# United States Environmental Protection Agency
# Yellow Bluff Air Quality Study

Yellow Bluff, Wilcox County, Alabama

## Yellow Bluff Airborne Particle Study Summary Sheet

Phase 2 Sampling Results

July 10, 2013

Solomon Pollard, Ph.D. Senior Toxicologist

### *Background*

At the request of Yellow Bluff citizens, a second sampling study was implemented to assess resident exposure to airborne particulates in the area and to provide analytical data regarding the composition of the particulates. EPA conducted air monitoring at two locations including the Yellow Bluff Town Hall and the Roland Cooper State Park (background site). The time tables for the study included July-August of 2012 and October 2012 at the two locations.

### *Study Design*

On each of the two sampling occasion, Filter-based samples were collected (i.e., $PM_{10}$, $PM_{2.5}$, and Total Suspended Particulates [TSP]) daily over a 3-day period (i.e., 3-samples/location/sampling episode). Subsequent lab analyses of these filter-based samples included Water Soluble Reactive Analyte analysis. Dry Deposition sampling was also conducted whereby a collector was placed at each location and left in place for 79 days (i.e., 2 samples over the entire study). Meteorological data were also collected including wind direction and speed and ambient temperature.

### *Results*

Table 1 demonstrates that none of the Filter-based Particulate sample results exceeded their respective screening levels.

**Table 1. Filter-based Particulate Sampling Results**

| | Primary Location | | | Background Location | | |
|---|---|---|---|---|---|---|
| | $PM_{2.5}$ | $PM_{10}$ | TSP | $PM_{2.5}$ | $PM_{10}$ | TSP |
| Average Particulate Conc. ug/m3 | 10.7 | 19.4 | 22.7 | 10.1 | 16.7 | 18.8 |
| Maximum Particulate Conc. ug/m3 | 20.3 | 31.2 | 33.1 | 20.2 | 29.3 | 33.0 |
| Health-based Comparison Level | 35 | 150 | 260 | 35 | 150 | 260 |

*There are generally no health screening concentrations for Particulate/TSP sampling results. With the Hurricane Katrina demolition and debris burning screening effort, $PM_{10}$ = 150 ug/m$^3$ (24-hr Std) and $PM_{2.5}$ = 35 ug/m$^3$ (24-hr Std) were used. The TSP standard (260 ug/m$^3$ [24-hr Std]) was used although it was vacated in 1987 (http://www.epa.gov/ttn/naaqs/standards/pm/s_pm_history.htmp).*

Table 2 shows that none of the detected Water Soluble Reactive Analytes were at levels above their respective screening levels.

**Table 2. Maximum Water Soluble Reactive Analyte Results**

| | Primary Location ($ug/m^3$) | Background Location ($ug/m^3$) | Screening Level ($ug/m^3$) | Source |
|---|---|---|---|---|
| Sulfate | 3.3 | 5.0 | 100 | ATSDR Acute MRL |
| Ammonia | 0.6 | 0.9 | 1000 | ATSDR Acute MRL |
| Chloride | 0.8U | 0.8U | | |
| Potassium | 8.3U | 8.3U | | |
| Sodium | 8.3U | 8.3U | | |
| Calcium | 2.1U | 2.1U | | |
| Magnesium | 2.1U | 2.1U | | |

*U-denotes not detected at or above the detection limit. All micrograms per filter results (reported in the SESD Final Report: 12-0562) were converted to $ug/m^3$ by dividing by 24 (factor associated with the area of the filter).The converted results are provided herein. The Agency for Toxic Substances and Disease Registry (ATSDR) acute Minimum Risk Level (MRL) is protective of exposures ranging from 1-14 days.*

The Dry Deposition results were provided in units of micrograms per container and could not be converted to $ug/m^3$. However, the process of conversion would involve a division step such that all of the values provided in Table 5 of the report would be lower. The appropriate screening levels are provided below in Table 3 for consideration. Also note that the Dry Deposition sampling data lack accuracy due to vegetative materials being found in the Background Location sample and bird excrement in the Primary Location sample.

**Table 3. Dry Deposition Analytical Results**

| | Primary Location (ug/container) | Background Location (ug/container) | Screening Level ($ug/m^3$) | Source |
|---|---|---|---|---|
| Sulfate | 570 | 300 | 100 | ATSDR Acute MRL |
| Ammonia | 10U | 99J | 1,000 | ATSDR Acute MRL |
| Chloride | 210 | 68 | 200 | ATSDR Acute MRL |
| Potassium | 730 | 200U | 2,000 | OSHA PEL |
| Sodium | 200U | 200U | 2,000 | OSHA PEL |
| Calcium | 370 | 130 | 5,000 | OSHA PEL |
| Magnesium | 78 | 50U | 5,000 | OSHA PEL |

*U-denotes not detected at or above the detection limit. J denotes that the concentration is an estimate. The Agency for Toxic Substances and Disease Registry (ATSDR) acute Minimum Risk Level (MRL) is protective of exposure ranging from 1-14 days. Chlorine is used as a surrogate for Chloride. The Occupational Safety and Health Administration (OSHA) concentrations are Permissible Exposure Limits (PEL) for an 8-hour work day. The screening levels employed surrogates including Potassium Hydroxide used for Potassium, Sodium hydroxide used for Sodium, respirable Calcium Hydroxide used for Calcium, and respirable Magnesite used for Magnesium.*

Although not a straight forward comparison, generally the sampling levels provided in Table 3 were similar to the screening levels only in the cases of Sulfate and Chloride.

## *Overall Conclusions*

The Filter and Dry Deposition sampling results did not identify levels that would represent a public health concern. Further, the particle-based sampling levels associated with the Town Hall location were only mildly elevated compared to that of the background samples.

July 10, 2013

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 4 Science and Ecosystem Support Division
980 College Station Road, Athens, Georgia 30605-2700
D.A.R.T. Id: 12-0562
Project: 13-0013, Yellow Bluff Dust Study - Reported by Curtis Callahan

**November 15, 2012**

**4SESD-ASB**

## MEMORANDUM

**SUBJECT:** DRAFT Analytical Report
Project: 13-0013, Yellow Bluff Dust Study
Air Quality Management

**FROM:** Curtis Callahan
ASB Analyst

**THRU:** Gary Bennett, Chief
Analytical Support Branch

**TO:** Michael Crowe

Attached are the preliminary results for the analytical groups listed below. These data have not been subjected to a full quality control review and are subject to change.

| Analyses Included in this report: | Method Used: | Accreditations: |
|---|---|---|
| **DRAFT: Total Metals (TMTL)** | | |
| Total Metals | EPA 6010 (Air) | None |

**Sample Disposal Policy**

Because of the laboratory's limited space for long term sample storage, our policy is to dispose of samples on a periodic schedule. Please note that within 60 days of this memo, the original samples and all sample extracts and/or sample digestates will be disposed of in accordance with applicable regulations. The 60-day sample disposal policy does not apply to criminal samples which are held until the laboratory is notified by the criminal investigators that case development and litigation are complete.

These samples may be held in the laboratory's custody for a longer period of time if you have a special project need. If you wish for the laboratory to hold samples beyond the 60-day period, please contact our Sample Control Coordinator, Debbie Colquitt, by e-mail at Colquitt.Debbie@epa.gov, and provide a reason for holding samples beyond 60 days

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 4 Science and Ecosystem Support Division
980 College Station Road, Athens, Georgia 30605-2700
D.A.R.T. Id: 12-0562
Project: 13-0013, Yellow Bluff Dust Study - Reported by Curtis Callahan

## SAMPLES INCLUDED IN THIS REPORT

### Project: 13-0013, Yellow Bluff Dust Study

| Sample ID | Laboratory ID | Matrix | Date Collected | Date Received |
|---|---|---|---|---|
| DRAFT: MC3 | E124405-01 | Field Blank Air | 7/31/12 15:00 | 11/1/12 14:45 |
| DRAFT: MC4 | E124405-02 | Air Equipment Rinse Blank | 10/18/12 11:07 | 11/1/12 14:45 |
| DRAFT: YBA105FB | E124405-03 | Field Blank Air | 10/17/12 12:00 | 11/1/12 14:45 |
| DRAFT: YBA256FB | E124405-04 | Field Blank Air | 10/18/12 13:30 | 11/1/12 14:45 |
| DRAFT: YBATSP4FB | E124405-05 | Field Blank Air | 10/16/12 00:00 | 11/1/12 14:45 |
| DRAFT: MC1 | E124405-06 | Ambient Air | 7/31/12 15:02 | 11/1/12 14:45 |
| DRAFT: YBA104 | E124405-07 | Ambient Air | 10/16/12 00:00 | 11/1/12 14:45 |
| DRAFT: YBA105 | E124405-08 | Ambient Air | 10/17/12 12:00 | 11/1/12 14:45 |
| DRAFT: YBA106 | E124405-09 | Ambient Air | 10/18/12 13:30 | 11/1/12 14:45 |
| DRAFT: YBA10C5 | E124405-10 | Ambient Air | 10/17/12 12:00 | 11/1/12 14:45 |
| DRAFT: YBA254 | E124405-11 | Ambient Air | 10/16/12 00:00 | 11/1/12 14:45 |
| DRAFT: YBA255 | E124405-12 | Ambient Air | 10/17/12 12:00 | 11/1/12 14:45 |
| DRAFT: YBA256 | E124405-13 | Ambient Air | 10/18/12 13:30 | 11/1/12 14:45 |
| DRAFT: YBA25C6 | E124405-14 | Ambient Air | 10/18/12 13:30 | 11/1/12 14:45 |
| DRAFT: YBATSC4 | E124405-15 | Ambient Air | 10/16/12 00:00 | 11/1/12 14:45 |
| DRAFT: YBATSP4 | E124405-16 | Ambient Air | 10/16/12 00:00 | 11/1/12 14:45 |
| DRAFT: YBATSP5 | E124405-17 | Ambient Air | 10/17/12 12:00 | 11/1/12 14:45 |
| DRAFT: YBATSP6 | E124405-18 | Ambient Air | 10/18/12 13:30 | 11/1/12 14:45 |
| DRAFT: MC2 | E124405-19 | Ambient Air | 7/31/12 13:00 | 11/1/12 14:45 |
| DRAFT: YBB104 | E124405-20 | Ambient Air | 10/16/12 00:00 | 11/1/12 14:45 |
| DRAFT: YBB105 | E124405-21 | Ambient Air | 10/17/12 10:00 | 11/1/12 14:45 |
| DRAFT: YBB106 | E124405-22 | Ambient Air | 10/18/12 10:45 | 11/1/12 14:45 |
| DRAFT: YBB254 | E124405-23 | Ambient Air | 10/16/12 00:00 | 11/1/12 14:45 |
| DRAFT: YBB255 | E124405-24 | Ambient Air | 10/17/12 10:00 | 11/1/12 14:45 |
| DRAFT: YBB256 | E124405-25 | Ambient Air | 10/18/12 10:45 | 11/1/12 14:45 |
| DRAFT: YBBTSP4 | E124405-26 | Ambient Air | 10/16/12 00:00 | 11/1/12 14:45 |
| DRAFT: YBBTSP5 | E124405-27 | Ambient Air | 10/17/12 10:00 | 11/1/12 14:45 |
| DRAFT: YBBTSP6 | E124405-28 | Ambient Air | 10/18/12 10:45 | 11/1/12 14:45 |

## DATA QUALIFIER DEFINITIONS

U The analyte was not detected at or above the reporting limit.

## ACRONYMS AND ABBREVIATIONS

CAS Chemical Abstracts Service

Note: Analytes with no known CAS identifiers have been assigned codes beginning with "E", the EPA ID as assigned by the EPA Substance Registry System (www.epa.gov/srs), or beginning with "R4-", a unique identifier assigned by the EPA Region 4 laboratory.

ISO The test, if analyzed after June 26, 2012, is accredited under the EPA Region 4 ASB's ISO/IEC 17025 accreditation issued by ANSI-ASQ National Accreditation Board/ACLASS. Refer to certificate and scope of accreditation AT-1691.

MDL Method Detection Limit - The minimum concentration of a substance (an analyte) that can be measured and reported with a 99% confidence that the analyte concentration is greater than zero.

MRL Minimum Reporting Limit - Analyte concentration that corresponds to the lowest demonstrated level of acceptable quantitation. The MRL is sample-specific and accounts for preparation weights and volumes, dilutions, and moisture content of soil/sediments.

TIC Tentatively Identified Compound - An analyte identified based on a match with the instrument software's mass spectral library. A calibration standard has not been analyzed to confirm the compound's identification or the estimated concentration reported.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 4 Science and Ecosystem Support Division
980 College Station Road, Athens, Georgia 30605-2700
D.A.R.T. Id: 12-0562
Project: 13-0013, Yellow Bluff Dust Study - Reported by Curtis Callahan

# DRAFT: Total Metals

**Project: 13-0013, Yellow Bluff Dust Study**

**Sample ID:** DRAFT: MC3 **Lab ID:** E124405-01
**Station ID:** **Matrix:** Field Blank Air

**Date Collected:** 7/31/12 15:00

| CAS Number | Analyte | MDL Draft Only | Results Qualifiers | Units | MRL | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 6.7 | 20 U | ug/Filter | 20 | 11/07/12 14:20 | 11/14/12 21:26 | EPA 6010 |
| 7440-70-2 | Calcium | 12 | 50 U | ug/Filter | 50 | 11/07/12 14:20 | 11/14/12 21:26 | EPA 6010 |
| 7439-89-6 | Iron | 2.2 | 20 U | ug/Filter | 20 | 11/07/12 14:20 | 11/14/12 21:26 | EPA 6010 |
| 7439-95-4 | Magnesium | 12 | 50 U | ug/Filter | 50 | 11/07/12 14:20 | 11/14/12 21:26 | EPA 6010 |
| 7439-96-5 | Manganese | 0.20 | 1.0 U | ug/Filter | 1.0 | 11/07/12 14:20 | 11/14/12 21:26 | EPA 6010 |
| 7440-09-7 | Potassium | 26 | 200 U | ug/Filter | 200 | 11/07/12 14:20 | 11/14/12 21:26 | EPA 6010 |
| 7440-23-5 | Sodium | 27 | 200 U | ug/Filter | 200 | 11/07/12 14:20 | 11/14/12 21:26 | EPA 6010 |

Al 100 ug/L x .2 l = 20 ug/filter T. White 11-16-12

mg 250 ug/L x .2 l = 50 ug/filter T. White 11-16-12

Ca 250 ug/L x .2 l = 50 ug/filter T. White 11-16-12

Mn 5 ug/L x .2 l = 1 ug/filter T. White 11-16-12

K 1000 ug/L x .2 l = 200 ug/filter T. White 11-16-12

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 4 Science and Ecosystem Support Division
980 College Station Road, Athens, Georgia 30605-2700
D.A.R.T. Id: 12-0562
Project: 13-0013, Yellow Bluff Dust Study - Reported by Curtis Callahan

# DRAFT: Total Metals

**Project: 13-0013, Yellow Bluff Dust Study**

**Sample ID:** DRAFT: MC4
**Station ID:**

**Lab ID:** E124405-02
**Matrix:** Air Equipment Rinse Blank

**Date Collected:** 10/18/12 11:07

| CAS Number | Analyte | MDL Draft Only | Results | Qualifiers | Units | MRL | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 6.7 | 20 | U | ug/Filter | 20 | 11/07/12 14:20 | 11/14/12 21:31 | EPA 6010 |
| 7440-70-2 | Calcium | 12 | 50 | U | ug/Filter | 50 | 11/07/12 14:20 | 11/14/12 21:31 | EPA 6010 |
| 7439-89-6 | Iron | 2.2 | 20 | U | ug/Filter | 20 | 11/07/12 14:20 | 11/14/12 21:31 | EPA 6010 |
| 7439-95-4 | Magnesium | 12 | 50 | U | ug/Filter | 50 | 11/07/12 14:20 | 11/14/12 21:31 | EPA 6010 |
| 7439-96-5 | Manganese | 0.20 | 1.0 | U | ug/Filter | 1.0 | 11/07/12 14:20 | 11/14/12 21:31 | EPA 6010 |
| 7440-09-7 | Potassium | 25 | 200 | U | ug/Filter | 200 | 11/07/12 14:20 | 11/14/12 21:31 | EPA 6010 |
| 7440-23-5 | Sodium | 27 | 200 | U | ug/Filter | 200 | 11/07/12 14:20 | 11/14/12 21:31 | EPA 6010 |

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 4 Science and Ecosystem Support Division
980 College Station Road, Athens, Georgia 30605-2700
D.A.R.T. Id: 12-0562
Project: 13-0013, Yellow Bluff Dust Study - Reported by Curtis Callahan

# DRAFT: Total Metals

## Project: 13-0013, Yellow Bluff Dust Study

**Sample ID:** DRAFT: YBA105FB
**Station ID:**

**Lab ID:** E124405-03
**Matrix:** Field Blank Air

**Date Collected:** 10/17/12 12:00

| CAS Number | Analyte | MDL Draft Only | Results | Qualifiers | Units | MRL | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 6.7 | 20 | U | ug/Filter | 20 | 11/07/12 14:09 | 11/14/12 17:34 | EPA 6010 |
| 7440-70-2 | Calcium | 12 | 50 | U | ug/Filter | 50 | 11/07/12 14:09 | 11/14/12 17:34 | EPA 6010 |
| 7439-89-6 | Iron | 2.2 | 20 | U | ug/Filter | 20 | 11/07/12 14:09 | 11/14/12 17:34 | EPA 6010 |
| 7439-95-4 | Magnesium | 12 | 50 | U | ug/Filter | 50 | 11/07/12 14:09 | 11/14/12 17:34 | EPA 6010 |
| 7439-96-5 | Manganese | 0.20 | 1.0 | U | ug/Filter | 1.0 | 11/07/12 14:09 | 11/14/12 17:34 | EPA 6010 |
| 7440-09-7 | Potassium | 25 | 200 | U | ug/Filter | 200 | 11/07/12 14:09 | 11/14/12 17:34 | EPA 6010 |
| 7440-23-5 | Sodium | 27 | 200 | U | ug/Filter | 200 | 11/07/12 14:09 | 11/14/12 17:34 | EPA 6010 |

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 4 Science and Ecosystem Support Division
980 College Station Road, Athens, Georgia 30605-2700
D.A.R.T. Id: 12-0562
Project: 13-0013, Yellow Bluff Dust Study - Reported by Curtis Callahan

# DRAFT: Total Metals

**Project: 13-0013, Yellow Bluff Dust Study**

**Sample ID: DRAFT: YBA256FB** **Lab ID: E124405-04**
**Station ID:** **Matrix: Field Blank Air**

**Date Collected: 10/18/12 13:30**

| CAS Number | Analyte | MDL Draft Only | Results | Qualifiers | Units | MRL | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 6.7 | 20 | U | ug/Filter | 20 | 11/07/12 14:09 | 11/14/12 17:39 | EPA 6010 |
| 7440-70-2 | Calcium | 12 | 50 | U | ug/Filter | 50 | 11/07/12 14:09 | 11/14/12 17:39 | EPA 6010 |
| 7439-89-6 | Iron | 2.2 | 20 | U | ug/Filter | 20 | 11/07/12 14:09 | 11/14/12 17:39 | EPA 6010 |
| 7439-95-4 | Magnesium | 12 | 50 | U | ug/Filter | 50 | 11/07/12 14:09 | 11/14/12 17:39 | EPA 6010 |
| 7439-96-5 | Manganese | 0.20 | 1.0 | U | ug/Filter | 1.0 | 11/07/12 14:09 | 11/14/12 17:39 | EPA 6010 |
| 7440-09-7 | Potassium | 25 | 200 | U | ug/Filter | 200 | 11/07/12 14:09 | 11/14/12 17:39 | EPA 6010 |
| 7440-23-5 | Sodium | 27 | 200 | U | ug/Filter | 200 | 11/07/12 14:09 | 11/14/12 17:39 | EPA 6010 |

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 4 Science and Ecosystem Support Division
980 College Station Road, Athens, Georgia 30605-2700
D.A.R.T. Id: 12-0562
Project: 13-0013, Yellow Bluff Dust Study - Reported by Curtis Callahan

# DRAFT: Total Metals

## Project: 13-0013, Yellow Bluff Dust Study

**Sample ID:** DRAFT: YBATSP4FB
**Station ID:**

**Lab ID:** E124405-05
**Matrix:** Field Blank Air

**Date Collected:** 10/16/12 0:00

| CAS Number | Analyte | MDL Draft Only | Results | Qualifiers | Units | MRL | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 6.7 | 20 | U | ug/Filter | 20 | 11/07/12 14:09 | 11/14/12 17:45 | EPA 6010 |
| 7440-70-2 | Calcium | 12 | 50 | U | ug/Filter | 50 | 11/07/12 14:09 | 11/14/12 17:45 | EPA 6010 |
| 7439-89-6 | Iron | 2.2 | 20 | U | ug/Filter | 20 | 11/07/12 14:09 | 11/14/12 17:45 | EPA 6010 |
| 7439-95-4 | Magnesium | 12 | 50 | U | ug/Filter | 50 | 11/07/12 14:09 | 11/14/12 17:45 | EPA 6010 |
| 7439-96-5 | Manganese | 0.20 | 1.0 | U | ug/Filter | 1.0 | 11/07/12 14:09 | 11/14/12 17:45 | EPA 6010 |
| 7440-09-7 | Potassium | 26 | 200 | U | ug/Filter | 200 | 11/07/12 14:09 | 11/14/12 17:45 | EPA 6010 |
| 7440-23-5 | Sodium | 27 | 200 | U | ug/Filter | 200 | 11/07/12 14:09 | 11/14/12 17:45 | EPA 6010 |

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 4 Science and Ecosystem Support Division
980 College Station Road, Athens, Georgia 30605-2700
D.A.R.T. Id: 12-0562
Project: 13-0013, Yellow Bluff Dust Study - Reported by Curtis Callahan

# DRAFT: Total Metals

**Project: 13-0013, Yellow Bluff Dust Study**

**Sample ID: DRAFT: MC1**
**Station ID: YBA**

**Lab ID: E124405-06**
**Matrix: Ambient Air**

**Date Collected: 7/31/12 15:02**

| CAS Number | Analyte | MDL Draft Only | Results | Qualifiers | Units | MRL | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 6.7 | 20 | U | ug/Filter | 20 | 11/07/12 14:20 | 11/14/12 21:48 | EPA 6010 |
| 7440-70-2 | Calcium | 12 | 370 | | ug/Filter | 50 | 11/07/12 14:20 | 11/14/12 21:48 | EPA 6010 |
| 7439-89-6 | Iron | 2.2 | 20 | U | ug/Filter | 20 | 11/07/12 14:20 | 11/14/12 21:48 | EPA 6010 |
| 7439-95-4 | Magnesium | 12 | 78 | | ug/Filter | 50 | 11/07/12 14:20 | 11/14/12 21:48 | EPA 6010 |
| 7439-96-5 | Manganese | 0.20 | 4.0 | | ug/Filter | 1.0 | 11/07/12 14:20 | 11/14/12 21:48 | EPA 6010 |
| 7440-09-7 | Potassium | 25 | 730 | | ug/Filter | 200 | 11/07/12 14:20 | 11/14/12 21:48 | EPA 6010 |
| 7440-23-5 | Sodium | 27 | 200 | U | ug/Filter | 200 | 11/07/12 14:20 | 11/14/12 21:48 | EPA 6010 |

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 4 Science and Ecosystem Support Division
980 College Station Road, Athens, Georgia 30605-2700
D.A.R.T. Id: 12-0562
Project: 13-0013, Yellow Bluff Dust Study - Reported by Curtis Callahan

# DRAFT: Total Metals

## Project: 13-0013, Yellow Bluff Dust Study

**Sample ID:** DRAFT: YBA104 **Lab ID:** E124405-07
**Station ID:** YBA **Matrix:** Ambient Air

**Date Collected:** 10/16/12 0:00

| CAS Number | Analyte | MDL Draft Only | Results | Qualifiers | Units | MRL | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 6.7 | 20 U | | ug/Filter | 20 | 11/07/12 14:09 | 11/14/12 18:01 | EPA 6010 |
| 7440-70-2 | Calcium | 12 | 50 U | | ug/Filter | 50 | 11/07/12 14:09 | 11/14/12 18:01 | EPA 6010 |
| 7439-89-6 | Iron | 2.2 | 20 U | | ug/Filter | 20 | 11/07/12 14:09 | 11/14/12 18:01 | EPA 6010 |
| 7439-95-4 | Magnesium | 12 | 50 U | | ug/Filter | 50 | 11/07/12 14:09 | 11/14/12 18:01 | EPA 6010 |
| 7439-96-5 | Manganese | 0.20 | 1.0 U | | ug/Filter | 1.0 | 11/07/12 14:09 | 11/14/12 18:01 | EPA 6010 |
| 7440-09-7 | Potassium | 25 | 200 U | | ug/Filter | 200 | 11/07/12 14:09 | 11/14/12 18:01 | EPA 6010 |
| 7440-23-5 | Sodium | 27 | 200 U | | ug/Filter | 200 | 11/07/12 14:09 | 11/14/12 18:01 | EPA 6010 |

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 4 Science and Ecosystem Support Division
980 College Station Road, Athens, Georgia 30605-2700
D.A.R.T. Id: 12-0562
Project: 13-0013, Yellow Bluff Dust Study - Reported by Curtis Callahan

# DRAFT: Total Metals

## Project: 13-0013, Yellow Bluff Dust Study

**Sample ID:** DRAFT: YBA105
**Station ID:** YBA

**Lab ID:** E124405-08
**Matrix:** Ambient Air

**Date Collected:** 10/17/12 12:00

| CAS Number | Analyte | MDL Draft Only | Results | Qualifiers | Units | MRL | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 6.7 | 20 | U | ug/Filter | 20 | 11/07/12 14:09 | 11/14/12 18:07 | EPA 6010 |
| 7440-70-2 | Calcium | 12 | 50 | U | ug/Filter | 50 | 11/07/12 14:09 | 11/14/12 18:07 | EPA 6010 |
| 7439-89-6 | Iron | 2.2 | 20 | U | ug/Filter | 20 | 11/07/12 14:09 | 11/14/12 18:07 | EPA 6010 |
| 7439-95-4 | Magnesium | 12 | 50 | U | ug/Filter | 50 | 11/07/12 14:09 | 11/14/12 18:07 | EPA 6010 |
| 7439-96-5 | Manganese | 0.20 | 1.0 | U | ug/Filter | 1.0 | 11/07/12 14:09 | 11/14/12 18:07 | EPA 6010 |
| 7440-09-7 | Potassium | 25 | 200 | U | ug/Filter | 200 | 11/07/12 14:09 | 11/14/12 18:07 | EPA 6010 |
| 7440-23-5 | Sodium | 27 | 200 | U | ug/Filter | 200 | 11/07/12 14:09 | 11/14/12 18:07 | EPA 6010 |

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 4 Science and Ecosystem Support Division
980 College Station Road, Athens, Georgia 30605-2700
D.A.R.T. Id: 12-0562
Project: 13-0013, Yellow Bluff Dust Study - Reported by Curtis Callahan

# DRAFT: Total Metals

## Project: 13-0013, Yellow Bluff Dust Study

**Sample ID:** DRAFT: YBA106 **Lab ID:** E124405-09
**Station ID:** YBA **Matrix:** Ambient Air

**Date Collected:** 10/18/12 13:30

| CAS Number | Analyte | MDL Draft Only | Results | Qualifiers | Units | MRL | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 6.7 | 20 | U | ug/Filter | 20 | 11/07/12 14:09 | 11/14/12 18:12 | EPA 6010 |
| 7440-70-2 | Calcium | 12 | 50 | U | ug/Filter | 50 | 11/07/12 14:09 | 11/14/12 18:12 | EPA 6010 |
| 7439-89-6 | Iron | 2.2 | 20 | U | ug/Filter | 20 | 11/07/12 14:09 | 11/14/12 18:12 | EPA 6010 |
| 7439-95-4 | Magnesium | 12 | 50 | U | ug/Filter | 50 | 11/07/12 14:09 | 11/14/12 18:12 | EPA 6010 |
| 7439-96-5 | Manganese | 0.20 | 1.0 | U | ug/Filter | 1.0 | 11/07/12 14:09 | 11/14/12 18:12 | EPA 6010 |
| 7440-09-7 | Potassium | 25 | 200 | U | ug/Filter | 200 | 11/07/12 14:09 | 11/14/12 18:12 | EPA 6010 |
| 7440-23-5 | Sodium | 27 | 200 | U | ug/Filter | 200 | 11/07/12 14:09 | 11/14/12 18:12 | EPA 6010 |

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 4 Science and Ecosystem Support Division
980 College Station Road, Athens, Georgia 30605-2700
D.A.R.T. Id: 12-0562
Project: 13-0013, Yellow Bluff Dust Study - Reported by Curtis Callahan

# DRAFT: Total Metals

**Project: 13-0013, Yellow Bluff Dust Study**

**Sample ID:** DRAFT: YBA10C5
**Station ID:** YBA

**Lab ID:** E124405-10
**Matrix:** Ambient Air

**Date Collected:** 10/17/12 12:00

| CAS Number | Analyte | MDL Draft Only | Results | Qualifiers | Units | MRL | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 6.7 | 20 | U | ug/Filter | 20 | 11/07/12 14:09 | 11/14/12 18:18 | EPA 6010 |
| 7440-70-2 | Calcium | 12 | 50 | U | ug/Filter | 50 | 11/07/12 14:09 | 11/14/12 18:18 | EPA 6010 |
| 7439-89-6 | Iron | 2.2 | 20 | U | ug/Filter | 20 | 11/07/12 14:09 | 11/14/12 18:18 | EPA 6010 |
| 7439-95-4 | Magnesium | 12 | 50 | U | ug/Filter | 50 | 11/07/12 14:09 | 11/14/12 18:18 | EPA 6010 |
| 7439-96-5 | Manganese | 0.20 | 1.0 | U | ug/Filter | 1.0 | 11/07/12 14:09 | 11/14/12 18:18 | EPA 6010 |
| 7440-09-7 | Potassium | 25 | 200 | U | ug/Filter | 200 | 11/07/12 14:09 | 11/14/12 18:18 | EPA 6010 |
| 7440-23-5 | Sodium | 27 | 200 | U | ug/Filter | 200 | 11/07/12 14:09 | 11/14/12 18:18 | EPA 6010 |

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 4 Science and Ecosystem Support Division
980 College Station Road, Athens, Georgia 30605-2700
D.A.R.T. Id: 12-0562
Project: 13-0013, Yellow Bluff Dust Study - Reported by Curtis Callahan

# DRAFT: Total Metals

**Project: 13-0013, Yellow Bluff Dust Study**

**Sample ID:** DRAFT: YBA254 **Lab ID:** E124405-11
**Station ID:** YBA **Matrix:** Ambient Air

**Date Collected: 10/16/12 0:00**

| CAS Number | Analyte | MDL Draft Only | Results | Qualifiers | Units | MRL | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 6.7 | 20 | U | ug/Filter | 20 | 11/07/12 14:09 | 11/14/12 18:48 | EPA 6010 |
| 7440-70-2 | Calcium | 12 | 50 | U | ug/Filter | 50 | 11/07/12 14:09 | 11/14/12 18:48 | EPA 6010 |
| 7439-89-6 | Iron | 2.2 | 20 | U | ug/Filter | 20 | 11/07/12 14:09 | 11/14/12 18:48 | EPA 6010 |
| 7439-95-4 | Magnesium | 12 | 50 | U | ug/Filter | 50 | 11/07/12 14:09 | 11/14/12 18:48 | EPA 6010 |
| 7439-96-5 | Manganese | 0.20 | 1.0 | U | ug/Filter | 1.0 | 11/07/12 14:09 | 11/14/12 18:48 | EPA 6010 |
| 7440-09-7 | Potassium | 25 | 200 | U | ug/Filter | 200 | 11/07/12 14:09 | 11/14/12 18:48 | EPA 6010 |
| 7440-23-5 | Sodium | 27 | 200 | U | ug/Filter | 200 | 11/07/12 14:09 | 11/14/12 18:48 | EPA 6010 |

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 4 Science and Ecosystem Support Division
980 College Station Road, Athens, Georgia 30605-2700
D.A.R.T. Id: 12-0562
Project: 13-0013, Yellow Bluff Dust Study - Reported by Curtis Callahan

# DRAFT: Total Metals

**Project: 13-0013, Yellow Bluff Dust Study**

**Sample ID: DRAFT: YBA255** **Lab ID: E124405-12**
**Station ID: YBA** **Matrix: Ambient Air**

**Date Collected: 10/17/12 12:00**

| CAS Number | Analyte | MDL Draft Only | Results Qualifiers | Units | MRL | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 6.7 | 20 U | ug/Filter | 20 | 11/07/12 14:09 | 11/14/12 18:54 | EPA 6010 |
| 7440-70-2 | Calcium | 12 | 50 U | ug/Filter | 50 | 11/07/12 14:09 | 11/14/12 18:54 | EPA 6010 |
| 7439-89-6 | Iron | 2.2 | 20 U | ug/Filter | 20 | 11/07/12 14:09 | 11/14/12 18:54 | EPA 6010 |
| 7439-95-4 | Magnesium | 12 | 50 U | ug/Filter | 50 | 11/07/12 14:09 | 11/14/12 18:54 | EPA 6010 |
| 7439-96-5 | Manganese | 0.26 | 1.0 U | ug/Filter | 1.0 | 11/07/12 14:09 | 11/14/12 18:54 | EPA 6010 |
| 7440-09-7 | Potassium | 25 | 200 U | ug/Filter | 200 | 11/07/12 14:09 | 11/14/12 18:54 | EPA 6010 |
| 7440-23-5 | Sodium | 27 | 200 U | ug/Filter | 200 | 11/07/12 14:09 | 11/14/12 18:54 | EPA 6010 |

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 4 Science and Ecosystem Support Division
980 College Station Road, Athens, Georgia 30605-2700
D.A.R.T. Id: 12-0562
Project: 13-0013, Yellow Bluff Dust Study - Reported by Curtis Callahan

# DRAFT: Total Metals

## Project: 13-0013, Yellow Bluff Dust Study

**Sample ID:** DRAFT: YBA256 **Lab ID:** E124405-13
**Station ID:** YBA **Matrix:** Ambient Air

**Date Collected:** 10/18/12 13:30

| CAS Number | Analyte | MDL Draft Only | Results | Qualifiers | Units | MRL | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 6.7 | 20 U | | ug/Filter | 20 | 11/07/12 14:09 | 11/14/12 18:59 | EPA 6010 |
| 7440-70-2 | Calcium | 12 | 50 U | | ug/Filter | 50 | 11/07/12 14:09 | 11/14/12 18:59 | EPA 6010 |
| 7439-89-6 | Iron | 2.2 | 20 U | | ug/Filter | 20 | 11/07/12 14:09 | 11/14/12 18:59 | EPA 6010 |
| 7439-95-4 | Magnesium | 12 | 50 U | | ug/Filter | 50 | 11/07/12 14:09 | 11/14/12 18:59 | EPA 6010 |
| 7439-96-5 | Manganese | 0.20 | 1.0 U | | ug/Filter | 1.0 | 11/07/12 14:09 | 11/14/12 18:59 | EPA 6010 |
| 7440-09-7 | Potassium | 25 | 200 U | | ug/Filter | 200 | 11/07/12 14:09 | 11/14/12 18:59 | EPA 6010 |
| 7440-23-5 | Sodium | 27 | 200 U | | ug/Filter | 200 | 11/07/12 14:09 | 11/14/12 18:59 | EPA 6010 |

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 4 Science and Ecosystem Support Division
980 College Station Road, Athens, Georgia 30605-2700
D.A.R.T. Id: 12-0562
Project: 13-0013, Yellow Bluff Dust Study - Reported by Curtis Callahan

# DRAFT: Total Metals

**Project: 13-0013, Yellow Bluff Dust Study**

**Sample ID:** DRAFT: YBA25C6
**Station ID:** YBA

**Lab ID:** E124405-14
**Matrix:** Ambient Air

**Date Collected:** 10/18/12 13:30

| CAS Number | Analyte | MDL Draft Only | Results Qualifiers | Units | MRL | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 6.7 | 20 U | ug/Filter | 20 | 11/07/12 14:09 | 11/14/12 19:05 | EPA 6010 |
| 7440-70-2 | Calcium | 12 | 50 U | ug/Filter | 50 | 11/07/12 14:09 | 11/14/12 19:05 | EPA 6010 |
| 7439-89-6 | Iron | 2.2 | 20 U | ug/Filter | 20 | 11/07/12 14:09 | 11/14/12 19:05 | EPA 6010 |
| 7439-95-4 | Magnesium | 12 | 50 U | ug/Filter | 50 | 11/07/12 14:09 | 11/14/12 19:05 | EPA 6010 |
| 7439-96-5 | Manganese | 0.20 | 1.0 U | ug/Filter | 1.0 | 11/07/12 14:09 | 11/14/12 19:05 | EPA 6010 |
| 7440-09-7 | Potassium | 25 | 200 U | ug/Filter | 200 | 11/07/12 14:09 | 11/14/12 19:05 | EPA 6010 |
| 7440-23-5 | Sodium | 27 | 200 U | ug/Filter | 200 | 11/07/12 14:09 | 11/14/12 19:05 | EPA 6010 |

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 4 Science and Ecosystem Support Division
980 College Station Road, Athens, Georgia 30605-2700
D.A.R.T. Id: 12-0562
Project: 13-0013, Yellow Bluff Dust Study - Reported by Curtis Callahan

# DRAFT: Total Metals

## Project: 13-0013, Yellow Bluff Dust Study

**Sample ID:** DRAFT: YBATSC4 **Lab ID:** E124405-15
**Station ID:** YBA **Matrix:** Ambient Air

**Date Collected:** 10/16/12 0:00

| CAS Number | Analyte | MDL Draft Only | Results | Qualifiers | Units | MRL | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 6.7 | 20 | U | ug/Filter | 20 | 11/07/12 14:09 | 11/14/12 19:21 | EPA 6010 |
| 7440-70-2 | Calcium | 12 | 50 | U | ug/Filter | 50 | 11/07/12 14:09 | 11/14/12 19:21 | EPA 6010 |
| 7439-89-6 | Iron | 2.2 | 20 | U | ug/Filter | 20 | 11/07/12 14:09 | 11/14/12 19:21 | EPA 6010 |
| 7439-95-4 | Magnesium | 12 | 50 | U | ug/Filter | 50 | 11/07/12 14:09 | 11/14/12 19:21 | EPA 6010 |
| 7439-96-5 | Manganese | 0.20 | 1.0 | U | ug/Filter | 1.0 | 11/07/12 14:09 | 11/14/12 19:21 | EPA 6010 |
| 7440-09-7 | Potassium | 25 | 200 | U | ug/Filter | 200 | 11/07/12 14:09 | 11/14/12 19:21 | EPA 6010 |
| 7440-23-5 | Sodium | 27 | 200 | U | ug/Filter | 200 | 11/07/12 14:09 | 11/14/12 19:21 | EPA 6010 |

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 4 Science and Ecosystem Support Division
980 College Station Road, Athens, Georgia 30605-2700
D.A.R.T. Id: 12-0562
Project: 13-0013, Yellow Bluff Dust Study - Reported by Curtis Callahan

# DRAFT: Total Metals

**Project: 13-0013, Yellow Bluff Dust Study**

**Sample ID:** DRAFT: YBATSP4
**Station ID:** YBA

**Lab ID:** E124405-16
**Matrix:** Ambient Air

**Date Collected:** 10/16/12 0:00

| CAS Number | Analyte | MDL Draft Only | Results | Qualifiers | Units | MRL | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 6.7 | 20 | U | ug/Filter | 20 | 11/07/12 14:09 | 11/14/12 19:27 | EPA 6010 |
| 7440-70-2 | Calcium | 12 | 50 | U | ug/Filter | 50 | 11/07/12 14:09 | 11/14/12 19:27 | EPA 6010 |
| 7439-89-6 | Iron | 2.2 | 20 | U | ug/Filter | 20 | 11/07/12 14:09 | 11/14/12 19:27 | EPA 6010 |
| 7439-95-4 | Magnesium | 12 | 50 | U | ug/Filter | 50 | 11/07/12 14:09 | 11/14/12 19:27 | EPA 6010 |
| 7439-96-5 | Manganese | 0.20 | 1.0 | U | ug/Filter | 1.0 | 11/07/12 14:09 | 11/14/12 19:27 | EPA 6010 |
| 7440-09-7 | Potassium | 25 | 200 | U | ug/Filter | 200 | 11/07/12 14:09 | 11/14/12 19:27 | EPA 6010 |
| 7440-23-5 | Sodium | 27 | 200 | U | ug/Filter | 200 | 11/07/12 14:09 | 11/14/12 19:27 | EPA 6010 |

