

# Orica Botany Groundwater Project Community Liaison Committee Newsletter

Issue 10

October 2002

## Summary of Meeting No. 15

Community Liaison Committee (CLC) Meeting No. 15 was held on Tuesday 30 July 2002 at Botany Town Hall.

### Voluntary Remediation Agreement

The Stage 4 Voluntary Remediation Agreement between Orica and EPA NSW was issued on 21 May 2002. It carries on from the Stage 3 Agreement, setting out a timetable for and describing the investigation, research and remediation modules and goals for the Orica Botany Groundwater Project. It will remain in force until December 2004.

### Monitoring Program

In May 2002 groundwater samples were taken from 5 of the southern plumes' monitoring points along Foreshore Road and at Penrhyn Estuary. The southern plumes are composed of mainly tetrachloroethylene (PCE), carbon tetrachloride (CTC) and trichloroethylene (TCE) from the former solvents manufacturing plants on the operating site.

The results showed little had changed since the last round of monitoring in May 1999. As a result, it is recommended not to re-sample these points until 2003/4.

Samples of groundwater from the central EDC (ethylene dichloride) plume and from surface waters in Orica Southlands and at Penrhyn Estuary were collected in July 2002. The results were not available in time for the CLC meeting. However the results from sampling conducted in January 2002 showed that contamination in the shallow groundwater was not moving across Orica Southlands Block 2 between Springvale and Floodvale Drains, and that in all but one surface water sample contaminant concentrations were lower than had been measured in the previous 18 months. The July groundwater data will assist in finalising the design of the proposed bioremediation field trials (described below).

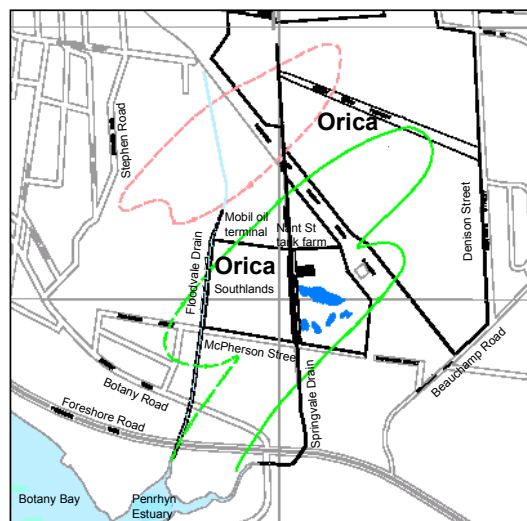
Orica plans to measure soil vapour emissions in November 2002. This was last done in July 2001, and resulted in no change to the conclusions of the Human Health Risk Assessment (i.e., that there was no unacceptable risk to human health). Sampling in the warmer months this time will enable assessment of any potential seasonal effects.

## Focus on *Stage 4 Voluntary Remediation Agreement*

Issue 4 of this newsletter (June 2000) contained an article in the *Focus on ...* section on the Orica/EPA Voluntary Investigation and Remediation Agreement (VRA). This was to mark the occasion of the signing of the first such agreement between Orica and EPA NSW on 24 February 2000. That Agreement, known as "Stage 3", expired at the end of last year. It has now been replaced by a Stage 4 VRA, which was issued on 21 May 2002.

So what does the Agreement contain?

- A description of the "land affected by the Orica-sourced contaminants" (the VRA - like groundwater plumes - is not confined by property boundaries);
- A list of the contaminants;
- The background to the proposal – background reports and letters Orica has issued to EPA NSW;
- The lifetime of the Agreement (3 years);
- Objectives - Orica's stated objectives and also what the regulators (not just EPA) would like to see happen in the course of the current Agreement and over the duration of the remediation project; and
- The Principal Features - this describes the main activities of the Botany Groundwater Project:
  - investigation (including monitoring, source areas and review of emerging technologies);
  - remediation (including the reactive iron barrier and removal of the contaminated sediments from Springvale Drain);
  - research (mainly bioremediation); and
  - communication (including the CLC and the annual reports under the VRA).



