance.

Note: Assessment in accordance with the 'National Protocols' involves applying for a technology assessment under the Environmentally Hazardous Chemicals Act 1985 and paying the assessment fee.

Treatment limits

The EA must demonstrate how the Proponent will:

- Process all Scheduled Chemical Waste, dioxin waste and/or Polychlorinated Biphenyls Waste (PCBs), and any wastes generated by the treatment process until the materials/wastes meet:
 - a statistical average dioxin, furan and dioxin like PCB WHO-TEQ of less than $1\mu\text{g/kg}^{-1}$ (1000 ppt) determined with a methodology acceptable to the EPA;
 - an aggregate concentration of scheduled chemical waste constituents of less than 2mg/kg;
 - a polychlorinated biphenyl concentration of less than 2mg/kg;
 - the requirements that apply in accordance with the Organochlorine Pesticide Waste Management Plan 1999; and
 - best practice limits as demonstrated within the Commissioning and Proof of Performance Program for other principal contaminants of concern.

Excavation, handling, pre-treatment and storage

The EA must demonstrate how the Proponent will:

- Demonstrate how excavation, handling, pre-treatment, storage and other activities involving materials and wastes containing scheduled chemical waste, dioxin, polychlorinated biphenyls (PCBs) and other principal contaminants of concern is conducted in accordance with best practice measures to minimise loss to the environment, exposure to humans and maximise destruction through the proposed treatment plant. In the EA, the applicant should demonstrate how this will be achieved.
- In addition to the NSW statutory requirements, the proponent should consider the USEPA Best Management Practices (BMPs) for Soils Treatment Technologies - Suggested Operational Guidelines to Prevent Cross-Media Transfer of Contaminants During Cleanup Activities - EPA530-R-97-007. DECCW can provide the proponent with all the application forms, protocols and guidelines covered in relation to the EHC Act and technology assessment.

In development of the EA and carrying out the works, the proponent should also refer to the following guidelines: The former EPA guidelines titled *Assessment, Classification & Management of Liquid & Non-liquid Wastes*.

Risk assessment

The EA needs to include risk assessment details covering exposure by inhalation and ingestion of contaminated soil if there is to be any loss of dust from the site during the rehabilitation process. The risk assessment should also focus on inhalation of volatilised chemicals that are released whenever the soil is worked – i.e. when excavated; when prepared for treatment; when treated; when stored prior to treatment; when moved from storage shed. .

Ambient monitoring using summa canisters for VOCs and high volume air sampling for SVOCs should be undertaken.

Other waste

If any waste (including “clean” and contaminated soil not suitable for treatment in the DTD Plant) is proposed to leave the site, the EA must:

- Identify and characterise the waste leaving the site;
- Proposed quantities of the waste; and
- Disposal location for the waste.

In addition, if waste leaving the site has the potential to be classified as “hazardous” under DECCW’s *Waste Classification Guidelines 2008*, the EA must outline:

- How the waste will be handled and managed onsite and during transport to a lawful facility;
- How the waste will be treated or immobilised to render it suitable for transport and disposal;
- That the proponent is aware of DECCW’s requirements with respect to notification and tracking of the waste; and
- All procedures and protocols to be implemented to ensure that any hazardous waste leaving the site is transported and disposed of lawfully and does not pose a risk to human health or the environment.

5. Impacts on threatened species and their habitat

DECCW acknowledges that the site is highly disturbed and therefore the presence of threatened species is unlikely. Nonetheless, the EA should, if applicable, include a brief field survey of the site. If any TS are identified then likely impacts on threatened species and their habitat need to be assessed, evaluated and reported on. The EA must describe the actions that will be taken to avoid or mitigate impacts or compensate for unavoidable impacts of the project on threatened species and their habitat. This should include an assessment of the effectiveness and reliability of the measures and any residual impacts after these measures are implemented.