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 4 Science and Ecosystem Support Division
980 College Station Road, Athens, Georgia 30605-2700
D.A.R.T. Id: 12-0562
Project: 13-0013, Yellow Bluff Dust Study - Reported by Curtis Callahan

# DRAFT: Total Metals

## Project: 13-0013, Yellow Bluff Dust Study

**Sample ID:** DRAFT: YBATSP5 **Lab ID:** E124405-17
**Station ID:** YBA **Matrix:** Ambient Air

**Date Collected:** 10/17/12 12:00

| CAS Number | Analyte | MDL Draft Dnb | Results | Qualifiers | Units | MRL | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 6.7 | 20 U | | ug/Filter | 20 | 11/07/12 14:09 | 11/14/12 19:33 | EPA 6010 |
| 7440-70-2 | Calcium | 12 | 50 U | | ug/Filter | 50 | 11/07/12 14:09 | 11/14/12 19:33 | EPA 6010 |
| 7439-89-6 | Iron | 2.2 | 20 U | | ug/Filter | 20 | 11/07/12 14:09 | 11/14/12 19:33 | EPA 6010 |
| 7439-95-4 | Magnesium | 12 | 50 U | | ug/Filter | 50 | 11/07/12 14:09 | 11/14/12 19:33 | EPA 6010 |
| 7439-96-5 | Manganese | 0.20 | 1.0 U | | ug/Filter | 1.0 | 11/07/12 14:09 | 11/14/12 19:33 | EPA 6010 |
| 7440-09-7 | Potassium | 25 | 200 U | | ug/Filter | 200 | 11/07/12 14:09 | 11/14/12 19:33 | EPA 6010 |
| 7440-23-5 | Sodium | 27 | 200 U | | ug/Filter | 200 | 11/07/12 14:09 | 11/14/12 19:33 | EPA 6010 |

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 4 Science and Ecosystem Support Division
980 College Station Road, Athens, Georgia 30605-2700
D.A.R.T. Id: 12-0562
Project: 13-0013, Yellow Bluff Dust Study - Reported by Curtis Callahan

# DRAFT: Total Metals

**Project: 13-0013, Yellow Bluff Dust Study**

**Sample ID:** DRAFT: YBATSP6
**Station ID:** YBA

**Lab ID:** E124405-18
**Matrix:** Ambient Air

**Date Collected:** 10/18/12 13:30

| CAS Number | Analyte | MDL Draft Only | Results | Qualifiers | Units | MRL | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 6.7 | 20 | U | ug/Filter | 20 | 11/07/12 14:09 | 11/14/12 19:38 | EPA 6010 |
| 7440-70-2 | Calcium | 12 | 50 | U | ug/Filter | 50 | 11/07/12 14:09 | 11/14/12 19:38 | EPA 6010 |
| 7439-89-6 | Iron | 2.2 | 20 | U | ug/Filter | 20 | 11/07/12 14:09 | 11/14/12 19:38 | EPA 6010 |
| 7439-95-4 | Magnesium | 12 | 50 | U | ug/Filter | 50 | 11/07/12 14:09 | 11/14/12 19:38 | EPA 6010 |
| 7439-96-5 | Manganese | 0.26 | 1.0 | U | ug/Filter | 1.0 | 11/07/12 14:09 | 11/14/12 19:38 | EPA 6010 |
| 7440-09-7 | Potassium | 25 | 200 | U | ug/Filter | 200 | 11/07/12 14:09 | 11/14/12 19:38 | EPA 6010 |
| 7440-23-5 | Sodium | 27 | 200 | U | ug/Filter | 200 | 11/07/12 14:09 | 11/14/12 19:38 | EPA 6010 |

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 4 Science and Ecosystem Support Division
980 College Station Road, Athens, Georgia 30605-2700
D.A.R.T. Id: 12-0562
Project: 13-0013, Yellow Bluff Dust Study - Reported by Curtis Callahan

# DRAFT: Total Metals

## Project: 13-0013, Yellow Bluff Dust Study

**Sample ID:** DRAFT: MC2 **Lab ID:** E124405-19
**Station ID:** YBB **Matrix:** Ambient Air

**Date Collected:** 7/31/12 13:00

| CAS Number | Analyte | MDL Draft Only | Results | Qualifiers | Units | MRL | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 6.7 | 20 U | | ug/Filter | 20 | 11/07/12 14:20 | 11/14/12 21:54 | EPA 6010 |
| 7440-70-2 | Calcium | 12 | 130 | | ug/Filter | 50 | 11/07/12 14:20 | 11/14/12 21:54 | EPA 6010 |
| 7439-89-6 | Iron | 2.2 | 20 U | | ug/Filter | 20 | 11/07/12 14:20 | 11/14/12 21:54 | EPA 6010 |
| 7439-95-4 | Magnesium | 12 | 50 U | | ug/Filter | 50 | 11/07/12 14:20 | 11/14/12 21:54 | EPA 6010 |
| 7439-96-5 | Manganese | 0.20 | 4.8 | | ug/Filter | 1.0 | 11/07/12 14:20 | 11/14/12 21:54 | EPA 6010 |
| 7440-09-7 | Potassium | 25 | 200 U | | ug/Filter | 200 | 11/07/12 14:20 | 11/14/12 21:54 | EPA 6010 |
| 7440-23-5 | Sodium | 27 | 200 U | | ug/Filter | 200 | 11/07/12 14:20 | 11/14/12 21:54 | EPA 6010 |

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 4 Science and Ecosystem Support Division
980 College Station Road, Athens, Georgia 30605-2700
D.A.R.T. Id: 12-0562
Project: 13-0013, Yellow Bluff Dust Study - Reported by Curtis Callahan

# DRAFT: Total Metals

## Project: 13-0013, Yellow Bluff Dust Study

**Sample ID:** DRAFT: YBB104
**Station ID:** YBB

**Lab ID:** E124405-20
**Matrix:** Ambient Air

**Date Collected:** 10/16/12 0:00

| CAS Number | Analyte | MDL Draft Only | Results | Qualifiers | Units | MRL | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 6.7 | 20 U | | ug/Filter | 20 | 11/07/12 14:09 | 11/14/12 19:44 | EPA 6010 |
| 7440-70-2 | Calcium | 12 | 50 U | | ug/Filter | 50 | 11/07/12 14:09 | 11/14/12 19:44 | EPA 6010 |
| 7439-89-6 | Iron | 2.2 | 20 U | | ug/Filter | 20 | 11/07/12 14:09 | 11/14/12 19:44 | EPA 6010 |
| 7439-95-4 | Magnesium | 12 | 50 U | | ug/Filter | 50 | 11/07/12 14:09 | 11/14/12 19:44 | EPA 6010 |
| 7439-96-5 | Manganese | 0.20 | 1.0 U | | ug/Filter | 1.0 | 11/07/12 14:09 | 11/14/12 19:44 | EPA 6010 |
| 7440-09-7 | Potassium | 25 | 200 U | | ug/Filter | 200 | 11/07/12 14:09 | 11/14/12 19:44 | EPA 6010 |
| 7440-23-5 | Sodium | 27 | 200 U | | ug/Filter | 200 | 11/07/12 14:09 | 11/14/12 19:44 | EPA 6010 |

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 4 Science and Ecosystem Support Division
980 College Station Road, Athens, Georgia 30605-2700
D.A.R.T. Id: 12-0562
Project: 13-0013, Yellow Bluff Dust Study - Reported by Curtis Callahan

# DRAFT: Total Metals

## Project: 13-0013, Yellow Bluff Dust Study

**Sample ID:** DRAFT: YBB105 **Lab ID:** E124405-21
**Station ID:** YBB **Matrix:** Ambient Air

**Date Collected:** 10/17/12 10:00

| CAS Number | Analyte | MDL Draft Only | Results | Qualifiers | Units | MRL | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 6.7 | 20 | U | ug/Filter | 20 | 11/07/12 14:09 | 11/14/12 19:49 | EPA 6010 |
| 7440-70-2 | Calcium | 12 | 50 | U | ug/Filter | 50 | 11/07/12 14:09 | 11/14/12 19:49 | EPA 6010 |
| 7439-89-6 | Iron | 2.2 | 20 | U | ug/Filter | 20 | 11/07/12 14:09 | 11/14/12 19:49 | EPA 6010 |
| 7439-95-4 | Magnesium | 12 | 50 | U | ug/Filter | 50 | 11/07/12 14:09 | 11/14/12 19:49 | EPA 6010 |
| 7439-96-5 | Manganese | 0.20 | 1.0 | U | ug/Filter | 1.0 | 11/07/12 14:09 | 11/14/12 19:49 | EPA 6010 |
| 7440-09-7 | Potassium | 25 | 200 | U | ug/Filter | 200 | 11/07/12 14:09 | 11/14/12 19:49 | EPA 6010 |
| 7440-23-5 | Sodium | 27 | 200 | U | ug/Filter | 200 | 11/07/12 14:09 | 11/14/12 19:49 | EPA 6010 |

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 4 Science and Ecosystem Support Division
980 College Station Road, Athens, Georgia 30605-2700
D.A.R.T. Id: 12-0562
Project: 13-0013, Yellow Bluff Dust Study - Reported by Curtis Callahan

# DRAFT: Total Metals

## Project: 13-0013, Yellow Bluff Dust Study

**Sample ID:** DRAFT: YBB106
**Station ID:** YBB

**Lab ID:** E124405-22
**Matrix:** Ambient Air

**Date Collected:** 10/18/12 10:45

| CAS Number | Analyte | MDL Draft Only | Results Qualifiers | Units | MRL | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 6.7 | 20 U | ug/Filter | 20 | 11/07/12 14:09 | 11/14/12 20:07 | EPA 6010 |
| 7440-70-2 | Calcium | 12 | 50 U | ug/Filter | 50 | 11/07/12 14:09 | 11/14/12 20:07 | EPA 6010 |
| 7439-89-6 | Iron | 2.2 | 20 U | ug/Filter | 20 | 11/07/12 14:09 | 11/14/12 20:07 | EPA 6010 |
| 7439-95-4 | Magnesium | 12 | 50 U | ug/Filter | 50 | 11/07/12 14:09 | 11/14/12 20:07 | EPA 6010 |
| 7439-96-5 | Manganese | 0.20 | 1.0 U | ug/Filter | 1.0 | 11/07/12 14:09 | 11/14/12 20:07 | EPA 6010 |
| 7440-09-7 | Potassium | 25 | 200 U | ug/Filter | 200 | 11/07/12 14:09 | 11/14/12 20:07 | EPA 6010 |
| 7440-23-5 | Sodium | 27 | 200 U | ug/Filter | 200 | 11/07/12 14:09 | 11/14/12 20:07 | EPA 6010 |

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 4 Science and Ecosystem Support Division
980 College Station Road, Athens, Georgia 30605-2700
D.A.R.T. Id: 12-0562
Project: 13-0013, Yellow Bluff Dust Study - Reported by Curtis Callahan

# DRAFT: Total Metals

## Project: 13-0013, Yellow Bluff Dust Study

**Sample ID:** DRAFT: YBB254 **Lab ID:** E124405-23
**Station ID:** YBB **Matrix:** Ambient Air

**Date Collected:** 10/16/12 0:00

| CAS Number | Analyte | MDL Draft Only | Results | Qualifiers | Units | MRL | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 6.7 | 20 | U | ug/Filter | 20 | 11/07/12 14:09 | 11/14/12 20:12 | EPA 6010 |
| 7440-70-2 | Calcium | 12 | 50 | U | ug/Filter | 50 | 11/07/12 14:09 | 11/14/12 20:12 | EPA 6010 |
| 7439-89-6 | Iron | 2.2 | 20 | U | ug/Filter | 20 | 11/07/12 14:09 | 11/14/12 20:12 | EPA 6010 |
| 7439-95-4 | Magnesium | 12 | 50 | U | ug/Filter | 50 | 11/07/12 14:09 | 11/14/12 20:12 | EPA 6010 |
| 7439-96-5 | Manganese | 0.20 | 1.0 | U | ug/Filter | 1.0 | 11/07/12 14:09 | 11/14/12 20:12 | EPA 6010 |
| 7440-09-7 | Potassium | 25 | 200 | U | ug/Filter | 200 | 11/07/12 14:09 | 11/14/12 20:12 | EPA 6010 |
| 7440-23-5 | Sodium | 27 | 200 | U | ug/Filter | 200 | 11/07/12 14:09 | 11/14/12 20:12 | EPA 6010 |

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 4 Science and Ecosystem Support Division
980 College Station Road, Athens, Georgia 30605-2700
D.A.R.T. Id: 12-0562
Project: 13-0013, Yellow Bluff Dust Study - Reported by Curtis Callahan

# DRAFT: Total Metals

## Project: 13-0013, Yellow Bluff Dust Study

**Sample ID:** DRAFT: YBB255
**Station ID:** YBB

**Lab ID:** E124405-24
**Matrix:** Ambient Air

**Date Collected:** 10/17/12 10:00

| CAS Number | Analyte | MDL Draft Only | Results Qualifiers | Units | MRL | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 6.7 | 20 U | ug/Filter | 20 | 11/07/12 14:09 | 11/14/12 20:18 | EPA 6010 |
| 7440-70-2 | Calcium | 12 | 50 U | ug/Filter | 50 | 11/07/12 14:09 | 11/14/12 20:18 | EPA 6010 |
| 7439-89-6 | Iron | 2.2 | 20 U | ug/Filter | 20 | 11/07/12 14:09 | 11/14/12 20:18 | EPA 6010 |
| 7439-95-4 | Magnesium | 12 | 50 U | ug/Filter | 50 | 11/07/12 14:09 | 11/14/12 20:18 | EPA 6010 |
| 7439-96-5 | Manganese | 0.20 | 1.0 U | ug/Filter | 1.0 | 11/07/12 14:09 | 11/14/12 20:18 | EPA 6010 |
| 7440-09-7 | Potassium | 25 | 200 U | ug/Filter | 200 | 11/07/12 14:09 | 11/14/12 20:18 | EPA 6010 |
| 7440-23-5 | Sodium | 27 | 200 U | ug/Filter | 200 | 11/07/12 14:09 | 11/14/12 20:18 | EPA 6010 |

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 4 Science and Ecosystem Support Division
980 College Station Road, Athens, Georgia 30605-2700
D.A.R.T. Id: 12-0562
Project: 13-0013, Yellow Bluff Dust Study - Reported by Curtis Callahan

# DRAFT: Total Metals

## Project: 13-0013, Yellow Bluff Dust Study

**Sample ID:** DRAFT: YBB256 **Lab ID:** E124405-25
**Station ID:** YBB **Matrix:** Ambient Air

**Date Collected:** 10/18/12 10:45

| CAS Number | Analyte | MDL Draft Only | Results Qualifiers | Units | MRL | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 6.7 | 20 U | ug/Filter | 20 | 11/07/12 14:09 | 11/14/12 20:23 | EPA 6010 |
| 7440-70-2 | Calcium | 12 | 50 U | ug/Filter | 50 | 11/07/12 14:09 | 11/14/12 20:23 | EPA 6010 |
| 7439-89-6 | Iron | 2.2 | 20 U | ug/Filter | 20 | 11/07/12 14:09 | 11/14/12 20:23 | EPA 6010 |
| 7439-95-4 | Magnesium | 12 | 50 U | ug/Filter | 50 | 11/07/12 14:09 | 11/14/12 20:23 | EPA 6010 |
| 7439-96-5 | Manganese | 0.20 | 1.0 U | ug/Filter | 1.0 | 11/07/12 14:09 | 11/14/12 20:23 | EPA 6010 |
| 7440-09-7 | Potassium | 25 | 200 U | ug/Filter | 200 | 11/07/12 14:09 | 11/14/12 20:23 | EPA 6010 |
| 7440-23-5 | Sodium | 27 | 200 U | ug/Filter | 200 | 11/07/12 14:09 | 11/14/12 20:23 | EPA 6010 |

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 4 Science and Ecosystem Support Division
980 College Station Road, Athens, Georgia 30605-2700
D.A.R.T. Id: 12-0562
Project: 13-0013, Yellow Bluff Dust Study - Reported by Curtis Callahan

# DRAFT: Total Metals

**Project: 13-0013, Yellow Bluff Dust Study**

**Sample ID:** DRAFT: YBBTSP4
**Station ID:** YBB

**Lab ID:** E124405-26
**Matrix:** Ambient Air

**Date Collected:** 10/16/12 0:00

| CAS Number | Analyte | MDL Draft Only | Results | Qualifiers | Units | MRL | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 6.7 | 20 | U | ug/Filter | 20 | 11/07/12 14:09 | 11/14/12 20:40 | EPA 6010 |
| 7440-70-2 | Calcium | 12 | 50 | U | ug/Filter | 50 | 11/07/12 14:09 | 11/14/12 20:40 | EPA 6010 |
| 7439-89-6 | Iron | 2.2 | 20 | U | ug/Filter | 20 | 11/07/12 14:09 | 11/14/12 20:40 | EPA 6010 |
| 7439-95-4 | Magnesium | 12 | 50 | U | ug/Filter | 50 | 11/07/12 14:09 | 11/14/12 20:40 | EPA 6010 |
| 7439-96-5 | Manganese | 0.20 | 1.0 | U | ug/Filter | 1.0 | 11/07/12 14:09 | 11/14/12 20:40 | EPA 6010 |
| 7440-09-7 | Potassium | 25 | 200 | U | ug/Filter | 200 | 11/07/12 14:09 | 11/14/12 20:40 | EPA 6010 |
| 7440-23-5 | Sodium | 27 | 200 | U | ug/Filter | 200 | 11/07/12 14:09 | 11/14/12 20:40 | EPA 6010 |

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 4 Science and Ecosystem Support Division
980 College Station Road, Athens, Georgia 30605-2700
D.A.R.T. Id: 12-0562
Project: 13-0013, Yellow Bluff Dust Study - Reported by Curtis Callahan

# DRAFT: Total Metals

## Project: 13-0013, Yellow Bluff Dust Study

**Sample ID:** DRAFT: YBBTSP5 **Lab ID:** E124405-27
**Station ID:** YBB **Matrix:** Ambient Air

**Date Collected:** 10/17/12 10:00

| CAS Number | Analyte | MDL Draft Only | Results Qualifiers | Units | MRL | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 6.7 | 20 U | ug/Filter | 20 | 11/07/12 14:09 | 11/14/12 20:46 | EPA 6010 |
| 7440-70-2 | Calcium | 12 | 50 U | ug/Filter | 50 | 11/07/12 14:09 | 11/14/12 20:46 | EPA 6010 |
| 7439-89-6 | Iron | 2.2 | 20 U | ug/Filter | 20 | 11/07/12 14:09 | 11/14/12 20:46 | EPA 6010 |
| 7439-95-4 | Magnesium | 12 | 50 U | ug/Filter | 50 | 11/07/12 14:09 | 11/14/12 20:46 | EPA 6010 |
| 7439-96-5 | Manganese | 0.20 | 1.0 U | ug/Filter | 1.0 | 11/07/12 14:09 | 11/14/12 20:46 | EPA 6010 |
| 7440-09-7 | Potassium | 25 | 200 U | ug/Filter | 200 | 11/07/12 14:09 | 11/14/12 20:46 | EPA 6010 |
| 7440-23-5 | Sodium | 27 | 200 U | ug/Filter | 200 | 11/07/12 14:09 | 11/14/12 20:46 | EPA 6010 |

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 4 Science and Ecosystem Support Division
980 College Station Road, Athens, Georgia 30605-2700
D.A.R.T. Id: 12-0562
Project: 13-0013, Yellow Bluff Dust Study - Reported by Curtis Callahan

# DRAFT: Total Metals

**Project: 13-0013, Yellow Bluff Dust Study**

**Sample ID: DRAFT: YBBTSP6** **Lab ID: E124405-28**
**Station ID: YBB** **Matrix: Ambient Air**

**Date Collected: 10/18/12 10:45**

| CAS Number | Analyte | MDL Draft Only | Results Qualifiers | Units | MRL | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 6.7 | 20 U | ug/Filter | 20 | 11/07/12 14:09 | 11/14/12 20:51 | EPA 6010 |
| 7440-70-2 | Calcium | 12 | 50 U | ug/Filter | 50 | 11/07/12 14:09 | 11/14/12 20:51 | EPA 6010 |
| 7439-89-6 | Iron | 2.2 | 20 U | ug/Filter | 20 | 11/07/12 14:09 | 11/14/12 20:51 | EPA 6010 |
| 7439-95-4 | Magnesium | 12 | 50 U | ug/Filter | 50 | 11/07/12 14:09 | 11/14/12 20:51 | EPA 6010 |
| 7439-96-5 | Manganese | 0.20 | 1.0 U | ug/Filter | 1.0 | 11/07/12 14:09 | 11/14/12 20:51 | EPA 6010 |
| 7440-09-7 | Potassium | 25 | 200 U | ug/Filter | 200 | 11/07/12 14:09 | 11/14/12 20:51 | EPA 6010 |
| 7440-23-5 | Sodium | 27 | 200 U | ug/Filter | 200 | 11/07/12 14:09 | 11/14/12 20:51 | EPA 6010 |

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 4 Science and Ecosystem Support Division
980 College Station Road, Athens, Georgia 30605-2700
D.A.R.T. Id: 12-0562
Project: 13-0013, Yellow Bluff Dust Study - Reported by Curtis Callahan

# DRAFT: Total Metals (TMTL) - Quality Control
## US-EPA, Region 4, SESD

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1211025 - M Air Filter Prep** | | | | | | | | | | |
| **Blank (1211025-BLK1)** | | | | Prepared: 11/07/12 Analyzed: 11/14/12 | | | | | | |
| **EPA 6010** | | | | | | | | | | |
| Aluminum | U | 20 | ug/Filter | | | | | | | U |
| Manganese | U | 1.0 | " | | | | | | | U |
| Calcium | U | 50 | " | | | | | | | U |
| Magnesium | U | 50 | " | | | | | | | U |
| Iron | U | 20 | " | | | | | | | U |
| Sodium | U | 200 | " | | | | | | | U |
| Potassium | U | 200 | " | | | | | | | U |
| **LCS (1211025-BS1)** | | | | Prepared: 11/07/12 Analyzed: 11/14/12 | | | | | | |
| **EPA 6010** | | | | | | | | | | |
| Aluminum | 4.9149 | | mg/L | 5.0000 | | 98.3 | 85-115 | | | |
| Manganese | 0.49471 | | " | 0.50000 | | 98.9 | 85-115 | | | |
| Calcium | 4.9672 | | " | 5.0000 | | 99.3 | 85-115 | | | |
| Magnesium | 5.3102 | | " | 5.0000 | | 106 | 85-115 | | | |
| Iron | 5.2472 | | " | 5.0000 | | 105 | 85-115 | | | |
| Sodium | 10.201 | | " | 10.000 | | 102 | 85-115 | | | |
| Potassium | 9.8005 | | " | 10.000 | | 98.0 | 85-115 | | | |
| **Matrix Spike (1211025-MS1)** | | Source: E124405-05 | | Prepared: 11/07/12 Analyzed: 11/14/12 | | | | | | |
| **EPA 6010** | | | | | | | | | | |
| Aluminum | 4.9601 | | mg/L | 5.0000 | 0.28004 | 93.6 | 75-125 | | | |
| Manganese | 0.49795 | | " | 0.50000 | 0.0036097 | 98.9 | 75-125 | | | |
| Calcium | 5.0346 | | " | 5.0000 | 0.18236 | 97.0 | 75-125 | | | |
| Magnesium | 5.3275 | | " | 5.0000 | -0.17010 | 110 | 75-125 | | | |
| Iron | 5.2815 | | " | 5.0000 | 0.057039 | 104 | 75-125 | | | |
| Sodium | 10.234 | | " | 10.000 | 0.11061 | 101 | 75-125 | | | |
| Potassium | 9.9342 | | " | 10.000 | 0.075073 | 98.6 | 75-125 | | | |
| **Matrix Spike (1211025-MS2)** | | Source: E124405-14 | | Prepared: 11/07/12 Analyzed: 11/14/12 | | | | | | |
| **EPA 6010** | | | | | | | | | | |
| Aluminum | 4.9368 | | mg/L | 5.0000 | 0.15072 | 95.7 | 75-125 | | | |
| Manganese | 0.49351 | | " | 0.50000 | 0.00078880 | 98.9 | 75-125 | | | |
| Calcium | 4.9714 | | " | 5.0000 | 0.10147 | 97.4 | 75-125 | | | |
| Magnesium | 5.3151 | | " | 5.0000 | -0.13189 | 109 | 75-125 | | | |
| Iron | 5.2634 | | " | 5.0000 | 0.10242 | 103 | 75-125 | | | |
| Sodium | 10.208 | | " | 10.000 | -0.019615 | 102 | 75-125 | | | |
| Potassium | 9.8215 | | " | 10.000 | 0.60081 | 92.2 | 75-125 | | | |

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 4 Science and Ecosystem Support Division
980 College Station Road, Athens, Georgia 30605-2700
D.A.R.T. Id: 12-0562
Project: 13-0013, Yellow Bluff Dust Study - Reported by Curtis Callahan

# DRAFT: Total Metals (TMTL) - Quality Control
## US-EPA, Region 4, SESD

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1211025 - M Air Filter Prep** | | | | | | | | | | |
| **Matrix Spike (1211025-MS3)** | | Source: E124405-25 | | Prepared: 11/07/12 Analyzed: 11/14/12 | | | | | | |
| **EPA 6010** | | | | | | | | | | |
| Aluminum | 4.8647 | | mg/L | 5.0000 | 0.098706 | 95.3 | 75-125 | | | |
| Manganese | 0.49090 | | " | 0.50000 | -0.0021103 | 98.6 | 75-125 | | | |
| Calcium | 4.8968 | | " | 5.0000 | -0.011048 | 98.2 | 75-125 | | | |
| Magnesium | 5.2894 | | " | 5.0000 | 0.27139 | 100 | 75-125 | | | |
| Iron | 5.1612 | | " | 5.0000 | 0.061331 | 102 | 75-125 | | | |
| Sodium | 10.126 | | " | 10.000 | 0.19031 | 99.4 | 75-125 | | | |
| Potassium | 9.6527 | | " | 10.000 | 0.73366 | 89.2 | 75-125 | | | |
| **Matrix Spike Dup (1211025-MSD1)** | | Source: E124405-05 | | Prepared: 11/07/12 Analyzed: 11/14/12 | | | | | | |
| **EPA 6010** | | | | | | | | | | |
| Aluminum | 4.8784 | | mg/L | 5.0000 | 0.28004 | 92.0 | 75-125 | | 20 | |
| Manganese | 0.49489 | | " | 0.50000 | 0.0036097 | 98.3 | 75-125 | 0.617 | 20 | |
| Calcium | 4.9634 | | " | 5.0000 | 0.18236 | 95.6 | 75-125 | | 20 | |
| Magnesium | 5.2711 | | " | 5.0000 | -0.17010 | 109 | 75-125 | | 20 | |
| Iron | 5.2275 | | " | 5.0000 | 0.057039 | 103 | 75-125 | 1.03 | 20 | |
| Sodium | 10.141 | | " | 10.000 | 0.11061 | 100 | 75-125 | | 20 | |
| Potassium | 9.7548 | | " | 10.000 | 0.075073 | 96.8 | 75-125 | | 20 | |
| **Matrix Spike Dup (1211025-MSD2)** | | Source: E124405-14 | | Prepared: 11/07/12 Analyzed: 11/14/12 | | | | | | |
| **EPA 6010** | | | | | | | | | | |
| Aluminum | 4.9196 | | mg/L | 5.0000 | 0.15072 | 95.4 | 75-125 | | 20 | |
| Manganese | 0.49137 | | " | 0.50000 | 0.0007888( | 98.4 | 75-125 | 0.436 | 20 | |
| Calcium | 4.9591 | | " | 5.0000 | 0.10147 | 97.2 | 75-125 | | 20 | |
| Magnesium | 5.3085 | | " | 5.0000 | -0.13189 | 109 | 75-125 | | 20 | |
| Iron | 5.2610 | | " | 5.0000 | 0.10242 | 103 | 75-125 | 0.0459 | 20 | |
| Sodium | 10.199 | | " | 10.000 | -0.019615 | 102 | 75-125 | | 20 | |
| Potassium | 9.7973 | | " | 10.000 | 0.60081 | 92.0 | 75-125 | | 20 | |
| **Matrix Spike Dup (1211025-MSD3)** | | Source: E124405-25 | | Prepared: 11/07/12 Analyzed: 11/14/12 | | | | | | |
| **EPA 6010** | | | | | | | | | | |
| Aluminum | 4.9599 | | mg/L | 5.0000 | 0.098706 | 97.2 | 75-125 | | 20 | |
| Manganese | 0.49836 | | " | 0.50000 | -0.0021103 | 100 | 75-125 | 1.51 | 20 | |
| Calcium | 5.0320 | | " | 5.0000 | -0.011048 | 101 | 75-125 | | 20 | |
| Magnesium | 5.3374 | | " | 5.0000 | 0.27139 | 101 | 75-125 | | 20 | |
| Iron | 5.2708 | | " | 5.0000 | 0.061331 | 104 | 75-125 | 2.10 | 20 | |
| Sodium | 10.165 | | " | 10.000 | 0.19031 | 99.8 | 75-125 | | 20 | |
| Potassium | 9.9969 | | " | 10.000 | 0.73366 | 92.6 | 75-125 | | 20 | |

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 4 Science and Ecosystem Support Division
980 College Station Road, Athens, Georgia 30605-2700
D.A.R.T. Id: 12-0562
Project: 13-0013, Yellow Bluff Dust Study - Reported by Curtis Callahan

# DRAFT: Total Metals (TMTL) - Quality Control
## US-EPA, Region 4, SESD

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1211025 - M Air Filter Prep** | | | | | | | | | | |
| **MRL Verification (1211025-PS1)** | | | | Prepared: 11/07/12 Analyzed: 11/14/12 | | | | | | |
| **EPA 6010** | | | | | | | | | | |
| Aluminum | 0.11531 | | mg/L | 0.10000 | | 115 | 70-130 | | | MRL-2 |
| Manganese | 0.0055637 | | " | 0.0050000 | | 111 | 70-130 | | | MRL-2 |
| Calcium | 0.25556 | | " | 0.25000 | | 102 | 70-130 | | | MRL-2 |
| Magnesium | 0.26097 | | " | 0.25000 | | 104 | 70-130 | | | MRL-2 |
| Iron | 0.10930 | | " | 0.10000 | | 109 | 70-130 | | | MRL-2 |
| Sodium | 1.0531 | | " | 1.0000 | | 105 | 70-130 | | | MRL-2 |
| Potassium | 1.0231 | | " | 1.0000 | | 102 | 70-130 | | | MRL-2 |
| **Batch 1211026 - M Air Filter Prep** | | | | | | | | | | |
| **Blank (1211026-BLK1)** | | | | Prepared: 11/07/12 Analyzed: 11/14/12 | | | | | | |
| **EPA 6010** | | | | | | | | | | |
| Aluminum | U | 20 | ug/Filter | | | | | | | U |
| Manganese | U | 1.0 | " | | | | | | | U |
| Calcium | U | 50 | " | | | | | | | U |
| Magnesium | U | 50 | " | | | | | | | U |
| Iron | U | 20 | " | | | | | | | U |
| Sodium | U | 200 | " | | | | | | | U |
| Potassium | U | 200 | " | | | | | | | U |
| **LCS (1211026-BS1)** | | | | Prepared: 11/07/12 Analyzed: 11/14/12 | | | | | | |
| **EPA 6010** | | | | | | | | | | |
| Aluminum | 4.9382 | | mg/L | 5.0000 | | 98.8 | 85-115 | | | |
| Manganese | 0.49857 | | " | 0.50000 | | 99.7 | 85-115 | | | |
| Calcium | 4.9724 | | " | 5.0000 | | 99.4 | 85-115 | | | |
| Magnesium | 5.3422 | | " | 5.0000 | | 107 | 85-115 | | | |
| Iron | 5.2806 | | " | 5.0000 | | 106 | 85-115 | | | |
| Sodium | 10.245 | | " | 10.000 | | 102 | 85-115 | | | |
| Potassium | 9.8064 | | " | 10.000 | | 98.1 | 85-115 | | | |

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 4 Science and Ecosystem Support Division
980 College Station Road, Athens, Georgia 30605-2700
D.A.R.T. Id: 12-0562
Project: 13-0013, Yellow Bluff Dust Study - Reported by Curtis Callahan

# DRAFT: Total Metals (TMTL) - Quality Control
## US-EPA, Region 4, SESD

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1211026 - M Air Filter Prep** | | | | | | | | | | |
| **Matrix Spike (1211026-MS1)** | | **Source: E124405-02** | | Prepared: 11/07/12 Analyzed: 11/14/12 | | | | | | |
| **EPA 6010** | | | | | | | | | | |
| Aluminum | 4.8955 | | mg/L | 5.0000 | 0.13312 | 95.2 | 75-125 | | | |
| Manganese | 0.49493 | | " | 0.50000 | 0.0023592 | 98.5 | 75-125 | | | |
| Calcium | 4.9795 | | " | 5.0000 | -0.012127 | 99.8 | 75-125 | | | |
| Magnesium | 5.3040 | | " | 5.0000 | -0.14299 | 109 | 75-125 | | | |
| Iron | 5.2357 | | " | 5.0000 | 0.080515 | 103 | 75-125 | | | |
| Sodium | 10.148 | | " | 10.000 | 0.081883 | 101 | 75-125 | | | |
| Potassium | 9.7803 | | " | 10.000 | 0.014353 | 97.7 | 75-125 | | | |
| **Matrix Spike Dup (1211026-MSD1)** | | **Source: E124405-02** | | Prepared: 11/07/12 Analyzed: 11/14/12 | | | | | | |
| **EPA 6010** | | | | | | | | | | |
| Aluminum | 4.9356 | | mg/L | 5.0000 | 0.13312 | 96.0 | 75-125 | | 20 | |
| Manganese | 0.49641 | | " | 0.50000 | 0.0023592 | 98.8 | 75-125 | 0.298 | 20 | |
| Calcium | 4.9716 | | " | 5.0000 | -0.012127 | 99.7 | 75-125 | | 20 | |
| Magnesium | 5.3285 | | " | 5.0000 | -0.14299 | 109 | 75-125 | | 20 | |
| Iron | 5.2623 | | " | 5.0000 | 0.080515 | 104 | 75-125 | 0.506 | 20 | |
| Sodium | 10.219 | | " | 10.000 | 0.081883 | 101 | 75-125 | | 20 | |
| Potassium | 9.7825 | | " | 10.000 | 0.014353 | 97.7 | 75-125 | | 20 | |
| **MRL Verification (1211026-PS1)** | | | | Prepared: 11/07/12 Analyzed: 11/14/12 | | | | | | |
| **EPA 6010** | | | | | | | | | | |
| Aluminum | 0.10449 | | mg/L | 0.10000 | | 104 | 70-130 | | | MRL-2 |
| Manganese | 0.0051456 | | " | 0.0050000 | | 103 | 70-130 | | | MRL-2 |
| Calcium | 0.25446 | | " | 0.25000 | | 102 | 70-130 | | | MRL-2 |
| Magnesium | 0.26403 | | " | 0.25000 | | 106 | 70-130 | | | MRL-2 |
| Iron | 0.11216 | | " | 0.10000 | | 112 | 70-130 | | | MRL-2 |
| Sodium | 1.0442 | | " | 1.0000 | | 104 | 70-130 | | | MRL-2 |
| Potassium | 1.0142 | | " | 1.0000 | | 101 | 70-130 | | | MRL-2 |

## Notes and Definitions for QC Samples

| | |
|---|---|
| U | The analyte was not detected at or above the reporting limit. |
| MRL-2 | MRL verification for Non-Potable Water matrix |

Book/Page 3/48

# EMPTY BOTTLE PREPARATION LOG

Project Name/Number: 13-0013 Yellow Bluff Dust Study E124405

Date: 11/07/12

Analyst: T. White

Lot No. $HNO_3$/ HCl: NA

| Sample No. | Bottle Type* | DI wtr added (mL) | Preservative added (amount/type) |
|---|---|---|---|
| Prep ~~Filter - Blk~~ | 200ml Flask | 200 mls | |
| E124405-03 | filter | 200mls | NA |
| E124405-04 | ↓ | ↓ | ↓ |
| E124405-05 | | | |
| E124405-07 | | | |
| E124405-08 | | | |
| E124405-09 | | | |
| E124405-10 | | | |
| E124405-11 | | | |
| E124405-12 | | | |
| E124405-13 | | | |
| E124405-14 | ↓ | ↓ | ↓ |

*Bottle type: 1LP- 1 Liter Plastic
8ozG- 8 ounce glass
1GalAm- 1 gallon glass amber bottle

Notes: These filters were sonicated in 50 mls DI $H_2O$ - poured up to a final volume of 200 mls - aliquoted into 50 ml digi tubes for metals, anions, and ammonia. See directions from Mike Waske in workorder notes.

Form Ver 03/26/2003

T. White
11/7/12

Book/Page 3/49

# EMPTY BOTTLE PREPARATION LOG

Project Name/Number: 13-0013 Yellow Bluff Dust Study E124405

Date: 11/07/12

Analyst: T. White

Lot No. $HNO_3$/ HCl: NA

| Sample No. | Bottle Type* | DI wtr added (mL) | Preservative added (amount/type) |
|---|---|---|---|
| E124405- 15 | filter | 200 mls | NA |
| E124405- 16 | | | |
| E124405- 17 | | | |
| E124405- 18 | | | |
| E124405- 20 | | | |
| E124405- 21 | | | |
| E124405- 22 | | | |
| E124405- 23 | | | |
| E124405- 24 | | | |
| E124405- 25 | | | |
| E124405 26 | | | |
| E124405 27 | | | |

*Bottle type: 1LP- 1 Liter Plastic
8ozG- 8 ounce glass
1GalAm- 1 gallon glass amber bottle

E124405-28

Notes:

Form Ver 03/26/2003

Book/Page 3 / 50

# EMPTY BOTTLE PREPARATION LOG

Project Name/Number: 13-0013 Yellow Bluff Dust Study E124405

Date: 11/07/12

Analyst: T. White

Lot No. $HNO_3$/ HCl: NA

| Sample No. | Bottle Type* | DI wtr added (mL) | Preservative added (amount/type) |
|---|---|---|---|
| E124405-01 | teflon canister | 200 mls | NA |
| E124405-02 | ↓ | ↓ | ↓ |
| E124405-06 | ↓ | ↓ | ↓ |
| E124405-19 | ↓ | ↓ | ↓ |
| Prepped - BLK | 200ml Flask | 200 mls | NA |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

*Bottle type:
1LP- 1 Liter Plastic
8ozG- 8 ounce glass
1GalAm- 1 gallon glass amber bottle

Notes: These canisters were rinsed + sonicated with 200 mls DI $H_2O$ - then aliquoted into 50 ml digitubes for metals, anions, and ammonia. See directions from Mike Wacko in Work ordinates. T. White 11/7/12

Form Ver 03/26/2003

Digestion of Water

Book/pg 43/71.