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## Reactive Iron Barrier

Based on successful trials of a pilot-scale reactive iron barrier (PSRIB) to capture and destroy a range of chlorinated hydrocarbons (CHCs) found in the groundwater flowing under Orica's site, Orica plans to install a full-scale barrier. The location will be Orica Southlands, an unused block of land to the southwest of the manufacturing site. Installation is planned for 2003.

A project meeting was held with ETI (the Canadian licensor of the technology) in May 2002. Matters discussed included quality assurance/quality control issues for the materials of construction and for installing the barrier, the list of prospective installation contractors and consultants, and the site licensing arrangements with ETI.

At about the same time groundwater samples were collected from the PSRIB to assess its performance after 39 months of service. Results were consistent with earlier data. ETI reviewed the data and concurred that the barrier was continuing to perform satisfactorily.

Orica has engaged a highly regarded remediation specialist, Dr Hans Stroo of RETEC Associates, USA, to provide an independent review of Orica's two-pronged remediation strategy. His draft report was issued in late August 2002. In brief, he has stated that the strategy looks sound, and that Orica has selected the two most promising *in situ* groundwater remediation technologies (i.e., reactive iron barriers and enhanced bioremediation). He has also suggested a few further enhancements that Orica can explore.

In June 2002 Orica issued to EPA NSW a letter under the VRA outlining Orica's progress to date with the installation of the full-scale barrier.

## Springvale Drain Sediment Removal and Drain Reconstruction

Orica has restored the original alignment of Springvale Drain running through Orica Southlands. About 1000 m<sup>3</sup> of contaminated sediments were excavated from the original section of the Drain. The sediments are stored in sediment containment structures pending classification for disposal. Samples were collected in March 2002.

An initial assessment of the results and preliminary waste classification have been made. However, because of the variability in sediment concentrations, more samples have been collected for further evaluation. When this is completed, a formal application to EPA NSW for waste classification will be made; expected in September 2002.

## Bioremediation Field Trials

Work continues on the design of field-scale bioremediation research trials, building on the successful completion of laboratory investigations by GeoSyntec Consultants in Canada. This includes an independent peer review by former US EPA remediation specialist Dr Guy Sewell.

The proposed trials will take place on Orica Southlands. They will involve the injection of non-harmful nutrients into the shallow and deep groundwater to enhance natural biological destruction of the EDC in the groundwater. The nutrients include ethanol, corn oil and a soap-like substance called potassium oleate.

Orica has met with the City of Botany Bay, DLWC and EPA NSW in preparation for submitting a Development Application shortly. Orica plans to install the process equipment by the end of 2002, and commission it in early 2003. The trials are expected to last 8-18 months.

## Remediation Conference

Orica sent a representative to the Third International Conference on the Remediation of Chlorinated and Recalcitrant Compounds, held in California in late May 2002. The presentations, short courses and trade exhibits were extremely relevant to the Botany groundwater project. Topics included permeable reactive barriers, bioremediation and, importantly, other emerging technologies. All of Orica's North American consultants were also represented there, so a number of project meetings were held. β

### About this Newsletter

This newsletter aims to keep the Randwick and Botany communities informed about progress of the Orica Botany Groundwater Project. The newsletter is prepared by Orica on behalf of the CLC following each meeting of the CLC. Meetings are held approximately every 3 months.

### Who Receives this Newsletter?

This newsletter is distributed throughout the suburbs neighbouring Orica's Botany Site including Banksmeadow, Botany, East Botany, Eastgardens, Hillsdale, Matraville and Pagewood.

**Meeting No. 16 is planned for Tuesday 10 December 2002, at 1 p.m. in Botany Town Hall. If you wish to inquire about the CLC or its meetings, please call Orica's Community Hotline on 1800 025 138.**