Using Vapor Pins® for Vapor-Intrusion Assessments

The Vapor Pin® has a number of applications, but it was designed to collect soil gas for vapor-intrusion assessments, and it does it well. The soil gas directly beneath a building floor, "subslab" soil gas, best represents the risk of vapor-intrusion, because it is the next closest thing to indoor air. But unlike indoor air, subslab soil gas generally does not contain background contamination from indoor or outdoor sources. Subslab soil gas more representative of indoor conditions than deep soil gas, and it's easier to collect using hand-held equipment.

Subslab soil gas is normally collected prior to sampling indoor air. One or more Vapor Pins® are installed by drilling 5/8-inch holes through the floor with a hammer drill, and installing them, as described in the Standard Operating Procedure (SOP) _____. For a one-time sampling event, one can use brass Vapor Pins® installed in the stick-up configuration. If repeat sampling is needed, we recommend installing stainless-steel Vapor Pins® in the flush-mount configuration.

After installing the Vapor Pin® and allowing soil gas to equilibrate for two hours or more, connect the Summa canister, TO-17, or other sample container to the Vapor Pin®, purge the dead space in the sample train, and collect the sample, as described in the SOP _____. As discussed in the memorandum "Using Vapor Pins® for Source Characterization", vapor sources are often located away from obvious locations, such as buried tanks and degreasing areas, so we recommend conducting field screening at additional locations when working near potential source areas.

Always follow the appropriate guidance when assessing vapor intrusion. Some regulatory agencies allow or encourage the use of the Vapor Pin®, but some guidance might preclude the use of some devices.