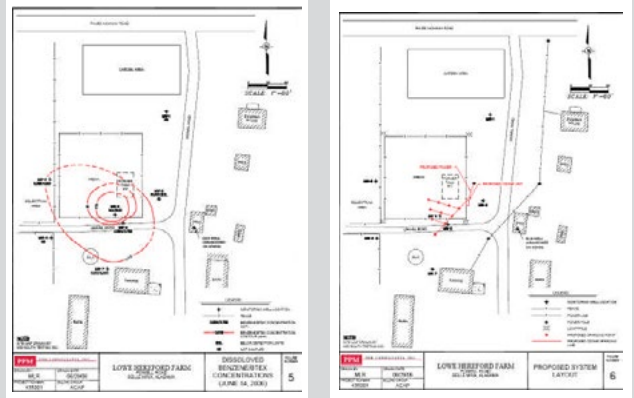


CASE STUDY



Newterra Technology Chosen for Unique Site Remediation

A crucial project was commissioned to devise a plan due to petroleum hydrocarbon and BTEX residual contamination in the soil and groundwater.

Market Served: Agricultural
Application: Remediation Technology
Location: Alabama (USA)
Challenge: Groundwater Contamination
Solution/Service: Ozone Sparge System

Summary

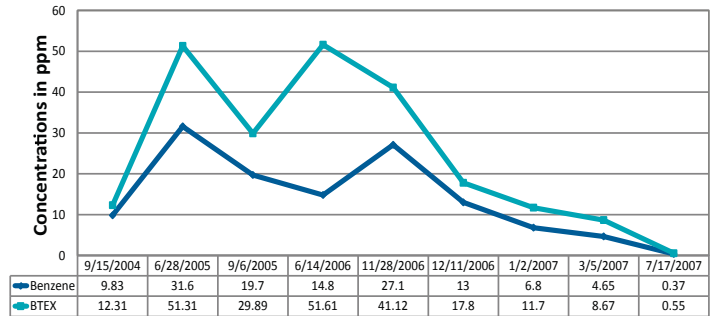
One gasoline and two diesel USTs were removed from the Lowe Farm site in July 1995, which is located in Limestone County, Alabama. The Alabama Department of Environmental Management (ADEM) required that investigative and corrective actions be implemented at the site. PPM Consultants Inc.'s (PPM) services were requested to construct a corrective action plan for the site by the property owner. In general, the native lithology is such that the upper 25 feet of soil consists of moist, reddish brown clay and silty or sandy clay. Chert fragments were present in most of the borings at various depths. Primary contaminants of concern are petroleum hydrocarbon and BTEX residual in both the soil and groundwater.

The Solution

Newterra was selected as the remediation technology for this site. After initial site condition research was conducted and a system sizing questionnaire was filled out, Newterra recommended the use of an OSU20-52 cabinet with 10 in-situ oxidation points, each estimated at achieving a 10 foot radius of influence. The site layout shows the locations of each of the sparge wells.

The Results

Sparging began in December of 2006. Results from monitoring indicated that BTEX levels dramatically decreased from the time that the system was installed. Results from monitoring well 8 are graphed showing the fluctuating background concentrations pre ozone and the decreasing trends from throughout the injection period. The site closed in 2008.



Project Snapshot

Existing Conditions: Primary contaminants of concern are petroleum hydrocarbon and BTEX residual in both the soil and groundwater.

Contaminant	Soil (ppm)	Groundwater (ppm)
Benzene	0.54 14.80	14.80
Toluene	0.24	22.30
Ethyl-benzene	2.02	2.11
Xylene	9.17	12.40
MTBE	0.04	0.09

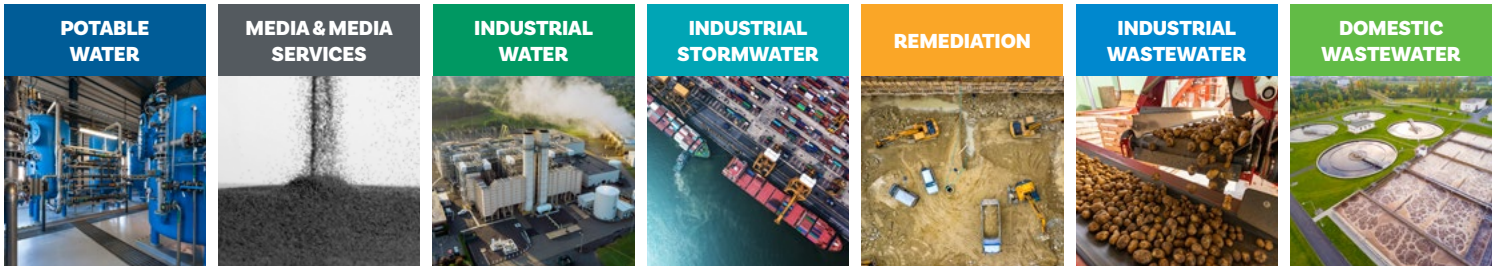
Newterra Solution: Newterra was contracted to build a system capable of injecting concentrated ozone gas focussed on treating BTEX and Benzene in tight clay soils. Newterra recommended the use of an 10 pound per day ozone cabinet equipped with Intelo-zone. The system utilized 10 in-situ oxidation points, each estimated at achieving a 10 foot radius of influence.

The site was closed in a year and a half after mobilization.

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