



## Former Coffee Processing Facility, Brownfields Site AGI Universal Sampler

### Summary

<b>Media:</b>	Soil Gas
<b>Study Type:</b>	Source Investigation
<b>Technology:</b>	Accumulation
<b>Peer Reviewed:</b>	No
<b>Publication Date:</b>	N/A

### Study Description

- The site is a former coffee processing facility in the Mid-Atlantic region of the United States that operated between the 1930s and 1980s. The former operations included the use and handling of several solvents, including trichloroethene (TCE). Previous investigations, conducted between 1993 and 1998, have identified impacts to groundwater, with the plume set in a zone of unconsolidated fill material.
- Contaminants of concern: chlorinated volatile organic compounds (VOCs), including TCE, as well as petroleum-related compounds, polychlorinated biphenyls (PCBs), and metals.
- Routine groundwater monitoring began as early as 1999. This investigation was a singular sampling event to identify potential contaminant source.
- A total of 58 passive Amplified Geochemical Imaging (AGI) Universal Samplers were deployed in a grid pattern over the 2.5-acre property. The samplers were set at 3-4 feet below ground surface (bgs) and left to passively collect soil gas for ten days. Once collected, the samples were submitted for laboratory analysis using a modified USEPA Method 8260/8270 GC/MS.

### Remedial Phase

Historical investigations had identified impacts to groundwater, but the source zones remained unclear. The objectives of the investigation were to locate and delineate the sources of subsurface contamination.

### Outcome

The results of the soil gas survey identified a previously undetected DNAPL source area and defined soil gas plumes for TCE and cis- and trans-1,2-dichloroethene. Furthermore, the analytical results compared well with groundwater data and identified the presence of natural attenuation. The use of passive soil gas sampling allowed the source areas to be both identified and delineated in a single large-scale sampling event versus multiple events that could have taken years.

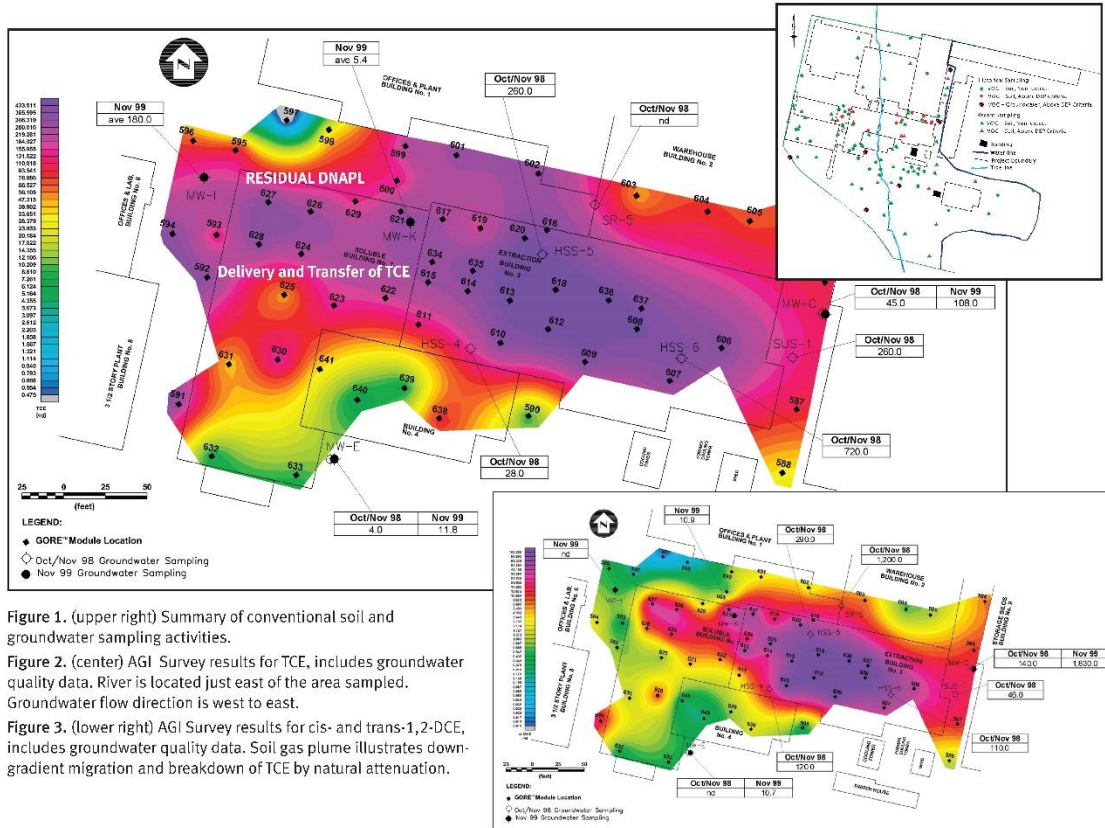


Figure 1. (upper right) Summary of conventional soil and groundwater sampling activities.

Figure 2. (center) AGI Survey results for TCE, includes groundwater quality data. River is located just east of the area sampled. Groundwater flow direction is west to east.

Figure 3. (lower right) AGI Survey results for cis- and trans-1,2-DCE, includes groundwater quality data. Soil gas plume illustrates down-gradient migration and breakdown of TCE by natural attenuation.

Image used with permission from AGI.

### Case Study Reference

Amplified Geochemical Imaging. <https://agisurveys.net/technical-library.html>