Project 13-0013 Yellow Bluff Dust E124405 Batch ID 1211025/6 TW 11/08/12

Analyst(s) T. White Start 11/07/12 Complete 11/08/12

Method Reference Air Filter-Main filter prep Plate#/Hot Block # NA Hood # NA

Spike NA Temperature Check NA

mLs $HNO_3$ 1 mLs HCl 0.5 PT? Y/N N PT prep

Acid Lot no. $HNO_3$/HCl: 1112040 / 4111060

| No | Sample Number | pH<2 | Init. Vol. | Final Vol | No | Sample No. Cu 11/15/12 | pH<2 | Init. Vol | Final Vol |
|---|---|---|---|---|---|---|---|---|---|
| 1 | ~~18~~ | | | | 16 | ~~E122405~~-19 | | 1 Cannister | 200mls |
| 2 | ~~19~~ | T. White 11-08-12 | | | 17 | E124405- | | | |
| 3 | ~~20~~ | | | | 18 | | | | |
| 4 | ~~21~~ | | | | 19 | | | | |
| 5 | ~~22~~ | | | | 20 | | | | |
| 6 | ~~23~~ | | | | 21 | | | | |
| 7 | ~~24~~ | | | | 22 | | | | |
| 8 | ~~25~~ | | | | 23 | | | | |
| 9 | ~~26~~ | | | | 24 | | | | |
| 10 | ~~27~~ | | | | 25 | | | | |
| 11 | ~~28~~ | | | | 26 | | | | |
| 12 | 1211026-BlK1 | | 1 cannister | 200mls | 27 | | | | |
| 13 | ~~E122405~~ 01 | | 1 cannister | 200mls | 28 | | | | |
| 14 | E124405- 02 | | 1 cannister | 200mls | 29 | | | | |
| 15 | 06 | | 1 cannister | 200mls | 30 | | | | |

Cu 11/15/12

These cannisters were: sonicated + rinsed w/an added 200 mls. Aliquoted into 50 ml digitubes for metals, anions + ammonia analyses. See directions from Mike Wasko in

Version 05/01/2008

# PREPARATION BENCH SHEET

1211026

US-EPA, Region 4, SESD

Printed: 11/16/2012 1:57:24PM

Matrix: Air

Prepared using: ICS MET - M Air Filter Prep

| Lab Number | Analysis | Prepared | By | Initial (Filter) | Final (ml) | Source ID | Spike 1 ID | ul Spike 1 | Spike 2 ID | ul Spike 2 | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1211026-BLK1 | QC | 11/07/12 14:20 | TW | 1 | 200 | | | | | | |
| 1211026-BS1 | QC | 11/07/12 14:20 | CC | 1 | 10 | | 2102503 | 500 | 2101802 | 200 | |
| 1211026-MS1 | QC | 11/07/12 14:20 | CC | 1 | 10 | E124405-02 | 2102503 | 500 | 2101802 | 200 | |
| 1211026-MSD1 | QC | 11/07/12 14:20 | CC | 1 | 10 | E124405-02 | 2102503 | 500 | 2101802 | 200 | |
| 1211026-PS1 | QC | 11/07/12 14:20 | CC | 1 | 10 | | 2012402 | 100 | | | |
| E124405-01 | v Major Metals 6010 IC | 11/07/12 14:20 | TW | 1 | 200 | | | | | | from F2L |
| E124405-02 | v Major Metals 6010 IC | 11/07/12 14:20 | TW | 1 | 200 | | | | | | from F2L |
| E124405-06 | v Major Metals 6010 IC | 11/07/12 14:20 | TW | 1 | 200 | | | | | | from F2L |
| E124405-19 | v Major Metals 6010 IC | 11/07/12 14:20 | TW | 1 | 200 | | | | | | from F2L |

Brittany Stuart 11/16/12

Verified By Date

# PREPARATION BENCH SHEET

1211026

## US-EPA, Region 4, SESD

**Matrix: Air** | **Prepared using: ICS MET - M Air Filter Prep** | **Printed: 11/14/2012 1:12:21PM**

| Lab Number | Prepared | Due | Container | Initial (Filter) | Final (ml) | Spike ID | Source ID | ul Spike |
|---|---|---|---|---|---|---|---|---|
| **1211026-BLK1** | 11/07/12 14:20 | | | 1 | 200 | | | |
| **E124405-01** *v Major Metals 6010 ICI* | 11/07/12 14:20 | 12/06/12 00:00 | A | 1 | 200 | Air Quality Management | | |
| **E124405-02** *v Major Metals 6010 ICI* | 11/07/12 14:20 | 12/06/12 00:00 | A | 1 | 200 | Air Quality Management | | |
| **E124405-06** *v Major Metals 6010 ICI* | 11/07/12 14:20 | 12/06/12 00:00 | A | 1 | 200 | Air Quality Management | | |
| **E124405-19** *v Major Metals 6010 ICI* | 11/07/12 14:20 | 12/06/12 00:00 | A | 1 | 200 | Air Quality Management | | |

Standard(s):

| Standard ID# | Description | Manufacture Lot# |
|---|---|---|

Brittany Stuart 11/16/12

Verified By Date

**Digestion of Water**

Book/pg 43/70

Project 13-0013 Yellow Bluff Dust E124405 Batch ID 1211025

Analyst(s) T. White Start 11/07/12 Complete 11/08/12

Method Reference Air filter - Manifold Prep Plate#/Hot Block # NA Hood # NA

Spike NA Temperature Check NA

mLs $HNO_3$ 1 mLs HCl 0.5 PT? Y/N N PT prep

Acid Lot no. $HNO_3$/HCl: 1112040 / 4111060

| No | Sample Number | pH<2 | Init. Vol. | Final Vol | No | Sample No. | pH<2 | Init. Vol | Final Vol |
|---|---|---|---|---|---|---|---|---|---|
| 1 | PB 1211025-BIK1 | | 1ml | 200ml | 16 | E124405- 18 | | 1 filter | 200mls |
| 2 | E124405-03 | | 1 filter | 200mls | 17 | ~~E124405- 19~~ T. White 11/8/12 | | | |
| 3 | E124405- 04 | | 1 filter | 200mls | 18 | E124405- 20 | | 1 filter | 200mls |
| 4 | E124405- 05 | | 1 filter | 200mls | 19 | E124405- 21 | | 1 filter | 200mls |
| 5 | E124405-07 | | 1 filter | 200mls | 20 | E124405- 22 | | 1 filter | 200mls |
| 6 | E124405- 08 | | 1 filter | 200mls | 21 | E124405- 23 | | 1 filter | 200mls |
| 7 | E124405- 09 | | 1 filter | 200mls | 22 | E124405- 24 | | 1 filter | 200mls |
| 8 | E124405- 10 | | 1 filter | 200mls | 23 | E124405- 25 | | 1 filter | 200mls |
| 9 | E124405 11 | | 1 filter | 200mls | 24 | E124405- 26 | | 1 filter | 200mls |
| 10 | E124405 12 | | 1 filter | 200mls | 25 | E124405- 27 | | 1 filter | 200mls |
| 11 | E124405 13 | | 1 filter | 200mls | 26 | E124405- 28 | | 1 filter | 200mls |
| 12 | E124405 -14 | | 1 filter | 200mls | 27 | | | | |
| 13 | E124405 - 15 | | 1 filter | 200mls | 28 | | | | |
| 14 | E124405- 16 | | 1 filter | 200mls | 29 | | | | |
| 15 | E124405- 17 | | 1 filter | 200mls | 30 | | | | |

These filters were: Sonicated in 50 mls DI $H_2O$
Poured up to a final volume of 200mls
Aliquoted into 50 ml digitubes for a metals, anions + ammonia analyses. See directions from Mike Wasko in Workorder notes

Version 05/01/2008

# PREPARATION BENCH SHEET

1211025

## US-EPA, Region 4, SESD

**Matrix: Air** | **Prepared using: ICS MET - M Air Filter Prep** | **Printed: 11/14/2012 1:12:42PM**

| Lab Number | Prepared | Due | Container | Initial (Filter) | Final (ml) | Spike ID | Source ID | ul Spike |
|---|---|---|---|---|---|---|---|---|
| 1211025-BLK1 | 11/07/12 14:09 | | | 1 | 200 | | | |
| E124405-03<br>*v Major Metals 6010 ICI* | 11/07/12 14:09 | 12/06/12 00:00 | A | 1 | 200 | Air Quality Management | | |
| E124405-04<br>*v Major Metals 6010 ICI* | 11/07/12 14:09 | 12/06/12 00:00 | A | 1 | 200 | Air Quality Management | | |
| E124405-05<br>*v Major Metals 6010 ICI* | 11/07/12 14:09 | 12/06/12 00:00 | A | 1 | 200 | Air Quality Management | | |
| E124405-07<br>*v Major Metals 6010 ICI* | 11/07/12 14:09 | 12/06/12 00:00 | A | 1 | 200 | Air Quality Management | | |
| E124405-08<br>*v Major Metals 6010 ICI* | 11/07/12 14:09 | 12/06/12 00:00 | A | 1 | 200 | Air Quality Management | | |
| E124405-09<br>*v Major Metals 6010 ICI* | 11/07/12 14:09 | 12/06/12 00:00 | A | 1 | 200 | Air Quality Management | | |
| E124405-10<br>*v Major Metals 6010 ICI* | 11/07/12 14:09 | 12/06/12 00:00 | A | 1 | 200 | Air Quality Management | | |
| E124405-11<br>*v Major Metals 6010 ICI* | 11/07/12 14:09 | 12/06/12 00:00 | A | 1 | 200 | Air Quality Management | | |
| E124405-12<br>*v Major Metals 6010 ICI* | 11/07/12 14:09 | 12/06/12 00:00 | A | 1 | 200 | Air Quality Management | | |
| E124405-13<br>*v Major Metals 6010 ICI* | 11/07/12 14:09 | 12/06/12 00:00 | A | 1 | 200 | Air Quality Management | | |
| E124405-14<br>*v Major Metals 6010 ICI* | 11/07/12 14:09 | 12/06/12 00:00 | A | 1 | 200 | Air Quality Management | | |
| E124405-15<br>*v Major Metals 6010 ICI* | 11/07/12 14:09 | 12/06/12 00:00 | A | 1 | 200 | Air Quality Management | | |
| E124405-16<br>*v Major Metals 6010 ICI* | 11/07/12 14:09 | 12/06/12 00:00 | A | 1 | 200 | Air Quality Management | | |

Brittany Stuart 11/16/12

Verified By Date

# PREPARATION BENCH SHEET

1211025

## US-EPA, Region 4, SESD

Matrix: Air

Prepared using: ICS MET - M Air Filter Prep

Printed: 11/14/2012 1:12:42PM

| Lab Number | Prepared | Due | Container | Initial (Filter) | Final (ml) | Spike ID | Source ID | ul Spike |
|---|---|---|---|---|---|---|---|---|
| E124405-17 | 11/07/12 14:09 | 12/06/12 00:00 | A | 1 | 200 | Air Quality Management | | |
| *v Major Metals 6010 ICI* | | | | | | | | |
| E124405-18 | 11/07/12 14:09 | 12/06/12 00:00 | A | 1 | 200 | Air Quality Management | | |
| *v Major Metals 6010 ICI* | | | | | | | | |
| E124405-20 | 11/07/12 14:09 | 12/06/12 00:00 | A | 1 | 200 | Air Quality Management | | |
| *v Major Metals 6010 ICI* | | | | | | | | |
| E124405-21 | 11/07/12 14:09 | 12/06/12 00:00 | A | 1 | 200 | Air Quality Management | | |
| *v Major Metals 6010 ICI* | | | | | | | | |
| E124405-22 | 11/07/12 14:09 | 12/06/12 00:00 | A | 1 | 200 | Air Quality Management | | |
| *v Major Metals 6010 ICI* | | | | | | | | |
| E124405-23 | 11/07/12 14:09 | 12/06/12 00:00 | A | 1 | 200 | Air Quality Management | | |
| *v Major Metals 6010 ICI* | | | | | | | | |
| E124405-24 | 11/07/12 14:09 | 12/06/12 00:00 | A | 1 | 200 | Air Quality Management | | |
| *v Major Metals 6010 ICI* | | | | | | | | |
| E124405-25 | 11/07/12 14:09 | 12/06/12 00:00 | A | 1 | 200 | Air Quality Management | | |
| *v Major Metals 6010 ICI* | | | | | | | | |
| E124405-26 | 11/07/12 14:09 | 12/06/12 00:00 | A | 1 | 200 | Air Quality Management | | |
| *v Major Metals 6010 ICI* | | | | | | | | |
| E124405-27 | 11/07/12 14:09 | 12/06/12 00:00 | A | 1 | 200 | Air Quality Management | | |
| *v Major Metals 6010 ICI* | | | | | | | | |
| E124405-28 | 11/07/12 14:09 | 12/06/12 00:00 | A | 1 | 200 | Air Quality Management | | |
| *v Major Metals 6010 ICI* | | | | | | | | |

Standard(s):

| Standard ID# | Description | Manufacture Lot# |
|---|---|---|

Verified By Date

# PREPARATION BENCH SHEET

1211025

US-EPA, Region 4, SESD

Printed: 11/16/2012 1:57:12PM

Matrix: Air

Prepared using: ICS MET - M Air Filter Prep

| Lab Number | Analysis | Prepared | By | Initial (Filter) | Final (ml) | Source ID | Spike 1 ID | ul Spike 1 | Spike 2 ID | ul Spike 2 | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1211025-BLK1 | QC | 11/07/12 14:09 | TW | 1 | 200 | | | | | | |
| 1211025-BS1 | QC | 11/07/12 14:09 | CC | 1 | 10 | | 2102503 | 500 | 2101802 | 200 | |
| 1211025-MS1 | QC | 11/07/12 14:09 | CC | 1 | 10 | E124405-05 | 2102503 | 500 | 2101802 | 200 | |
| 1211025-MS2 | QC | 11/07/12 14:09 | CC | 1 | 10 | E124405-14 | 2102503 | 500 | 2101802 | 200 | |
| 1211025-MS3 | QC | 11/07/12 14:09 | CC | 1 | 10 | E124405-25 | 2102503 | 500 | 2101802 | 200 | |
| 1211025-MSD1 | QC | 11/07/12 14:09 | CC | 1 | 10 | E124405-05 | 2102503 | 500 | 2101802 | 200 | |
| 1211025-MSD2 | QC | 11/07/12 14:09 | CC | 1 | 10 | E124405-14 | 2102503 | 500 | 2101802 | 200 | |
| 1211025-MSD3 | QC | 11/07/12 14:09 | CC | 1 | 10 | E124405-25 | 2102503 | 500 | 2101802 | 200 | |
| 1211025-PS1 | QC | 11/07/12 14:09 | CC | 1 | 10 | | 2012402 | 100 | | | |
| E124405-03 | v Major Metals 6010 IC | 11/07/12 14:09 | TW | 1 | 200 | | | | | | from F2L |
| E124405-04 | v Major Metals 6010 IC | 11/07/12 14:09 | TW | 1 | 200 | | | | | | from F2L |
| E124405-05 | v Major Metals 6010 IC | 11/07/12 14:09 | TW | 1 | 200 | | | | | | from F2L |
| E124405-07 | v Major Metals 6010 IC | 11/07/12 14:09 | TW | 1 | 200 | | | | | | from F2L |
| E124405-08 | v Major Metals 6010 IC | 11/07/12 14:09 | TW | 1 | 200 | | | | | | from F2L |
| E124405-09 | v Major Metals 6010 IC | 11/07/12 14:09 | TW | 1 | 200 | | | | | | from F2L |
| E124405-10 | v Major Metals 6010 IC | 11/07/12 14:09 | TW | 1 | 200 | | | | | | from F2L |
| E124405-11 | v Major Metals 6010 IC | 11/07/12 14:09 | TW | 1 | 200 | | | | | | from F2L |
| E124405-12 | v Major Metals 6010 IC | 11/07/12 14:09 | TW | 1 | 200 | | | | | | from F2L |
| E124405-13 | v Major Metals 6010 IC | 11/07/12 14:09 | TW | 1 | 200 | | | | | | from F2L |
| E124405-14 | v Major Metals 6010 IC | 11/07/12 14:09 | TW | 1 | 200 | | | | | | from F2L |
| E124405-15 | v Major Metals 6010 IC | 11/07/12 14:09 | TW | 1 | 200 | | | | | | from F2L |
| E124405-16 | v Major Metals 6010 IC | 11/07/12 14:09 | TW | 1 | 200 | | | | | | from F2L |

Brittany Stuart 11/16/12

Verified By Date

# PREPARATION BENCH SHEET

1211025

US-EPA, Region 4, SESD

Printed: 11/16/2012 1:57:12PM

Matrix: Air

Prepared using: ICS MET - M Air Filter Prep

| Lab Number | Analysis | Prepared | By | Initial (Filter) | Final (ml) | Source ID | Spike 1 ID | ul Spike 1 | Spike 2 ID | ul Spike 2 | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|
| E124405-17 | v Major Metals 6010 IC | 11/07/12 14:09 | TW | 1 | 200 | | | | | | from F2L |
| E124405-18 | v Major Metals 6010 IC | 11/07/12 14:09 | TW | 1 | 200 | | | | | | from F2L |
| E124405-20 | v Major Metals 6010 IC | 11/07/12 14:09 | TW | 1 | 200 | | | | | | from F2L |
| E124405-21 | v Major Metals 6010 IC | 11/07/12 14:09 | TW | 1 | 200 | | | | | | from F2L |
| E124405-22 | v Major Metals 6010 IC | 11/07/12 14:09 | TW | 1 | 200 | | | | | | from F2L |
| E124405-23 | v Major Metals 6010 IC | 11/07/12 14:09 | TW | 1 | 200 | | | | | | from F2L |
| E124405-24 | v Major Metals 6010 IC | 11/07/12 14:09 | TW | 1 | 200 | | | | | | from F2L |
| E124405-25 | v Major Metals 6010 IC | 11/07/12 14:09 | TW | 1 | 200 | | | | | | from F2L |
| E124405-26 | v Major Metals 6010 IC | 11/07/12 14:09 | TW | 1 | 200 | | | | | | from F2L |
| E124405-27 | v Major Metals 6010 IC | 11/07/12 14:09 | TW | 1 | 200 | | | | | | from F2L |
| E124405-28 | v Major Metals 6010 IC | 11/07/12 14:09 | TW | 1 | 200 | | | | | | from F2L |

Verified By _____ Date _____

**Operation Log:** 4300 **DV** **Book/Page** 8 / 31

**Analyst:** C. Callahan **Date** 11/14/12

**Plasma Pre-ignition Check:**

nitrogen: Bulk
argon supply: ✓
sample uptake rate: 1.6 ml/min

chiller: ok
pump tubings: sample(B-B): new
Int. Std(Y-O): ✓
drain (R-R): ok
rinse (R-R): ✓

**Optimization:**

**Xrad** ✓ **Xax** ✓ **Yax** ✓ **Hg** —

**Int. std. Sc counts:** **axial** 1,482,238.7 **rad** 40,910.3

**Analysis:**

Method: EPA DV68
IEC file: Cal baseline
Sample info file: 111412-1
Data set: 111412-1

Sample Type: Sed/soil Wste (Wtr) Tis TCLPX Other

Project nos.: 13-0013 Yellow bluff dust study
13-0050 GMH Electronics

Sample nos.: E124505-20 & 21
E124405-01 thru 28

| Calibration Stds: | Date Prepared: | ICV/CCV: | Date Prepared: |
|---|---|---|---|
| Blank | 8/28/12 | A | 11/2/12 |
| Cal STD MRL | 10/25/12 | B | 11/2/12 |
| 1 | 9/17/12 | Ag | 11/13/12 |
| 2 | 9/17/12 | | |
| 3 | 10/25/12 | | |
| 6 | 11/14/12 | | |
| 7 | 10/22/12 | IS 2.0ppm Sc | 11/14/12 |

**Reprocessing data:**

Date reprocessed: N/A
Method: N/A
IEC file: N/A
Saved to data set: N/A

Changes to IEC file: None Original Data used

**Comments & IEC solutions used:**

Ca 100 from Ca 1000 9/6/12
Fe 100 from Fe 1000 9/6/12
Mg 100 from Mg 1000 9/6/12

Dil $H_2O$ 10/29/12

**Sample Information Detail Report**
**Document Name: 111412-1**

**File Description**
13-0050/0013 GMH Electronics/Yellow Bluff E124505/405

**Parameters Common to All Samples**

| | |
|---|---|
| Batch ID | 111412-1 |
| Volume Units | L |
| Weight Units | ug |

**Parameters That Vary By Sample**

| Sample No | A/S Location | Sample ID | Initial Sample Wt. |
|---|---|---|---|
| 1 | 38 | SEQ-ICB | |
| 2 | 39 | SEQ-ICV@A1 | |
| 3 | 40 | SEQ-ICV@B1 | |
| 4 | 41 | SEQ-ICV@AG1 | |
| 5 | 42 | Ca 100 | |
| 6 | 43 | Mg 100 | |
| 7 | 44 | Fe 100 | |
| 8 | 45 | 1211053-BLK1 | |
| 9 | 46 | 1211053-PS1 | |
| 10 | 47 | 1211053-BS1 | |
| 11 | 48 | E124505-20 | |
| 12 | 49 | 1211053-MS1 | |
| 13 | 50 | 1211053-MSD1 | |
| 14 | 51 | E124505-21 | |
| 15 | 52 | 1211025-BLK1 | |
| 16 | 53 | 1211025-PS1 | |
| 17 | 54 | 1211025-BS1 | |
| 18 | 55 | E124405-03 | |
| 19 | 56 | E124405-04 | |
| 20 | 57 | E124405-05 | |
| 21 | 58 | 1211025-MS1 | |
| 22 | 59 | 1211025-MSD1 | |
| 23 | 60 | E124405-07 | |
| 24 | 61 | E124405-08 | |
| 25 | 62 | E124405-09 | |
| 26 | 63 | E124405-10 | |
| 27 | 64 | SEQ-CCB1 | |
| 28 | 65 | SEQ-CCV@A1 | |
| 29 | 66 | SEQ-CCV@B1 | |
| 30 | 67 | SEQ-CCV@AG1 | |
| 31 | 68 | E124405-11 | |
| 32 | 69 | E124405-12 | |
| 33 | 70 | E124405-13 | |
| 34 | 71 | E124405-14 | |
| 35 | 72 | 1211025-MS2 | |
| 36 | 73 | 1211025-MSD2 | |
| 37 | 74 | E124405-15 | |
| 38 | 75 | E124405-16 | |
| 39 | 76 | E124405-17 | |
| 40 | 77 | E124405-18 | |
| 41 | 78 | E124405-20 | |
| 42 | 79 | E124405-21 | |
| 43 | 80 | SEQ-CCB2 | |
| 44 | 81 | SEQ-CCV@B2 | |
| 45 | 82 | E124405-22 | |
| 46 | 83 | E124405-23 | |
| 47 | 84 | E124405-24 | |
| 48 | 85 | E124405-25 | |
| 49 | 86 | 1211025-MS3 | |
| 50 | 87 | 1211025-MSD3 | |
| 51 | 88 | E124405-26 | |
| 52 | 89 | E124405-27 | |
| 53 | 90 | E124405-28 | |
| 54 | 91 | SEQ-CCB3 | |
| 55 | 92 | SEQ-CCV@B3 | |
| 56 | 93 | 1211026-BLK1 | |

| | | |
|---|---|---|
| 57 | 94 | 1211026-PS1 |
| 58 | 95 | 1211026-BS1 |
| 59 | 96 | E124405-01 |
| 60 | 97 | E124405-02 |
| 61 | 98 | 1211026-MS1 |
| 62 | 99 | 1211026-MSD1 |
| 63 | 100 | E124405-06 |
| 64 | 101 | E124405-19 |
| 65 | 102 | SEQ-CCB4 |
| 66 | 103 | SEQ-CCV@B4 |

| Sample No | Sample Prep. Vol. | Aliquot Volume | Diluted To Vol. |
|---|---|---|---|
| 1 | | | |
| 2 | | | |
| 3 | | | |
| 4 | | | |
| 5 | | | |
| 6 | | | |
| 7 | | | |
| 8 | | | |
| 9 | | | |
| 10 | | | |
| 11 | | | |
| 12 | | | |
| 13 | | | |
| 14 | | | |
| 15 | | | |
| 16 | | | |
| 17 | | | |
| 18 | | | |
| 19 | | | |
| 20 | | | |
| 21 | | | |
| 22 | | | |
| 23 | | | |
| 24 | | | |
| 25 | | | |
| 26 | | | |
| 27 | | | |
| 28 | | | |
| 29 | | | |
| 30 | | | |
| 31 | | | |
| 32 | | | |
| 33 | | | |
| 34 | | | |
| 35 | | | |
| 36 | | | |
| 37 | | | |
| 38 | | | |
| 39 | | | |
| 40 | | | |
| 41 | | | |
| 42 | | | |
| 43 | | | |
| 44 | | | |
| 45 | | | |
| 46 | | | |
| 47 | | | |
| 48 | | | |
| 49 | | | |
| 50 | | | |
| 51 | | | |
| 52 | | | |
| 53 | | | |
| 54 | | | |
| 55 | | | |
| 56 | | | |

Align View X Radial for analyte Mn 257.610

| X-position | Y-position | Intensity |
|---|---|---|
| -7.0 | 15.0 | -1.0 |
| -6.5 | 15.0 | 228.6 |
| -6.0 | 15.0 | 416.7 |
| -5.5 | 15.0 | 637.3 |
| -5.0 | 15.0 | 933.2 |
| -4.5 | 15.0 | 2040.4 |
| -4.0 | 15.0 | 5274.4 |
| -3.5 | 15.0 | 12194.5 |
| -3.0 | 15.0 | 27995.1 |
| -2.5 | 15.0 | 50475.6 |
| -2.0 | 15.0 | 31262.7 |
| -1.5 | 15.0 | 72483.7 |
| -1.0 | 15.0 | 130772.9 |
| -0.5 | 15.0 | 147388.8 |
| 0.0 | 15.0 | 149363.3 |
| 0.5 | 15.0 | 131046.7 |
| 1.0 | 15.0 | 102162.1 |
| 1.5 | 15.0 | 68747.9 |
| 2.0 | 15.0 | 39462.9 |
| 2.5 | 15.0 | 15634.3 |
| 3.0 | 15.0 | 5486.4 |
| 3.5 | 15.0 | 4290.9 |
| 4.0 | 15.0 | 2234.8 |
| 4.5 | 15.0 | 1234.9 |
| 5.0 | 15.0 | 737.7 |
| 5.5 | 15.0 | 498.8 |
| 6.0 | 15.0 | 380.3 |
| 6.5 | 15.0 | 278.9 |
| 7.0 | 15.0 | 211.2 |

11/14/2012 3:03:52 PM aligned for analyte Mn 257.610
X viewing position set to 0.0 mm having Peak intensity 149363.3 for Radial viewing

Align View XY Axial for analyte Mn 257.610

| X-position | Y-position | Intensity |
|---|---|---|
| -2.0 | 15.0 | 2366824.5 |
| -1.6 | 15.0 | 2438055.7 |
| -1.2 | 15.0 | 849101.9 |
| -0.8 | 15.0 | 822149.8 |
| -0.4 | 15.0 | 794960.8 |
| 0.0 | 15.0 | 767674.9 |
| 0.4 | 15.0 | 692521.3 |
| 0.8 | 15.0 | 593067.0 |
| 1.2 | 15.0 | 467251.4 |
| 1.6 | 15.0 | 347337.2 |
| 2.0 | 15.0 | 247724.5 |
| -1.6 | 10.0 | 1921.8 |
| -1.6 | 10.5 | 5505.2 |
| -1.6 | 11.0 | 9898.0 |
| -1.6 | 11.5 | 27463.8 |
| -1.6 | 12.0 | 35278.0 |
| -1.6 | 12.5 | 93139.4 |
| -1.6 | 13.0 | 146581.6 |
| -1.6 | 13.5 | 189371.7 |
| -1.6 | 14.0 | 259105.6 |
| -1.6 | 14.5 | 357691.8 |
| -1.6 | 15.0 | 384387.8 |
| -1.6 | 15.5 | 372319.4 |
| -1.6 | 16.0 | 341355.0 |
| -1.6 | 16.5 | 231853.9 |
| -1.6 | 17.0 | 151268.1 |
| -1.6 | 17.5 | 123509.7 |
| -1.6 | 18.0 | 69410.3 |
| -1.6 | 18.5 | 54698.0 |
| -1.6 | 19.0 | 14070.4 |
| -1.6 | 19.5 | 1794.5 |
| -1.6 | 20.0 | 1386.7 |
| -2.4 | 15.0 | 197315.3 |

| | | |
|---|---|---|
| -2.0 | 15.0 | 272312.3 |
| -1.6 | 15.0 | 380659.5 |
| -1.2 | 15.0 | 487684.4 |
| -0.8 | 15.0 | 592571.3 |
| -0.8 | 13.0 | 238039.0 |
| -0.8 | 13.5 | 267258.5 |
| -0.8 | 14.0 | 447282.4 |
| -0.8 | 14.5 | 578721.2 |
| -0.8 | 15.0 | 583412.7 |
| -0.8 | 15.5 | 553068.2 |
| -0.8 | 16.0 | 524946.0 |
| -0.8 | 16.5 | 354029.0 |
| -0.8 | 17.0 | 213784.8 |

---

11/14/2012 3:07:13 PM aligned for analyte Mn 257.610
X viewing position set to -0.8 mm having Peak intensity 583412.7 for Axial viewing
Y viewing position set to 15.0 mm having Peak intensity 583412.7 for Axial viewing

==========

Dataset 111412-1 Cu 11/15/12



Calibration Summary

| Analyte | Stds. | Equation | Intercept | Slope | Curvature | Corr. Coef. | Reslope |
|---|---|---|---|---|---|---|---|
| 2005 Ag-A | 2 | Lin Thru 0 | 0.0 | 201.3 | 0.00000 | 0.999999 | |
| 2010 As-A | 2 | Lin Thru 0 | 0.0 | 0.9718 | 0.00000 | 1.000000 | |
| 2015 B-R | 1 | Lin Thru 0 | 0.0 | 1.482 | 0.00000 | 1.000000 | |
| 2020 Ba-R | 2 | Lin Thru 0 | 0.0 | 168.0 | 0.00000 | 1.000000 | |
| 2025 Be-A | 2 | Lin Thru 0 | 0.0 | 3510 | 0.00000 | 1.000000 | |
| 2030 Cd-A | 2 | Lin Thru 0 | 0.0 | 96.81 | 0.00000 | 1.000000 | |
| 2035 Co-A | 2 | Lin Thru 0 | 0.0 | 25.82 | 0.00000 | 1.000000 | |
| 2040 Cr-A | 2 | Lin Thru 0 | 0.0 | 116.2 | 0.00000 | 1.000000 | |
| 2045 Cu-R | 2 | Lin Thru 0 | 0.0 | 8.091 | 0.00000 | 1.000000 | |
| 2050 Mo-A | 2 | Lin Thru 0 | 0.0 | 14.48 | 0.00000 | 1.000000 | |
| 2055 Ni-A | 2 | Lin Thru 0 | 0.0 | 40.69 | 0.00000 | 1.000000 | |
| 2060 Pb-A | 2 | Lin Thru 0 | 0.0 | 7.188 | 0.00000 | 1.000000 | |
| 2065 Sb-A | 2 | Lin Thru 0 | 0.0 | 1.531 | 0.00000 | 1.000000 | |
| 2070 Se-A | 2 | Lin Thru 0 | 0.0 | 1.312 | 0.00000 | 0.999997 | |
| 2075 Sn-A | 2 | Lin Thru 0 | 0.0 | 3.573 | 0.00000 | 1.000000 | |
| 2080 Sr-R | 2 | Lin Thru 0 | 0.0 | 1244 | 0.00000 | 1.000000 | |
| 2090 Ti-R | 2 | Lin Thru 0 | 0.0 | 21.46 | 0.00000 | 1.000000 | |
| 2095 Tl-A | 2 | Lin Thru 0 | 0.0 | 1.187 | 0.00000 | 0.999998 | |
| 2100 V-A | 2 | Lin Thru 0 | 0.0 | 156.0 | 0.00000 | 1.000000 | |
| 2105 Y-A | 2 | Lin Thru 0 | 0.0 | 1221 | 0.00000 | 1.000000 | |
| 2110 Zn-A | 2 | Lin Thru 0 | 0.0 | 81.63 | 0.00000 | 1.000000 | |
| 2125 Al-R | 2 | Lin Thru 0 | 0.0 | 651.2 | 0.00000 | 1.000000 | |
| 2130 Mn-R | 2 | Lin Thru 0 | 0.0 | 15720 | 0.00000 | 1.000000 | |
| 2135 Ca-R | 2 | Lin Thru 0 | 0.0 | 2739 | 0.00000 | 1.000000 | |
| 2140 Mg-R | 2 | Lin Thru 0 | 0.0 | 293.7 | 0.00000 | 1.000000 | |
| 2145 Fe-R | 2 | Lin Thru 0 | 0.0 | 1208 | 0.00000 | 1.000000 | |
| 2150 Na-R | 2 | Lin Thru 0 | 0.0 | 8994 | 0.00000 | 1.000000 | |
| 2160 K-R | 2 | Lin Thru 0 | 0.0 | 1577 | 0.00000 | 1.000000 | |
| Au 242.795 | 1 | Lin Thru 0 | 0.0 | 0.6587 | 0.00000 | 1.000000 | |
| Bi 223.061 | 1 | Lin Thru 0 | 0.0 | 4.362 | 0.00000 | 1.000000 | |
| Ce 413.764 | 1 | Lin Thru 0 | 0.0 | 10.37 | 0.00000 | 1.000000 | |
| Hg 194.168-A | 1 | Lin Thru 0 | 0.0 | 2.577 | 0.00000 | 1.000000 | |
| La 379.478 | 1 | Lin Thru 0 | 0.0 | 5.197 | 0.00000 | 1.000000 | |
| Si 251.611 | 1 | Lin Thru 0 | 0.0 | 670.1 | 0.00000 | 1.000000 | |
| Te 214.281 | 1 | Lin Thru 0 | 0.0 | 3.897 | 0.00000 | 1.000000 | |
| Th 283.730 | 1 | Lin Thru 0 | 0.0 | 32.69 | 0.00000 | 1.000000 | |
| U 367.007 | 1 | Lin Thru 0 | 0.0 | 4.286 | 0.00000 | 1.000000 | |
| W 239.708 | 1 | Lin Thru 0 | 0.0 | 0.2011 | 0.00000 | 1.000000 | |
| S 182.563 | 1 | Lin Thru 0 | 0.0 | 146.7 | 0.00000 | 1.000000 | |
| B 249.677 | 1 | Lin Thru 0 | 0.0 | 0.6357 | 0.00000 | 1.000000 | |
| Cd 228.802-A | 2 | Lin Thru 0 | 0.0 | 29.85 | 0.00000 | 1.000000 | |
| Pb 283.306-A | 2 | Lin Thru 0 | 0.0 | 5.315 | 0.00000 | 0.999999 | |
| Tl 351.924-A | 2 | Lin Thru 0 | 0.0 | 5.088 | 0.00000 | 0.999998 | |
| Zn 206.200-A | 2 | Lin Thru 0 | 0.0 | 27.31 | 0.00000 | 1.000000 | |
| P 213.617 | 1 | Lin Thru 0 | 0.0 | 3083 | 0.00000 | 1.000000 | |
| Li 670.784 | 1 | Lin Thru 0 | 0.0 | 67710 | 0.00000 | 1.000000 | |
| Ag 338.289 | 2 | Lin Thru 0 | 0.0 | 99.05 | 0.00000 | 0.999999 | |
| Be 234.861 | 2 | Lin Thru 0 | 0.0 | 843.8 | 0.00000 | 1.000000 | |
| Si 288.158 | 1 | Lin Thru 0 | 0.0 | 16040 | 0.00000 | 1.000000 | |

13-0013 YELLOW BLUFF DUST STUDY

**Mean Data**

ID: Calib Blank 1 Seq. No.: 1 A/S Pos: 1

Sample Qty: g Prep. Vol.: Dilution: : Date: 2012/11/14 15:17:33

| Analyte | Corr. Intensity | Conc (Calib) | Std. Dev. | Calib Units | Conc (Sample) | Std. Dev. | Sample Units | RSD |
|---|---|---|---|---|---|---|---|---|
| Sc-R | 40,910.3 | [0.00] | 733.20 | % | | | | 1.79 % |
| Sc-A | 1,482,238.7 | [0.00] | 23,826.50 | % | | | | 1.61 % |
| 2125 Al-R | 74.2 | [0.00] | 1.48 | mg/L | | | | 2.00 % |
| 2130 Mn-R | 32.3 | [0.00] | 2.99 | mg/L | | | | 9.28 % |
| 2135 Ca-R | -76.2 | [0.00] | 5.74 | mg/L | | | | 7.53 % |
| 2140 Mg-R | 11.2 | [0.00] | 5.66 | mg/L | | | | 50.54 % |
| 2145 Fe-R | 5.1 | [0.00] | 1.55 | mg/L | | | | 30.60 % |
| 2150 Na-R | 574.0 | [0.00] | 57.35 | mg/L | | | | 9.99 % |
| 2160 K-R | 544.8 | [0.00] | 77.04 | mg/L | | | | 14.14 % |

**Mean Data**

ID: Cal Std MRL Seq. No.: 2 A/S Pos: 2

Sample Qty: g Prep. Vol.: Dilution: : Date: 2012/11/14 15:23:02

| Analyte | Corr. Intensity | Conc (Calib) | Std. Dev. | Calib Units | Conc (Sample) | Std. Dev. | Sample Units | RSD |
|---|---|---|---|---|---|---|---|---|
| Sc-R | 41,609.4 | 101.71 | 357.26 | % | | | | 0.86 % |
| Sc-A | 1,460,951.8 | 98.564 | 10,182.00 | % | | | | 0.70 % |
| 2125 Al-R | 64.8 | [0.1] | 10.52 | mg/L | | | | 16.25 % |
| 2130 Mn-R | 78.8 | [0.005] | 5.06 | mg/L | | | | 6.41 % |
| 2135 Ca-R | 727.4 | [0.25] | 8.57 | mg/L | | | | 1.18 % |
| 2140 Mg-R | 76.9 | [0.25] | 3.18 | mg/L | | | | 4.13 % |
| 2145 Fe-R | 130.1 | [0.1] | 2.77 | mg/L | | | | 2.13 % |
| 2150 Na-R | 9,062.0 | [1] | 116.45 | mg/L | | | | 1.29 % |
| 2160 K-R | 1,603.2 | [1] | 27.15 | mg/L | | | | 1.69 % |

**Mean Data**

ID: Cal Std 1 Seq. No.: 3 A/S Pos: 3

Sample Qty: g Prep. Vol.: Dilution: : Date: 2012/11/14 15:28:31

| Analyte | Corr. Intensity | Conc (Calib) | Std. Dev. | Calib Units | Conc (Sample) | Std. Dev. | Sample Units | RSD |
|---|---|---|---|---|---|---|---|---|
| Sc-R | 40,841.6 | 99.832 | 1,184.35 | % | | | | 2.90 % |
| Sc-A | 1,443,315.9 | 97.374 | 17,633.19 | % | | | | 1.22 % |

**Mean Data**

ID: Cal Std 2 Seq. No.: 4 A/S Pos: 4

Sample Qty: g Prep. Vol.: Dilution: : Date: 2012/11/14 15:35:07

| Analyte | Corr. Intensity | Conc (Calib) | Std. Dev. | Calib Units | Conc (Sample) | Std. Dev. | Sample Units | RSD |
|---|---|---|---|---|---|---|---|---|
| Sc-R | 42,581.4 | 104.08 | 563.42 | % | | | | 1.32 % |
| Sc-A | 1,466,992.5 | 98.971 | 10,742.32 | % | | | | 0.73 % |

