

**Submission  
No 67  
Item C, Tab  
15**

**INQUIRY INTO ENROLMENT CAPACITY IN INNER CITY  
PUBLIC PRIMARY SCHOOLS**

**Name:** NSW Department of Education  
**Date received:** 27 September 2016

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ORAP Option 2		Partial Off Site Disposal & On Site Capping	
		<ol style="list-style-type: none"> <li>1. A shoring wall is constructed to restrict groundwater flow</li> <li>2. 3m (i. e the depth estimated to be sufficient to remove smear layer of petroleum) of contaminated soil is removed and disposed off. The petroleum smear has to be removed to minimise gas monitoring</li> <li>3. At least 3m of clean fill has to be imported to replace contaminated soil</li> <li>4. The clean fill will be compacted and marker layer added.</li> <li>5. Gas management raising the ground floor of the building to create natural vents</li> <li>6. Ongoing monitoring of groundwater to ensure natural attenuation of contaminants occurring (MNA)</li> <li>7. Ongoing management required</li> </ol>	
<p><b>Duration</b> ~</p>	<p><b>Risks</b></p> <ol style="list-style-type: none"> <li>1. Potential community backlash that could delay the EIS approval.</li> <li>2. May need barrier wall instead of MNA pending further investigation results</li> <li>3. Future failure in MNA could result in need to future management of off-site groundwater plume</li> </ol>		
<p><b>Cost</b> ~ <b>\$31.3 million</b></p> <p>including 20% contingency</p>	<p><b>Opportunities</b></p> <ol style="list-style-type: none"> <li>1. Savings can be realised by obtaining free clean fill from construction sites across the city that need to dispose clean excavated material.</li> <li>2. May be able to show gas management not required (pending further investigation results and risk assessment)</li> <li>3. May be able to place OSD etc instead of clean fill in capping layer.</li> </ol>		
ORAP Option 3		Contamination encapsulation and Impermeable Barrier Wall	
		<ol style="list-style-type: none"> <li>1. An impermeable barrier wall to the bedrock is constructed to restrict groundwater flow</li> <li>2. Clean fill has to be imported to raise the flood levels.</li> <li>3. The clean fill will be compacted and a marker layer added</li> <li>4. Gas management through raising the groundfloor of building to create natural vents</li> <li>5. Ongoing management required</li> </ol>	
<p><b>Duration</b> ~</p>	<p><b>Risks</b></p> <ol style="list-style-type: none"> <li>1. Potential community backlash that could delay the EIS approval.</li> <li>2. Ongoing management requirements/restrictions will be greater than for Option 2</li> </ol>		
<p><b>Cost</b> ~ <b>\$10.5 million</b></p> <p>including 20% contingency</p>	<p><b>Opportunities</b></p> <ol style="list-style-type: none"> <li>1. Savings can be realised by requesting clean fill from construction sites across the city that need to dispose clean excavated material.</li> </ol>		
ORAP Option 4		Full Remediation	
		<ol style="list-style-type: none"> <li>1. Complete removal of all the soil to bed rock across the 12 000m2 site</li> <li>2. Removal and off-sie disposal of contaminated groundwater</li> <li>3. Import clean fill and compact</li> </ol>	
<p><b>Duration</b> ~</p>	<p><b>Risks</b></p> <p>A very expensive process that could diminish the feasibility of the project.</p>		
<p><b>Cost</b> ~ <b>\$53.9 million</b></p> <p>Including 20% contingency</p>	<p><b>Opportunities</b></p> <p>Savings can be realised by requesting clean fill from construction sites across the city that need to dispose clean excavated material.</p>		

**Option 1:** Source removal of "hotspots" (say to nominal depth of 0.5m below water table ~3m), partial physical encapsulation of soil (surface capping), vapour management system (if required) and monitored natural attenuation. Contingency: impermeable barrier wall.

Not being considered further at this stage. Elevated level of uncertainty, potential delays. The Site auditor has concerns about this method  
11/05/2015

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