Florida Department of

Memorandum — Environmental Protection

To: Division of Waste Management Staff
Waste Program Administrators
Contracted Local Programs

From: Jorge R. Caspary, P.G., Director
Division of Waste Management

Date: November 17, 2011

Subject: **Rounding Analytical Data for Site Rehabilitation Completion**

This memorandum addresses the use of laboratory analytical results that are reported for soil, groundwater or surface water samples from contaminated sites at concentrations close to the Cleanup Target Level (CTL) for a contaminant but in more significant figures than were used in establishing the CTL; in such cases rounding the analytical results may be appropriate. Effective November 17, 2011, the Division of Waste Management will authorize rounding of analytical results to the same number of significant figures used to express the applicable CTL. This guidance applies to site rehabilitation being conducted at contaminated sites pursuant to the Division of Waste Management's applicable rule chapters.

BACKGROUND

CTLs referenced in Chapter 62-777, Florida Administrative Code (F.A.C.), include: (1) numerical groundwater standards established in Chapter 62-550, F.A.C.; (2) numerical surface water standards established in Chapter 62-302, F.A.C.; (3) groundwater CTLs derived based upon the minimum criteria specified in Chapter 62-520, F.A.C., and (as applicable) a lifetime excess cancer risk level of 1.0E-6, a hazard quotient of 1, and nuisance, organoleptic, and aesthetic considerations; (4) surface water CTLs calculated using the human health and environmental criteria established in Chapter 62-302, F.A.C.; (5) soil CTLs for human exposure based (as applicable) upon a lifetime excess cancer risk level of 1.0E-6 and a hazard quotient of 1; and (6) leachability-based soil CTLs for protection of the groundwater and surface water that were derived based on the groundwater and surface water CTLs.

Although the development of most standards and CTLs involves algebraic calculations that provide results with several significant figures, most of these have been rounded either for simplicity or as part of a negotiated, public standard-setting or rule-adoption process. Many groundwater and surface water standards were rounded, but because they were established at different times by different people or standard-setting bodies, no formal convention was used. Soil CTLs were rounded to one significant figure if the

value was less than 1, and to two significant figures if the value was 1 or higher, as specified in a footnote to Table II of Chapter 62-777, F.A.C. Consequently, for the purposes of regulatory compliance it is appropriate to round analytical results to the same number of significant figures as the CTL.

The CTLs referenced in Chapter 62-777, F.A.C. are the cleanup goals for each contaminant; however, the Division of Waste Management's cleanup rule chapters indicate that when the CTL is lower than the Practical Quantitation Limit (PQL), the reported PQL (best achievable detection limit) becomes the alternative CTL. The proper applicability of this option for four carcinogenic Polycyclic Aromatic Hydrocarbons in groundwater is discussed in the guidance memorandum '*Quality Assurance and Related Issues*,' dated May 14, 2007, which can be found at http://www.dep.state.fl.us/waste/categories/pcp/pages/pg_documents.htm under 'General Technical.' For a discussion of reported versus target PQLs, and tables listing target PQLs for different matrices, see the '*Guidance for the Selection of Analytical Methods and for the Evaluation of Practical Quantitation Limits*,' dated October 12, 2004, which can be found at http://www.dep.state.fl.us/waste/categories/wc/pages/LinksToGuidanceDocuments.htm.

PROCEDURE

The applicable table(s) of the '*Guidance for the Selection of Analytical Methods and for the Evaluation of Practical Quantitation Limits*' should be checked to determine whether the PQL applies. The scenarios below assume that the PQLs reported by laboratories will not exceed the published target PQLs. Although exceeding the target PQL is acceptable in some circumstances (see page 4 of the guidance document referenced above), those results will not be acceptable to determine whether site rehabilitation completion has been achieved for the contaminant(s) under consideration.

Important Note: Analytical summary tables in reports submitted to the FDEP must list the analytical results as they are reported in laboratory reports; rounding only may be performed prior to comparing those results to CTL tables.

I) If the CTL has one significant figure, the analytical results for that contaminant may be rounded to one significant figure, except that if the PQL applies, the analytical results for that contaminant may be rounded to the number of significant figures in the PQL reported by the laboratory.

II) If the CTL has two significant figures, the analytical results for that contaminant may be rounded to two significant figures, except that if the PQL applies, the analytical results for that contaminant may be rounded to the number of significant figures in the PQL reported by the laboratory.