

**TECHNICAL REVIEW AND EVALUATION  
OF THE SOIL VAPOR EXTRACION UNIT GENERAL PERMIT**

**I. INTRODUCTION**

The Soil Vapor Extraction Unit (SVEU) General Permit is a permit for a facility class (Soil Vapor Extraction Units) that contains 10 or more facilities that are similar in nature, have substantially similar emissions, and would be subject to the same or substantially similar requirements. Equipment that is covered under the general permit will be required to have an “Authorization To Operate” (ATO). The ATO will identify the piece of equipment by having the manufacturer, date of manufacture, maximum capacity, and serial number or equipment number along with the hours of operation limitation.

This General Permit allows for portable SVEUs to move to other locations statewide. The Permittee that applies for an ATO under the general permit shall pay the Department a flat application fee of \$500 with the submittal of the permit application. The Permittee must also continue to pay, for each calendar year, the applicable administrative or inspection fees as described in the Arizona Administrative Code Title 18, Chapter 2, Article 5, Section 511 (A.A.C. R18-2-511).

**II. PROCESS DESCRIPTION**

Soil vapor extraction units extract contaminants (typically solvents or gasoline) from below ground for treatment above ground. First, one or more extraction wells are drilled into the contaminated soil, and a blower or vacuum pump is attached. The vacuum pump pulls air and vapors through the soil and up to the ground. The air and vapor extracted from the ground is then directed to an air-water separator to remove moisture, and then treated to remove any harmful levels of contaminants. Treatment may be by either filtration or combustion. The treated air and remaining contaminants are then released to the atmosphere.

**III. APPLICABLE REGULATIONS**

The Department has identified the applicable regulations that apply to the soil vapor extraction system. Table on the following page summarizes the findings of the Department with respect to the regulations that are applicable to SVEU.

Equipment	Control Equipment	Applicable Regulation	Verification
Soil Vapor Extraction System	Thermal Oxidizer or Catalytic Converter or Carbon Adsorption	A.A.C. R18-2-702.B.3 and -730	There are no specific standard for SVEU in Arizona Administrative Code. This standard is applicable to all un-classified sources.

**IV. PERIODIC MONITORING, RECORDKEEPING AND REPORTING REQUIREMENTS**

**A. Operating Limitations**

1. The Permittee will retain records of all required monitoring data and support information for a minimum of five years from the date of generation in accordance with Section XI of Attachment “A”.
2. The Permittee will submit reports of all monitoring, record keeping, and testing activities

required by Attachment “B” performed during the compliance term as specified in Condition VII of Attachment “A”.

**B. Thermal/Catalytic Oxidizer Requirements**

1. The Permittee will install and maintain a temperature recording device with an accuracy of  $\pm 5$  degrees Fahrenheit ( $^{\circ}\text{F}$ ) to measure and continuously record the process temperature of the thermal or catalytic oxidizer.
2. The Permittee will measure flow at the stack of the thermal or catalytic oxidizer to obtain the total actual flow rate of gases exiting the unit.
3. At each location at which the SVEU is operated, the Permittee shall take a representative grab sample of the inlet and outlet vapor stream of the SVEU device upon startup at each new location, and then once every two weeks for the first six weeks, then monthly for the following six months, and then quarterly thereafter
4. The Permittee will test for halogenated compounds and VOCs. The analysis shall be conducted in accordance with EPA Reference Method 8260B, EPA Method TO -15, or equivalent method as approved by Director.
5. The Permittee will calculate and record a 12-month rolling total of VOC emissions at the end of each month.

**C. Carbon Adsorption Requirements**

1. If carbon adsorption is used, the Permittee will measure flow at the stack of the carbon adsorption unit to obtain the total actual flow rate of gases exiting the unit.
2. The Permittee will maintain records of the serial number of each canister of activated carbon, the date each is installed, the position in the series (first, second, or third stage position, etc.) and the date removed from service.
3. The Permittee shall calculate and record a 12-month rolling total of VOC emissions at the end of each month.