Supporting Documentation for a Request to Modify a Major Project

Car Park Waste Encapsulation Remediation

Treatment of contaminated soils and concrete at the Directly-heated Thermal Desorption Plant other than those in the CPWE

1. Introduction

This report has been prepared by Orica to support an application to gain approval for modification of Project Approval (No. 06_0197, signed 12 November 2009). The approval would permit treatment of contaminated soils and concrete from locations on the Botany Industrial Park (BIP), other than the CPWE as defined by the Schedule 1 of the Project Approval.

2. Background

In July 2007, Orica submitted to the Department of Planning (DoP) an application seeking approval to remediate the Car Park Waste Encapsulation (CPWE) under Section 75E of the EP&A Act. In that application the lots and DP's of the project were specified. The DoP granted Project Approval under Section 75J of the EP&A Act for the remediation of the CPWE project on 12 November 2009 (No. 06_0197). In this approval the specified lots and DP's were included in Schedule 1.

Operation of the project is also licensed through the Department of Environment, Climate Change and Water (DECCW) by Environment Protection Licence (EPL) No. 13263 (dated: 27 May 2010) under the Protection of Environment Operations Act, 1997 (POEO Act).

The Project's purpose is to remediate the area known as the CPWE. The main activities are:
Construction and site establishment works including:

- Construction of ESB, FSB and Emission Control Systems (ECS) for each
- Construction of Directly-heated Thermal Desorption (DTD) plant and associated ECS
- Preliminary excavation of material for preparation of testing period

DTD Plant Commissioning and Proof of Performance (CPoP) Trials to:

- Test the performance of process components including ECSs
- Test the performance of the DTD plants ability to treat materials

Commercial operations including:

- Excavate, transfer, prepare, test, treat, validate and reinstate materials in the CPWE
- Decommission and demobilize site buildings, plant and equipment and remove from site
- Reinstatement of remaining validated material in the CPWE and stabilise.

A general site layout as provided in the Technology Assessment can be seen in Figure 1.

Figure 1: CPWE Remediation site layout.

3. Approved Operations

Currently, through both the Project Approval and the EPL, Orica is permitted to handle and treat materials from within the CPWE only.

Condition 8 of the Project Approval states:
The proponent shall only process materials from the CPWE site through the treatment plant and shall not receive any contaminated material from offsite for the purpose of treatment.

Note: treatment of contaminated material from other site is subject to a separate approval.

Condition O9.1 of EPL 13263 states:
All excavation, loading unloading, handling and testing involving contaminated soil must only occur within the ESB and FSB.

Note: For this scheduled activity to be undertaken contaminated soil may be appropriately transported between the ESB and FSB.

Orica is constructing the Excavation Soil Building (ESB) and the Feed Soil Building (FSB) in preparation for the handling and processing of the CPWE materials.

4. Need and Request for Modification

Since the granting of the Project Approval and issuing of the EPL, Orica has located other materials, beyond the boundaries of the CPWE, which are suitable for treatment at the DTD plant. These are HCB contaminated concrete and soil type materials currently held in the location known as Store E and are presented in Figure 4-1.

Figure 4-1: Aerial view of the CPWE Remediation Project and HCB Store E.

Details of the materials are provided in Table 4-1.

Table 4-1: Other contaminated materials suitable for treatment at DTD plant.

Location	Material	Estimated tonnes	Maximum measured concentration (mg/kg)		
			HCB	HCBD	Mercury
HCB Store E	Concrete	480	260	4.7	1.4
	Soils	490	1,200	11	-
For comparison: CPWE	Soils	70,000	641	11,700	14.7

Analytical reports of the materials, providing details of all the contaminants detected were provided in correspondence to the authorities on 15 November 2010. That correspondence along with the analytical reports has been included in Attachment 4 of the modification request.

5. Options

The alternatives for the management of these materials are outlined in Table 5-1.

Alternatives	Suitability
Store the materials at Store E (do nothing).	The materials are safely stored, however the 'do nothing' scenario does not present a suitable outcome for the management of contaminated waste. Orica is committed to clean up all contaminated wastes at the BIP.
Send waste to an external third party for storage or treatment	The hierarchy of management options starts with the onsite treatment of waste. If there is a viable option to treat the waste onsite then to send it to a third party should not be pursued. Transport of the waste has the potential to increase risk of spill or other loss of containment during transit. Shifting the material to a third party, removes the responsibility of managing the waste which was generated onsite. The responsibility then also becomes a burden on the stakeholders of the receiving party.
Repackage the waste	The repackaging of HCB waste was for the primary aim of export for final destruction. The materials earmarked for treatment at the DTD plant are soils and concretes and are not suitable for export. Materials which can be treated locally are not subject to the Basel Convention. Export scenario no longer confirmed.

