

TITLE: Issues Related to Analysis of COCs with Special Laboratory Considerations

DATE EFFECTIVE: March 2009

HISTORY: New to the Technical Guidance Compendium

KEYWORDS: Hazardous substances; Constituent; Chemical testing method; Chemicals of Concern; 40 CFR Subpart 302.4

RULES: OAC 3745-300-04; 3745-300-07

QUESTION: How does a volunteer obtain certified laboratory data for a chemical of concern when no analytical method or technology is available for the particular chemical?

ANSWER: OAC 3745-300-07(E)(3) requires a volunteer to identify the Chemicals of Concern (COCs) in the identified areas (IAs) listed in a Phase I property assessment by evaluating the hazardous substances or petroleum that have been used or released on the volunteer's property. OAC 3745-300-07(E)(3)(d) states that the volunteer must obtain certified data for each constituent of a hazardous substance even if an analytical method or technology does not exist for that particular chemical or compound.

For example, if a Certified Professional (CP) has identified the use or potential release on the volunteer's property of silver cyanide, which is a listed hazardous substance in 40 CFR 302.4, then the CP must then quantify a value for the concentration of silver cyanide. However, no method or analytical technology exists at present for the analysis of this chemical, but the VAP Phase 2 rule still requires its concentration to be measured.

OAC 3745-300-04(A)(5) provides for a volunteer to request a certified laboratory to analyze the constituents of a hazardous substance when a chemical testing method or technology does not exist to measure the concentration of the particular hazardous substance. When a hazardous substance is comprised of more than one constituent, the certified laboratory must obtain certification for each constituent pursuant to this rule, even if the constituent is not listed as a hazardous substance, as defined in OAC 3745-300-01.

Please note that whether these compounds have been released into an aqueous, sediment or soil matrix, analyses of the components can be particularly problematic.

Analyzing each of the components of a particular compound may provide reasonable data if the COC is released into aqueous media, and sufficiently dissociated in quantities that can be analyzed. At a minimum, the dissociation constant of the compound must be known, along with the in-situ pH of the water, and the concentrations of any other known chemicals that may complex or react with it which are also present in the water.

However, when these particular COCs have been released into a soil or sediment matrix, measuring each of a compound's particular components becomes even more problematic. Many factors influence the validity of these results; including weathering, and the reaction of the components with other naturally occurring chemicals or COCs that are present within the soil matrix. Therefore, chemical analyses of the constituents of these compounds that are released to a soil or sediment matrix may not be practical or valid in many circumstances.

Because the nature of this sort of contamination is generally very rare as well as site and chemical specific, the VAP recommends that the CP contact the VAP for guidance and have close communication with their CL when COCs are identified that presently do not have an analytical method or analytical technology.

SUMMARY:

When a volunteer identifies COCs consisting of hazardous substances or petroleum within an IA for which no analytical method or technology is available, the CP is still required to obtain certified analyses for them by requesting the certified laboratory (CL) to analyze the individual constituents of the COCs. The CL must obtain certification for each of the individual constituents even if they are not listed in 40 CFR 302.4 as hazardous substances. However, because of the site specific nature of these COCs, the CP should contact the VAP for guidance prior to requesting the CL to conduct the analyses.

**OHIO EPA
CONTACT:**

For questions concerning this issue, please contact the VAP at (614) 644-4826.