

A.1 Technology Name

AGI Universal Sampler

A.1.1 Source

Published in: Proceedings of Vapor Intrusion 2009, Air & Waste Management Association (San Diego, CA; January 2009). Jay W. Hodny, Ph.D., James E. Whetzel. Jr., and Harry S. Anderson, II.

<https://aqisurveys.net/technical-library.html>

A.1.2 Summary

Media:	Soil Gas
Study Type:	Comparison study
Technology:	AGI Universal Sampler, Tedlar Bag, TO-17 Sorbent Tubes, Vacuum Box and/or Evacuated Canister, and Bottle-Vac™ Sampler
Peer Reviewed:	Yes
Publication Date:	January 2009

A.1.3 Site Description

- The Site was an industrial facility in the Mid-Western United States. Existing permanent soil gas probes “provided an opportunity to collect active and passive soil gas data for site evaluation and comparative purposes.
- Contaminants of concern (COCs): volatile organic compounds (VOCs), particularly tetrachloroethene (PCE).
- This investigation was conducted during the site-characterization stage for this project. Sampling was conducted in two stages. The first, completed between June and December 2006, included a limited passive soil gas sampling scope (to compare to active methods), followed by active soil gas sampling. The second stage included a Site-wide passive soil gas investigation to delineate source areas and focus any subsequent intrusive sampling.
- The soil gas probes were installed (depths of 1, 5, and 8 feet below ground surface [bgs]) in June 2006 and subsequently sampled using active methods, including Tedlar bags with vacuum box or evacuated canisters and sorbent tubes collected using a low-flow air pump. For comparison of seasonal variability, a second active sampling event was performed in December 2006, and included the collection of soil gas samples from select probes using Bottle-Vac™ sampler (also known as the “bottle technique”). Upon completion of the two active sampling events, passive soil gas samples were collected from 2.5-foot borings drilled at the same locations as the probes using AGI Universal Samplers. Only the 5-foot active soil gas samples were used for the comparison study.
- The Site-wide passive soil gas investigation, completed as the second stage of this study, was performed in March 2008 and involved no further active sampling methods.

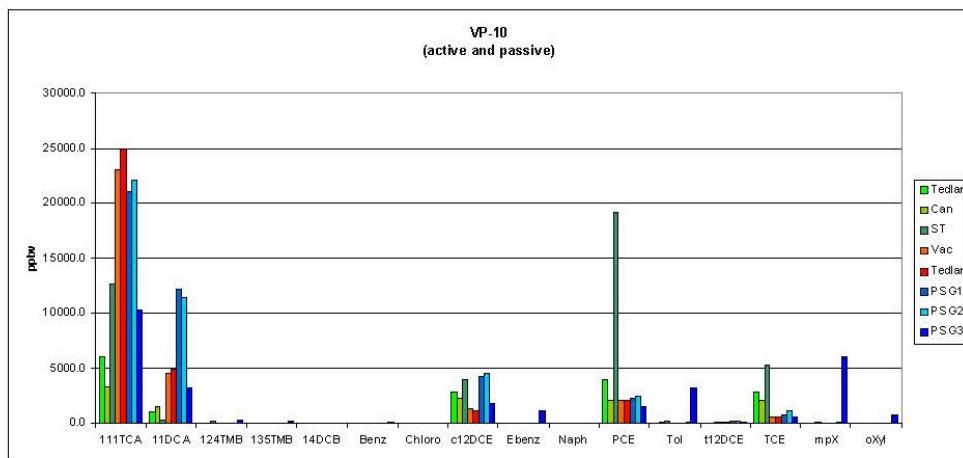
A.1.4 Remedial Phase

The objective of this investigation was initially to compare active and passive soil gas sampling methods at the Site. Once the data was shown to be comparable, the objectives of the site-wide investigation were to delineate source areas laterally and create more focus for any subsequent intrusive sampling.

