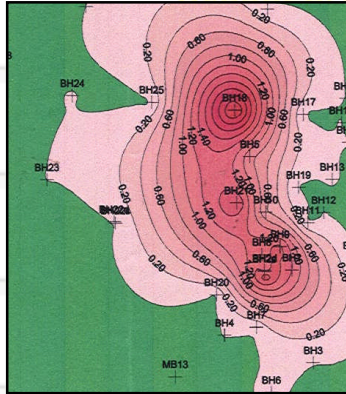




PROJECTS

CONTAMINATED LAND & GROUNDWATER



HydroSolutions Contam 2

PRECIOUS METAL REFINERY, WA
Investigation, risk assessment, remedial design, groundwater contamination

A phased groundwater investigation was undertaken of impacts from leakage of refinery effluent. An initial hydrogeological audit reviewed site operations, historical spillages & existing monitoring data, leading to the development of a phased investigation program.

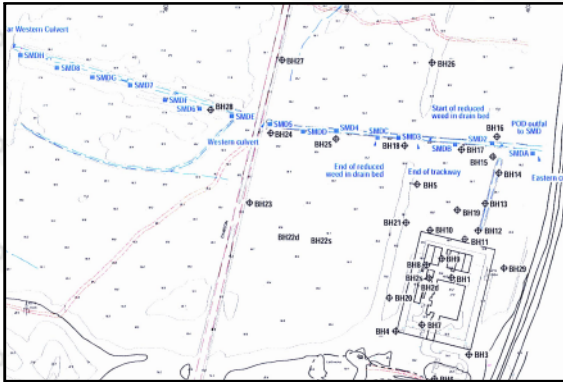
An EM34 geophysical survey broadly defined anomalous areas of contrasting electrical conductivity. A bore investigation & sampling program identified the extent of a groundwater contaminant plume comprising excess EC, acidic pH and a variety of metals in particulate & dissolved forms extending approximately 400m west from the refinery.

The plume was impacting a surface water & groundwater flood control drain. Sampling of surface waters & sediments in conjunction with consultants ERS at regular intervals identified an impact zone over an approximate 250m length, where metal concentrations exceeded applicable environmental guidelines.

A detailed groundwater & surface water monitoring program was initiated, together with a risk assessment study, including:

- Ecological assessment of the impact zone & downstream areas surrounding the drain
- Sampling exercise to determine downstream surface water quality
- A surface water management plan to prevent or minimise effluent discharges
- A numerical groundwater modeling and contaminant transport simulation exercise to assess the significance of plume contribution to surface water quality and the potential for natural attenuation
- A metal ecotoxicology assessment in conjunction with CSIRO

The risk assessment program will identify the requirements for the implementation of a future remedial action plan.



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