

## SVE Pilot Testing Workplan Guidance

**This document is meant as NMED-PSTB staff guidance and is intended to be modified as appropriate.**

SVE pilot test workplans should include the following:

- Brief narrative description of:
  - the intent/goal(s) of the pilot test
  - the pilot testing unit:
    - Blower specs (including brand, type, motor size, operational RPMs, and respective performance curves for vacuum operation)
    - Vapor treatment strategy
  - Instrumentation used to measure vacuum/pressure
    - manometers/U tubes or
    - vacuum/pressure gauges
  - Instrumentation typically used to measure flow include but is not limited to:
    - Pitot tube with a differential pressure gauge and chart or calculation as appropriate to convert to flow
    - Direct reading differential pressure flow meters ( with readings in acfm) or
    - Variable area flow meters (e.g rotameters) that measure scfm directly

When selecting type of flow meter consider under what conditions it will be used (e.g. diurnal effects, moisture, high vacuum applications etc.) and its sensitivity to turbulence effects. The workplan should describe the limitations and advantages of using the selected flow meter and how the limitations will be corrected for when calculating the flow rate.
  - Instrumentation used to measure temperature
  - Instrumentation used to measure absolute pressure e.g. an altimeter (not an aneroid gauge that measures barometric pressure corrected to sea level)
  - Methodology for measuring concentrations of VOCs include a description of field screening and laboratory methodologies, frequency of sampling, sample collection protocol, and sampling locations. NMED-PSTB requires that Summa canisters be used when appropriate.
  - Methodology for measuring concentrations of fixed gases include same as described for VOCs above.
  - Pilot testing protocol:
    - Wells to be tested
    - Construction of new SVE test and observation well(s): including drilling methods and well materials.
    - Parameters to be measured including frequency and interval between recordings/measurements
    - Duration of pilot tests
    - Step testing description
    - Data recording/strategy (e.g. hand recording, data logger, etc.)
  - Supplemental fuel use information if appropriate
  - Health and safety planning with consideration to public safety and site security (including temporary fencing and lighting if appropriate).
- A Process and Instrumentation Diagram (P&ID) of pilot testing unit depicting the following:
  - Piping
  - Moisture/vapor separator tank
  - Blower
  - Vapor treatment
  - Sampling locations
  - Supplemental fuel source

- Flow meters, vacuum and temperature gauges
- Power source
- Indicate on P&ID where measurements will be taken, including but not limited to the following:
  - Well effluent concentrations (field instrument measurements and bag or canister samples for lab analysis)
  - Temperature pre- extraction blower (well effluent temperature). Temperature should be taken where the flow and vacuum measurements are taken. Ideally temperature, flow and vacuum measurements should be taken at wellhead.
  - The limitations and advantages of the selected temperature gauge and its proposed location should be include, but not be limited to, a discussion of the following:
    - Diurnal effects
    - Extent of moisture in vapor stream
    - High vacuum SVE applications, which can cause upwelling and increase the relative humidity in vapor stream.
  - Test well effluent flow
    - Consider the sensitivity of the flow meter selected wrt turbulence effects relative to installation location
  - Test well vacuum
  - Dilution flow contribution
  - Applied vacuum at blower inlet if conducting a multi-well SVE pilot test.
  - Fixed gases effluent vapor concentrations
- Plan view of the site depicting SVE test wells and observation wells.
- Cross-section schematic depicting screened intervals for test well and observation wells in relation to the subsurface contamination and geology including current ground water levels.
- Field Data Sheet (See SVE Pilot Testing Reporting Requirements guidance document for details.)
- Statement of Qualifications of staff who will be performing the pilot test.
- A list of the SVE references used to support the design and scope of the pilot test.