



March 18, 2011

Mr. Ken Rhame
On-Scene Coordinator
U.S. Environmental Protection Agency, Region 4
61 Forsyth Street, SW, 11th Floor
Atlanta, Georgia 30303

**Subject: Draft Emergency Response Letter Report
Agrium US Fertilizer Fire
Hartsville, Darlington County, South Carolina
Contract No.: EP-W-05-054
TDD No.: TTEMI-05-001-0148**

Dear Mr. Rhame:

The Tetra Tech Superfund Technical Assessment and Response Team (START) is submitting this letter report summarizing the emergency response activities conducted from February 15 through 17, 2011 at the Agrium US Fertilizer Fire in Hartsville, Darlington County, South Carolina. Enclosure 1 contains figures illustrating the site location and key features associated with response activities. Enclosure 2 contains tables summarizing analytical results for samples collected during response activities. Enclosure 3 contains a photographic log of the response activities. Enclosure 4 contains a copy of the Tetra Tech START logbook notes. Enclosure 5 contains a table of witnesses. Enclosure 6 contains copies of the analytical data packages for samples collected during response activities.

BACKGROUND

The Agrium US Fertilizer (Agrium) facility, located at 201 Society Avenue in Hartsville, South Carolina, was impacted by a fire that began on their loading dock at approximately 1830 hours on February 14, 2011 (see Figure 1 of Enclosure 1). The geographic coordinates for the facility are 34.388341 degrees north latitude and 80.072594 degrees west longitude. Due to immediate health concerns from burning fertilizers and possible pesticides stored at the facility, local responders initiated a mandatory evacuation of local residents, which was later downgraded to a voluntary evacuation. An estimated 30 residents reported to a shelter.

The facility reportedly contained several thousand tons of fertilizer product and raw materials. Prestwood Lake serves as a reservoir and urban recreational lake and is located adjacent to the Agrium facility. Runoff water from firefighting activities which potentially contained fertilizer products, drained into the lake. Additionally, the smoke plume entered the surrounding community, which consists of a mixture of industrial, commercial, and residential properties. On February 14, 2011, the South Carolina Department of Health and Environmental Control (SC DHEC) requested assistance from the U.S. Environmental Protection Agency (EPA).

RESPONSE ACTIVITIES

On February 14, 2011, On Scene Coordinator (OSC) Ken Rhame and Tetra Tech START mobilized to the site. The following subsections provide a summary of response activities.

Air Monitoring

On February 15, 2011, Tetra Tech START arrived at the site and conducted initial air monitoring using a MultiRAE unit to measure concentrations of hydrogen sulfide, carbon monoxide, and volatile organic compounds (VOC) as well as lower explosive limit (LEL) for flammable gasses and percent oxygen in the air. In addition, two Single Point Monitors (SPM) were utilized to measure concentrations of phosgene and ammonia. Initial air monitoring conducted by Tetra Tech START included monitoring at locations only in the immediate vicinity of the facility, and was used primarily for health and safety controls and to supplement data collected by SC DHEC. No elevated readings were detected by Tetra Tech START.

Air quality monitoring was conducted during response activities primarily by SC DHEC using AreaRAE units that were deployed at various locations throughout the community with sensors capable of monitoring for percent oxygen, hydrogen sulfide, carbon monoxide, VOCs, chlorine, ammonia, phosgene, and LEL. Figure 2 of Enclosure 1 illustrates the monitoring locations used by SC DHEC. Because SC DHEC had the resources and staff available to conduct air monitoring activities for the duration of the response, Tetra Tech START focused on multimedia sampling activities, including the collection of air, surface water, sediment, and product (fertilizer) samples. Air monitoring results obtained by SC DHEC indicated slightly elevated detections of carbon monoxide, which were attributed to nearby vehicles, not the Agrium fertilizer fire. No other elevated readings were detected by SC DHEC.

During response activities, SC DHEC informed Tetra Tech START that a nuclear power plant was located upstream of the Agrium facility and tritium had reportedly been identified in Prestwood Lake. Tetra Tech START subsequently performed radiation monitoring at the Agrium site with a Ludlum Model 3 unit, but identified no significantly elevated readings. Typical readings were measured at approximately 40 counts per minute.

Air Sampling

On February 15, Tetra Tech START collected the following air samples for laboratory analysis of Resource Conservation and Recovery Act (RCRA) metals and zinc (see Figure 2 of Enclosure 1):

- 02-AA-021511 collected from inside the exclusion zone and attached to the excavator that was used to extinguish the smoldering fertilizer.
- 11-AA-021511 collected from a downwind location to the southwest of the facility.
- 12-AA-021511 collected from a downwind location to the southwest of the facility.

Each sample was collected using a Gilian (GilAir5) personal air sampling pump affixed with a mixed-cellulose ester (MCE) cassette for analysis of RCRA metals and zinc. The GilAir 5 pumps were calibrated at four liters per minute and allowed to run for four hours. No analytes were detected above the laboratory reporting limit in these samples. Table 1 of Enclosure 2 provides a summary of the analytical results.

On February 16, Tetra Tech START collected the following air samples for laboratory analysis of RCRA metals, zinc, and hexavalent chromium (see Figure 2 of Enclosure 1):

- 02-AA-021611 collected from inside the exclusion zone and attached to the excavator that was used to extinguish the smoldering fertilizer.
- 13-AA-021611 collected from a downwind location to the northeast of the facility.

- 14-AA-021611 collected from a downwind location to the northeast of the facility.

Each sample was collected using two Gilian (GilAir5) personal air sampling pumps, one affixed with a MCE cassette for analysis of RCRA metals and zinc and one affixed with a polyvinyl chloride (PVC) cassette for analysis of hexavalent chromium. The GilAir 5 pumps were calibrated at four liters per minute and allowed to run for four hours. Zinc was detected at a concentration of 0.0036 milligrams per cubic meter (mg/m^3) in the sample collected from inside the exclusion zone (02-AA-021611). No other analytes were detected above the laboratory reporting limit in these samples. Table 1 of Enclosure 2 provides a summary of the analytical results.

On February 16, Tetra Tech START also collected the following air samples for laboratory analysis of nitric oxide (NO), nitrous oxide (N_2O), and nitrogen dioxide (NO_2) because of concerns associated with the burning fertilizer (see Figure 2 of Enclosure 1):

- 02-AA-021611 collected from a smoke plume emanating from smoldering fertilizer inside the exclusion zone. A field duplicate sample (02-AA-021611-DUP) was also collected.
- 13-AA-021611 collected from a downwind location to the northeast of the facility (collocated with the MCE and PVC cassettes described above).
- 14-AA-021611 collected from a downwind location to the northeast of the facility (collocated with the MCE and PVC cassettes described above).

Each sample for laboratory analysis of NO, N_2O , and NO_2 was collected using tedlar bags that were filled with outside air drawn through the bag by a GilAir5 personal air sampling pump. Analytical results, which are summarized in Table 1 of Enclosure 2, were compared to the Acute Exposure Guideline Levels (AEGL) values, specifically AEGL-1, and the threshold values obtained from the National Institute for Occupational Safety and Health (NIOSH) and the Occupational Safety and Health Administration (OSHA) Standards, 29 CFR 1910.146(b), that define a hazardous atmosphere. Highlights of the comparisons are summarized below:

- N_2O was detected at a concentration up to 5,049 parts per million by volume (ppmv) in the samples collected from inside the exclusion zone (02-AA-021611 and 02-AA-021611-DUP), which exceeds the OSHA standard of 25 ppmv.
- NO_x was detected at a concentration up to 141 parts per million by volume (ppmv) in the samples collected from inside the exclusion zone (02-AA-021611 and 02-AA-021611-DUP), which exceeds the AEGL value of 0.5 ppmv and the OSHA standard of 1 ppmv.
- Hydrogen chloride was detected at concentrations of approximately 100 to 150 ppmv in the samples collected from inside the exclusion zone (02-AA-021611 and 02-AA-021611-DUP), which exceeds the AEGL value of 1.8 ppmv and the OSHA standard of 5 ppmv.
- NO_x was detected at concentrations ranging from 1.49 to 2.31 ppmv in the samples collected from downwind locations (13-AA-021611 and 14-AA-021611), which exceeds the AEGL value of 0.5 ppmv and the OSHA standard of 1 ppmv.

On February 16, Tetra Tech START also collected one air sample for laboratory analysis of asbestos using transmission electron microscopy (TEM) based on a previous inspection report that indicated that non-friable asbestos was present at the Agrium facility. The sample location is described below:

- 01-AA-021611 collected from inside the exclusion zone and attached to the excavator that was used to extinguish the smoldering fertilizer.

The air sample for TEM asbestos analysis was collected using a GilAir5 personal air sampling pump that was calibrated at two liters per minute and allowed to run for eight hours. A GilAir5 pump was utilized to create a vacuum; subsequently passing air through the filter at two L/min for an 8-hour period. TEM results indicated no asbestos present in the sample.

Surface Water and Sediment Sampling

On February 15, Tetra Tech START collected the following surface water samples (see Figure 2 of Enclosure 1):

- SW-01-021511 collected on the northern portion of the property from a small creek that traversed the property;
- SW-02-021511 collected from a retention pond on the southeastern portion of the property;
- SW-03-021511 through SW-05-021511 collected from outfall locations on Prestwood Lake south and southwest of the burning building;
- SW-06-021511 through SW-08-021511 collected from Prestwood Lake;
- SW-09-021511 collected from the creek downstream of the dam on Prestwood Lake; and
- SW-10-021511 collected from an onsite vat used to store water from firefighting activities.

Surface water samples were delivered for laboratory analysis of biological oxygen demand (BOD), chemical oxygen demand (COD), dissolved oxygen (DO), nitrate-nitrite, phosphorus, Total Kjeldahl Nitrogen (TKN), RCRA metals, and potassium. Table 2 of Enclosure 2 provides a summary of the analytical results. As per agreement with the U.S. Fish and Wildlife Service (USFWS), further discussion of these analytical results will be provided in a forthcoming report prepared by the USFWS.

On February 16, Tetra Tech START also collected the following sediment samples to support efforts conducted by the USFWS:

- 02-SD-021611 collected from the same location as surface water sample SW-02-021511. A field duplicate sample (02-SD-021611-DUP) was also collected from this location.
- 05-SD-021611 collected from the same location as surface water sample SW-05-021511.
- 07-SD-021611 collected from the same location as surface water sample SW-07-021511.

Sediment samples, which were collected and split with the consultant for the potentially responsible party (PRP), were delivered for laboratory analysis of RCRA metals, zinc, and hexavalent chromium. Table 3 of Enclosure 2 provides a summary of analytical results. In addition, field measurements of the surface water were collected using a water quality meter for DO and pH during sediment sample collection. DO readings ranged from 7.97 to 10.87 milligrams per liter (mg/L) and pH readings ranged from 6.65 to 8.04. As per agreement with the USFWS, further discussion of these analytical results and water quality standards will be provided in a forthcoming report prepared by the USFWS.

EPA and Tetra Tech START demobilized from the site on the afternoon of February 17, 2011.

Mr. Ken Rhame
March 18, 2011

If you have any questions or comments regarding this letter report, please contact me at (678) 775-3081.

Sincerely,



Christopher Jones
Tetra Tech START III Site Manager



Andrew F. Johnson
Tetra Tech START III Program Manager

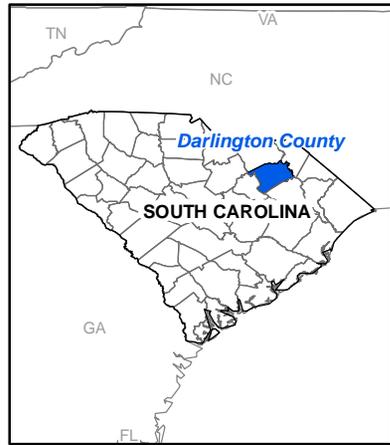
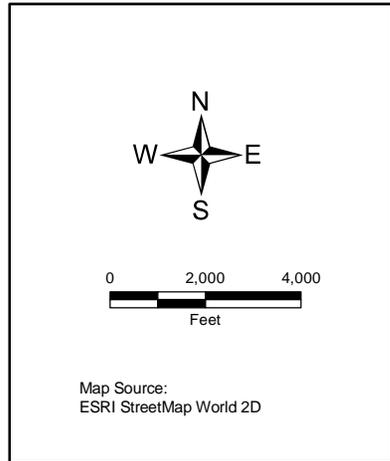
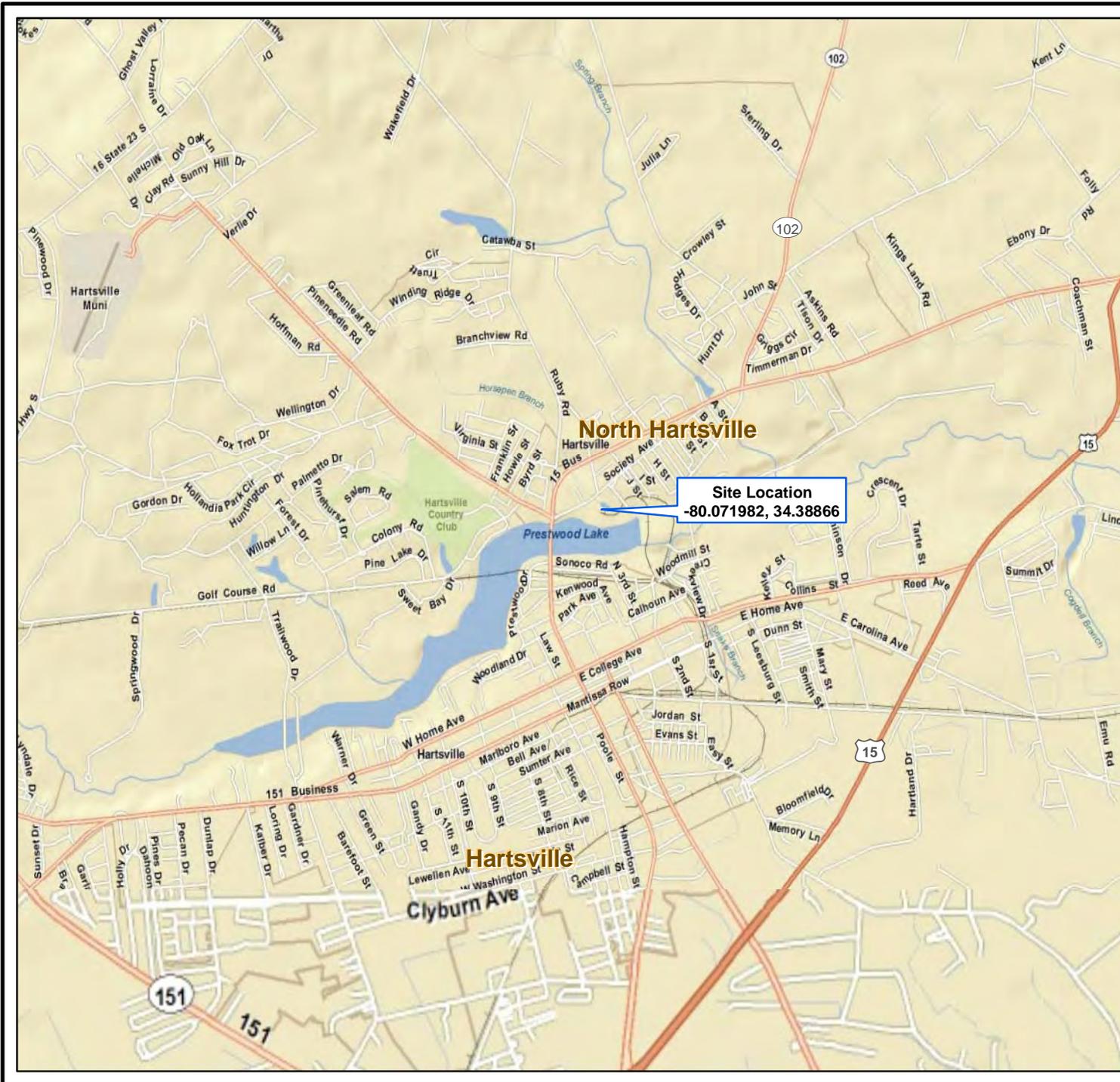
Enclosures (6)

cc: Katrina Jones, EPA Project Officer
Brian Croft, START III Task Order Manager
Angel Reed, START III Document Control Coordinator

ENCLOSURE 1

FIGURES

(Two Pages)

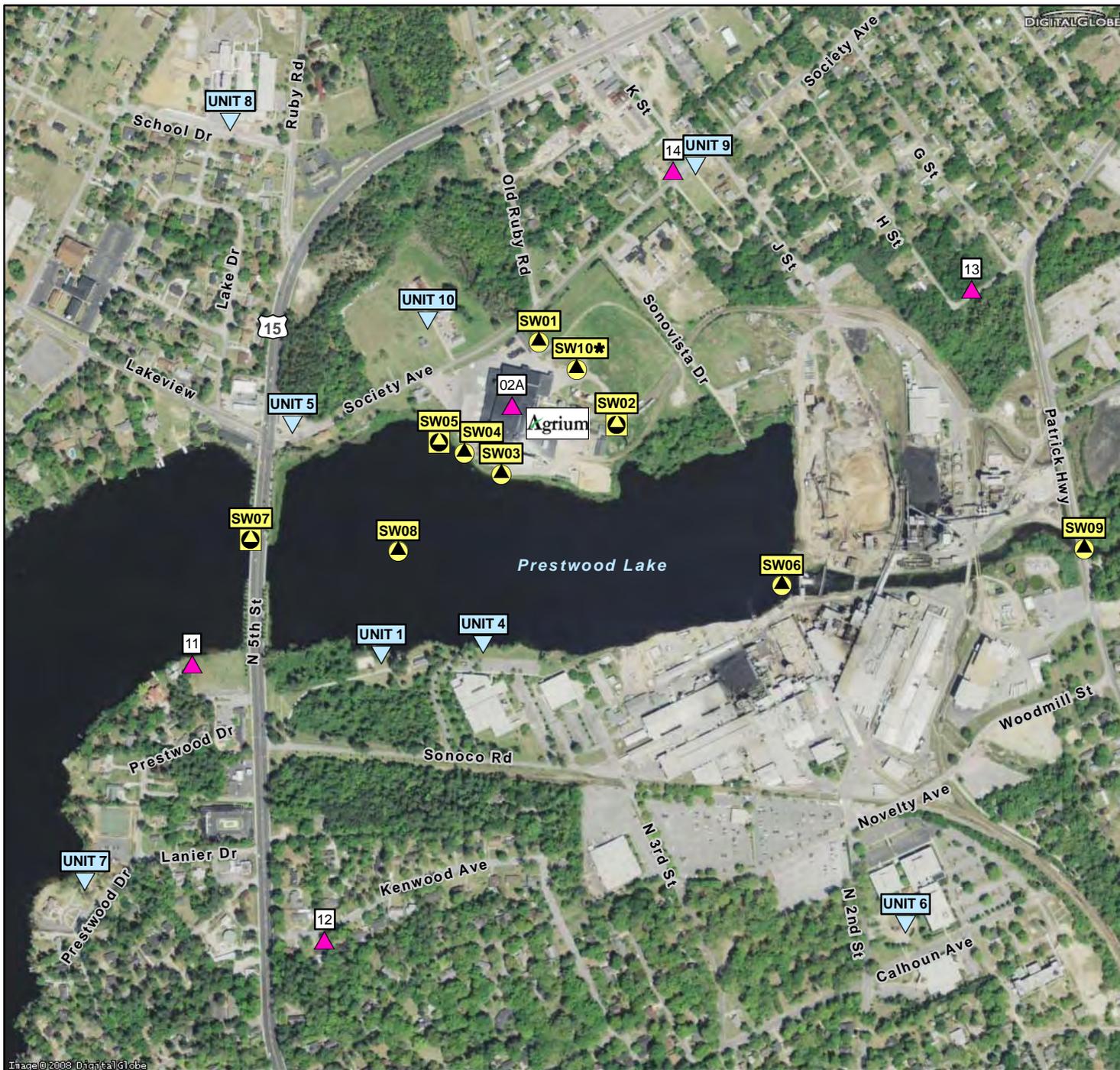



 United States
 Environmental Protection Agency

AGRUM US FERTILIZER FIRE
 201 SOCIETY AVENUE,
 HARTSVILLE,
 DARLINGTON COUNTY,
 SOUTH CAROLINA
 TDD: TTEMI-05-001-0148

FIGURE 1
SITE LOCATION


TETRA TECH



Legend

-  Surface Water Sample
-  Surface Water and Sediment Sample
-  Air Sampling Location
-  SCDHEC AreaRAE Monitoring Location



Note:
 * - Sample SW10 was collected from an onsite frac-tank used to store water from firefighting activities.

Map Source:
 GlobeXplorer Image Connect, 2009



 United States Environmental Protection Agency

AGRIUM US FERTILIZER FIRE
 201 SOCIETY AVENUE,
 HARTSVILLE,
 DARLINGTON COUNTY,
 SOUTH CAROLINA
 TDD: TTEMI-05-001-0148

**FIGURE 2
 MONITORING AND
 SAMPLING LOCATIONS**



ENCLOSURE 2

TABLES

(Five Pages)

**TABLE 1
ANALYTICAL RESULTS FOR AIR SAMPLES**

Analyte	AEGL-1	NIOSH/ OSHA ^a	02-AA-021511	11-AA-021511	12-AA-021511
Inorganics and asbestos (ppmv)					
Nitrous oxide (N ₂ O)	NL	25	NA	NA	NA
Nitrogen oxides (NO _x)	0.50 ^b	1 ^b	NA	NA	NA
Asbestos	NL	LFC	NA	NA	NA
Metals (mg/m³)					
Arsenic	NL	0.002	0.00032 U	0.00030 U	0.00031 U
Barium	NL	NL	0.00016 U	0.00015 U	0.00015 U
Cadmium	0.041	LFC	0.00016 U	0.00015 U	0.00015 U
Chromium	NL	0.5	0.0032 U	0.0030 U	0.0031 U
Hexavalent Chromium	NL	0.001	NA	NA	NA
Trivalent Chromium (calculated)	NL	0.5	NA	NA	NA
Lead	NL	0.05	0.00040 U	0.00038 U	0.00038 U
Selenium	NL	0.2	0.0024 U	0.0023 U	0.0023 U
Silver	NL	0.01	0.00032 UJ	0.00030 UJ	0.00031 UJ
Zinc	NL	NL	NA	0.0023 U	0.0023 U

**TABLE 1
ANALYTICAL RESULTS FOR AIR SAMPLES**

Analyte	AEGL-1	NIOSH/ OSHA	02-AA-021611	02-AA-021611 DUP	13-AA-021611	14-AA-021611
Inorganics and asbestos (ppmv)						
Nitrous oxide (N ₂ O)	NL	25	5049	4320	1.44 U	1.49 J
Nitrogen oxides (NO _x)	0.50 ^b	1 ^b	141	134	1.49	2.31
Hydrogen chloride	1.8	5	100 - 150^c	100 - 150^c	NA	NA
Asbestos	NL	LFC	NAD	NA	NA	NA
Metals (mg/m³)						
Arsenic	NL	0.002	0.00030 U	NA	0.00030 U	0.00030 U
Barium	NL	NL	0.00015 U	NA	0.00015 U	0.00015 U
Cadmium	0.041	LFC	0.00015 U	NA	0.00015 U	0.00015 U
Chromium	NL	0.5	0.0030 U	NA	0.0030 U	0.0030 U
Hexavalent Chromium	NL	0.001	0.074 U	NA	0.069 U	0.065 U
Trivalent Chromium (calculated)	NL	0.5	0.074 U	NA	0.069 U	0.065 U
Lead	NL	0.05	0.00038 U	NA	0.00038 U	0.00038 U
Selenium	NL	0.2	0.0023 U	NA	0.0023 U	0.0023 U
Silver	NL	0.01	0.00030 UJ	NA	0.00030 UJ	0.00030 UJ
Zinc	NL	NL	0.0036	NA	0.0023 U	0.0023 U

Notes:

- ^a Lower of the two values between the OSHA permissible exposure limit (PEL) and the NIOSH recommended exposure limit (REL)
- ^b Value listed is for nitrogen dioxide.
- ^c Estimated concentration was noted by laboratory analyst
- AA Agrium air
- AEGL Acute Exposure Guideline Levels
- DUP Field duplicate
- J Compound was detected above the minimum detectable concentration (MDC) value in some of the spectra, and below the MDC in others.
- LFC Lowest feasible concentration
- mg/m³ Milligrams per cubic meter
- NA Not analyzed
- NAD No asbestos detected
- NIOSH National Institute for Occupational Safety and Health
- NL Not listed
- OSHA Occupational Safety and Health Administration
- ppmv Parts Per Million by Volume
- U The analyte was not detected at or above the reporting limit.
- UJ The analyte was not detected at or above the reporting limit; the reported value is an estimate.
- BOLD** Shaded and bolded values exceed at least one of the listed criteria.

