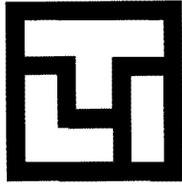


General



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TECHLAW INC.

PHONE: (602) 230-8000
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March 25, 2002

Mr. John Young
State of New Mexico Environment Department
Hazardous Waste Bureau
2905 Rodeo Park Drive East
Santa Fe, New Mexico 87505-6303



Reference: Work Assignment No. Y515, 06082.350; State of New Mexico
Environment Department, Santa Fe, New Mexico; General Permit Support
Contract; Data Validation Report; Los Alamos National Laboratory; Draft
Deliverable

Dear Mr. Young:

Enclosed please find the deliverable for the above-referenced work assignment. The deliverable consists of a review of the perchlorate sample taken on February 4, 2002 from the Los Alamos National Laboratory (LANL). A random sample was validated in accordance with SW-846.

A problem with significant applications was observed during the data validation procedures. It appears that actual samples were spiked during the sampling procedure making the NMED sample results unusable (see Performance Spike Analyses Section).

The document is formatted in WordPerfect and was emailed to you on March 25, 2002 at John Young@nmenv.state.nm.us. If you have any questions, please call me at (303) 763-7188.

Sincerely,

June K. Dreith
Program Manager
Enclosures

cc: Mr. James Bearzi
Mr. Carl Will, NMED

Mr. B. Jordan, TechLaw Central Files
Denver Files

32410



DATA VALIDATION REPORT

Submitted by:

TechLaw, Inc.
300 Union Boulevard, Suite 600
Lakewood, Colorado 80228

Submitted to:

Mr. John Young
State of New Mexico Environment Department
Hazardous Waste Bureau
2905 Rodeo Park Drive East
Building One
Santa Fe, New Mexico 87505

In response to:

Work Assignment No. Y513.06082.350

March 2002

DATA VALIDATION REPORT

Report Date: March 21, 2002
SDG No.: G02010410
Matrix: 1 Aqueous Sample
Laboratory: Acculabs, Inc.
Collection Date(s): January 25, 2002

This report provides the data validation report for 1 aqueous sample collected by the State of New Mexico Department of Environmental Services on January 25, 2002 from the Los Alamos facility located in Los Alamos, New Mexico. The sample was analyzed for perchlorate on February 4, 2002. It should be noted that the original sample was submitted to Pinnacle Laboratories, Inc., Albuquerque, New Mexico. Pinnacle Laboratories, Inc. then shipped the sample to Acculabs, Inc. for analysis. Although only one sample was validated, the sample delivery group (SDG) was comprised of four client samples and four organic free water samples prepared by Pinnacle Laboratories, Inc.

PARAMETERS	SAMPLE NUMBERS
Perchlorate (Modified SW-846 8321A)	E1-HWB/201121-01 (G02010410-01A)

Data validation was conducted in accordance with the documents "Test Methods for Evaluating Solid Wastes, SW-846, Final Update III," (June, 1997); and U.S. EPA Contract Laboratory Program National Functional Guidelines for Organic Data Review, October, 1999 (Functional Guidelines).

Perchlorate Analysis

- Data Completeness/Usability
- *● Holding Times
- *● Calibrations
- *● Laboratory Blank Analyses
- *● Laboratory Control Sample (LCS)
- *● Matrix Spike/Duplicate
- Performance Spike
- Field Duplicate
- *● Internal Standards
- Sample Result Verification

* All criteria met for this parameter

Data Completeness/Usability

The original data package only included the interlab chain-of-custody form. The data reviewer requested and obtained the original field chain-of-custody form. In addition, necessary information regarding performance spike enrichment of the samples was not included in the data package but was obtained by the reviewer at a later date. Due to performance spike issues, the client sample results were determined to be unusable. Refer to the Performance Spike Analysis section of this report for specifics.

Holding Times

Analytical holding times were evaluated and it appears that the holding time requirements were met by the laboratory (28 days from collection to analysis).

Calibrations

All initial calibration and calibration verification analyses appear acceptable.

Laboratory Blank Analyses

There were no detected compounds in the laboratory blanks.

Laboratory Control Sample (LCS) Analyses

The LCS percent recovery (%R) results appear acceptable.

Matrix Spike (MS)/Duplicate Sample Analyses

Matrix spike sample results (76 %R) met the laboratory control limits (70 - 130 %) and were within QC limits (75 - 125 %R).

Duplicate sample relative percent difference (RPD) results (9 RPD) were within the QC limits of 20 RPD.

Performance Spike Analyses

In order to assess the effectiveness and applicability of the analytical method, Pinnacle Laboratories prepared and enriched the four client samples with varying concentrations of a perchlorate spiking solution (performance spike) prior to forwarding the samples to Acculabs for analysis. Additionally, four samples of organic free water were prepared by Pinnacle Laboratories and assigned sample identification numbers. Three of the organic free water samples were enriched with the varying concentrations of the spiking solution.

All eight samples were then submitted to Acculabs for analysis. Information regarding the concentrations of spiking solutions added to the samples was not supplied to Acculabs prior to analysis.

Sample ID	Expected Concentration (µg/L)	Reported Concentration (µg/L)
E1-HWB/201121-01*	0.501	1.3
E5-HWB/201121-02	1.002	0.61
E1-A5/201121-03	0.501	1.3
E5-A5/201121-04	1.002	0.91
P1/201121-05	Not Spiked	0.00
P2/201121-06	0.501	0.58
P3/201121-07	1.002	0.98
P4/201121-08	16.7	13

* Sample originally selected for validation

The reported spike concentrations for perchlorate in samples E1-HWB/201121-01 and E1-A5/201121-03 were approximately twice the expected spike concentrations. The reported spike concentration for perchlorate in sample E5-HWB/201121-02 was approximately half of the expected spike concentration. The reported spike concentration for E5-A5/201121-04 appeared to be acceptable, if it is assumed that the unspiked aliquot of this sample contains no perchlorates. However, no unspiked analyses were performed on these samples for comparison to the spiked sample results. Therefore, the baseline concentration of perchlorate in each sample can not be determined. For example, high recoveries could be attributed to laboratory error when enriching the spike samples, mislabeling of the samples during transfer, or perchlorate in the samples that was present prior to spiking. The low recovery could be due to laboratory error when enriching the sample, mislabeling of the sample during transfer or matrix interferences.

Since no baseline data is available, these sample results do not appear usable. Finally, although only one sample was selected for validation, the issues associated with the performance spikes affected all of the client samples.

Field Duplicate Analyses

No field duplicate samples were associated with this SDG.

Internal Standards

All of the internal standard recoveries met the required QC limits.

Sample Result Verification

Sample results were recalculated to ensure that the reported results were accurate. Raw data were examined for anomalies, transcription errors, and reduction errors. No calculation errors were noted.

LOS ALAMOS
ANALYTICAL DATA SUMMARY TABLE Lot No. G02010410
PERCHLORATE (MODIFIED SW-846 8321A)

Sample ID Number	E1-HWB/201121-01	Q
Sample Description		
Matrix	Aqueous	
Collection Date	1/25/02	
Analyte	µg/L	
Perchlorate	1.3	R

Q - Qualifier

µg/L - micrograms per liter

R - Reported result is unusable/unreliable