

**Independent Monitoring Committee – Community Liaison  
Committee  
Tasks for Prof Ian Acworth**

**Task 10** – Respond to the following question from the CLC:

*“Can we use water re-injected back into the aquifer to accelerate the groundwater clean up project and does Prof Acworth’s recently announced recommendation for groundwater recharge using storm water at Centennial Parklands have any impact on the Botany area?”*

Any additional recharge to the Botany Aquifer will not significantly accelerate the groundwater clean up. The source of contamination is free phase liquid DNAPL that occurs in one or more of 3 locations:

- as a discrete pool of material lying on lower hydraulic conductivity layers beneath Southlands or the ORICA plant,
- adsorbed onto organic (peat) layers within the sands,
- or as residual saturation in the pore space between the sands grains.

In each case, clean groundwater passing into contact with the DNAPL dissolves a very small amount and continues on its way to Botany Bay – now as a plume of dissolved DNAPL in groundwater. The quantity of DNAPL dissolved is limited by the very low solubility of these DNAPL’s in groundwater. It is estimated that groundwater flowing through much less than a metre of DNAPL contaminated sands will reach saturation, after which no more DNAPL can dissolve. Causing more groundwater to flow through the site simply speeds up the generation of the dissolved phase plume. As such, there is little if any significant reduction in the time to clean the site. Restoration of the site can only be carried out by removal of the DNAPL source.

Following from the above, it is clear that additional groundwater recharge in Centennial Parklands, or elsewhere in the aquifer, will not impact on the Botany Area. ORICA are required to stop any of the contaminated water getting to the Bay.