**TABLE 2
ANALYTICAL RESULTS FOR SURFACE WATER SAMPLES**

Analysis	SW-01-021511	SW-02-021511	SW-03-021511	SW-03-021511 DUP	SW-04-021511	SW-05-021511
Wet Chemistry Parameters (mg/L)						
BOD, 5 day	2.0 U	2.4	2.0 U	2.4	2.5	3.3
COD	45	100	28	46	31	32
Dissolved Oxygen	10.2	11.0	11.2 J	11.3 J	11.0 J	11.1 J
Nitrate-Nitrite - N	31	13	3.2	3.8	5.4	1.2
pH (standard units)	6.09 J	6.39 J	6.09 J	6.24 J	5.71 J	5.8 J
Phosphorus	42	10	4.3	5.1	6.2	1.3
TKN	48	39	12	14	8.3	3.9
Metals (mg/L)						
Arsenic	0.0066 J	0.017	0.012	0.0092 J	0.0041 J	0.015
Barium	0.018 J	0.021 J	0.026	0.023 J	0.027	0.035
Cadmium	0.0017 J	0.0030	0.0020 U	0.00096 J	0.00087 J	0.0020 U
Chromium	0.017	0.0078	0.0037 J	0.0050 U	0.0026 J	0.0031 J
Hexavalent Chromium	0.010 UJ	0.010 UJ	0.010 UJ	0.010 UJ	0.010 UJ	0.010 UJ
Trivalent Chromium (calculated)	0.017	0.0078	0.0037 J	0.010 U	0.0026 J	0.0031 J
Lead	0.011	0.013	0.0093 J	0.010 U	0.010 U	0.0055 J
Mercury	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U
Potassium	140	67	26	25	15	6.5
Selenium	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
Silver	0.0050 U	0.00061 J	0.0050 U	0.0050 U	0.0050 U	0.00087 J
Zinc	0.47	0.55	0.17	0.13	0.39	0.27

**TABLE 2
ANALYTICAL RESULTS FOR SURFACE WATER SAMPLES**

Analysis	SW-06-021511	SW-07-021511	SW-08-021511	SW-09-021511	SW-10-021511
Wet Chemistry Parameters (mg/L)					
BOD, 5 day	2.0 U	2.0 U	2.0 U	2.0 U	88
COD	19	24	17	19	960
Dissolved Oxygen	10.7 J	10.5 J	11.0 J	10.8 J	10.5
Nitrate-Nitrite - N	0.92	0.50	0.91	1.1	1100
pH (standard units)	5.51 J	5.48 J	5.1 J	5.5 J	6.28 J
Phosphorus	0.21	0.16	0.047	0.31	770
TKN	0.65	0.15	0.25	0.71	960
Metals (mg/L)					
Arsenic	0.010 U	0.0048 J	0.0044 J	0.010 U	0.20
Barium	0.015 J	0.015 J	0.015 J	0.015 J	0.084
Cadmium	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.019
Chromium	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.12
Hexavalent Chromium	0.010 UJ	0.010 UJ	0.010 UJ	0.010 UJ	0.055 J-
Trivalent Chromium (calculated)	0.010 U	0.010 U	0.010 U	0.010 U	0.065
Lead	0.010 U	0.010 U	0.0026 J	0.010 U	0.047
Mercury	0.00010 U				
Potassium	1.8 J	5.0 U	1.2 J	2.4 J	9000
Selenium	0.010 U	0.010 U	0.010 U	0.010 U	0.0030 J
Silver	0.0050 U				
Zinc	0.0061 J	0.020 U	0.011 J	0.0090 J	1.7

Notes:

- DUP Field duplicate
- mg/L Milligrams per liter
- J The identification of the analyte is acceptable; the reported value is an estimate.
- J- The identification of the analyte is acceptable; the reported value is an estimate and may be biased low.
- SW Surface water
- U The analyte was not detected at or above the reporting limit.
- UJ The analyte was not detected at or above the reporting limit; the reported value is an estimate.

**TABLE 3
ANALYTICAL RESULTS FOR SEDIMENT SAMPLES**

Analyte	02-SD-021611	02-SD-021611 DUP	05-SD-021611	07-SD-021611
Metals (mg/kg)				
Arsenic	3.0	3.2	0.57 U	1.0
Barium	110	120	2.7	15
Cadmium	1.6	1.9	0.029 J	0.19 U
Chromium	33	47	1.8	58
Hexavalent Chromium	2.7 UJ	3.1 UJ	1.2 UJ	2.8 J
Trivalent Chromium (calculated)	33	47	1.8	55
Lead	47	53	4.1	50
Mercury	0.051 J	0.052 J	0.093 U	0.016 J
Selenium	0.65 J	1.4 U	0.57 U	0.96 U
Silver	0.26 J	0.72 U	0.29 U	0.48 U
Zinc	470	600	5.9	20

Notes:

- DUP Field duplicate
- J The identification of the analyte is acceptable; the reported value is an estimate.
- mg/kg Milligrams per kilogram
- SD Sediment
- U The analyte was not detected at or above the reporting limit.
- UJ The analyte was not detected at or above the reporting limit; the reported value is an estimate.

ENCLOSURE 3
PHOTOGRAPHIC LOG
(Seven Pages)



OFFICIAL PHOTOGRAPH NO. 1
U.S. ENVIRONMENTAL PROTECTION AGENCY

TDD Number: TTEMI-05-001-0148

Location: Agrium US Fertilizer Fire

Orientation: Northwest

Date: February 15, 2011

Photographer: Chris Jones, Tetra Tech

Witness: John Steinauer, Tetra Tech

Subject: Smoke rising from the Agrium US Fertilizer facility that caught fire on the evening of February 14, 2011.





OFFICIAL PHOTOGRAPH NO. 2
U.S. ENVIRONMENTAL PROTECTION AGENCY

TDD Number: TTEMI-05-001-0148

Location: Agrium US Fertilizer Fire

Orientation: Southeast

Date: February 15, 2011

Photographer: Chris Jones, Tetra Tech

Witness: John Steinauer, Tetra Tech

Subject: Front of the burned building as the fire continued to smolder. Note the brownish yellow smoke; these areas were targeted during tedlar bag air sampling for laboratory analysis of nitric oxide, nitrous oxide, and nitrogen dioxide.



OFFICIAL PHOTOGRAPH NO. 3
U.S. ENVIRONMENTAL PROTECTION AGENCY

TDD Number: TTEMI-05-001-0148

Location: Agrium US Fertilizer Fire

Orientation: East

Date: February 16, 2011

Photographer: Didi Fung, Tetra Tech

Witness: Eric Turner, Tetra Tech

Subject: Burned building with heavy equipment being used to move metal debris and a vacuum truck being used to collect water used during firefighting efforts.



**OFFICIAL PHOTOGRAPH NO. 4
U.S. ENVIRONMENTAL PROTECTION AGENCY**

TDD Number: TTEMI-05-001-0148

Location: Agrium US Fertilizer Fire

Orientation: Northeast

Date: February 16, 2011

Photographer: Didi Fung, Tetra Tech

Witness: Eric Turner, Tetra Tech

Subject: Air sampling location 02-AA located on the excavator working in the exclusion zone.



OFFICIAL PHOTOGRAPH NO. 5
U.S. ENVIRONMENTAL PROTECTION AGENCY

TDD Number: TTEMI-05-001-0148

Location: Agrium US Fertilizer Fire

Orientation: Northwest

Date: February 15, 2011

Photographer: Didi Fung, Tetra Tech

Witness: Ken Rhame, EPA

Subject: Air monitoring location 12-AA located in a neighborhood southwest (and downwind) of the burned building. The Gilian personal air sampling pump and sampling cassette are visible on the telephone pole.





OFFICIAL PHOTOGRAPH NO. 6
U.S. ENVIRONMENTAL PROTECTION AGENCY

TDD Number: TTEMI-05-001-0148

Location: Agrium US Fertilizer Fire

Orientation: West

Date: February 15, 2011

Photographer: Chris Jones, Tetra Tech

Witness: Didi Fung, Tetra Tech

Subject: Surface water sampling location SW-05 located west of the burning facility and adjacent to an outfall. Tetra Tech START also collected a sediment sample at this same location.





OFFICIAL PHOTOGRAPH NO. 7
U.S. ENVIRONMENTAL PROTECTION AGENCY

TDD Number: TTEMI-05-001-0148

Location: Agrium US Fertilizer Fire

Orientation: NA

Date: February 15, 2011

Photographer: Chris Jones, Tetra Tech

Witness: John Steinauer, Tetra Tech

Subject: EPA's RCRA Division was concerned that hazardous chemicals may have been used during the manufacturing process at the Agrium facility. As a result, five bags of finished product for three separate product grades were selected and composite samples were collected. Samples were split with the potentially responsible party (PRP).

ENCLOSURE 4
LOGBOOK NOTES
(15 Sheets)

2/15/11

TUESDAY

David Williamson (FIRE CHIEF)

(843) 616 1938 cell wants updates on analytical results.

1355 setup ¹¹ AA-021511 Air sample for metals analysis (as Hg) Kennwood Ave

LEL = 0% VOC = 0.0 ppm HCN = 0.0 ppm

O₂ = 20.9% CO = 0 ppmH₂S = 0 ppmAmmonia Sulfuric, Phosphoric acid tanks present over ~~at~~ on site per Ken Rhama.140,000 lbs 44.8% nitrogen solution } tanks have
6% water } been kept cool

Owens

James ~~Ray~~ - Plant manager with water from fire crew.H₂S Hydrogen sulfide } potential gases coming
Potassium Chloride } from burning pig per
NH₃ Ammonia } plant manager

Scale: 1 square =

D. Fung

2/15/11

Preston Dr. (Park)

Tuesday

1414 Setup second off-site air sample

AA-021511 for metals (as Hg)

4L/m rthv run time. Air monitor reads same

O₂ @ BSS, but O₂ = 21.3%

1534 Rad meter reading on the ground across from Avium Hartsville, other road to CPA 2200pm. The state discussed tridium being found in the water do to the nuclear plant.

1540 OSC Ken requested to add zinc to all matrix analysis & TSP zinc for waste or product samples. Previous hexavalent chrome was suspected and will be sampled for in air tomorrow.

On Monday (2/14/11) Didi Fung & Chris Jones from TE SNET began mobilizing to Hartsville, SC to respond to a chemical fire at 2230. At 0400 the following day (2/15/11) we stopped to sleep in ~~the~~ Augusta, GA and arrange for pile of water quality meters requested for the response. At 0730 on 2/15/11 Fung & Jones resumed mobilization to Hartsville, SC and arrived on site at ~ 1030 (see page 2 notes).

Scale: 1 square =

Didi Fung

2/15/11

SCDHEC air monitoring team started no significant
detections of fine particulates monitoring for
CL, NH₃, and ~~other~~ This was for 2/14/11 results.



Dana L. Cook
Environmental Health Manager

BLWM- Division of Waste Assessment & Emergency Response
2600 Bull Street, Columbia, SC 29201-1708
Phone: (803) 896-4126 Fax: (803) 896-4102
Cell: (803) 429-7639 Pager: (803) 698-2123
cookdl@dhec.sc.gov

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SOUTH CAROLINA DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL

C: (803) 220-4839



Lionel C. Arnold, Env. Health Manager
Waste Assessment & Emergency Response
Bureau of Land & Waste Management
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E-Mail: arnoldlc@columbia@dhec.sc.gov

SOUTH CAROLINA DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL

Scale: 1 square=

D.L. Cook

2/15/11

OZ-AA-021511 air sample for metals (RCRA)
was collected from excavator waiting to put out
smoldering fertilizer.

10 surface water samples were collected around
the facility (see ~~list~~ logbook)

SW-01 through 10 021511

OZ-AA-021511 asbestos cassette filtered out

D.L. Cook

Scale: 1 square=

2/16/11

E. Turner

Wednesday

0800 TT START Fung, Jones, Stainauer & Turner, EPA arrive on site for H&S meeting, discuss daily plan. RCRA personnel will arrive on site around lunch. They had been inspecting site prior to fire and found hazardous waste (Zinc oxide) from automobile plating facility. TT will collect sed. samples, perform air & water monitoring, and collect asbestos sample from air in plume attached to excavator.

0835 Calibrate MultiRAE 095-908250

Iso Lot# LTE040C - MD-CM exp 05-2013

Cocktail Lot# LTE260 - MD-CM exp 05-2014

Bump test fail, H₂ 5 < 10%

Calibration Value	Actual Reading	(508250)	(518698)
H ₂ S 10 ppm	10 ppm	10 ppm	10 ppm
CO 50 ppm	50 ppm	50 ppm	50 ppm
LEL 90%	48%	19%	* Bad Sensor
O ₂ 20.9%	20.9%	20.9%	20.9%
VOC 100 ppm	99.7 ppm	97.2 ppm	

Calibrate MultiRAE 095-518698

0910 Calibrate HCN meter J410-Z024703

HCN 10 ppm Lot# 888922 exp 11-2011

Scale: 1 square=

2/16/11

Post calibration value 10.0 ppm

1042 Setup air sample 01-AA-021611 asbestos on excavator water in facility zone.

1109 Begin collecting sediment samples along south side of facility. Rep from Davis & Brown will accompany sample team.

1105 at location of SW side #05

LEL=0%, O₂=20.1%, H₂S=0ppm, CO=0ppm
VOC=0.0ppm, HCN=0ppm

End of outfall 8.04 pH, Side of outfall 6.65 pH

no noticeable flowout of outfall, right side outfall 8.2

9.9 mg/L DO at end of outfall

10.97 DO left of outfall, 7.97 DO mg/L Right of outfall
DO & pH meter provided Davis & Brown



DAVIS & BROWN

ENGINEERING • ENVIRONMENTAL • O&M SERVICES

www.NACCDB.com

(843) 665-6746

W. Van Ward, P.E.

Laboratory Director

vward@naccdb.com

Fax: (843)656-2208

P.O. Box 15038

Quinby, SC 29506

W. Van Ward

Scale: 1 square=

2/16/11

Rad meter = 40-60 cpm

1132 collected sediment sample 05-SD-021611
outfall #006 (same as SW-02 sample)

1215 collected sediment sample 02-SD-021611
02-SD-021611 DUP at Pond on east side of facility PH strip = 7.5
ACM = 0.0 ppm, LEL = 0%, O₂ = 20.7%, CO = 0 ppm
H₂S = 0 ppm, Volc = 0.0 ppm, Rad = 40 to 60 cpm

1422 SC DHEC Area RAE locations

Unit	Lat	Long	Location
1	34°38'52.31"N	80°07'47.60"W	Coker Park
4	34°38'53.57"N	80°07'31.36"W	Sonoco
5	34°23'17.8"N	80°04'34.11"W	5th & Society Ave
6	34°22'53.8"N	80°03'59.3"W	Coker College
7	34°22'56.2"N	80°04'46.2"W	Prestwood Park
8	34°23'32.2"N	80°04'37.5"W	N. Hartsville Elem
9	34°23'29.9"N	80°04'10.9"W	L Cir. & Society Ave
10	34°23'22.7"N	80°04'26.3"W	N. F site

Sensors: Unit			Unit	
1	Cl ₂	H ₂ S	8	Cl ₂ NH ₃
4	Cl ₂	H ₂ S	9	Cl ₂ NH ₃
5	CO	H ₂ S	10	HCN SO ₂
6	Cl ₂	H ₂ S		
7	CO	H ₂ S		

Scale: 1 square = \$



Michael J. Spradlin
 Homeland Security Coordinator
 Environmental Quality Control
 2600 Bull St., Columbia, SC 29201
 Phone: (803) 896-4100 • Fax: (803) 896-4102
 Email: SpradlMJ@dhec.sc.gov

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SOUTH CAROLINA DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL

02-SD-021611
 02-SD-021611 DUP
 05-SD-021611
 07-SD-021611
 split samples turned over to Van Ward w/ Davis & Brown

2/16/11 date
 1648 time

Scale: 1 square = _____

2/16/11

~1215 Sample supplies for air samples arrived
for Chromium(VI) & Nitrous oxide analysis.
~~These~~ Two Chromium samples were set out ~~at~~ One
on site and two in down wind surrounding neighborhood.
02-AA-021611, & 13-AA-021611, 14-AA-021611
Four nitrous oxide samples were collected in
tedlar bags. Two from on site and two in the
neighborhood. 02-AA-021611 & Dup, 13-AA-021611 &
14-AA-021611

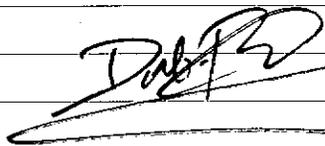
1700 FedEx drop of samples after processing.

2030 Evening briefing for site ops.

Let fire department ^{know about} and sampling that many
involve climbing on the piles of debris
Hepaco still smothering smoking piles. They
expect to be complete by tomorrow.

EPA state water quality monitor did not
show alarming reading of DO or pH.

2100 Left site for the night



Scale: 1 square = _____

2/17/11

0800 Steve King on scene EPA noticed a film
buildup on the lake. Wants to take a closer
look.

0850 The film appears to be soot floating
on the surface of the lake.
No smell detected. No oily & texture
HEPCO mentioned that they have been
performing daily patrols of the lake,
and no visible life or animals seen
affected or killed.

1215 02-AA-021611 (source) Preliminary results
from 3500-4500 N₂O of tedlar bags
100 ppm NO₂ + R
~0 ppm NO 100 ppm HCL

1215 Team completes samples of product with
EPA RCHA. 5 + dup samples were
collected.

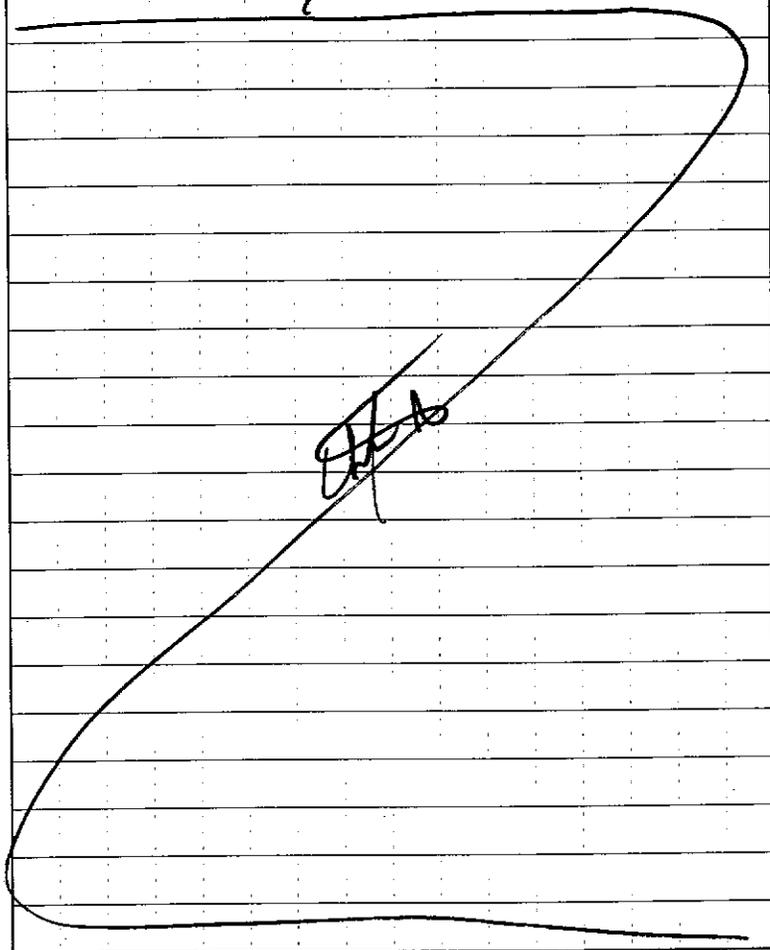
SCDHEC Contacts for _____

Ted Ambrose ambrosts@dhec.sc.gov
Buck ~~Graham~~ Graham bw@dhec.sc.gov
Keith Lane lanehk@dhec.sc.gov
Jeff. burr@hartsville.org

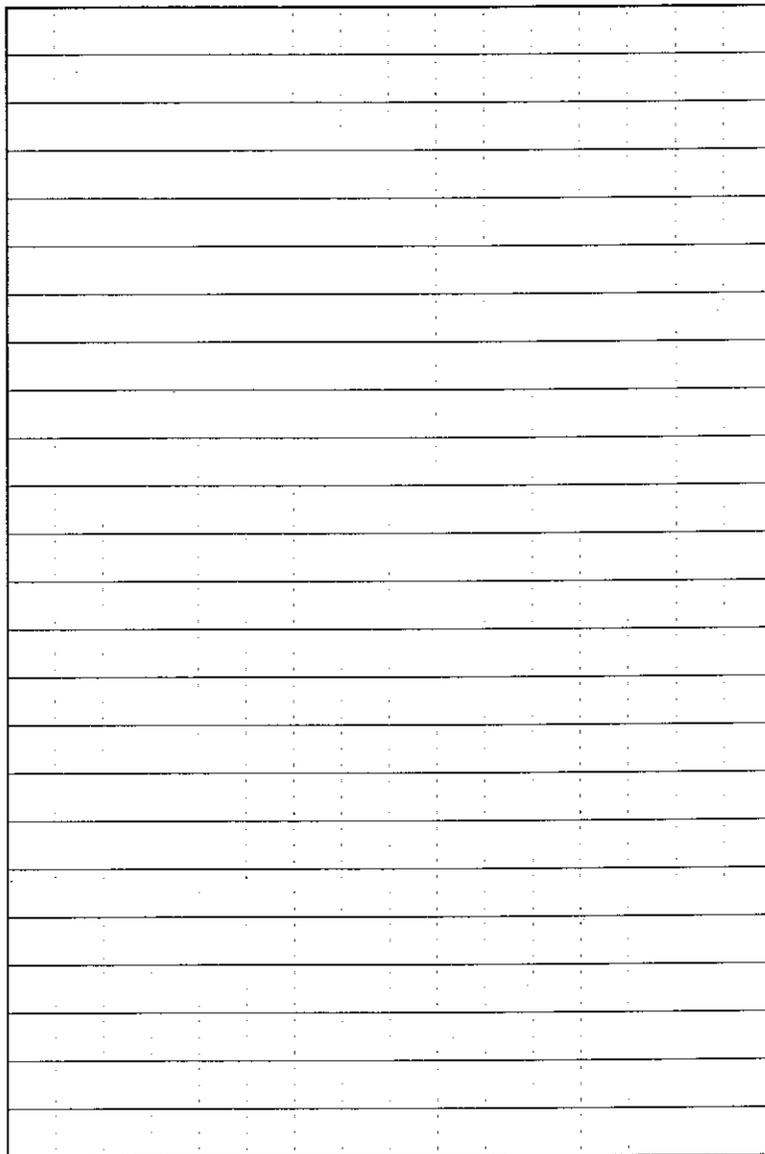
Scale: 1 square = _____

difficult
include disclosure about preliminary

1400 Activities complete, START
departs site.
1900 Arrive back at office, End
of Day



Scale: 1 square=_____



Scale: 1 square=_____



Site # B4F7

Name John Steinauer

Address 1320 Londonderry Circle
Raleigh NC 27610

Phone 919 605 7491

Project Agrium Fertilizer Fine
OSC Ken Rheme

ambrosts@dnec.sc.gov

- Mark Gay, Rainbow Division Mgr
229-942-9578

- Ted Ambrose 843-340-0579

SCDTEC

- Agrium - James Awnley
Plant Manager
843-859-1829 Cell
843-332-3104 Office

CONTENTS

PAGE REFERENCE DATE

⁰⁹³⁰
02/11/11 Deploy to Wartsville, SC
to Fertilizer manufacturing Fine arrive 0130
02/11/11 consumed w/ NOx and NO
decomposition products.

