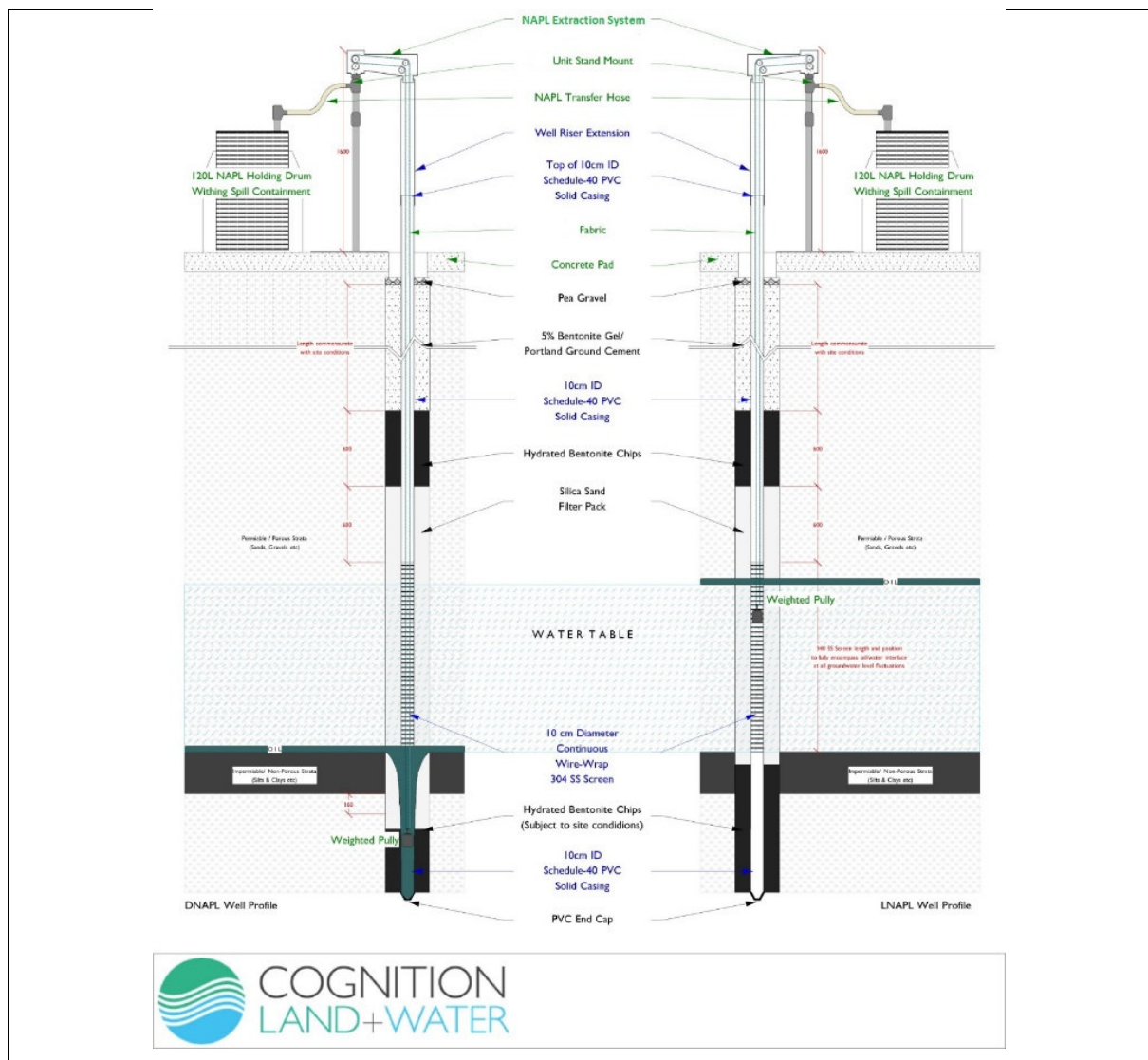