6. Impacts on Aboriginal cultural heritage values

DECCW acknowledges that the site is highly disturbed and therefore the presence of Aboriginal cultural heritage artefacts is unlikely. Nonetheless, the EA should if applicable:

- Address and document the information requirements set out in the draft *Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation* involving surveys and consultation with the Aboriginal community;
- Identify the nature and extent of impacts on Aboriginal cultural heritage values across the project area;
- Describe the actions that will be taken to avoid or mitigate impacts or compensate to prevent unavoidable impacts of the project on Aboriginal cultural heritage values. This should include an assessment of the effectiveness and reliability of the measures and any residual impacts after these measures are implemented; and
- Demonstrate that effective community consultation with Aboriginal communities has been undertaken in determining and assessing impacts, developing options and making final recommendations.

7. Other site specific issues

The proponent should address all requirements listed in Sections 1-6 above (where applicable) in respect of the proposal.

If not already addressed in Sections 1-6, DECCW requires the following specific issues to be addressed in the Environmental Assessment:

Excavation works

The EA must specifically state whether excavation of materials at the site will be wholly completed within a building or out in the open.

If all excavation works are to be conducted within a building(s), the EA must provide:

- The size and specifications of the building;
- Mitigation measures associated with the building to address air quality, noise and odour emissions; and
- Details of how the building will be relocated around the site to different excavation areas.

If excavation works are proposed to be conducted out in the open, the EA must provide specific and extensive details of how dust, noise and odour emissions will be managed at the site, to the satisfaction of DECCW.

Stockpile management

- The EA should outline how stockpiles of material (both “clean”, contaminated and post-treatment) will be handled and managed at the site, including:
 - Labelling of stockpiles for identification, ensuring that all material is clearly identified and stockpiled separately from other types of material;
 - Proposed height limits for all materials to reduce the potential for dust and odour;
 - Timeframes for moving stockpiles of pre-treated contaminated material to the PTB to ensure that it is completed quickly to minimise dust and odour issues;
 - Procedures for minimising the movement of contaminated material around the site and double handling;
 - Measures to minimise contaminants leaching from stockpiles into the surrounding environment, such as sediment fencing, geofabric liners etc; and
 - How the post-treatment stockpiles will be stabilised and stored prior to backfilling at the site.

Hazards

- The EA must include a Preliminary Hazard Analysis (PHA) of the treatment facility including a detailed assessment of the potential off-site risks.

Visual

- The EA must include an assessment of the visual impact of the treatment facility (height, scale and lighting) on the local and regional area, particularly on any adjoining land owners and significant vantage points in the public domain.

Sampling

- The EA must include details of sampling methodology and regime used at the site to ensure:
 - Appropriate characterisation of site areas;
 - Appropriate handling and management; and
 - Frequency and timeframes for sampling to minimise extended stockpiling of contaminated material.

Contingency plans

- The EA must outline contingency plans for any event that affects contaminated soil treatment operations at the site, particularly in relation to the DTD Plant.

Traffic

- The EA must consider the impacts of extra traffic and truck movements as a result of the project including:
 - details of the traffic that would be generated by the project;
 - transport routes;

- traffic management procedures for onsite traffic; and
- navigation and safety impacts on other road users as a result of the transport of any contaminated material.

8. References

The environmental assessment of the key issues listed above must take into account relevant guidelines, policies, and plans. While not exhaustive, the following attachment contains a list of some of the guidelines, policies, and plans that may be relevant to the environmental assessment of this project.

