DEQ	**Remediation and Redevelopment Division RESCISSION OF POLICY AND PROCEDURE**	DEPARTMENT OF ENVIRONMENTAL QUALITY
Rescinded Date: November 20, 2015	Subject: MERA Operational Memorandum #13 Data Quality Objectives, Review of TDL Excursions, and Evaluation of Laboratory Data	Category: ☐ Internal/Administrative ☐ External/Non-Interpretive ☒ External/Interpretive
	Program Name: Part 201: Environmental Remediation Part 213: Leaking Underground Storage Tanks	Type: ☐ Policy ☐ Procedure ☒ Policy and Procedure
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The former Michigan Environmental Response Act (MERA) Operational Memorandum #13: Data Quality Objectives, Review of TDL Excursions, and Evaluation of Laboratory Data, dated February 18, 1993, is rescinded.

General information contained in former Operational Memorandum #13 has been reformatted as part of the Application of Target Detection Limits and Designated Analytical Methods Resource Materials.

The Resource Materials are available to staff and contractors, and to assist any party in the implementation of response activities or corrective action proposals regulated by Part 201, Environmental Remediation, and Part 213, Leaking Underground Storage Tanks, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended.

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Operational Memorandum #13

February 18, 1993

TO: Environmental Response Division Staff

FROM: Alan J. Howard, Chief, Environmental Response Division

SUBJECT: **MERA Operational Memorandum #13**: Data Quality Objectives,

Review of TMDL Excursions, and Evaluation of Laboratory Data

This memorandum provides guidance in determining compliance with MERA Administrative Rules 299.5511(3)(t), (u), and (v) and 299.5519(2)(f) and (g). Provisions of the data described below will satisfy these rules relating to laboratory data quality in remedial investigation or monitoring data submitted pursuant to MERA. These requirements should be addressed in the overall planning process for site investigation and monitoring. Data quality objectives should be established prior to beginning site characterization and monitoring work. Guidance on establishing appropriate objectives can be found in the U.S. Environmental Protection Agency publications Data Quality Objectives for Remedial Activities, EPA/540/G-87/004 and Guidance for Conducting Remedial Investigations and Feasibility Studies, EPA/540/G-89/004.

The following information and procedures may be reviewed to determine whether data quality objectives have been satisfied. Data should be evaluated at periodic intervals throughout the course of the project and whenever the need to review data is suggested by inconsistent site data, inconsistent split sample data, or if Target Method Detection Limits TMDLs; i.e., the target method detection limits identified in Operational Memorandum #6) are not achieved. Detection limits may be increased by matrix effects or interferences. It may be necessary to evaluate elevated detection limits, considering the number of samples and the amount of excursion above TMDLs, background levels, or Type B criteria. Remember that the TMDLs in Operational Memo #6 are not fixed regulatory standards, but rather are levels which define the low level measurements capabilities in the matrix being analyzed.

Requests to review the information outlined below should be made in writing, including an explanation of the reason that the information is being requested.

I. METHODS - All laboratory methods must be clearly specified, including preservation, preparatory and analytical methods.

a. EPA Reference Methods - such as those identified in Operational Memo #6 are preferred and should be used whenever possible. Lab standard operation procedures (SOPs) based on these reference methods must be provided with the data.

b. Other Methods - other methods must be demonstrated on a case-by-case basis by the party proposing the method to be appropriate. It is prudent to obtain prior approval for non-EPA methods. Any non-EPA method should reflect the best available laboratory technology.

II. HOLDING TIMES/SAMPLE HANDLING - All holding times specified in the method should be strictly followed.

a. The chain of custody should be clearly documented and complete.

b. Date of sample receipt in the lab, date of each progressive analytical procedure, and the name of the analyst performing the procedure should be included in the report.

c. Proper preservation (e.g., temperature and pH) should be checked and maintained and any discrepancies noted.

