

1 INTRODUCTION

1.1 Background

The proposed project relates to land within the Botany Industrial Park (BIP) known as the Car Park Waste Encapsulation (CPWE).

The land comprising the BIP has been used for industrial purposes since the early 1940s and was operated by ICI Australia Operations Pty Ltd (ICI, now Orica Australia Pty Ltd, Orica) until 1996 when Orica established the BIP.

Commencing in the 1960s, chlorinated solvents such as tetrachloroethene (PCE - commonly used as dry cleaning fluid) and carbon tetrachloride (CTC – an industrial solvent and formerly used for manufacturing refrigerants) were produced at the BIP in the ‘Solvents Plant’. During this manufacturing process, a number of waste by-products were produced, including hexachlorobutadiene (HCBD), PCE, hexachlorobenzene (HCB) and octachlorostyrene (OCS). The waste by-product was commonly known as ‘Heavy Ends’.

Prior to 1979, the Heavy Ends from the Solvents Plant were drummed and stored on a bed of boiler ash. Drum corrosion led to contamination of the ash bed and underlying sandy soil. Orica (then ICI) undertook investigations into the treatment and storage of the contaminated ash and soil. At the time there was no suitable technology available to treat this material, therefore, it was managed by encapsulation – that is, containing the soil within a synthetic liner (Hypalon®) and burying it awaiting the development of a suitable remediation technology. In 1980, the contaminated material was excavated and transferred to the site located in the north east of the BIP. Approximately 45,000 m³ of excavated material was encapsulated and the surface capped with bitumen. The area has subsequently been referred to as the CPWE.

The CPWE has been managed and monitored for a number of years. Recent monitoring results indicate that contamination of surrounding soil has occurred. The precise cause of this is unknown although hypotheses which have been considered include:

- some contaminated fill could have been placed outside the encapsulation;
- potential penetration of the encapsulation liner via tree roots;
- potential vapour permeation through the liner; and
- possible chemical degradation of the liner.

Studies have identified low concentrations of HCBD in groundwater in close proximity to the CPWE. Low concentrations of HCBD are also present in air emissions in the vicinity of the CPWE. Studies have confirmed that the identified contamination does not pose an unacceptable risk to human health or the environment.

Although conditions indicate that there is not a risk, they do show that the conditions are not improving at the CPWE. Additionally, Orica’s strategy for the BIP involves remediation of contamination legacies to enable ongoing industrial use of the land. Accordingly, given that suitable proven technology is now available, Orica proposes to undertake the remediation of the CPWE site.

1.2 The Project

The project involves the remediation of the CPWE using Directly-heated Thermal Desorption (DTD) technology (described in detail in **Section 4**). The primary objective of the project is to

clean up the CPWE site in line with the requirements of Orica's Environment Protection Licence (EPL).

The area to be remediated, known as the CPWE, is defined in the EPL as the encapsulation cell that lies beneath the car park on the north east boundary of the BIP. The project proposes to remediate only the material contained within the liner of the CPWE, including remediation of the liner material itself where required. The material surrounding and beneath the liner within the CPWE boundary would be tested and assessed against the derived risk based soil concentrations. If the material does not meet the criteria, then it would also be treated in the DTD Plant. If it does meet the criteria, it would remain on-site. The project does not include remediation of groundwater, contaminated material which may exist outside the boundary of the CPWE area or contaminated material where the source of contamination is not within the BIP site and not related to industrial activities undertaken by Orica.

1.3 Location

The proposed remediation works are to take place within the BIP, located north east of Botany Bay, south of the Sydney Central Business District (CBD) (see **Figure 1**).

The CPWE comprises land located adjacent to Corish Circle within the north eastern corner of the BIP (see **Figure 2**). Certain components of the remediation works such as soil treatment and stockpiling would be undertaken on other land within the BIP as shown in **Figure 3**. This will be referred to as 'the Site'.

1.4 The Proponent

Orica is a wholly owned subsidiary of Orica Limited. Orica Limited is an Australian publicly listed company which operates through the following business platforms:

- Mining services - offering commercial explosives, initiating systems and advanced mining solutions to the mining, quarrying and construction industries;
- Chemnet - imports, sources or manufactures over 20,000 chemical products;
- Chemical services - supplies chemicals, services and technology to the water treatment, mining chemical and industrial chemical markets; and
- Orica consumer products – supplies a range of decorative paints, surface preparation products, and garden care products.

The BIP is managed jointly by Orica, Huntsman Chemical Company Australia (Huntsman) and Qenos Pty Ltd (Qenos).

1.5 Environmental Assessment Process

The *Environmental Planning and Assessment Act 1979* (EP&A Act) and the *EP&A Regulation 2000* provide a framework for environmental planning in New South Wales (NSW).

Prior to any decision to proceed with a proposal that may have an impact on the environment, a detailed assessment of the likely impacts of the project must be undertaken. The proposed project has been declared by the Minister for Planning as a 'Major Project' under the provisions of the EP&A Act and *State Environmental Planning Policy (Major Projects) 2005* (SEPP 2005), and is therefore subject to the provisions of Part 3A of the EP&A Act (see **Appendix A** for record of Minister's opinion). Part 3A of the EP&A Act establishes the processes and matters for consideration by the approval authority when determining the impact of a project and whether the project should be approved.

1.5.1 Major Projects

Section 75B of the EP&A Act makes provision for major projects to be identified through various means, including by way of declaration by a SEPP, or by order of the Minister for Planning published in the Gazette.