Anticipate sampling 8 sites include
sample for Parameters
DO, BOD, COD, pH
Nitrate, Nitrite →
metals (RCRA)
(NPK)

- 2 Tank Car 90 Ton 180 ~~total~~
Rail

- 450 Ton Phosphoric Acid
- Sulfuric Acid 325 tons
- 8000 Tons finished products
- 4000 Raw Tons
- Weather 36°f winds NNE
215 knts.

* Water Quality Meter
are needed

* Van Ward (Supervisor) 843 601 1692
843 665 6746
Davis + Brown - Stormwater
sampling (SWSP) (40 min)

working at local BCS to

determine makeup of waterway

* Spillway - Top + middle

feeds Black Creek

Prestwood Lake

Pee Dee River

02/15/11 obtained Facility data from RR.

* LEL, CO, NH₃, VOC, H₂S, etc

were measured by state DHEC

Highest Reading CO 6ppm

* HERACO contractor FRP

* J Lindsay Cook, CIH, CSP w/ EIT
Senior VP

2101 Gateway Centre Blvd, E200

Morrisville, NC 27560

(0) 919 459-5246, (0) 919 475-1445

cook@e1.com

* Hwy 102 - gate sample alone

can get access.

* Frack Tank #10 - sample

* clarify w/ Didi Fung + Eric

equipment needed w/ water quality

Sampling at lake + river

3 YSC instruments for 2-7 ft Card + 1 30+ ft

0952 - need 3 1 l

plastic bottles per sample according
to Didi Fung. ETA est min.

1000 - Mike Badenbaugh, Lee County

Free new IC

12+5500 Sampling H₂O locations

	Lat	Long	Time
SW01	34.38934	-80.07221	1507
SW02	34.38824	-80.07099	1527
SW03	34.38760	-80.07283	1357
SW04	34.38789	-80.07341	1348
SW05	34.38803	-80.07381	1337
SW06	34.38610	-80.06839	1322
SW07	34.38677	-80.07682	1242
SW08	34.38660	-80.07448	1315
SW09	34.38655	-80.06358	1219
SW10	34.38898	-80.07161	1515

* Advised that SC OSHA on site for:

* Dept. of Labor, Licensing +

Regulation - Charles R. Price

Division of Labor

(803) 896-7688

(803) 896-7670

0800 Arrive on site 021611

0810 Conduct Safety Brief + Sign HASP

John H

DHEC Air monitoring locations

- 1 S Shore of OL #158 Picnic area
- 2 Lake Drive at Church - school
- 3 - NO unit w/ this #
- 4 S Shore of S Shore
- 5 Corner Society Ave + 158
- 6 - No unit w/ this #
- 7 Park

#11 sonoco HQ on statute

POC Jim Rice 803 896-4114

0830 Briefing

- All Elementary Schools limited outside activity until 1230

#10 Tons of 40% Zinc Oxide that we should try and not disturb.

* Jeff Grossing, EHS Agrium 720 854-8711

* Agrium wants split samples of sediment.

1200 Provided PRP + State DHEC

copies of Google Earth Map print out w/ initial sample locations and copy of log page w/ GPS Coordinates.

John H

1415 Take N₂O Tedlar bag sample at 34.38998 by 06-AA-021611 N20-80.06533 at 145 hrs

1453 Take N₂O Tedlar bag sample at 34.39158 - 80.07005

at Hartsville Family Worship Center 07-AA-021611 N20

1515 Take sample 14-AA-021611 at 34.39158 by -80.07005

Same location as N₂O at Hartsville Family Worship Center for RCRA metals + Chrom VI. Society Ave

1523 Take Sample 13-AA-021611 at 34.38998 by -80.06533 at

same location as N₂O Tedlar bag "H" Street

1555 sample background at same location as SW-07-021511 on West Side of Bridge on SC Hwy 15, 34.38677 by -80.07682.

1630 Request by EPA RCRA

to sample.

6-13-18 4 AM

- 1) Composite 5 bags w/ Dup
+ ms/msd
- 2) ~~10-10-10~~ RB 2 bag w/ Dup
+ ms/msd
- 3) ~~8-16-24~~ RB TOB 8 bags w/ Dup
+ ms/msd
- 4) Zinc Oxide Take Sample
from each pile and composite
Take from progressively deeper
to 9"
- 5) Bulk Fertilizer - 10 Grabs
TCP + Total Metals +
Cyanide plus Zinc. Compositing
2 402 Jars

A Lab advises that no ms/msd or
Dup is needed of bulk products.

021711 0915 Contact entry
of RCRA Samples, Field Team
determined that a Duplicate
Sample would be needed.

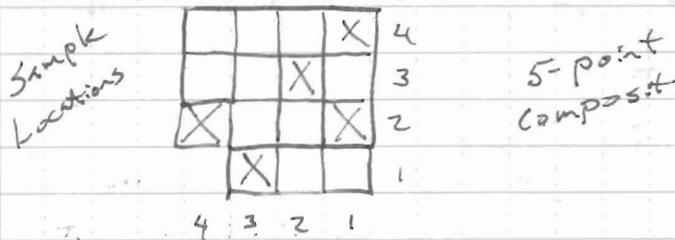
-0950 Zinc Oxide Sample Taken

-1001 Zinc Oxide Dup Taken

- 1013 • John enters Bulk fertilizer pile
• Material has solidified due to
the addition of water during
fire fighting activities.
• VOC = 0.1 ppm, No other
elevated readings.

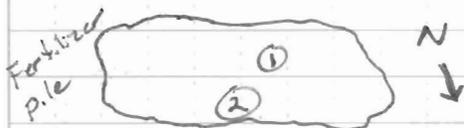
1023 Due to hardness unable to
collect Bulk Fertilizer sample,
an excavator will be utilized
to break up material, move to
bags in the mean time.

1042 Sample 6-3-18 4 AM



1057 Back at Bulk Fertilizer location
Excavator takes 2 scoops 5-pt
will be collected from each
bucket. Material is very hot.
It will be put in bowl

and allowed to cool before
containerizing.



1 - 10 ft deep

2 - 3 ft deep

1117 Collect Bulk Fertilizer Sample

1132 Collect 18-16-24 RB TAB

1205 Collect 14-4-14 RB

1230 Leave Hot Zone

1300 Clean up equipment, load ER Van.

1500 Demob to Raleigh, NC

1700 Arrive in Raleigh, NC

No more Entries This Page 555

Wendell Warr

Administrator II / EHS

843-332-8104 (Plant)

843-319-0458 (cell)

wwarr@agrimum.com

Mr. Warr maintains MSDS's for
Agrimum

Agrimum
James Ownley
Plant Manager

843-858-1829 cell

843-332-8104 office

Agrimum Plant Manager on Duty
at time of Fire.



Energy and Environment
Industrial Hygiene
Occupational Health
Safety
Training

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Senior Vice President

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Consultant Hired by HEPACO



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Wholesale U.S.
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Send Google File

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jgay@agrium.com



Plant Mgr of Heartsville Plant
Sister facility in Georgia.



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Special Programs Coordinator

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Darlington, South Carolina 29532

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email - mmcdonald@darlcosc.com

FAX - 843-398-4447

Cell - 843-616-0942



PROMOTE PROTECT PROSPER

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Homeland Security Coordinator

Environmental Quality Control

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SOUTH CAROLINA DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL

Requested copies of ITEM1
logs and other documentation.



PROMOTE PROTECT PROSPER

James R. Rice, Jr., MAT., MS.
Environmental Health Manager

BLWM - Div. of Waste Assessment & Emergency Response

2600 Bull Street, Columbia, SC 29201-1708

Phone: (803) 896-4114 • Fax (803) 896-4602

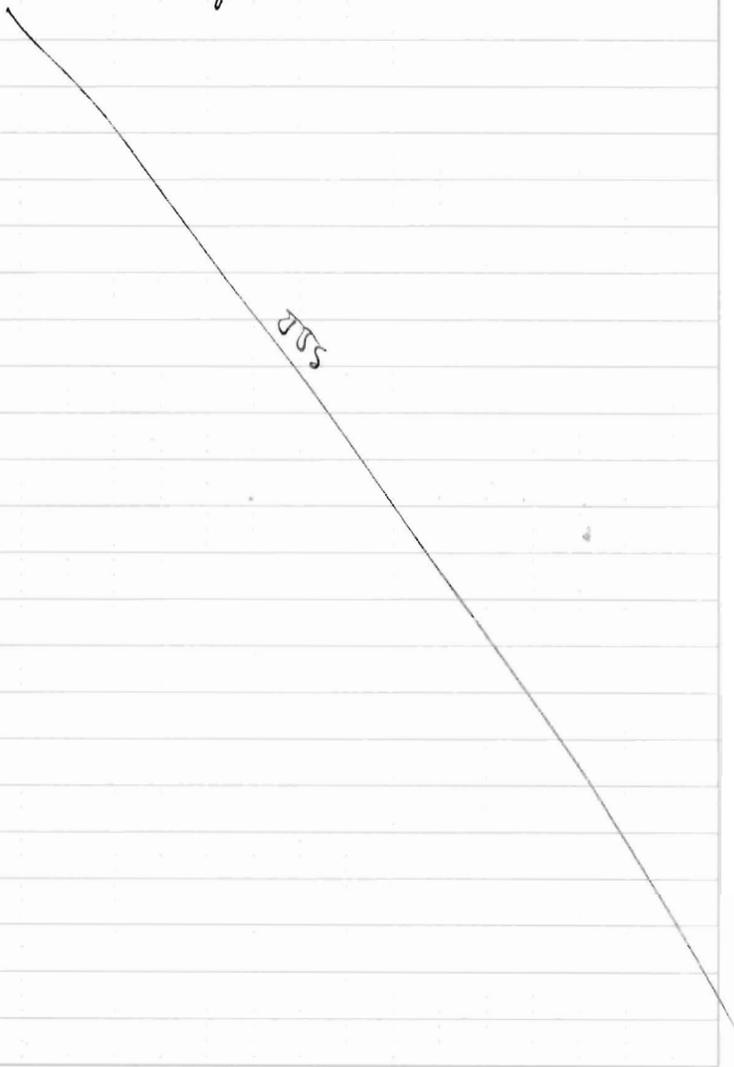
Pager (803) 654-2410 • 24 Hr Emergency 888-481-0125

E-mail: ricejr@dhec.sc.gov

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SOUTH CAROLINA DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL

End of log, no more entries.



Scale: 1 square=_____



Scale: 1 square=_____

ENCLOSURE 5
TABLE OF WITNESSES
(One Page)

TABLE OF WITNESSES
WARRENTON FIRE
HARTSVILLE, DARLINGTON COUNTY, SOUTH CAROLINA

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U.S. Environmental Protection Agency
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11th Floor
Atlanta, GA 30303
Telephone No.: (678) 678-8648

Mr. Didi Fung (site manager)
Mr. Chris Jones
Mr. Eric Turner
Tetra Tech EM Inc.
Superfund Technical Assessment and
Response Team (START)
1955 Evergreen Blvd.
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Duluth, GA 30096
Telephone No.: (678) 775-3080

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START
Raleigh, NC
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Mr. David Williamson
Fire Chief
Darlington County Fire Department
Telephone No.: (843) 616-1938

Dana L. Cook
Lionel C. Arnold
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James R. Rice
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Hartsville, SC 29550
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Mike (Mac) McDonald
Darlington County Emergency Services
Special Programs Coordinator
1625 Harry Byrd Highway
Darlington, South Carolina 29532
Telephone No.: (843) 398-4450

ENCLOSURE 6
ANALYTICAL DATA PACKAGES
(Electronic copy only)



Ms. Jessica Vickers
Tetra Tech EM, Inc.
1955 Evergreen Blvd
Suite 300
Duluth, GA 30096

February 17, 2011

DOH ELAP# 11626

Account# 17302

Login# L233854

Dear Ms. Vickers:

Enclosed are the analytical results for the samples received by our laboratory on February 16, 2011. All test results meet the quality control requirements of AIHA and NELAC unless otherwise stated in this report. All samples on the chain of custody were received in good condition unless otherwise noted.

Results in this report are based on the sampling data provided by the client and refer only to the samples as they were received at the laboratory. Unless otherwise requested, all samples will be discarded 14 days from the date of this report.

Please contact Heidi Fruhlinger at (877) 386-0035, if you would like any additional information regarding this report.

Thank you for using Galson Laboratories.

Sincerely,

Galson Laboratories

Mary G. Unangst
Laboratory Director

Enclosure(s)



LABORATORY ANALYSIS REPORT

6601 Kirkville Road
East Syracuse, NY 13057
(315) 432-5227
FAX: (315) 437-0571
www.galsonlabs.com

Client : Tetra Tech EM, Inc.
Site : NS

Date Sampled : 15-FEB-11
Date Received : 16-FEB-11
Date Analyzed : 17-FEB-11
Report ID : 681394

Account No.: 17302
Login No. : L233854

Client ID : 02-AA-021511 Lab ID : L233854-1 Air Volume : 940 Liter
Date Sampled : 02/15/11 Date Analyzed : 02/17/11

Table with 5 columns: Parameter, LOQ ug, Total ug, Conc, Units. Rows include Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, and Silver.

COMMENTS: Please see attached lab footnote report for any applicable footnotes.

Collection Media : Filter

Submitted by: CJU/DEH
Approved by : DEH
Date : 17-FEB-11 NYS DOH # : 11626
QC by: Tom Burgess

< -Less Than mg -Milligrams m3 -Cubic Meters kg -Kilograms
> -Greater Than ug -Micrograms l -Liters NS -Not Specified
NA -Not Applicable ND -Not Detected ppm -Parts per Million LOQ-Limit of Quantitation

Field sampling was not performed by Galson. Galson presents results based on sampling data provided by clients.



LABORATORY ANALYSIS REPORT

6601 Kirkville Road
East Syracuse, NY 13057
(315) 432-5227
FAX: (315) 437-0571
www.galsonlabs.com

Client : Tetra Tech EM, Inc.
Site : NS
Date Sampled : 15-FEB-11
Date Received : 16-FEB-11
Date Analyzed : 17-FEB-11
Report ID : 681394

Account No.: 17302
Login No. : L233854

Client ID : BK-01 Lab ID : L233854-2 Air Volume : NA
Date Sampled : 02/15/11 Date Analyzed : 02/17/11

Table with 5 columns: Parameter, LOQ ug, Total ug, Conc, Units. Rows include Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, and Silver.

COMMENTS: Please see attached lab footnote report for any applicable footnotes.

Collection Media : Filter

Submitted by: CJU/DEH
Approved by : DEH
Date : 17-FEB-11 NYS DOH # : 11626
QC by: Tom Burgess

< -Less Than mg -Milligrams m3 -Cubic Meters kg -Kilograms
> -Greater Than ug -Micrograms l -Liters NS -Not Specified
NA -Not Applicable ND -Not Detected ppm -Parts per Million LOQ-Limit of Quantitation

Field sampling was not performed by Galson. Galson presents results based on sampling data provided by clients.



LABORATORY FOOTNOTE REPORT

Client Name : Tetra Tech EM, Inc.
Site :

6601 Kirkville Road
East Syracuse, NY 13057
(315) 432-5227
FAX: (315) 437-0571
www.galsonlabs.com

Date Sampled : 15-FEB-11 Account No.: 17302
Date Received: 16-FEB-11 Login No. : L233854
Date Analyzed: 16-FEB-11 - 17-FEB-11

Unless otherwise noted below, all quality control results associated with the samples were within established control limits.

Unrounded results are carried through the calculations that yield the final result and the final result is rounded to the number of significant figures appropriate to the accuracy of the analytical method. Please note that results appearing in the columns preceeding the final result column may have been rounded in order to fit the report format and therefore, if carried through the calculations, may not yield an identical final result to the one reported.

The stated LOQs for each analyte represent the demonstrated LOQ concentrations prior to correction for desorption efficiency (if applicable).

L233854 (Report ID: 681394):

Reported results reflect elemental analysis of the requested metals. Certain compounds may not be solubilized during digestion, resulting in data that is biased low.

SOPs: MT-SOP-9(10), im-mwvfilt(13)

Due to different digestion requirements, silver should be collected on a separate filter. Results for silver may be biased low.

OSHA PEL: Chromium II and III = 0.5 mg/m3; Chromium metal (as Cr) = 1 mg/m3

Blank spike recovered above the control limit of 120% at 123% for Selenium.

Data is not affected as the bias would be biased high and the samples are non detect.

Table with 3 columns: Parameter, Method, PEL. Lists elements like Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver with their respective methods and PEL values.

< -Less Than mg -Milligrams m3 -Cubic Meters kg -Kilograms
> -Greater Than ug -Micrograms l -Liters NS -Not Specified
NA -Not Applicable ND -Not Detected ppm -Parts per Million



6601 Kirkville Rd
 East Syracuse, NY 13057
 Tel: (315) 432-5227
 888-432-LABS (5227)
 Fax: (315) 437-0571
 www.galsonlabs.com

Check if change of address

New Client ? yes no

Report To : Tetra Tech (Jessica Vinters)
1855 EVERETT BLVD
DULUTH, GA 30096

Invoice To : MJ

Phone No. : 678 775-2104
 Fax No. : _____

Phone No. : _____
 Fax No. : _____

Site Name : _____ Project : _____ Sampled By : _____

Need Results By: (surcharge) [Samples submitted using the Free Pump Loan™ Program] Samples submitted using the Free Sampling Badges™ Program.

<input type="checkbox"/> 5 Business Days	0%
<input type="checkbox"/> 4 Business Days	35%
<input type="checkbox"/> 3 Business Days	50%
<input type="checkbox"/> 2 Business Days	75%
<input type="checkbox"/> Next Day by 6pm	100%
<input type="checkbox"/> Next Day by Noon	150%
<input checked="" type="checkbox"/> Same day	200%

Client Account No. : _____
 Purchase Order No. : _____
 Credit Card No. : _____ Card Holder Name : _____ Exp. : _____
 Email / Fax Results To : _____
 Email Address : jessica.vinters@tetatech.com Fax No. : _____

Sample Identification	Date Sampled	Collection Medium	*Air Volume (Liters)	Passive Monitors (Min)	Analysis Requested	Method Reference	Specific DL Needed
1. <u>02-AA-021511</u>	<u>2/15/11</u>	<u>3/4 MWH CE</u>	<u>940</u>		<u>RPA METALS</u>		
2. <u>BK-01</u>	<u>2/15/11</u>	<u>"</u>	<u>—</u>		<u>RPA METALS</u>		
3.		<u>MM</u>					
4.							
5.							
6.							
7.							
8.							
9.							
10.							
11.							

Yes No We normally add a laboratory blank for each analyte. We will charge you for this at our normal rate. If you agree please check "Yes" otherwise check "No".

List description of industry or process / interference's present in sampling area: _____

Comments: _____

Chain of Custody	Print Name	Signature	Date/Time
Relinquished by :	<u>DJO: Fung</u>	<u>[Signature]</u>	<u>2/15/11 - 1730</u>
Received by LAB :	<u>[Signature]</u>	<u>[Signature]</u>	<u>2/16/11 7012</u>

Samples received after 3pm will be considered as next day's business. * sample collection time X LPM = Air Vol. Page _____ of _____



Ms. Jessica Vickers
Tetra Tech EM, Inc.
1955 Evergreen Blvd
Suite 300
Duluth, GA 30096

February 21, 2011

DOH ELAP# 11626

Account# 17302

Login# L233939

Dear Ms. Vickers:

Enclosed are the revised analytical results for the samples received by our laboratory on February 17, 2011. The report was revised in order to include Qualitative Dust analysis on sample 02-AA-021611. This sample was subcontracted to AMA. Its report is included. This version of the report replaces any previously issued versions. All test results meet the quality control requirements of AIHA and NELAC unless otherwise stated in this report. All samples on the chain of custody were received in good condition unless otherwise noted.

OSHA has issued a revised version of the OSHA ID-215 method for hexavalent chromium sampling. Method Number ID-215 (version 2), Control Number T-ID215-FV-02-0604-M. The significant modification related to sample collection in the method is that when using the 37 or 25 mm PVC filter with cellulose back-up pad for welding operations or chromium plating operations special handling requirements have been added.

A summary of the new special handling requirements follows:

1. Samples collected on PVC filters must be shipped overnight to the laboratory within 24 hours of sampling.
2. Samples collected on PVC filters from welding operations must be analyzed within 8 days of sampling.
3. Samples collected on PVC filters from chromium plating operations must be analyzed within 6 days of sampling or be stabilized at the laboratory upon receipt.

If special handling requirements are not met there is the possibility that the sample results may be biased low. Results in this report are based on the sampling data provided by the client and refer only to the samples as they were received at the laboratory. Unless otherwise requested, all samples will be discarded 14 days from the date of this report.

Please contact Heidi Fruhlinger at (877) 386-0035, if you would like any additional information regarding this report.

Thank you for using Galson Laboratories.

Sincerely,

Galson Laboratories

Mary G. Unangst
Laboratory Director

Enclosure(s)



LABORATORY ANALYSIS REPORT

6601 Kirkville Road
 East Syracuse, NY 13057
 (315) 432-5227
 FAX: (315) 437-0571
 www.galsonlabs.com

Client : Tetra Tech EM, Inc.
 Site : Agrium, Hartsville SC
 Date Sampled : 15-FEB-11 - 16-FEB-11 Account No.: 17302
 Date Received : 17-FEB-11 Login No. : L233939
 Date Analyzed : 17-FEB-11
 Report ID : 681395

Client ID : 11-AA-021511 Lab ID : L233939-5 Air Volume : 987.5 Liter
 Date Sampled : 02/15/11 Date Analyzed : 02/17/11

Parameter	LOQ ug	Total ug	Conc	Units
Arsenic	0.30	<0.30	<0.00030	MG/M3
Barium	0.15	<0.15	<0.00015	MG/M3
Cadmium	0.15	<0.15	<0.00015	MG/M3
Chromium	3.0	<3.0	<0.0030	MG/M3
Lead	0.38	<0.38	<0.00038	MG/M3
Selenium	2.3	<2.3	<0.0023	MG/M3
Silver	0.30	<0.30	<0.00030	MG/M3
Zinc	2.3	<2.3	<0.0023	MG/M3

COMMENTS: Please see attached lab footnote report for any applicable footnotes.

Collection Media : Filter

Submitted by: CJU/DEH
 Approved by : DEH
 Date : 17-FEB-11 NYS DOH # : 11626
 QC by: Tom Burgess

< -Less Than mg -Milligrams m3 -Cubic Meters kg -Kilograms
 > -Greater Than ug -Micrograms l -Liters NS -Not Specified
 NA -Not Applicable ND -Not Detected ppm -Parts per Million LOQ-Limit of Quantitation

Field sampling was not performed by Galson. Galson presents results based on sampling data provided by clients.



LABORATORY ANALYSIS REPORT

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 East Syracuse, NY 13057
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 FAX: (315) 437-0571
 www.galsonlabs.com

Client : Tetra Tech EM, Inc.
 Site : Agrium, Hartsville SC
 Date Sampled : 15-FEB-11 - 16-FEB-11 Account No.: 17302
 Date Received : 17-FEB-11 Login No. : L233939
 Date Analyzed : 17-FEB-11
 Report ID : 681395

Client ID : 12-AA-021511 Lab ID : L233939-6 Air Volume : 978.0 Liter
 Date Sampled : 02/15/11 Date Analyzed : 02/17/11

Parameter	LOQ ug	Total ug	Conc	Units
Arsenic	0.30	<0.30	<0.00031	MG/M3
Barium	0.15	<0.15	<0.00015	MG/M3
Cadmium	0.15	<0.15	<0.00015	MG/M3
Chromium	3.0	<3.0	<0.0031	MG/M3
Lead	0.38	<0.38	<0.00038	MG/M3
Selenium	2.3	<2.3	<0.0023	MG/M3
Silver	0.30	<0.30	<0.00031	MG/M3
Zinc	2.3	<2.3	<0.0023	MG/M3

COMMENTS: Please see attached lab footnote report for any applicable footnotes.

