



Vapor Analysis Method

Without The Use of Tedlar Bags

Soil vapors from vapor intrusion pathways are an excellent opportunity to use SM 10 and AM 4.03

Microseeps recognized the need for a sampling method specifically for collecting soil vapor samples from soil gas surveys and from soil vapor extraction (SVES) systems.

Currently there are two methods that are normally referenced when SVES or sampling of vapor samples is required. They are Method 18 – Tedlar Bags and Method TO 14 or 15 -- Summa canisters. Method 18 is basically a stack testing method and TO 14&15 are methods for ambient air.

None of these methods was developed specifically for soil vapor sampling. Rather than using either of these methods for sample collection for SVES, Microseeps' developed Method SM 10 specifically for this purpose.

Microseeps' method SM 10 was designed to capture a discreet vapor sample and to provide the highest degree of confidence that the analytical result will give an accurate representation of the efficiency of the system. Vapor intrusion pathway investigations and SM 10 are a perfect match.

Analytical method AM 4.03 utilizes glass vials as the sample receptacle as opposed to the commonly used Tedlar bags or Summa canisters.

The Advantages of Using Glass Vials

- **Holding Time** – Samples collected in bags must be analyzed within 48 hours. The holding time for glass vials is the industry standard, 14 days.
- **Shipping** – Tedlar bags must be shipped overnight, limiting sampling to Monday through Thursday unless special arrangements are made for Saturday analysis. With glass vials, overnight shipping is unnecessary.
- **Dependability of Analyses** – When a sample is taken using a bag, it is adsorbed on the sampling port and also the inner wall of the bag. With vials there is still adsorption, but during the analytical process the vial is heated to approximately 75 degrees centigrade. This is more than enough to desorb all constituents and make them available for the analytical process.
- **Sample Collection** – Using a disposable syringe you merely secure the sample from the sample port and transfer it to the 22cc glass vials. We supply all of the necessary equipment with the vials. None of this equipment is reused, therefore there is no costly clean up.
- **Cost** – Two glass vials per sample are sent out in each kit and a duplicate sample is taken at each sample point. If there is any reason to believe that the sample result is not correct the duplicate sample can be analyzed. It is cost prohibitive to take a duplicate sample with either a Tedlar Bag or a Summa Canister.

Glass Vial / VOC Recovery Study Using AM 4.03

Microseeps' research showed no significant VOC loss using glass vials

Compound Name	Day 1	Day 4	Day 7	% Recovery After 7 Days
Vinyl Chloride	1027.8	1002.3	978.5	95.2
Bromomethane/ Chloroethane	28.05	28.20	27.83	99.2
1,1,Dichloroethylene	11.07	11.18	10.99	99.3
Trans-1,2 Dichloroethylene	11.02	10.97	10.6	96.2
1,1 Dichloroethane	11.00	11.11	10.96	99.3
Chloroform	9.07	9.11	8.91	98.3
1,1,1 Trichloroethane	8.13	8.23	8.08	99.4
Carbon Tetrachloride	8.81	6.83	8.77	99.4
1,2 Dichloroethane	10.92	10.66	10.55	97.0
Trichloroethylene	8.02	6.15	7.81	97.4
1,1,2 Trichloroethane	7.92	7.72	7.68	96.4
Tetrachloroethylene	6.01	5.59	5.36	89.5

