

ARCHIVE: Archived because revisions made to VAP rules in 2002 in OAC Chapter 3745-300 render inaccurate the rule citations in this document (technical content remains accurate under the 1996 VAP rules). Refer to VA30007.03.009 for the updated document.

OHIO EPA

DIVISION OF EMERGENCY AND REMEDIAL RESPONSE VOLUNTARY ACTION PROGRAM

FREQUENTLY ASKED QUESTION #5: Appropriate Application of Yield and Hydraulic Conductivity Data

PURPOSE

This series of fact sheets is intended to provide guidance regarding the Agency's position concerning the interpretation of certain Voluntary Action Program (VAP) rule requirements. The information provided within these documents is based upon Agency evaluation of several VAP no further action letters submitted with the intent of obtaining a covenant not to sue as well as assistance provided for several VAP technical assistance projects.

QUESTION

Once the yield or hydraulic conductivity of a saturated zone has been adequately field-tested, how should a volunteer apply the data to arrive at a value that can be used to classify or identify ground water?

ANSWER

Once a certified professional (CP)/volunteer has identified a saturated zone, determined yield or hydraulic conductivity at an adequate number of locations in the saturated zone, and satisfied any other applicable requirements, the data will need to be analyzed to determine the appropriate designation. For purposes of identifying and/or classifying each ground water zone at the property, the VAP recommends that the central tendency of the data set be used to derive a representative yield or hydraulic conductivity value. For data that fit a normal or a log-normal distribution, the central tendency would be the arithmetic mean and the

geometric mean of the raw data, respectively. The results from any test for the normality or log-normality of the data set distribution should also be included with the demonstration, if appropriate. If the data set distribution has not or cannot pass any appropriate test for normality or log-normality, the central tendency of the data set may also be derived by empirical, non-parametric methods. For example, if a data set of yield values consist of 5 data points placed in order from lowest to highest as 1.1, 2.3, 2.4, 3.1, and 4.2 gpm, then the central tendency could easily be determined as 2.4 gpm.

It is important that sufficient data points are available so that the site or the property is adequately characterized (see FAQs #1 and 3). The VAP does not recommend any generic or fixed number of samples for yield or hydraulic conductivity determination at a property for purposes of the identification or classification of each ground water zone. The appropriate number of samples for yield or hydraulic conductivity determination is affected by the size of the property, the degree of site characterization, and the heterogeneity of the subsurface. Technical assistance is also available to assist the certified professional (CP)/volunteer in making the determination of an adequate number of sample points or in deriving a representative yield or hydraulic conductivity value from a data set.