Department of Energy
Carlsbad Field Office
P. O. Box 3090
Carlsbad, New Mexico 88221

Mr. John E. Kieling, Bureau Chief
Hazardous Waste Bureau
New Mexico Environment Department
2905 Rodeo Park Drive East, Building 1
Santa Fe, NM 87508-6303

Subject: Laboratory Proficiency Testing Plan, Hazardous Waste Facility Permit Number: NM4890139088-TSDF

Dear Mr. Kieling:

The purpose of this letter is to provide the Laboratory Proficiency Testing Plan in accordance with Permit Attachment N, Section N-5e.

We certify under penalty of law that this document and all attachments were prepared under our direction or supervision according to a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on our inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of our knowledge and belief, true, accurate, and complete. We are aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

If you have any questions, please contact Mr. George T. Basabilvazo at (575) 234-7488.

Sincerely,

for

Todd Shrader, Manager
Carlsbad Field Office

Philip J. Breidenbach, Project Manager
Nuclear Waste Partnership LLC

Enclosure

cc: w/enclosure
K. Roberts, NMED *ED
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CBFO:EPD:GTB:TJC:16-0548 UFC 5486.00

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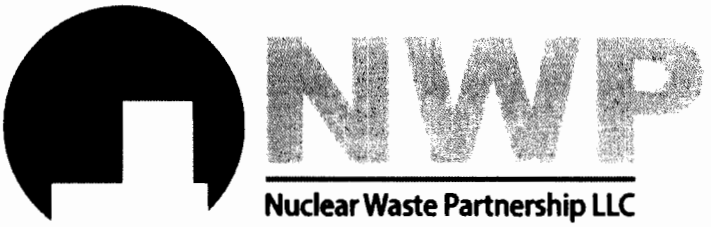
Laboratory Proficiency Testing Plan

July 2016



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ABBREVIATIONS, ACRONYMS, AND UNITS

EPA	U.S. Environmental Protection Agency
HAP	hazardous air pollutants
MRL	method reporting limit
NATTS	National Air Toxics Trends Station
NMED	New Mexico Environment Department
NWP	Nuclear Waste Partnership LLC
PAL	Permittees analytical laboratory
ppbv	parts per billion by volume
pptv	parts per trillion by volume
PT	proficiency testing
RPD	relative percent difference
SIM	selective ion monitoring
SOP	standard operating procedure
SOW	statement of work
VOC	volatile organic compound
WIPP	Waste Isolation Pilot Plan

1.0 INTRODUCTION

On January 8, 2016, the New Mexico Environment Department (NMED) approved a Permit modification that incorporated the use of ambient air sampling for volatile organic compounds (VOCs) at the Waste Isolation Pilot Plant (WIPP). The April 27, 2016, Class 1 Permit modification revised Permit, Part 4.6.2.1 and Attachment N, Section N-5e adding an option for proficiency testing (PT). The Permit now requires that the Permittees develop and implement a Laboratory Performance Evaluation Plan or participate in PT for the Repository Volatile Organic Compound Monitoring Program. On May 2, 2016, the Permittees notified the NMED of the intention to require the Permittees analytical laboratory (PAL) to participate in PT. This plan addresses the requirements in Permit Attachment N, Section N-5e for PT.

2.0 BACKGROUND

Previously, compliance was determined in part by collecting underground air samples in the exhaust of the mine prior to reaching the surface. These underground samples were higher in concentration than samples collected on the surface after dispersion occurs.

The air samples collected on the surface are typically detected in parts per trillion by volume (pptv) as opposed to the underground samples that were detected in parts per billion volume (ppbv). This led to the need for lower method reporting limits (MRLs) provided by the PAL. As part of the April 27, 2016 Permit modification, PT is one of the acceptable methods to demonstrate that the PAL can meet the MRLs required by the Permit.

3.0 SCOPE AND OBJECTIVES

This PT evaluation will focus on the results from participation in low level VOC PT for PALs that are not accredited by accepted accreditation bodies. The Permittees have identified low level PT provided by a laboratory contracted directly to the U.S. Environmental Protection Agency (EPA). This PT program is part of the National Air Toxics Trends Station (NATTS) Program which monitors low level VOCs in ambient air across the United States The PAL(s) will be responsible for initiating and maintaining participation in the PT program.

The NATTS Program ambient monitoring network was developed to fulfill the need for long-term hazardous air pollutant (HAP) monitoring. This network uses consistent measurement approaches to acquire data that are of known and high quality. The NATTS uses a network to track trends in ambient HAP levels to help assess progress toward emission and risk reduction goals. The EPA has implemented rigorous quality standards to assure data quality for laboratories participating in the NATTS Program.

While the Permittees are not proposing to join the NATTS network, the PT process employed by NATTS is suitable to assure the Repository VOC Monitoring Program data meet the applicable quality standards imposed by the Permit by providing independent low level standards that will test the PAL's ability to identify and quantitate EPA Method TO-15 compounds. Data produced from the participation in this PT program will solely be used for determination of PAL analytical capability. For the PAL(s), participation in

the NATTS PT Program does not require participation in other NATTS activities or NATTS-specific quality requirements.

According to the NATTS manual, a PT is a type of assessment in which a sample, the composition of which is unknown to the analyst (i.e., single blind sample), is provided to test whether the analyst/laboratory can produce analytical results within the specified acceptance criteria. The EPA proposes the use of bi-annual PT studies for the NATTS Program laboratories. The NATTS process for preparing and distributing samples is summarized below:

1. Decide on the audit constituents and the concentration levels.
2. Find an independent organization to develop the PT samples. The organization (PT provider) that creates the PT samples must not perform analysis for any of the NATTS state or local agencies.
3. The independent organization/provider will certify the audit constituents and concentration. This information would be reported to EPA for review/approval.
4. Samples will then be distributed to the participating laboratory for analysis and reporting.
5. Samples are also sent to "referee" laboratories for analysis. The results from these laboratories are averaged and included in NATTS program final data reports.