Collection Media : Filter

Submitted by: CJU/DEH
 Approved by : DEH
 Date : 17-FEB-11 NYS DOH # : 11626
 QC by: Tom Burgess

< -Less Than mg -Milligrams m3 -Cubic Meters kg -Kilograms
 > -Greater Than ug -Micrograms l -Liters NS -Not Specified
 NA -Not Applicable ND -Not Detected ppm -Parts per Million LOQ-Limit of Quantitation

Field sampling was not performed by Galson. Galson presents results based on sampling data provided by clients.



LABORATORY ANALYSIS REPORT

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 East Syracuse, NY 13057
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 FAX: (315) 437-0571
 www.galsonlabs.com

Client : Tetra Tech EM, Inc.
 Site : Agrium, Hartsville SC
 Date Sampled : 15-FEB-11 - 16-FEB-11 Account No.: 17302
 Date Received : 17-FEB-11 Login No. : L233939
 Date Analyzed : 17-FEB-11
 Report ID : 681395

Client ID : BK-02 Lab ID : L233939-7 Air Volume : NA
 Date Sampled : 02/16/11 Date Analyzed : 02/17/11

Parameter	LOQ ug	Total ug	Conc	Units
Arsenic	0.30	<0.30	NA	MG/M3
Barium	0.15	<0.15	NA	MG/M3
Cadmium	0.15	<0.15	NA	MG/M3
Chromium	3.0	<3.0	NA	MG/M3
Lead	0.38	<0.38	NA	MG/M3
Selenium	2.3	<2.3	NA	MG/M3
Silver	0.30	<0.30	NA	MG/M3
Zinc	2.3	<2.3	NA	MG/M3

COMMENTS: Please see attached lab footnote report for any applicable footnotes.

Collection Media : Filter

Submitted by: CJU/DEH
 Approved by : DEH
 Date : 17-FEB-11 NYS DOH # : 11626
 QC by: Tom Burgess

< -Less Than mg -Milligrams m3 -Cubic Meters kg -Kilograms
 > -Greater Than ug -Micrograms l -Liters NS -Not Specified
 NA -Not Applicable ND -Not Detected ppm -Parts per Million LOQ-Limit of Quantitation

Field sampling was not performed by Galson. Galson presents results based on sampling data provided by clients.



LABORATORY ANALYSIS REPORT

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East Syracuse, NY 13057
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FAX: (315) 437-0571
www.galsonlabs.com

Client : Tetra Tech EM, Inc.
Site : Agrium, Hartsville SC

Date Sampled : 16-FEB-11
Date Received : 17-FEB-11
Date Analyzed : 17-FEB-11
Report ID : 681375

Account No.: 17302
Login No. : L233939

Hexavalent Chromium

Table with 5 columns: Sample ID, Lab ID, Air Vol liter, Total ug, Conc ug/m3. Rows include 02-AA-021611 and BK-03.

COMMENTS: Please see attached lab footnote report for any applicable footnotes.

Level of quantitation: 0.030 ug
Analytical Method : mod. OSHA ID-215; IC
OSHA PEL (TWA) : 5 ug/m3
Collection Media : 37mm PVC
Submitted by: EEB
Approved by : tns
Date : 17-FEB-11 NYS DOH # : 11626
QC by: Tom Burgess

< -Less Than mg -Milligrams m3 -Cubic Meters kg -Kilograms
> -Greater Than ug -Micrograms l -Liters NS -Not Specified
NA -Not Applicable ND -Not Detected ppm -Parts per Million



LABORATORY FOOTNOTE REPORT

Client Name : Tetra Tech EM, Inc.
 Site : Agridum, Hartsville SC

6601 Kirkville Road
 East Syracuse, NY 13057
 (315) 432-5227
 FAX: (315) 437-0571
 www.galsonlabs.com

Date Sampled : 15-FEB-11 - 16-FEB-11 Account No.: 17302
 Date Received: 17-FEB-11 Login No. : L233939
 Date Analyzed: 17-FEB-11

Unless otherwise noted below, all quality control results associated with the samples were within established control limits.

Unrounded results are carried through the calculations that yield the final result and the final result is rounded to the number of significant figures appropriate to the accuracy of the analytical method. Please note that results appearing in the columns preceding the final result column may have been rounded in order to fit the report format and therefore, if carried through the calculations, may not yield an identical final result to the one reported.

The stated LOQs for each analyte represent the demonstrated LOQ concentrations prior to correction for desorption efficiency (if applicable).

L233939 (Report ID: 681395):

The Silver results are considered accurate to within 105% +/-6.3 based on a 95% confidence interval. The estimated uncertainty applies to the media, technology, and SOP(s) referenced in this report and does not account for any uncertainty associated with the sampling process.

The Arsenic results are considered accurate to within 101% +/-7.2 based on a 95% confidence interval. The estimated uncertainty applies to the media, technology, and SOP(s) referenced in this report and does not account for any uncertainty associated with the sampling process.

The Barium results are considered accurate to within 103% +/-7.7 based on a 95% confidence interval. The estimated uncertainty applies to the media, technology, and SOP(s) referenced in this report and does not account for any uncertainty associated with the sampling process.

The Cadmium results are considered accurate to within 101% +/-6.1 based on a 95% confidence interval. The estimated uncertainty applies to the media, technology, and SOP(s) referenced in this report and does not account for any uncertainty associated with the sampling process.

The Chromium results are considered accurate to within 104% +/-7.9 based on a 95% confidence interval. The estimated uncertainty applies to the media, technology, and SOP(s) referenced in this report and does not account for any uncertainty associated with the sampling process.

The Lead results are considered accurate to within 99% +/-6.6 based on a 95% confidence interval. The estimated uncertainty applies to the media, technology, and SOP(s) referenced in this report and does not account for any uncertainty associated with the sampling process.

The Selenium results are considered accurate to within 111% +/-7.9 based on a 95% confidence interval. The estimated uncertainty applies to the media, technology, and SOP(s) referenced in this report and does not account for any uncertainty associated with the sampling process.

The Zinc results are considered accurate to within 102% +/-5.8 based on a 95% confidence interval. The estimated uncertainty applies to the media, technology, and SOP(s) referenced in this report and does not account for any uncertainty associated with the sampling process.

Reported results reflect elemental analysis of the requested metals. Certain compounds may not be solubilized during digestion, resulting in data that is biased low.

SOPs: MT-SOP-9(10), im-icp(17), im-icpms(14), im-mwvflt(13)

Due to different digestion requirements, silver should be collected on a separate filter. Results for silver may be biased low.

OSHA PEL: Chromium II and III = 0.5 mg/m3; Chromium metal (as Cr) = 1 mg/m3

Parameter	Method	PEL
Arsenic	mod. NIOSH 7300/OSHA 125G; ICP/ICPMS	0.010 mg/m3

< -Less Than mg -Milligrams m3 -Cubic Meters kg -Kilograms
 > -Greater Than ug -Micrograms l -Liters NS -Not Specified
 NA -Not Applicable ND -Not Detected ppm -Parts per Million



LABORATORY FOOTNOTE REPORT

Client Name : Tetra Tech EM, Inc.
 Site : Agrium, Hartsville SC

6601 Kirkville Road
 East Syracuse, NY 13057
 (315) 432-5227
 FAX: (315) 437-0571
 www.galsonlabs.com

Date Sampled : 15-FEB-11 - 16-FEB-11 Account No.: 17302
 Date Received: 17-FEB-11 Login No. : L233939
 Date Analyzed: 17-FEB-11

Unless otherwise noted below, all quality control results associated with the samples were within established control limits.

Unrounded results are carried through the calculations that yield the final result and the final result is rounded to the number of significant figures appropriate to the accuracy of the analytical method. Please note that results appearing in the columns preceding the final result column may have been rounded in order to fit the report format and therefore, if carried through the calculations, may not yield an identical final result to the one reported.

The stated LOQs for each analyte represent the demonstrated LOQ concentrations prior to correction for desorption efficiency (if applicable).

L233939 (Report ID: 681395):

Parameter	Method	PEL
Barium	mod. NIOSH 7300/OSHA 125G; ICP/ICPMS	0.5 mg/m3 (soluble)
Cadmium	mod. NIOSH 7300/OSHA 125G; ICP/ICPMS	0.005 mg/m3
Chromium	mod. NIOSH 7300/OSHA 125G; ICP/ICPMS	Varies, see footnote
Lead	mod. NIOSH 7300/OSHA 125G; ICP/ICPMS	0.05 mg/m3
Selenium	mod. NIOSH 7300/OSHA 125G; ICP/ICPMS	NA
Silver	mod. NIOSH 7300/OSHA 125G; ICP/ICPMS	0.01 mg/m3
Zinc	mod. NIOSH 7300/OSHA 125G; ICP/ICPMS	Varies

L233939 (Report ID: 681375):

The Hexavalent Chromium results are considered accurate to within 95.9% +/-16.4 based on a 95% confidence interval. The estimated uncertainty applies to the media, technology, and SOP(s) referenced in this report and does not account for any uncertainty associated with the sampling process.
 SOPs: IC-SOP-15(2)
 Total ug corrected for a desorption efficiency of 104%.
 Samples were prepared and analyzed within method-specified hold times.

< -Less Than mg -Milligrams m3 -Cubic Meters kg -Kilograms
 > -Greater Than ug -Micrograms l -Liters NS -Not Specified
 NA -Not Applicable ND -Not Detected ppm -Parts per Million



6601 Kirkville Rd
 East Syracuse, NY 13057
 Tel: (315) 432-5227
 888-432-LABS (5227)
 Fax: (315) 437-0571
 www.galsonlabs.com

Check if change of address

New Client? yes no

Report To: TETRA TECH
1955 EVERGREEN BLVD
DULUTH, GA 30096
 Phone No.: 678 775-3104
 Fax No.: _____

Invoice To: _____
 Phone No.: _____
 Fax No.: _____

(Handwritten signature/initials)

Site Name: AGRIUM, HARTSVILLE SC Project: _____
 Sampled By: D. FONG / E. TURNER

Need Results By: (surcharge)

<input type="checkbox"/> 5 Business Days	0%
<input type="checkbox"/> 4 Business Days	35%
<input type="checkbox"/> 3 Business Days	50%
<input type="checkbox"/> 2 Business Days	75%
<input type="checkbox"/> Next Day by 6pm	100%
<input type="checkbox"/> Next Day by Noon	150%
<input checked="" type="checkbox"/> Same day	200%

Samples submitted using the FreePumpLoan™ Program. Samples submitted using the FreeSamplingBadges™ Program.

Client Account No.: TTEMI
 Purchase Order No.: _____
 Credit Card No.: _____
 Card Holder Name: _____ Exp.: _____
 Email / Fax Results To: _____
 Email Address: _____ Fax No.: _____

Sample Identification	Date Sampled	Collection Medium	*Air Volume (Liters)	Passive Monitors (Min)	Analysis Requested	Method Reference	Specific DL Needed
1. <u>02-AA-021611</u>	<u>02/16/11</u>	<u>PCM Medium</u>	<u>PCM - 700 L</u>	<u>PCM - 369 min</u>	<u>TEM w EPA level 2</u> <u>ASBESTOS + CHROME (VI)</u>	<u>PCM / 2 PPLW</u>	
2. 1-AA-021611							
3. 2-AA-021611							
4. 3-AA-021611							
5. 4-AA-021611							
6. <u>11-AA-021511</u>	<u>02/15/11</u>	<u>MCE</u>	<u>987.5 L</u>		<u>RURA METALS + ZINC</u>		
7. <u>12-AA-021511</u>	<u>02/15/11</u>	<u>MCE</u>	<u>978.0 L</u>		<u>RURA METALS + ZINC</u>		
8. <u>BK-02</u>	<u>02/16/11</u>	<u>MCE</u>			<u>" " "</u>		
9. <u>BK-03</u>	<u>02/16/11</u>	<u>PVC</u>			<u>CHROME (VI)</u>		
10. <u>BK-04</u>	<u>02/16/11</u>	<u>PCM</u>			<u>TEM w EPA level 2 (Asbestos)</u>		
11.							

Yes No We normally add a laboratory blank for each analyte. We will charge you for this at our normal rate. If you agree please check "Yes" otherwise check "No".
 List description of industry or process / interference's present in sampling area: As, Ba, Cd, Cr, Pb, Se, Ag per cent spec 2/17/11
 Comments: _____

Chain of Custody	Print Name	Signature	Date/Time
Relinquished by:	<u>Christopher Jones</u>	<i>(Signature)</i>	<u>2/16/11 1700</u>
Received by LAB:	<u>(Signature)</u>	<i>(Signature)</i>	<u>2/17/11 1000</u>

Samples received after 3pm will be considered as next day's business. * sample collection time X LPM = Air Vol. Page 1 of 1



Ms. Jessica Vickers
Tetra Tech EM, Inc.
1955 Evergreen Blvd
Suite 300
Duluth, GA 30096

February 18, 2011

DOH ELAP# 11626

Account# 17302

Login# L234047

Dear Ms. Vickers:

Enclosed are the analytical results for the samples received by our laboratory on February 18, 2011. All test results meet the quality control requirements of AIHA and NELAC unless otherwise stated in this report. All samples on the chain of custody were received in good condition unless otherwise noted.

OSHA has issued a revised version of the OSHA ID-215 method for hexavalent chromium sampling. Method Number ID-215 (version 2), Control Number T-ID215-FV-02-0604-M. The significant modification related to sample collection in the method is that when using the 37 or 25 mm PVC filter with cellulose back-up pad for welding operations or chromium plating operations special handling requirements have been added.

A summary of the new special handling requirements follows:

1. Samples collected on PVC filters must be shipped overnight to the laboratory within 24 hours of sampling.
2. Samples collected on PVC filters from welding operations must be analyzed within 8 days of sampling.
3. Samples collected on PVC filters from chromium plating operations must be analyzed within 6 days of sampling or be stabilized at the laboratory upon receipt.

If the special handling requirements are not met there is the possibility that the sample results may be biased low.

Results in this report are based on the sampling data provided by the client and refer only to the samples as they were received at the laboratory. Unless otherwise requested, all samples will be discarded 14 days from the date of this report.

Please contact Heidi Fruhlinger at (877) 386-0035, if you would like any additional information regarding this report.

Thank you for using Galson Laboratories.

Sincerely,

Galson Laboratories

Mary G. Unangst
Laboratory Director

Enclosure(s)



LABORATORY ANALYSIS REPORT

6601 Kirkville Road
 East Syracuse, NY 13057
 (315) 432-5227
 FAX: (315) 437-0571
 www.galsonlabs.com

Client : Tetra Tech EM, Inc.
 Site : Agrium, Hartsville, SC
 Date Sampled : 16-FEB-11
 Date Received : 18-FEB-11
 Date Analyzed : 18-FEB-11
 Report ID : 681556

Account No.: 17302
 Login No. : L234047

Client ID : 02-AA-021611
 Date Sampled : 02/16/11

Lab ID : L234047-1
 Date Analyzed : 02/18/11

Air Volume : 990.1 Liter

Parameter	LOQ ug	Total ug	Conc	Units
Arsenic	0.30	<0.30	<0.00030	MG/M3
Barium	0.15	<0.15	<0.00015	MG/M3
Cadmium	0.15	<0.15	<0.00015	MG/M3
Chromium	3.0	<3.0	<0.0030	MG/M3
Lead	0.38	<0.38	<0.00038	MG/M3
Selenium	2.3	<2.3	<0.0023	MG/M3
Silver	0.30	<0.30	<0.00030	MG/M3
Zinc	2.3	3.6	0.0036	MG/M3

COMMENTS: Please see attached lab footnote report for any applicable footnotes.

Collection Media : Filter

Submitted by: cju
 Approved by : DEH
 Date : 18-FEB-11 NYS DOH # : 11626
 QC by: Tom Burgess

< -Less Than mg -Milligrams m3 -Cubic Meters kg -Kilograms
 > -Greater Than ug -Micrograms l -Liters NS -Not Specified
 NA -Not Applicable ND -Not Detected ppm -Parts per Million LOQ-Limit of Quantitation

Field sampling was not performed by Galson. Galson presents results based on sampling data provided by clients.



LABORATORY ANALYSIS REPORT

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 East Syracuse, NY 13057
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 www.galsonlabs.com

Client : Tetra Tech EM, Inc.
 Site : Agrium, Hartsville, SC
 Date Sampled : 16-FEB-11
 Date Received : 18-FEB-11
 Date Analyzed : 18-FEB-11
 Report ID : 681556
 Account No.: 17302
 Login No. : L234047

Client ID : 13-AA-021611 Lab ID : L234047-2 Air Volume : 991.6 Liter
 Date Sampled : 02/16/11 Date Analyzed : 02/18/11

Parameter	LOQ ug	Total ug	Conc	Units
Arsenic	0.30	<0.30	<0.00030	MG/M3
Barium	0.15	<0.15	<0.00015	MG/M3
Cadmium	0.15	<0.15	<0.00015	MG/M3
Chromium	3.0	<3.0	<0.0030	MG/M3
Lead	0.38	<0.38	<0.00038	MG/M3
Selenium	2.3	<2.3	<0.0023	MG/M3
Silver	0.30	<0.30	<0.00030	MG/M3
Zinc	2.3	<2.3	<0.0023	MG/M3

COMMENTS: Please see attached lab footnote report for any applicable footnotes.

Collection Media : Filter

Submitted by: cju
 Approved by : DEH
 Date : 18-FEB-11 NYS DOH # : 11626
 QC by: Tom Burgess

< -Less Than mg -Milligrams m3 -Cubic Meters kg -Kilograms
 > -Greater Than ug -Micrograms l -Liters NS -Not Specified
 NA -Not Applicable ND -Not Detected ppm -Parts per Million LOQ-Limit of Quantitation

Field sampling was not performed by Galson. Galson presents results based on sampling data provided by clients.



LABORATORY ANALYSIS REPORT

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Client : Tetra Tech EM, Inc.
 Site : Agrium, Hartsville, SC
 Date Sampled : 16-FEB-11
 Date Received : 18-FEB-11
 Date Analyzed : 18-FEB-11
 Report ID : 681556
 Account No.: 17302
 Login No. : L234047

Client ID : 14-AA-021611 Lab ID : L234047-3 Air Volume : 995.8 Liter
 Date Sampled : 02/16/11 Date Analyzed : 02/18/11

<u>Parameter</u>	<u>LOQ</u> <u>ug</u>	<u>Total</u> <u>ug</u>	<u>Conc</u>	<u>Units</u>
Arsenic	0.30	<0.30	<0.00030	MG/M3
Barium	0.15	<0.15	<0.00015	MG/M3
Cadmium	0.15	<0.15	<0.00015	MG/M3
Chromium	3.0	<3.0	<0.0030	MG/M3
Lead	0.38	<0.38	<0.00038	MG/M3
Selenium	2.3	<2.3	<0.0023	MG/M3
Silver	0.30	<0.30	<0.00030	MG/M3
Zinc	2.3	<2.3	<0.0023	MG/M3

COMMENTS: Please see attached lab footnote report for any applicable footnotes.

Collection Media : Filter

Submitted by: cju
 Approved by : DEH
 Date : 18-FEB-11 NYS DOH # : 11626
 QC by: Tom Burgess

< -Less Than mg -Milligrams m3 -Cubic Meters kg -Kilograms
 > -Greater Than ug -Micrograms l -Liters NS -Not Specified
 NA -Not Applicable ND -Not Detected ppm -Parts per Million LOQ-Limit of Quantitation

Field sampling was not performed by Galson. Galson presents results based on sampling data provided by clients.



LABORATORY ANALYSIS REPORT

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East Syracuse, NY 13057
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www.galsonlabs.com

Client : Tetra Tech EM, Inc.
Site : Agrium, Hartsville, SC

Date Sampled : 16-FEB-11
Date Received : 18-FEB-11
Date Analyzed : 18-FEB-11
Report ID : 681553

Account No.: 17302
Login No. : L234047

Hexavalent Chromium

<u>Sample ID</u>	<u>Lab ID</u>	<u>Air Vol</u> <u>liter</u>	<u>Total</u> <u>ug</u>	<u>Conc</u> <u>ug/m3</u>
13-AA-021611	L234047-4	419.6	<0.029	<0.069
14-AA-021611	L234047-5	443.2	<0.029	<0.065

COMMENTS: Please see attached lab footnote report for any applicable footnotes.

Level of quantitation: 0.030 ug	Submitted by: tmk
Analytical Method : mod. OSHA ID-215; IC	Approved by : tns
OSHA PEL (TWA) : 5 ug/m3	Date : 18-FEB-11 NYS DOH # : 11626
Collection Media : 37mm PVC	QC by: Tom Burgess

< -Less Than	mg -Milligrams	m3 -Cubic Meters	kg -Kilograms
> -Greater Than	ug -Micrograms	l -Liters	NS -Not Specified
NA -Not Applicable	ND -Not Detected	ppm -Parts per Million	



LABORATORY FOOTNOTE REPORT

Client Name : Tetra Tech EM, Inc.
 Site : Agrium, Hartsville, SC

6601 Kirkville Road
 East Syracuse, NY 13057
 (315) 432-5227
 FAX: (315) 437-0571
 www.galsonlabs.com

Date Sampled : 16-FEB-11
 Date Received: 18-FEB-11
 Date Analyzed: 18-FEB-11

Account No.: 17302
 Login No. : L234047

Unless otherwise noted below, all quality control results associated with the samples were within established control limits.

Unrounded results are carried through the calculations that yield the final result and the final result is rounded to the number of significant figures appropriate to the accuracy of the analytical method. Please note that results appearing in the columns preceding the final result column may have been rounded in order to fit the report format and therefore, if carried through the calculations, may not yield an identical final result to the one reported.

The stated LOQs for each analyte represent the demonstrated LOQ concentrations prior to correction for desorption efficiency (if applicable).

L234047 (Report ID: 681556):

Reported results reflect elemental analysis of the requested metals. Certain compounds may not be solubilized during digestion, resulting in data that is biased low.

SOPs: MT-SOP-9(11), im-mwvfilt(13)

Due to different digestion requirements, silver should be collected on a separate filter. Results for silver may be biased low.

OSHA PEL: Chromium II and III = 0.5 mg/m3; Chromium metal (as Cr) = 1 mg/m3

Blank spikes recovered above the control limit of 120% for Selenium at 122%, 126%, 123%, 125%. Sample data is not affected as the bias would be high and the samples are non detect.

Parameter	Method	PEL
Arsenic	mod. NIOSH 7300/OSHA 125G; ICP/ICPMS	0.010 mg/m3
Barium	mod. NIOSH 7300/OSHA 125G; ICP/ICPMS	0.5 mg/m3 (soluble)
Cadmium	mod. NIOSH 7300/OSHA 125G; ICP/ICPMS	0.005 mg/m3
Chromium	mod. NIOSH 7300/OSHA 125G; ICP/ICPMS	Varies, see footnote
Lead	mod. NIOSH 7300/OSHA 125G; ICP/ICPMS	0.05 mg/m3
Selenium	mod. NIOSH 7300/OSHA 125G; ICP/ICPMS	NA
Silver	mod. NIOSH 7300/OSHA 125G; ICP/ICPMS	0.01 mg/m3
Zinc	mod. NIOSH 7300/OSHA 125G; ICP/ICPMS	Varies

L234047 (Report ID: 681553):

SOPs: IC-SOP-15(2)

Total ug corrected for a desorption efficiency of 104%.

Samples were prepared and analyzed within method-specified hold times.