**Mean Data**

ID: Cal Std 3 Seq. No.: 5 A/S Pos: 5

Sample Qty: g Prep. Vol.: Dilution: : Date: 2012/11/14 15:39:40

| Analyte | Corr. Intensity | Conc (Calib) | Std. Dev. | Calib Units | Conc (Sample) | Std. Dev. | Sample Units | RSD |
|---|---|---|---|---|---|---|---|---|
| Sc-R | 40,075.2 | 97.959 | 425.01 | % | | | | 1.06 % |
| Sc-A | 1,355,051.2 | 91.419 | 10,395.14 | % | | | | 0.77 % |
| 2125 Al-R | 65,121.6 | [100] | 760.08 | mg/L | | | | 1.17 % |
| 2130 Mn-R | 157,205.6 | [10] | 1,611.28 | mg/L | | | | 1.02 % |
| 2135 Ca-R | 273,892.6 | [100] | 2,797.35 | mg/L | | | | 1.02 % |
| 2140 Mg-R | 29,370.4 | [100] | 346.93 | mg/L | | | | 1.18 % |
| 2145 Fe-R | 120,803.1 | [100] | 1,304.72 | mg/L | | | | 1.08 % |
| 2150 Na-R | 899,404.7 | [100] | 6,298.16 | mg/L | | | | 0.70 % |

| | | | | | |
|---|---|---|---|---|---|
| 2160 K-R | 157,679.2 | [100] | 1,439.51 | mg/L | 0.91 % |

**Mean Data**

ID: Cal Std 6 Seq. No.: 6 A/S Pos: 6

Sample Qty: g Prep. Vol.: Dilution: : Date: 2012/11/14 15:43:20

| Analyte | Corr. Intensity | Conc (Calib) | Std. Dev. | Calib Units | Conc (Sample) | Std. Dev. | Sample Units | RSD |
|---|---|---|---|---|---|---|---|---|
| Sc-R | 40,095.3 | 98.008 | 420.79 | % | | | | 1.05 % |
| Sc-A | 1,432,025.8 | 96.612 | 18,067.05 | % | | | | 1.26 % |

**Mean Data**

ID: Cal Std 7 Seq. No.: 7 A/S Pos: 7

Sample Qty: g Prep. Vol.: Dilution: : Date: 2012/11/14 15:46:20

| Analyte | Corr. Intensity | Conc (Calib) | Std. Dev. | Calib Units | Conc (Sample) | Std. Dev. | Sample Units | RSD |
|---|---|---|---|---|---|---|---|---|
| Sc-R | 39,938.7 | 97.625 | 551.44 | % | | | | 1.38 % |
| Sc-A | 1,452,564.0 | 97.998 | 14,530.57 | % | | | | 1.00 % |

**Mean Data**

ID: SEQ-ICB Seq. No.: 8 A/S Pos: 38

Sample Qty: ug Prep. Vol.: Dilution: : Date: 2012/11/14 15:52:21

| Analyte | Corr. Intensity | Conc (Calib) | Std. Dev. | Calib Units | Conc (Sample) | Std. Dev. | Sample Units | RSD |
|---|---|---|---|---|---|---|---|---|
| Sc-R | 41,419.1 | 101.24 | 1.087 | % | | | % | 1.07 % |
| Sc-A | 1,418,369.2 | 95.691 | 0.7461 | % | | | % | 0.78 % |
| 2125 Al-R | 3.6 | 0.00558 | 0.011096 | mg/L | 0.00558 | 0.011096 | mg/L | 198.81 % |
| 2130 Mn-R | 3.4 | 0.00021 | 0.000345 | mg/L | 0.00021 | 0.000345 | mg/L | 165.42 % |
| 2135 Ca-R | 7.4 | 0.00237 | 0.003307 | mg/L | 0.00237 | 0.003307 | mg/L | 139.35 % |
| 2140 Mg-R | 5.0 | 0.01665 | 0.009217 | mg/L | 0.01665 | 0.009217 | mg/L | 55.34 % |
| 2145 Fe-R | 3.0 | 0.00245 | 0.002769 | mg/L | 0.00245 | 0.002769 | mg/L | 112.89 % |
| 2150 Na-R | 193.3 | 0.02141 | 0.015851 | mg/L | 0.02141 | 0.015851 | mg/L | 74.03 % |
| 2160 K-R | 64.3 | 0.04079 | 0.041220 | mg/L | 0.04079 | 0.041220 | mg/L | 101.05 % |

**Mean Data**

ID: SEQ-ICV@A1 Seq. No.: 9 A/S Pos: 39

Sample Qty: ug Prep. Vol.: Dilution: : Date: 2012/11/14 15:58:06

| Analyte | Corr. Intensity | Conc (Calib) | Std. Dev. | Calib Units | Conc (Sample) | Std. Dev. | Sample Units | RSD |
|---|---|---|---|---|---|---|---|---|
| Sc-R | 40,997.4 | 100.21 | 0.916 | % | | | % | 0.91 % |
| Sc-A | 1,415,000.3 | 95.464 | 0.5591 | % | | | % | 0.59 % |
| 2125 Al-R | 28.7 | -0.02309 | 0.010983 | mg/L | -0.02309 | 0.010983 | mg/L | 47.57 % |
| 2130 Mn-R | 3.8 | 0.00010 | 0.000204 | mg/L | 0.00010 | 0.000204 | mg/L | 203.71 % |
| 2135 Ca-R | 223.9 | 0.01040 | 0.002138 | mg/L | 0.01040 | 0.002138 | mg/L | 20.56 % |
| 2140 Mg-R | -2.5 | -0.00893 | 0.013521 | mg/L | -0.00893 | 0.013521 | mg/L | 151.37 % |
| 2145 Fe-R | 3.1 | 0.00044 | 0.001964 | mg/L | 0.00044 | 0.001964 | mg/L | 445.11 % |
| 2150 Na-R | 118.7 | 0.01312 | 0.005241 | mg/L | 0.01312 | 0.005241 | mg/L | 39.95 % |
| 2160 K-R | -50.2 | -0.03186 | 0.015200 | mg/L | -0.03186 | 0.015200 | mg/L | 47.71 % |

**Mean Data**

ID: SEQ-ICV@B1 Seq. No.: 10 A/S Pos: 40

Sample Qty: ug Prep. Vol.: Dilution: : Date: 2012/11/14 16:04:54

| Analyte | Corr. Intensity | Conc (Calib) | Std. Dev. | Calib Units | Conc (Sample) | Std. Dev. | Sample Units | RSD |
|---|---|---|---|---|---|---|---|---|
| Sc-R | 40,613.5 | 99.275 | 1.0122 | % | | | % | 1.02 % |
| Sc-A | 1,423,854.0 | 96.061 | 0.8352 | % | | | % | 0.87 % |
| 2125 Al-R | 34,037.8 | 52.267 | 0.6893 | mg/L | 52.267 | 0.6893 | mg/L | 1.32 % |
| 2130 Mn-R | 79,581.9 | 5.0596 | 0.06173 | mg/L | 5.0596 | 0.06173 | mg/L | 1.22 % |
| 2135 Ca-R | 136,631.4 | 49.874 | 0.6683 | mg/L | 49.874 | 0.6683 | mg/L | 1.34 % |
| 2140 Mg-R | 15,007.8 | 51.097 | 0.8179 | mg/L | 51.097 | 0.8179 | mg/L | 1.60 % |
| 2145 Fe-R | 61,868.6 | 51.201 | 0.6394 | mg/L | 51.201 | 0.6394 | mg/L | 1.25 % |
| 2150 Na-R | 441,399.6 | 49.077 | 0.5780 | mg/L | 49.077 | 0.5780 | mg/L | 1.18 % |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 2160 K-R | 78,453.0 | 49.755 | 0.6483 | mg/L | 49.755 | 0.6483 | mg/L | 1.30 % |

Mean Data

ID: SEQ-ICV@AG1 Seq. No.: 11 A/S Pos: 41

Sample Qty: ug Prep. Vol.: Dilution: : Date: 2012/11/14 16:11:24

| Analyte | Corr. Intensity | Conc (Calib) | Std. Dev. | Calib Units | Conc (Sample) | Std. Dev. | Sample Units | RSD |
|---|---|---|---|---|---|---|---|---|
| Sc-R | 41,203.3 | 100.72 | 1.385 | % | | | % | 1.38 % |
| Sc-A | 1,453,790.8 | 98.081 | 1.0363 | % | | | % | 1.06 % |
| 2125 Al-R | 11.2 | 0.01729 | 0.009996 | mg/L | 0.01729 | 0.009996 | mg/L | 57.81 % |
| 2130 Mn-R | 17.2 | 0.00109 | 0.000323 | mg/L | 0.00109 | 0.000323 | mg/L | 29.65 % |
| 2135 Ca-R | 57.0 | 0.02064 | 0.005536 | mg/L | 0.02064 | 0.005536 | mg/L | 26.82 % |
| 2140 Mg-R | 4.7 | 0.01586 | 0.012456 | mg/L | 0.01586 | 0.012456 | mg/L | 78.56 % |
| 2145 Fe-R | 18.0 | 0.01492 | 0.002212 | mg/L | 0.01492 | 0.002212 | mg/L | 14.82 % |
| 2150 Na-R | 139.9 | 0.01552 | 0.008440 | mg/L | 0.01552 | 0.008440 | mg/L | 54.39 % |
| 2160 K-R | 125.2 | 0.07938 | 0.029564 | mg/L | 0.07938 | 0.029564 | mg/L | 37.24 % |

Mean Data

ID: Ca 100 Seq. No.: 12 A/S Pos: 42

Sample Qty: ug Prep. Vol.: Dilution: : Date: 2012/11/14 16:16:55

| Analyte | Corr. Intensity | Conc (Calib) | Std. Dev. | Calib Units | Conc (Sample) | Std. Dev. | Sample Units | RSD |
|---|---|---|---|---|---|---|---|---|
| Sc-R | 40,454.3 | 98.885 | 0.8892 | % | | | % | 0.90 % |
| Sc-A | 1,431,296.2 | 96.563 | 1.2171 | % | | | % | 1.26 % |
| 2125 Al-R | 14.1 | 0.02206 | 0.009391 | mg/L | 0.02206 | 0.009391 | mg/L | 42.58 % |
| 2130 Mn-R | 6.5 | -0.00005 | 0.000140 | mg/L | -0.00005 | 0.000140 | mg/L | 286.35 % |
| 2135 Ca-R | 275,273.4 | 100.50 | 0.389 | mg/L | 100.50 | 0.389 | mg/L | 0.39 % |
| 2140 Mg-R | 1.5 | 0.00478 | 0.004435 | mg/L | 0.00478 | 0.004435 | mg/L | 92.73 % |
| 2145 Fe-R | 10.8 | 0.00571 | 0.002518 | mg/L | 0.00571 | 0.002518 | mg/L | 44.08 % |
| 2150 Na-R | 285.6 | 0.03154 | 0.008763 | mg/L | 0.03154 | 0.008763 | mg/L | 27.78 % |
| 2160 K-R | 35.2 | 0.02231 | 0.036339 | mg/L | 0.02231 | 0.036339 | mg/L | 162.91 % |

Mean Data

ID: Mg 100 Seq. No.: 13 A/S Pos: 43

Sample Qty: ug Prep. Vol.: Dilution: : Date: 2012/11/14 16:23:29

| Analyte | Corr. Intensity | Conc (Calib) | Std. Dev. | Calib Units | Conc (Sample) | Std. Dev. | Sample Units | RSD |
|---|---|---|---|---|---|---|---|---|
| Sc-R | 39,985.1 | 97.738 | 0.6227 | % | | | % | 0.64 % |
| Sc-A | 1,449,867.9 | 97.816 | 1.0017 | % | | | % | 1.02 % |
| 2125 Al-R | 18.4 | 0.02806 | 0.008733 | mg/L | 0.02806 | 0.008733 | mg/L | 31.12 % |
| 2130 Mn-R | 71.3 | 0.00036 | 0.000148 | mg/L | 0.00036 | 0.000148 | mg/L | 41.48 % |
| 2135 Ca-R | 75.9 | 0.02684 | 0.002422 | mg/L | 0.02684 | 0.002422 | mg/L | 9.03 % |
| 2140 Mg-R | 30,513.4 | 103.89 | 0.903 | mg/L | 103.89 | 0.903 | mg/L | 0.87 % |
| 2145 Fe-R | 17.9 | 0.00805 | 0.001134 | mg/L | 0.00805 | 0.001134 | mg/L | 14.09 % |
| 2150 Na-R | 98.2 | 0.01082 | 0.009916 | mg/L | 0.01082 | 0.009916 | mg/L | 91.63 % |
| 2160 K-R | 93.2 | 0.05912 | 0.016371 | mg/L | 0.05912 | 0.016371 | mg/L | 27.69 % |

Mean Data

ID: Fe 100 Seq. No.: 14 A/S Pos: 44

Sample Qty: ug Prep. Vol.: Dilution: : Date: 2012/11/14 16:29:59

| Analyte | Corr. Intensity | Conc (Calib) | Std. Dev. | Calib Units | Conc (Sample) | Std. Dev. | Sample Units | RSD |
|---|---|---|---|---|---|---|---|---|
| Sc-R | 41,350.8 | 101.08 | 2.856 | % | | | % | 2.83 % |
| Sc-A | 1,467,625.6 | 99.014 | 0.7780 | % | | | % | 0.79 % |
| 2125 Al-R | 14.2 | 0.01942 | 0.007455 | mg/L | 0.01942 | 0.007455 | mg/L | 38.40 % |
| 2130 Mn-R | -33.8 | -0.00288 | 0.000280 | mg/L | -0.00288 | 0.000280 | mg/L | 9.71 % |
| 2135 Ca-R | 114.7 | 0.02072 | 0.004298 | mg/L | 0.02072 | 0.004298 | mg/L | 20.74 % |
| 2140 Mg-R | 62.4 | 0.06652 | 0.008682 | mg/L | 0.06652 | 0.008682 | mg/L | 13.05 % |
| 2145 Fe-R | 124,583.2 | 103.13 | 0.776 | mg/L | 103.13 | 0.776 | mg/L | 0.75 % |
| 2150 Na-R | 68.5 | 0.00761 | 0.006857 | mg/L | 0.00761 | 0.006857 | mg/L | 90.07 % |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 2160 K-R | 5.4 | 0.00345 | 0.044922 | mg/L | 0.00345 | 0.044922 | mg/L | 1,301.43 % |

**Mean Data**

ID: 1211025-BLK1 Seq. No.: 22 A/S Pos: 52

Sample Qty: ug Prep. Vol.: Dilution: : Date: 2012/11/14 17:19:49

| Analyte | Corr. Intensity | Conc (Calib) | Std. Dev. | Calib Units | Conc (Sample) | Std. Dev. | Sample Units | RSD |
|---|---|---|---|---|---|---|---|---|
| Sc-R | 40,803.7 | 99.739 | 1.6154 | % | | | % | 1.62 % |
| Sc-A | 1,444,032.8 | 97.422 | 0.9847 | % | | | % | 1.01 % |
| 2125 Al-R | 9.0 | 0.01390 | 0.009015 | mg/L | 0.01390 | 0.009015 | mg/L | 64.86 % |
| 2130 Mn-R | 47.1 | 0.00300 | 0.000942 | mg/L | 0.00300 | 0.000942 | mg/L | 31.42 % |
| 2135 Ca-R | 9.0 | 0.00307 | 0.003053 | mg/L | 0.00307 | 0.003053 | mg/L | 99.45 % |
| 2140 Mg-R | 0.3 | 0.00062 | 0.006413 | mg/L | 0.00062 | 0.006413 | mg/L | 1,026.36 % |
| 2145 Fe-R | 3.7 | 0.00307 | 0.001333 | mg/L | 0.00307 | 0.001333 | mg/L | 43.39 % |
| 2150 Na-R | 87.7 | 0.00969 | 0.009611 | mg/L | 0.00969 | 0.009611 | mg/L | 99.15 % |
| 2160 K-R | 33.5 | 0.02127 | 0.049349 | mg/L | 0.02127 | 0.049349 | mg/L | 232.05 % |

**Mean Data**

ID: 1211025-PS1 Seq. No.: 23 A/S Pos: 53

Sample Qty: ug Prep. Vol.: Dilution: : Date: 2012/11/14 17:25:20

| Analyte | Corr. Intensity | Conc (Calib) | Std. Dev. | Calib Units | Conc (Sample) | Std. Dev. | Sample Units | RSD |
|---|---|---|---|---|---|---|---|---|
| Sc-R | 41,087.1 | 100.43 | 1.886 | % | | | % | 1.88 % |
| Sc-A | 1,459,890.2 | 98.492 | 0.7542 | % | | | % | 0.77 % |
| 2125 Al-R | 75.3 | 0.11531 | 0.013583 | mg/L | 0.11531 | 0.013583 | mg/L | 11.78 % |
| 2130 Mn-R | 87.6 | 0.00556 | 0.000488 | mg/L | 0.00556 | 0.000488 | mg/L | 8.78 % |
| 2135 Ca-R | 700.9 | 0.25556 | 0.005129 | mg/L | 0.25556 | 0.005129 | mg/L | 2.01 % |
| 2140 Mg-R | 76.7 | 0.26097 | 0.016374 | mg/L | 0.26097 | 0.016374 | mg/L | 6.27 % |
| 2145 Fe-R | 132.3 | 0.10930 | 0.002922 | mg/L | 0.10930 | 0.002922 | mg/L | 2.67 % |
| 2150 Na-R | 9,472.9 | 1.0531 | 0.02011 | mg/L | 1.0531 | 0.02011 | mg/L | 1.91 % |
| 2160 K-R | 1,613.3 | 1.0231 | 0.02927 | mg/L | 1.0231 | 0.02927 | mg/L | 2.86 % |

**Mean Data**

ID: 1211025-BS1 Seq. No.: 24 A/S Pos: 54

Sample Qty: ug Prep. Vol.: Dilution: : Date: 2012/11/14 17:30:54

| Analyte | Corr. Intensity | Conc (Calib) | Std. Dev. | Calib Units | Conc (Sample) | Std. Dev. | Sample Units | RSD |
|---|---|---|---|---|---|---|---|---|
| Sc-R | 40,720.6 | 99.536 | 2.0213 | % | | | % | 2.03 % |
| Sc-A | 1,447,313.6 | 97.644 | 0.9388 | % | | | % | 0.96 % |
| 2125 Al-R | 3,204.8 | 4.9149 | 0.05064 | mg/L | 4.9149 | 0.05064 | mg/L | 1.03 % |
| 2130 Mn-R | 7,781.4 | 0.49471 | 0.002393 | mg/L | 0.49471 | 0.002393 | mg/L | 0.48 % |
| 2135 Ca-R | 13,627.6 | 4.9672 | 0.03591 | mg/L | 4.9672 | 0.03591 | mg/L | 0.72 % |
| 2140 Mg-R | 1,559.8 | 5.3102 | 0.09737 | mg/L | 5.3102 | 0.09737 | mg/L | 1.83 % |
| 2145 Fe-R | 6,341.7 | 5.2472 | 0.04932 | mg/L | 5.2472 | 0.04932 | mg/L | 0.94 % |
| 2150 Na-R | 91,747.4 | 10.201 | 0.0956 | mg/L | 10.201 | 0.0956 | mg/L | 0.94 % |
| 2160 K-R | 15,453.4 | 9.8005 | 0.09547 | mg/L | 9.8005 | 0.09547 | mg/L | 0.97 % |

**Mean Data**

ID: E124405-03 Seq. No.: 25 A/S Pos: 55

Sample Qty: ug Prep. Vol.: Dilution: : Date: 2012/11/14 17:36:24

| Analyte | Corr. Intensity | Conc (Calib) | Std. Dev. | Calib Units | Conc (Sample) | Std. Dev. | Sample Units | RSD |
|---|---|---|---|---|---|---|---|---|
| Sc-R | 41,068.5 | 100.39 | 1.407 | % | | | % | 1.40 % |
| Sc-A | 1,446,403.4 | 97.582 | 0.6464 | % | | | % | 0.66 % |
| 2125 Al-R | 5.4 | 0.00840 | 0.010532 | mg/L | 0.00840 | 0.010532 | mg/L | 125.35 % |
| 2130 Mn-R | 3.8 | 0.00024 | 0.000291 | mg/L | 0.00024 | 0.000291 | mg/L | 121.82 % |
| 2135 Ca-R | 29.8 | 0.01066 | 0.003336 | mg/L | 0.01066 | 0.003336 | mg/L | 31.28 % |
| 2140 Mg-R | 2.9 | 0.00971 | 0.011105 | mg/L | 0.00971 | 0.011105 | mg/L | 114.33 % |
| 2145 Fe-R | 8.0 | 0.00664 | 0.002946 | mg/L | 0.00664 | 0.002946 | mg/L | 44.34 % |
| 2150 Na-R | 85.6 | 0.00947 | 0.008382 | mg/L | 0.00947 | 0.008382 | mg/L | 88.53 % |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 2160 K-R | 97.8 | 0.06203 | 0.011660 | mg/L | 0.06203 | 0.011660 | mg/L | 18.80 % |

**Mean Data**

ID: E124405-04 Seq. No.: 26 A/S Pos: 56

Sample Qty: ug Prep. Vol.: Dilution: : Date: 2012/11/14 17:41:56

| Analyte | Corr. Intensity | Conc (Calib) | Std. Dev. | Calib Units | Conc (Sample) | Std. Dev. | Sample Units | RSD |
|---|---|---|---|---|---|---|---|---|
| Sc-R | 41,003.2 | 100.23 | 0.541 | % | | | % | 0.54 % |
| Sc-A | 1,449,997.0 | 97.825 | 0.4857 | % | | | % | 0.50 % |
| 2125 Al-R | 6.9 | 0.01107 | 0.011792 | mg/L | 0.01107 | 0.011792 | mg/L | 106.56 % |
| 2130 Mn-R | 1.1 | 0.00007 | 0.000193 | mg/L | 0.00007 | 0.000193 | mg/L | 270.82 % |
| 2135 Ca-R | 22.8 | 0.00815 | 0.002837 | mg/L | 0.00815 | 0.002837 | mg/L | 34.81 % |
| 2140 Mg-R | 4.7 | 0.01582 | 0.021211 | mg/L | 0.01582 | 0.021211 | mg/L | 134.03 % |
| 2145 Fe-R | 3.4 | 0.00282 | 0.001750 | mg/L | 0.00282 | 0.001750 | mg/L | 62.08 % |
| 2150 Na-R | 58.3 | 0.00629 | 0.002682 | mg/L | 0.00629 | 0.002682 | mg/L | 42.62 % |
| 2160 K-R | 33.3 | 0.02112 | 0.045400 | mg/L | 0.02112 | 0.045400 | mg/L | 214.98 % |

**Mean Data**

ID: E124405-05 Seq. No.: 27 A/S Pos: 57

Sample Qty: ug Prep. Vol.: Dilution: : Date: 2012/11/14 17:47:33

| Analyte | Corr. Intensity | Conc (Calib) | Std. Dev. | Calib Units | Conc (Sample) | Std. Dev. | Sample Units | RSD |
|---|---|---|---|---|---|---|---|---|
| Sc-R | 40,949.1 | 100.09 | 2.156 | % | | | % | 2.15 % |
| Sc-A | 1,435,576.3 | 96.852 | 0.7885 | % | | | % | 0.81 % |
| 2125 Al-R | 9.0 | 0.01400 | 0.008991 | mg/L | 0.01400 | 0.008991 | mg/L | 64.22 % |
| 2130 Mn-R | 2.8 | 0.00018 | 0.000348 | mg/L | 0.00018 | 0.000348 | mg/L | 192.65 % |
| 2135 Ca-R | 25.4 | 0.00912 | 0.004496 | mg/L | 0.00912 | 0.004496 | mg/L | 49.31 % |
| 2140 Mg-R | -2.4 | -0.00851 | 0.020711 | mg/L | -0.00851 | 0.020711 | mg/L | 243.51 % |
| 2145 Fe-R | 3.4 | 0.00285 | 0.001742 | mg/L | 0.00285 | 0.001742 | mg/L | 61.09 % |
| 2150 Na-R | 50.7 | 0.00553 | 0.007843 | mg/L | 0.00553 | 0.007843 | mg/L | 141.81 % |
| 2160 K-R | 5.9 | 0.00375 | 0.010930 | mg/L | 0.00375 | 0.010930 | mg/L | 291.19 % |

**Mean Data**

ID: 1211025-MS1 Seq. No.: 28 A/S Pos: 58

Sample Qty: ug Prep. Vol.: Dilution: : Date: 2012/11/14 17:53:04

| Analyte | Corr. Intensity | Conc (Calib) | Std. Dev. | Calib Units | Conc (Sample) | Std. Dev. | Sample Units | RSD |
|---|---|---|---|---|---|---|---|---|
| Sc-R | 40,626.7 | 99.307 | 1.0813 | % | | | % | 1.09 % |
| Sc-A | 1,434,318.0 | 96.767 | 0.2860 | % | | | % | 0.30 % |
| 2125 Al-R | 3,234.6 | 4.9601 | 0.04917 | mg/L | 4.9601 | 0.04917 | mg/L | 0.99 % |
| 2130 Mn-R | 7,832.4 | 0.49795 | 0.000961 | mg/L | 0.49795 | 0.000961 | mg/L | 0.19 % |
| 2135 Ca-R | 13,812.3 | 5.0346 | 0.01442 | mg/L | 5.0346 | 0.01442 | mg/L | 0.29 % |
| 2140 Mg-R | 1,564.9 | 5.3275 | 0.03377 | mg/L | 5.3275 | 0.03377 | mg/L | 0.63 % |
| 2145 Fe-R | 6,383.2 | 5.2815 | 0.03148 | mg/L | 5.2815 | 0.03148 | mg/L | 0.60 % |
| 2150 Na-R | 92,043.0 | 10.234 | 0.0401 | mg/L | 10.234 | 0.0401 | mg/L | 0.39 % |
| 2160 K-R | 15,664.1 | 9.9342 | 0.09395 | mg/L | 9.9342 | 0.09395 | mg/L | 0.95 % |

**Mean Data**

ID: 1211025-MSD1 Seq. No.: 29 A/S Pos: 59

Sample Qty: ug Prep. Vol.: Dilution: : Date: 2012/11/14 17:58:37

| Analyte | Corr. Intensity | Conc (Calib) | Std. Dev. | Calib Units | Conc (Sample) | Std. Dev. | Sample Units | RSD |
|---|---|---|---|---|---|---|---|---|
| Sc-R | 41,070.0 | 100.39 | 1.940 | % | | | % | 1.93 % |
| Sc-A | 1,450,867.8 | 97.884 | 0.4201 | % | | | % | 0.43 % |
| 2125 Al-R | 3,181.3 | 4.8784 | 0.06715 | mg/L | 4.8784 | 0.06715 | mg/L | 1.38 % |
| 2130 Mn-R | 7,784.4 | 0.49489 | 0.004847 | mg/L | 0.49489 | 0.004847 | mg/L | 0.98 % |
| 2135 Ca-R | 13,617.1 | 4.9634 | 0.05477 | mg/L | 4.9634 | 0.05477 | mg/L | 1.10 % |
| 2140 Mg-R | 1,548.3 | 5.2711 | 0.09270 | mg/L | 5.2711 | 0.09270 | mg/L | 1.76 % |
| 2145 Fe-R | 6,317.9 | 5.2275 | 0.07559 | mg/L | 5.2275 | 0.07559 | mg/L | 1.45 % |
| 2150 Na-R | 91,208.0 | 10.141 | 0.1086 | mg/L | 10.141 | 0.1086 | mg/L | 1.07 % |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 2160 K-R | 15,381.3 | 9.7548 | 0.09743 | mg/L | 9.7548 | 0.09743 | mg/L | 1.00 % |

**Mean Data**

ID: E124405-07 Seq. No.: 30 A/S Pos: 60

Sample Qty: ug Prep. Vol.: Dilution: : Date: 2012/11/14 18:04:08

| Analyte | Corr. Intensity | Conc (Calib) | Std. Dev. | Calib Units | Conc (Sample) | Std. Dev. | Sample Units | RSD |
|---|---|---|---|---|---|---|---|---|
| Sc-R | 41,246.1 | 100.82 | 1.627 | % | | | % | 1.61 % |
| Sc-A | 1,424,223.5 | 96.086 | 0.3141 | % | | | % | 0.33 % |
| 2125 Al-R | 9.3 | 0.01489 | 0.008497 | mg/L | 0.01489 | 0.008497 | mg/L | 57.06 % |
| 2130 Mn-R | 10.0 | 0.00064 | 0.000176 | mg/L | 0.00064 | 0.000176 | mg/L | 27.40 % |
| 2135 Ca-R | 88.3 | 0.03203 | 0.002058 | mg/L | 0.03203 | 0.002058 | mg/L | 6.43 % |
| 2140 Mg-R | 1.9 | 0.00638 | 0.013617 | mg/L | 0.00638 | 0.013617 | mg/L | 213.29 % |
| 2145 Fe-R | 7.4 | 0.00615 | 0.002618 | mg/L | 0.00615 | 0.002618 | mg/L | 42.56 % |
| 2150 Na-R | 311.2 | 0.03437 | 0.003751 | mg/L | 0.03437 | 0.003751 | mg/L | 10.91 % |
| 2160 K-R | -0.9 | -0.00058 | 0.028253 | mg/L | -0.00058 | 0.028253 | mg/L | 4,845.78 % |

**Mean Data**

ID: E124405-08 Seq. No.: 31 A/S Pos: 61

Sample Qty: ug Prep. Vol.: Dilution: : Date: 2012/11/14 18:09:42

| Analyte | Corr. Intensity | Conc (Calib) | Std. Dev. | Calib Units | Conc (Sample) | Std. Dev. | Sample Units | RSD |
|---|---|---|---|---|---|---|---|---|
| Sc-R | 41,029.2 | 100.29 | 0.550 | % | | | % | 0.55 % |
| Sc-A | 1,435,940.7 | 96.876 | 1.2402 | % | | | % | 1.28 % |
| 2125 Al-R | 3.9 | 0.00610 | 0.002193 | mg/L | 0.00610 | 0.002193 | mg/L | 35.92 % |
| 2130 Mn-R | 2.8 | 0.00018 | 0.000222 | mg/L | 0.00018 | 0.000222 | mg/L | 123.66 % |
| 2135 Ca-R | 25.3 | 0.00909 | 0.002078 | mg/L | 0.00909 | 0.002078 | mg/L | 22.85 % |
| 2140 Mg-R | 4.0 | 0.01338 | 0.007935 | mg/L | 0.01338 | 0.007935 | mg/L | 59.29 % |
| 2145 Fe-R | 4.6 | 0.00380 | 0.001925 | mg/L | 0.00380 | 0.001925 | mg/L | 50.71 % |
| 2150 Na-R | 211.7 | 0.02349 | 0.006915 | mg/L | 0.02349 | 0.006915 | mg/L | 29.43 % |
| 2160 K-R | 72.6 | 0.04603 | 0.019397 | mg/L | 0.04603 | 0.019397 | mg/L | 42.14 % |

**Mean Data**

ID: E124405-09 Seq. No.: 32 A/S Pos: 62

Sample Qty: ug Prep. Vol.: Dilution: : Date: 2012/11/14 18:15:13

| Analyte | Corr. Intensity | Conc (Calib) | Std. Dev. | Calib Units | Conc (Sample) | Std. Dev. | Sample Units | RSD |
|---|---|---|---|---|---|---|---|---|
| Sc-R | 40,726.7 | 99.551 | 1.2723 | % | | | % | 1.28 % |
| Sc-A | 1,419,108.5 | 95.741 | 0.6922 | % | | | % | 0.72 % |
| 2125 Al-R | 7.7 | 0.01215 | 0.014270 | mg/L | 0.01215 | 0.014270 | mg/L | 117.49 % |
| 2130 Mn-R | 7.2 | 0.00046 | 0.000215 | mg/L | 0.00046 | 0.000215 | mg/L | 46.82 % |
| 2135 Ca-R | 138.3 | 0.05029 | 0.001337 | mg/L | 0.05029 | 0.001337 | mg/L | 2.66 % |
| 2140 Mg-R | 2.4 | 0.00780 | 0.004818 | mg/L | 0.00780 | 0.004818 | mg/L | 61.75 % |
| 2145 Fe-R | 5.0 | 0.00416 | 0.001822 | mg/L | 0.00416 | 0.001822 | mg/L | 43.79 % |
| 2150 Na-R | 25.4 | 0.00265 | 0.009696 | mg/L | 0.00265 | 0.009696 | mg/L | 366.37 % |
| 2160 K-R | 91.9 | 0.05826 | 0.064812 | mg/L | 0.05826 | 0.064812 | mg/L | 111.25 % |

**Mean Data**

ID: E124405-10 Seq. No.: 33 A/S Pos: 63

Sample Qty: ug Prep. Vol.: Dilution: : Date: 2012/11/14 18:20:45

| Analyte | Corr. Intensity | Conc (Calib) | Std. Dev. | Calib Units | Conc (Sample) | Std. Dev. | Sample Units | RSD |
|---|---|---|---|---|---|---|---|---|
| Sc-R | 40,712.6 | 99.517 | 1.5233 | % | | | % | 1.53 % |
| Sc-A | 1,442,577.9 | 97.324 | 0.6735 | % | | | % | 0.69 % |
| 2125 Al-R | 5.0 | 0.00788 | 0.014777 | mg/L | 0.00788 | 0.014777 | mg/L | 187.48 % |
| 2130 Mn-R | 7.0 | 0.00044 | 0.000252 | mg/L | 0.00044 | 0.000252 | mg/L | 57.01 % |
| 2135 Ca-R | 47.6 | 0.01728 | 0.001276 | mg/L | 0.01728 | 0.001276 | mg/L | 7.39 % |
| 2140 Mg-R | 3.3 | 0.01096 | 0.016424 | mg/L | 0.01096 | 0.016424 | mg/L | 149.89 % |
| 2145 Fe-R | 5.1 | 0.00422 | 0.002427 | mg/L | 0.00422 | 0.002427 | mg/L | 57.45 % |
| 2150 Na-R | 167.4 | 0.01855 | 0.006461 | mg/L | 0.01855 | 0.006461 | mg/L | 34.83 % |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 2160 K-R | 79.5 | 0.05042 | 0.038724 | mg/L | 0.05042 | 0.038724 | mg/L | 76.80 % |

Mean Data

ID: SEQ-CCB1 Seq. No.: 34 A/S Pos: 64

Sample Qty: ug Prep. Vol.: Dilution: : Date: 2012/11/14 18:26:20

| Analyte | Corr. Intensity | Conc (Calib) | Std. Dev. | Calib Units | Conc (Sample) | Std. Dev. | Sample Units | RSD |
|---|---|---|---|---|---|---|---|---|
| Sc-R | 40,400.9 | 98.755 | 0.6229 | % | | | % | 0.63 % |
| Sc-A | 1,439,722.0 | 97.132 | 0.9364 | % | | | % | 0.96 % |
| 2125 Al-R | 4.3 | 0.00646 | 0.012151 | mg/L | 0.00646 | 0.012151 | mg/L | 188.24 % |
| 2130 Mn-R | 1.9 | 0.00012 | 0.000079 | mg/L | 0.00012 | 0.000079 | mg/L | 66.88 % |
| 2135 Ca-R | -1.2 | -0.00058 | 0.003946 | mg/L | -0.00058 | 0.003946 | mg/L | 681.77 % |
| 2140 Mg-R | 4.6 | 0.01541 | 0.012071 | mg/L | 0.01541 | 0.012071 | mg/L | 78.32 % |
| 2145 Fe-R | 2.6 | 0.00214 | 0.002843 | mg/L | 0.00214 | 0.002843 | mg/L | 133.07 % |
| 2150 Na-R | -29.8 | -0.00331 | 0.013961 | mg/L | -0.00331 | 0.013961 | mg/L | 421.32 % |
| 2160 K-R | 1.0 | 0.00060 | 0.056254 | mg/L | 0.00060 | 0.056254 | mg/L | 9,314.07 % |

Mean Data

ID: SEQ-CCV@A1 Seq. No.: 35 A/S Pos: 65

Sample Qty: ug Prep. Vol.: Dilution: : Date: 2012/11/14 18:32:04

| Analyte | Corr. Intensity | Conc (Calib) | Std. Dev. | Calib Units | Conc (Sample) | Std. Dev. | Sample Units | RSD |
|---|---|---|---|---|---|---|---|---|
| Sc-R | 40,450.1 | 98.875 | 1.1327 | % | | | % | 1.15 % |
| Sc-A | 1,410,868.5 | 95.185 | 1.1616 | % | | | % | 1.22 % |
| 2125 Al-R | 27.6 | -0.02572 | 0.006126 | mg/L | -0.02572 | 0.006126 | mg/L | 23.82 % |
| 2130 Mn-R | -3.5 | -0.00036 | 0.000250 | mg/L | -0.00036 | 0.000250 | mg/L | 69.44 % |
| 2135 Ca-R | 203.8 | 0.00339 | 0.001167 | mg/L | 0.00339 | 0.001167 | mg/L | 34.44 % |
| 2140 Mg-R | 2.1 | 0.00693 | 0.020900 | mg/L | 0.00693 | 0.020900 | mg/L | 301.80 % |
| 2145 Fe-R | 6.1 | 0.00294 | 0.003281 | mg/L | 0.00294 | 0.003281 | mg/L | 111.73 % |
| 2150 Na-R | 26.4 | 0.00306 | 0.014587 | mg/L | 0.00306 | 0.014587 | mg/L | 476.77 % |
| 2160 K-R | 48.0 | 0.03045 | 0.007232 | mg/L | 0.03045 | 0.007232 | mg/L | 23.75 % |

Mean Data

ID: SEQ-CCV@B1 Seq. No.: 36 A/S Pos: 66

Sample Qty: ug Prep. Vol.: Dilution: : Date: 2012/11/14 18:38:50

| Analyte | Corr. Intensity | Conc (Calib) | Std. Dev. | Calib Units | Conc (Sample) | Std. Dev. | Sample Units | RSD |
|---|---|---|---|---|---|---|---|---|
| Sc-R | 39,913.7 | 97.564 | 0.6636 | % | | | % | 0.68 % |
| Sc-A | 1,416,185.5 | 95.544 | 1.4601 | % | | | % | 1.53 % |
| 2125 Al-R | 33,660.9 | 51.687 | 0.4666 | mg/L | 51.687 | 0.4666 | mg/L | 0.90 % |
| 2130 Mn-R | 78,050.4 | 4.9622 | 0.04694 | mg/L | 4.9622 | 0.04694 | mg/L | 0.95 % |
| 2135 Ca-R | 136,438.3 | 49.804 | 0.4400 | mg/L | 49.804 | 0.4400 | mg/L | 0.88 % |
| 2140 Mg-R | 14,882.5 | 50.670 | 0.5310 | mg/L | 50.670 | 0.5310 | mg/L | 1.05 % |
| 2145 Fe-R | 61,240.7 | 50.682 | 0.4617 | mg/L | 50.682 | 0.4617 | mg/L | 0.91 % |
| 2150 Na-R | 446,096.0 | 49.599 | 0.3572 | mg/L | 49.599 | 0.3572 | mg/L | 0.72 % |
| 2160 K-R | 75,337.5 | 47.779 | 0.2650 | mg/L | 47.779 | 0.2650 | mg/L | 0.55 % |

Mean Data

ID: SEQ-CCV@AG1 Seq. No.: 37 A/S Pos: 67

Sample Qty: ug Prep. Vol.: Dilution: : Date: 2012/11/14 18:45:24

| Analyte | Corr. Intensity | Conc (Calib) | Std. Dev. | Calib Units | Conc (Sample) | Std. Dev. | Sample Units | RSD |
|---|---|---|---|---|---|---|---|---|
| Sc-R | 40,875.5 | 99.915 | 0.5235 | % | | | % | 0.52 % |
| Sc-A | 1,429,826.1 | 96.464 | 0.6082 | % | | | % | 0.63 % |
| 2125 Al-R | 15.5 | 0.02399 | 0.004866 | mg/L | 0.02399 | 0.004866 | mg/L | 20.28 % |
| 2130 Mn-R | 15.2 | 0.00097 | 0.000345 | mg/L | 0.00097 | 0.000345 | mg/L | 35.61 % |
| 2135 Ca-R | 47.1 | 0.01704 | 0.001907 | mg/L | 0.01704 | 0.001907 | mg/L | 11.20 % |
| 2140 Mg-R | 5.2 | 0.01746 | 0.008394 | mg/L | 0.01746 | 0.008394 | mg/L | 48.07 % |
| 2145 Fe-R | 18.2 | 0.01510 | 0.002385 | mg/L | 0.01510 | 0.002385 | mg/L | 15.79 % |
| 2150 Na-R | 126.4 | 0.01397 | 0.007532 | mg/L | 0.01397 | 0.007532 | mg/L | 53.93 % |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 2160 K-R | 51.1 | 0.03243 | 0.038888 | mg/L | 0.03243 | 0.038888 | mg/L | 119.91 % |