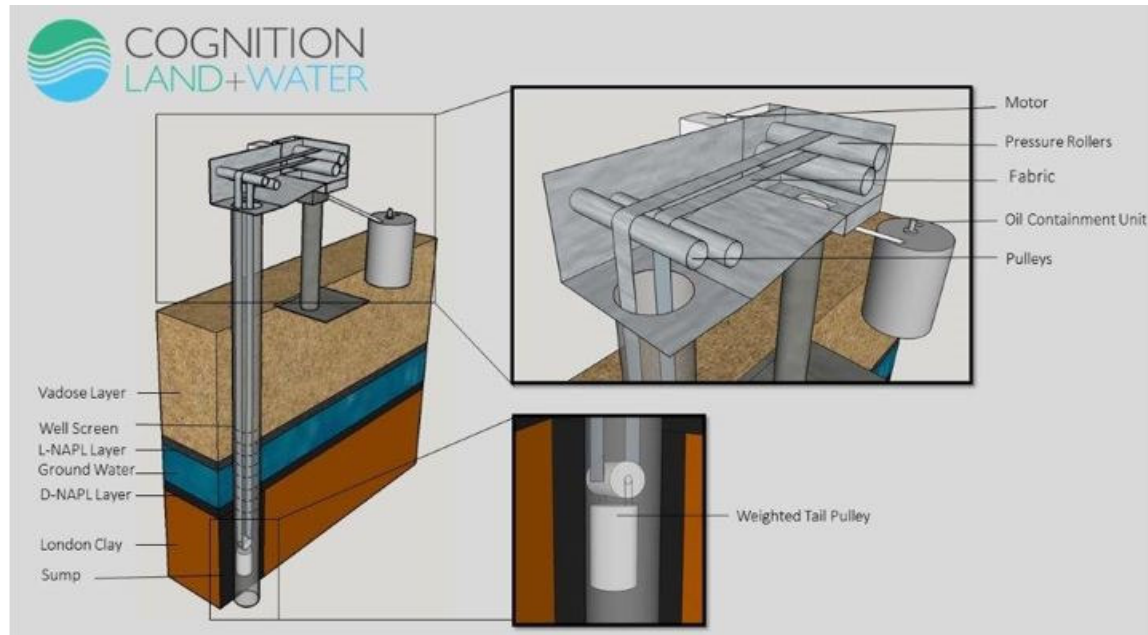


