

Case Study

Site Description – Crude Oil Contamination from Oil Fields

Site Location: Poza Rica, Mexico

Site Description: For years refinery and oil field waste had been dumped into the marsh adjacent to a large residential community. The waste oil had also started seeping into the local groundwater.

The area included three large ponds including a dyked area, 3 meters deep, containing a mixture of 60% oil-tar in water. The total area held approximately 3,400 cubic metres (m³) of contaminated soil and sludge material.



Waste pond filled with 60% crude oil/sludge

Contaminant: Crude oil and refinery waste.



Starting Contamination Levels: The average Total Petroleum Hydrocarbons (TPH) level was 131,192 parts per million (PPM).

Testing standards: All tests were performed by an independent 3rd party laboratory.

Recommended Treatment Method (in-situ) : The soil around the dyke was mixed with the dyke walls to achieve a uniform Total Petroleum Hydrocarbons (TPH) contamination level of 89,650 PPM. The Oppenheimer Formula I, nutrients, and biocatalyst were added and with the use of a heavy duty slurry pump, the area was converted into a giant bioreactor. When the TPH of the slurry reached 18,000 PPM, 6,000 cubic meters of soil was excavated and land farmed offsite.

Goal: The goal of the program is to cleanup the sludge pond to allow the local community to be able to farm the land.

Final Soil Total Petroleum Hydrocarbon (TPH) Levels: The final TPH level was less than 300 parts per million (ppm)

Outcome: Duration of the treatment time to bioremediate the area was approximately 180 days (6 months).