IIIa. QUALITY CONTROL (QC) DATA - data required by the EPA reference method must be included. Written comments should be included regarding any general difficulty with the procedure or "outliers" in the QC data. In general, when non-EPA methods are used, the following information should be provided, where appropriate.

a. Blanks - Trip and field blanks should be identified. Laboratory reagent blanks (method blanks) should be prepared and analyzed at the appropriate frequency. Target analytes detected in blanks indicate some degree of contamination which could potentially impact the quality of analytical data for associated samples. It is recognized that it is nearly impossible to remove all potential sources of contamination in the laboratory environment, however contamination must be minimized using all means available. When detections of target analytes are encountered in blank samples, the source of contamination must be evaluated and the potential impact of the contamination on data quality should be described in the sample results. As a general rule, method blanks should not contain more than five times the target detection limit for common laboratory contaminants (e.g., methylene chloride and ketones for volatiles analysis, certain phthalates for the semivolatile analyses). Blank subtraction is not permitted.

b. Surrogate Recoveries - Should be performed when appropriate and meet the reference method specifications and statistically derived lab control limits. If surrogate outliers are observed, the laboratory must justify acceptance of the data, or take corrective action to remedy the outlier, including restandardization and re-evaluation of instruments performance parameters. If reanalysis demonstrates a similar surrogate result (outlier), then the laboratory should document the reanalysis and qualify the data. Matrix interference is assumed to be the cause of the outlier.

c. Lab Control Sample Recoveries - Should be performed using prepared "known" samples which have documented concentrations of the analytes of interest. Such recoveries should be within reference method specifications and within lab specific statistically derived control limits.

d. Matrix Spiked Recoveries - Should be acceptable by statistically derived control limits or properly qualified when limits are not met. If matrix spike outliers are observed, the laboratory must take corrective action (e.g., qualify data, reanalyze). If reanalysis demonstrates a similar matrix spike result (outlier), then the laboratory should document the reanalysis and matrix interference is assumed to be the cause of the outlier.

e. Duplicate Analyses - should be acceptable by protocol or lab specific statistically derived control limits.

f. Method Detection Limit (MDL) Calculations - must include data and method used to calculate the MDL according to the method described in 40 CFR Part 136, Appendix B.

IIIb. QUALITY ASSURANCE SAMPLE RESULTS - Quality Assurance (QA) samples are periodically analyzed by laboratories as an external check on performance. Performance on QA samples is an indication of the lab's ability to perform a certain analysis and is potentially useful to evaluate a lab's capabilities. Examples of QA reference sample are EPA, National Bureau of Standards, commercially available standards, and various intercomparison studies.

IV. CALIBRATION DATA - Provide all data and information to demonstrate that the analytical system was properly calibrated at the time of analysis including calibration method, frequency, source of standards, concentration of standards, response factors, linear range, check standards, and check standard control limits.

The following additional factors should be considered in data management and report preparation.

DATA RECORDS RETENTION - Must include properly identified raw data (not summaries) and must be organized to facilitate review. Data and records should be retained for a minimum of seven years.

LABORATORY CERTIFICATION STATEMENT - The following statement is not mandatory; however, laboratories and parties submitting data to ERD should be aware that provision of such a certification statement as part of each data package will facilitate acceptance of the data by ERD. Parties who are evaluating laboratory services can consider the laboratory's willingness to acknowledge data quality through such a statement as a factor in selecting a laboratory. The statement should be signed by the laboratory manager, OQ/OC officer, or person of equivalent responsibility.

" I certify that the data presented in this report meets both the minimum quality assurance standards specified in the referenced analytical methodology and the standards established by this laboratory. I have personally examined and am familiar with the information contained in this report, and based on my inquiry of those individuals directly responsible for obtaining the information, I believe the submitted information is true, accurate and complete. I have described as part of this report any exceptions, outliers and/or problems encountered during the analysis of samples addressed by this report, and have informed the client of the potential impact of these departures from protocol on the quality of the data presented. I am aware that there are significant penalties for knowingly submitting false information, including fines and imprisonment."

This memorandum is intended to provide guidance to Division staff to foster consistent application of the Michigan Environmental Response Act, 1982 PA 307, as amended, and the administrative rules promulgate thereunder. This document is not intended to convey any rights to any parties nor create any duties or responsibilities under the law. This document and matters addressed herein are subject to revision.

Questions about this memorandum should be addressed to George Jackson at 517-335-0223.