Guidelines, Policies and Plans

Aspect	Policy /Methodology
Risk	
	AS/NZS 4360 Risk Management (Standards Australia)
	HB 203:2006 Environmental Risk Management – Principals and Process
Contamination	
	Australian and New Zealand Guidelines for the Assessment and Management of Contaminated Sites (ANZECC & NHMRC)
	National Environment Protection (Assessment of Site Contamination) Measure (NEPC)
	EnHealth – Environmental Health Risk Assessment – Guidelines for assessing human health risks from environmental hazards
	Managing Land Contamination - Planning Guidelines SEPP 55 – Remediation of Land (DUAP and EPA)
	Contaminated Sites: Sampling Design Guidelines (NSW EPA)
	Contaminated Sites: Guidelines for Consultants Reporting on Contaminated Sites (NSW EPA)
	Contaminated Sites: Guidelines for the NSW Auditor Scheme (NSW EPA)
	Contaminated Sites: Guidelines on Significant Risk of Harm from Contaminated Land and Duty to Report (NSW EPA)
	Guidelines for the Assessment and Management of Groundwater Contamination (DECC)
Traffic and Transport	
	Guide to Traffic Generating Development (RTA)
	RTAs Road Design Guide (RTA)
Air Quality	
	Technical Framework: Assessment and Management of Odour from Stationary Sources in NSW (DEC)
	Technical Notes: Assessment and Management of Odour from Stationary Sources in NSW (DEC)
	Approved Methods for the Modelling and Assessment of Air Pollutants in NSW (DEC)

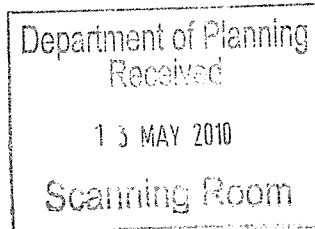
Approved Methods for the Sampling and Analysis of Air Pollutants in NSW (DEC)	
Protection of the Environment Operations (Clean Air) Regulation	
Soil and Water	
Soil	Managing Urban Stormwater: Soils & Construction (Landcom)
Surface Water	Managing Urban Stormwater: Treatment Techniques (EPA)
	Managing Urban Stormwater: Source Control. Draft (EPA)
	Managing Urban Stormwater: Harvesting and Reuse (DEC)
	National Water Quality Management Strategy - Guidelines For Water Recycling: Managing Health And Environmental Risks (Phase1) (EPHC, NRMMC & AHMC)
	National Water Quality Management Strategy: Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZECC/ARMCANZ);
	National Water Quality Management Strategy: Australian Guidelines for Water Quality Monitoring and Reporting (ANZECC/ARMCANZ);
	Using the ANZECC Guidelines and Water Quality Objectives in NSW (DEC);
	Approved Methods for the Sampling and Analysis of Water Pollutants in NSW (DEC)
	Storing and Handling Liquids: Environmental Protection - Participants Manual (DECC)
	Environmental Compliance Report: Liquid Chemical Storage, Handling and Spill Management - Part B Review of Best Practice and Regulation (DEC)
Health	
	Environmental Health Risk Assessment Guidelines for Assessing Human Health Risks from Environmental Hazards (Department of Health and Ageing and enHealth Council)
Flora and Fauna	
	Policy & Guidelines - Aquatic Habitat Management and Fish Conservation (NSW Fisheries)
	Primefacts. Mangroves (DPI)
	Threatened Biodiversity Survey and Assessment: Guidelines for Developments and Activities. Working Draft (DEC)
	Draft Guidelines for Threatened Species Assessment under Part 3A of the <i>Environmental Planning and Assessment Act 1979</i> (DEC)
Hazards	
	Multi-Level Risk Assessment (DUAP)
	Hazardous Industry Planning Advisory Paper No 6 - Guidelines for Hazard Analysis
Noise	
	Industrial Noise Policy (DEC)
	Environmental Criteria for Road Traffic Noise (DEC)
	Environmental Noise Control Manual (DEC)

Waste

Waste Classification Guidelines 2008 (DECC)

Environmental guidelines: Solid Waste Landfills (NSW EPA)

Ms Ann-Maree Carruthers
NSW Department of Planning
GPO Box 39
SYDNEY NSW 2001



Dear Ms Carruthers

Re: Comment on Orica Villawood Remediation Project – Preliminary Environmental Assessment

Thank you for the opportunity to comment on the above proposal.

