

ARCHIVE: Archived due to the 2009 rule revision. Refer to VA30008.09.001 for the updated document.

TITLE: Applying Petroleum Standards for Residential and Commercial Properties Under the Voluntary Action Program

DATE

EFFECTIVE: August 2003

HISTORY: Update of VA30008.00.002 - Revision was necessary to conform to rule revisions that became effective on October 21, 2002. However, the archived TDC document remains accurate under the 1996 VAP rules.

KEYWORDS: Applicable standards, petroleum, residential land use, commercial land use, Bureau of Underground Storage Tank Regulations (BUSTR)

RULE/

AUTHORITY: Ohio Administrative Code (OAC) 3745-300-07, 3745-300-08, 3745-300-09; Ohio Revised Code (ORC) 3746.04(B)(1); see also ORC 3737.882(B), OAC 1301:7-9-13 for applicable petroleum standards.

QUESTION: How are the BUSTR generic standards for petroleum at residential and commercial properties applied under the Voluntary Action Program?

ANSWER: Under Ohio EPA's Voluntary Action Program (VAP), the generic petroleum standards for residential and commercial properties are the generic standards developed by the State Fire Marshal, Bureau of Underground Storage Tank Regulations (BUSTR) by rule under ORC 3737.882(B). VAP's statute, ORC 3746.04(B)(1), and generic standards rule, OAC 3745-300-08, directs VAP's use of BUSTR's generic numerical standards for petroleum at residential and commercial properties.

The BUSTR generic standards apply to petroleum releases at residential or commercial properties, regardless of the petroleum source. For example, the BUSTR generic standards apply to petroleum from aboveground storage tanks and former manufacturing processes as well as from underground storage tank (UST) systems regulated by BUSTR. The use of BUSTR's standards in a voluntary action occurs within the VAP rule framework, as explained below.

VAP-eligibility and identified areas. The BUSTR generic standards

may be used under the VAP as long as the property is VAP-eligible. ORC 3746.02 and OAC 3745-300-02 provide the conditions which render a property ineligible to participate in the VAP. For example, a property must first receive a “no further action” determination from BUSTR for each petroleum UST system subject to regulation by BUSTR to proceed in the VAP. After BUSTR’s no further action determination, the UST system area would be considered a VAP identified area pursuant to OAC 3745-300-06(F) due to the broad criteria for the designation of identified areas. VAP certified laboratory data is required to demonstrate compliance with the BUSTR generic standards, as with other applicable standards under the VAP.

BUSTR’s generic standards. BUSTR considers its “Tier 1 action levels” as defined in OAC 1301:7-9-13(I) to be the generic numerical standards for petroleum at residential and commercial properties in the VAP. Also, BUSTR applies distillate-specific soil saturation limits for “free product” (defined as a separate liquid hydrocarbon phase with a measured thickness of greater than one one-hundredth (0.01) of a foot or at levels above soil saturation limits). Refer to BUSTR’s fact sheet, *Providing Generic Numeric Petroleum Standards for Cleanups Under the Voluntary Action Program* issued April of 2003, for more information regarding the generic standards. The fact sheet is available at: <http://www.com.state.oh.us/odoc/sfm/bustr>.

Applying standards to complete exposure pathways. The BUSTR petroleum standards are applied in a voluntary action much like other VAP standards. The standards are applied as part of the property’s Phase II Property Assessment. Under the Phase II Property Assessment, the complete exposure pathways for the property are determined in accordance with OAC 3745-300-07(D)(2).

An exposure pathway that is not included within the BUSTR Tier 1 action level tables may be reasonably anticipated to be complete pursuant to OAC 3745-300-07(D)(2), e.g., no applicable BUSTR generic standards were developed for the surface water pathway. In such cases, the volunteer can either derive the property’s standards for that pathway through a VAP property-specific risk assessment conducted in accordance with OAC 3745-300-09 or apply VAP generic standards in accordance with OAC 3745-300-08.

BUSTR has generic soil standards for the following pathways:

- direct contact with soil,
- soil to ground water used for drinking water use,

- soil to ground water used for non-drinking water use, and
- soil to indoor air.

BUSTR also has generic ground water standards for:

- ground water ingestion, and
- ground water to indoor air.

Chemicals of concern identification and assessment. The chemicals of concern (COCs) including petroleum release constituents at a voluntary action property are identified using VAP rules, for example, OAC 3745-300-06(D)(4) and 3745-300-07(D)(1)(c) (e.g., considering release history, facility operations, typical constituents). As with other voluntary actions, the volunteer assesses the petroleum COCs as part of the Phase II Property Assessment, in accordance with OAC 3745-300-07(D)(6), to determine concentrations of the COCs in the property's environmental media. Further, VAP rules call for the volunteer to assess the COCs to determine the applicable standards for each complete exposure pathway and identified area at the property. See OAC 3745-300-07(D)(5).

The petroleum COCs included in BUSTR's standards. The COCs for which BUSTR provides generic standards are:

Benzene, Toluene, Ethyl-benzene, Total Xylenes (BTEX)
Methyl Tertiary Butyl Ether (MTBE)
Benzo(a)anthracene
Benzo(a)pyrene
Benzo(b)fluoranthene
Benzo(k)-fluoranthene
Chrysene
Dibenzo (a,h)-anthracene
Indo(1,2,3-cd)pyrene
Naphthalene

For a petroleum-only release (without co-mingled hazardous substances) within an identified area (IA) at a residential or commercial property, the BUSTR generic standards are limited to the above COCs. If any other petroleum COCs are detected in the petroleum release, only the BUSTR generic standards need to be applied to the petroleum release. If BUSTR generic standards are not applied to the petroleum release, the additional petroleum COCs

would need to be assessed and VAP standards derived through a property-specific risk assessment. See OAC 3745-300-09(D)(3)(a).