The PAL(s) PT process will be as follows:

1. The PT provider notifies PAL(s) of upcoming PT test dates and requirements.
2. The PAL(s) informs the PT provider of its intent to participate.
3. The PAL(s) sends clean and certified canisters to the PT provider.
4. Once the canisters are received by the PT provider, the canisters are filled with a unique air matrix that includes NATTS target VOCs at parts per trillion-volume (pptv) and low parts per billion-volume (ppbv) concentrations.
5. The sample canisters are then sent back to the PAL(s).
6. The PAL(s) will analyze the samples based on the requirements of the WP12-VC.01, WIPP Volatile Organic Compound Monitoring Plan, WP12-VC.02, Quality Assurance Project Plan for Volatile Organic Compound Monitoring , and the PAL statement of work (SOW).
7. Upon completion of the analysis, the PAL(s) sends the results back to the PT provider.
8. Once the data are compiled by the PT provider, a report will be sent to the PAL(s) including:
    - The concentration provided from the PT provider
    - Average results from "referee" laboratories.
    - Average results from participating NATTS laboratories
9. As the PAL is not a NATTS laboratory, the data produced by participation in this NATTS PT process will only be used for the determination of analytical capability by the Permittees and is not intended to be included in the overall assessment of the other NATTS laboratories.

3.1 Schedule

Proficiency testing for VOC analyses will be conducted twice each year as scheduled by the NATTS program. Prior to the initiation of each test, the PT provider will announce the dates and schedule to the contract laboratory and the Permittees along with participation instructions.

4.0 ANALYTICAL METHODOLOGIES

EPA Method TO-15 will be used as the method for analyzing samples for purposes of this evaluation. Method TO-15 is the Permit required method for the Repository VOC Monitoring Program.

5.0 QUALITY ASSURANCE REQUIREMENTS

Quality assurance requirements as specified in the PAL SOW will be used for PT. This is required as the objective of the participation in PT is to ensure the PAL can meet the requirements of the SOW and the Permit. Quality assurance requirements applicable to the PT are shown in Table 1. These are based on Table N-2 of the Permit. The PAL standard operating procedures (SOPs) will incorporate quality assurance requirements and are submitted to the NMED as required in Attachment N, Section 4e.

6.0 RESULT EVALUATION

Analytical results from PT will include the following: 1) standard concentrations, 2) "referee" laboratory average, 3) NATTS laboratory average. EPA Method TO-15 section 11.4 establishes the criteria for audit accuracy at ± 30 percent.

For determining PAL proficiency, the PT results will be compared to the standard concentrations from the audit sample reported by the PT provider. The PAL result criteria for each target compound reported greater than or equal to the PAL MRL will be within 30 percent to be considered acceptable, as established by EPA Method TO-15. Results falling outside of the 30 percent range will be subject to corrective action unless justification of acceptability can be provided. The average "referee" lab results and the average NATTS lab results will provide an understanding of other analytical laboratories performance with low level VOC analysis. This information may be beneficial for determining corrective actions. The results from other laboratories will be considered informational data points and will not be used for the determination of PAL performance. Test results will be reported to the Permittees upon receipt by the PAL.

7.0 NONCONFORMANCE

Any criteria associated with this evaluation that does not meet the requirements listed in this plan will be evaluated to determine acceptability. If the evaluation determines that the results are not acceptable, appropriate corrective action will be identified by the PAL with concurrence by NWP. Implementation of corrective actions will include demonstration of PAL capability through analysis of appropriate standards, and will also be demonstrated with continued PT participation.

8.0 REPORTING

Proficiency testing results and corrective actions, if any, will be submitted to the NMED in the Semi-Annual VOC Monitoring Report as specified in Permit Part 4, Section 4.6.2.2. Any corrective actions will be submitted to the NMED within 45 days of receipt of unacceptable PT results. Results of corrective actions will be submitted to the NMED within 45 days of completion of corrective actions.

Additionally, the PAL PT results of the first two NATTS PT program rounds will be submitted to the NMED. Subsequent reports that do not require corrective action may be requested by the NMED at any time.

9.0 PLAN MODIFICATION

Proposed changes to this plan must be submitted to the NMED for approval.

Table 1, Quality Assurance Requirements for Accuracy, Precision, and Sensitivity for PT

Target Analyte	Accuracy (Percent Recovery)	Precision (RPD) Laboratory	Required Repository Surface Monitoring MRL for Scan Mode (ppbv)	Required Repository Surface Monitoring MRL for SIM Mode (ppbv)
Carbon Tetrachloride	60 to 140	≤25	0.2	0.1
Chlorobenzene	60 to 140	≤25	0.2	0.1
Chloroform	60 to 140	≤25	0.2	0.1
1,1-Dichloroethylene	60 to 140	≤25	0.2	0.1
1,2-Dichloroethane	60 to 140	≤25	0.2	0.1
Methylene Chloride	60 to 140	≤25	0.2	0.1
1,1,2,2-Tetrachloroethane	60 to 140	≤25	0.2	0.1
Toluene	60 to 140	≤25	0.2	0.1
1,1,1-Trichloroethane	60 to 140	≤25	0.2	0.1
Trichloroethylene	60 to 140	≤25	0.2	0.1

MRL maximum method reporting limit for undiluted samples. Also defined as the contract required quantitation limits
RPD relative percent difference, allowances for conditions that may produce non-representative values will be specified in the Permittees' SOP
SIM selective ion monitoring