**Mean Data**

ID: E124405-11 Seq. No.: 38 A/S Pos: 68

Sample Qty: ug Prep. Vol.: Dilution: : Date: 2012/11/14 18:50:57

| Analyte | Corr. Intensity | Conc (Calib) | Std. Dev. | Calib Units | Conc (Sample) | Std. Dev. | Sample Units | RSD |
|---|---|---|---|---|---|---|---|---|
| Sc-R | 40,374.6 | 98.691 | 2.0009 | % | | | % | 2.03 % |
| Sc-A | 1,439,144.7 | 97.093 | 0.9004 | % | | | % | 0.93 % |
| 2125 Al-R | 9.5 | 0.01447 | 0.006426 | mg/L | 0.01447 | 0.006426 | mg/L | 44.40 % |
| 2130 Mn-R | 3.2 | 0.00020 | 0.000261 | mg/L | 0.00020 | 0.000261 | mg/L | 129.10 % |
| 2135 Ca-R | 22.6 | 0.00814 | 0.006250 | mg/L | 0.00814 | 0.006250 | mg/L | 76.80 % |
| 2140 Mg-R | -0.5 | -0.00192 | 0.008915 | mg/L | -0.00192 | 0.008915 | mg/L | 463.73 % |
| 2145 Fe-R | 9.6 | 0.00797 | 0.001771 | mg/L | 0.00797 | 0.001771 | mg/L | 22.21 % |
| 2150 Na-R | 147.1 | 0.01638 | 0.005097 | mg/L | 0.01638 | 0.005097 | mg/L | 31.11 % |
| 2160 K-R | 40.7 | 0.02583 | 0.070250 | mg/L | 0.02583 | 0.070250 | mg/L | 272.00 % |

**Mean Data**

ID: E124405-12 Seq. No.: 39 A/S Pos: 69

Sample Qty: ug Prep. Vol.: Dilution: : Date: 2012/11/14 18:56:28

| Analyte | Corr. Intensity | Conc (Calib) | Std. Dev. | Calib Units | Conc (Sample) | Std. Dev. | Sample Units | RSD |
|---|---|---|---|---|---|---|---|---|
| Sc-R | 41,140.5 | 100.56 | 1.556 | % | | | % | 1.55 % |
| Sc-A | 1,434,742.8 | 96.796 | 1.3379 | % | | | % | 1.38 % |
| 2125 Al-R | 9.0 | 0.01393 | 0.008745 | mg/L | 0.01393 | 0.008745 | mg/L | 62.78 % |
| 2130 Mn-R | 3.3 | 0.00021 | 0.000442 | mg/L | 0.00021 | 0.000442 | mg/L | 212.40 % |
| 2135 Ca-R | 13.1 | 0.00460 | 0.004973 | mg/L | 0.00460 | 0.004973 | mg/L | 108.07 % |
| 2140 Mg-R | 2.5 | 0.00843 | 0.011560 | mg/L | 0.00843 | 0.011560 | mg/L | 137.07 % |
| 2145 Fe-R | 5.1 | 0.00421 | 0.001126 | mg/L | 0.00421 | 0.001126 | mg/L | 26.75 % |
| 2150 Na-R | 15.5 | 0.00166 | 0.006849 | mg/L | 0.00166 | 0.006849 | mg/L | 412.82 % |
| 2160 K-R | 55.0 | 0.03490 | 0.052468 | mg/L | 0.03490 | 0.052468 | mg/L | 150.32 % |

**Mean Data**

ID: E124405-13 Seq. No.: 40 A/S Pos: 70

Sample Qty: ug Prep. Vol.: Dilution: : Date: 2012/11/14 19:02:02

| Analyte | Corr. Intensity | Conc (Calib) | Std. Dev. | Calib Units | Conc (Sample) | Std. Dev. | Sample Units | RSD |
|---|---|---|---|---|---|---|---|---|
| Sc-R | 41,088.9 | 100.44 | 2.213 | % | | | % | 2.20 % |
| Sc-A | 1,457,484.8 | 98.330 | 0.6619 | % | | | % | 0.67 % |
| 2125 Al-R | 4.2 | 0.00656 | 0.017888 | mg/L | 0.00656 | 0.017888 | mg/L | 272.85 % |
| 2130 Mn-R | 2.4 | 0.00015 | 0.000626 | mg/L | 0.00015 | 0.000626 | mg/L | 413.02 % |
| 2135 Ca-R | 15.5 | 0.00562 | 0.002555 | mg/L | 0.00562 | 0.002555 | mg/L | 45.43 % |
| 2140 Mg-R | 3.3 | 0.01124 | 0.014910 | mg/L | 0.01124 | 0.014910 | mg/L | 132.71 % |
| 2145 Fe-R | 3.8 | 0.00314 | 0.001458 | mg/L | 0.00314 | 0.001458 | mg/L | 46.37 % |
| 2150 Na-R | 77.4 | 0.00855 | 0.002767 | mg/L | 0.00855 | 0.002767 | mg/L | 32.36 % |
| 2160 K-R | 44.1 | 0.02794 | 0.036610 | mg/L | 0.02794 | 0.036610 | mg/L | 131.02 % |

**Mean Data**

ID: E124405-14 Seq. No.: 41 A/S Pos: 71

Sample Qty: ug Prep. Vol.: Dilution: : Date: 2012/11/14 19:07:33

| Analyte | Corr. Intensity | Conc (Calib) | Std. Dev. | Calib Units | Conc (Sample) | Std. Dev. | Sample Units | RSD |
|---|---|---|---|---|---|---|---|---|
| Sc-R | 40,706.3 | 99.501 | 1.8237 | % | | | % | 1.83 % |
| Sc-A | 1,425,759.7 | 96.190 | 0.3798 | % | | | % | 0.39 % |
| 2125 Al-R | 4.8 | 0.00754 | 0.004420 | mg/L | 0.00754 | 0.004420 | mg/L | 58.65 % |
| 2130 Mn-R | -0.6 | -0.00004 | 0.000181 | mg/L | -0.00004 | 0.000181 | mg/L | 459.53 % |
| 2135 Ca-R | 14.2 | 0.00507 | 0.003157 | mg/L | 0.00507 | 0.003157 | mg/L | 62.23 % |
| 2140 Mg-R | -1.9 | -0.00659 | 0.018082 | mg/L | -0.00659 | 0.018082 | mg/L | 274.19 % |
| 2145 Fe-R | 6.2 | 0.00512 | 0.002266 | mg/L | 0.00512 | 0.002266 | mg/L | 44.24 % |
| 2150 Na-R | -8.1 | -0.00098 | 0.004842 | mg/L | -0.00098 | 0.004842 | mg/L | 493.74 % |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 2160 K-R | 47.4 | 0.03004 | 0.030047 | mg/L | 0.03004 | 0.030047 | mg/L | 100.02 % |

**Mean Data**

ID: 1211025-MS2 Seq. No.: 42 A/S Pos: 72

Sample Qty: ug Prep. Vol.: Dilution: : Date: 2012/11/14 19:13:06

| Analyte | Corr. Intensity | Conc (Calib) | Std. Dev. | Calib Units | Conc (Sample) | Std. Dev. | Sample Units | RSD |
|---|---|---|---|---|---|---|---|---|
| Sc-R | 40,213.4 | 98.296 | 1.8393 | % | | | % | 1.87 % |
| Sc-A | 1,436,321.6 | 96.902 | 0.1565 | % | | | % | 0.16 % |
| 2125 Al-R | 3,219.3 | 4.9368 | 0.03802 | mg/L | 4.9368 | 0.03802 | mg/L | 0.77 % |
| 2130 Mn-R | 7,762.7 | 0.49351 | 0.004440 | mg/L | 0.49351 | 0.004440 | mg/L | 0.90 % |
| 2135 Ca-R | 13,638.8 | 4.9714 | 0.04434 | mg/L | 4.9714 | 0.04434 | mg/L | 0.89 % |
| 2140 Mg-R | 1,561.3 | 5.3151 | 0.07300 | mg/L | 5.3151 | 0.07300 | mg/L | 1.37 % |
| 2145 Fe-R | 6,361.3 | 5.2634 | 0.05357 | mg/L | 5.2634 | 0.05357 | mg/L | 1.02 % |
| 2150 Na-R | 91,812.4 | 10.208 | 0.0947 | mg/L | 10.208 | 0.0947 | mg/L | 0.93 % |
| 2160 K-R | 15,486.5 | 9.8215 | 0.10076 | mg/L | 9.8215 | 0.10076 | mg/L | 1.03 % |

**Mean Data**

ID: 1211025-MSD2 Seq. No.: 43 A/S Pos: 73

Sample Qty: ug Prep. Vol.: Dilution: : Date: 2012/11/14 19:18:39

| Analyte | Corr. Intensity | Conc (Calib) | Std. Dev. | Calib Units | Conc (Sample) | Std. Dev. | Sample Units | RSD |
|---|---|---|---|---|---|---|---|---|
| Sc-R | 40,186.2 | 98.230 | 0.9729 | % | | | % | 0.99 % |
| Sc-A | 1,453,233.0 | 98.043 | 0.5993 | % | | | % | 0.61 % |
| 2125 Al-R | 3,208.1 | 4.9196 | 0.02548 | mg/L | 4.9196 | 0.02548 | mg/L | 0.52 % |
| 2130 Mn-R | 7,729.0 | 0.49137 | 0.002413 | mg/L | 0.49137 | 0.002413 | mg/L | 0.49 % |
| 2135 Ca-R | 13,604.7 | 4.9591 | 0.03286 | mg/L | 4.9591 | 0.03286 | mg/L | 0.66 % |
| 2140 Mg-R | 1,559.3 | 5.3085 | 0.05476 | mg/L | 5.3085 | 0.05476 | mg/L | 1.03 % |
| 2145 Fe-R | 6,358.4 | 5.2610 | 0.01258 | mg/L | 5.2610 | 0.01258 | mg/L | 0.24 % |
| 2150 Na-R | 91,734.5 | 10.199 | 0.0377 | mg/L | 10.199 | 0.0377 | mg/L | 0.37 % |
| 2160 K-R | 15,448.3 | 9.7973 | 0.06027 | mg/L | 9.7973 | 0.06027 | mg/L | 0.62 % |

**Mean Data**

ID: E124405-15 Seq. No.: 44 A/S Pos: 74

Sample Qty: ug Prep. Vol.: Dilution: : Date: 2012/11/14 19:24:12

| Analyte | Corr. Intensity | Conc (Calib) | Std. Dev. | Calib Units | Conc (Sample) | Std. Dev. | Sample Units | RSD |
|---|---|---|---|---|---|---|---|---|
| Sc-R | 40,739.0 | 99.581 | 1.2491 | % | | | % | 1.25 % |
| Sc-A | 1,422,491.7 | 95.969 | 0.9534 | % | | | % | 0.99 % |
| 2125 Al-R | 6.5 | 0.00989 | 0.007032 | mg/L | 0.00989 | 0.007032 | mg/L | 71.11 % |
| 2130 Mn-R | 4.9 | 0.00031 | 0.000166 | mg/L | 0.00031 | 0.000166 | mg/L | 53.62 % |
| 2135 Ca-R | 181.9 | 0.06624 | 0.002801 | mg/L | 0.06624 | 0.002801 | mg/L | 4.23 % |
| 2140 Mg-R | 4.4 | 0.01484 | 0.008244 | mg/L | 0.01484 | 0.008244 | mg/L | 55.56 % |
| 2145 Fe-R | 8.8 | 0.00728 | 0.002202 | mg/L | 0.00728 | 0.002202 | mg/L | 30.27 % |
| 2150 Na-R | 313.6 | 0.03489 | 0.007939 | mg/L | 0.03489 | 0.007939 | mg/L | 22.76 % |
| 2160 K-R | 39.0 | 0.02474 | 0.024383 | mg/L | 0.02474 | 0.024383 | mg/L | 98.56 % |

**Mean Data**

ID: E124405-16 Seq. No.: 45 A/S Pos: 75

Sample Qty: ug Prep. Vol.: Dilution: : Date: 2012/11/14 19:29:43

| Analyte | Corr. Intensity | Conc (Calib) | Std. Dev. | Calib Units | Conc (Sample) | Std. Dev. | Sample Units | RSD |
|---|---|---|---|---|---|---|---|---|
| Sc-R | 40,739.8 | 99.583 | 2.0362 | % | | | % | 2.04 % |
| Sc-A | 1,435,095.8 | 96.819 | 0.9743 | % | | | % | 1.01 % |
| 2125 Al-R | 1.6 | 0.00242 | 0.003516 | mg/L | 0.00242 | 0.003516 | mg/L | 145.56 % |
| 2130 Mn-R | 14.1 | 0.00089 | 0.000134 | mg/L | 0.00089 | 0.000134 | mg/L | 15.01 % |
| 2135 Ca-R | 315.1 | 0.11491 | 0.003432 | mg/L | 0.11491 | 0.003432 | mg/L | 2.99 % |
| 2140 Mg-R | 5.6 | 0.01891 | 0.009917 | mg/L | 0.01891 | 0.009917 | mg/L | 52.44 % |
| 2145 Fe-R | 4.6 | 0.00379 | 0.002045 | mg/L | 0.00379 | 0.002045 | mg/L | 54.03 % |
| 2150 Na-R | 512.1 | 0.05689 | 0.014118 | mg/L | 0.05689 | 0.014118 | mg/L | 24.82 % |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 2160 K-R | 58.0 | 0.03675 | 0.067853 | mg/L | 0.03675 | 0.067853 | mg/L | 184.61 % |

**Mean Data**

ID: E124405-17 Seq. No.: 46 A/S Pos: 76

Sample Qty: ug Prep. Vol.: Dilution: : Date: 2012/11/14 19:35:14

| Analyte | Corr. Intensity | Conc (Calib) | Std. Dev. | Calib Units | Conc (Sample) | Std. Dev. | Sample Units | RSD |
|---|---|---|---|---|---|---|---|---|
| Sc-R | 40,443.3 | 98.859 | 1.5811 | % | | | % | 1.60 % |
| Sc-A | 1,433,280.3 | 96.697 | 0.8752 | % | | | % | 0.91 % |
| 2125 Al-R | 8.7 | 0.01343 | 0.014881 | mg/L | 0.01343 | 0.014881 | mg/L | 110.85 % |
| 2130 Mn-R | 10.1 | 0.00064 | 0.000110 | mg/L | 0.00064 | 0.000110 | mg/L | 17.03 % |
| 2135 Ca-R | 42.4 | 0.01527 | 0.002547 | mg/L | 0.01527 | 0.002547 | mg/L | 16.67 % |
| 2140 Mg-R | 4.0 | 0.01348 | 0.017924 | mg/L | 0.01348 | 0.017924 | mg/L | 132.95 % |
| 2145 Fe-R | 6.6 | 0.00549 | 0.000928 | mg/L | 0.00549 | 0.000928 | mg/L | 16.90 % |
| 2150 Na-R | 163.5 | 0.01812 | 0.016135 | mg/L | 0.01812 | 0.016135 | mg/L | 89.04 % |
| 2160 K-R | 42.1 | 0.02670 | 0.020487 | mg/L | 0.02670 | 0.020487 | mg/L | 76.73 % |

**Mean Data**

ID: E124405-18 Seq. No.: 47 A/S Pos: 77

Sample Qty: ug Prep. Vol.: Dilution: : Date: 2012/11/14 19:40:45

| Analyte | Corr. Intensity | Conc (Calib) | Std. Dev. | Calib Units | Conc (Sample) | Std. Dev. | Sample Units | RSD |
|---|---|---|---|---|---|---|---|---|
| Sc-R | 41,062.2 | 100.37 | 2.162 | % | | | % | 2.15 % |
| Sc-A | 1,450,384.1 | 97.851 | 0.7506 | % | | | % | 0.77 % |
| 2125 Al-R | 5.1 | 0.00820 | 0.013262 | mg/L | 0.00820 | 0.013262 | mg/L | 161.74 % |
| 2130 Mn-R | 4.8 | 0.00031 | 0.000211 | mg/L | 0.00031 | 0.000211 | mg/L | 68.65 % |
| 2135 Ca-R | 183.4 | 0.06681 | 0.004202 | mg/L | 0.06681 | 0.004202 | mg/L | 6.29 % |
| 2140 Mg-R | 2.1 | 0.00715 | 0.008700 | mg/L | 0.00715 | 0.008700 | mg/L | 121.60 % |
| 2145 Fe-R | 0.9 | 0.00075 | 0.003175 | mg/L | 0.00075 | 0.003175 | mg/L | 425.11 % |
| 2150 Na-R | 77.2 | 0.00842 | 0.009091 | mg/L | 0.00842 | 0.009091 | mg/L | 107.96 % |
| 2160 K-R | 6.8 | 0.00429 | 0.016183 | mg/L | 0.00429 | 0.016183 | mg/L | 377.01 % |

**Mean Data**

ID: E124405-20 Seq. No.: 48 A/S Pos: 78

Sample Qty: ug Prep. Vol.: Dilution: : Date: 2012/11/14 19:46:19

| Analyte | Corr. Intensity | Conc (Calib) | Std. Dev. | Calib Units | Conc (Sample) | Std. Dev. | Sample Units | RSD |
|---|---|---|---|---|---|---|---|---|
| Sc-R | 41,302.1 | 100.96 | 0.984 | % | | | % | 0.97 % |
| Sc-A | 1,442,174.1 | 97.297 | 0.9230 | % | | | % | 0.95 % |
| 2125 Al-R | 4.1 | 0.00671 | 0.013552 | mg/L | 0.00671 | 0.013552 | mg/L | 201.99 % |
| 2130 Mn-R | 0.6 | 0.00004 | 0.000191 | mg/L | 0.00004 | 0.000191 | mg/L | 481.62 % |
| 2135 Ca-R | 64.3 | 0.02328 | 0.002520 | mg/L | 0.02328 | 0.002520 | mg/L | 10.82 % |
| 2140 Mg-R | 2.9 | 0.00953 | 0.006162 | mg/L | 0.00953 | 0.006162 | mg/L | 64.66 % |
| 2145 Fe-R | 2.3 | 0.00189 | 0.003119 | mg/L | 0.00189 | 0.003119 | mg/L | 165.33 % |
| 2150 Na-R | -9.8 | -0.00127 | 0.017425 | mg/L | -0.00127 | 0.017425 | mg/L | 1,377.05 % |
| 2160 K-R | 11.8 | 0.00747 | 0.018781 | mg/L | 0.00747 | 0.018781 | mg/L | 251.32 % |

**Mean Data**

ID: E124405-21 Seq. No.: 49 A/S Pos: 79

Sample Qty: ug Prep. Vol.: Dilution: : Date: 2012/11/14 19:51:50

| Analyte | Corr. Intensity | Conc (Calib) | Std. Dev. | Calib Units | Conc (Sample) | Std. Dev. | Sample Units | RSD |
|---|---|---|---|---|---|---|---|---|
| Sc-R | 40,694.0 | 99.471 | 1.0301 | % | | | % | 1.04 % |
| Sc-A | 1,434,279.2 | 96.764 | 0.5077 | % | | | % | 0.52 % |
| 2125 Al-R | 1.7 | 0.00267 | 0.009764 | mg/L | 0.00267 | 0.009764 | mg/L | 365.90 % |
| 2130 Mn-R | 6.3 | 0.00040 | 0.000169 | mg/L | 0.00040 | 0.000169 | mg/L | 41.94 % |
| 2135 Ca-R | 46.7 | 0.01693 | 0.002785 | mg/L | 0.01693 | 0.002785 | mg/L | 16.45 % |
| 2140 Mg-R | 5.1 | 0.01719 | 0.007837 | mg/L | 0.01719 | 0.007837 | mg/L | 45.60 % |
| 2145 Fe-R | 3.8 | 0.00315 | 0.002652 | mg/L | 0.00315 | 0.002652 | mg/L | 84.32 % |
| 2150 Na-R | 73.9 | 0.00816 | 0.009275 | mg/L | 0.00816 | 0.009275 | mg/L | 113.73 % |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 2160 K-R | 79.7 | 0.05052 | 0.045181 | mg/L | 0.05052 | 0.045181 | mg/L | 89.44 % |

Mean Data

ID: SEQ-CCB2 Seq. No.: 50 A/S Pos: 80

Sample Qty: ug Prep. Vol.: Dilution: : Date: 2012/11/14 19:57:21

| Analyte | Corr. Intensity | Conc (Calib) | Std. Dev. | Calib Units | Conc (Sample) | Std. Dev. | Sample Units | RSD |
|---|---|---|---|---|---|---|---|---|
| Sc-R | 40,536.2 | 99.086 | 0.8839 | % | | | % | 0.89 % |
| Sc-A | 1,424,302.4 | 96.091 | 0.6319 | % | | | % | 0.66 % |
| 2125 Al-R | 2.8 | 0.00437 | 0.015712 | mg/L | 0.00437 | 0.015712 | mg/L | 359.52 % |
| 2130 Mn-R | -0.3 | -0.00002 | 0.000258 | mg/L | -0.00002 | 0.000258 | mg/L | 1,427.30 % |
| 2135 Ca-R | 5.5 | 0.00183 | 0.002860 | mg/L | 0.00183 | 0.002860 | mg/L | 156.36 % |
| 2140 Mg-R | 2.9 | 0.00970 | 0.009612 | mg/L | 0.00970 | 0.009612 | mg/L | 99.06 % |
| 2145 Fe-R | 1.8 | 0.00146 | 0.001550 | mg/L | 0.00146 | 0.001550 | mg/L | 106.36 % |
| 2150 Na-R | -74.6 | -0.00836 | 0.006107 | mg/L | -0.00836 | 0.006107 | mg/L | 73.04 % |
| 2160 K-R | 53.5 | 0.03392 | 0.046081 | mg/L | 0.03392 | 0.046081 | mg/L | 135.83 % |

Mean Data

ID: SEQ-CCV@B2 Seq. No.: 51 A/S Pos: 81

Sample Qty: ug Prep. Vol.: Dilution: : Date: 2012/11/14 20:03:04

| Analyte | Corr. Intensity | Conc (Calib) | Std. Dev. | Calib Units | Conc (Sample) | Std. Dev. | Sample Units | RSD |
|---|---|---|---|---|---|---|---|---|
| Sc-R | 40,356.0 | 98.645 | 1.4218 | % | | | % | 1.44 % |
| Sc-A | 1,442,767.8 | 97.337 | 0.6322 | % | | | % | 0.65 % |
| 2125 Al-R | 33,537.4 | 51.499 | 0.6642 | mg/L | 51.499 | 0.6642 | mg/L | 1.29 % |
| 2130 Mn-R | 78,294.8 | 4.9778 | 0.04857 | mg/L | 4.9778 | 0.04857 | mg/L | 0.98 % |
| 2135 Ca-R | 133,052.5 | 48.568 | 0.9002 | mg/L | 48.568 | 0.9002 | mg/L | 1.85 % |
| 2140 Mg-R | 14,757.2 | 50.244 | 0.5582 | mg/L | 50.244 | 0.5582 | mg/L | 1.11 % |
| 2145 Fe-R | 60,965.4 | 50.454 | 0.5411 | mg/L | 50.454 | 0.5411 | mg/L | 1.07 % |
| 2150 Na-R | 438,803.5 | 48.788 | 0.8009 | mg/L | 48.788 | 0.8009 | mg/L | 1.64 % |
| 2160 K-R | 75,761.0 | 48.047 | 0.8292 | mg/L | 48.047 | 0.8292 | mg/L | 1.73 % |

Mean Data

ID: E124405-22 Seq. No.: 52 A/S Pos: 82

Sample Qty: ug Prep. Vol.: Dilution: : Date: 2012/11/14 20:09:36

| Analyte | Corr. Intensity | Conc (Calib) | Std. Dev. | Calib Units | Conc (Sample) | Std. Dev. | Sample Units | RSD |
|---|---|---|---|---|---|---|---|---|
| Sc-R | 40,705.5 | 99.499 | 1.4438 | % | | | % | 1.45 % |
| Sc-A | 1,429,085.4 | 96.414 | 1.1587 | % | | | % | 1.20 % |
| 2125 Al-R | 10.5 | 0.01614 | 0.015848 | mg/L | 0.01614 | 0.015848 | mg/L | 98.21 % |
| 2130 Mn-R | 15.3 | 0.00097 | 0.000191 | mg/L | 0.00097 | 0.000191 | mg/L | 19.60 % |
| 2135 Ca-R | 43.0 | 0.01560 | 0.001670 | mg/L | 0.01560 | 0.001670 | mg/L | 10.71 % |
| 2140 Mg-R | 1.3 | 0.00445 | 0.022067 | mg/L | 0.00445 | 0.022067 | mg/L | 496.04 % |
| 2145 Fe-R | 20.2 | 0.01668 | 0.001581 | mg/L | 0.01668 | 0.001581 | mg/L | 9.47 % |
| 2150 Na-R | 334.1 | 0.03713 | 0.011326 | mg/L | 0.03713 | 0.011326 | mg/L | 30.51 % |
| 2160 K-R | 97.6 | 0.06187 | 0.015440 | mg/L | 0.06187 | 0.015440 | mg/L | 24.96 % |

Mean Data

ID: E124405-23 Seq. No.: 53 A/S Pos: 83

Sample Qty: ug Prep. Vol.: Dilution: : Date: 2012/11/14 20:15:10

| Analyte | Corr. Intensity | Conc (Calib) | Std. Dev. | Calib Units | Conc (Sample) | Std. Dev. | Sample Units | RSD |
|---|---|---|---|---|---|---|---|---|
| Sc-R | 40,871.1 | 99.904 | 1.8194 | % | | | % | 1.82 % |
| Sc-A | 1,428,115.9 | 96.349 | 0.8183 | % | | | % | 0.85 % |
| 2125 Al-R | 3.0 | 0.00470 | 0.010643 | mg/L | 0.00470 | 0.010643 | mg/L | 226.37 % |
| 2130 Mn-R | 2.3 | 0.00015 | 0.000168 | mg/L | 0.00015 | 0.000168 | mg/L | 112.24 % |
| 2135 Ca-R | 10.9 | 0.00388 | 0.002466 | mg/L | 0.00388 | 0.002466 | mg/L | 63.65 % |
| 2140 Mg-R | 1.7 | 0.00571 | 0.018625 | mg/L | 0.00571 | 0.018625 | mg/L | 326.04 % |
| 2145 Fe-R | 7.3 | 0.00602 | 0.000934 | mg/L | 0.00602 | 0.000934 | mg/L | 15.51 % |
| 2150 Na-R | 86.8 | 0.00963 | 0.008618 | mg/L | 0.00963 | 0.008618 | mg/L | 89.53 % |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 2160 K-R | 71.1 | 0.04508 | 0.021703 | mg/L | 0.04508 | 0.021703 | mg/L | 48.14 % |

**Mean Data**

ID: E124405-24 Seq. No.: 54 A/S Pos: 84

Sample Qty: ug Prep. Vol.: Dilution: : Date: 2012/11/14 20:20:41

| Analyte | Corr. Intensity | Conc (Calib) | Std. Dev. | Calib Units | Conc (Sample) | Std. Dev. | Sample Units | RSD |
|---|---|---|---|---|---|---|---|---|
| Sc-R | 40,833.5 | 99.812 | 1.1318 | % | | | % | 1.13 % |
| Sc-A | 1,424,064.7 | 96.075 | 0.9390 | % | | | % | 0.98 % |
| 2125 Al-R | 4.2 | 0.00675 | 0.006050 | mg/L | 0.00675 | 0.006050 | mg/L | 89.59 % |
| 2130 Mn-R | -0.4 | -0.00002 | 0.000191 | mg/L | -0.00002 | 0.000191 | mg/L | 794.82 % |
| 2135 Ca-R | -4.5 | -0.00182 | 0.003901 | mg/L | -0.00182 | 0.003901 | mg/L | 214.48 % |
| 2140 Mg-R | -0.3 | -0.00117 | 0.008168 | mg/L | -0.00117 | 0.008168 | mg/L | 700.67 % |
| 2145 Fe-R | 6.1 | 0.00504 | 0.002108 | mg/L | 0.00504 | 0.002108 | mg/L | 41.84 % |
| 2150 Na-R | 19.6 | 0.00202 | 0.018484 | mg/L | 0.00202 | 0.018484 | mg/L | 914.50 % |
| 2160 K-R | -1.1 | -0.00071 | 0.029554 | mg/L | -0.00071 | 0.029554 | mg/L | 4,143.14 % |

**Mean Data**

ID: E124405-25 Seq. No.: 55 A/S Pos: 85

Sample Qty: ug Prep. Vol.: Dilution: : Date: 2012/11/14 20:26:14

| Analyte | Corr. Intensity | Conc (Calib) | Std. Dev. | Calib Units | Conc (Sample) | Std. Dev. | Sample Units | RSD |
|---|---|---|---|---|---|---|---|---|
| Sc-R | 41,097.8 | 100.46 | 1.289 | % | | | % | 1.28 % |
| Sc-A | 1,452,326.0 | 97.982 | 1.1413 | % | | | % | 1.16 % |
| 2125 Al-R | 3.0 | 0.00494 | 0.006618 | mg/L | 0.00494 | 0.006618 | mg/L | 134.10 % |
| 2130 Mn-R | -1.7 | -0.00011 | 0.000326 | mg/L | -0.00011 | 0.000326 | mg/L | 309.29 % |
| 2135 Ca-R | -1.2 | -0.00055 | 0.002918 | mg/L | -0.00055 | 0.002918 | mg/L | 528.20 % |
| 2140 Mg-R | 4.0 | 0.01357 | 0.024368 | mg/L | 0.01357 | 0.024368 | mg/L | 179.58 % |
| 2145 Fe-R | 3.7 | 0.00307 | 0.001299 | mg/L | 0.00307 | 0.001299 | mg/L | 42.37 % |
| 2150 Na-R | 86.8 | 0.00952 | 0.006308 | mg/L | 0.00952 | 0.006308 | mg/L | 66.30 % |
| 2160 K-R | 57.8 | 0.03668 | 0.065161 | mg/L | 0.03668 | 0.065161 | mg/L | 177.63 % |

**Mean Data**

ID: 1211025-MS3 Seq. No.: 56 A/S Pos: 86

Sample Qty: ug Prep. Vol.: Dilution: : Date: 2012/11/14 20:31:46

| Analyte | Corr. Intensity | Conc (Calib) | Std. Dev. | Calib Units | Conc (Sample) | Std. Dev. | Sample Units | RSD |
|---|---|---|---|---|---|---|---|---|
| Sc-R | 39,823.5 | 97.344 | 1.9647 | % | | | % | 2.02 % |
| Sc-A | 1,436,696.1 | 96.927 | 0.5968 | % | | | % | 0.62 % |
| 2125 Al-R | 3,172.2 | 4.8647 | 0.05725 | mg/L | 4.8647 | 0.05725 | mg/L | 1.18 % |
| 2130 Mn-R | 7,721.4 | 0.49090 | 0.005709 | mg/L | 0.49090 | 0.005709 | mg/L | 1.16 % |
| 2135 Ca-R | 13,434.2 | 4.8968 | 0.05896 | mg/L | 4.8968 | 0.05896 | mg/L | 1.20 % |
| 2140 Mg-R | 1,553.7 | 5.2894 | 0.06634 | mg/L | 5.2894 | 0.06634 | mg/L | 1.25 % |
| 2145 Fe-R | 6,237.7 | 5.1612 | 0.05073 | mg/L | 5.1612 | 0.05073 | mg/L | 0.98 % |
| 2150 Na-R | 91,076.5 | 10.126 | 0.0927 | mg/L | 10.126 | 0.0927 | mg/L | 0.92 % |
| 2160 K-R | 15,220.3 | 9.6527 | 0.08385 | mg/L | 9.6527 | 0.08385 | mg/L | 0.87 % |

**Mean Data**

ID: 1211025-MSD3 Seq. No.: 57 A/S Pos: 87

Sample Qty: ug Prep. Vol.: Dilution: : Date: 2012/11/14 20:37:20

| Analyte | Corr. Intensity | Conc (Calib) | Std. Dev. | Calib Units | Conc (Sample) | Std. Dev. | Sample Units | RSD |
|---|---|---|---|---|---|---|---|---|
| Sc-R | 40,081.6 | 97.974 | 0.5516 | % | | | % | 0.56 % |
| Sc-A | 1,445,784.4 | 97.541 | 0.2401 | % | | | % | 0.25 % |
| 2125 Al-R | 3,234.1 | 4.9599 | 0.06966 | mg/L | 4.9599 | 0.06966 | mg/L | 1.40 % |
| 2130 Mn-R | 7,838.6 | 0.49836 | 0.006547 | mg/L | 0.49836 | 0.006547 | mg/L | 1.31 % |
| 2135 Ca-R | 13,804.3 | 5.0320 | 0.05313 | mg/L | 5.0320 | 0.05313 | mg/L | 1.06 % |
| 2140 Mg-R | 1,567.8 | 5.3374 | 0.02275 | mg/L | 5.3374 | 0.02275 | mg/L | 0.43 % |
| 2145 Fe-R | 6,370.2 | 5.2708 | 0.08002 | mg/L | 5.2708 | 0.08002 | mg/L | 1.52 % |
| 2150 Na-R | 91,429.6 | 10.165 | 0.1101 | mg/L | 10.165 | 0.1101 | mg/L | 1.08 % |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 2160 K-R | 15,763.1 | 9.9969 | 0.09306 | mg/L | 9.9969 | 0.09306 | mg/L | 0.93 % |

Mean Data

ID: E124405-26 Seq. No.: 58 A/S Pos: 88

Sample Qty: ug Prep. Vol.: Dilution: : Date: 2012/11/14 20:42:52

| Analyte | Corr. Intensity | Conc (Calib) | Std. Dev. | Calib Units | Conc (Sample) | Std. Dev. | Sample Units | RSD |
|---|---|---|---|---|---|---|---|---|
| Sc-R | 40,519.4 | 99.044 | 1.0024 | % | | | % | 1.01 % |
| Sc-A | 1,445,319.0 | 97.509 | 0.6889 | % | | | % | 0.71 % |
| 2125 Al-R | 1.5 | 0.00235 | 0.007584 | mg/L | 0.00235 | 0.007584 | mg/L | 322.42 % |
| 2130 Mn-R | 10.8 | 0.00069 | 0.000169 | mg/L | 0.00069 | 0.000169 | mg/L | 24.49 % |
| 2135 Ca-R | 68.1 | 0.02485 | 0.002411 | mg/L | 0.02485 | 0.002411 | mg/L | 9.70 % |
| 2140 Mg-R | 0.0 | -0.00012 | 0.019894 | mg/L | -0.00012 | 0.019894 | mg/L | 16,155.60 % |
| 2145 Fe-R | 7.0 | 0.00578 | 0.001818 | mg/L | 0.00578 | 0.001818 | mg/L | 31.43 % |
| 2150 Na-R | 174.2 | 0.01935 | 0.005805 | mg/L | 0.01935 | 0.005805 | mg/L | 30.00 % |
| 2160 K-R | 40.0 | 0.02538 | 0.045900 | mg/L | 0.02538 | 0.045900 | mg/L | 180.83 % |

Mean Data

ID: E124405-27 Seq. No.: 59 A/S Pos: 89

Sample Qty: ug Prep. Vol.: Dilution: : Date: 2012/11/14 20:48:24

| Analyte | Corr. Intensity | Conc (Calib) | Std. Dev. | Calib Units | Conc (Sample) | Std. Dev. | Sample Units | RSD |
|---|---|---|---|---|---|---|---|---|
| Sc-R | 41,029.6 | 100.29 | 1.565 | % | | | % | 1.56 % |
| Sc-A | 1,455,022.4 | 98.164 | 1.1694 | % | | | % | 1.19 % |
| 2125 Al-R | -0.8 | -0.00090 | 0.007585 | mg/L | -0.00090 | 0.007585 | mg/L | 841.31 % |
| 2130 Mn-R | 7.1 | 0.00046 | 0.000183 | mg/L | 0.00046 | 0.000183 | mg/L | 40.06 % |
| 2135 Ca-R | 42.6 | 0.01551 | 0.000967 | mg/L | 0.01551 | 0.000967 | mg/L | 6.24 % |
| 2140 Mg-R | -0.6 | -0.00203 | 0.009248 | mg/L | -0.00203 | 0.009248 | mg/L | 455.96 % |
| 2145 Fe-R | 0.9 | 0.00074 | 0.002675 | mg/L | 0.00074 | 0.002675 | mg/L | 360.99 % |
| 2150 Na-R | 112.5 | 0.01241 | 0.007164 | mg/L | 0.01241 | 0.007164 | mg/L | 57.73 % |
| 2160 K-R | 61.2 | 0.03882 | 0.026802 | mg/L | 0.03882 | 0.026802 | mg/L | 69.04 % |

Mean Data

ID: E124405-28 Seq. No.: 60 A/S Pos: 90

Sample Qty: ug Prep. Vol.: Dilution: : Date: 2012/11/14 20:54:02

| Analyte | Corr. Intensity | Conc (Calib) | Std. Dev. | Calib Units | Conc (Sample) | Std. Dev. | Sample Units | RSD |
|---|---|---|---|---|---|---|---|---|
| Sc-R | 40,662.4 | 99.394 | 0.8994 | % | | | % | 0.90 % |
| Sc-A | 1,444,538.2 | 97.457 | 0.5327 | % | | | % | 0.55 % |
| 2125 Al-R | 4.0 | 0.00632 | 0.007681 | mg/L | 0.00632 | 0.007681 | mg/L | 121.55 % |
| 2130 Mn-R | 0.6 | 0.00004 | 0.000363 | mg/L | 0.00004 | 0.000363 | mg/L | 915.45 % |
| 2135 Ca-R | 36.1 | 0.01311 | 0.004250 | mg/L | 0.01311 | 0.004250 | mg/L | 32.42 % |
| 2140 Mg-R | 1.7 | 0.00578 | 0.020448 | mg/L | 0.00578 | 0.020448 | mg/L | 354.04 % |
| 2145 Fe-R | 5.6 | 0.00466 | 0.002388 | mg/L | 0.00466 | 0.002388 | mg/L | 51.23 % |
| 2150 Na-R | 23.1 | 0.00247 | 0.014132 | mg/L | 0.00247 | 0.014132 | mg/L | 572.89 % |
| 2160 K-R | 38.6 | 0.02451 | 0.038801 | mg/L | 0.02451 | 0.038801 | mg/L | 158.31 % |

Mean Data

ID: SEQ-CCB3 Seq. No.: 61 A/S Pos: 91

Sample Qty: ug Prep. Vol.: Dilution: : Date: 2012/11/14 20:59:34

| Analyte | Corr. Intensity | Conc (Calib) | Std. Dev. | Calib Units | Conc (Sample) | Std. Dev. | Sample Units | RSD |
|---|---|---|---|---|---|---|---|---|
| Sc-R | 41,021.3 | 100.27 | 0.769 | % | | | % | 0.77 % |
| Sc-A | 1,441,674.9 | 97.263 | 0.4636 | % | | | % | 0.48 % |
| 2125 Al-R | 9.0 | 0.01411 | 0.009999 | mg/L | 0.01411 | 0.009999 | mg/L | 70.86 % |
| 2130 Mn-R | -3.0 | -0.00019 | 0.000089 | mg/L | -0.00019 | 0.000089 | mg/L | 47.64 % |
| 2135 Ca-R | 6.4 | 0.00227 | 0.003829 | mg/L | 0.00227 | 0.003829 | mg/L | 168.77 % |
| 2140 Mg-R | 2.3 | 0.00781 | 0.012489 | mg/L | 0.00781 | 0.012489 | mg/L | 159.98 % |
| 2145 Fe-R | 0.7 | 0.00055 | 0.003075 | mg/L | 0.00055 | 0.003075 | mg/L | 557.58 % |
| 2150 Na-R | -10.0 | -0.00121 | 0.008335 | mg/L | -0.00121 | 0.008335 | mg/L | 691.40 % |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 2160 K-R | 31.8 | 0.02019 | 0.026833 | mg/L | 0.02019 | 0.026833 | mg/L | 132.90 % |