< -Less Than mg -Milligrams m3 -Cubic Meters kg -Kilograms
 > -Greater Than ug -Micrograms l -Liters NS -Not Specified
 NA -Not Applicable ND -Not Detected ppm -Parts per Million



6601 Kirkville Rd
 East Syracuse, NY 13057
 Tel: (315) 432-5227
 888-432-LABS (5227)
 Fax: (315) 437-0571
 www.galsonlabs.com

Check if change of address

New Client? yes no

Report To : Tetra Tech
1955 Evergreen Blvd
Duluth, GA 30096

Invoice To : _____

RUS

Phone No. : Jessica Vukob 678 775-3104
 Fax No. : _____

Phone No. : _____
 Fax No. : _____

Site Name : AQUUM, ARBIVILLE, SC Project : _____
 Sampled By : C. JONES

Need Results By: (surcharge) Samples submitted using the FreePumpLoan™ Program. Samples submitted using the FreeSamplingBadges™ Program.

<input type="checkbox"/> 5 Business Days	0%
<input type="checkbox"/> 4 Business Days	35%
<input type="checkbox"/> 3 Business Days	50%
<input type="checkbox"/> 2 Business Days	75%
<input type="checkbox"/> Next Day by 6pm	100%
<input type="checkbox"/> Next Day by Noon	150%
<input checked="" type="checkbox"/> Report Same day	200%

Client Account No. : _____
 Purchase Order No. : _____
 Credit Card No. : _____ Card Holder Name : _____ Exp. : _____
 Email / Fax Results To : _____
 Email Address : _____ Fax No. : _____

Sample Identification	Date Sampled	Collection Medium	*Air Volume (Liters)	Passive Monitors (Min)	Analysis Requested	Method Reference	Specific DL Needed
1. <u>02-AA-021611</u>	<u>2/16/11</u>	<u>MCE 3P PVC</u>	<u>990.1 L</u>		<u>Metals (RLPA) + ZINC</u>		
2. <u>B3-AA-021611</u>	<u>2/16/11</u>	<u>MCE / PVC</u>	<u>MCE=991.6L PVC=119.6L</u>		<u>RLPA Metals + ZINC / Chromium (VI)</u>		
3. <u>1A-AA-021611</u>	<u>2/16/11</u>	<u>MCE / PVC</u>	<u>MCE=995.0L, PVC=113.2L</u>		<u>RLPA Metals + ZINC / Chromium (VI)</u>		
4. <u>AK-05 (DP)</u>							
5. <u>AK-06 (DP)</u>							
6.							
7.							
8.							
9.							
10.							
11.							

Yes No We normally add a laboratory blank for each analyte. We will charge you for this at our normal rate. If you agree please check "Yes" otherwise check "No".
 List description of industry or process / interference's present in sampling area: RLPA Metals - Ag, As, Ba, Cd, Cr, Pb, Se per client.
 Comments: Received by FedEx Florence, SC at 2/17/11 1100 PMU 2/18/11

Chain of Custody	Print Name	Signature	Date/Time
Relinquished by :	<u>Eric Turner</u>	<u>[Signature]</u>	<u>2/17/11 1100</u>
Received by LAB :	<u>ACostello</u>	<u>[Signature]</u>	<u>2/18/11 1024</u>

Samples received after 3pm will be considered as next day's business. * sample collection time X LPM = Air Vol. Page _____ of _____

Tetra Tech, Inc.

1955 Evergreen Blvd
Bldg 200, Suite 300
Duluth, GA 30096

Agrium Chemical Fire
Hartsville, SC

Analytical Report
(0211-67)

EPA Method 320 type

Nitrogen dioxide, nitrogen monoxide, nitrous oxide



Enthalpy Analytical, Inc.

Phone: (919) 850 - 4392 / Fax: (919) 850 - 9012 / www.enthalpy.com
2202 Ellis Road Durham, NC 27703 - 5518

I certify that to the best of my knowledge all analytical data presented in this report:

- Have been checked for completeness
- Are accurate, error-free, and legible
- Have been conducted in accordance with approved protocol, and that all deviations and analytical problems are summarized in the appropriate narrative(s)

This analytical report was prepared in Portable Document Format (.PDF) and contains 23 pages.

Valgena Respass

QA Review Performed by – Valgena Respass

Report Issued: 02/18/2011



FTIR Summary of Results



Company	Tetra Tech
Analyst Initials	CJT
Parameters	EPA Method 320-Type
# Samples	4 Bags

Client #	Agrium Chemical Fire - Hartsville, SC
Job #	0211-67
PO #	Verbal
Report Date	2/17/2011

Compound	Sample ID / Concentration (ppmv wet)	
	13-AA-021611	14-AA-021611
Nitrous Oxide (N ₂ O)	1.44 ND	1.49 J
Nitrogen Oxides (NO _x)	1.49	2.31
	02-AA-021611	02-AA-021611Dup
Nitrous Oxide (N ₂ O)	5,049	4,320
Nitrogen Oxides (NO _x)	141	134

FTIR Results



Company	Tetra Tech
Analyst Initials	CJT
Parameters	EPA Method 320-Type
# Samples	4 Bags

Client #	Agrium Chemical Fire - Hartsville, SC
Job #	0211-67
PO #	Verbal
Report Date	2/17/2011

13-AA-021611

Date	Method	Filename	DF	N2O (ppm)	SEC (ppm)	NO (ppm)	SEC (ppm)	NO2 (ppm)	SEC (ppm)	
2/17/2011 10:03	0211-67A	11_02_17_1003_07_580	1.07	1.34	0.499	0.121	3.24	1.71	0.281	
2/17/2011 10:04	0211-67A	11_02_17_1004_00_251	1.07	1.34	0.530	0.121	3.23	1.26	0.290	
2/17/2011 10:04	0211-67A	11_02_17_1004_52_923	1.07	1.34	0.512	0.121	3.24	1.56	0.285	
2/17/2011 10:05	0211-67A	11_02_17_1005_45_610	1.07	1.34	0.488	0.121	3.25	1.12	0.304	
2/17/2011 10:06	0211-67A	11_02_17_1006_38_282	1.07	1.34	0.502	0.121	3.25	1.30	0.320	
Average Conc. (ppm):				1.07	1.44	0.544	0.130	3.48	1.49	0.318

14-AA-021611

Date	Method	Filename	DF	N2O (ppm)	SEC (ppm)	NO (ppm)	SEC (ppm)	NO2 (ppm)	SEC (ppm)	
2/17/2011 10:21	0211-67A	11_02_17_1021_21_981	1.09	1.34	0.512	0.121	3.29	2.30	0.333	
2/17/2011 10:22	0211-67A	11_02_17_1022_14_652	1.09	1.34	0.501	0.121	3.28	2.28	0.309	
2/17/2011 10:23	0211-67A	11_02_17_1023_07_324	1.09	1.34	0.491	0.121	3.28	2.65	0.306	
2/17/2011 10:23	0211-67A	11_02_17_1023_59_995	1.09	1.46	0.485	0.121	3.29	1.76	0.313	
2/17/2011 10:24	0211-67A	11_02_17_1024_52_698	1.09	1.34	0.520	0.121	3.28	1.58	0.323	
Average Conc. (ppm):				1.09	1.49	0.549	0.132	3.59	2.31	0.346

02-AA-021611

Date	Method	Filename	DF	N2O (ppm)	SEC (ppm)	NO (ppm)	SEC (ppm)	NO2 (ppm)	SEC (ppm)	
2/17/2011 10:36	0211-67A	11_02_17_1036_13_445	1.05	3,860	55.4	5.17	2.77	121	1.58	
2/17/2011 10:37	0211-67A	11_02_17_1037_06_117	1.05	3,861	55.5	6.57	2.78	124	1.53	
2/17/2011 10:37	0211-67A	11_02_17_1037_58_788	1.05	3,857	55.3	7.66	2.82	127	1.50	
2/17/2011 10:38	0211-67A	11_02_17_1038_51_460	1.05	3,856	55.3	8.57	2.82	129	1.47	
2/17/2011 10:39	0211-67A	11_02_17_1039_44_147	1.05	3,852	55.3	9.51	2.78	130	1.48	
Average Conc. (ppm):				1.05	4,066	58.4	7.90	2.94	133	1.59

02-AA-021611Dup

Date	Method	Filename	DF	N2O (ppm)	SEC (ppm)	NO (ppm)	SEC (ppm)	NO2 (ppm)	SEC (ppm)	
2/17/2011 10:46	0211-67A	11_02_17_1046_14_052	1.05	3,365	47.0	4.90	2.88	114	2.56	
2/17/2011 10:47	0211-67A	11_02_17_1047_06_739	1.05	3,364	46.9	5.69	2.89	118	2.52	
2/17/2011 10:47	0211-67A	11_02_17_1047_59_410	1.05	3,359	46.8	6.39	2.89	122	2.50	
2/17/2011 10:48	0211-67A	11_02_17_1048_52_082	1.05	3,358	47.1	7.07	2.85	125	2.51	
2/17/2011 10:49	0211-67A	11_02_17_1049_44_769	1.05	3,359	47.1	7.49	2.88	128	2.53	
Average Conc. (ppm):				1.05	3,535	49.4	6.64	3.02	128	2.65

02-AA-021611 (diluted)

Date	Method	Filename	DF	N2O (ppm)	SEC (ppm)	NO (ppm)	SEC (ppm)	NO2 (ppm)	SEC (ppm)	
2/17/2011 11:45	0211-67A	11_02_17_1145_03_364	2.30	2,202	26.0	8.80	3.92	54.7	1.05	
2/17/2011 11:45	0211-67A	11_02_17_1145_56_051	2.30	2,201	28.1	9.37	3.91	56.4	1.03	
2/17/2011 11:46	0211-67A	11_02_17_1146_48_707	2.30	2,200	26.2	9.76	3.91	57.2	1.01	
2/17/2011 11:47	0211-67A	11_02_17_1147_41_379	2.30	2,200	26.3	10.3	3.90	58.2	0.991	
2/17/2011 11:48	0211-67A	11_02_17_1148_34_066	2.30	2,195	26.2	10.7	3.90	58.7	0.984	
Average Conc. (ppm):				2.30	5,049	60.0	22.43	8.97	130.9	2.33

12-AA-021811 Dup (diluted)

Date	Method	Filename	DF	N2O (ppm)	SEC (ppm)	NO (ppm)	SEC (ppm)	NO2 (ppm)	SEC (ppm)	
2/17/2011 11:52	0211-67A	11_02_17_1152_38_721	2.26	1,913	20.2	6.69	3.89	51.0	1.81	
2/17/2011 11:53	0211-67A	11_02_17_1153_31_393	2.26	1,913	20.2	7.32	3.89	52.6	1.83	
2/17/2011 11:54	0211-67A	11_02_17_1154_24_064	2.26	1,914	20.3	7.68	3.88	54.2	1.81	
2/17/2011 11:55	0211-67A	11_02_17_1155_16_736	2.26	1,912	20.3	8.04	3.88	55.9	1.80	
2/17/2011 11:56	0211-67A	11_02_17_1156_09_408	2.26	1,913	20.3	8.29	3.89	57.7	1.82	
Average Conc. (ppm):				2.26	4,320	45.8	17.17	8.77	122.5	4.10

FTIR Narrative Summary



Enthalpy Analytical Narrative Summary

Company	Tetra Tech, Inc.	Client #	Agrium Chemical Fire - Hartsville, SC
Analyst	CJT	Job #	0211-67
Parameters	EPA Method 320 type	PO #	Verbal
# Samples	4 Bags	Report Date	February 17, 2011

Custody

Anthony Mastrianni received the samples on 2/17/11 after being relinquished by Tetra Tech, Inc. The samples were received at ambient temperature in good condition. Prior to, during, and after analysis, the samples were kept under lock with access only to authorized personnel by Enthalpy Analytical, Inc.

Analysis

The four bags were analyzed for nitrous oxide (N₂O), nitrogen monoxide (NO or nitric oxide), and nitrogen dioxide (NO₂) using the analytical procedures in EPA Method 320, Measurement of Vapor Phase Organic and Inorganic Emissions (40 CFR, Part 63, Appendix A). While this is a source testing method, the analytical parameters of the method are easily adapted to Tedlar® bag analysis.

The FTIR gas cell was purged with nitrogen gas and evacuated using a vacuum pump to between 0.5 and 8.5psi, absolute. A bag was then connected to the inlet of the FTIR gas cell. The valve on the bag was opened and the total gas pressure in the absorption cell was brought to approximately 1.0 atm, after which the FTIR gas cell was isolated. The FTIR absorption spectrum of the sample was recorded several times.

Using the measured cell pressure after evacuation (P_{vac}) and the final cell pressure after it has been filled with sample gas (P_{final}), a cell dilution ratio can be determined. Due to various levels of different compounds, multiple cell dilutions were required to ensure that each compound was present at a concentration within or near its calibration range. Compounds whose concentrations were not within the appropriate concentration range for a given dilution are reported from an alternate, more appropriate dilution level. Compounds with a "strikethrough" through their concentration for a given dilution indicate that the concentration of that compound in that particular dilution was not appropriate, and that the appropriate result has been reported from an alternate dilution.



Enthalpy Analytical Narrative Summary (continued)

Analysis (continued)

In samples *13-AA-021611-N2O* and *14-AA-021611-N2O*, NO₂ was detected above its minimum detectable concentration (MDC) value in the samples. NO was not detected above its MDC value, and N₂O was detected above its MDC value in only one of the sample spectra (though only slightly above the MDC value).

In samples *02-AA-021611-N2O* and *02-AA-021611-N2O Dup*, all compounds were detected above their respective MDC values. However, there was a high degree of uncertainty in the results for NO due to the high level of moisture present. It was also noted by the analyst that these samples contained a substantial amount of hydrogen chloride (HCl) at about 100-150ppm.

In samples where compounds detected below their respective MDC values are tagged "ND" and are reported as the MDC on the summary page. In samples where a compound was detected above its respective MDC value in some of the spectra and below it in others, the compound is reported with a "J" flag for that sample. The reported concentrations include corrections for dilutions of the samples in the FTIR cell. The reported MDC values were calculated according to Section A2.2 of ASTM Standard D6348-03.

Before and after all the samples were analyzed, a calibration transfer standard (CTS) gas (Ethylene) was introduced to the FTIR and allowed to reach steady state. A single cylinder of Ethylene in Nitrogen (100 ppm, Custom Gas CC47738) served as the CTS. The CTS was used to determine cell path length and check for instrument drift/problems pre and post analysis.

Instrumentation

The FTIR spectrometer used for this test was a Midac I-1301 medium-resolution Michelson interferometer instrument. The interferometer and detector were assembled by MIDAC Corporation (Irvine, CA). The nominal spectral resolution of the system was 0.5 cm⁻¹.

The instrument was equipped with a fixed, nominal 10-meter path length White cell, a potassium bromide (KBr) beamsplitter, zinc selenide (ZnSe) non-hygroscopic windows, and a mercury cadmium telluride (MCT) liquid nitrogen cooled detector. The inside walls of the cell were polished stainless steel to minimize interaction of the sample with the cell walls and the mirrors were bare gold. The pressure of the FTIR extractive sample cell was monitored with a digital pressure transducer connected directly to the sample cell. The sample cell was wrapped in an insulating blanket and the temperature monitored with digital type J thermocouple. The cell volume is 1.915 liters.



Enthalpy Analytical Narrative Summary (continued)

Data Analysis

All data were analyzed using Autoquant Pro (Midac Corporation, Irvine, CA). The spectra used for this analysis were obtained from available spectra found in the Enthalpy, Midac and EPA spectral libraries. For all data analysis, the apodization was triangular and the baseline correction was linear. The "Method Map" section contains all the parameters required to reproduce the results of this testing.

Reporting Notes

The nitrogen oxides reported on the Summary page is the sum of the NO and NO₂ results.

The results presented in this report are representative of the samples as provided to the laboratory.



Sample Custody





Chain of Custody Record

Page 1 of 1

Special Handling:

- Standard Turn Around Time (10 business days)
- Rush Turn Around Time - Date Needed ASAP SAME DAY
- All TATs Subject to Approval by Enthalpy Analytical, Inc.
- All Bag/Can Samples Disposed of After 1 Month Unless Otherwise Instructed.
- All Other Samples Disposed of After 6 months Unless Otherwise Instructed.

Client Name: TERRA TECH
 Project Manager: JESSICA
 Report To: _____

Project Number: Agrium Chemical
 Site Name: Hartselle Fire
 Location: SC

PO#: _____
 Telephone#: _____
 Email: _____

For Collocated spike trains: please provide sample volumes for recovery calculations.
 For Particulates: please provide tare weights and/or condensed water volumes.

Special Instructions:

RUSH TAT

A=Air 1=H2SO4 2=NaOH 3=_____ 4=_____
 X=XAD C=Charcoal SG=Silica Gel

G=Grab C=Composite Q=Quality Control

Sample ID	Date	Time	Sample Volume	Type	Matrix	Sample Containers						H ₂ O Nitrogs Oxide	Analyses	Notes:		
						# of VOA Vials	# of Glass	# of Plastic	# of Bags	# of Canisters	# of Tubes				# Other	
05-SD-021611	2/16/11	113														
13-AA-021611	2/16/11	1415			AIR				1							
14-AA-021611	2/16/11	1453			AIR				1							
02-AA-021611	2/16/11	1720			AIR				1							
02-AA-021611	Dep 2/16/11	1725			AIR				1							

(Handwritten signature/initials)

Relinquished By:	Date:	Received By:	Date:	Time:	Sample Condition Upon Receipt:
<i>(Signature)</i>	2/16/11	Fedex	2/16/11	1830	<input type="checkbox"/> Iced <input type="checkbox"/> Ambient <input type="checkbox"/> °C _____
		<i>(Signature)</i>	2/17/11	0923	<input type="checkbox"/> Iced <input type="checkbox"/> Ambient <input checked="" type="checkbox"/> °C _____

FTIR QA



Company	Tetra Tech
Analyst Initials	CJT
Parameters	EPA Method 320-Type
# Samples	4 Bags

Client #	Agrium Chemical Fire - Hartsville, SC
Job #	0211-67
PO #	Verbal
Report Date	2/17/2011

Minimum Detectable Concentration - Default

Date	Method	Filename	DF	N2O (ppm)	SEC (ppm)	NO (ppm)	SEC (ppm)	NO2 (ppm)	SEC (ppm)
2/17/2011 9:46	0211-67A	11_02_17_0946_37_069	1	-0.0780	0.365	-0.0700	0.0320	-0.455	0.162
2/17/2011 9:47	0211-67A	11_02_17_0947_29_756	1	0.411	0.353	-0.0440	0.0350	-0.443	0.153
2/17/2011 9:48	0211-67A	11_02_17_0948_22_428	1	-0.335	0.363	-0.0830	0.0330	0.435	0.161
2/17/2011 9:49	0211-67A	11_02_17_0949_15_115	1	-0.0810	0.346	0.0170	0.0320	0.0710	0.163
2/17/2011 9:50	0211-67A	11_02_17_0950_07_818	1	-0.871	0.352	-0.0460	0.0330	-0.709	0.176
2/17/2011 9:51	0211-67A	11_02_17_0951_00_489	1	0.212	0.372	0.0200	0.0350	-0.481	0.173
2/17/2011 9:51	0211-67A	11_02_17_0951_53_161	1	0.296	0.383	-0.0780	0.0330	-0.466	0.159
2/17/2011 9:52	0211-67A	11_02_17_0952_45_864	1	0.469	0.381	-0.0230	0.0330	-0.197	0.168
				0.448		0.0403		0.370	
MDC(ppm):				1.34		0.121		1.11	

Company	Tetra Tech
Analyst Initials	CJT
Parameters	EPA Method 320-Type
# Samples	4 Bags

Client #	Agrium Chemical Fire - Hartsville, SC
Job #	0211-67
PO #	Verbal
Report Date	2/17/2011

Path Length - Path

Date	Method	FileName	ethylene (ppm)	SEC (ppm)
2/17/2011 9:35	0211-67CTS	11_02_17_0935_22_275	8.26	0.113
2/17/2011 9:35	0211-67CTS	11_02_17_0935_39_134	8.27	0.113
2/17/2011 9:35	0211-67CTS	11_02_17_0935_55_994	8.25	0.113
2/17/2011 9:36	0211-67CTS	11_02_17_0936_12_868	8.25	0.114
2/17/2011 9:36	0211-67CTS	11_02_17_0936_29_728	8.27	0.114
2/17/2011 9:36	0211-67CTS	11_02_17_0936_46_571	8.24	0.113
2/17/2011 9:37	0211-67CTS	11_02_17_0937_03_415	8.22	0.113
2/17/2011 9:37	0211-67CTS	11_02_17_0937_20_274	8.25	0.113
Average (m)			8.25	0.113
2/17/2011 10:59	0211-67CTS	11_02_17_1059_09_267	8.29	0.111
2/17/2011 10:59	0211-67CTS	11_02_17_1059_26_142	8.32	0.111
2/17/2011 10:59	0211-67CTS	11_02_17_1059_43_001	8.32	0.111
2/17/2011 10:59	0211-67CTS	11_02_17_1059_59_829	8.30	0.111
2/17/2011 11:00	0211-67CTS	11_02_17_1100_16_688	8.31	0.111
2/17/2011 11:00	0211-67CTS	11_02_17_1100_33_548	8.29	0.111
2/17/2011 11:00	0211-67CTS	11_02_17_1100_50_423	8.30	0.111
2/17/2011 11:01	0211-67CTS	11_02_17_1101_07_282	8.31	0.111
Average (m)			8.31	0.111
2/17/2011 12:03	0211-67CTS	11_02_17_1203_52_734	8.37	0.111
2/17/2011 12:04	0211-67CTS	11_02_17_1204_09_984	8.38	0.112
2/17/2011 12:04	0211-67CTS	11_02_17_1204_26_937	8.35	0.111
2/17/2011 12:04	0211-67CTS	11_02_17_1204_43_937	8.36	0.111
2/17/2011 12:05	0211-67CTS	11_02_17_1205_01_062	8.36	0.112
2/17/2011 12:05	0211-67CTS	11_02_17_1205_18_265	8.36	0.112
2/17/2011 12:05	0211-67CTS	11_02_17_1205_35_202	8.35	0.111
2/17/2011 12:05	0211-67CTS	11_02_17_1205_52_249	8.36	0.111
Average (m)			8.36	0.111
Average Pathlength (m)			8.31	0.112
Max (m)			8.36	
Min (m)			8.25	
Max % Deviation			0.670%	

FTIR Method Map



CTS Method Map:

Overrides: Path Length=100ppm

Method Name: 0211-67CTS

Method Path: c:\autoq4\methods\0211-67CTS\0211-67CTS.aq4

Method Type: AutoQuant 4.0

Linear Analysis Mode

MethodParameters

Wavenumber range: 650.00 - 4500.00 cm-1

Default Pathlength = 100.0000 M

Gain = 0.000000

Apodization = Triangle

Phase Correction = Mertz

Resolution = 0.5 cm-1

Baseline Correction: Single Linear

Exclusion Criterion: 2500.000000

Compound: ethylene

Description:

Molecular Weight: 0.00

Alarms: Disabled

Primary Spectrum: ETYH5A.SPC

Reference Concentration: 206.6000 ppm-m

Reference Pathlength: 1.0000 M

Reference Pressure: 1.0000 atm

Reference Temperature: 121.00 C

Region #1: 870.00 - 1040.00 cm-1

Sample Method Map:

Overrides: Path Length=8.31m

Method Name: 0211-67A

Method Path: X:\FTIR2011Q1\0211-67_TetraTech\Methods\0211-67A\0211-67A.aq4

Method Type: AutoQuant 4.0

Non-Linear Analysis Mode

MethodParameters

Wavenumber range: 650.00 - 4500.00 cm-1

Default Pathlength = 9.3000 M

Gain = 0.000000

Apodization = Triangle

Phase Correction = Mertz

Resolution = 0.5 cm-1

Baseline Correction: Single

Exclusion Criterion: 2500.000000

Compound: N2O

Description:

Molecular Weight: 0.00

Alarms: Disabled

Spectrum: N2O_808ppm_8.6916m_121C.SPC

Reference Concentration: 7022.8128 ppm-m

Reference Pathlength: 8.6916 M

Reference Pressure: 1.0002 atm

Reference Temperature: 121.39 C

Region #1: 2504.49 - 2617.46 cm-1

Spectrum: N2O_600ppm_8.5025m_121C.SPC

Reference Concentration: 5101.5000 ppm-m

Reference Pathlength: 8.5025 M

Reference Pressure: 1.0034 atm

Reference Temperature: 121.39 C

Region #1: 2504.49 - 2617.46 cm-1

Spectrum: N2O_300ppm_8.5025m_121C.SPC

Reference Concentration: 2550.7500 ppm-m

Reference Pathlength: 8.5025 M

Reference Pressure: 1.0028 atm

Reference Temperature: 121.39 C

Region #1: 2504.49 - 2617.46 cm-1

Spectrum: N2O_3050ppm_121C_8.44m(tri).SPC

Reference Concentration: 25742.0000 ppm-m

Reference Pathlength: 8.4400 M

Reference Pressure: 0.9765 atm

Reference Temperature: 121.00 C

Region #1: 2504.49 - 2617.46 cm-1

Primary Spectrum: N2O_60ppm_8.5025m_121C.SPC
Reference Concentration: 510.1500 ppm-m
Reference Pathlength: 8.5025 M
Reference Pressure: 1.0027 atm
Reference Temperature: 121.17 C
Region #1: 2504.49 - 2617.46 cm-1

Compound: NO

Description:
Molecular Weight: 0.00
Alarms: Disabled
Primary Spectrum: NO_1662.282ppm-m_121C_14.54psi.SPC
Reference Concentration: 1662.2820 ppm-m
Reference Pathlength: 1.0000 M
Reference Pressure: 0.9883 atm
Reference Temperature: 120.88 C
Region #1: 1863.15 - 1965.63 cm-1
Spectrum: NO_831.141ppm-m_121C_14.56psi.SPC
Reference Concentration: 831.1410 ppm-m
Reference Pathlength: 1.0000 M
Reference Pressure: 0.9915 atm
Reference Temperature: 120.95 C
Region #1: 1863.15 - 1965.63 cm-1
Spectrum: NO_415.152ppm-m_121C_14.57psi.SPC
Reference Concentration: 415.1520 ppm-m
Reference Pathlength: 1.0000 M
Reference Pressure: 0.9915 atm
Reference Temperature: 120.88 C
Region #1: 1863.15 - 1965.63 cm-1

Compound: NO2

Description:
Molecular Weight: 0.00
Alarms: Disabled
Primary Spectrum: NO2_1690.74ppm-m_121C_14.56psi.SPC
Reference Concentration: 1690.7400 ppm-m
Reference Pathlength: 1.0000 M
Reference Pressure: 0.9974 atm
Reference Temperature: 120.81 C
Region #1: 2847.09 - 2943.15 cm-1
Spectrum: NO2_845.37ppm-m_121C_14.6psi.SPC
Reference Concentration: 845.3700 ppm-m
Reference Pathlength: 1.0000 M
Reference Pressure: 0.9929 atm
Reference Temperature: 120.81 C
Region #1: 2847.09 - 2943.15 cm-1

Spectrum: NO2_422.69ppm-m_121C_14.59psi.SPC
Reference Concentration: 422.6900 ppm-m
Reference Pathlength: 1.0000 M
Reference Pressure: 0.9922 atm
Reference Temperature: 120.88 C
Region #1: 2847.09 - 2943.15 cm-1

Compound: H2O

Description:
Molecular Weight: 0.00
Alarms: Disabled
Primary Spectrum: 11_02_17_1215_21_248.abs
Reference Concentration: 83.0000 ppm-m
Reference Pathlength: 8.3000 M
Reference Pressure: 1.0038 atm
Reference Temperature: 121.17 C
Region #1: 1971.45 - 1855.85 cm-1
Region #2: 2972.00 - 2709.25 cm-1

Compound: HCl

Description:
Molecular Weight: 0.00
Alarms: Disabled
Primary Spectrum: 57.5PPM_HCL_9.101M_T1.SPC
Reference Concentration: 523.2500 ppm-m
Reference Pathlength: 9.1000 M
Reference Pressure: 1.0190 atm
Reference Temperature: 181.10 C
Region #1: 2613.05 - 2955.20 cm-1

Logbook Notes



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INST
PAC

T1
T1

I1301-430
F0177-105

2/17/11

DATE	TIME	TEMP °C	DEPTH m	SL	NRG	NOTES	P _{tot} psi
2-17-0922	0922	12.0	14.88	128	1	BC Taken	N/A
	0927	12.0	14.88	16	1	OTS CTY 100 ppm (Carbon Gas - CC47738)	N/A
	0940	12.0	14.88	50	1	N ₂ Blank	N/A
	0942	12.0	14.88	128	2	BC Taken	N/A
	0946	12.0	14.88	50	2	N ₂ Blank	N/A
	0958	12.0	14.88	128	3	BC Taken	N/A
	1003	12.0	14.68	50	3	13-AA-021611-N ₂ O	1.01
	1021	12.0	14.59	50	3	14-AA-021611-N ₂ O	1.25
	1030	12.0	14.93	128	4	BC Taken	N/A
	1036	12.0	14.61	50	4	02-AA-021611-N ₂ O	0.75
	1046	12.0	14.61	50	4	02-AA-021611-N ₂ O Dup	0.72
	1053	12.0	14.88	16	4	OTS CTY 100 ppm (Carbon Gas - CC47738)	N/A
	1133	12.0	14.92	128	5	BC Taken	N/A
	1145	12.0	14.69	50	5	02-AA-021611-N ₂ O B'ntel	8.29
	1152	12.0	14.61	50	5	02-AA-021611-N ₂ O Dup D'ntel	8.14
	1203	12.0	14.89	16	5	OTS CTY 100 ppm (Carbon Gas - CC47738)	N/A
	1211	12.0	14.85	32	5	N ₂ Fraction - use 1215.21	N/A

OTS 2/17/11

nessed & Understood by me,

Date

Invented by: G.P.H.

Date 2/19/11

To Page No.

**This Is The Last Page
Of This Report.**



Report of Analysis

Tetra Tech EM Inc.
1955 Evergreen Boulevard
Building 200, Suite 300
Duluth, GA 30096
Attention: Jessica Vickers

Project Name: **Agrium Fire**

Lot Number: **MB16011**
Date Completed: **02/17/2011**



Nisreen Saikaly
Project Manager



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The following non-paginated documents are considered part of this report: Chain of Custody Record and Sample Receipt Checklist.

* MB16011 *

SHEALY ENVIRONMENTAL SERVICES, INC.

SC DHEC No: 32010

NELAC No: E87653

NC DEHNR No: 329

Case Narrative

Tetra Tech EM Inc.

Lot Number: MB16011

This Report of Analysis contains the analytical result(s) for the sample(s) listed on the Sample Summary following this Case Narrative. The sample receiving date is documented in the header information associated with each sample.

Sample receipt, sample analysis, and data review have been performed in accordance with the most current approved NELAC standards, the Shealy Environmental Services, Inc. ("Shealy") Quality Assurance Management Plan (QAMP), standard operating procedures (SOPs), and Shealy policies. Any exceptions to the NELAC standards, the QAMP, SOPs or policies are qualified on the results page or discussed below.

If you have any questions regarding this report please contact the Shealy Project Manager listed on the cover page.

Hexavalent Chromium

The MS recoveries in batch 52935 were outside acceptance criteria. All other QA/QC criteria for the batch were within acceptance criteria and method control limits. The MSD recovery results are attributed to matrix interference. The associated sample results were reported and no corrective action was required.

TKN

According to Standard Methods nitrate in excess of 10 mg/L can oxidize a portion of the ammonia released from the digested organics nitrogen, resulting in a negative interference. The conditions under which significant interference occur are not well defined and there are no proven ways to eliminate the interference in conjunction with kjeldahl method. The TKN result of sample -011 is most likely biased low.

SHEALY ENVIRONMENTAL SERVICES, INC.

Sample Summary Tetra Tech EM Inc. Lot Number: MB16011

Sample Number	Sample ID	Matrix	Date Sampled	Date Received
001	SW-01-021511	Aqueous	02/15/2011 1507	02/16/2011
002	SW-02-021511	Aqueous	02/15/2011 1527	02/16/2011
003	SW-03-021511	Aqueous	02/15/2011 1357	02/16/2011
004	SW-03-021511DUP	Aqueous	02/15/2011 1357	02/16/2011
005	SW-04-021511	Aqueous	02/15/2011 1345	02/16/2011
006	SW-05-021511	Aqueous	02/15/2011 1337	02/16/2011
007	SW-06-021511	Aqueous	02/15/2011 1322	02/16/2011
008	SW-07-021511	Aqueous	02/15/2011 1242	02/16/2011
009	SW-08-021511	Aqueous	02/15/2011 1315	02/16/2011
010	SW-09-021511	Aqueous	02/15/2011 1219	02/16/2011
011	SW-10-021511	Aqueous	02/15/2011 1515	02/16/2011

(11 samples)

SHEALY ENVIRONMENTAL SERVICES, INC.

Executive Summary

Tetra Tech EM Inc.

Lot Number: MB16011

Sample	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
001	SW-01-021511	Aqueous	COD	SM 5220D	45		mg/L	7
001	SW-01-021511	Aqueous	Dissolved Oxygen	SM 4500-O G	10.2		mg/L	7
001	SW-01-021511	Aqueous	Nitrate-Nitrite - N	353.2	31		mg/L	7
001	SW-01-021511	Aqueous	Phosphorus	365.1	42		mg/L	7
001	SW-01-021511	Aqueous	TKN	351.2	48		mg/L	7
001	SW-01-021511	Aqueous	Arsenic	6010C	0.0066	J	mg/L	8
001	SW-01-021511	Aqueous	Barium	6010C	0.018	J	mg/L	8
001	SW-01-021511	Aqueous	Cadmium	6010C	0.0017	J	mg/L	8
001	SW-01-021511	Aqueous	Chromium	6010C	0.017		mg/L	8
001	SW-01-021511	Aqueous	Lead	6010C	0.011		mg/L	8
001	SW-01-021511	Aqueous	Potassium	6010C	140		mg/L	8
001	SW-01-021511	Aqueous	Zinc	6010C	0.47		mg/L	8
002	SW-02-021511	Aqueous	COD	SM 5220D	100		mg/L	9
002	SW-02-021511	Aqueous	Dissolved Oxygen	SM 4500-O G	11.0		mg/L	9
002	SW-02-021511	Aqueous	Nitrate-Nitrite - N	353.2	13		mg/L	9
002	SW-02-021511	Aqueous	Phosphorus	365.1	10		mg/L	9
002	SW-02-021511	Aqueous	TKN	351.2	39		mg/L	9
002	SW-02-021511	Aqueous	Arsenic	6010C	0.017		mg/L	10
002	SW-02-021511	Aqueous	Barium	6010C	0.021	J	mg/L	10
002	SW-02-021511	Aqueous	Cadmium	6010C	0.0030		mg/L	10
002	SW-02-021511	Aqueous	Chromium	6010C	0.0078		mg/L	10
002	SW-02-021511	Aqueous	Lead	6010C	0.013		mg/L	10
002	SW-02-021511	Aqueous	Potassium	6010C	67		mg/L	10
002	SW-02-021511	Aqueous	Silver	6010C	0.00061	J	mg/L	10
002	SW-02-021511	Aqueous	Zinc	6010C	0.55		mg/L	10
003	SW-03-021511	Aqueous	COD	SM 5220D	28		mg/L	11
003	SW-03-021511	Aqueous	Dissolved Oxygen	SM 4500-O G	11.2	H	mg/L	11
003	SW-03-021511	Aqueous	Nitrate-Nitrite - N	353.2	3.2		mg/L	11
003	SW-03-021511	Aqueous	Phosphorus	365.1	4.3		mg/L	11
003	SW-03-021511	Aqueous	TKN	351.2	12		mg/L	11
003	SW-03-021511	Aqueous	Arsenic	6010C	0.012		mg/L	12
003	SW-03-021511	Aqueous	Barium	6010C	0.026		mg/L	12
003	SW-03-021511	Aqueous	Chromium	6010C	0.0037	J	mg/L	12
003	SW-03-021511	Aqueous	Lead	6010C	0.0093	J	mg/L	12
003	SW-03-021511	Aqueous	Potassium	6010C	26		mg/L	12
003	SW-03-021511	Aqueous	Zinc	6010C	0.17		mg/L	12
004	SW-03-021511DUP	Aqueous	COD	SM 5220D	46		mg/L	13
004	SW-03-021511DUP	Aqueous	Dissolved Oxygen	SM 4500-O G	11.3	H	mg/L	13
004	SW-03-021511DUP	Aqueous	Nitrate-Nitrite - N	353.2	3.8		mg/L	13
004	SW-03-021511DUP	Aqueous	Phosphorus	365.1	5.1		mg/L	13
004	SW-03-021511DUP	Aqueous	TKN	351.2	14		mg/L	13
004	SW-03-021511DUP	Aqueous	Arsenic	6010C	0.0092	J	mg/L	14
004	SW-03-021511DUP	Aqueous	Barium	6010C	0.023	J	mg/L	14
004	SW-03-021511DUP	Aqueous	Cadmium	6010C	0.00096	J	mg/L	14
004	SW-03-021511DUP	Aqueous	Potassium	6010C	25		mg/L	14

Executive Summary (Continued)

Lot Number: MB16011

Sample ID	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
004	SW-03-021511DUP	Aqueous	Zinc	6010C	0.13		mg/L	14
005	SW-04-021511	Aqueous	COD	SM 5220D	31		mg/L	15
005	SW-04-021511	Aqueous	Dissolved Oxygen	SM 4500-O G	11.0	H	mg/L	15
005	SW-04-021511	Aqueous	Nitrate-Nitrite - N	353.2	5.4		mg/L	15
005	SW-04-021511	Aqueous	Phosphorus	365.1	6.2		mg/L	15
005	SW-04-021511	Aqueous	TKN	351.2	8.3		mg/L	15
005	SW-04-021511	Aqueous	Arsenic	6010C	0.0041	J	mg/L	16
005	SW-04-021511	Aqueous	Barium	6010C	0.027		mg/L	16
005	SW-04-021511	Aqueous	Cadmium	6010C	0.00087	J	mg/L	16
005	SW-04-021511	Aqueous	Chromium	6010C	0.0026	J	mg/L	16
005	SW-04-021511	Aqueous	Potassium	6010C	15		mg/L	16
005	SW-04-021511	Aqueous	Zinc	6010C	0.39		mg/L	16
006	SW-05-021511	Aqueous	COD	SM 5220D	32		mg/L	17
006	SW-05-021511	Aqueous	Dissolved Oxygen	SM 4500-O G	11.1	H	mg/L	17
006	SW-05-021511	Aqueous	Nitrate-Nitrite - N	353.2	1.2		mg/L	17
006	SW-05-021511	Aqueous	Phosphorus	365.1	1.3		mg/L	17
006	SW-05-021511	Aqueous	TKN	351.2	3.9		mg/L	17
006	SW-05-021511	Aqueous	Arsenic	6010C	0.015		mg/L	18
006	SW-05-021511	Aqueous	Barium	6010C	0.035		mg/L	18
006	SW-05-021511	Aqueous	Chromium	6010C	0.0031	J	mg/L	18
006	SW-05-021511	Aqueous	Lead	6010C	0.0055	J	mg/L	18
006	SW-05-021511	Aqueous	Potassium	6010C	6.5		mg/L	18
006	SW-05-021511	Aqueous	Silver	6010C	0.00087	J	mg/L	18
006	SW-05-021511	Aqueous	Zinc	6010C	0.27		mg/L	18
007	SW-06-021511	Aqueous	COD	SM 5220D	19		mg/L	19
007	SW-06-021511	Aqueous	Dissolved Oxygen	SM 4500-O G	10.7	H	mg/L	19
007	SW-06-021511	Aqueous	Nitrate-Nitrite - N	353.2	0.92		mg/L	19
007	SW-06-021511	Aqueous	Phosphorus	365.1	0.21		mg/L	19
007	SW-06-021511	Aqueous	TKN	351.2	0.65		mg/L	19
007	SW-06-021511	Aqueous	Barium	6010C	0.015	J	mg/L	20
007	SW-06-021511	Aqueous	Potassium	6010C	1.8	J	mg/L	20
007	SW-06-021511	Aqueous	Zinc	6010C	0.0061	J	mg/L	20
008	SW-07-021511	Aqueous	COD	SM 5220D	24		mg/L	21
008	SW-07-021511	Aqueous	Dissolved Oxygen	SM 4500-O G	10.5	H	mg/L	21
008	SW-07-021511	Aqueous	Nitrate-Nitrite - N	353.2	0.50		mg/L	21
008	SW-07-021511	Aqueous	Phosphorus	365.1	0.16		mg/L	21
008	SW-07-021511	Aqueous	TKN	351.2	0.15		mg/L	21
008	SW-07-021511	Aqueous	Arsenic	6010C	0.0048	J	mg/L	22
008	SW-07-021511	Aqueous	Barium	6010C	0.015	J	mg/L	22
009	SW-08-021511	Aqueous	COD	SM 5220D	17		mg/L	23
009	SW-08-021511	Aqueous	Dissolved Oxygen	SM 4500-O G	11.0	H	mg/L	23
009	SW-08-021511	Aqueous	Nitrate-Nitrite - N	353.2	0.91		mg/L	23
009	SW-08-021511	Aqueous	Phosphorus	365.1	0.047		mg/L	23
009	SW-08-021511	Aqueous	TKN	351.2	0.25		mg/L	23
009	SW-08-021511	Aqueous	Arsenic	6010C	0.0044	J	mg/L	24
009	SW-08-021511	Aqueous	Barium	6010C	0.015	J	mg/L	24
009	SW-08-021511	Aqueous	Lead	6010C	0.0026	J	mg/L	24
009	SW-08-021511	Aqueous	Potassium	6010C	1.2	J	mg/L	24

Executive Summary (Continued)

Lot Number: MB16011

Sample	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
009	SW-08-021511	Aqueous	Zinc	6010C	0.011	J	mg/L	24
010	SW-09-021511	Aqueous	COD	SM 5220D	19		mg/L	25
010	SW-09-021511	Aqueous	Dissolved Oxygen	SM 4500-O G	10.8	H	mg/L	25
010	SW-09-021511	Aqueous	Nitrate-Nitrite - N	353.2	1.1		mg/L	25
010	SW-09-021511	Aqueous	Phosphorus	365.1	0.31		mg/L	25
010	SW-09-021511	Aqueous	TKN	351.2	0.71		mg/L	25
010	SW-09-021511	Aqueous	Barium	6010C	0.015	J	mg/L	26
010	SW-09-021511	Aqueous	Potassium	6010C	2.4	J	mg/L	26
010	SW-09-021511	Aqueous	Zinc	6010C	0.0090	J	mg/L	26
011	SW-10-021511	Aqueous	COD	SM 5220D	960		mg/L	27
011	SW-10-021511	Aqueous	Dissolved Oxygen	SM 4500-O G	10.5		mg/L	27
011	SW-10-021511	Aqueous	Hexavalent Chromium	SM 3500-Cr D	0.055		mg/L	27
011	SW-10-021511	Aqueous	Nitrate-Nitrite - N	353.2	1100		mg/L	27
011	SW-10-021511	Aqueous	Phosphorus	365.1	770		mg/L	27
011	SW-10-021511	Aqueous	TKN	351.2	960		mg/L	27
011	SW-10-021511	Aqueous	Arsenic	6010C	0.20		mg/L	28
011	SW-10-021511	Aqueous	Barium	6010C	0.084		mg/L	28
011	SW-10-021511	Aqueous	Cadmium	6010C	0.019		mg/L	28
011	SW-10-021511	Aqueous	Chromium	6010C	0.12		mg/L	28
011	SW-10-021511	Aqueous	Lead	6010C	0.047		mg/L	28
011	SW-10-021511	Aqueous	Potassium	6010C	9000		mg/L	28
011	SW-10-021511	Aqueous	Selenium	6010C	0.0030	J	mg/L	28
011	SW-10-021511	Aqueous	Zinc	6010C	1.7		mg/L	28

(116 detections)

Inorganic non-metals

Client: **Tetra Tech EM Inc.**

Laboratory ID: **MB16011-001**

Description: **SW-01-021511**

Matrix: **Aqueous**

Date Sampled: **02/15/2011 1507**

Date Received: **02/16/2011**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(COD) SM 5220D	1	02/17/2011 1040	SNM	02/16/2011 1500	
1		(Dissolved Ox) SM	1	02/16/2011 1445	MML		
1		(Hexavalent C) SM	1	02/16/2011 1237	HBB		52935
1		(Nitrate-Nitr) 353.2	20	02/16/2011 1428	SMH		52919
1		(pH) SM 4500-H B	1	02/17/2011 0036	PMM		52965
1		(Phosphorus) 365.1	100	02/17/2011 1608	HBB	02/16/2011 1348	52920
1	351.4	(TKN) 351.2	10	02/17/2011 1833	HBB	02/16/2011 1125	52902

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
COD		SM 5220D	45		10	5.7	mg/L	1
Dissolved Oxygen		SM 4500-O G	10.2		2.00		mg/L	1
Hexavalent Chromium	18540-29-9	SM 3500-Cr D	ND		0.010	0.0046	mg/L	1
Nitrate-Nitrite - N		353.2	31		0.40	0.026	mg/L	1
pH		SM 4500-H B	6.09	H	0.000	0.000	su	1
Phosphorus	7723-14-0	365.1	42		1.0	0.48	mg/L	1
TKN		351.2	48		1.0	0.84	mg/L	1

PQL = Practical quantitation limit

B = Detected in the method blank

E = Quantitation of compound exceeded the calibration range

ND = Not detected at or above the MDL

J = Estimated result < PQL and ≥ MDL

P = The RPD between two GC columns exceeds 40%

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

N = Recovery is out of criteria

H = Out of holding time

TAL Metals

Client: **Tetra Tech EM Inc.**

Laboratory ID: **MB16011-001**

Description: **SW-01-021511**

Matrix: **Aqueous**

Date Sampled: **02/15/2011 1507**

Date Received: **02/16/2011**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		7470A	1	02/16/2011 2152	KJC	02/16/2011 1815	52939
1	3005A	6010C	1	02/16/2011 2125	CDF	02/16/2011 1220	52899
2	3005A	6010C	1	02/17/2011 1247	CDF	02/16/2011 1220	52899

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Arsenic	7440-38-2	6010C	0.0066	J	0.010	0.0040	mg/L	1
Barium	7440-39-3	6010C	0.018	J	0.025	0.0075	mg/L	1
Cadmium	7440-43-9	6010C	0.0017	J	0.0020	0.00060	mg/L	2
Chromium	7440-47-3	6010C	0.017		0.0050	0.0021	mg/L	1
Lead	7439-92-1	6010C	0.011		0.010	0.0019	mg/L	2
Mercury	7439-97-6	7470A	ND		0.00010	0.000053	mg/L	1
Potassium	7440-09-7	6010C	140		5.0	1.1	mg/L	1
Selenium	7782-49-2	6010C	ND		0.010	0.0026	mg/L	1
Silver	7440-22-4	6010C	ND		0.0050	0.00040	mg/L	1
Zinc	7440-66-6	6010C	0.47		0.020	0.0045	mg/L	1

PQL = Practical quantitation limit

B = Detected in the method blank

E = Quantitation of compound exceeded the calibration range

ND = Not detected at or above the MDL

J = Estimated result < PQL and ≥ MDL

P = The RPD between two GC columns exceeds 40%

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

N = Recovery is out of criteria

H = Out of holding time

Inorganic non-metals

Client: **Tetra Tech EM Inc.**

Laboratory ID: **MB16011-002**

Description: **SW-02-021511**

Matrix: **Aqueous**

Date Sampled: **02/15/2011 1527**

Date Received: **02/16/2011**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(COD) SM 5220D	1	02/17/2011 1015	SNM	02/16/2011 1500	
1		(Dissolved Ox) SM	1	02/16/2011 1445	MML		
1		(Hexavalent C) SM	1	02/16/2011 1238	HBB		52935
1		(Nitrate-Nitr) 353.2	10	02/16/2011 1424	SMH		52919
1		(pH) SM 4500-H B	1	02/17/2011 0036	PMM		52965
1		(Phosphorus) 365.1	25	02/17/2011 1608	HBB	02/16/2011 1348	52920
1	351.4	(TKN) 351.2	10	02/17/2011 1859	HBB	02/16/2011 1125	52902