The document has been reviewed by Sydney South West Area Health Service Public Health Unit and the following comments are offered:

1. It is unknown whether a human health and environmental risk assessment was finalised with the Department of Environment, Climate Change and Water (DECCW).
2. Offsite migration monitoring may need to be longer than 5 years because some plumes extend quite a distance off site.
3. Soil investigation levels are not available for all contaminants of potential concern identified on site. A health risk assessment approach was used to determine suitable criteria for these chemicals and level of remediation for the proposed future use of the site. This assessment is apparently detailed in the risk assessment process document RAP (HLA, 2009). The Public Health Unit has not seen this document.
4. At community consultation meetings, some long term residents had concerns about potential impact on their health following past practices on the Orica site. They also had concerns about noise, odour and emissions from site and potential impacts on their health. The community consultation so far has been an effective method of providing information and allowing an opportunity for the community to raise concerns. We would suggest that community consultation continue through the remediation project as per the model followed in Rhodes.
5. Persons most likely to be affected by remediation works (sensitive receptors) would include:
 - (1) the residents, with the closest being about 100 metres away;

Head Office

Liverpool Hospital (Eastern Campus)
Elizabeth Street Liverpool NSW 2170

Mailing Address

Locked Bag 7017 Liverpool BC 1871
Tel 61 2 9828 5700 Fax 61 2 9828 5769

General Correspondence

Email SSWAHS.ESU@sswahs.nsw.gov.au
Website www.sswhealth.nsw.gov.au
ABN 55 338 004 696

Royal Prince Alfred Hospital

KGV Building Level 11 Missenden Road
Camperdown NSW 2050
Tel 61 2 9515 9600 Fax 61 2 9515 9611

- (2) various businesses that border the site;
- (3) the boundary of the immigration detention centre within about 150 metres;
- (4) the Independent Motor Auctions would have the general public and car buyers wandering around their site on auction days; and
- (5) the high school over 400 metres away.

The proposed health risk assessment for the on-site workers should be extended to also cover the potential impact and health risks to residents, and workers in surrounding businesses and school for likely exposures to contaminants emanating from the site during the remediation work.

6. Control measures during remediation should include a monitoring program to measure potential levels of dusts and odours that emanate from the site during remediation. If certain threshold levels (alert levels) of particulates, volatiles or other pollutants at the site boundary are exceeded there should be agreed actions that follow. On-site monitoring including alert levels could be similar to those used for the Rhodes remediation site.
7. Monitoring should also extend to surface waters and runoff to ensure that no contaminated waters leave the site untreated.
8. The prioritisation of potential environmental issues seems reasonable.
9. Offsite residuals from past munitions and paint factories on what has been residential land for many decades needs to be discussed with DECCW and Bankstown Council.

It is hoped that these comments are of assistance. Sydney South West Area Health Service Public Health Unit is available to discuss any public health concerns that may arise with this project. Should you have any queries regarding these comments please contact Mr John Birkett, Senior Environmental Health Officer, Public Health Unit on 9515 9433.

Yours sincerely



Mike Wallace
Chief Executive

Date: 11/2/10

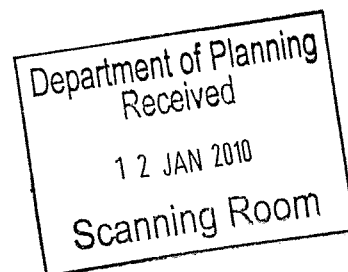
4 January 2010



NSW Department of Planning
GPO Box 39
SYDNEY 2001
NSW

Attn Anne Marie Carruthers

Dear Ms Carruthers



Re: Proposed Remediation of the Orica site - Christina Rd Villawood

In December 2009, staff from Bankstown Council attended a briefing given by Thiess in relation to their proposal for the remediation of the Orica site, located at Christina Rd Villawood. Our understanding from that meeting is that Thiess (or Orica) would be requesting Director General's requirements for an Environmental Assessment Report (EAR) for their proposed remediation works in the near future.