**Mean Data**

ID: SEQ-CCV@B3 Seq. No.: 62 A/S Pos: 92

Date: 2012/11/14 21:05:17

Sample Qty: ug Prep. Vol.: Dilution: :

| Analyte | Corr. Intensity | Conc (Calib) | Std. Dev. | Calib Units | Conc (Sample) | Std. Dev. | Sample Units | RSD |
|---|---|---|---|---|---|---|---|---|
| Sc-R | 40,571.1 | 99.171 | 1.4332 | % | | | % | 1.45 % |
| Sc-A | 1,447,613.3 | 97.664 | 1.0730 | % | | | % | 1.10 % |
| 2125 Al-R | 33,474.0 | 51.401 | 0.5324 | mg/L | 51.401 | 0.5324 | mg/L | 1.04 % |
| 2130 Mn-R | 78,208.4 | 4.9723 | 0.05031 | mg/L | 4.9723 | 0.05031 | mg/L | 1.01 % |
| 2135 Ca-R | 130,452.0 | 47.618 | 1.0292 | mg/L | 47.618 | 1.0292 | mg/L | 2.16 % |
| 2140 Mg-R | 14,718.7 | 50.113 | 0.6115 | mg/L | 50.113 | 0.6115 | mg/L | 1.22 % |
| 2145 Fe-R | 60,899.5 | 50.399 | 0.5271 | mg/L | 50.399 | 0.5271 | mg/L | 1.05 % |
| 2150 Na-R | 436,987.4 | 48.586 | 0.9678 | mg/L | 48.586 | 0.9678 | mg/L | 1.99 % |
| 2160 K-R | 73,866.4 | 46.846 | 0.9910 | mg/L | 46.846 | 0.9910 | mg/L | 2.12 % |

**Mean Data**

ID: 1211026-BLK1 Seq. No.: 63 A/S Pos: 93

Date: 2012/11/14 21:11:49

Sample Qty: ug Prep. Vol.: Dilution: :

| Analyte | Corr. Intensity | Conc (Calib) | Std. Dev. | Calib Units | Conc (Sample) | Std. Dev. | Sample Units | RSD |
|---|---|---|---|---|---|---|---|---|
| Sc-R | 40,540.4 | 99.096 | 1.1618 | % | | | % | 1.17 % |
| Sc-A | 1,445,896.2 | 97.548 | 0.4642 | % | | | % | 0.48 % |
| 2125 Al-R | 13.7 | 0.02124 | 0.009739 | mg/L | 0.02124 | 0.009739 | mg/L | 45.84 % |
| 2130 Mn-R | 11.5 | 0.00074 | 0.000316 | mg/L | 0.00074 | 0.000316 | mg/L | 42.94 % |
| 2135 Ca-R | 12.9 | 0.00461 | 0.001824 | mg/L | 0.00461 | 0.001824 | mg/L | 39.58 % |
| 2140 Mg-R | 2.2 | 0.00749 | 0.017452 | mg/L | 0.00749 | 0.017452 | mg/L | 233.03 % |
| 2145 Fe-R | 22.9 | 0.01891 | 0.001481 | mg/L | 0.01891 | 0.001481 | mg/L | 7.83 % |
| 2150 Na-R | 287.1 | 0.03182 | 0.010565 | mg/L | 0.03182 | 0.010565 | mg/L | 33.21 % |
| 2160 K-R | 148.5 | 0.09416 | 0.029772 | mg/L | 0.09416 | 0.029772 | mg/L | 31.62 % |

**Mean Data**

ID: 1211026-PS1 Seq. No.: 64 A/S Pos: 94

Date: 2012/11/14 21:17:21

Sample Qty: ug Prep. Vol.: Dilution: :

| Analyte | Corr. Intensity | Conc (Calib) | Std. Dev. | Calib Units | Conc (Sample) | Std. Dev. | Sample Units | RSD |
|---|---|---|---|---|---|---|---|---|
| Sc-R | 40,766.5 | 99.648 | 2.0711 | % | | | % | 2.08 % |
| Sc-A | 1,440,324.4 | 97.172 | 0.8744 | % | | | % | 0.90 % |
| 2125 Al-R | 68.2 | 0.10449 | 0.004153 | mg/L | 0.10449 | 0.004153 | mg/L | 3.98 % |
| 2130 Mn-R | 81.1 | 0.00515 | 0.000203 | mg/L | 0.00515 | 0.000203 | mg/L | 3.94 % |
| 2135 Ca-R | 697.9 | 0.25446 | 0.003124 | mg/L | 0.25446 | 0.003124 | mg/L | 1.23 % |
| 2140 Mg-R | 77.6 | 0.26403 | 0.002245 | mg/L | 0.26403 | 0.002245 | mg/L | 0.85 % |
| 2145 Fe-R | 135.8 | 0.11216 | 0.001599 | mg/L | 0.11216 | 0.001599 | mg/L | 1.43 % |
| 2150 Na-R | 9,392.6 | 1.0442 | 0.00918 | mg/L | 1.0442 | 0.00918 | mg/L | 0.88 % |
| 2160 K-R | 1,599.2 | 1.0142 | 0.03516 | mg/L | 1.0142 | 0.03516 | mg/L | 3.47 % |

**Mean Data**

ID: 1211026-BS1 Seq. No.: 65 A/S Pos: 95

Date: 2012/11/14 21:22:54

Sample Qty: ug Prep. Vol.: Dilution: :

| Analyte | Corr. Intensity | Conc (Calib) | Std. Dev. | Calib Units | Conc (Sample) | Std. Dev. | Sample Units | RSD |
|---|---|---|---|---|---|---|---|---|
| Sc-R | 40,215.1 | 98.301 | 1.1265 | % | | | % | 1.15 % |
| Sc-A | 1,430,905.6 | 96.537 | 0.6294 | % | | | % | 0.65 % |
| 2125 Al-R | 3,220.3 | 4.9382 | 0.01781 | mg/L | 4.9382 | 0.01781 | mg/L | 0.36 % |
| 2130 Mn-R | 7,842.2 | 0.49857 | 0.003505 | mg/L | 0.49857 | 0.003505 | mg/L | 0.70 % |
| 2135 Ca-R | 13,641.9 | 4.9724 | 0.03873 | mg/L | 4.9724 | 0.03873 | mg/L | 0.78 % |
| 2140 Mg-R | 1,569.2 | 5.3422 | 0.06620 | mg/L | 5.3422 | 0.06620 | mg/L | 1.24 % |
| 2145 Fe-R | 6,382.1 | 5.2806 | 0.04706 | mg/L | 5.2806 | 0.04706 | mg/L | 0.89 % |
| 2150 Na-R | 92,148.1 | 10.245 | 0.0601 | mg/L | 10.245 | 0.0601 | mg/L | 0.59 % |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 2160 K-R | 15,462.7 | 9.8064 | 0.05815 | mg/L | 9.8064 | 0.05815 | mg/L | 0.59 % |

**Mean Data**

ID: E124405-01 Seq. No.: 66 A/S Pos: 96

Sample Qty: ug Prep. Vol.: Dilution: : Date: 2012/11/14 21:28:27

| Analyte | Corr. Intensity | Conc (Calib) | Std. Dev. | Calib Units | Conc (Sample) | Std. Dev. | Sample Units | RSD |
|---|---|---|---|---|---|---|---|---|
| Sc-R | 40,966.4 | 100.14 | 2.094 | % | | | % | 2.09 % |
| Sc-A | 1,427,412.4 | 96.301 | 0.4621 | % | | | % | 0.48 % |
| 2125 Al-R | 2.3 | 0.00350 | 0.004363 | mg/L | 0.00350 | 0.004363 | mg/L | 124.78 % |
| 2130 Mn-R | 1.9 | 0.00012 | 0.000235 | mg/L | 0.00012 | 0.000235 | mg/L | 197.59 % |
| 2135 Ca-R | 10.7 | 0.00367 | 0.002773 | mg/L | 0.00367 | 0.002773 | mg/L | 75.52 % |
| 2140 Mg-R | 2.2 | 0.00711 | 0.027643 | mg/L | 0.00711 | 0.027643 | mg/L | 388.67 % |
| 2145 Fe-R | 7.7 | 0.00639 | 0.003802 | mg/L | 0.00639 | 0.003802 | mg/L | 59.52 % |
| 2150 Na-R | 107.2 | 0.01188 | 0.007341 | mg/L | 0.01188 | 0.007341 | mg/L | 61.79 % |
| 2160 K-R | 98.1 | 0.06220 | 0.014285 | mg/L | 0.06220 | 0.014285 | mg/L | 22.96 % |

**Mean Data**

ID: E124405-02 Seq. No.: 67 A/S Pos: 97

Sample Qty: ug Prep. Vol.: Dilution: : Date: 2012/11/14 21:33:59

| Analyte | Corr. Intensity | Conc (Calib) | Std. Dev. | Calib Units | Conc (Sample) | Std. Dev. | Sample Units | RSD |
|---|---|---|---|---|---|---|---|---|
| Sc-R | 40,479.0 | 98.946 | 1.2566 | % | | | % | 1.27 % |
| Sc-A | 1,438,928.2 | 97.078 | 1.0882 | % | | | % | 1.12 % |
| 2125 Al-R | 4.2 | 0.00666 | 0.005407 | mg/L | 0.00666 | 0.005407 | mg/L | 81.23 % |
| 2130 Mn-R | 1.8 | 0.00012 | 0.000182 | mg/L | 0.00012 | 0.000182 | mg/L | 154.65 % |
| 2135 Ca-R | -1.2 | -0.00061 | 0.001787 | mg/L | -0.00061 | 0.001787 | mg/L | 294.80 % |
| 2140 Mg-R | -2.0 | -0.00715 | 0.005528 | mg/L | -0.00715 | 0.005528 | mg/L | 77.32 % |
| 2145 Fe-R | 4.9 | 0.00403 | 0.003556 | mg/L | 0.00403 | 0.003556 | mg/L | 88.32 % |
| 2150 Na-R | 37.8 | 0.00409 | 0.016853 | mg/L | 0.00409 | 0.016853 | mg/L | 411.63 % |
| 2160 K-R | 1.1 | 0.00072 | 0.013020 | mg/L | 0.00072 | 0.013020 | mg/L | 1,814.28 % |

**Mean Data**

ID: 1211026-MS1 Seq. No.: 68 A/S Pos: 98

Sample Qty: ug Prep. Vol.: Dilution: : Date: 2012/11/14 21:39:32

| Analyte | Corr. Intensity | Conc (Calib) | Std. Dev. | Calib Units | Conc (Sample) | Std. Dev. | Sample Units | RSD |
|---|---|---|---|---|---|---|---|---|
| Sc-R | 40,485.7 | 98.962 | 1.2540 | % | | | % | 1.27 % |
| Sc-A | 1,448,139.2 | 97.699 | 1.4792 | % | | | % | 1.51 % |
| 2125 Al-R | 3,192.2 | 4.8955 | 0.05014 | mg/L | 4.8955 | 0.05014 | mg/L | 1.02 % |
| 2130 Mn-R | 7,785.1 | 0.49493 | 0.005822 | mg/L | 0.49493 | 0.005822 | mg/L | 1.18 % |
| 2135 Ca-R | 13,661.2 | 4.9795 | 0.04384 | mg/L | 4.9795 | 0.04384 | mg/L | 0.88 % |
| 2140 Mg-R | 1,558.0 | 5.3040 | 0.05285 | mg/L | 5.3040 | 0.05285 | mg/L | 1.00 % |
| 2145 Fe-R | 6,327.8 | 5.2357 | 0.05575 | mg/L | 5.2357 | 0.05575 | mg/L | 1.06 % |
| 2150 Na-R | 91,270.8 | 10.148 | 0.0991 | mg/L | 10.148 | 0.0991 | mg/L | 0.98 % |
| 2160 K-R | 15,421.5 | 9.7803 | 0.09059 | mg/L | 9.7803 | 0.09059 | mg/L | 0.93 % |

**Mean Data**

ID: 1211026-MSD1 Seq. No.: 69 A/S Pos: 99

Sample Qty: ug Prep. Vol.: Dilution: : Date: 2012/11/14 21:45:06

| Analyte | Corr. Intensity | Conc (Calib) | Std. Dev. | Calib Units | Conc (Sample) | Std. Dev. | Sample Units | RSD |
|---|---|---|---|---|---|---|---|---|
| Sc-R | 40,025.3 | 97.837 | 0.8809 | % | | | % | 0.90 % |
| Sc-A | 1,440,087.8 | 97.156 | 0.5292 | % | | | % | 0.54 % |
| 2125 Al-R | 3,218.5 | 4.9356 | 0.01242 | mg/L | 4.9356 | 0.01242 | mg/L | 0.25 % |
| 2130 Mn-R | 7,808.3 | 0.49641 | 0.002135 | mg/L | 0.49641 | 0.002135 | mg/L | 0.43 % |
| 2135 Ca-R | 13,639.6 | 4.9716 | 0.02745 | mg/L | 4.9716 | 0.02745 | mg/L | 0.55 % |
| 2140 Mg-R | 1,565.2 | 5.3285 | 0.09548 | mg/L | 5.3285 | 0.09548 | mg/L | 1.79 % |
| 2145 Fe-R | 6,359.9 | 5.2623 | 0.03932 | mg/L | 5.2623 | 0.03932 | mg/L | 0.75 % |
| 2150 Na-R | 91,914.2 | 10.219 | 0.0509 | mg/L | 10.219 | 0.0509 | mg/L | 0.50 % |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 2160 K-R | 15,425.0 | 9.7825 | 0.08631 | mg/L | 9.7825 | 0.08631 | mg/L | 0.88 % |

**Mean Data**

ID: E124405-06 Seq. No.: 70 A/S Pos: 100

Date: 2012/11/14 21:50:44

Sample Qty: ug Prep. Vol.: Dilution: :

| Analyte | Corr. Intensity | Conc (Calib) | Std. Dev. | Calib Units | Conc (Sample) | Std. Dev. | Sample Units | RSD |
|---|---|---|---|---|---|---|---|---|
| Sc-R | 40,692.8 | 99.468 | 1.4088 | % | | | % | 1.42 % |
| Sc-A | 1,433,848.1 | 96.735 | 1.4160 | % | | | % | 1.46 % |
| 2125 Al-R | 35.3 | 0.05433 | 0.015061 | mg/L | 0.05433 | 0.015061 | mg/L | 27.72 % |
| 2130 Mn-R | 312.1 | 0.01983 | 0.000393 | mg/L | 0.01983 | 0.000393 | mg/L | 1.98 % |
| 2135 Ca-R | 5,098.5 | 1.8613 | 0.02239 | mg/L | 1.8613 | 0.02239 | mg/L | 1.20 % |
| 2140 Mg-R | 114.1 | 0.38858 | 0.017615 | mg/L | 0.38858 | 0.017615 | mg/L | 4.53 % |
| 2145 Fe-R | 53.4 | 0.04391 | 0.003413 | mg/L | 0.04391 | 0.003413 | mg/L | 7.77 % |
| 2150 Na-R | 4,665.6 | 0.51865 | 0.009130 | mg/L | 0.51865 | 0.009130 | mg/L | 1.76 % |
| 2160 K-R | 5,775.7 | 3.6629 | 0.04060 | mg/L | 3.6629 | 0.04060 | mg/L | 1.11 % |

**Mean Data**

ID: E124405-19 Seq. No.: 71 A/S Pos: 101

Date: 2012/11/14 21:56:17

Sample Qty: ug Prep. Vol.: Dilution: :

| Analyte | Corr. Intensity | Conc (Calib) | Std. Dev. | Calib Units | Conc (Sample) | Std. Dev. | Sample Units | RSD |
|---|---|---|---|---|---|---|---|---|
| Sc-R | 40,244.8 | 98.373 | 1.0834 | % | | | % | 1.10 % |
| Sc-A | 1,464,482.1 | 98.802 | 0.6397 | % | | | % | 0.65 % |
| 2125 Al-R | 56.4 | 0.08652 | 0.004817 | mg/L | 0.08652 | 0.004817 | mg/L | 5.57 % |
| 2130 Mn-R | 342.1 | 0.02175 | 0.000368 | mg/L | 0.02175 | 0.000368 | mg/L | 1.69 % |
| 2135 Ca-R | 1,777.2 | 0.64875 | 0.001971 | mg/L | 0.64875 | 0.001971 | mg/L | 0.30 % |
| 2140 Mg-R | 53.8 | 0.18334 | 0.012631 | mg/L | 0.18334 | 0.012631 | mg/L | 6.89 % |
| 2145 Fe-R | 83.4 | 0.06890 | 0.002127 | mg/L | 0.06890 | 0.002127 | mg/L | 3.09 % |
| 2150 Na-R | 3,564.6 | 0.39631 | 0.008832 | mg/L | 0.39631 | 0.008832 | mg/L | 2.23 % |
| 2160 K-R | 1,359.1 | 0.86193 | 0.086240 | mg/L | 0.86193 | 0.086240 | mg/L | 10.01 % |

**Mean Data**

ID: SEQ-CCB4 Seq. No.: 72 A/S Pos: 102

Date: 2012/11/14 22:01:50

Sample Qty: ug Prep. Vol.: Dilution: :

| Analyte | Corr. Intensity | Conc (Calib) | Std. Dev. | Calib Units | Conc (Sample) | Std. Dev. | Sample Units | RSD |
|---|---|---|---|---|---|---|---|---|
| Sc-R | 40,823.1 | 99.787 | 0.6415 | % | | | % | 0.64 % |
| Sc-A | 1,464,155.8 | 98.780 | 0.8122 | % | | | % | 0.82 % |
| 2125 Al-R | 2.8 | 0.00461 | 0.003979 | mg/L | 0.00461 | 0.003979 | mg/L | 86.37 % |
| 2130 Mn-R | -1.3 | -0.00008 | 0.000186 | mg/L | -0.00008 | 0.000186 | mg/L | 231.68 % |
| 2135 Ca-R | 6.8 | 0.00246 | 0.001748 | mg/L | 0.00246 | 0.001748 | mg/L | 71.02 % |
| 2140 Mg-R | 1.5 | 0.00522 | 0.029662 | mg/L | 0.00522 | 0.029662 | mg/L | 567.95 % |
| 2145 Fe-R | 3.5 | 0.00289 | 0.001382 | mg/L | 0.00289 | 0.001382 | mg/L | 47.78 % |
| 2150 Na-R | -51.3 | -0.00583 | 0.009556 | mg/L | -0.00583 | 0.009556 | mg/L | 163.95 % |
| 2160 K-R | -15.4 | -0.00976 | 0.032725 | mg/L | -0.00976 | 0.032725 | mg/L | 335.13 % |

**Mean Data**

ID: SEQ-CCV@B4 Seq. No.: 73 A/S Pos: 103

Date: 2012/11/14 22:07:33

Sample Qty: ug Prep. Vol.: Dilution: :

| Analyte | Corr. Intensity | Conc (Calib) | Std. Dev. | Calib Units | Conc (Sample) | Std. Dev. | Sample Units | RSD |
|---|---|---|---|---|---|---|---|---|
| Sc-R | 40,686.2 | 99.452 | 1.1140 | % | | | % | 1.12 % |
| Sc-A | 1,427,175.4 | 96.285 | 0.6401 | % | | | % | 0.66 % |
| 2125 Al-R | 33,515.9 | 51.466 | 0.3891 | mg/L | 51.466 | 0.3891 | mg/L | 0.76 % |
| 2130 Mn-R | 78,378.1 | 4.9831 | 0.03696 | mg/L | 4.9831 | 0.03696 | mg/L | 0.74 % |
| 2135 Ca-R | 131,550.0 | 48.019 | 0.6866 | mg/L | 48.019 | 0.6866 | mg/L | 1.43 % |
| 2140 Mg-R | 14,777.2 | 50.312 | 0.2171 | mg/L | 50.312 | 0.2171 | mg/L | 0.43 % |
| 2145 Fe-R | 61,132.1 | 50.592 | 0.4019 | mg/L | 50.592 | 0.4019 | mg/L | 0.79 % |
| 2150 Na-R | 440,316.7 | 48.956 | 0.6941 | mg/L | 48.956 | 0.6941 | mg/L | 1.42 % |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 2160 K-R | 74,559.1 | 47.285 | 0.6762 | mg/L | 47.285 | | 0.6762 | mg/L | 1.43 % |

Where Rpt Checkbox = ALL

## Ammonia. Undistilled

| | | IResult | FResult | Qualifiers | Units | MRL | TrueValue | Prep I/F | Recovery | RPD |
|---|---|---|---|---|---|---|---|---|---|---|
| **Air** | **1211031-BLK1 (Blank)** | | | | | | | | | |
| | Ammonia as N | -0.06 | -12.200U | | ug/Filter | 10 | | 1.00Filter/200. | | |
| **Air** | **1211031-BLK2 (Blank)** | | | | | | | | | |
| | Ammonia as N | -0.07 | -13.200U | | ug/Filter | 10 | | 1.00Filter/200. | | |
| **Air** | **1211031-BS1 (LCS)** | | | | | | | | | |
| | Ammonia as N | 0.95 | 0.94900 | | ug/Filter | 0.050 | 1.0000 | 10.00Filter/10. | 94.9 | |
| **Air** | **1211031-BS2 (LCS)** | | | | | | | | | |
| | Ammonia as N | 0.95 | 0.95100 | | ug/Filter | 0.050 | 1.0000 | 10.00Filter/10. | 95.1 | |
| **Air** | **1211031-CCV1 (Calibration Check)** | | | | | | | | | |
| | Ammonia as N | 2.53 | 2.5340 | | ug/Filter | | 2.5000 | 100.00Filter/1C | 101 | |
| **Air** | **1211031-CCV2 (Calibration Check)** | | | | | | | | | |
| | Ammonia as N | 2.52 | 2.5230 | | ug/Filter | | 2.5000 | 100.00Filter/1C | 101 | |
| **Air** | **1211031-CCV3 (Calibration Check)** | | | | | | | | | |
| | Ammonia as N | 2.52 | 2.5210 | | ug/Filter | | 2.5000 | 100.00Filter/1C | 101 | |
| **Air** | **1211031-CCV4 (Calibration Check)** | | | | | | | | | |
| | Ammonia as N | 2.52 | 2.5170 | | ug/Filter | | 2.5000 | 100.00Filter/1C | 101 | |
| **Air** | **1211031-MS1 (Matrix Spike)** | | | | | | | | | |
| | Ammonia as N | 1.01 | 1.0070 | | ug/Filter | | 1.0000 | 1.00Filter/200. | 106 | |
| **Air** | **1211031-MS2 (Matrix Spike)** | | | | | | | | | |
| | Ammonia as N | 0.98 | 0.98100 | | ug/Filter | | 1.0000 | 1.00Filter/200. | 105 | |
| **Air** | **1211031-MS3 (Matrix Spike)** | | | | | | | | | |
| | Ammonia as N | 1.00 | 0.99800 | | ug/Filter | | 1.0000 | 1.00Filter/200. | 104 | |
| **Air** | **1211031-MSD1 (Matrix Spike Dup)** | | | | | | | | | |
| | Ammonia as N | 1.01 | 1.0050 | | ug/Filter | | 1.0000 | 1.00Filter/200. | 105 | |
| **Air** | **1211031-MSD2 (Matrix Spike Dup)** | | | | | | | | | |
| | Ammonia as N | 0.98 | 0.97700 | | ug/Filter | | 1.0000 | 1.00Filter/200. | 105 | |
| **Air** | **1211031-MSD3 (Matrix Spike Dup)** | | | | | | | | | |

Where Rpt Checkbox = ALL

## Ammonia. Undistilled

| | | IResult | FResult | Qualifiers | Units | MRL | TrueValue | Prep I/F | Recovery | RPD |
|---|---|---|---|---|---|---|---|---|---|---|
| **Air** | **1211031-MSD3 (Matrix Spike Dup)** | | | | | | | | | |
| | Ammonia as N | 0.99 | 0.98900 | | ug/Filter | | 1.0000 | 1.00Filter/200. | 103 | |
| **Air** | **1211031-PS1 (Post Spike)** | | | | | | | | | |
| | Ammonia as N | 0.05 | 0.053000 | MRL-2 | ug/Filter | 0.050 | 0.050000 | 100.00Filter/1C | 106 | |
| **Air** | **E124405-01 (MC3)** | | | | | | | | | |
| | Ammonia as N | -0.06 | -12U | H-4,J,CR | ug/Filter | 10 | | 1.00Filter/200. | | |
| **Air** | **E124405-02 (MC4)** | | | | | | | | | |
| | Ammonia as N | -0.06 | -13U | J,CR | ug/Filter | 10 | | 1.00Filter/200. | | |
| **Air** | **E124405-03 (YBA105FB)** | | | | | | | | | |
| | Ammonia as N | -0.06 | -13U | J,CR | ug/Filter | 10 | | 1.00Filter/200. | | |
| **Air** | **E124405-04 (YBA256FB)** | | | | | | | | | |
| | Ammonia as N | -0.07 | -13U | J,CR | ug/Filter | 10 | | 1.00Filter/200. | | |
| **Air** | **E124405-05 (YBATSP4FB)** | | | | | | | | | |
| | Ammonia as N | -0.07 | -14U | J,CR | ug/Filter | 10 | | 1.00Filter/200. | | |
| **Air** | **E124405-06 (MC1)** | | | | | | | | | |
| | Ammonia as N | -0.02 | -3.0U | H-4,J,CR | ug/Filter | 10 | | 1.00Filter/200. | | |
| **Air** | **E124405-07 (YBA104)** | | | | | | | | | |
| | Ammonia as N | -0.05 | -9.4U | J,CR | ug/Filter | 10 | | 1.00Filter/200. | | |
| **Air** | **E124405-08 (YBA105)** | | | | | | | | | |
| | Ammonia as N | -0.05 | -9.6U | J,CR | ug/Filter | 10 | | 1.00Filter/200. | | |
| **Air** | **E124405-09 (YBA106)** | | | | | | | | | |
| | Ammonia as N | -0.05 | -10U | J,CR | ug/Filter | 10 | | 1.00Filter/200. | | |
| **Air** | **E124405-10 (YBA10C5)** | | | | | | | | | |
| | Ammonia as N | -0.05 | -9.0U | J,CR | ug/Filter | 10 | | 1.00Filter/200. | | |
| **Air** | **E124405-11 (YBA254)** | | | | | | | | | |
| | Ammonia as N | -0.05 | -10U | J,CR | ug/Filter | 10 | | 1.00Filter/200. | | |
| **Air** | **E124405-12 (YBA255)** | | | | | | | | | |

Where Rpt Checkbox = ALL

## Ammonia. Undistilled

| | IResult | FResult | Qualifiers | Units | MRL | TrueValue | Prep I/F | Recovery | RPD |
|---|---|---|---|---|---|---|---|---|---|
| **Air E124405-25 (YBB256)** | | | | | | | | | |
| Ammonia as N | -0.04 | -8.2U | J,CR | ug/Filter | 10 | | 1.00Filter/200.0 | | |
| **Air E124405-26 (YBBTSP4)** | | | | | | | | | |
| Ammonia as N | -0.04 | -8.2U | J,CR | ug/Filter | 10 | | 1.00Filter/200.0 | | |
| **Air E124405-27 (YBBTSP5)** | | | | | | | | | |
| Ammonia as N | -0.05 | -9.0U | J,CR | ug/Filter | 10 | | 1.00Filter/200.0 | | |
| **Air E124405-28 (YBBTSP6)** | | | | | | | | | |
| Ammonia as N | -0.05 | -9.0U | J,CR | ug/Filter | 10 | | 1.00Filter/200.0 | | |

Where Rpt Checkbox = ALL

| | IResult | FResult | Qualifiers | Units | MRL | TrueValue | Prep I/F | Recovery | RPD |
|---|---|---|---|---|---|---|---|---|---|
| **ammonia. Undistilled** | | | | | | | | | |
| **Air E124405-12 (YBA255)** | | | | | | | | | |
| Ammonia as N | -0.05 | -9.4U | J,CR | ug/Filter | 10 | | 1.00Filter/200. | | |
| **Air E124405-13 (YBA256)** | | | | | | | | | |
| Ammonia as N | -0.05 | -11U | J,CR | ug/Filter | 10 | | 1.00Filter/200. | | |
| **Air E124405-14 (YBA25C6)** | | | | | | | | | |
| Ammonia as N | -0.06 | -12U | J,CR | ug/Filter | 10 | | 1.00Filter/200. | | |
| **Air E124405-15 (YBATSC4)** | | | | | | | | | |
| Ammonia as N | -0.07 | -13U | J,CR | ug/Filter | 10 | | 1.00Filter/200. | | |
| **Air E124405-16 (YBATSP4)** | | | | | | | | | |
| Ammonia as N | -0.07 | -15U | J,CR | ug/Filter | 10 | | 1.00Filter/200. | | |
| **Air E124405-17 (YBATSP5)** | | | | | | | | | |
| Ammonia as N | -0.04 | -8.6U | J,CR | ug/Filter | 10 | | 1.00Filter/200. | | |
| **Air E124405-18 (YBATSP6)** | | | | | | | | | |
| Ammonia as N | -0.05 | -10U | J,CR | ug/Filter | 10 | | 1.00Filter/200. | | |
| **Air E124405-19 (MC2)** | | | | | | | | | |
| Ammonia as N | 0.50 | 99 | H-4,J | ug/Filter | 10 | | 1.00Filter/200. | | |
| **Air E124405-20 (YBB104)** | | | | | | | | | |
| Ammonia as N | -0.04 | -8.4U | J,CR | ug/Filter | 10 | | 1.00Filter/200. | | |
| **Air E124405-21 (YBB105)** | | | | | | | | | |
| Ammonia as N | -0.04 | -8.8U | J,CR | ug/Filter | 10 | | 1.00Filter/200. | | |
| **Air E124405-22 (YBB106)** | | | | | | | | | |
| Ammonia as N | -0.04 | -8.2U | J,CR | ug/Filter | 10 | | 1.00Filter/200. | | |
| **Air E124405-23 (YBB254)** | | | | | | | | | |
| Ammonia as N | -0.05 | -9.4U | J,CR | ug/Filter | 10 | | 1.00Filter/200. | | |
| **Air E124405-24 (YBB255)** | | | | | | | | | |
| Ammonia as N | -0.04 | -8.8U | J,CR | ug/Filter | 10 | | 1.00Filter/200. | | |
| **Air E124405-25 (YBB256)** | | | | | | | | | |

# PREPARATION BENCH SHEET

1211031

## US-EPA, Region 4, SESD

**Matrix: Air** **Prepared using: ICS Nuts - M M/T Bottle-dry ice blk** **Printed: 11/9/2012 3:32:13PM**

| Lab Number | Prepared | Due | Container | Initial (Filter) | Final (mL) | Spike ID | Source ID | ul Spike |
|---|---|---|---|---|---|---|---|---|
| 1211031-BLK1 | 11/08/12 10:52 | | | 1 | 200 | | | |
| 1211031-BLK2 | 11/08/12 10:52 | | | 1 | 200 | | | |
| 1211031-BS1 | 11/08/12 10:52 | | | 10 | 10 | 2110702 | | 200 |
| 1211031-BS2 | 11/08/12 10:52 | | | 10 | 10 | 2110702 | | 200 |
| 1211031-CCV1 | 11/08/12 10:52 | | | 100 | 100 | 2110701 | | 2500 |
| 1211031-CCV2 | 11/08/12 10:52 | | | 100 | 100 | 2110701 | | 2500 |
| 1211031-CCV3 | 11/08/12 10:52 | | | 100 | 100 | 2110701 | | 2500 |
| 1211031-CCV4 | 11/08/12 10:52 | | | 100 | 100 | 2110701 | | 2500 |
| 1211031-MS1 | 11/08/12 10:52 | | | 1 | 200 | 2110903 | E124405-08 | 1000 |
| 1211031-MS2 | 11/08/12 10:52 | | | 1 | 200 | 2110903 | E124405-16 | 1000 |
| 1211031-MS3 | 11/08/12 10:52 | | | 1 | 200 | 2110903 | E124405-24 | 1000 |
| 1211031-MSD1 | 11/08/12 10:52 | | | 1 | 200 | 2110903 | E124405-08 | 1000 |
| 1211031-MSD2 | 11/08/12 10:52 | | | 1 | 200 | 2110903 | E124405-16 | 1000 |
| 1211031-MSD3 | 11/08/12 10:52 | | | 1 | 200 | 2110903 | E124405-24 | 1000 |
| 1211031-PS1 | 11/08/12 10:52 | | | 100 | 100 | 2110701 | | 50 |
| E124405-01 *Ammonia, Undistilled* | 11/08/12 10:52 | 12/06/12 00:00 | A | 1 | 200 | Air Quality Management | | |
| E124405-02 *Ammonia, Undistilled* | 11/08/12 10:52 | 12/06/12 00:00 | A | 1 | 200 | Air Quality Management | | |
| E124405-03 *Ammonia, Undistilled* | 11/08/12 10:52 | 12/06/12 00:00 | A | 1 | 200 | Air Quality Management | | |
| E124405-04 *Ammonia, Undistilled* | 11/08/12 10:52 | 12/06/12 00:00 | A | 1 | 200 | Air Quality Management | | |
| E124405-05 *Ammonia, Undistilled* | 11/08/12 10:52 | 12/06/12 00:00 | A | 1 | 200 | Air Quality Management | | |

D. Adams 11/20/12

Verified By Date

# PREPARATION BENCH SHEET

1211031

## US-EPA, Region 4, SESD

Matrix: Air

Prepared using: ICS Nuts - M M/T Bottle-dry ice blk

Printed: 11/9/2012 3:32:13PM

| Lab Number | Prepared | Due | Container | Initial (Filter) | Final (mL) | Spike ID | Source ID | ul Spike |
|---|---|---|---|---|---|---|---|---|
| E124405-06<br>*Ammonia, Undistilled* | 11/08/12 10:52 | 12/06/12 00:00 | A | 1 | 200 | Air Quality Management | | |
| E124405-07<br>*Ammonia, Undistilled* | 11/08/12 10:52 | 12/06/12 00:00 | A | 1 | 200 | Air Quality Management | | |
| E124405-08<br>*Ammonia, Undistilled* | 11/08/12 10:52 | 12/06/12 00:00 | A | 1 | 200 | Air Quality Management | | |
| E124405-09<br>*Ammonia, Undistilled* | 11/08/12 10:52 | 12/06/12 00:00 | A | 1 | 200 | Air Quality Management | | |
| E124405-10<br>*Ammonia, Undistilled* | 11/08/12 10:52 | 12/06/12 00:00 | A | 1 | 200 | Air Quality Management | | |
| E124405-11<br>*Ammonia, Undistilled* | 11/08/12 10:52 | 12/06/12 00:00 | A | 1 | 200 | Air Quality Management | | |
| E124405-12<br>*Ammonia, Undistilled* | 11/08/12 10:52 | 12/06/12 00:00 | A | 1 | 200 | Air Quality Management | | |
| E124405-13<br>*Ammonia, Undistilled* | 11/08/12 10:52 | 12/06/12 00:00 | A | 1 | 200 | Air Quality Management | | |
| E124405-14<br>*Ammonia, Undistilled* | 11/08/12 10:52 | 12/06/12 00:00 | A | 1 | 200 | Air Quality Management | | |
| E124405-15<br>*Ammonia, Undistilled* | 11/08/12 10:52 | 12/06/12 00:00 | A | 1 | 200 | Air Quality Management | | |
| E124405-16<br>*Ammonia, Undistilled* | 11/08/12 10:52 | 12/06/12 00:00 | A | 1 | 200 | Air Quality Management | | |
| E124405-17<br>*Ammonia, Undistilled* | 11/08/12 10:52 | 12/06/12 00:00 | A | 1 | 200 | Air Quality Management | | |
| E124405-18<br>*Ammonia, Undistilled* | 11/08/12 10:52 | 12/06/12 00:00 | A | 1 | 200 | Air Quality Management | | |
| E124405-19 | 11/08/12 10:52 | 12/06/12 00:00 | A | 1 | 200 | Air Quality Management | | |

Verified By _____ Date _____

# PREPARATION BENCH SHEET

1211031

## US-EPA, Region 4, SESD

**Matrix: Air**

**Prepared using: ICS Nuts - M M/T Bottle-dry ice blk**

**Printed: 11/9/2012 3:32:13PM**

| Lab Number | Prepared | Due | Container | Initial (Filter) | Final (mL) | Spike ID | Source ID | ul Spike |
|---|---|---|---|---|---|---|---|---|
| *Ammonia, Undistilled* | | | | | | | | |
| E124405-20 *Ammonia, Undistilled* | 11/08/12 10:52 | 12/06/12 00:00 | A | 1 | 200 | Air Quality Management | | |
| E124405-21 *Ammonia, Undistilled* | 11/08/12 10:52 | 12/06/12 00:00 | A | 1 | 200 | Air Quality Management | | |
| E124405-22 *Ammonia, Undistilled* | 11/08/12 10:52 | 12/06/12 00:00 | A | 1 | 200 | Air Quality Management | | |
| E124405-23 *Ammonia, Undistilled* | 11/08/12 10:52 | 12/06/12 00:00 | A | 1 | 200 | Air Quality Management | | |
| E124405-24 *Ammonia, Undistilled* | 11/08/12 10:52 | 12/06/12 00:00 | A | 1 | 200 | Air Quality Management | | |
| E124405-25 *Ammonia, Undistilled* | 11/08/12 10:52 | 12/06/12 00:00 | A | 1 | 200 | Air Quality Management | | |
| E124405-26 *Ammonia, Undistilled* | 11/08/12 10:52 | 12/06/12 00:00 | A | 1 | 200 | Air Quality Management | | |
| E124405-27 *Ammonia, Undistilled* | 11/08/12 10:52 | 12/06/12 00:00 | A | 1 | 200 | Air Quality Management | | |
| E124405-28 *Ammonia, Undistilled* | 11/08/12 10:52 | 12/06/12 00:00 | A | 1 | 200 | Air Quality Management | | |

Standard(s):

| | | |
|---|---|---|
| 2110701 | NH3/TKN Interm REF STD IS-110712-100ppm | 2500 uL |
| | | 50 uL |
| 2110702 | NH3/TKN Interm LCS / SPIKE IS-110712-50ppm | 200 uL |
| 2110903 | 1.0ppm static spike for NH3. | 1000 uL |

| Standard ID# | Description | Manufacture Lot# |
|---|---|---|

Verified By _____ Date _____

# AA3-NUTS 2

Post-run report

| | | | |
|---|---|---|---|
| Name of Run | : 121109A | Name of Analysis | : Ammonia.ANL |
| Date of Report | : 11/9/2012 | System | : 1 / AA3 HR |
| Run Start | : 11/9/2012 1:16:49 PM | Run Stop | : 2:28:34 PM |
| Operator | : MH | | |
| Comment | : 13-0003 United Metals reshots, 13-0013 Yellow Bluf | | |