Clause 6 of SEPP 2005 identifies Part 3A projects as projects where the Minister forms the opinion that the project is described in one of the Schedules to SEPP 2005. Schedule 1 of SEPP 2005 identifies classes of development. Group 9 of Schedule 1 to SEPP 2005 identifies the following class of development:

'Development for the purpose of remediation of land on:

- (a) premises subject to a notice requiring prescribed remedial action to be undertaken under section 35 or section 36 of the Environmentally Hazardous Chemicals Act 1985 (as continued in force by the Contaminated Land Management Act 1997), or*
- (b) land declared as a remediation site under Division 3 of Part 3 of the Contaminated Land Management Act 1997'*

The proposed project comprises development for the purpose of remediation of land, namely the land on which the CPWE is located.

The CPWE forms part of land affected by Section 35 Notice No. 450 issued under the *Environmentally Hazardous Chemicals Act 1985* (EHC Act), for 16 – 20 Beauchamp Road, Matraville, New South Wales. This Notice states the following:

'The occupier must obtain the written approval of the EPA if works are to be carried out at the Premises for the purpose of:

- (a) covering, dispersing or reducing the contamination of the premises; or*
- (b) restoring or rehabilitating the Premises; or*
- (c) removing or disposing of any soil, sand, rock, water, or any other solid or liquid material of any kind from the premises.'*

The proposed project falls within the above description of the types of works which require approval from the Environment Protection Authority (EPA) (now part of the Department of Environment and Conservation (DEC)). It should be noted that since the commencement of this project, the DEC has been restructured and is now known as the Department of Environment and Climate Change (DECC), however has been referred to as the DEC throughout this EA.

The CPWE also forms part of the land affected by a remediation site declaration under Division 3 of Part 3 of the *Contaminated Land Management Act 1997* (CLM Act). Declaration No 21074 was made on 9 February 2005. It applies to a large area of land at Botany which includes the BIP (including the CPWE). According to the declaration, the nature of the contamination is:

"Groundwater and/or soil on the land to which this declaration applies contains elevated levels of various organic contaminants, including but not limited to volatile chlorinated hydrocarbons and semi-volatile chlorinated hydrocarbons."

Accordingly, the proposed remediation of the CPWE falls within either or both limbs of the definition under Group 9 of Schedule 1 of SEPP 2005.

A project approval under section 75J of the EP&A Act is therefore being sought for the proposed remediation works.

1.5.2 Environmental Assessment Requirements

Under section 75F of the EP&A Act, an Environmental Assessment (EA) must be prepared in accordance with the Environmental Assessment Requirements (EARs) of the Director-General of the Department of Planning (DoP). A request for these requirements was made in July 2006.

The Director-General's EARs were issued on 29 August 2006. A copy is attached as **Appendix B** to this EA. This EA has been prepared in accordance with the EARs.

1.5.3 EA Exhibition

This EA has been prepared under Part 3A of the EP&A Act which specifically lists the matters to be addressed in an EA.

The EP&A Act requires that the EA be placed on exhibition for public review for a minimum period of 30 days.

1.6 Context of this Proposal

EPL No. 2148 applies to the Site. Conditions E1, E2 and E3 of EPL No. 2148 require the remediation of the CPWE, defined as the encapsulation cell that lies beneath the car park on the north east boundary of the BIP. More specifically, Condition E3 of this licence requires the submission of an EA for the remediation works to the DEC by November 2006. The proposed project comprises the remediation of this area of the BIP in accordance with these licence conditions.

The proposed remediation works would allow the CPWE site to be returned to productive use in line with the zoning and surrounding land uses.

1.7 Purpose of this Report

This EA has been prepared by HLA-Envirosciences Pty Ltd (HLA) on behalf of Orica for the proposed remediation of the CPWE at the BIP.

In accordance with Part 3A of the EP&A Act, this EA has been prepared pursuant to the Director-General's EARs and addresses the matters listed by the Director-General. The purpose of this report is to assess the environmental effects of the proposal and to describe the measures that Orica would take in order to minimise the impact of identified adverse environmental effects such that the Minister for Planning can make an informed decision with regard to the proposal.

As the detailed design of the proposed DTD Plant and associated plant/equipment has not been finalised, the EA has been prepared using an environmental envelope approach, generally utilising conservative assumptions as the basis for assessment (for example, minimum performance specifications for air quality assessment), in the knowledge that the plant's actual performance would be well within these parameters and would therefore perform better environmentally. This could be further demonstrated once the detailed design has been developed and the Technology Assessment for the proposed plant has been prepared and submitted to the DEC.



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— Botany Industrial Park Site Boundary

Figure 1

**Location of Botany Industrial Park
Orica Australia Pty Ltd**
Remediation of Car Park Waste Encapsulation
Botany Industrial Park
Environmental Assessment



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— Botany industrial park site boundary
— CPWE

Figure 2
Location of CPWE
Orica Australia Pty Ltd
Remediation of Car Park Waste Encapsulation
Botany Industrial Park
Environmental Assessment



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- Botany industrial park site boundary
- Lot boundary
- CPWE boundary
- Land affected by project



Figure 3

Land Subject of the Proposal "The Site"

Orica Australia Pty Ltd

Remediation of Car Park Waste Encapsulation

Botany Industrial Park

Environmental Assessment