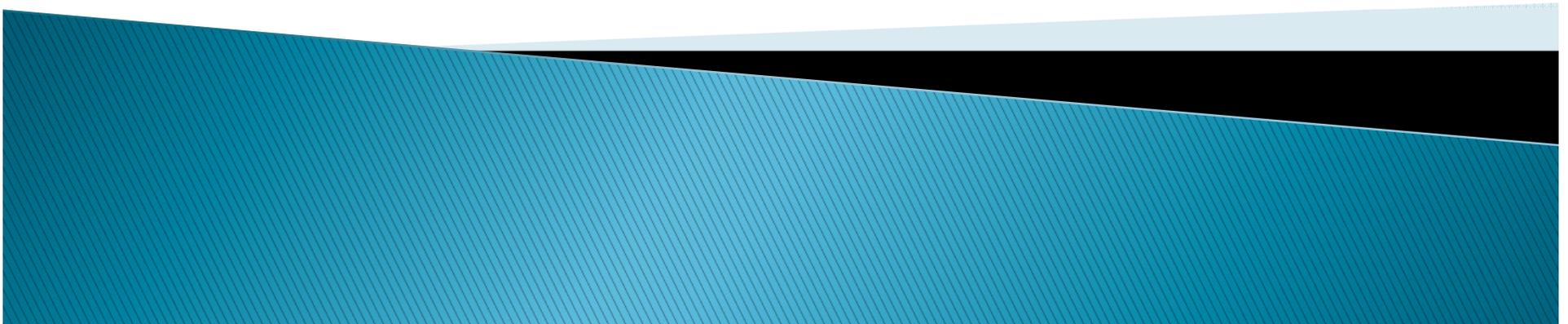


# **DEH Regulatory Update: Vapor Intrusion**

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# Current Guidance

## SAM Manual Section 5

- ❑ The Vapor Intrusion Section (IV.) was updated in August 2011
  
- ❑ Areas Covered
  - ❑ Soil Vapor Sampling (Sampling Methods, Procedures and Laboratory Requirements)
  - ❑ Direct Measurement of Vapor Flux



# Passive Soil Gas Sampling

Passive methods are for qualitative and quantitative applications for assessment purposes only.

- ❑ Quantitative applications:

- ❑ The uptake rate must be experimentally measured and reported in a scientific publication.

- ❑ The uptake will generally require verification prior to use in estimating exposure point concentrations.

- ❑ The use of passive sampling data for risk assessment purposes must be pre-approved by DEH.



# Active Soil Gas Sampling

- ❑ Active methods are primarily used for quantitative applications including for assessment and risk assessment purposes.
- ❑ Provides guidance on:
  - ❑ Probe installation including method and materials
  - ❑ Collection depth
  - ❑ Equilibrium times before purging and sampling.
  - ❑ Leak testing
  - ❑ Sampling Containers



# Indoor Air Sampling

The reader is referred to guidance by DTSC and ITRC regarding sampling procedures (duration, number of events, locations, sampling equipment, analyte list and ambient (outdoor air samples)).

## DTSC

Title: Guideline for the Evaluation and Mitigation of Subsurface Vapor Intrusion to Indoor Air, Oct 2011

Web: [www.dtsc.ca.gov/AssessingRisk/upload/Final\\_VIG\\_Oct\\_2011.pdf](http://www.dtsc.ca.gov/AssessingRisk/upload/Final_VIG_Oct_2011.pdf)

## ITRC

Title: Vapor Intrusion Pathway: A Practical Guideline, Jan 2007

Web: <http://www.itrcweb.org/Guidance/GetDocument?documentID=104>



# Soil Vapor Surveys Design

## □ Petroleum Related Sites

- Because petroleum products, such as gasoline and diesel, are complex mixtures containing a wide variety of different hydrocarbons, the appropriate analytical measurements depend upon the product type as follows:
- Aromatics (BTEX) and naphthalene: Method 8260, TO-15, or TO-17.
- MTBE and Oxygenates: Method 8260, TO-15, or TO-17



# Soil Vapor Surveys Design

## □ Petroleum Related Sites (Continued)

□ Methane: The use of gas chromatography method with a flame detector, such as 8015 modified.

□ PAHs: Due to low vapor pressures, these compounds cannot be detected by active soil gas methods (except for naphthalene).

□ For Health Risk Assessments the sampling frequency is generally two sampling events, following probe installation.



# Soil Vapor Surveys Design

- Dry Cleaners & Industrial Facilities with Non-Petroleum VOCs

- Not all compounds at a facility may be detectable by soil vapor methods depending upon their vapor pressures.

- For quantitative evaluations, the appropriate analytical methods are 8021, 8260, TO-15, or TO-17.

- The detection limits, calibration procedures, and other QA/QC requirements are presented in Section 5.IV.B.



# Since the last update of the SAM Guidance

- ❑ DTSC finalized their December 2004 Vapor Intrusion Guidance document in October 2011
- ❑ EPA's Office of Solid Waste and Emergency Response (OSWER) issued Draft Vapor Intrusion Guidance in November 2002. This document did not address petroleum vapor intrusion related to underground storage tanks (USTs).
- ❑ EPA's Office of Inspector General (OIG) released an evaluation report in 2009 on EPA lack of finalizing Vapor Intrusion Guidance. As a result of this review EPA committed to finalizing two separate documents.



# Since the last update of the SAM Guidance

These documents are:

- ❑ *Guidance for Addressing Petroleum Vapor Intrusion at Leaking Underground Storage Tank Sites (Petroleum releases) – Draft releases for public review in April 2013. Final ?*
- ❑ *Final Guidance for Assessing and Mitigating the Vapor Intrusion Pathway from Subsurface Sources to Indoor Air (Non-petroleum releases) – Draft ? Final ?*