---

| | | |
|---|---|---|
| Channel | : | 2 |
| Method | : | EPA Method |
| Unit | : | mg/L |
| Calibr. Fit | : | Linear |
| Corr. Coeff.(r) | : | 1.0000 |
| Base | : | -7596 |
| Gain | : | 13 |
| Sensitivity | : | 0.6211 |
| Sample Limit 1 | : | |
| Sample Limit 2 | : | |

| Pk | Cup | | Sample ID | Value |
|---|---|---|---|---|
| 0 | 0 | B | Baseline | -0.005 |
| 1 | 1 | P | Primer | 4.971 |
| 2 | 1 | D | Drift | 4.981 |
| 3 | 1 | C | 5.0 | 4.986 |
| 4 | 2 | C | 2.5 | 2.533 |
| 5 | 3 | C | 1.0 | 0.990 |
| 6 | 4 | C | 0.5 | 0.493 |
| 7 | 5 | C | 0.25 | 0.244 |
| 8 | 6 | C | 0.10 | 0.098 |
| 9 | 7 | C | 0.05 | 0.053 |
| 10 | 8 | C | 0.00 | 0.003 |
| 11 | 0 | N | Null | 0.001N |
| 12 | 1 | H1 | High | 4.987 |
| 13 | 7 | L1 | Low | 0.058 |
| 14 | 7 | L1 | Low | 0.058 |
| 15 | 0 | N | Null | 0.006N |
| 16 | 13 | S | ICV=1.0ppm | 0.950 |
| 17 | 0 | N | Null | 0.005N |
| 18 | 25 | S | 1211031-BLK1 | -0.061 |
| 19 | 26 | S | 1211031-BLK2 | -0.066 |
| 20 | 7 | S | 1211031-PS1 | 0.053 |
| 21 | 13 | S | 1211031-BS1 | 0.949 |
| 22 | 14 | S | 1211031-BS2 | 0.951 |
| 23 | 0 | N | Null | 0.006N |
| 24 | 27 | S | E124405-01 | -0.060 |
| 25 | 28 | S | E124405-02 | -0.063 |
| 26 | 29 | S | E124405-03 | -0.064 |
| 27 | 30 | S | E124405-04 | -0.067 |
| 28 | 31 | S | E124405-05 | -0.069 |
| 29 | 32 | S | E124405-06 | -0.015 |
| 30 | 33 | S | E124405-07 | -0.047 |
| 31 | 34 | S | E124405-08 | -0.048 |
| 32 | 55 | S | 1211031-MS1 | 1.007 |
| 33 | 56 | S | 1211031-MSD1 | 1.005 |
| 34 | 0 | N | Null | 0.001N |
| 35 | 2 | S | 1211031-CCV1 | 2.534 |
| 36 | 0 | N | Null | 0.005N |
| 37 | 35 | S | E124405-09 | -0.051 |
| 38 | 36 | S | E124405-10 | -0.045 |
| 39 | 37 | S | E124405-11 | -0.051 |
| 40 | 38 | S | E124405-12 | -0.047 |
| 41 | 39 | S | E124405-13 | -0.054 |
| 42 | 40 | S | E124405-14 | -0.058 |
| 43 | 41 | S | E124405-15 | -0.066 |

| | | | | |
|---|---|---|---|---|
| 44 | 42 | S | E124405-16 | -0.073 |
| 45 | 57 | S | 1211031-MS2 | 0.981 |
| 46 | 58 | S | 1211031-MSD2 | 0.977 |
| 47 | 0 | N | Null | -0.003N |
| 48 | 2 | S | 1211031-CCV2 | 2.523 |
| 49 | 0 | N | Null | 0.000N |
| 50 | 43 | S | E124405-17 | -0.043 |
| 51 | 44 | S | E124405-18 | -0.052 |
| 52 | 45 | S | E124405-19 | 0.497 |
| 53 | 46 | S | E124405-20 | -0.042 |
| 54 | 47 | S | E124405-21 | -0.044 |
| 55 | 48 | S | E124405-22 | -0.041 |
| 56 | 49 | S | E124405-23 | -0.047 |
| 57 | 50 | S | E124405-24 | -0.044 |
| 58 | 59 | S | 1211031-MS3 | 0.998 |
| 59 | 60 | S | 1211031-MSD3 | 0.989 |
| 60 | 0 | N | Null | -0.004N |
| 61 | 2 | S | 1211031-CCV3 | 2.521 |
| 62 | 0 | N | Null | 0.001N |
| 63 | 51 | S | E124405-25 | -0.041 |
| 64 | 52 | S | E124405-26 | -0.041 |
| 65 | 53 | S | E124405-27 | -0.045 |
| 66 | 54 | S | E124405-28 | -0.045 |
| 67 | 15 | S | E124302-03RE1@20 | 2.354 |
| 68 | 16 | S | E124302-04RE1 | -0.043 |
| 69 | 0 | N | Null | -0.003N |
| 70 | 2 | S | 1211031-CCV4 | 2.517 |
| 71 | 0 | N | Null | 0.000N |
| 72 | 1 | D | Drift | 4.981 |
| 73 | 0 | B | Final Base | -0.005 |

mad 11/9/12

mad 11/9/12

CORRECTIONS

| | | |
|---|---|---|
| Channel | : | 2 |
| Baseline | : | Yes |
| Drift | : | Yes |
| Carryover | : | Yes |
| %: | | 0.3 |

* ... Sample offscale
\+ ... Result higher than sample limit
\- ... Result lower than sample limit
P ... Standard passed
F ... Standard failed
N ... Value not calculated or not used
R ... Resample after offscale
M ... Peak marker moved manually
D ... Diluted sample
H ... Dual calibration used

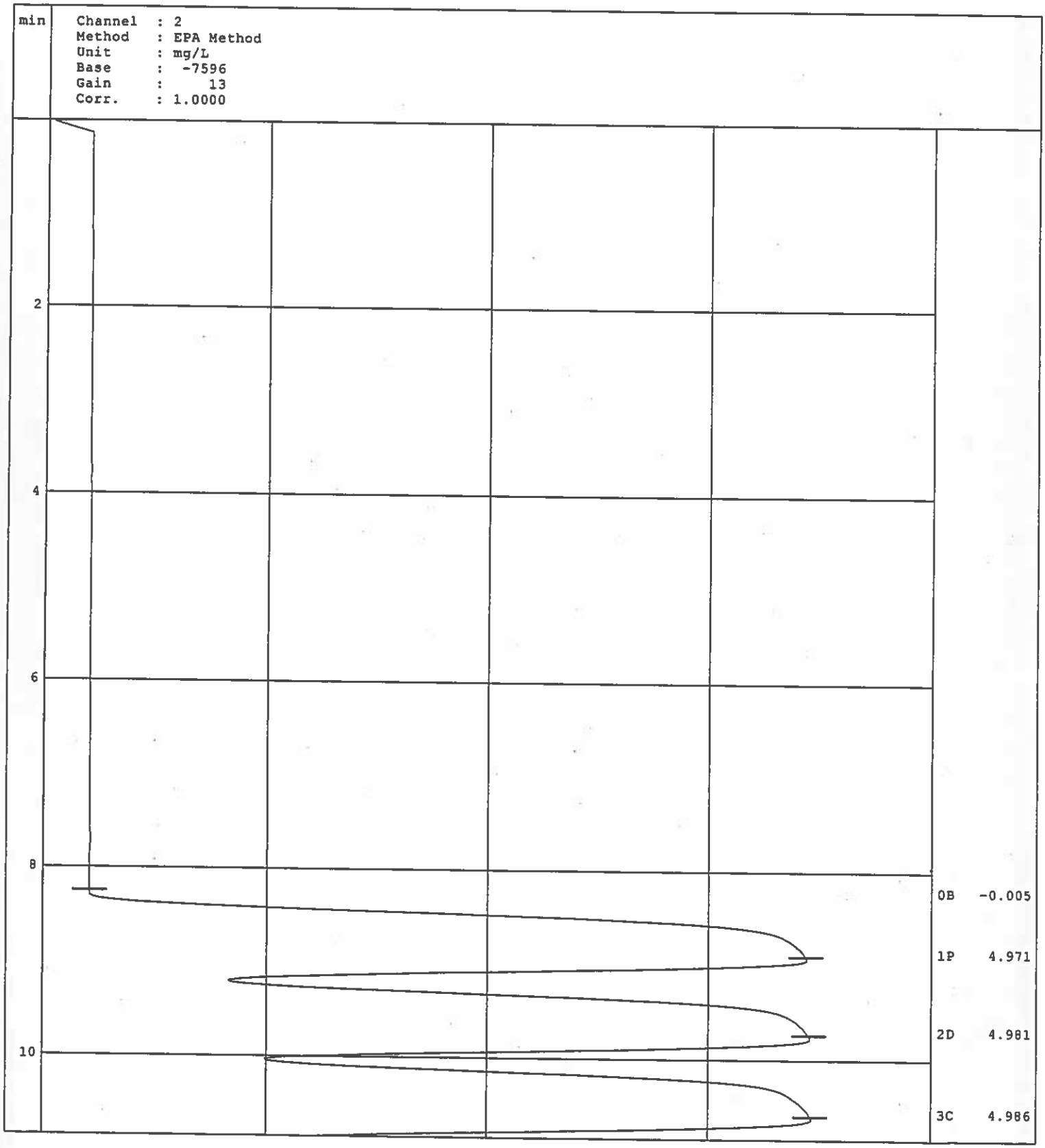
** <END OF REPORT> **

# AA3-NUTS 2

Post-run report

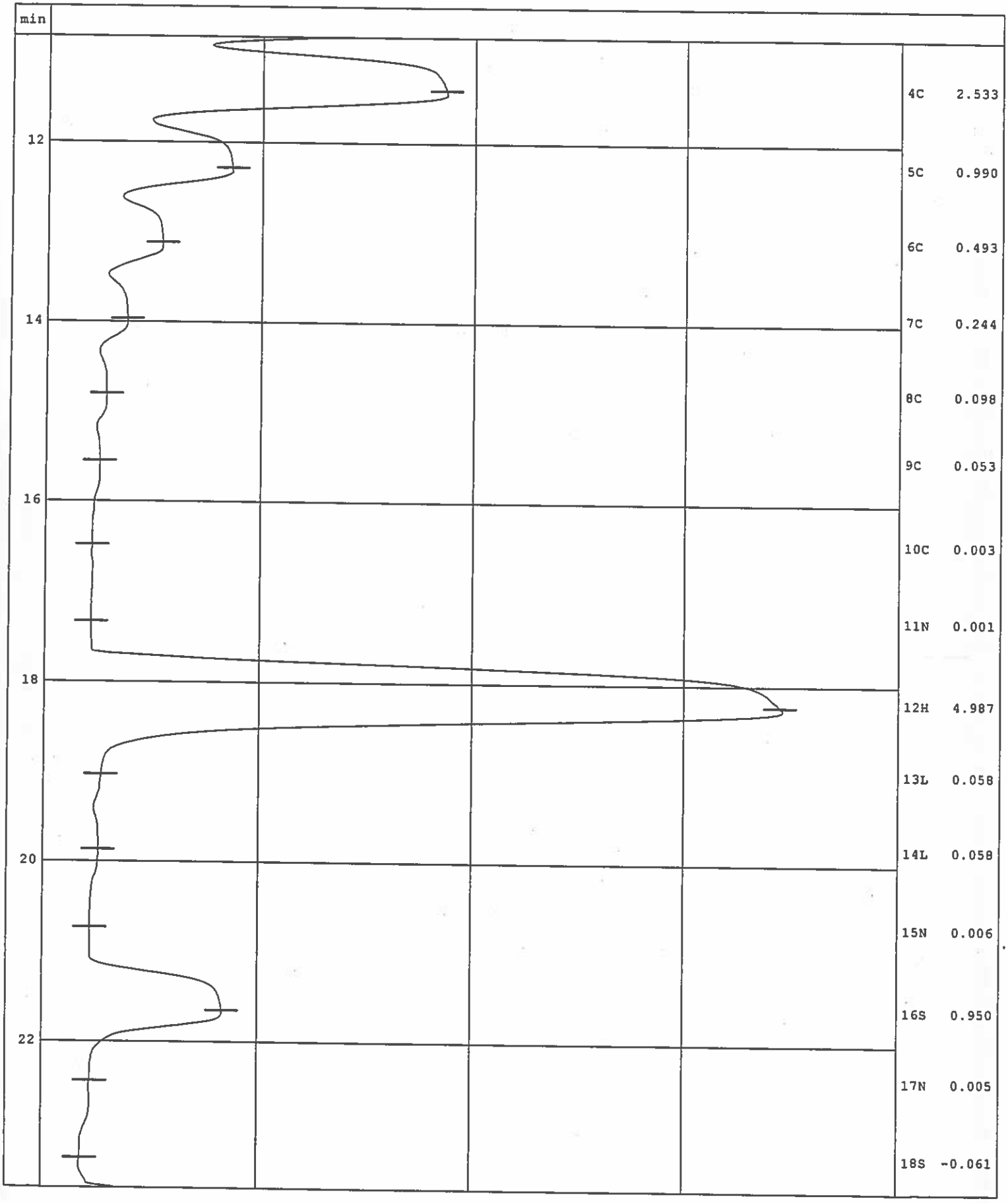
Name of run :121109A.RUN
Comment :13-0003 United Metals reshots, 13-0013 Yellow Bluf

Name of analysis :Ammonia.ANL



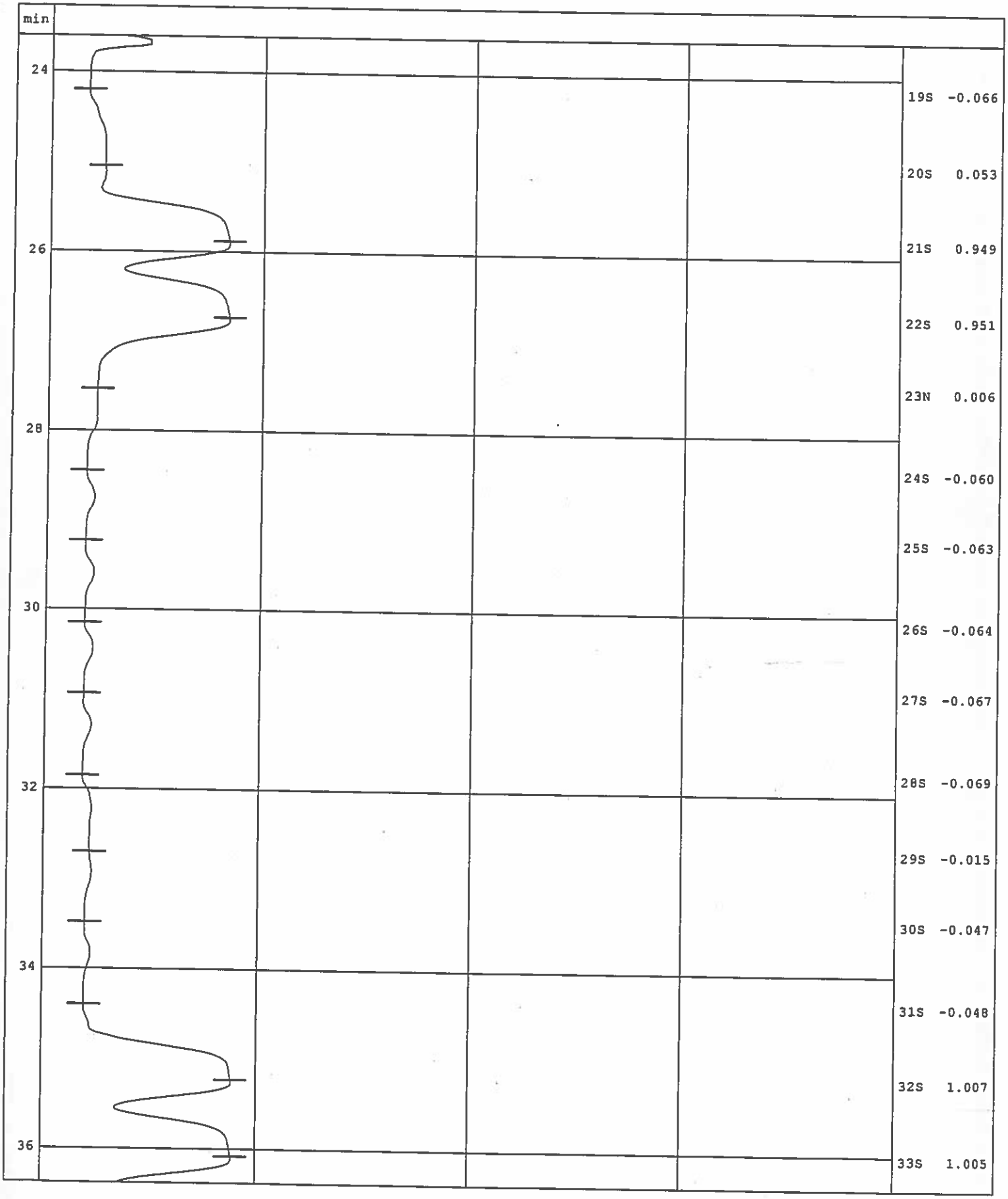
Name of run :121109A.RUN
Comment :13-0003 United Metals reshots, 13-0013 Yellow Bluf

Name of analysis :Ammonia.ANL



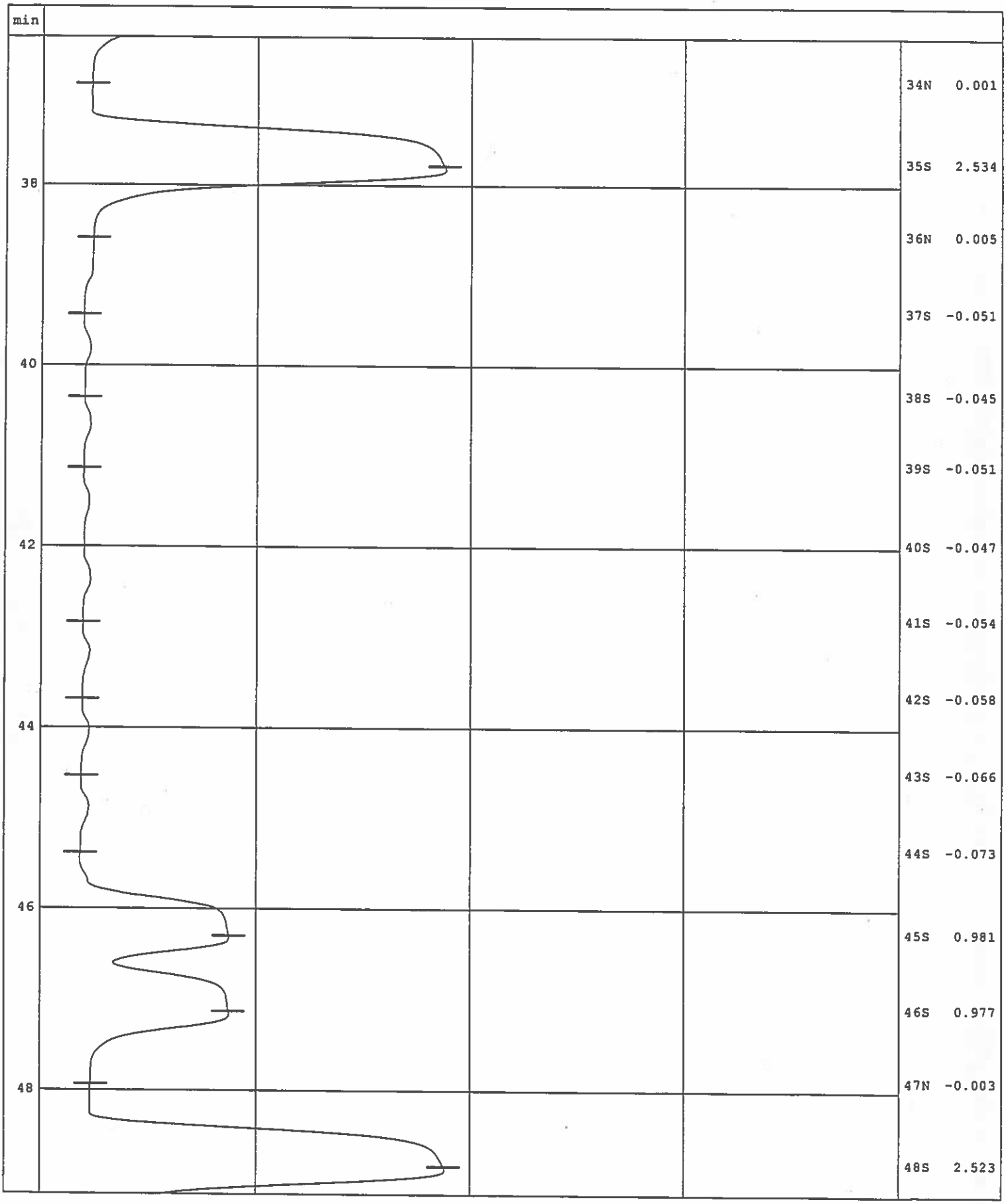
Name of run :121109A.RUN
Comment :13-0003 United Metals reshots, 13-0013 Yellow Bluf

Name of analysis :Ammonia.ANL



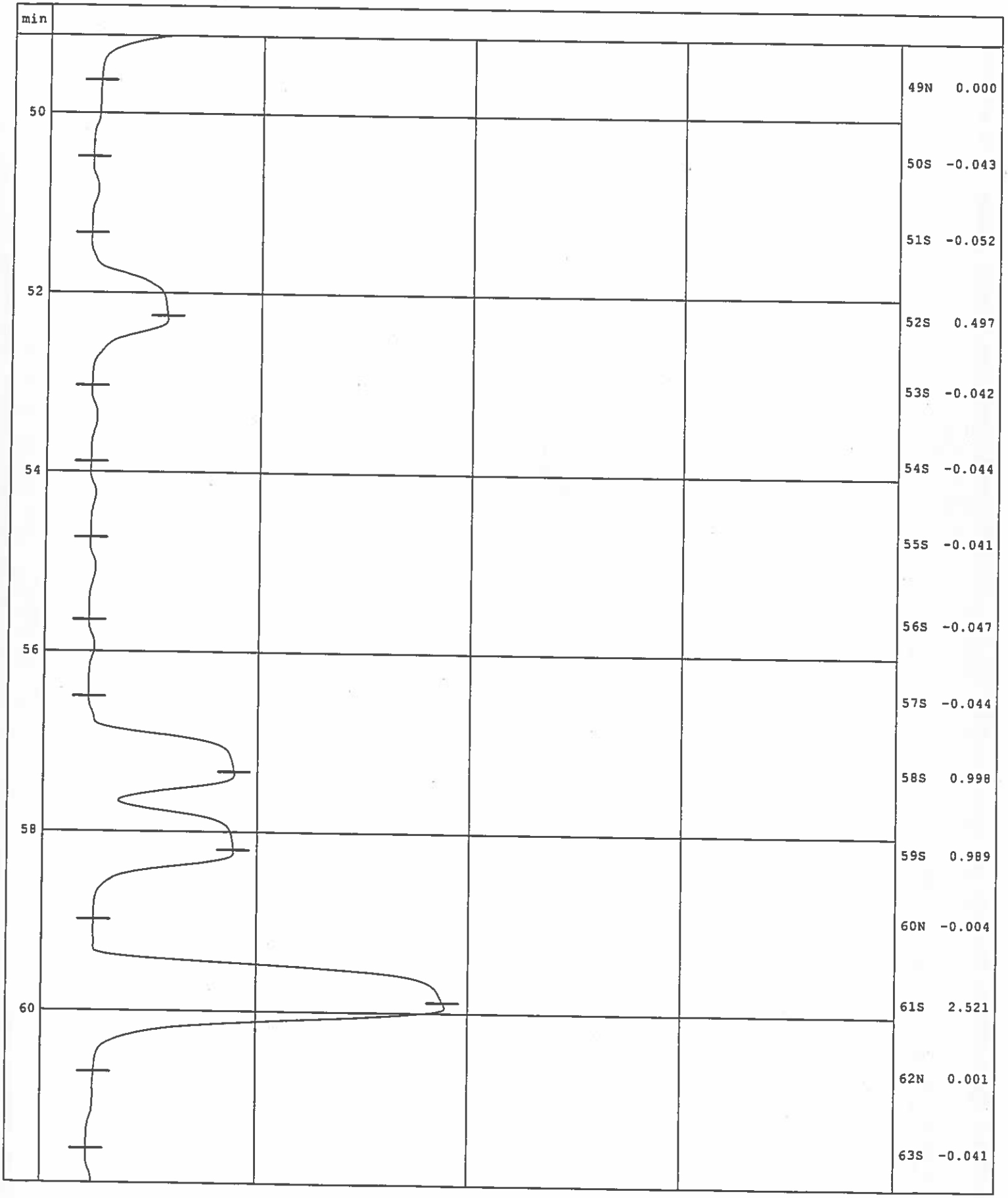
Name of run :121109A.RUN
Comment :13-0003 United Metals reshots, 13-0013 Yellow Bluf

Name of analysis :Ammonia.ANL



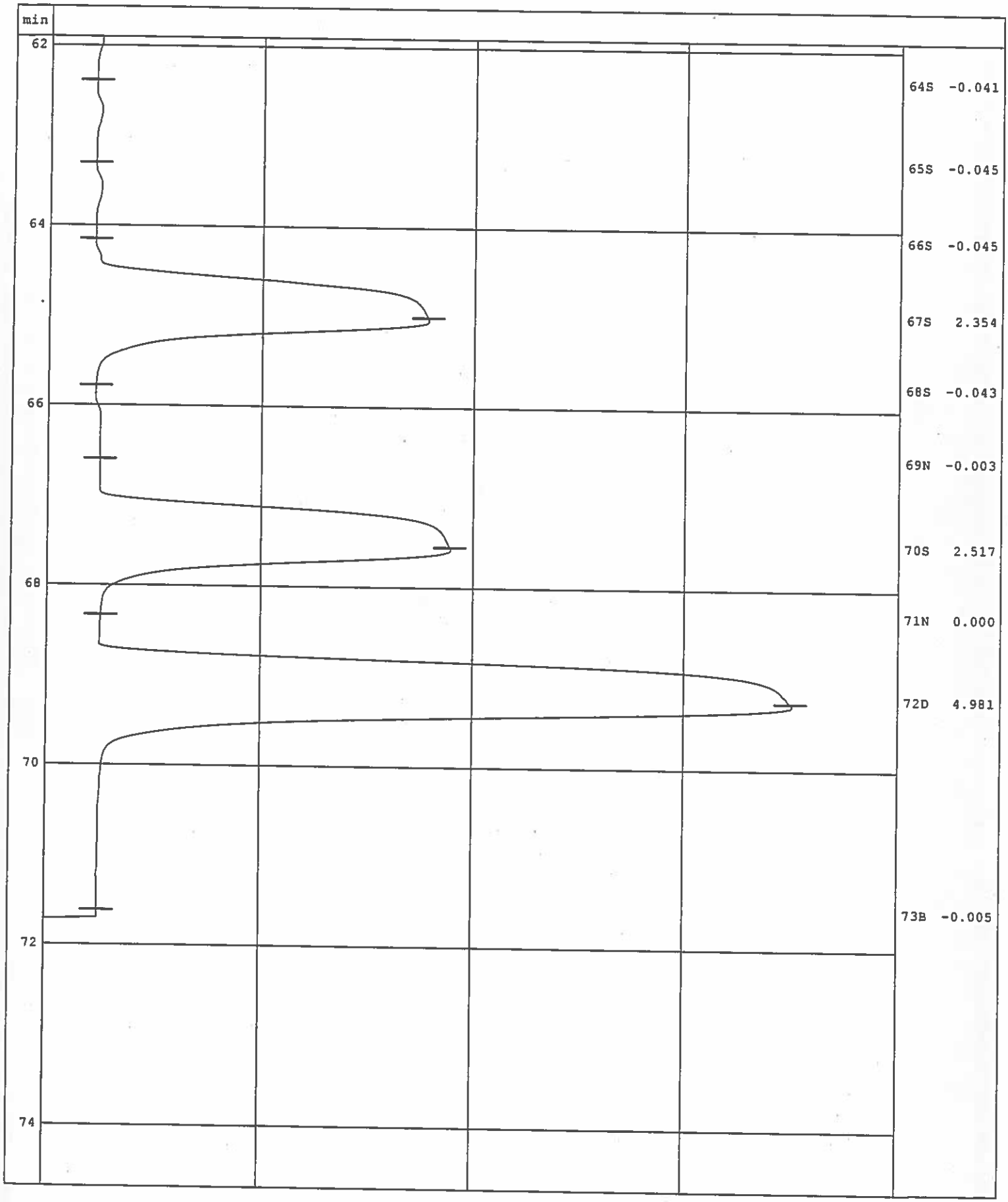
Name of run :121109A.RUN
Comment :13-0003 United Metals reshots, 13-0013 Yellow Bluf

Name of analysis :Ammonia.ANL



Name of run :121109A.RUN
Comment :13-0003 United Metals reshots, 13-0013 Yellow Bluf

Name of analysis :Ammonia.ANL

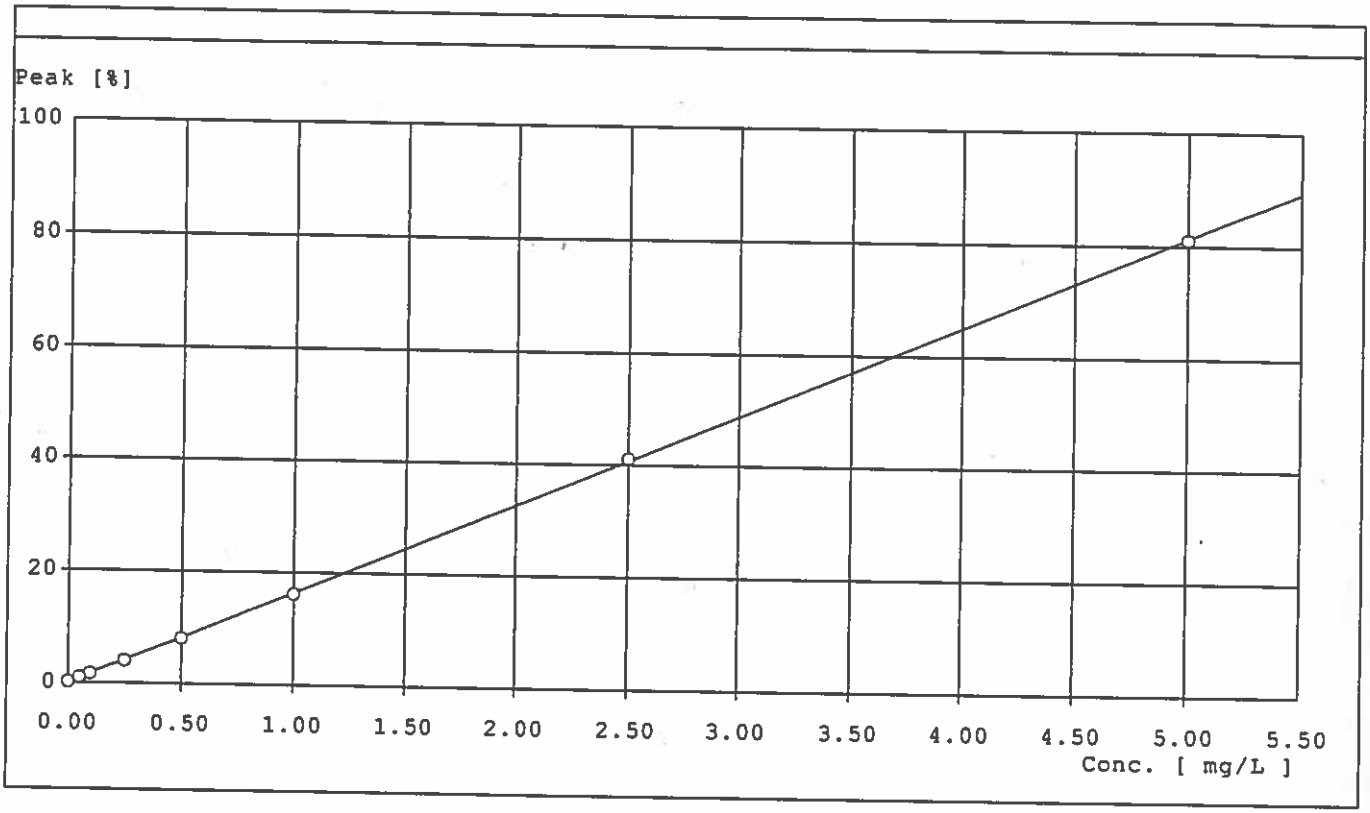


# AA3-NUTS 2

Post-run report

Name of run :121109A.RUN
Comment :13-0003 United Metals reshots, 13-0013 Yellow Bluf

Name of analysis :Ammonia.ANL
Date of report :11/9/2012




Channel :2
Method :EPA Method
Curve fit :Linear
Corr.coeff.(r) :1.0000

Date of run :11/9/2012

Equation :y = bx + a

y = conc. in
x = peak height in digital units
a = -3.2557E-001
b = 9.4042E-005

Corrections
Baseline Corr. done
Drift Correction done
Carryover Corr. done 0.31 %

Calibrant Values

| Type | Calculated | Target | Diff.[mg/L] | Diff. (%) |
|---|---|---|---|---|
| 1C | 4.986 | 5.000 | -0.014 | -0.27 |
| 2C | 2.533 | 2.500 | 0.033 | 1.31 |
| 3C | 0.990 | 1.000 | -0.010 | -0.97 |
| 4C | 0.493 | 0.500 | -0.007 | -1.33 |
| 5C | 0.244 | 0.250 | -0.006 | -2.42 |
| 6C | 0.098 | 0.100 | -0.002 | -2.20 |
| 7C | 0.053 | 0.050 | 0.003 | 5.89 |
| 8C | 0.003 | 0.000 | 0.0 | |

# AA3-NUTS 2

Post-run report

| | | | |
|---|---|---|---|
| Name of Run | :121109A | Name of Analysis | :Ammonia |
| Date | :11/9/2012 | System No. | :1 |
| Sample/Hour | :70 | Sample Time | :39 |
| Sample/Wash | :3.0 | Wash Time | :12.0 |
| Statistics | :No | CLP | :No |

Channel / Method

| | |
|---|---|
| Channel | 2 |
| Method | EPA Method |
| Unit | mg/L |
| Inverse Chem. | No |
| Sample limit | No |
| Sample limit low | 0.000 |
| Sample limit high | 0.000 |
| Baseline Corr. | Yes |
| Drift Correction | Yes |
| Carryover Corr. | Yes |
| Calibration Fit | L |
| Base Calibration | No |
| Base Concentration | 0.000 |
| Carryover Factor | 0.000 |
| QCLink | |
| QCCopy | No |
| Dual-cal-run : Second calibration from | |
| Calibrant 1 | 5.000 |
| Calibrant 2 | 2.500 |
| Calibrant 3 | 1.000 |
| Calibrant 4 | 0.500 |
| Calibrant 5 | 0.250 |
| Calibrant 6 | 0.100 |
| Calibrant 7 | 0.050 |
| Calibrant 8 | 0.000 |
| Calibrant 9 | 0.000 |
| Calibrant 10 | 0.000 |
| Smoothing | 8 |
| Peak Window Start | 50 |
| Peak Window End | 105 |
| Spike Recovery | 0.000 |
| Baseline Max Heigh [%] | 26 |
| Baseline Noise | 0.6 |
| Primer Max Heigh [%] | 50 |
| Primer Rise | 0.5 |
| Primer Rise After | 6 |
| Primer After Last Base | Yes |

QC Limits

| | |
|---|---|
| Channel | 2 |

SEAL Analytical AACE 6.07

Tray Protocol

| | | |
|---|---|---|
| QC 1 | Cond. 1 | Below/Equal |
| | Limit 1 | 0.700 |
| | Action 1 | Continue |
| | Cond. 2 | Above/Equal |
| | Limit 2 | 1.300 |
| | Action 2 | Continue |
| | Autocopy | No |
| | Filename | |
| QC 2 | Unused | |
| QC 3 | Unused | |
| QC 4 | Unused | |
| QC 5 | Unused | |
| QC 6 | Unused | |
| QC 7 | Unused | |
| QC 8 | Unused | |
| QC 9 | Unused | |
| QC10 | Unused | |

---

Tray / Cups

Number of Cups : 48

Number of Samples : 46

| No | Cup | Type | Sample ID |
|---|---|---|---|
| 1 | 1 | P | Primer |
| 2 | 1 | D | Drift |
| 3 | 1 | C | 5.0 |
| 4 | 2 | C | 2.5 |
| 5 | 3 | C | 1.0 |
| 6 | 4 | C | 0.5 |
| 7 | 5 | C | 0.25 |
| 8 | 6 | C | 0.10 |
| 9 | 7 | C | 0.05 |
| 10 | 8 | C | 0.00 |
| 11 | 0 | N | Null |
| 12 | 1 | H1 | High |
| 13 | 7 | L1 | Low |
| 14 | 7 | L1 | Low |
| 15 | 0 | N | Null |
| 16 | 13 | S | ICV=1.0ppm |
| 17 | 0 | N | Null |
| 18 | 25 | S | 1211031-BLK1 |
| 19 | 26 | S | 1211031-BLK2 |
| 20 | 7 | S | 1211031-PS1 |
| 21 | 13 | S | 1211031-BS1 |
| 22 | 14 | S | 1211031-BS2 |
| 23 | 0 | N | Null |
| 24 | 27 | S | E124405-01 |
| 25 | 28 | S | E124405-02 |
| 26 | 29 | S | E124405-03 |
| 27 | 30 | S | E124405-04 |
| 28 | 31 | S | E124405-05 |
| 29 | 32 | S | E124405-06 |
| 30 | 33 | S | E124405-07 |
| 31 | 34 | S | E124405-08 |
| 32 | 55 | S | 1211031-MS1 |
| 33 | 56 | S | 1211031-MSD1 |

| | | | |
|---|---|---|---|
| 34 | 0 | N | Null |
| 35 | 2 | S | 1211031-CCV1 |
| 36 | 0 | N | Null |
| 37 | 35 | S | E124405-09 |
| 38 | 36 | S | E124405-10 |
| 39 | 37 | S | E124405-11 |
| 40 | 38 | S | E124405-12 |
| 41 | 39 | S | E124405-13 |
| 42 | 40 | S | E124405-14 |
| 43 | 41 | S | E124405-15 |
| 44 | 42 | S | E124405-16 |
| 45 | 57 | S | 1211031-MS2 |
| 46 | 58 | S | 1211031-MSD1 |
| 47 | 0 | N | Null |
| 48 | 2 | S | 1211031-CCV2 |
| 49 | 0 | N | Null |
| 50 | 43 | S | E124405-17 |
| 51 | 44 | S | E124405-18 |
| 52 | 45 | S | E124405-19 |
| 53 | 46 | S | E124405-20 |
| 54 | 47 | S | E124405-21 |
| 55 | 48 | S | E124405-22 |
| 56 | 49 | S | E124405-23 |
| 57 | 50 | S | E124405-24 |
| 58 | 59 | S | 1211031-MS3 |
| 59 | 60 | S | 1211031-MSD3 |
| 60 | 0 | N | Null |
| 61 | 2 | S | 1211031-CCV3 |
| 62 | 0 | N | Null |
| 63 | 51 | S | E124405-25 |
| 64 | 52 | S | E124405-26 |
| 65 | 53 | S | E124405-27 |
| 66 | 54 | S | E124405-28 |
| 67 | 15 | S | E124302-03RE1 |
| 68 | 16 | S | E124302-04RE1 |
| 69 | 0 | N | Null |
| 70 | 2 | S | 1211031-CCV4 |
| 71 | 0 | N | Null |
| 72 | 1 | D | Drift |
| 73 | 0 | E | End |

# AA3-NUTS 2

Post-run report

| | | | |
|---|---|---|---|
| Name of Run | : 121108C | Name of Analysis | : Ammonia.ANL |
| Date of Report | : 11/9/2012 | System | : 1 / AA3 HR |
| Run Start | : 11/9/2012 11:15:44 AM | Run Stop | : 12:06:11 PM |
| Operator | : MH | | |
| Comment | : 13-0013 Yellow Bluff Dust Study SCAN | | |