I wish to advise you that whilst Council is supportive of proposals to remediate this site, we wish to ensure that it is done so appropriately and with no off site impacts to the local community. I would therefore like to request that any requirements issued by the Director General for the EAR should include mandatory consultation with Bankstown Council, and that Thiess take into account any matters that Council believes to be relevant to a proper consideration of impacts.

We also request that the following specific matters be considered for inclusion in the D/Gs requirements:

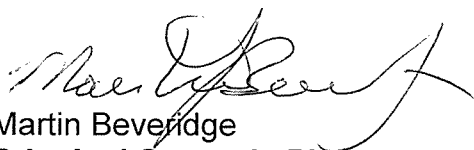
- Description of the remediation techniques to be used, and a clear statement of the remediation standard being adopted for the site, and the future uses that will be suitable for the site when the remediation is complete;
- A peer review of the proposed remediation techniques by an accredited site auditor, and an assessment of their adequacy and a confirmation that the site will be suitable for the intended use when the remediation has been completed
- Proposals to validate that the remediation has been completed to the proposed standard
- Proposals to manage the migration of contaminants during the remediation process, including both the dispersal of contaminants through the air and the groundwater;

- Proposals to manage the stockpiles of contaminated material in the event of a flood event, or during heavy rain. This should be considered with reference to the Villawood Catchment Flood Study that has recently been adopted by Bankstown Council;
- Identification of any sensitive land uses in the vicinity of the site and which could be impacted on by the decontamination works, and proposals to manage any impacts (eg is it necessary to advise uses such as schools, child care centres etc to stay indoors on windy days)
- A risk assessment of the proposed remediation works, including a consideration of potentially hazardous events (fire, explosion or release of toxic substances). This should be carried out in accordance with the Department of Planning's Guidelines, and should include a risk assessment and recommendations to minimise risk;
- Impact of the proposal on items of ecological value, including the impact on any nearby threatened species or endangered ecological communities;
- Impact of the proposal on any buildings of the site that have heritage value;
- Noise impacts associated with the proposal and proposed mitigation measures;
- Traffic impacts of the proposal, and proposed mitigation measures (if necessary);
- Air quality impacts, and proposed mitigation measures. This should include proposals to manage the stockpiles of contaminated material in the event of a very windy day;

Council request that the Department consider including these matters in any Director General's requirements for an EAR for this proposal. As well, Council would also like to attend any inter-agency meetings that are held to discuss this proposal.

Please contact me if you wish to discuss this letter (9707 9577).

Yours sincerely



Martin Beveridge
Principal Strategic Planner
Bankstown City Council

Richard B. Giles

From: Ann-Maree Carruthers [Ann-Maree.Carruthers@planning.nsw.gov.au]
Sent: Friday, 16 April 2010 5:36 PM
To: Richard B. Giles
Subject: Fwd: Additional Requirements for Detailed Environmental Assessment -Orica Remediation Project, Villawood

Hello,

Additional requirements from Council are below.

Regards,
Ann-Maree

Ann-Maree Carruthers
Senior Environmental Planning Officer
Mining and Industry
Department of Planning
23-33 Bridge Street, Sydney
PO Box 39 Sydney NSW 2001

Phone: (02) 9228 6550

Fax: (02) 9228 6466

>>> MARIANI Leanne <leanne.mariani@bankstown.nsw.gov.au> 06/04/2010 16:18 >>>

Hi Ann-Maree,

I have recently returned to work following maternity leave and I am following up on the remediation of the Orica site at 2 Christina Rd, Villawood. Following on from your earlier email to Martin Beveridge on 4 March 2010 (Council's Strategic Planner), I have included some additional requirements that Council would like addressed in the detailed environmental assessment. I apologise for the delay in responding and I hope that these requirements can still be considered. These requirements have been prepared by my colleague Kim Hill.

The requirements include:

- 1. Acoustic/ Noise Assessment** - particularly with relation to the operation of the treatment plant, movement of vehicles at night during plant operation and weekend excavation activities.
- 2. Water Management Plan** - for management of contamination surface water to prevent site runoff (including onsite management of potential flooding).
- 3. Soil Management Plan** - for management of contaminated soil during treatment works to prevent offsite movement and tracking of material from hotspots to other parts of the site.

