**Groundwater Community Liaison Committee (CLC)**

**Botany Groundwater Cleanup Project**

**Briefing Paper for Meeting on 9 March 2010**

This paper aims to provide an update on the progress of Orica's Botany Groundwater Cleanup (BGC) Project, actions required of Orica, as well as other matters of interest to the CLC. Matters covered in this briefing paper are:

1. Groundwater Cleanup Plan Progress Report No. 25;
2. Voluntary Management Proposal Update;
3. Revision of Consolidated Human Health Risk Assessment;
4. November 2009 Residential Bore Monitoring Results;
5. Springvale Drain Infilling Works Update;
6. Foreshore Road Temporary Barricades
7. Former ChlorAlkali Plant Mercury Investigations & Cleanup Update; and
8. Community Communication Update.

## 1 GROUNDWATER CLEANUP PLAN PROGRESS REPORT NO. 25

Since the planned maintenance shutdown in November/December 2009, the GTP has been operating well and containment continues to be maintained.

Progress Report No. 25 for the Groundwater Cleanup Plan was submitted to the Department of Environment, Climate Change and Water (DECCW) on 26 February 2010. It included the DNAPL and Groundwater Remediation Technology Annual Review No. 4. The Executive Summary of the Progress Report is included as Attachment A to this Briefing Paper.

## 2 VOLUNTARY MANAGEMENT PROPOSAL UPDATE

As the CLC is aware, the Notice of Clean Up Action is to be replaced with a Voluntary Management Proposal (VMP) to regulate the BGC Project. Orica submitted a final VMP with a Groundwater Remediation and Management Plan to DECCW on 3 February 2010 for its consideration.

## 3 REVISION OF CONSOLIDATED HUMAN HEALTH RISK ASSESSMENT

In the VMP, Orica has made a commitment to revise the Consolidated Human Health Risk Assessment every five years to take into account of more recent consolidated monitoring data and changes to relevant exposure scenarios, toxicological data and risk calculation methods. The first revision is to be completed by June 2010.

## 4 RESIDENTIAL BORE MONITORING – NOVEMBER 2009 RESULTS

Orica tested 13 residential bores in the Groundwater Extraction Exclusion Area (GEEA) in November 2009. Results are reported in comparison with drinking water guidelines where volatile chlorinated hydrocarbons (vCHCs) are described as being either below or above these guidelines (Table 1). Results were provided to the residents and to DECCW.

**Table 1. November 2009 Residential Bore Monitoring Results**

| | |
|---|---|
| Number of bores tested | 13 |
| Bores with no detection of vCHCs | 3 |
| Bores with detections of vCHCs below drinking water guideline values | 3 |
| Bores with detections of vCHCs above drinking water guideline values | 7 |

The majority of detections were in Spring and Collins Streets, Pagewood, where chemical monitoring data strongly suggests the presence of another non-Orica contaminant source.

The source of contamination under the Collins and Spring Streets area is considered to be unrelated to historic activities conducted by Orica at Botany Industrial Park (BIP), based on:

- The location of Collins, Queen, Swinbourne and Spring Streets relative to BIP and the known groundwater flow direction;
- Differences in the contaminant characteristics.

The potential long term health risks presented by the presence of these compounds have not been quantified. It is the role of the responsible polluter to perform this work.

It is Orica's opinion that other responsible polluters should contribute to the residential bore monitoring program. This will be the subject of discussion with DECCW, including the NSW Office of Water, in early 2010.

## 5 SPRINGVALE DRAIN INFILLING WORKS UPDATE

As previously reported, the realignment channel located in Southlands generally contains concentrations of contaminants greater than in the main channel. Consequently, as a precautionary measure to protect against possible elevated concentrations of vCHCs in air close to the realignment channel, it was considered prudent to infill this channel. Following submission of the Environmental Assessment for the Southlands Remediation and Development Project, the Department of Planning has required Orica to revise the flood modelling to ensure it is performed to the latest standards. This work commenced in February 2010 and will be completed by April 2010.

The final configuration of Springvale Drain cannot be finalised until this work is completed. As a result, the proposed infilling of the realignment channel has been deferred pending completion of these works.

## 6 FORESHORE ROAD TEMPORARY BARRICADES

As the CLC is aware, Orica conducts ongoing maintenance works on the containment lines consisting primarily of cleaning and minor inspection and repair works. In the short term this will require the barricades on Foreshore Road to remain in place. In early 2010, the barricades were moved to the western end of the line to facilitate the regular cleaning and maintenance associated with a pump-and-treat system. These works will continue until approximately April 2010. As discussed at the December 2009 CLC Meeting, Orica is reviewing long term options for the barricades on Foreshore Road.

## 7 FORMER CHLORALKALI PLANT MERCURY INVESTIGATION & CLEANUP UPDATE

As the CLC is aware, mercury has been detected in soil at the site of the demolished former ChlorAlkali Plant (FCAP) at the Botany Industrial Park (BIP), and in groundwater both on and off the site. Orica plans to remove the contamination source by using a soil washing technology and aims to render the site suitable for future industrial/commercial use. Orica aims to commence soil remediation in 2010.

