



DEPARTMENT OF ENVIRONMENTAL QUALITY
POLICY AND PROCEDURES

SUBJECT: ENVIRONMENTAL SAMPLING

Number: 09-005

Date: July 28, 2000

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ISSUE:

In order to assure acceptable standards for environmental data, the Michigan Department of Environmental Quality (MDEQ) establishes appropriate standards for environmental sampling. These standards address a variety of issues, such as Sampling Plans, Chain of Custody, and holding times.

DEFINITIONS:

Quality Assurance/Quality Control Manual (QA/QC Manual)

Documentation of procedures outlining systematic monitoring and evaluation of the various aspects of a project, or service, or methodology ensuring that standards of quality are being met.

Standard Operating Procedures (SOP)

Established or prescribed methods to be followed routinely for the performance of designated operations or in designated situations.

POLICY:

Sampling Plans

Sampling Plans may vary in complexity based on the conditions warranting the examination of environmental conditions. As a general policy of the MDEQ, at a minimum, all MDEQ sampling plans will take into consideration the following issues:

The necessary sampling design and/or number of samples needed to satisfy associated data quality objectives;

The locations where sampling is to be conducted in order to satisfy associated data objectives;

Preservation methods and holding times of the parameter being sampled;

Shipping considerations;

Laboratory scheduling and possible use of contract laboratories;

Use of on-site mobile laboratory;

Sampling container to suit the parameter;

Special sampling techniques such as required for methanol preservation of volatile organics;

Discrete versus composite sampling;

For sampling effluents/emissions consideration of sampling based on rate of flow;

Consideration of homogeneity of media;

Variability of media sampled based on changes in company operations in processes or shifts;

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- Decontamination of sampling equipment;
- Method detection levels required for parameters;
- Special precautions when dealing with trace chemicals or chemicals commonly used for analysis such as; acids, or methylene chloride;
- Split sampling with responsible parties;
- Chain-of-custody for samples with possible enforcement potential;
- Installation of wells and screening at appropriate depths if none exists when sampling groundwater;
- Use of augering and other equipment to obtain soil/sediment samples at depth;
- Hazards posed by contaminants to sampling personnel and/or the laboratory.

Chain-of-Custody

The Chain-of-Custody documentation requires the ability to track samples from the time of collection to disposal, if needed. There are two types of Chain-of-Custody available in the MDEQ.

A. The routine Chain-of-Custody utilizes the MDEQ Laboratory Sample Analysis Request Sheet to identify who collected the sample, the sample identification, the site, date collected, time collected, who transported the sample, date received at the lab, and who received the sample. This form may be used by the state overflow contract laboratories, or the laboratories may use their own form for documenting the Chain-of-Custody.

B. The second type is a more formal process used for criminal enforcement sample collection and analysis. This Chain-of-Custody uses the Criminal Investigations Transmittal of Evidence and Laboratory Analysis Form, EQP 9103. This form documents all information necessary to support the MDEQ criminal investigations and prosecution.

The MDEQ Drinking Water and Radiological Protection Laboratory Section's internal policy, PD-18, Chain-of-Custody for Criminal Court Cases, specifies the process and requirements for samples collected by enforcement personnel. This policy is updated every two years, or sooner if a significant change has occurred.

Holding Time Periods

The MDEQ Laboratory and the state overflow contract laboratories use all specified and appropriate Holding Times (HT) as indicated by the United States Environmental Protection Agency (U.S. EPA) for designated matrices. Information on HT may be found in each laboratory's SOPs and referenced by the U.S. EPA Methodology. Updates are made only on changes from the U.S. EPA. Samples exceeding the HT are qualified and flagged for user and regulatory review.

As a routine protocol, the MDEQ laboratory analysis request sheets are to be completed by an MDEQ project manager or appropriate staff, prior to the submittal of samples. These will serve as minimum documentation containing information pertaining to the sample location, person

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sampling, date, media, preservation method, container type, parameters to be analyzed, Chain-of-Custody (routine or enforcement), and any contaminant/safety issues or concerns.

PROCEDURE:

Responsibility

Action

Program Manager

1. Develops and/or updates Sampling Plans for the program or project QA/QC responsibilities.

All Staff

2. Implements all QA/QC responsibilities in accordance with the appropriate Sampling Plans.

Approved: _____

Date: _____



7/28/00