When available, Council also requests copies of the following documentation when available:

1. Proof of Performance Report for the Emissions Control Systems
2. Copies of environmental monitoring data during and post remediation.

In addition, Council requests that it be advised when the applicant proposes to move materials offsite for disposal so that customer enquiries can be managed with regard to movements of vehicles to and from the site.

If you have any questions regarding the above, please contact me on 0412 551 448 (please note that I work on Tuesday and Thursday only).

Thank you
Leanne Mariani
Environmental Projects Officer
Bankstown City Council
mob 0412 551 448 (Tues & Thurs)

From: Ann-Maree Carruthers [mailto:Ann-Maree.Carruthers@planning.nsw.gov.au]
Sent: Thursday, 4 March 2010 8:26 AM
To: BEVERIDGE Martin
Subject: Orica Remediation Project, Villawood

Hi Martin,

I refer to Council's letter dated 4 January 2010 concerning the remediation of 2 Christina Rd Villawood. Sine receiving your letter the Department has received a Project Application from Orica Australia Pty Ltd (Orica) for the project (MP09_0147).

I have attached a copy of the Major Project Application and the Preliminary Environmental Assessment for the proposal. Orica has requested Director General's requirements for the proposal.

It would be appreciated if you could confirm whether there are any additional requirements Council would like addressed in the detailed Environmental Assessment for the project by **Friday 19 March 2010**.

If you have any queries in relation to the application, I can be contacted on 9228 6550.

Regards,
Ann-Maree

Ann-Maree Carruthers
Senior Environmental Planning Officer
Mining and Industry
Department of Planning
23-33 Bridge Street, Sydney
PO Box 39 Sydney NSW 2001

Phone: (02) 9228 6550
Fax: (02) 9228 6466

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Office of Water

Ms Ann-Maree Carruthers
Department of Planning
GPO Box 39
SYDNEY NSW 2001

Contact: Janne Grose
Phone: 02 4729 8262
Fax: 02 4729 8141
Email: Janne.Grose@water.nsw.gov.au

14 May 2010

Our ref: ER21005
Your ref:

Dear Ms Carruthers

MP09_0147 – Orica Villawood Remediation, 2 Christina Rd, Villawood – Bankstown Council

I refer to your emails of 4 March and 16 April 2010 requesting key issues and assessment requirements from the NSW Office of Water (NOW) for the project proposal. I apologise for the delay in responding.

The NOW's key issues and assessment are in relation to groundwater and groundwater dependent ecosystems.

Specific comment is outlined in Attachment A.

Contact Details:

Should you have any queries in respect to this matter, please contact me on (02) 4729 8262.

Yours sincerely

Janne Grose
Planning and Assessment Coordinator
Major Projects and Assessments
NSW Office of Water
Penrith



Office of Water

ATTACHMENT A

Specific Comments from the DECCW (Office of Water)

Major Project – Orica Villawood Remediation, 2 Christina Rd, Villawood

Director-General's Environmental Assessment Requirements

Relevant Legislation

The NSW Office of Water (NOW) is responsible for administering the Water Act 1912 and the Water Management Act 2000 (WMA) which manage and regulate the use of surface water and groundwater resources. The Environmental Assessment (EA) is required to take into account the objectives and regulatory requirements of these Acts, as applicable.

Relevant Policies

The EA is required to take into account the following NSW Government policies, as applicable:

- NSW Groundwater Policy Framework Document - General
- NSW Groundwater Quantity Management Policy
- NSW Groundwater Quality Protection Policy
- NSW Groundwater Dependent Ecosystem Policy

Surface Water and Groundwater

The EA needs to provide adequate details to assess the impact of the proposal on surface water and groundwater resources.

