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Department of Toxic Substances Control

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March 17, 2006

Ms. Yvonne Meeks
Portfolio Manager - Site Remediation
Pacific Gas and Electric Company
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REQUIREMENT FOR THE PREPARATION OF A DATA QUALITY ASSESSMENT TECHNICAL MEMORANDUM, PACIFIC GAS AND ELECTRIC COMPANY, TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA (EPA ID NO. CAT080011729)

Dear Ms. Meeks:

The Department of Toxic Substances Control (DTSC) is requiring Pacific Gas and Electric Company (PG&E) to prepare and submit a Data Quality Assessment (DQA) Technical Memorandum for the current and historical data that has been collected for the PG&E Topock site. It is the intent of the DQA to determine the usability of historical data from the PG&E Topock site and identify a data set that will support the objectives and ultimate decisions of the investigations. The DQA shall be submitted to DTSC no later than May 15, 2006.

A major goal of the Resource Conservation Recovery Act (RCRA) investigation process is to collect data of the right type, quality, and quantity to support site-specific decisions. All data is useful to some degree in the characterization of a site. However, the quality and type of data will vary. Some data may only be useful for screening and assisting in the determination of data gaps and some data is useful for the delineation of the magnitude and extent of contamination and some data may be designed to support site-specific risk decisions. To demonstrate the acceptability and usefulness of various data sets, a DQA should be conducted for the data that has been collected for the Topock Site. This assessment should include all data that will be used for the site investigation, including the historical data collected prior to the current efforts by CH₂MHill.

The DQA should be consistent with the five steps, identified in the Environmental Protection Agency (EPA) guidance that is typically used by a statistician when analyzing a data set for the first time. This does not require an academic approach, but the use of statistical and graphical tools that non-statisticians can apply to a data set.

The DQA should be developed based on the premise that data quality, as a concept, is meaningful only when it relates to the intended use of the data. The DQA should

provide the context in which the data will be used and provide a gauge that will allow DTSC to judge whether or not the data set is adequate for the intended application.

The DQA should allow DTSC to answer a basic question: Can a decision (or estimate) be made with the desired confidence, given the quality of the data set?

The five steps that are typically evaluated in the DQA are:

1. **Review the project objectives [Data Quality Objectives (DQOs)].** If DQOs have not been developed, a statistical hypothesis should be presented and the tolerable limits on decision errors specified.
2. **Conduct a preliminary review of the data.** Generate statistical quantities and graphical representation that describe the data. This review should identify the structure of the data and any patterns or relationships between the data points.
3. **Select a statistical test.** Select the most appropriate procedure for summarizing and analyzing the data based on the preliminary data review. The underlying assumptions of the test should also be specified.
4. **Verify the assumptions of the statistical test.** This step should discuss the underlying assumptions of the statistical test in light of the environmental data.
5. **Draw conclusions from the data.** Perform the calculation of the statistical hypothesis test and document the interferences drawn as a result of the calculations step should identify the usefulness of the data. (i.e. what data can be used to support risk-based decisions?)

This process should result in the determination of the usefulness of the data and identify a data set or subsets of the data that is useful for site characterization, identifying data gaps, or supporting risk-based decisions.

Once the acceptable data set is approved by DTSC, there should not be a need to revisit data quality issues.

The DQA should include the following:

1. An assessment of the data following the National Functional Guidelines. This assessment should include a discussion of the PARCC requirements:
 - a. Precision
 - b. Accuracy
 - c. Representativeness
 - d. Completeness
 - e. Comparability

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2. A discussion of the sensitivity of the data should also be included. This is a discussion of the ability of the data to support decision criteria and is generally a discussion of whether the actual detection limits exceed the decision criteria.
3. The DQA should also identify how each data set is to be used.
 - a. Identify the data that will be used to support the risk assessments
 - b. Identify the data that will be used in site characterization. These data may not need to be such a high quality as what is being used for risk characterization.
 - c. Screening level data used to assist in filling data gaps guide future sampling efforts and provide a general assessment of the potential extent of contamination.
4. The DQA should identify a data set that will be used for consideration in the human and ecological risk assessments and should determine how the data collected during previous investigations will be used to support the risk assessments. It may be possible to include this data set as long as the data meets the validation requirements.
5. The DQA should identify data considered unacceptable for supporting risk-based decisions. This data should be identified and included in a separate database.
6. The DQA should provide a decision logic showing how the various datasets can be used.

If you have any questions, please contact me at (510) 540-3943.

Sincerely,



Norman Shopay, P.G.
Project Manager
Geology, Permitting and Corrective Action Branch

NS/203A

cc: PG&E Topock Consultative Workgroup Members – Via e-mail