COGNITION Fabric Extraction System (FES) - Wandsworth

Historical contamination associated with the former gasworks at Wandsworth includes free product, referred to in the remediation industry as Non-Aqueous Phase Liquid (NAPL). These NAPLs are liquid phase contaminants that do not dissolve or mix easily in groundwater and when present can be a persistent source of contamination. Dependant on the contaminant they can be present as Light NAPL (LNAPL) which float on water, and Dense NAPL (DNAPL) which sink below water. Historical systems of removing NAPL from the ground are principally pumping techniques that extract large volumes of water. NAPL can also be present at significant depth, therefore can be notoriously difficult to remove. Therefore, historical techniques have placed both a resource and financial burden on remediation projects. To remove NAPL at the site in Wandsworth COGNITION is employing a Fabric Extraction System (FES) that can target both LNAPL and DNAPL within the ground. This technique can extract NAPL without the requirement to extract large volumes of water, efficiently removing the source of contamination. The system also has a small footprint, low power requirements and can quickly be deployed and moved to other boreholes.

How this system is being used to effectively remove NAPL at the Wandsworth Site:

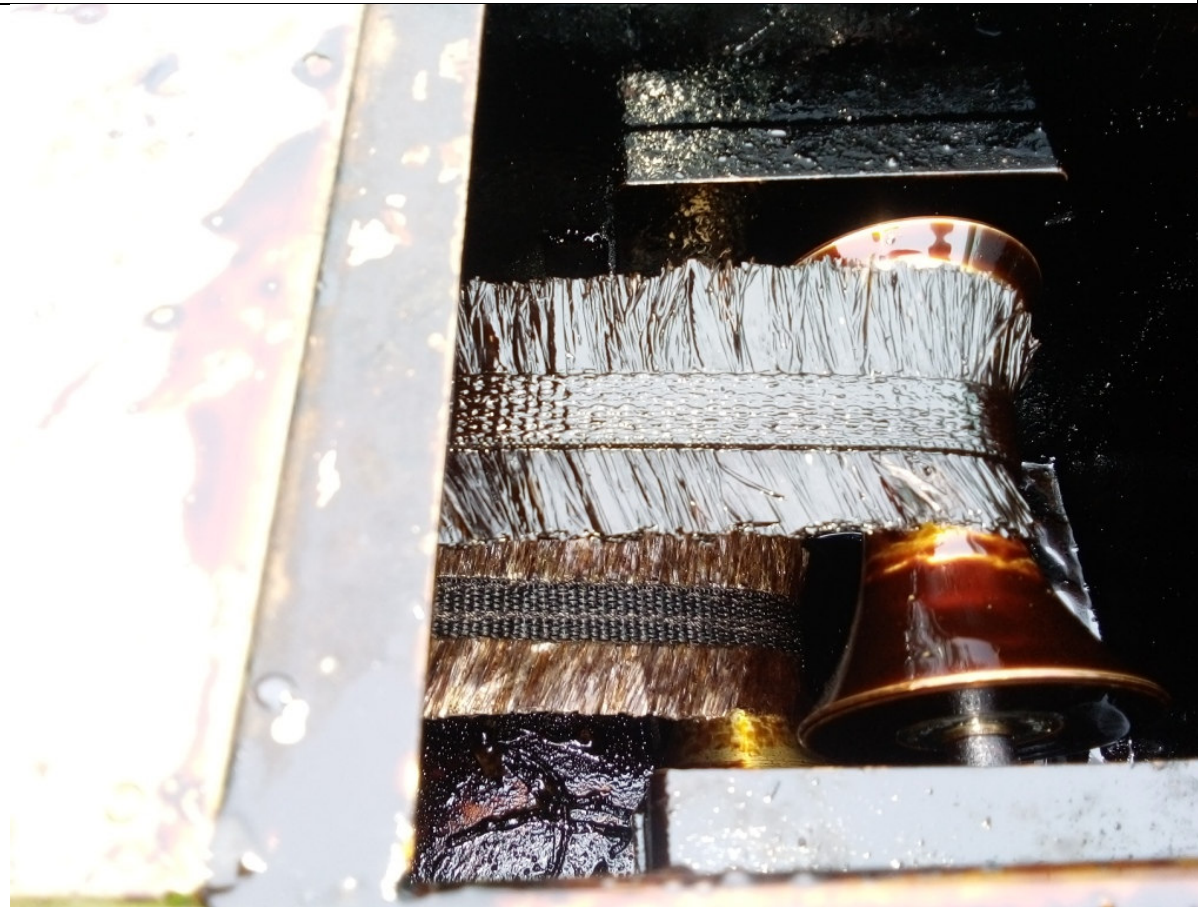
1. The location of NAPL is determined by reviewing the site historical information and previous site investigation data.
2. Following the identification of NAPL hotspots boreholes are advanced in select locations across the site ranging from 10m to 15m. The boreholes are extended 1m into the clay forming a sump for DNAPL to accumulate into.
3. The FES utilises an oleophilic/hydrophobic fabric conveyed in a continuous loop into a groundwater well to intersect the oil-water interface. As the fabric travels through the interface, product is adsorbed. As the loop returns to the surface, the adsorbed product is removed in a specially designed desorption unit, and the recovered oil collected in a storage drum or tank for disposal or recycling.



FES system Design



Extracted Dense Product (DNAPL)



Extracted Dense Product (DNAPL) with oleophilic/hydrophobic fabric



Overview of FES System