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
COD		SM 5220D	100		10	5.7	mg/L	1
Dissolved Oxygen		SM 4500-O G	11.0		2.00		mg/L	1
Hexavalent Chromium	18540-29-9	SM 3500-Cr D	ND		0.010	0.0046	mg/L	1
Nitrate-Nitrite - N		353.2	13		0.20	0.013	mg/L	1
pH		SM 4500-H B	6.39	H	0.000	0.000	su	1
Phosphorus	7723-14-0	365.1	10		0.25	0.12	mg/L	1
TKN		351.2	39		1.0	0.84	mg/L	1

PQL = Practical quantitation limit

B = Detected in the method blank

E = Quantitation of compound exceeded the calibration range

ND = Not detected at or above the MDL

J = Estimated result < PQL and ≥ MDL

P = The RPD between two GC columns exceeds 40%

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

N = Recovery is out of criteria

H = Out of holding time

TAL Metals

Client: **Tetra Tech EM Inc.**

Laboratory ID: **MB16011-002**

Description: **SW-02-021511**

Matrix: **Aqueous**

Date Sampled: **02/15/2011 1527**

Date Received: **02/16/2011**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		7470A	1	02/16/2011 2155	KJC	02/16/2011 1815	52939
1	3005A	6010C	1	02/16/2011 2128	CDF	02/16/2011 1220	52899
2	3005A	6010C	1	02/17/2011 1251	CDF	02/16/2011 1220	52899

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Arsenic	7440-38-2	6010C	0.017		0.010	0.0040	mg/L	2
Barium	7440-39-3	6010C	0.021	J	0.025	0.0075	mg/L	1
Cadmium	7440-43-9	6010C	0.0030		0.0020	0.00060	mg/L	1
Chromium	7440-47-3	6010C	0.0078		0.0050	0.0021	mg/L	2
Lead	7439-92-1	6010C	0.013		0.010	0.0019	mg/L	2
Mercury	7439-97-6	7470A	ND		0.00010	0.000053	mg/L	1
Potassium	7440-09-7	6010C	67		5.0	1.1	mg/L	1
Selenium	7782-49-2	6010C	ND		0.010	0.0026	mg/L	1
Silver	7440-22-4	6010C	0.00061	J	0.0050	0.00040	mg/L	1
Zinc	7440-66-6	6010C	0.55		0.020	0.0045	mg/L	1

PQL = Practical quantitation limit

B = Detected in the method blank

E = Quantitation of compound exceeded the calibration range

ND = Not detected at or above the MDL

J = Estimated result < PQL and ≥ MDL

P = The RPD between two GC columns exceeds 40%

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

N = Recovery is out of criteria

H = Out of holding time

Inorganic non-metals

Client: **Tetra Tech EM Inc.**

Laboratory ID: **MB16011-003**

Description: **SW-03-021511**

Matrix: **Aqueous**

Date Sampled: **02/15/2011 1357**

Date Received: **02/16/2011**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(COD) SM 5220D	1	02/17/2011 1040	SNM	02/16/2011 1500	
1		(Dissolved Ox) SM	1	02/16/2011 1445	MML		
1		(Hexavalent C) SM	1	02/16/2011 1237	HBB		52935
1		(Nitrate-Nitr) 353.2	2	02/16/2011 1425	SMH		52919
1		(pH) SM 4500-H B	1	02/17/2011 0036	PMM		52965
1		(Phosphorus) 365.1	10	02/17/2011 1608	HBB	02/16/2011 1348	52920
1	351.4	(TKN) 351.2	4	02/17/2011 1859	HBB	02/16/2011 1125	52902

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
COD		SM 5220D	28		10	5.7	mg/L	1
Dissolved Oxygen		SM 4500-O G	11.2	H	2.00		mg/L	1
Hexavalent Chromium	18540-29-9	SM 3500-Cr D	ND		0.010	0.0046	mg/L	1
Nitrate-Nitrite - N		353.2	3.2		0.040	0.0026	mg/L	1
pH		SM 4500-H B	6.09	H	0.000	0.000	su	1
Phosphorus	7723-14-0	365.1	4.3		0.10	0.048	mg/L	1
TKN		351.2	12		0.40	0.33	mg/L	1

PQL = Practical quantitation limit

B = Detected in the method blank

E = Quantitation of compound exceeded the calibration range

ND = Not detected at or above the MDL

J = Estimated result < PQL and ≥ MDL

P = The RPD between two GC columns exceeds 40%

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

N = Recovery is out of criteria

H = Out of holding time

TAL Metals

Client: **Tetra Tech EM Inc.**

Laboratory ID: **MB16011-003**

Description: **SW-03-021511**

Matrix: **Aqueous**

Date Sampled: **02/15/2011 1357**

Date Received: **02/16/2011**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		7470A	1	02/16/2011 2157	KJC	02/16/2011 1815	52939
1	3005A	6010C	1	02/16/2011 2132	CDF	02/16/2011 1220	52899

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Arsenic	7440-38-2	6010C	0.012		0.010	0.0040	mg/L	1
Barium	7440-39-3	6010C	0.026		0.025	0.0075	mg/L	1
Cadmium	7440-43-9	6010C	ND		0.0020	0.00060	mg/L	1
Chromium	7440-47-3	6010C	0.0037	J	0.0050	0.0021	mg/L	1
Lead	7439-92-1	6010C	0.0093	J	0.010	0.0019	mg/L	1
Mercury	7439-97-6	7470A	ND		0.00010	0.000053	mg/L	1
Potassium	7440-09-7	6010C	26		5.0	1.1	mg/L	1
Selenium	7782-49-2	6010C	ND		0.010	0.0026	mg/L	1
Silver	7440-22-4	6010C	ND		0.0050	0.00040	mg/L	1
Zinc	7440-66-6	6010C	0.17		0.020	0.0045	mg/L	1

PQL = Practical quantitation limit

B = Detected in the method blank

E = Quantitation of compound exceeded the calibration range

ND = Not detected at or above the MDL

J = Estimated result < PQL and ≥ MDL

P = The RPD between two GC columns exceeds 40%

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

N = Recovery is out of criteria

H = Out of holding time

Inorganic non-metals

Client: **Tetra Tech EM Inc.**

Laboratory ID: **MB16011-004**

Description: **SW-03-021511DUP**

Matrix: **Aqueous**

Date Sampled: **02/15/2011 1357**

Date Received: **02/16/2011**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(COD) SM 5220D	1	02/17/2011 1040	SNM	02/16/2011 1500	
1		(Dissolved Ox) SM	1	02/16/2011 1445	MML		
1		(Hexavalent C) SM	1	02/16/2011 1237	HBB		52935
1		(Nitrate-Nitr) 353.2	2	02/16/2011 1426	SMH		52919
1		(pH) SM 4500-H B	1	02/17/2011 0036	PMM		52965
1		(Phosphorus) 365.1	20	02/17/2011 1608	HBB	02/16/2011 1348	52920
1	351.4	(TKN) 351.2	10	02/17/2011 1859	HBB	02/16/2011 1125	52902

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
COD		SM 5220D	46		10	5.7	mg/L	1
Dissolved Oxygen		SM 4500-O G	11.3	H	2.00		mg/L	1
Hexavalent Chromium	18540-29-9	SM 3500-Cr D	ND		0.010	0.0046	mg/L	1
Nitrate-Nitrite - N		353.2	3.8		0.040	0.0026	mg/L	1
pH		SM 4500-H B	6.24	H	0.000	0.000	su	1
Phosphorus	7723-14-0	365.1	5.1		0.20	0.096	mg/L	1
TKN		351.2	14		1.0	0.84	mg/L	1

PQL = Practical quantitation limit

B = Detected in the method blank

E = Quantitation of compound exceeded the calibration range

ND = Not detected at or above the MDL

J = Estimated result < PQL and ≥ MDL

P = The RPD between two GC columns exceeds 40%

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

N = Recovery is out of criteria

H = Out of holding time

TAL Metals

Client: **Tetra Tech EM Inc.**

Laboratory ID: **MB16011-004**

Description: **SW-03-021511DUP**

Matrix: **Aqueous**

Date Sampled: **02/15/2011 1357**

Date Received: **02/16/2011**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		7470A	1	02/16/2011 2200	KJC	02/16/2011 1815	52939
1	3005A	6010C	1	02/16/2011 2147	CDF	02/16/2011 1220	52899

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Arsenic	7440-38-2	6010C	0.0092	J	0.010	0.0040	mg/L	1
Barium	7440-39-3	6010C	0.023	J	0.025	0.0075	mg/L	1
Cadmium	7440-43-9	6010C	0.00096	J	0.0020	0.00060	mg/L	1
Chromium	7440-47-3	6010C	ND		0.0050	0.0021	mg/L	1
Lead	7439-92-1	6010C	ND		0.010	0.0019	mg/L	1
Mercury	7439-97-6	7470A	ND		0.00010	0.000053	mg/L	1
Potassium	7440-09-7	6010C	25		5.0	1.1	mg/L	1
Selenium	7782-49-2	6010C	ND		0.010	0.0026	mg/L	1
Silver	7440-22-4	6010C	ND		0.0050	0.00040	mg/L	1
Zinc	7440-66-6	6010C	0.13		0.020	0.0045	mg/L	1

PQL = Practical quantitation limit

B = Detected in the method blank

E = Quantitation of compound exceeded the calibration range

ND = Not detected at or above the MDL

J = Estimated result < PQL and ≥ MDL

P = The RPD between two GC columns exceeds 40%

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

N = Recovery is out of criteria

H = Out of holding time

Inorganic non-metals

Client: **Tetra Tech EM Inc.**

Laboratory ID: **MB16011-005**

Description: **SW-04-021511**

Matrix: **Aqueous**

Date Sampled: **02/15/2011 1345**

Date Received: **02/16/2011**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(COD) SM 5220D	1	02/17/2011 1040	SNM	02/16/2011 1500	
1		(Dissolved Ox) SM	1	02/16/2011 1445	MML		
1		(Hexavalent C) SM	1	02/16/2011 1237	HBB		52935
1		(Nitrate-Nitr) 353.2	5	02/16/2011 1427	SMH		52919
1		(pH) SM 4500-H B	1	02/17/2011 0036	PMM		52965
1		(Phosphorus) 365.1	20	02/17/2011 1608	HBB	02/16/2011 1348	52920
1	351.4	(TKN) 351.2	2	02/17/2011 1859	HBB	02/16/2011 1125	52902

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
COD		SM 5220D	31		10	5.7	mg/L	1
Dissolved Oxygen		SM 4500-O G	11.0	H	2.00		mg/L	1
Hexavalent Chromium	18540-29-9	SM 3500-Cr D	ND		0.010	0.0046	mg/L	1
Nitrate-Nitrite - N		353.2	5.4		0.10	0.0065	mg/L	1
pH		SM 4500-H B	5.71	H	0.000	0.000	su	1
Phosphorus	7723-14-0	365.1	6.2		0.20	0.096	mg/L	1
TKN		351.2	8.3		0.20	0.17	mg/L	1

PQL = Practical quantitation limit

B = Detected in the method blank

E = Quantitation of compound exceeded the calibration range

ND = Not detected at or above the MDL

J = Estimated result < PQL and ≥ MDL

P = The RPD between two GC columns exceeds 40%

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

N = Recovery is out of criteria

H = Out of holding time

TAL Metals

Client: **Tetra Tech EM Inc.**

Laboratory ID: **MB16011-005**

Description: **SW-04-021511**

Matrix: **Aqueous**

Date Sampled: **02/15/2011 1345**

Date Received: **02/16/2011**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		7470A	1	02/16/2011 2202	KJC	02/16/2011 1815	52939
1	3005A	6010C	1	02/16/2011 2151	CDF	02/16/2011 1220	52899

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Arsenic	7440-38-2	6010C	0.0041	J	0.010	0.0040	mg/L	1
Barium	7440-39-3	6010C	0.027		0.025	0.0075	mg/L	1
Cadmium	7440-43-9	6010C	0.00087	J	0.0020	0.00060	mg/L	1
Chromium	7440-47-3	6010C	0.0026	J	0.0050	0.0021	mg/L	1
Lead	7439-92-1	6010C	ND		0.010	0.0019	mg/L	1
Mercury	7439-97-6	7470A	ND		0.00010	0.000053	mg/L	1
Potassium	7440-09-7	6010C	15		5.0	1.1	mg/L	1
Selenium	7782-49-2	6010C	ND		0.010	0.0026	mg/L	1
Silver	7440-22-4	6010C	ND		0.0050	0.00040	mg/L	1
Zinc	7440-66-6	6010C	0.39		0.020	0.0045	mg/L	1

PQL = Practical quantitation limit

B = Detected in the method blank

E = Quantitation of compound exceeded the calibration range

ND = Not detected at or above the MDL

J = Estimated result < PQL and ≥ MDL

P = The RPD between two GC columns exceeds 40%

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

N = Recovery is out of criteria

H = Out of holding time

Inorganic non-metals

Client: **Tetra Tech EM Inc.**

Laboratory ID: **MB16011-006**

Description: **SW-05-021511**

Matrix: **Aqueous**

Date Sampled: **02/15/2011 1337**

Date Received: **02/16/2011**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(COD) SM 5220D	1	02/17/2011 1040	SNM	02/16/2011 1500	
1		(Dissolved Ox) SM	1	02/16/2011 1445	MML		
1		(Hexavalent C) SM	1	02/16/2011 1229	HBB		52935
1		(Nitrate-Nitr) 353.2	1	02/16/2011 1414	SMH		52919
1		(pH) SM 4500-H B	1	02/17/2011 0036	PMM		52965
1		(Phosphorus) 365.1	5	02/17/2011 1612	HBB	02/16/2011 1348	52920
1	351.4	(TKN) 351.2	1	02/17/2011 1825	HBB	02/16/2011 1125	52902

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
COD		SM 5220D	32		10	5.7	mg/L	1
Dissolved Oxygen		SM 4500-O G	11.1	H	2.00		mg/L	1
Hexavalent Chromium	18540-29-9	SM 3500-Cr D	ND		0.010	0.0046	mg/L	1
Nitrate-Nitrite - N		353.2	1.2		0.020	0.0013	mg/L	1
pH		SM 4500-H B	5.8	H	0.000	0.000	su	1
Phosphorus	7723-14-0	365.1	1.3		0.050	0.024	mg/L	1
TKN		351.2	3.9		0.10	0.084	mg/L	1

PQL = Practical quantitation limit

B = Detected in the method blank

E = Quantitation of compound exceeded the calibration range

ND = Not detected at or above the MDL

J = Estimated result < PQL and ≥ MDL

P = The RPD between two GC columns exceeds 40%

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

N = Recovery is out of criteria

H = Out of holding time

TAL Metals

Client: **Tetra Tech EM Inc.**

Laboratory ID: **MB16011-006**

Description: **SW-05-021511**

Matrix: **Aqueous**

Date Sampled: **02/15/2011 1337**

Date Received: **02/16/2011**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		7470A	1	02/16/2011 2204	KJC	02/16/2011 1815	52939
1	3005A	6010C	1	02/16/2011 2155	CDF	02/16/2011 1220	52899
2	3005A	6010C	1	02/17/2011 1254	CDF	02/16/2011 1220	52899

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Arsenic	7440-38-2	6010C	0.015		0.010	0.0040	mg/L	2
Barium	7440-39-3	6010C	0.035		0.025	0.0075	mg/L	1
Cadmium	7440-43-9	6010C	ND		0.0020	0.00060	mg/L	1
Chromium	7440-47-3	6010C	0.0031	J	0.0050	0.0021	mg/L	1
Lead	7439-92-1	6010C	0.0055	J	0.010	0.0019	mg/L	1
Mercury	7439-97-6	7470A	ND		0.00010	0.000053	mg/L	1
Potassium	7440-09-7	6010C	6.5		5.0	1.1	mg/L	1
Selenium	7782-49-2	6010C	ND		0.010	0.0026	mg/L	1
Silver	7440-22-4	6010C	0.00087	J	0.0050	0.00040	mg/L	1
Zinc	7440-66-6	6010C	0.27		0.020	0.0045	mg/L	1

PQL = Practical quantitation limit

B = Detected in the method blank

E = Quantitation of compound exceeded the calibration range

ND = Not detected at or above the MDL

J = Estimated result < PQL and ≥ MDL

P = The RPD between two GC columns exceeds 40%

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

N = Recovery is out of criteria

H = Out of holding time

Inorganic non-metals

Client: **Tetra Tech EM Inc.**

Laboratory ID: **MB16011-007**

Description: **SW-06-021511**

Matrix: **Aqueous**

Date Sampled: **02/15/2011 1322**

Date Received: **02/16/2011**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(COD) SM 5220D	1	02/17/2011 1040	SNM	02/16/2011 1500	
1		(Dissolved Ox) SM	1	02/16/2011 1445	MML		
1		(Hexavalent C) SM	1	02/16/2011 1229	HBB		52935
1		(Nitrate-Nitr) 353.2	1	02/16/2011 1415	SMH		52919
1		(pH) SM 4500-H B	1	02/17/2011 0036	PMM		52965
1		(Phosphorus) 365.1	1	02/17/2011 1633	HBB	02/16/2011 1348	52920
1	351.4	(TKN) 351.2	1	02/17/2011 1825	HBB	02/16/2011 1125	52902

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
COD		SM 5220D	19		10	5.7	mg/L	1
Dissolved Oxygen		SM 4500-O G	10.7	H	2.00		mg/L	1
Hexavalent Chromium	18540-29-9	SM 3500-Cr D	ND		0.010	0.0046	mg/L	1
Nitrate-Nitrite - N		353.2	0.92		0.020	0.0013	mg/L	1
pH		SM 4500-H B	5.51	H	0.000	0.000	su	1
Phosphorus	7723-14-0	365.1	0.21		0.010	0.0048	mg/L	1
TKN		351.2	0.65		0.10	0.084	mg/L	1

PQL = Practical quantitation limit

B = Detected in the method blank

E = Quantitation of compound exceeded the calibration range

ND = Not detected at or above the MDL

J = Estimated result < PQL and ≥ MDL

P = The RPD between two GC columns exceeds 40%

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

N = Recovery is out of criteria

H = Out of holding time

TAL Metals

Client: **Tetra Tech EM Inc.**

Laboratory ID: **MB16011-007**

Description: **SW-06-021511**

Matrix: **Aqueous**

Date Sampled: **02/15/2011 1322**

Date Received: **02/16/2011**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		7470A	1	02/16/2011 2208	KJC	02/16/2011 1815	52939
1	3005A	6010C	1	02/16/2011 2159	CDF	02/16/2011 1220	52899

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Arsenic	7440-38-2	6010C	ND		0.010	0.0040	mg/L	1
Barium	7440-39-3	6010C	0.015	J	0.025	0.0075	mg/L	1
Cadmium	7440-43-9	6010C	ND		0.0020	0.00060	mg/L	1
Chromium	7440-47-3	6010C	ND		0.0050	0.0021	mg/L	1
Lead	7439-92-1	6010C	ND		0.010	0.0019	mg/L	1
Mercury	7439-97-6	7470A	ND		0.00010	0.000053	mg/L	1
Potassium	7440-09-7	6010C	1.8	J	5.0	1.1	mg/L	1
Selenium	7782-49-2	6010C	ND		0.010	0.0026	mg/L	1
Silver	7440-22-4	6010C	ND		0.0050	0.00040	mg/L	1
Zinc	7440-66-6	6010C	0.0061	J	0.020	0.0045	mg/L	1

PQL = Practical quantitation limit

B = Detected in the method blank

E = Quantitation of compound exceeded the calibration range

ND = Not detected at or above the MDL

J = Estimated result < PQL and ≥ MDL

P = The RPD between two GC columns exceeds 40%

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

N = Recovery is out of criteria

H = Out of holding time

Inorganic non-metals

Client: **Tetra Tech EM Inc.**

Laboratory ID: **MB16011-008**

Description: **SW-07-021511**

Matrix: **Aqueous**

Date Sampled: **02/15/2011 1242**

Date Received: **02/16/2011**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(COD) SM 5220D	1	02/17/2011 1040	SNM	02/16/2011 1500	
1		(Dissolved Ox) SM	1	02/16/2011 1445	MML		
1		(Hexavalent C) SM	1	02/16/2011 1229	HBB		52935
1		(Nitrate-Nitr) 353.2	1	02/16/2011 1429	SMH		52919
1		(pH) SM 4500-H B	1	02/17/2011 0036	PMM		52965
1		(Phosphorus) 365.1	1	02/17/2011 1633	HBB	02/16/2011 1348	52920
1	351.4	(TKN) 351.2	1	02/17/2011 1825	HBB	02/16/2011 1125	52902

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
COD		SM 5220D	24		10	5.7	mg/L	1
Dissolved Oxygen		SM 4500-O G	10.5	H	2.00		mg/L	1
Hexavalent Chromium	18540-29-9	SM 3500-Cr D	ND		0.010	0.0046	mg/L	1
Nitrate-Nitrite - N		353.2	0.50		0.020	0.0013	mg/L	1
pH		SM 4500-H B	5.48	H	0.000	0.000	su	1
Phosphorus	7723-14-0	365.1	0.16		0.010	0.0048	mg/L	1
TKN		351.2	0.15		0.10	0.084	mg/L	1

PQL = Practical quantitation limit

B = Detected in the method blank

E = Quantitation of compound exceeded the calibration range

ND = Not detected at or above the MDL

J = Estimated result < PQL and ≥ MDL

P = The RPD between two GC columns exceeds 40%

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

N = Recovery is out of criteria

H = Out of holding time

TAL Metals

Client: **Tetra Tech EM Inc.**

Laboratory ID: **MB16011-008**

Description: **SW-07-021511**

Matrix: **Aqueous**

Date Sampled: **02/15/2011 1242**

Date Received: **02/16/2011**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		7470A	1	02/16/2011 2215	KJC	02/16/2011 1815	52939
1	3005A	6010C	1	02/16/2011 2202	CDF	02/16/2011 1220	52899

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Arsenic	7440-38-2	6010C	0.0048	J	0.010	0.0040	mg/L	1
Barium	7440-39-3	6010C	0.015	J	0.025	0.0075	mg/L	1
Cadmium	7440-43-9	6010C	ND		0.0020	0.00060	mg/L	1
Chromium	7440-47-3	6010C	ND		0.0050	0.0021	mg/L	1
Lead	7439-92-1	6010C	ND		0.010	0.0019	mg/L	1
Mercury	7439-97-6	7470A	ND		0.00010	0.000053	mg/L	1
Potassium	7440-09-7	6010C	ND		5.0	1.1	mg/L	1
Selenium	7782-49-2	6010C	ND		0.010	0.0026	mg/L	1
Silver	7440-22-4	6010C	ND		0.0050	0.00040	mg/L	1
Zinc	7440-66-6	6010C	ND		0.020	0.0045	mg/L	1

PQL = Practical quantitation limit

B = Detected in the method blank

E = Quantitation of compound exceeded the calibration range

ND = Not detected at or above the MDL

J = Estimated result < PQL and ≥ MDL

P = The RPD between two GC columns exceeds 40%

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

N = Recovery is out of criteria

H = Out of holding time

Shealy Environmental Services, Inc.

