

ARCHIVE: Archived because revisions made to VAP rules in 2002 in OAC Chapter 3745-300 render this guidance unnecessary. However, this document is accurate under the 1996 VAP rules.

TITLE: When to Evaluate the Risks Posed to Construction and Excavation Workers at a VAP Property

DATE

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RULES: OAC 3745-300-09

QUESTION: When should evaluation of a construction worker receptor population in the risk assessment supporting a No Further Action (NFA) letter, including whether such an evaluation is necessary at a particular property, be performed?

ANSWER: There are some aspects of a Phase II Property Assessment and Risk Assessment which vary considerably among the properties which are undergoing Voluntary Actions. Sometimes, steps that are important in the successful evaluation of one property are not necessary for the evaluation of another. This is a result of the wide variety of properties which have been and are being brought through the VAP. Many attributes about a property affect how it will be assessed and how compliance with applicable standards will be demonstrated. These attributes include the nature and release history of the contamination at the property, and which remedies are being utilized to make the property protective of human health and the environment.

From a risk assessment standpoint, construction work activities are notable since they may involve worker exposures of a significantly greater intensity and a notably shorter duration than those exposures determined for the general commercial and industrial worker populations. For instance, construction workers are prone to high rates of dermal contact with soil, incidental ingestion of soil, and inhalation of windblown dust particles. Construction workers are also likely to be exposed to soils from depths two feet or more below the surface, since construction activities include excavating, grading, drilling and other invasive activities. Additionally, construction workers may also experience exposures to shallow ground water at a property when ground water is found at the depths within which the excavating, grading and drilling activities occur.

As one might expect, the prediction of construction activities, as well as the construction worker exposures resulting from these activities, are difficult to determine generically for all properties. As a result, the VAP Generic Numerical Standards rule-writing subcommittee did not develop such standards generically. The VAP risk assessors acknowledge, however, that direct contact soil standards consider for the same exposure pathways as those encountered by a construction worker in contact with soils on the property. The VAP direct contact soil standards were derived by the modeling of many exposure scenarios, some of which included the high contact rate scenarios similar to those encountered by construction workers. Thus, as a rule, soils which have been shown to be protective of residential, commercial or industrial direct contact standards as defined in the Generic Numerical Standards Rule are assumed to be protective of construction worker activities of a high intensity and short duration. This assumption may not be appropriate for some construction work scenarios marked by activities of both a high intensity and prolonged duration.

So while it is safe to assume that soils meeting direct contact soil standards at a property are protective for ordinary construction worker activities, it remains to be determined whether soils which have not been demonstrated to be in compliance with direct contact standards pose any unacceptable risks to construction workers. Contaminated soils are often found outside the point of compliance for direct contact soils, and still require assessment as with regard to the property-specific determinations described in the Phase II Property Assessment Rule: the identification of receptor populations described in Paragraph (D)(1)(g) of Rule 3745-300-07 of the Ohio Administrative Code (OAC), and the identification of complete exposure pathways described in Paragraph (D)(2) of Rule 3745-300-07 of the OAC. At many properties, complete exposure pathways to a construction worker receptor population may exist and thus would have to be evaluated.

The types of properties where complete exposure pathways to a construction worker receptor population have been identified are often described by one or more common situations. An assessment of the risks posed to the construction worker receptor population should be undertaken in any of the three following circumstances:

- 1. An engineering control is invoked to block or limit exposures to direct contact soils at the property.**

Since the levels of contamination in the soil beneath the engineering control have not been shown to comply with direct contact standards, the exposures to the appropriate receptor populations from those soils should be assessed. This would include the short-term exposures to construction workers resulting from the construction, repair or replacement of the engineering control, and the short-term exposures to other on-property receptors during periods when the engineering control is breached and under repair.

2. A shallow point of compliance is invoked for direct contact soils.

At properties with appropriate institutional controls, a minimum point of compliance of two feet below ground surface must be specified for direct contact soils. Various construction activities occur at depths greater than two feet below ground surface, including basement excavation (which may occur at depths 10 or more feet below ground surface), and the installation and repair of utility lines (often four to six feet below ground surface.) The short-term exposures of construction workers to soils below the direct contact point of compliance should be evaluated, if such excavation activities are not otherwise prohibited in a deed restriction or other institutional control.

3. Seasonally high ground water is found at very shallow depths at the property.

Ground water underlying the property which exceeds the Unrestricted Potable Use Standards (*i.e.*, there is a restriction preventing the potable use of the ground water on the property) must be evaluated for, among other things, other on-property exposures not associated with potable use. If this ground water is found at depths where excavation activities for basements or utilities can occur, the short-term exposures of construction workers to the ground water should be assessed if such excavation activities are not otherwise prohibited in a deed restriction or other institutional control.

It is important to note that a Certified Professional (CP) must determine that applicable standards are met for contamination at the property **at any subsurface location** where it is reasonably anticipated that exposure pathways are complete for identified receptor populations. For example, if it is known or reasonably anticipated that soils at a depth of 18 feet below ground surface will be excavated, the resultant exposures should be assessed in the NFA

letter. Thus, the CP and Volunteer may need to consider exposures to subsurface soils and ground water by construction or excavation workers in situations similar to, but distinct from, the three examples provided above.

An assessment of the risks resulting from short-term exposures to construction or excavation workers as described above may involve the development of applicable standards for the construction worker scenario, and a demonstration of compliance with applicable standards in the risk assessment. Alternatively, the mitigation of any risks to the short-term construction workers resulting from exposures to soils or ground water at the property may be accomplished by the implementation of a Health and Safety Plan (H&SP) for the exposed receptor population. Both the actual H&SP and any approval, monitoring and reporting requirements associated with the H&SP need to be included in the Operation and Maintenance Plan in the NFA letter and in the Operation and Maintenance Agreement finalized before the issuance of a Covenant Not to Sue by the Director of Ohio EPA.

OHIO EPA
CONTACT:

If you have any questions regarding the assessment of risks to construction or excavation workers at a property, please contact the VAP staff at (614)644-2924.