

HC-2000 Bioremediation of Mineral Oil Release from Transformer Explosion at Electrical Substation

Location: Northeastern Georgia

Client: Major Transmission Company

Contract Amount: \$113,000

PROBLEM

7,000 gallons of mineral oil were released when a 230 KV transformer exploded at a power substation. Mineral oil migrated off the substation pad, through a rock filled detention pond and down a heavily vegetated drainage ditch that ended up in a depressed area 550 feet from the transformer pad (on the power line ROW). The impact area was determined to be 10,400 square feet by performing a GPS survey.

SOLUTION

350-gallons of oil were recovered using Remtech's all-terrain vacuum tankers inside the substation's fenced downgradient section. Recovered oil was transported to a recycling facility. The concrete transformer pad and power line footings were cleaned with HC-2000 enhanced bioremediation accelerator/cleaner and pressure washed with water.

Oil saturated soils were excavated from: the transformer area inside the fence above grounding grids, access road, rock filled detention pond, and drainage ditch. 280-tons of contaminated soils transported to a Subtitle D Landfill facility as a special waste.

The State of Georgia approved soil treatment of contaminated soil in and beneath the grounding grid and downgradient residual runoff soils with three (3) applications of Remtech's bioremediation accelerator HC-2000 without performance sampling based on successful degradation sampling on previous projects.

Remtech designed and constructed a new detention pond with an oil recovery cell employing an inground API separator and entrance and discharge hydraulic energy dissipators. The site was landscaped with soil stabilization systems consisting of gravel inside the fence, riprap, geotechnical fabric, and wetlands mix seed germination netting outside the fence.

COST/BENEFITS

The insitu treatment of 0.23 acres of the mineral oil contaminated soils in and beneath the substation's grounding grid and spill runoff area with HC-2000 rather than excavation saved the client an estimated \$100,000 and minimized extended power outages that would have been associated with removal and replacement of the substation's grounding grid.



Transformer Explosion at Substation



Transformer Explosion



Excavation of Grossly Contaminated Soils above Grounding Grid



New Detention Facility