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## OHIO EPA

### DIVISION OF EMERGENCY AND REMEDIAL RESPONSE VOLUNTARY ACTION PROGRAM

# FREQUENTLY ASKED QUESTION #9: Use of the 95% UCL for Protection of Ground Water Demonstration

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#### 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

How should the 95th percent upper confidence limit (UCL) of the arithmetic mean be used to characterize the concentration of chemicals of concern (COCs) in ground water when determining whether the provisions for protection of ground water meeting unrestricted potable use standards (POGWMUPUS) apply?

#### BACKGROUND

The Phase II Property Assessment Rule provides an opportunity to determine the concentration of COCs in ground water based upon the derivation of the 95% UCL of the arithmetic mean of a data set to determine if the provisions for POGWMUPUS apply. The 95% UCL of the arithmetic mean may be used to determine if concentrations of chemical(s) of concern in ground water meet or exceed the unrestricted potable use standards for purposes of determining if the provisions for POGWMUPUS do or do not apply. Ohio Administrative Code (OAC) 3745-300-07

(D)(3)(a)(iii) allows the volunteer to determine the applicability of POGWMUPUS by comparing the 95% UCL of the arithmetic mean of the ground water concentrations underlying the source area to the unrestricted potable use standards (UPUS). The 95% UCL of the arithmetic mean may be determined from either (1) a data set comprised of analytical results from a series of samples taken from the ground water in or underlying the source area; or (2) a data set obtained from modeling conducted in accordance with OAC 3745-300-07 (G).

## ANSWER

### **For samples from a monitoring well(s):**

There are several interpretations concerning the use of the 95% UCL of the arithmetic mean of a data set comprised of **direct samples from monitoring well(s)** for purposes of determining if the provisions for POGWMUPUS apply. The interpretation recommended here is that it is appropriate to determine the 95% UCL from a data set ( $n=x$ ) comprised of one sample each from a number  $x$  of monitoring wells near, within or immediately down-gradient of the source area.

### **For data points derived from modeling:**

There are several interpretations concerning the use of the 95% UCL of the arithmetic mean of a data set comprised of **data points derived from modeling** for determination of ground water concentrations for purposes of determining if the provisions for POGWMUPUS apply. The interpretation recommended here is that it is appropriate to determine the 95% UCL from a data set ( $n=x$ ) comprised of one modeled data point from each of an  $x$  number of locations.