Sufficient detail needs to be provided for the NOW to assess any water licensing requirements under the Water Act 1912, the EA needs to provide details on:

- the water supply source(s) for the proposal
- any proposed surface water extraction for the proposal, including purpose, location of any existing and proposed pumps, dams,
- any proposed groundwater extraction related to the project,
- volumes of water to be used
- the function and location of all existing and proposed storages/ponds on the site,
- the design, layout, pumping and storage capacities, all associated earthworks and infrastructure works must be clearly shown and explained.

Groundwater

The NOW is responsible for the management of the groundwater resources. The proposal needs to protect groundwater resources in accordance with NSW State groundwater policy, enhance groundwater quality and protect groundwater dependent ecosystems (GDEs).

The EA should identify groundwater issues and potential degradation to the groundwater source and provide the following details:

- the predicted highest groundwater table at the site.
- any works likely to intercept, connect with or infiltrate the groundwater sources.
- any proposed groundwater extraction, including purpose, location and construction details of all proposed bores and expected annual extraction volumes.
- a description of the flow directions and rates and physical and chemical characteristics of the groundwater source.
- the predicted impacts of any final landform on the groundwater regime.
- the existing groundwater users within the area (including the environment), any potential impacts on these users and safeguard measures to mitigate impacts.
- an assessment of the quality of the groundwater for the local groundwater catchment
- an assessment of groundwater contamination (considering both the impacts of the proposal on groundwater contamination and the impacts of contamination on the proposal).
- how the proposed development will not potentially diminish the current quality of groundwater, both in the short and long term.
- measures for preventing groundwater pollution so that remediation is not required.
- protective measures for any groundwater dependent ecosystems (GDEs).
- proposed methods of the disposal of waste water and approval from the relevant authority.
- the results of any models or predictive tools used.

Where potential impact/s are identified the assessment will need to identify limits to the level of impact and contingency measures that would remediate, reduce or manage potential impacts to the existing groundwater resource and any dependent groundwater environment or water users, including information on:

- any proposed monitoring programs, including water levels and quality data
- reporting procedures for any monitoring program including mechanism for transfer of information.
- an assessment of any groundwater source/aquifer that may be sterilised from future use as a water supply as a consequence of the proposal.
- identification of any nominal thresholds as to the level of impact beyond which remedial measures or contingency plans would be initiated (this may entail water level triggers or a beneficial use category).
- description of the remedial measures or contingency plans proposed.
- any funding assurances covering the anticipated post development maintenance cost, for example on-going groundwater monitoring for the nominated period.

Licensing

Section 3.4.4 of the PEA notes a licence under Part 5 of the Water Act 1912 will be required to authorise the short and medium term groundwater monitoring bores (page 19). If the proposal is likely to intercept or use groundwater, the need for a water license should be addressed in the EA.

All proposed groundwater works, including bores for the purpose of investigation, extraction, dewatering, testing or monitoring must be identified in the proposal and an approval obtained from NOW prior to their installation.

Groundwater Dependent Ecosystems

The EA should provide details on the presence and distribution of GDEs in the vicinity of the site and identify any potential impacts on GDEs as a result of the proposal.

GDEs are ecosystems which have their species composition and natural ecological processes wholly or partially determined by groundwater. GDEs represent a vital component of the natural environment and can vary in how they depend on groundwater, from having occasional or no apparent dependence through to being entirely dependent. GDEs occur across both the surface and subsurface landscapes ranging in area from a few metres to many kilometres. Surface and groundwaters are often interlinked and aquatic ecosystems may have a dependence on both.

Ecosystems that can depend on groundwater and that may support threatened or endangered species, communities and populations, include:

- Terrestrial vegetation that show seasonal or episodic reliance on groundwater.
- River base flow systems which are aquatic and riparian ecosystems in or adjacent to streams/rivers dependent on the input of groundwater to base flows.
- Aquifer and cave ecosystems.
- Wetlands
- Estuarine and near-shore marine discharge ecosystems.
- Fauna which directly depend on groundwater as a source of drinking water or live within water which provide a source.