---

| | | |
|---|---|---|
| Channel | : | 2 |
| Method | : | EPA Method |
| Unit | : | mg/L |
| Calibr. Fit | : | Linear |
| Corr. Coeff.(r) | : | 1.0000 |
| Base | : | -6907 |
| Gain | : | 13 |
| Sensitivity | : | 0.6150 |
| Sample Limit 1 | : | |
| Sample Limit 2 | : | |

| Pk | Cup | | Sample ID | Value |
|---|---|---|---|---|
| 0 | 0 | B | Baseline | -0.003 |
| 1 | 1 | P | Primer | 4.997 |
| 2 | 1 | D | Drift | 4.992 |
| 3 | 1 | C | 5.0 | 5.004 |
| 4 | 2 | C | 2.5 | 2.502 |
| 5 | 3 | C | 1.0 | 0.979 |
| 6 | 4 | C | 0.5 | 0.492 |
| 7 | 5 | C | 0.25 | 0.248 |
| 8 | 6 | C | 0.10 | 0.104 |
| 9 | 7 | C | 0.05 | 0.058 |
| 10 | 8 | C | 0.00 | 0.013 |
| 11 | 0 | N | Null | 0.011N |
| 12 | 1 | H1 | High | 5.008 |
| 13 | 7 | L1 | Low | 0.066 |
| 14 | 7 | L1 | Low | 0.066 |
| 15 | 0 | N | Null | 0.015N |
| 16 | 25 | S | BLK1 | -0.058 |
| 17 | 26 | S | BLK2 | -0.061 |
| 18 | 27 | S | E124405-01 | -0.059 |
| 19 | 28 | S | E124405-02 | -0.061 |
| 20 | 29 | S | E124405-03 | -0.063 |
| 21 | 30 | S | E124405-04 | -0.065 |
| 22 | 31 | S | E124405-05 | -0.068 |
| 23 | 32 | S | E124405-06 | -0.014 |
| 24 | 33 | S | E124405-07 | -0.046 |
| 25 | 34 | S | E124405-08 | -0.048 |
| 26 | 35 | S | E124405-09 | -0.055 |
| 27 | 36 | S | E124405-10 | -0.047 |
| 28 | 37 | S | E124405-11 | -0.052 |
| 29 | 38 | S | E124405-12 | -0.050 |
| 30 | 39 | S | E124405-13 | -0.057 |
| 31 | 40 | S | E124405-14 | -0.059 |
| 32 | 41 | S | E124405-15 | -0.066 |
| 33 | 42 | S | E124405-16 | -0.073 |
| 34 | 43 | S | E124405-17 | -0.047 |
| 35 | 44 | S | E124405-18 | -0.054 |
| 36 | 45 | S | E124405-19 | 0.512 |
| 37 | 46 | S | E124405-20 | -0.041 |
| 38 | 47 | S | E124405-21 | -0.043 |
| 39 | 48 | S | E124405-22 | -0.042 |
| 40 | 49 | S | E124405-23 | -0.047 |
| 41 | 50 | S | E124405-24 | -0.043 |
| 42 | 51 | S | E124405-25 | -0.045 |
| 43 | 52 | S | E124405-26 | -0.043 |

| | | | | |
|---|---|---|---|---|
| 44 | 53 | S | E124405-27 | -0.045 |
| 45 | 54 | S | E124405-28 | -0.046 |
| 46 | 0 | N | Null | -0.006N |
| 47 | 1 | D | Drift | 4.992 |
| 48 | 0 | B | Final Base | -0.003 |

CORRECTIONS

| | | |
|---|---|---|
| Channel | : | 2 |
| Baseline | : | Yes |
| Drift | : | Yes |
| Carryover | : | Yes |
| %: | | 0.3 |

* ... Sample offscale
\+ ... Result higher than sample limit
\- ... Result lower than sample limit
P ... Standard passed
F ... Standard failed
N ... Value not calculated or not used
R ... Resample after offscale
M ... Peak marker moved manually
D ... Diluted sample
H ... Dual calibration used

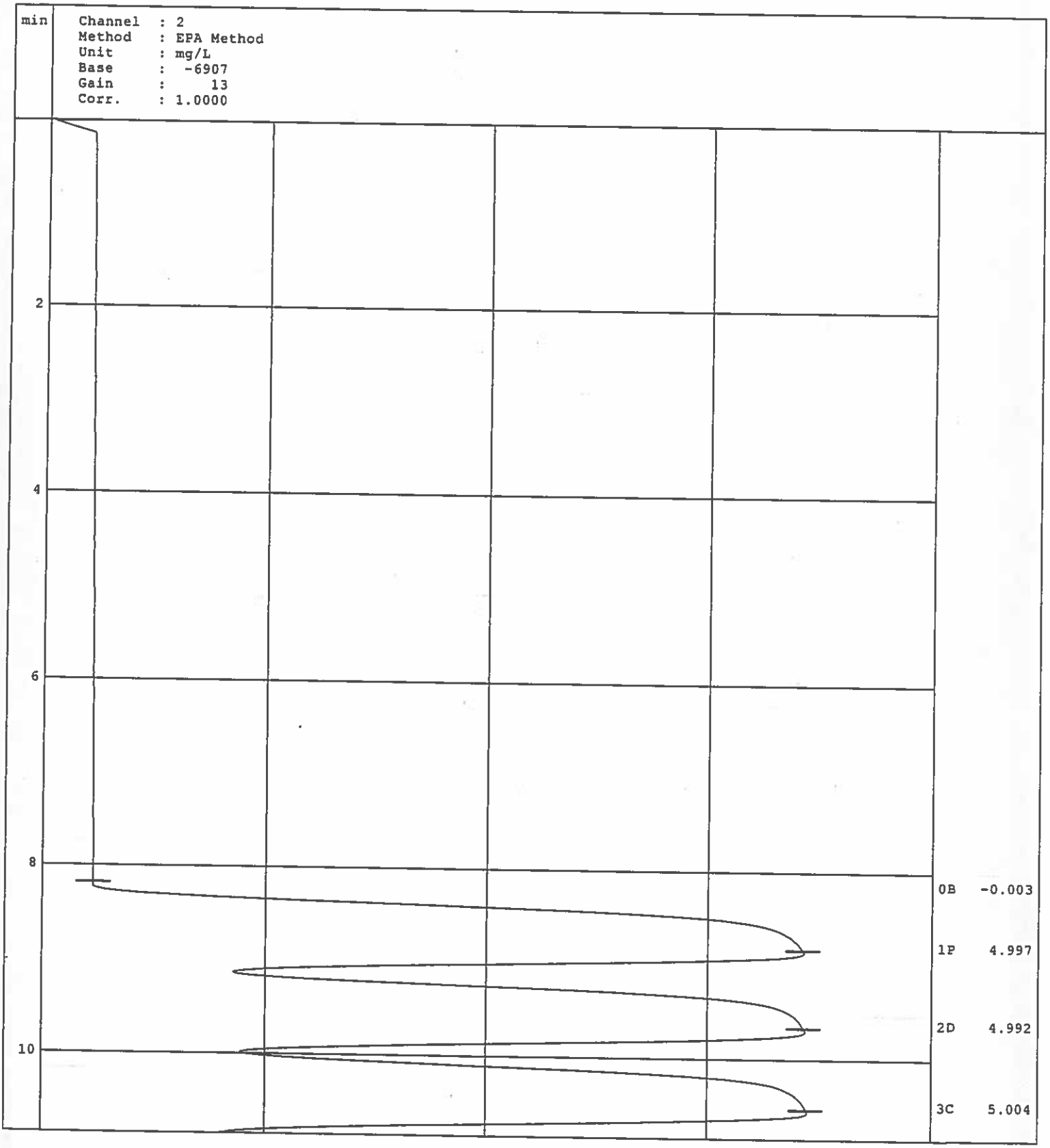
** <END OF REPORT> **

# AA3-NUTS 2

Post-run report

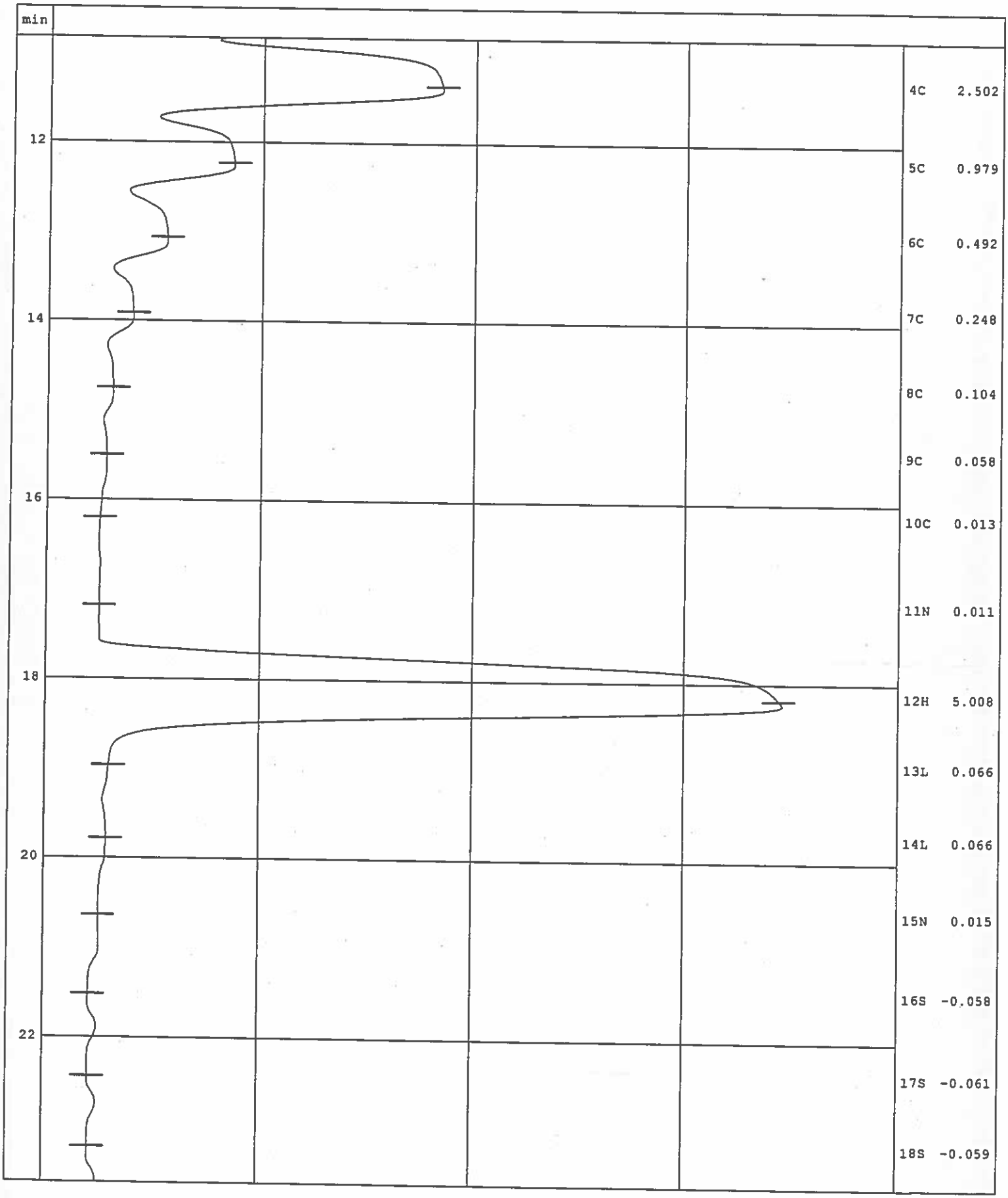
Name of run :121108C.RUN
Comment :13-0013 Yellow Bluff Dust Study SCAN

Name of analysis :Ammonia.ANL



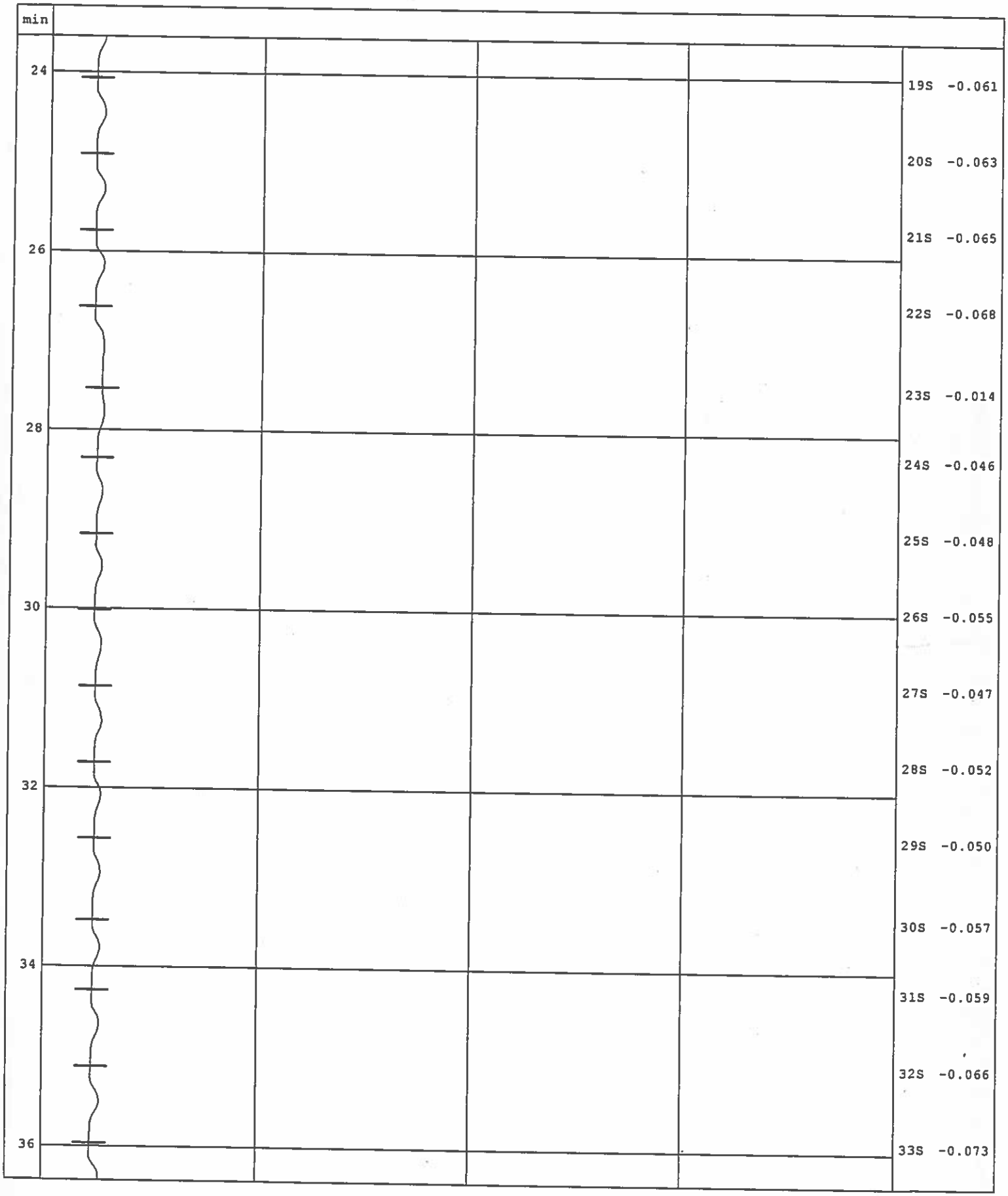
Name of run :121108C.RUN
Comment :13-0013 Yellow Bluff Dust Study SCAN

Name of analysis :Ammonia.ANL



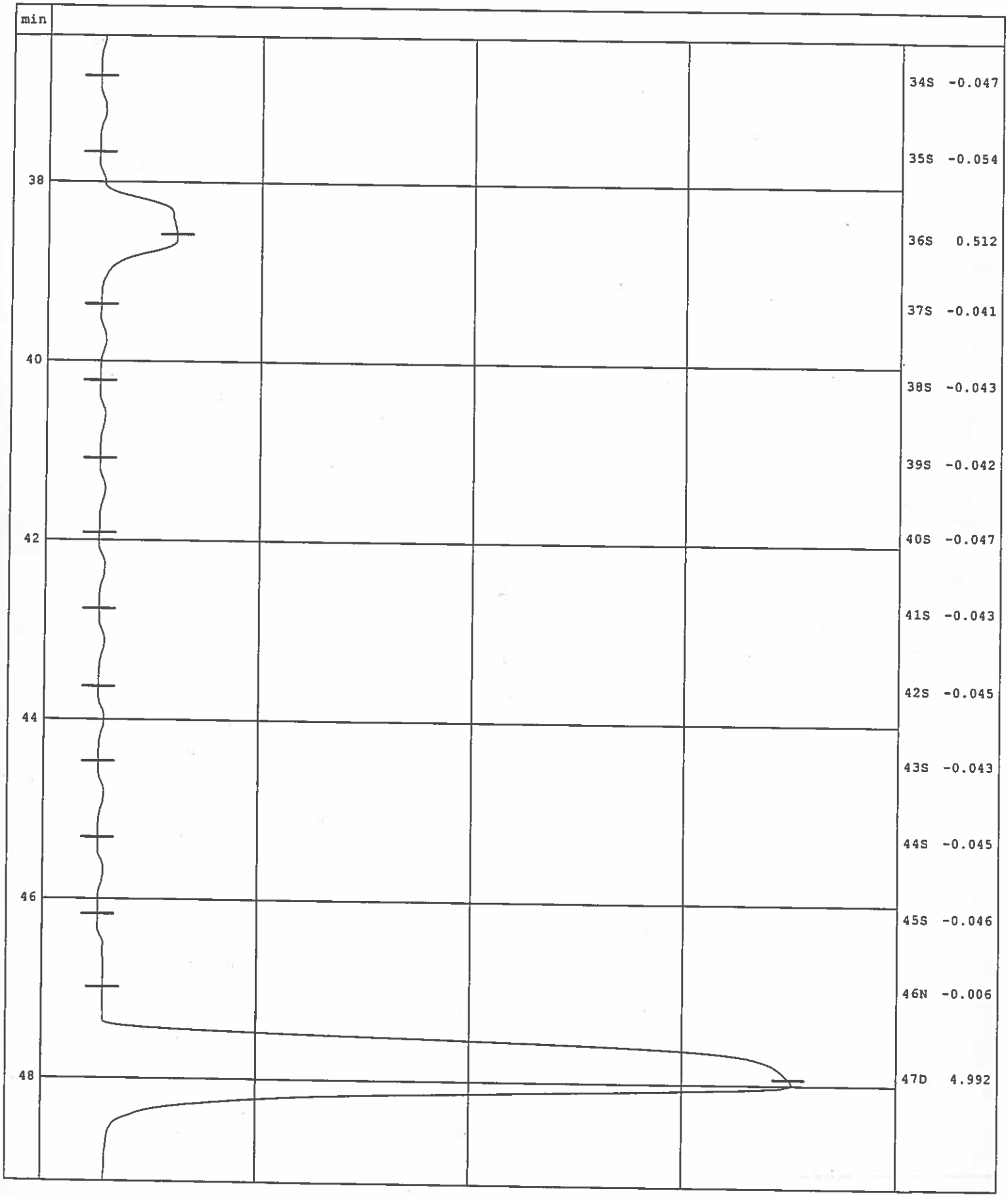
Name of run :121108C.RUN
Comment :13-0013 Yellow Bluff Dust Study SCAN

Name of analysis :Ammonia.ANL



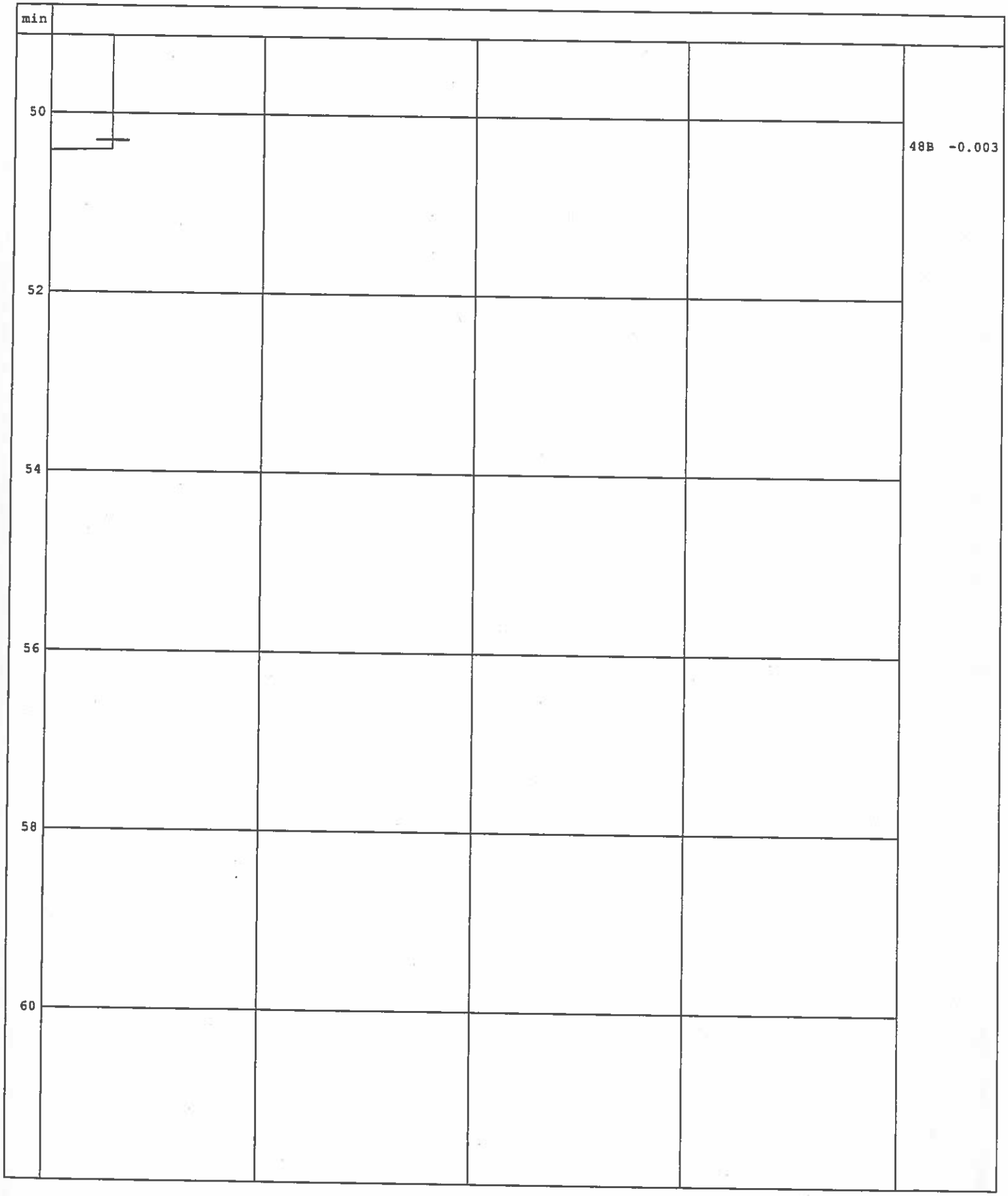
Name of run :121108C.RUN
Comment :13-0013 Yellow Bluff Dust Study SCAN

Name of analysis :Ammonia.ANL



Name of run :121108C.RUN
Comment :13-0013 Yellow Bluff Dust Study SCAN

Name of analysis :Ammonia.ANL

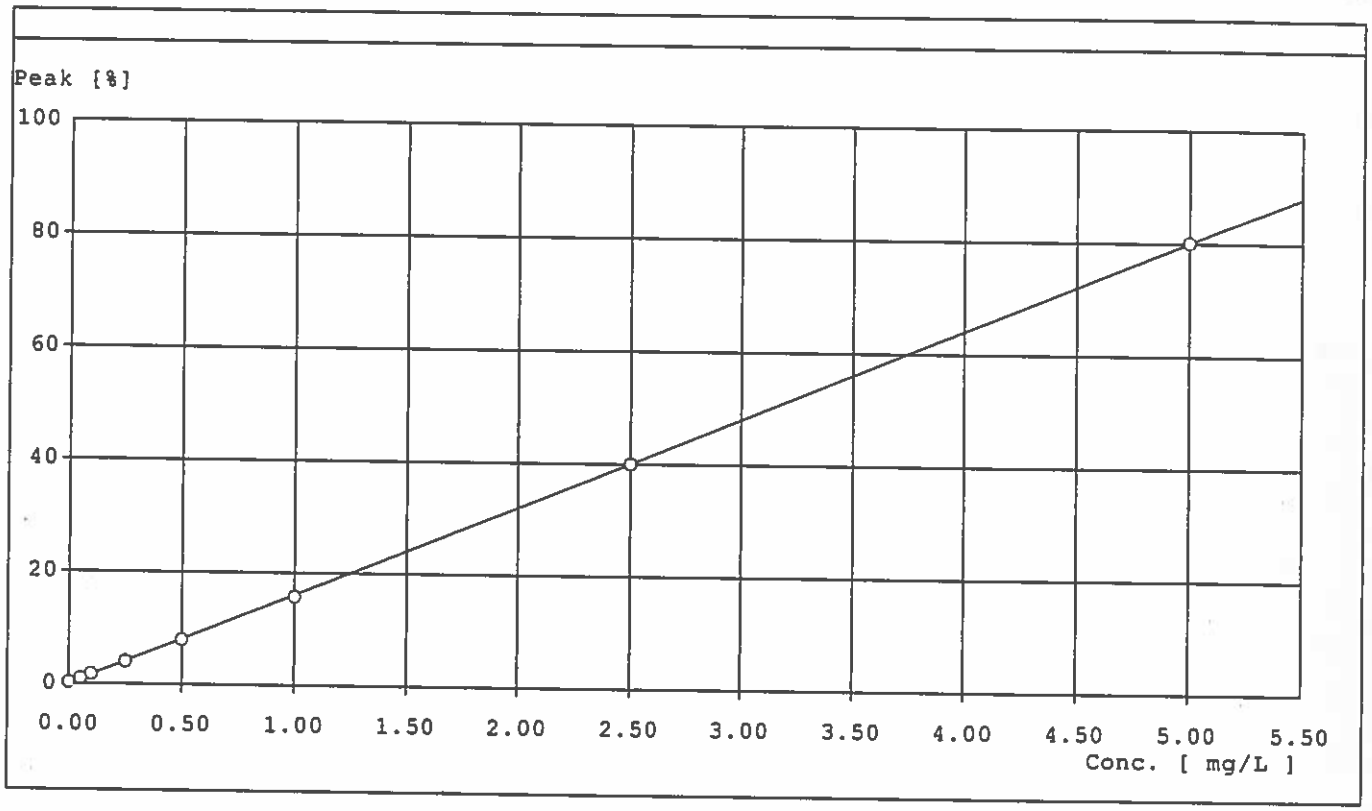


# AA3-NUTS 2

Post-run report

Name of run :121108C.RUN
Comment :13-0013 Yellow Bluff Dust Study SCAN

Name of analysis :Ammonia.ANL
Date of report :11/9/2012




Channel :2
Method :EPA Method
Curve fit :Linear
Corr.coeff.(r) :1.0000

Date of run :11/9/2012

Equation :y = bx + a

y = conc. in
x = peak height in digital units
a = -3.5666E-001
b = 9.5432E-005

Corrections
Baseline Corr. done
Drift Correction done
Carryover Corr. done 0.34 %

Calibrant Values

| Type | Calculated | Target | Diff.[mg/L] | Diff. (%) |
|---|---|---|---|---|
| 1C | 5.004 | 5.000 | 0.004 | 0.07 |
| 2C | 2.502 | 2.500 | 0.002 | 0.10 |
| 3C | 0.979 | 1.000 | -0.021 | -2.11 |
| 4C | 0.492 | 0.500 | -0.008 | -1.52 |
| 5C | 0.248 | 0.250 | -0.002 | -0.80 |
| 6C | 0.104 | 0.100 | 0.004 | 3.89 |
| 7C | 0.058 | 0.050 | 0.008 | 16.54 |
| 8C | 0.013 | 0.000 | 0.0 | --- |

# AA3-NUTS 2

Post-run report

| | | | |
|---|---|---|---|
| Name of Run | :121108C | Name of Analysis | :Ammonia |
| Date | :11/8/2012 | System No. | :1 |
| Sample/Hour | :70 | Sample Time | :39 |
| Sample/Wash | :3.0 | Wash Time | :12.0 |
| Statistics | :No | CLP | :No |

Channel / Method

| | |
|---|---|
| Channel | 2 |
| Method | EPA Method |
| Unit | mg/L |
| Inverse Chem. | No |
| Sample limit | No |
| Sample limit low | 0.000 |
| Sample limit high | 0.000 |
| Baseline Corr. | Yes |
| Drift Correction | Yes |
| Carryover Corr. | Yes |
| Calibration Fit | L |
| Base Calibration | No |
| Base Concentration | 0.000 |
| Carryover Factor | 0.000 |
| QCLink | |
| QCCopy | No |
| Dual-cal-run : Second calibration from | |
| Calibrant 1 | 5.000 |
| Calibrant 2 | 2.500 |
| Calibrant 3 | 1.000 |
| Calibrant 4 | 0.500 |
| Calibrant 5 | 0.250 |
| Calibrant 6 | 0.100 |
| Calibrant 7 | 0.050 |
| Calibrant 8 | 0.000 |
| Calibrant 9 | 0.000 |
| Calibrant 10 | 0.000 |
| Smoothing | 8 |
| Peak Window Start | 50 |
| Peak Window End | 105 |
| Spike Recovery | 0.000 |
| Baseline Max Heigh [%] | 26 |
| Baseline Noise | 0.6 |
| Primer Max Heigh [%] | 50 |
| Primer Rise | 0.5 |
| Primer Rise After | 6 |
| Primer After Last Base | Yes |

QC Limits

| | |
|---|---|
| Channel | 2 |

SEAL Analytical AACE 6.07

Tray Protocol

| | | |
|---|---|---|
| QC 1 | Cond. 1 | Below/Equal |
| | Limit 1 | 0.700 |
| | Action 1 | Continue |
| | Cond. 2 | Above/Equal |
| | Limit 2 | 1.300 |
| | Action 2 | Continue |
| | Autocopy | No |
| | Filename | |
| QC 2 | Unused | |
| QC 3 | Unused | |
| QC 4 | Unused | |
| QC 5 | Unused | |
| QC 6 | Unused | |
| QC 7 | Unused | |
| QC 8 | Unused | |
| QC 9 | Unused | |
| QC10 | Unused | |

---

Tray / Cups

Number of Cups : 38

Number of Samples : 30

| No | Cup | Type | Sample ID |
|---|---|---|---|
| 1 | 1 | P | Primer |
| 2 | 1 | D | Drift |
| 3 | 1 | C | 5.0 |
| 4 | 2 | C | 2.5 |
| 5 | 3 | C | 1.0 |
| 6 | 4 | C | 0.5 |
| 7 | 5 | C | 0.25 |
| 8 | 6 | C | 0.10 |
| 9 | 7 | C | 0.05 |
| 10 | 8 | C | 0.00 |
| 11 | 0 | N | Null |
| 12 | 1 | H1 | High |
| 13 | 7 | L1 | Low |
| 14 | 7 | L1 | Low |
| 15 | 0 | N | Null |
| 16 | 25 | S | BLK1 |
| 17 | 26 | S | BLK2 |
| 18 | 27 | S | E124405-01 |
| 19 | 28 | S | E124405-02 |
| 20 | 29 | S | E124405-03 |
| 21 | 30 | S | E124405-04 |
| 22 | 31 | S | E124405-05 |
| 23 | 32 | S | E124405-06 |
| 24 | 33 | S | E124405-07 |
| 25 | 34 | S | E124405-08 |
| 26 | 35 | S | E124405-09 |
| 27 | 36 | S | E124405-10 |
| 28 | 37 | S | E124405-11 |
| 29 | 38 | S | E124405-12 |
| 30 | 39 | S | E124405-13 |
| 31 | 40 | S | E124405-14 |
| 32 | 41 | S | E124405-15 |
| 33 | 42 | S | E124405-16 |

| | | | |
|---|---|---|---|
| 34 | 43 | S | E124405-17 |
| 35 | 44 | S | E124405-18 |
| 36 | 45 | S | E124405-19 |
| 37 | 46 | S | E124405-20 |
| 38 | 47 | S | E124405-21 |
| 39 | 48 | S | E124405-22 |
| 40 | 49 | S | E124405-23 |
| 41 | 50 | S | E124405-24 |
| 42 | 51 | S | E124405-25 |
| 43 | 52 | S | E124405-26 |
| 44 | 53 | S | E124405-27 |
| 45 | 54 | S | E124405-28 |
| 46 | 0 | N | Null |
| 47 | 1 | D | Drift |
| 48 | 0 | E | End |

# Traceability of TKN/Ammonia Standards

Book 7 Page 45

Intermediate Std - $NH_3$ / TKN standards

Prepared by: M. Dykes

| Intermediate Std ID# | Std conc. | Date prep. | Exp. Date | Primary Std. ID # | Amt. of Primary Std. used | Final Vol. |
|---|---|---|---|---|---|---|
| (#2110701) IS-110712-100 | 100 ppm | 11/07/12 | 11/21/12 | (#2081602) PS-081612-$NH_3$ | 10 ml | 100 mL |
| (#2110702) IS-110712-50 | 50 ppm | ↓ | ↓ | (#2081603) PS-081512-$NH_3$ | 5 ml | 100 mL |

Working Std's for Calibration

| Working Std. ID # | Std. Conc. | Date Prep. | Exp. Date | Intermediate Std. ID# or Working Std. ID# | | Amt. of WS or IS used to Prepare Working Standard | Final Vol. |
|---|---|---|---|---|---|---|---|
| WS-110712-0.05 | 0.05 ppm | 11/07/12 | 11/21/12 | WS<br>IS-110712 | - 0.50 ppm<br>- 100 ppm | 10 mL 0.5 ppm WS or<br>50 µL 100 ppm IS | 100 mL |
| WS-110712-1.0 | 0.10 ppm | | | WS<br>IS | - 1.0 ppm<br>- 100 ppm | 10 mL 1.0 ppm WS or<br>100 µL 100 ppm IS | 100 mL |
| WS-110712-0.25 | 0.25 ppm | | | WS<br>IS | - 2.5 ppm<br>- 100 ppm | 10 mL 2.5 ppm WS or<br>250 µL 100 ppm IS | 100 mL |
| WS-110712-0.50 | 0.50 ppm | | | WS<br>IS | - 5.0 ppm<br>- 100 ppm | 10 mL 5.0 ppm WS or<br>500 µL 100 ppm IS | 100 mL |
| WS-110712-1.0 | 1.0 ppm | | | IS | - 100 ppm | 1.0 mL 100 ppm IS | 100 mL |
| WS-110712-2.5 | 2.5 ppm | | | IS | - 100 ppm | 2.5 mL 100 ppm IS | 100 mL |
| WS-110712-5.0 | 5.0 ppm | ↓ | ↓ | IS | - 100 ppm | 5.0 mL 100 ppm IS | 100 mL |

) IS-110712-100 Metals Element ID: #2110801
IS-110712-50 Metals Element ID: #2110802
MAD 11/8/12

Form Ver 01/20/2005

Book 4 / Page 5

# Nutrient Sample Preservation Logbook

**Project Name:** Yellow Bluff Dust Study

**Project #:** 13-0013

**Work Order #:** E124405

**Analyst:** M. Degesus

**Date preservation checked:** 11/8/12 * Filtrate preserved in-house on 11/8/12 hnd 11/8/12

| Sample ID | pH < 2 ($H_2SO_4$)? | Chlorine present? |
|---|---|---|
| E124405-01 | ✓ | ND |
| -02 | ✓ | |
| -03 | ✓ | |
| -04 | ✓ | |
| -05 | ✓ | |
| -06 | ✓ | |
| -07 | ✓ | |
| -08 | ✓ | |
| -09 | ✓ | |
| -10 | ✓ | |
| -11 | ✓ | |
| -12 | ✓ | |
| -13 | ✓ | |
| -14 | ✓ | |
| -15 | ✓ | |
| -16 | ✓ | |
| -17 | ✓ | |
| -18 | ✓ | |
| -19 | ✓ | |
| -20 | ✓ | |
| -21 ✓ | | |
| -22 ✓ | | |
| -23 ✓ | | |
| -24 ✓ | | |
| -25 ✓ | | |
| -26 ✓ | | |
| -27 ✓ | | |
| -28 ✓ | | |

# AutoAnalyzer 3 Utilization/Maintenance Logbook

XY-2 Serial #: 5133A25415
Pump Serial #: 8007769
Colorimeter Serial #: 8007656

Instrument ID: AA3-NUTS2
Installation Date: 10/18/2011

| | |
|---|---|
| Date: 11/8/12 | Comments: Analyzed samples E124302-03→09 on |
| Project: 13-0003 United Metals | 11/8/12. Samples requiring dilution to be re analyzed |
| | w/ next run. All QC passed. |
| Parameter: $NH_3$ (undistilled) | Reagents: $NH_3$-110812-01→04 |
| Analyst: M. DeJesus | |
| Date: 11/9/12 | Comments: Analyzed samples E124405-01→28 and |
| Project: 13-0013 Yellow Bluff Dust Study 13-0003 United Metals Creeuns) | E124302-03,04. All QC passed. Projects batched |
| | separately. |
| Parameter: $NH_3$ (undistilled) | Reagents: $NH_3$-110812-01→04. |
| Analyst: M. DeJesus | |
| Date: | Comments: |
| Project: | |
| | |
| Parameter: | |
| Analyst: | |
| Date: | Comments: |
| Project: | |
| | |
| Parameter: | |
| Analyst: | |
| Date: | Comments: |
| Project: | |
| | |
| Parameter: | |
| Analyst: | |

Book/Page 3/48

# EMPTY BOTTLE PREPARATION LOG

Project Name/Number: 13-0013 Yellow Bluff Dust Study E124405

Date: 11/07/12

Analyst: T. White

Lot No. $HNO_3$/ HCl: NA

| Sample No. | Bottle Type* | DI wtr added (mL) | Preservative added (amount/type) |
|---|---|---|---|
| Prep ~~Filter - Blk~~ | 200ml Flask | 200 mls | |
| E124405-03 | filter | 200mls | NA |
| E124405-04 | ↓ | ↓ | ↓ |
| E124405-05 | | | |
| E124405-07 | | | |
| E124405-08 | | | |
| E124405-09 | | | |
| E124405-10 | | | |
| E124405-11 | | | |
| E124405-12 | | | |
| E124405-13 | | | |
| E124405-14 | ↓ | ↓ | ↓ |

*Bottle type: 1LP- 1 Liter Plastic
8ozG- 8 ounce glass
1GalAm- 1 gallon glass amber bottle

Notes: These filters were sonicated in 50 mls DI $H_2O$ - poured up to a final volume of 200 mls - aliquoted into 50 ml digi tubes for metals, anions, and ammonia. See directions from Mike Wasko in workorder notes.

Form Ver 03/26/2003

T. White
11/7/12

Book/Page 3/49

# EMPTY BOTTLE PREPARATION LOG

Project Name/Number: 13-0013 Yellow Bluff Dust Study E124405

Date: 11/07/12

Analyst: T. White

Lot No. $HNO_3$/ HCl: NA

| Sample No. | Bottle Type* | DI wtr added (mL) | Preservative added (amount/type) |
|---|---|---|---|
| E124405- 15 | filter | 200 mls | NA |
| E124405- 16 | | | |
| E124405- 17 | | | |
| E124405- 18 | | | |
| E124405- 20 | | | |
| E124405- 21 | | | |
| E124405- 22 | | | |
| E124405- 23 | | | |
| E124405- 24 | | | |
| E124405- 25 | | | |
| E124405 26 | | | |
| E124405 27 | | | |

*Bottle type: 1LP- 1 Liter Plastic
8ozG- 8 ounce glass
1GalAm- 1 gallon glass amber bottle

E124405-28

Notes:

Form Ver 03/26/2003

Book/Page 31 50

# EMPTY BOTTLE PREPARATION LOG

Project Name/Number: 13-0013 Yellow Bluff Dust Study E124405

Date: 11/07/12

Analyst: T. White

Lot No. $HNO_3$/ HCl: NA

| Sample No. | Bottle Type* | DI wtr added (mL) | Preservative added (amount/type) |
|---|---|---|---|
| E124405-01 | teflon canister | 200 mls | NA |
| E124405-02 | ↓ | ↓ | ↓ |
| E124405-06 | ↓ | ↓ | ↓ |
| E124405-19 | ↓ | ↓ | ↓ |
| Prepped - BLK | 200ml Flask | 200 mls | NA |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

*Bottle type:
1LP- 1 Liter Plastic
8ozG- 8 ounce glass
1GalAm- 1 gallon glass amber bottle

Notes: These canisters were rinsed + sonicated with 200 mls DI $H_2O$ - then aliquoted into 50ml digitubes for metals, anions, and ammonia. See directions from Mike Wasko in Work ordinates. T. White 11/7/12

Form Ver 03/26/2003