To ensure worker and community safety, Orica will be managing air emissions during the remediation works. A large temporary structure might be used to enclose parts of the soil washing plant, the main excavation areas and soil stockpiles to manage dust and vapours. Detailed emission control plans will be developed following further ambient air and soil vapour sampling at the Denison Street BIP boundary in March.

The emission mitigation measures will be detailed in the Remediation Action Plan, currently being prepared by URS.

## 8 COMMUNITY COMMUNICATION UPDATE

*CLC Newsletter*

5,500 copies of CLC Newsletter No. 35 were distributed to local areas in December 2009, after being reviewed by the CLC. It provided updates on: groundwater containment and treatment;

progress of the Groundwater Injection and Recovery (GIR) System trial; the CLC and Independent Monitoring Committee (IMC); Southlands; and, FCAP mercury remediation planning.

*Website*

Materials from the December 2009 CLC meeting and minutes from the September 2009 CLC Meeting were uploaded, and a webcast by Dr Bernie Kueper on 'DNAPL Behaviour' was released on the website. Of the 2,441 visits to the Botany Transformation Projects website from 13 November 2009 to 25 February 2010, 1,057 visits were to BGC Project pages.

*E-mail Enquiry*

There was one website email enquiry related to the BGC Project in this reporting period requesting an application to the now complete Rainwater Tank Rebate Program. No emails were received via the CLC feedback facility.

*Newspaper Columns*

Three newspaper columns have been published in the *Southern Courier* since the last quarterly Progress Report and uploaded onto the website. A column was also published in the *St George and Sutherland Shire Leader* in December 2009.

*1800 Number*

Of the calls received during this reporting period to the Community Hotline, two related to the BGC Project and these were from new residents to the area seeking information about the groundwater contamination. There were also two calls regarding completed rainwater tank installations.

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Attachment:

A. Executive Summary of the Groundwater Cleanup Plan Progress Report No. 25

## *EXECUTIVE SUMMARY*

The NSW Environment Protection Authority (EPA), now part of the Department of Environment, Climate Change and Water (DECCW), issued Orica Australia Pty Ltd (Orica) with Notice of Clean Up Action (NCUA) No. 1030236 on 26 September 2003, under the Protection of the Environment Operations (POEO) Act 1997. This document is the twenty fifth report submitted in accordance with NCUA Condition 4G. The following is a summary of activities in the period 1 October 2009 to 31 December 2009.

NCUA Condition 3B(e) requires Orica to implement a comprehensive monitoring program. Results in this quarter indicated the following:

- The inferred contours and patterns of shallow and deep groundwater flow infer that hydraulic containment was achieved at Secondary Containment Area (SCA and primary containment area (PCA) during the monitoring period;
- Hydraulic containment was achieved at the northern, central and southern portions of the Botany Industrial Park (BIP) containment line in the shallow and deep aquifers. The focus on containment at BIP remains at sections of the line where contaminant concentrations are highest;
- Concentrations of chlorinated solvents reported for offsite monitoring wells were generally similar to those previously reported;
- In general, volatile chlorinated hydrocarbons (CHC) concentrations in pore water within Penrhyn Estuary were similar to or lower than historical concentrations.
- The concentrations of volatile CHCs in surface water sampling locations were generally less than the respective ANZECC (2000) Trigger Values; and
- The conclusions presented within the Consolidated Human Health Risk Assessment (CHHRA) remain unchanged.

Other groundwater and surface water monitoring and data acquisition activities that have been undertaken in this reporting period pursuant to, or that have relevance to, the conditions of the NCUA are detailed below:

- The 15-monthly air emission report was finalised and forwarded to DECCW for review.
- A time weighted exposure assessment requested by DECCW for Springvale Drain air emissions was completed. The additional work (requested by DECCW) showed that the exposure scenarios were consistent with those presented previously.
- Monitoring of requested eligible residential bores in the Groundwater Extraction Exclusion Area (GEEA) for volatile chlorinated hydrocarbons (vCHCs) occurred again in early November 2009.
    - Volatile CHCs were detected in groundwater collected from 10 of the 13 residential bores sampled;

  - Of the 10 detections, 7 were located in either Collins or Spring Street, Pagewood. The source of contamination under the Collins and Spring Streets area is considered to be unrelated to historic activities conducted by Orica at BIP.

- In accordance with Condition 7E of the NCUA, Orica is required to stay abreast of relevant DNAPL remedial technologies and apply them as practicable. The 2010 annual report is provided as an attachment in GCP Progress Report No. 25.
- The Groundwater Injection and Recovery (GIR) System is designed to reinject extracted groundwater into the aquifer upgradient of the containment lines on BIP if the GTP is unable to treat groundwater for an extended period of time. Orica submitted a Stage 2 trial plan to DECCW in November 2009 for discussion.
- The annual GTP shutdown for preventative maintenance works and repairs commenced on 6 November 2009 and was completed in the first week of December. All works were completed successfully and without any environmental or safety incidents.