6. Preferred Option and proposed wording

The treatment of these materials at the DTD plant is the preferred option for the following reasons:

- The material is currently included in the HCB store inventory and does not represent 'extra' waste previously unreported.
- It represents only an additional 1.5% of the quantity of material approved for processing, adding only 2-3 days to the DTD plant operating period.
- The concentration of contaminants is well below that currently approved for processing. Orica believes that there is therefore no requirement to revisit the Air Quality Assessment, the Human Health impact Assessment and other studies undertaken for the original Environmental Assessment.
- It is better to deal with this material while the DTD plant, which is owned by Thiess Services, is still on the project and not relocated elsewhere.
- The material cannot be exported if there is a local treatment option.
- No transport on public roads is required
- The details were presented to the Community Participation and Review Committee (CPRC) on 8 November 2010 and there were no objections to the proposal. The only concern the CPRC raised was ensuring that there was clear communication with the broader community regarding the modification proposal. A 30 day exhibition period was requested by the CPRC.

Orica proposes the following wording to permit the activity:

Project Approval 06_0197 Condition 8:
The proponent shall only process materials from the CPWE site through the treatment plant and shall not receive any contaminated material from offsite for the purpose of treatment.

The proponent is permitted to process up to 1,000 tonnes of additional contaminated concrete and soil from HCB stores on the Botany Industrial Park, providing the total concentration of contaminants does not exceed those in the CPWE and all other conditions are maintained.

An application to vary the EPL will be made at a later date, pending the outcome of application to modify the Project Approval.

7. Other Approvals

Orica holds the following licences / exemptions as issued by the DECCW.

- Licence No. 26 under the Environmentally Hazardous Chemicals Act, 1985 (EHC Act) for the keeping, conveying and processing of scheduled chemical wastes.
- Mercury Exemption Order under section 284(2)(b) of the Protection of the Environment Operations Act 1997 (POEO Act). The order grants Orica exemption from the Protection of the Environment Operations (Clean Air) Regulation 2002 (CAR) stack emission concentration limits for mercury (0.2 mg/Nm3) and for Type 1 and Type 2 substances (1.0 mg/Nm3 in aggregate), which also include mercury.

The project is to be undertaken in accordance with the above licences.
As such the modification would not breach any of the conditions set out in these licences.

8. Potential Impacts of Preferred Option

Table 8-1 outlines the potential impacts of the relocation of the Store E materials to the CPWE for treatment at the DTD plant.

Table 8-1: Potential impacts of the preferred option.

Issue	Modification Assessment	Additional Mitigation Measures
Air Quality	The materials at Store E are not contaminated with volatile compounds, odorous or dusty and the contaminants (which are present in low concentrations) are effectively bound to each item. To release the contaminants, the various pieces would need to be crushed or ground etc. Handling these items for the purpose of relocation would not release any contaminants. The ESB and FSB are designed to manage contaminated materials at greater volumes and higher contaminant loading than those identified via their Emission Control Systems. The DTD plant is designed to manage contaminated materials at greater volumes and higher contaminant loading than those identified.	Where required, the process will be watered down with sprinklers or misting systems to further minimize the potential for airborne dust. The transport of the materials will be done in accordance with Orica's internal transport procedures, in covered bins or trucks to the ESB or FSB.
Human Health Impact Assessment	The volumes and contaminant loading of the materials are minimal compared to those previously covered in the Human health impact Assessment.	None required.
Hydrology and Surface Water	The proposed changes present no new impacts on hydrology or surface waters.	None required.
Geology, Hydrogeology and Soil	The proposed changes present no new impacts on geology, hydrology and soil.	None required.
Waste Management	The proposed changes present no new waste streams.	None required.
Noise and Vibration	The proposed changes present no significant new impacts from noise and vibration. An excavator and a small number of internal truck movements will be required to relocate the materials from Store E to the ESB and FSB. All plant and machinery is required to operate within the existing noise limits set for the project.	None required.
Traffic and Transport	An excavator and a small number of internal truck movements will be required to relocate the materials from Store E to the ESB and FSB. No use of public roads will be required. The proposed changes present no new impacts on traffic movements.	None required.

Issue	Modification Assessment	Additional Mitigation Measures
Visual Amenity	The proposed changes present no new impacts on visual amenity.	None required.
Cultural Heritage	The proposed changes present no new impacts on cultural heritage.	None required.
Flora & Fauna	The proposed changes present no new impacts on flora and fauna.	None required.
Cumulative Impacts	The treatment of these materials is not predicted to present any changes to the previously modeled air quality for the project.	None required.

9. Consultation

Orica acknowledges that the community takes significant interest in the CPWE Remediation and the potential impacts on air quality. As outlined in section 6, the details of the proposal were presented to the CPRC at the meeting held on 8 November 2010. At the meeting the CPRC stressed that clear communication with the broader community regarding the modification proposal was maintained. Also, a 30 day exhibition period was requested.

Orica will continue to communicate with the stakeholders through the regular methods: the newsletters, website, community meetings (CPRC) and the monthly news columns.

Both the Project Approval and EPL require Orica to provide regular updates to the authorities through various reporting requirements.