



Botany Groundwater Cleanup Project

Progress Update for CLC

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08/12/2009

Groundwater Treatment Update

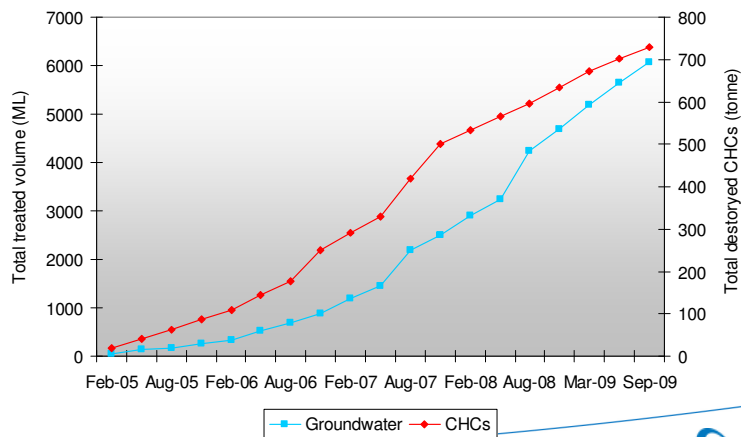
- GTP shutdown successfully completed on time & with no injuries
 - GTP started up 5 December
- Recent investigations into the possibility of pumping more groundwater to maximise hydraulic containment:
 - Identified that extraction beyond ~7 ML/day increases risk of subsidence, particularly on the BIP
- Continue industrial reuse of treated groundwater
- Will look for opportunities to treat other water sources for industrial reuse, but no feasible projects have been identified
- Plan to improve the efficiency of the biological treatment of water

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Groundwater Treatment Plant (GTP)

- Cumulative 6.1 billion litres of groundwater treated and 730 tonnes of contaminants destroyed (as of Sep '09)

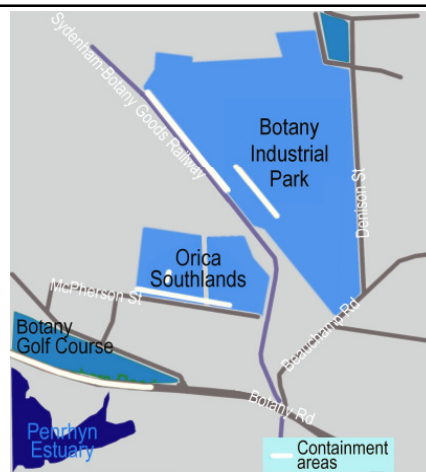


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Hydraulic Containment

- Secondary Containment Area (SCA) – Containment achieved
- Primary Containment Area (PCA) – Containment achieved
- BIP Containment Line – Achieved at priority areas
- GTP shutdown completed to schedule and hydraulic containment continues to be achieved



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Chemical Monitoring

- Biennial monitoring event
- As expected, results consistent with previous monitoring rounds
- Large decrease in the estimated average CHC concentration for entire PCA aquifer between Jul 2002 and Sep 2009
- Contaminant concentrations less than ANZECC Trigger Values for all pore water discharge interface samples in Penrhyn Estuary
- Surface water concentrations in Springvale Drain and Estuary hundreds of times lower than 5 years ago
- Conclusions of Consolidated Human Health Risk Assessment (2005/2006) do not change



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Groundwater Injection & Recovery (GIR)

- Initial trial completed successfully
 - Works well – worth pursuing
- Trial extension proposed to test anti-fouling agent and injection well maintenance techniques to extend life of wells in case of long term shutdown



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Voluntary Management Proposal

- VMP submitted to DECCW in October 09 for review
- VMP establishes clear set of undertakings for the project:
 - Maintenance & optimisation of hydraulic containment
 - Chemical & hydraulic monitoring programs for:
 - Groundwater & surface water
 - Air & other environmental media
 - Human health & the environment risk assessment
 - Source area management
 - Contingencies for the GTP
 - Community consultation



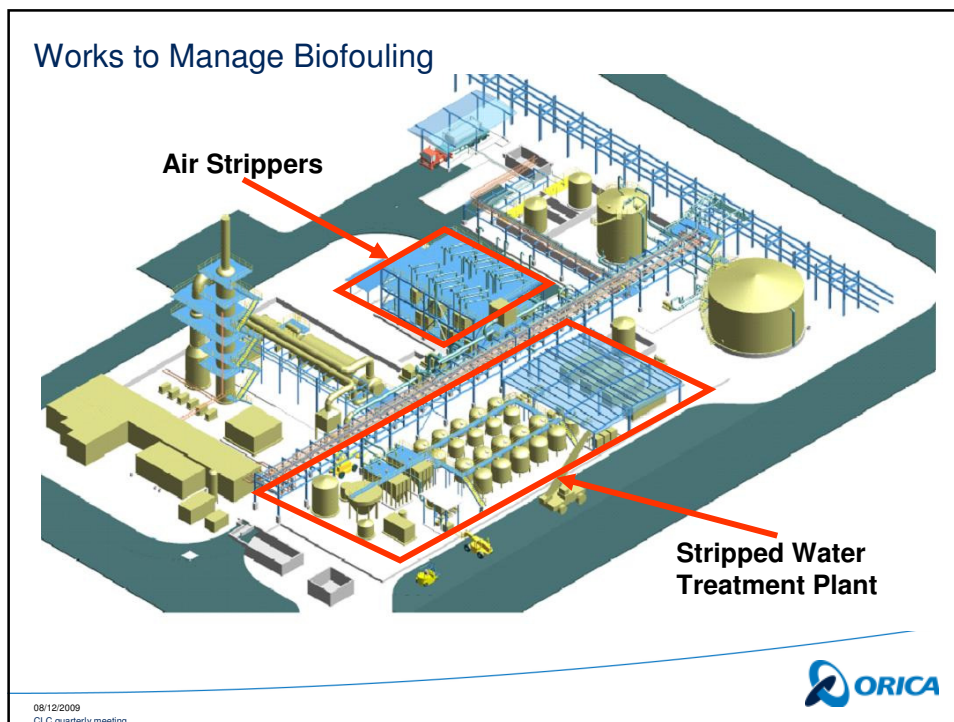
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Other Current Activities

- Bioaugmentation Trials – Jan 2010
 - As part of obligation to continue research & development
 - Follow-up on 2004-2005 bioremediation field trials
 - North-east corner of Southlands Block 2
 - Injection of bio culture developed by Centre for Marine Bio-Innovation (at UNSW)
 - To see whether it can achieve greater bioremediation than with nutrients alone
 - Targeting EDC



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2008-2009 EPL2148 Annual Return – BGC Project Conditions

- Seven minor non-compliances; all other discharges to air and water from the GTP met stipulated licence conditions
 1. GTP weather station unavailable for 24 hrs due to lightning strike
 2. Total Solid Particles exceedance at GTP stack
 - 42.2 mg/m³ compared to limit of 20 mg/m³
 - No harm to human health or the environment (Prof B Priestly IMC Task 24)
 3. Loss of a treated water test sample by the testing laboratory
 4. Minor exceedance of oxidised nitrogen in discharged treated water
 - 0.11 mg/L compared to limit of 0.1 mg/L
 - No environmental harm (URS risk assessment)
 5. Treated water discharge temperature exceedances
 - Shroud to reduce pipeline heating up in hot weather
 6. Minor spill of groundwater from a pump at the BIP Containment Line
 - Preventative measures in place
 7. Community Hotline unavailable during phone system upgrade

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