Property-specific information needed to apply standards. The application of BUSTR's standards requires use of the property's soil type (sand/gravel, silty/clayey, and clay/silt) and the depth to ground water (<15 feet, 15-30 feet, 31-50 feet and >50 feet). See the BUSTR generic standards (tier 1 tables) under OAC 1301:7-9-13(l)(3).

Ground water standards - BUSTR's and VAP's. As with soil standards, the VAP rule requirements for COC identification and assessment are performed for ground water media in a voluntary action; BUSTR's generic standards for ground water may then be applied as the applicable standards. Choosing the applicable BUSTR ground water standard depends on whether the ground water meets BUSTR's definition of drinking water or non-drinking water. See OAC 1301:7-9-13(H). Depending on whether BUSTR defined the ground water as drinking or non-drinking water, the BUSTR standards may then be pulled from the applicable OAC 1301:7-9-13(l)(3) table and applied to the VAP point of compliance. For example, the applicable BUSTR standard for benzene, for ground water to indoor air, would be applied to the applicable VAP point of compliance (see Point of Compliance, below).

To determine other applicable VAP standards for petroleum in ground water, the volunteer assesses whether ground water contains concentrations of COCs in excess of VAP unrestricted potable use standards (UPUS) in accordance with OAC 3745-300-07(D)(3). If any COC concentration exceeds UPUS, the ground water is then classified in accordance with OAC 3745-300-07(D)(8) and 3745-300-10(C). If ground water COC concentrations meet UPUS, OAC 3745-300-07(D)(4) and 3745-300-10(E) call for a demonstration that the ground water will continue to meet UPUS.

In scenarios where ground water meeting UPUS falls under BUSTR's definition of non-drinking water (instead of drinking water) the VAP provision calling for the continued protection of the clean ground water, OAC 3745-300-10(E), applies to the VAP cleanup regardless of the BUSTR definition.

The applicable VAP ground water response requirements within OAC 3745-300-10(F) must be complied with for property to meet VAP applicable standards. For example, OAC 3745-300-10(F)(4) calls for ground water classified as VAP Class A (without an urban setting

designation) to meet UPUS at the property boundary. Because OAC 3745-300-10(F)(4) considers protection of the potable uses of groundwater, BUSTR generic standards for drinking water or VAP UPUS may be used for UPUS under that rule. However, the BUSTR standards for non-drinking water would not be considered UPUS as the BUSTR standards presumes no potable use.

Land use definitions. When applying BUSTR's generic standards in the VAP, the land use category for the property is determined using the VAP rule, namely OAC 3745-300-08(B)(2). The BUSTR generic standards apply to both residential and commercial land uses.

Combined land uses. Under the VAP, the generic soil standards for industrial land use are in OAC 3745-300-08. For properties with combined commercial and industrial land use, the BUSTR petroleum standards apply to the commercial use and VAP standards apply to the industrial use. As a practical matter, the more protective standard determines the needed VAP remedial activities.

Free product removal. As noted above, BUSTR provides generic standards for free petroleum product at a property. BUSTR applies TPH, BTEX, or MTBE soil saturation limits depending on the distillate. The BUSTR standards call for the removal of all free product to the maximum extent practicable, regardless of depth. See, e.g., OAC 3701:7-9-13(G)(2), BUSTR's fact sheet, *Providing Generic Numeric Petroleum Standards for Cleanups Under the Voluntary Action Program*, April, 2003, and Memorandum, *Revision of BUSTR Policy Regarding Soil Saturation*, July 2003.

Points of compliance. As a general rule, the point of compliance (POC) for the property's demonstration of compliance with standards is determined under the VAP, by OAC 3745-300-07(G). The POC is from the surface to at least 2 feet for direct contact to soil in a commercial or industrial land use, deeper for other pathways pursuant to OAC 3745-300-07(G). For example, BUSTR soil standards may be applied to the depth necessary to address a complete exposure pathway to soils for the construction or excavation activities defined in OAC 3745-300-08(B)(2)(c). Regarding free petroleum product removal, the point of compliance is the depth at which the petroleum exists.

Standards derived through a property-specific risk assessment. Deriving standards through a VAP property-specific risk assessment remains an alternative to use of generic standards for any land use.

OAC 3745-300-09 governs the performance of VAP property-specific risk assessments. The NFA letter for a property needs to identify the applicable standards relied upon for the property, in accordance with OAC 3745-300-13(E).

Multiple chemical adjustment of petroleum standards. The BUSTR generic standards under OAC 1301:7-9-13 are not adjusted for multiple chemicals, and therefore the BUSTR generic standards are not considered within a multiple chemical adjustment of VAP standards. In other words, when VAP rules OAC 3745-300-08 and 3745-300-09 require adjustment of certain COCs, the adjustment would not include the multiple petroleum COCs for which the BUSTR generic standards apply. In a situation where a volunteer uses the BUSTR generic standards for the petroleum COCs at a property's identified area and VAP standards (e.g., VAP generic standards for hazardous substances, property-specific risk assessment derived standards, or background values) for the other COCs, the BUSTR standards would not be considered within the multiple chemical adjustment of the property's remaining standards.

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For any questions concerning this issue, please contact the VAP central office at (614) 644-2924.