Delineation of a VOC Release using the Soil Conductivity/Membrane Interface Probe
CASE STUDY PROFILE

- Property is a golf course maintenance facility where a 2,000 gal. UST released unleaded gasoline into the subsurface environment.
- Following two subsurface investigations that entailed the performance of 14 soil borings and the installation of six monitoring wells, the UST was removed.
- During a site inspection gasoline was observed seeping from the creek bank located along the western edge of the golf course maintenance facility.
Spatial Analysis of Benzene in Groundwater
UST Release at Golf Course in Missouri
**Soil Conductivity/Membrane Interface Probe Basics**

1. Gas Permeable membrane/soil conductivity probe advanced using DPT techniques, very fast generally 150 to 200 feet/day - up to 300 feet/day.

2. Collects soil gas from above and below the water table at intervals determined by the operator. In continuous sampling mode the sample interval is 0.05 feet.

3. A carrier gas sweeps over the membrane, pulling across VOCs and transporting them into a laboratory quality FID or PID for qualitative measurements of VOC concentration. At discreet depth intervals a sample of the VOC may also be analyzed using the purge and trap method to allow for speciation of the VOC plume constituents.

4. Measures the soils electrical conductivity on 0.05 foot intervals for qualitative evaluation of granular soils vs. cohesive soils.
SC/MIP Probe
Base Map of Investigation Area
MIP Data Set Graphs
Plan View Through PID Data Set

Elevation: 788.0 ft

Elevation: 787.5 ft

Elevation: 787.0 ft

Elevation: 786.5 ft
Plan View Through the PID Data Set

Elevation: 780.0 ft

Elevation: 779.5 ft

Elevation: 779.0 ft

Elevation: 778.5 ft
Plan View Through the PID Data Set

- Elevation: 776.0 ft
- Elevation: 775.5 ft
- Elevation: 775.0 ft
- Elevation: 774.5 ft
Plan View Through the PID Data Set
Cross-section Locations
Cross-section C-C’ through the Soil Electrical Conductivity Data Set
Cross-section A-A’ Through the PID Data Set
Cross-section B-B’ Through the PID Data Set
Cross-section C-C’ Through the PID Data Set
Cross-section F-F’ Through the PID Data Set
Volume of Impacted Soil Based on Soil Sample Data
Volume of Impacted Soil Based on SC/MIP data

![Graph showing the relationship between Volume and Cutoff Reading](image-url)