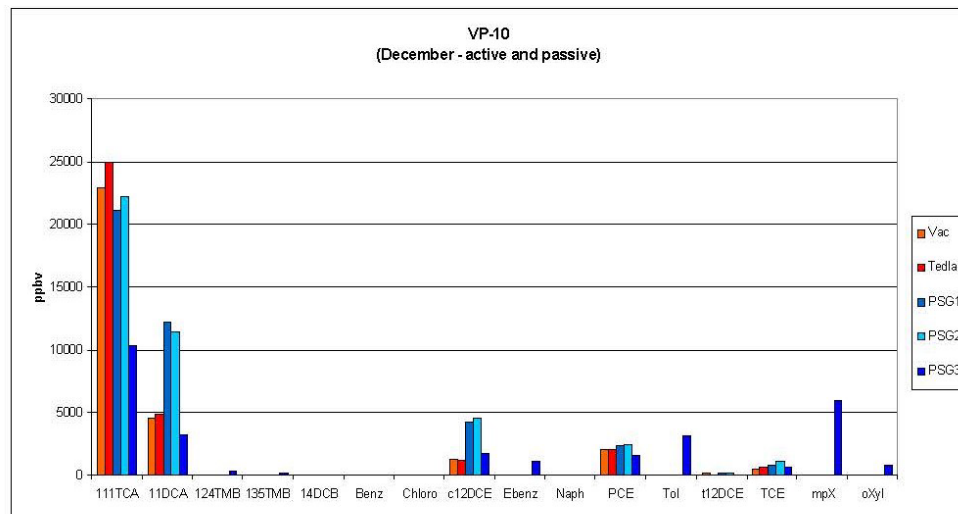
A.1.5 Outcome

Initially, the passive data was compared to both the June and December active data. It was apparent that variability existed in the active method results. However, when comparing only the December data, the variability was much less significant. Spatial variability was also observed at sampling locations where the active and passive probe were separated by only a few lateral feet. However, in general, the passive and active data compared well to each other, validating the use of passive sampling to report soil gas concentrations.

VOC Data From All Sampling Events



VOC Data From December Sampling Event



The Site-wide passive sampling was successfully able to delineate PCE in shallow soil gas, allowing future investigations to be more targeted when identifying additional soil, groundwater and permanent vapor sampling locations. The figure below presents the soil gas results for PCE. Since then, additional soil vapor, soil, and groundwater data has been collected that generally correlates with the passive soil gas sampling investigation.

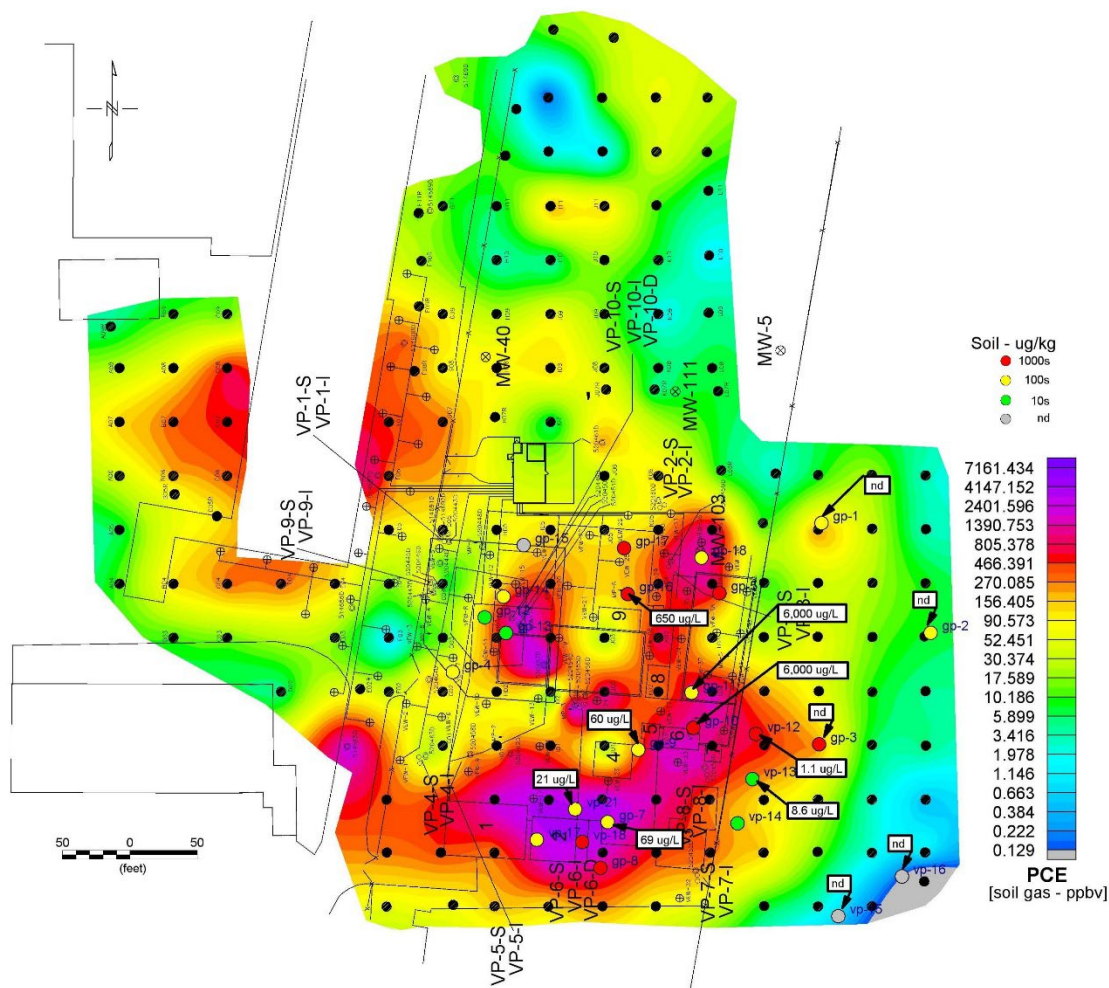


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A.1.6 References

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