



# COMBINED THERMAL REMEDY

## Technology(s)

ERH & MPE

## Electrode Pattern:

11 electrodes - Three Phase Array

## Treatment Area:

11,070 square feet

## Treatment Interval:

0 to 30-ft bgs

## Treatment Volume:

12,300 cubic yards

## Extraction System:

MPE and SVE

## Liquid Phase Treatment:

LGAC treatment

## Vapor Phase Treatment:

VGAC treatment

## Regulatory Driver:

Los Angeles Regional Water Quality Control Board (LARWQCB).

## CARSON PLAZA

### COMBINED N-SITU REMEDIATION OF AN OPERATING DRY-CLEANING BUSINESS USING THERMAL REMEDIATION

CARSON, CA

**Summary** – The Group’s personnel performed an Electrical Resistance Heating (ERH) remediation of Tetrachloroethene (PCE) and trichloroethene (TCE) in soil and groundwater for Behullar Properties LLC. The guaranteed remediation contract was based upon reducing existing groundwater concentrations to MCL’s and obtain a no further action letter from the Los Angeles Regional Water Quality Control Board (LARWQCB). Groundwater concentrations were reduced by approximately 98% and the Site was submitted for regulatory Closure.

The soil and groundwater beneath an operating dry-cleaning business and strip mall in Carson, California was impacted with tetrachloroethene (PCE), trichloroethene (TCE), dichloroethene (DCE), and vinyl chloride to a depth of 25 feet below ground surface (bgs). Initial soil concentrations at a depth of 16 feet bgs have maximum values of 860 µg/kg PCE and 1,700 µg/kg TCE. Initial groundwater concentrations in the hot spot area were 4,600 µg/L PCE and 18,000 µg/L TCE. The Group’s team used Multi Phase Extraction (MPE) and Electrical Resistive Heating (ERH) combined to remediate both the soil and groundwater at the project site.

MPE was used to treat the down gradient dissolved phase groundwater plume and ERH was used to focus treatment in the source areas soil and groundwater. The Site is currently submitted for regulatory closure.

After only sixty-five days of ERH operation soil and groundwater contaminant concentrations levels were reduced to below MCLs, approximately 177 pounds of VOC’s were removed, and the project was submitted for no further action with one year of rebound monitoring.

#### Soil Cleanup Goals

Treatment Interval (ft bgs)	trans-1,2-DCE	cis-1,2-DCE	TCE	PCE
	(ppb)	(ppb)	(ppb)	(ppb)
0 ft bgs	106	63.6	53	53
5 ft bgs	76	45.6	38	38
11 ft bgs	40	24	20	20
16 ft bgs	10	6	5	5
21 ft bgs	10	6	5	5
<b>Groundwater Clean-up Goals</b>	10	6	5	5

