



Orica Botany Groundwater Cleanup Project

Progress Update Presentation for Community Liaison Committee

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18 December 2007

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- ▶ **GTP Performance**
- Groundwater Cleanup Progress
- Springvale Drain Vapour Monitoring Program



GTP Performance



Performance

- GTP treating on average >5 ML/day
- Optimisation of Stripped Water Treatment Plant against fouling:
 - Improved iron and aluminium removal and pH stability to minimise inorganic fouling
 - 10 weeks without needing to clean the Primary Reverse Osmosis (RO) unit
 - Biological Aerated Filter trials
 - Pre-commissioning commenced this week
 - Aim to reduce total organic carbon content of RO feed water
 - › minimise chloramine dose
 - › improve suitability of treated water for reuse applications

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GTP Performance (cont.)

Annual Maintenance Shutdown

- 16 November - 9 December
 - All scheduled tasks completed
 - Over 500 jobs completed, injury free!

Dioxin at GTP Stack

- Ongoing good results



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GTP Performance (cont.)

Thermal Oxidiser Low Temperature Trials

- Successful, all within licence limit of 0.1 ng/m³:

Temperature (°C)	Dioxin Stack Emission (dioxin TEQ, ng/m ³)
900	Range of 0.015-0.019
875	0.011

- Licence amended on 15 November 2007 with new lowest operating temperature limit of 875 °C
- Now operating at 900 °C

Update on Ammonia Pollution Reduction Program

- Provide further details requested by DECC in Jan 2008

Replacement of Pump Discharge Pipes at SCA – Completed



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GTP Performance

▶ **Groundwater Cleanup Progress**

Springvale Drain Vapour Monitoring Program



Groundwater Cleanup Progress

Operational performance

- As of end October 2007:
 - 2.5 gigalitres (GL) groundwater treated
 - 500 tonnes of CHCs recovered
 - Recovered CHC condensate from past SSU operation currently being destroyed at GTP

CHCs in surface water

- Volatile CHC concentrations continue to decrease and are less than ANZECC Trigger Values
 - Exceptions:
 - Vinyl chloride (VC) detected at a shallow port of a bundle piezometer in centre of inner estuary
 - VC detected at Springvale Drain outlet at low tide

DNAPL treatment investigations ongoing

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Groundwater Cleanup Progress (cont.)

Hydraulic containment

Secondary Containment Area (SCA)

- Deep containment effectively achieved
- Inconsistent shallow containment near Floodvale Drain in late Aug (bio-fouling)
- Containment not achieved at eastern end in July (pipe replacement works)
- Likely to have drawn back groundwater that had passed the eastern end in Aug

Primary Containment Area (PCA)

- Containment line operated well, except for one pump on eastern end
- Increased drawdown (improved pumping) in mid-western area of containment line
- Significant dissolved-phase mass removed in core of Central Plume

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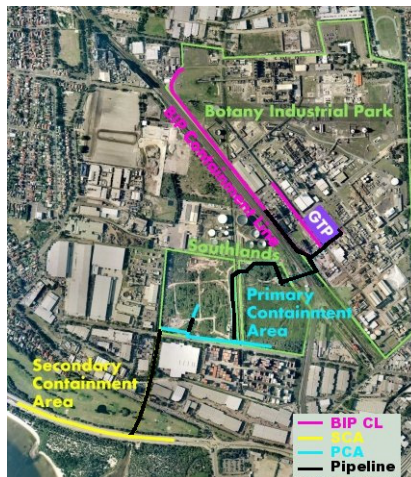
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Groundwater Cleanup Progress (cont.)

Hydraulic containment (cont.)

BIP Containment Line (BIP)

- Pumping priority is PCA and SCA; BIP is pumped as GTP capacity allows
- Containment generally achieved, but pumps at both ends only operated as capacity allows



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▶ **Springvale Drain Vapour Monitoring Program**

Springvale Drain Vapour Monitoring Program

Aims and Timeframe of the Program

- May - Nov 07
- Assess whether hydraulic containment and treatment is:
 - Reducing volatile CHC concentrations in surface water and air
 - Able to maintain the risk profile at an acceptable level
- Determine if current risk profile is within acceptable guidelines for workers adjacent to the drain

Procedures

- Hydraulic monitoring of shallow groundwater along the drain
- Collection of surface water samples and proximate ambient air monitoring at various locations from Nant Street Tank Farm to Discovery Cove

Springvale Drain Vapour Monitoring Program (cont.)

Interim Results (based on first four monitoring event)

- Hydraulic containment at PCA and BIP have significant impact on reducing shallow groundwater discharge into the drain

→ However, containment is less effective in stopping shallow groundwater from entering the drain following rainfall events



Springvale Drain Vapour Monitoring Program (cont.)

Next Steps

- Meeting with stakeholders early 2008
- Construct spearpoint extraction system along uncovered section of the drain
 - To actively lower groundwater in the immediate vicinity of the drain during high rainfall events
 - Extracted water to be treated at the GTP
- Finalise report on program, including risk assessment for workers adjacent to the drain
- Conduct monthly air monitoring in critical locations until spearpoints operating
- Post spearpoint installation, include in 15-month air monitoring program