106 Vantage Point Drive West Columbia, SC 29172 (803) 791-9700 Fax (803) 791-9111 www.shealylab.com

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Level 1 Report v2.1

Inorganic non-metals

Client: **Tetra Tech EM Inc.**

Laboratory ID: **MB16011-009**

Description: **SW-08-021511**

Matrix: **Aqueous**

Date Sampled: **02/15/2011 1315**

Date Received: **02/16/2011**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(COD) SM 5220D	1	02/17/2011 1040	SNM	02/16/2011 1500	
1		(Dissolved Ox) SM	1	02/16/2011 1445	MML		
1		(Hexavalent C) SM	1	02/16/2011 1229	HBB		52935
1		(Nitrate-Nitr) 353.2	1	02/16/2011 1430	SMH		52919
1		(pH) SM 4500-H B	1	02/17/2011 0036	PMM		52965
1		(Phosphorus) 365.1	1	02/17/2011 1631	HBB	02/16/2011 1348	52920
1	351.4	(TKN) 351.2	1	02/17/2011 1825	HBB	02/16/2011 1125	52902

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
COD		SM 5220D	17		10	5.7	mg/L	1
Dissolved Oxygen		SM 4500-O G	11.0	H	2.00		mg/L	1
Hexavalent Chromium	18540-29-9	SM 3500-Cr D	ND		0.010	0.0046	mg/L	1
Nitrate-Nitrite - N		353.2	0.91		0.020	0.0013	mg/L	1
pH		SM 4500-H B	5.1	H	0.000	0.000	su	1
Phosphorus	7723-14-0	365.1	0.047		0.010	0.0048	mg/L	1
TKN		351.2	0.25		0.10	0.084	mg/L	1

PQL = Practical quantitation limit

B = Detected in the method blank

E = Quantitation of compound exceeded the calibration range

ND = Not detected at or above the MDL

J = Estimated result < PQL and ≥ MDL

P = The RPD between two GC columns exceeds 40%

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

N = Recovery is out of criteria

H = Out of holding time

TAL Metals

Client: **Tetra Tech EM Inc.**

Laboratory ID: **MB16011-009**

Description: **SW-08-021511**

Matrix: **Aqueous**

Date Sampled: **02/15/2011 1315**

Date Received: **02/16/2011**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		7470A	1	02/16/2011 2225	KJC	02/16/2011 1815	52939
1	3005A	6010C	1	02/16/2011 2218	CDF	02/16/2011 1220	52899

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Arsenic	7440-38-2	6010C	0.0044	J	0.010	0.0040	mg/L	1
Barium	7440-39-3	6010C	0.015	J	0.025	0.0075	mg/L	1
Cadmium	7440-43-9	6010C	ND		0.0020	0.00060	mg/L	1
Chromium	7440-47-3	6010C	ND		0.0050	0.0021	mg/L	1
Lead	7439-92-1	6010C	0.0026	J	0.010	0.0019	mg/L	1
Mercury	7439-97-6	7470A	ND		0.00010	0.000053	mg/L	1
Potassium	7440-09-7	6010C	1.2	J	5.0	1.1	mg/L	1
Selenium	7782-49-2	6010C	ND		0.010	0.0026	mg/L	1
Silver	7440-22-4	6010C	ND		0.0050	0.00040	mg/L	1
Zinc	7440-66-6	6010C	0.011	J	0.020	0.0045	mg/L	1

PQL = Practical quantitation limit

B = Detected in the method blank

E = Quantitation of compound exceeded the calibration range

ND = Not detected at or above the MDL

J = Estimated result < PQL and ≥ MDL

P = The RPD between two GC columns exceeds 40%

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

N = Recovery is out of criteria

H = Out of holding time

Inorganic non-metals

Client: **Tetra Tech EM Inc.**

Laboratory ID: **MB16011-010**

Description: **SW-09-021511**

Matrix: **Aqueous**

Date Sampled: **02/15/2011 1219**

Date Received: **02/16/2011**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(COD) SM 5220D	1	02/17/2011 1040	SNM	02/16/2011 1500	
1		(Dissolved Ox) SM	1	02/16/2011 1445	MML		
1		(Hexavalent C) SM	1	02/16/2011 1229	HBB		52935
1		(Nitrate-Nitr) 353.2	1	02/16/2011 1431	SMH		52919
1		(pH) SM 4500-H B	1	02/17/2011 0036	PMM		52965
1		(Phosphorus) 365.1	1	02/17/2011 1631	HBB	02/16/2011 1348	52920
1	351.4	(TKN) 351.2	1	02/17/2011 1825	HBB	02/16/2011 1125	52902

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
COD		SM 5220D	19		10	5.7	mg/L	1
Dissolved Oxygen		SM 4500-O G	10.8	H	2.00		mg/L	1
Hexavalent Chromium	18540-29-9	SM 3500-Cr D	ND	H	0.010	0.0046	mg/L	1
Nitrate-Nitrite - N		353.2	1.1		0.020	0.0013	mg/L	1
pH		SM 4500-H B	5.5	H	0.000	0.000	su	1
Phosphorus	7723-14-0	365.1	0.31		0.010	0.0048	mg/L	1
TKN		351.2	0.71		0.10	0.084	mg/L	1

PQL = Practical quantitation limit

B = Detected in the method blank

E = Quantitation of compound exceeded the calibration range

ND = Not detected at or above the MDL

J = Estimated result < PQL and ≥ MDL

P = The RPD between two GC columns exceeds 40%

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

N = Recovery is out of criteria

H = Out of holding time

TAL Metals

Client: **Tetra Tech EM Inc.**

Laboratory ID: **MB16011-010**

Description: **SW-09-021511**

Matrix: **Aqueous**

Date Sampled: **02/15/2011 1219**

Date Received: **02/16/2011**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		7470A	1	02/16/2011 2230	KJC	02/16/2011 1815	52939
1	3005A	6010C	1	02/16/2011 2229	CDF	02/16/2011 1220	52899

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Arsenic	7440-38-2	6010C	ND		0.010	0.0040	mg/L	1
Barium	7440-39-3	6010C	0.015	J	0.025	0.0075	mg/L	1
Cadmium	7440-43-9	6010C	ND		0.0020	0.00060	mg/L	1
Chromium	7440-47-3	6010C	ND		0.0050	0.0021	mg/L	1
Lead	7439-92-1	6010C	ND		0.010	0.0019	mg/L	1
Mercury	7439-97-6	7470A	ND		0.00010	0.000053	mg/L	1
Potassium	7440-09-7	6010C	2.4	J	5.0	1.1	mg/L	1
Selenium	7782-49-2	6010C	ND		0.010	0.0026	mg/L	1
Silver	7440-22-4	6010C	ND		0.0050	0.00040	mg/L	1
Zinc	7440-66-6	6010C	0.0090	J	0.020	0.0045	mg/L	1

PQL = Practical quantitation limit

B = Detected in the method blank

E = Quantitation of compound exceeded the calibration range

ND = Not detected at or above the MDL

J = Estimated result < PQL and ≥ MDL

P = The RPD between two GC columns exceeds 40%

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

N = Recovery is out of criteria

H = Out of holding time

Inorganic non-metals

Client: **Tetra Tech EM Inc.**

Laboratory ID: **MB16011-011**

Description: **SW-10-021511**

Matrix: **Aqueous**

Date Sampled: **02/15/2011 1515**

Date Received: **02/16/2011**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(COD) SM 5220D	1	02/17/2011 1015	SNM	02/16/2011 1500	
1		(Dissolved Ox) SM	1	02/16/2011 1445	MML		
1		(Hexavalent C) SM	1	02/16/2011 1237	HBB		52935
1		(Nitrate-Nitr) 353.2	1000	02/16/2011 1500	SMH		52919
1		(pH) SM 4500-H B	1	02/17/2011 0036	PMM		52965
1		(Phosphorus) 365.1	2500	02/17/2011 1612	HBB	02/16/2011 1348	52920
1	351.4	(TKN) 351.2	500	02/17/2011 1926	HBB	02/16/2011 1125	52902

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
COD		SM 5220D	960		10	5.7	mg/L	1
Dissolved Oxygen		SM 4500-O G	10.5		2.00		mg/L	1
Hexavalent Chromium	18540-29-9	SM 3500-Cr D	0.055		0.010	0.0046	mg/L	1
Nitrate-Nitrite - N		353.2	1100		20	1.3	mg/L	1
pH		SM 4500-H B	6.28	H	0.000	0.000	su	1
Phosphorus	7723-14-0	365.1	770		25	12	mg/L	1
TKN		351.2	960		50	42	mg/L	1

PQL = Practical quantitation limit

B = Detected in the method blank

E = Quantitation of compound exceeded the calibration range

ND = Not detected at or above the MDL

J = Estimated result < PQL and ≥ MDL

P = The RPD between two GC columns exceeds 40%

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

N = Recovery is out of criteria

H = Out of holding time

TAL Metals

Client: **Tetra Tech EM Inc.**

Laboratory ID: **MB16011-011**

Description: **SW-10-021511**

Matrix: **Aqueous**

Date Sampled: **02/15/2011 1515**

Date Received: **02/16/2011**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		7470A	1	02/16/2011 2232	KJC	02/16/2011 1815	52939
1	3005A	6010C	1	02/16/2011 2233	CDF	02/16/2011 1220	52899
2	3005A	6010C	50	02/17/2011 1302	CDF	02/16/2011 1220	52899

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Arsenic	7440-38-2	6010C	0.20		0.010	0.0040	mg/L	1
Barium	7440-39-3	6010C	0.084		0.025	0.0075	mg/L	1
Cadmium	7440-43-9	6010C	0.019		0.0020	0.00060	mg/L	1
Chromium	7440-47-3	6010C	0.12		0.0050	0.0021	mg/L	1
Lead	7439-92-1	6010C	0.047		0.010	0.0019	mg/L	1
Mercury	7439-97-6	7470A	ND		0.00010	0.000053	mg/L	1
Potassium	7440-09-7	6010C	9000		250	55	mg/L	2
Selenium	7782-49-2	6010C	0.0030	J	0.010	0.0026	mg/L	1
Silver	7440-22-4	6010C	ND		0.0050	0.00040	mg/L	1
Zinc	7440-66-6	6010C	1.7		0.020	0.0045	mg/L	1

PQL = Practical quantitation limit

B = Detected in the method blank

E = Quantitation of compound exceeded the calibration range

ND = Not detected at or above the MDL

J = Estimated result < PQL and ≥ MDL

P = The RPD between two GC columns exceeds 40%

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

N = Recovery is out of criteria

H = Out of holding time

QC Summary

Inorganic non-metals - MB

Sample ID: MQ52902-001

Matrix: Aqueous

Batch: 52902

Prep Method: 351.4

Analytical Method: 351.2

Prep Date: 02/16/2011 1125

Parameter	Result	Q	Dil	PQL	MDL	Units	Analysis Date
TKN	ND		1	0.10	0.084	mg/L	02/17/2011 1825

PQL = Practical quantitation limit

P = The RPD between two GC columns exceeds 40%

N - Recovery is out of criteria

ND = Not detected at or above the MDL

J = Estimated result < PQL and \geq MDL

+ - RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Inorganic non-metals - LCS

Sample ID: MQ52902-002

Matrix: Aqueous

Batch: 52902

Prep Method: 351.4

Analytical Method: 351.2

Prep Date: 02/16/2011 1125

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
TKN	2.0	2.1		1	103	90-110	02/17/2011 1825

PQL = Practical quantitation limit

P = The RPD between two GC columns exceeds 40%

N - Recovery is out of criteria

ND = Not detected at or above the MDL

J = Estimated result < PQL and \geq MDL

+ - RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Inorganic non-metals - LCSD

Sample ID: MQ52902-003

Matrix: Aqueous

Batch: 52902

Prep Method: 351.4

Analytical Method: 351.2

Prep Date: 02/16/2011 1125

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
TKN	2.0	1.9		1	97	6.1	90-110	20	02/17/2011 1825

PQL = Practical quantitation limit

P = The RPD between two GC columns exceeds 40%

N - Recovery is out of criteria

ND = Not detected at or above the MDL

J = Estimated result < PQL and \geq MDL

+ - RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Inorganic non-metals - MB

Sample ID: MQ52919-001

Matrix: Aqueous

Batch: 52919

Analytical Method: 353.2

Parameter	Result	Q	Dil	PQL	MDL	Units	Analysis Date
Nitrate-Nitrite - N	ND		1	0.020	0.0013	mg/L	02/16/2011 1405

PQL = Practical quantitation limit

P = The RPD between two GC columns exceeds 40%

N - Recovery is out of criteria

ND = Not detected at or above the MDL

J = Estimated result < PQL and \geq MDL

+ - RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Inorganic non-metals - LCS

Sample ID: MQ52919-002

Matrix: Aqueous

Batch: 52919

Analytical Method: 353.2

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Nitrate-Nitrite - N	0.80	0.86		1	108	90-110	02/16/2011 1406

PQL = Practical quantitation limit

P = The RPD between two GC columns exceeds 40%

N - Recovery is out of criteria

ND = Not detected at or above the MDL

J = Estimated result < PQL and \geq MDL

+ - RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Inorganic non-metals - LCSD

Sample ID: MQ52919-003

Matrix: Aqueous

Batch: 52919

Analytical Method: 353.2

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
Nitrate-Nitrite - N	0.80	0.85		1	106	1.4	90-110	20	02/16/2011 1408

PQL = Practical quantitation limit

P = The RPD between two GC columns exceeds 40%

N - Recovery is out of criteria

ND = Not detected at or above the MDL

J = Estimated result < PQL and \geq MDL

+ - RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Inorganic non-metals - MB

Sample ID: MQ52920-001

Batch: 52920

Analytical Method: 365.1

Matrix: Aqueous

Prep Method: 365.1

Prep Date: 02/16/2011 1348

Parameter	Result	Q	Dil	PQL	MDL	Units	Analysis Date
Phosphorus	ND		1	0.010	0.0048	mg/L	02/17/2011 1309

PQL = Practical quantitation limit

P = The RPD between two GC columns exceeds 40%

N - Recovery is out of criteria

ND = Not detected at or above the MDL

J = Estimated result < PQL and \geq MDL

+ - RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Inorganic non-metals - LCS

Sample ID: MQ52920-002

Matrix: Aqueous

Batch: 52920

Prep Method: 365.1

Analytical Method: 365.1

Prep Date: 02/16/2011 1348

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Phosphorus	0.25	0.25		1	99	90-110	02/17/2011 1631

PQL = Practical quantitation limit

P = The RPD between two GC columns exceeds 40%

N - Recovery is out of criteria

ND = Not detected at or above the MDL

J = Estimated result < PQL and \geq MDL

+ - RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Inorganic non-metals - LCSD

Sample ID: MQ52920-003

Matrix: Aqueous

Batch: 52920

Prep Method: 365.1

Analytical Method: 365.1

Prep Date: 02/16/2011 1348

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
Phosphorus	0.25	0.27		1	107	7.8	90-110	20	02/17/2011 1546

PQL = Practical quantitation limit

P = The RPD between two GC columns exceeds 40%

N - Recovery is out of criteria

ND = Not detected at or above the MDL

J = Estimated result < PQL and \geq MDL

+ - RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Inorganic non-metals - MB

Sample ID: MQ52935-001

Matrix: Aqueous

Batch: 52935

Analytical Method: SM 3500-Cr D

Parameter	Result	Q	Dil	PQL	MDL	Units	Analysis Date
Hexavalent Chromium	ND		1	0.010	0.0046	mg/L	02/16/2011 1229

PQL = Practical quantitation limit

P = The RPD between two GC columns exceeds 40%

N - Recovery is out of criteria

ND = Not detected at or above the MDL

J = Estimated result < PQL and \geq MDL

+ - RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Inorganic non-metals - LCS

Sample ID: MQ52935-002

Matrix: Aqueous

Batch: 52935

Analytical Method: SM 3500-Cr D

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Hexavalent Chromium	0.10	0.10		1	101	90-110	02/16/2011 1229

PQL = Practical quantitation limit

P = The RPD between two GC columns exceeds 40%

N - Recovery is out of criteria

ND = Not detected at or above the MDL

J = Estimated result < PQL and \geq MDL

+ - RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Inorganic non-metals - LCSD

Sample ID: MQ52935-003

Matrix: Aqueous

Batch: 52935

Analytical Method: SM 3500-Cr D

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
Hexavalent Chromium	0.10	0.10		1	100	0.17	90-110	20	02/16/2011 1229

PQL = Practical quantitation limit

P = The RPD between two GC columns exceeds 40%

N - Recovery is out of criteria

ND = Not detected at or above the MDL

J = Estimated result < PQL and \geq MDL

+ - RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Inorganic non-metals - MS

Sample ID: MB16011-002MS

Matrix: Aqueous

Batch: 52935

Analytical Method: SM 3500-Cr D

Parameter	Sample Amount (mg/L)	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Hexavalent Chromium	ND	0.10	0.074		1	74	70-130	02/16/2011 1238

PQL = Practical quantitation limit

P = The RPD between two GC columns exceeds 40%

N - Recovery is out of criteria

ND = Not detected at or above the MDL

J = Estimated result < PQL and \geq MDL

+ - RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Inorganic non-metals - MSD

Sample ID: MB16011-002MD

Matrix: Aqueous

Batch: 52935

Analytical Method: SM 3500-Cr D

Parameter	Sample Amount (mg/L)	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
Hexavalent Chromium	ND	0.10	0.059	N,+	1	59	24	70-130	20	02/16/2011 1238

PQL = Practical quantitation limit

P = The RPD between two GC columns exceeds 40%

N - Recovery is out of criteria

ND = Not detected at or above the MDL

J = Estimated result < PQL and \geq MDL

+ - RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Inorganic non-metals - MS

Sample ID: MB16011-005MS

Matrix: Aqueous

Batch: 52935

Analytical Method: SM 3500-Cr D

Parameter	Sample Amount (mg/L)	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Hexavalent Chromium	ND	0.10	0.086		1	86	70-130	02/16/2011 1237

PQL = Practical quantitation limit

P = The RPD between two GC columns exceeds 40%

N - Recovery is out of criteria

ND = Not detected at or above the MDL

J = Estimated result < PQL and \geq MDL

+ - RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Inorganic non-metals - MSD

Sample ID: MB16011-005MD

Matrix: Aqueous

Batch: 52935

Analytical Method: SM 3500-Cr D

Parameter	Sample Amount (mg/L)	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
Hexavalent Chromium	ND	0.10	0.088		1	88	2.5	70-130	20	02/16/2011 1237

PQL = Practical quantitation limit

P = The RPD between two GC columns exceeds 40%

N - Recovery is out of criteria

ND = Not detected at or above the MDL

J = Estimated result < PQL and \geq MDL

+ - RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Inorganic non-metals - MB

Sample ID: MQ52965-001

Matrix: Aqueous

Batch: 52965

Analytical Method: SM 4500-H B

Parameter	Result	Q	Dil	PQL	MDL	Units	Analysis Date
pH	6.07		1	0.000	0.000	su	02/17/2011 0036

PQL = Practical quantitation limit

P = The RPD between two GC columns exceeds 40%

N - Recovery is out of criteria

ND = Not detected at or above the MDL

J = Estimated result < PQL and \geq MDL

+ - RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Inorganic non-metals - Duplicate

Sample ID: MB16011-010DU

Matrix: Aqueous

Batch: 52965

Analytical Method: SM 4500-H B

Parameter	Sample Amount (su)	Result	Q	Dil	% RPD	% RPD Limit	Analysis Date
pH	5.5	5.5		1	0.00	20	02/17/2011 0036

PQL = Practical quantitation limit

P = The RPD between two GC columns exceeds 40%

N - Recovery is out of criteria

ND = Not detected at or above the MDL

J = Estimated result < PQL and \geq MDL

+ - RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

TAL Metals - MB

Sample ID: MQ52899-001

Batch: 52899

Analytical Method: 6010C

Matrix: Aqueous

Prep Method: 3005A

Prep Date: 02/16/2011 1220

Parameter	Result	Q	Dil	PQL	MDL	Units	Analysis Date
Arsenic	ND		1	0.010	0.0040	mg/L	02/16/2011 2113
Barium	ND		1	0.025	0.0075	mg/L	02/16/2011 2113
Cadmium	ND		1	0.0020	0.00060	mg/L	02/16/2011 2113
Chromium	ND		1	0.0050	0.0021	mg/L	02/16/2011 2113
Lead	ND		1	0.010	0.0019	mg/L	02/16/2011 2113
Potassium	ND		1	5.0	1.1	mg/L	02/16/2011 2113
Selenium	ND		1	0.010	0.0026	mg/L	02/16/2011 2113
Silver	ND		1	0.0050	0.00040	mg/L	02/16/2011 2113
Zinc	ND		1	0.020	0.0045	mg/L	02/16/2011 2113

PQL = Practical quantitation limit

P = The RPD between two GC columns exceeds 40%

N - Recovery is out of criteria

ND = Not detected at or above the MDL

J = Estimated result < PQL and \geq MDL

+ - RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

TAL Metals - LCS

Sample ID: MQ52899-002

Matrix: Aqueous

Batch: 52899

Prep Method: 3005A

Analytical Method: 6010C

Prep Date: 02/16/2011 1220

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Arsenic	0.40	0.40		1	99	80-120	02/16/2011 2117
Barium	2.0	1.9		1	95	80-120	02/16/2011 2117
Cadmium	0.40	0.37		1	92	80-120	02/16/2011 2117
Chromium	2.0	1.8		1	92	80-120	02/16/2011 2117
Lead	0.40	0.38		1	94	80-120	02/16/2011 2117
Potassium	40	38		1	96	80-120	02/16/2011 2117
Selenium	0.40	0.39		1	97	80-120	02/16/2011 2117
Silver	0.40	0.37		1	94	80-120	02/16/2011 2117
Zinc	2.0	1.9		1	95	80-120	02/16/2011 2117

PQL = Practical quantitation limit

P = The RPD between two GC columns exceeds 40%

N - Recovery is out of criteria

ND = Not detected at or above the MDL

J = Estimated result < PQL and \geq MDL

+ - RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

TAL Metals - LCSD

Sample ID: MQ52899-003

Matrix: Aqueous

Batch: 52899

Prep Method: 3005A

Analytical Method: 6010C

Prep Date: 02/16/2011 1220

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
Arsenic	0.40	0.42		1	104	5.1	80-120	20	02/16/2011 2121
Barium	2.0	2.0		1	99	4.4	80-120	20	02/16/2011 2121
Cadmium	0.40	0.39		1	97	5.4	80-120	20	02/16/2011 2121
Chromium	2.0	1.9		1	97	5.5	80-120	20	02/16/2011 2121
Lead	0.40	0.38		1	95	0.94	80-120	20	02/16/2011 2121
Potassium	40	41		1	101	5.7	80-120	20	02/16/2011 2121
Selenium	0.40	0.41		1	102	5.3	80-120	20	02/16/2011 2121
Silver	0.40	0.39		1	99	5.4	80-120	20	02/16/2011 2121
Zinc	2.0	2.0		1	100	5.5	80-120	20	02/16/2011 2121

PQL = Practical quantitation limit

P = The RPD between two GC columns exceeds 40%

N - Recovery is out of criteria

ND = Not detected at or above the MDL

J = Estimated result < PQL and \geq MDL

+ - RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

TAL Metals - MS

Sample ID: MB16011-003MS

Matrix: Aqueous

Batch: 52899

Prep Method: 3005A

Analytical Method: 6010C

Prep Date: 02/16/2011 1220

Parameter	Sample Amount (mg/L)	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Arsenic	0.012	0.40	0.39		1	94	75-125	02/16/2011 2144
Barium	0.026	2.0	1.9		1	94	75-125	02/16/2011 2144
Cadmium	ND	0.40	0.37		1	92	75-125	02/16/2011 2144
Chromium	0.0037	2.0	1.9		1	93	75-125	02/16/2011 2144
Lead	0.0093	0.40	0.38		1	92	75-125	02/16/2011 2144
Potassium	26	40	62		1	90	75-125	02/16/2011 2144
Selenium	ND	0.40	0.38		1	95	75-125	02/16/2011 2144
Silver	ND	0.40	0.38		1	94	75-125	02/16/2011 2144
Zinc	0.17	2.0	2.1		1	94	75-125	02/16/2011 2144

PQL = Practical quantitation limit

P = The RPD between two GC columns exceeds 40%

N - Recovery is out of criteria

ND = Not detected at or above the MDL

J = Estimated result < PQL and \geq MDL

+ - RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

TAL Metals - MS

Sample ID: MB16011-008MS

Matrix: Aqueous

Batch: 52899

Prep Method: 3005A

Analytical Method: 6010C

Prep Date: 02/16/2011 1220

Parameter	Sample Amount (mg/L)	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Arsenic	0.0048	0.40	0.41		1	100	75-125	02/16/2011 2206
Barium	0.015	2.0	2.0		1	98	75-125	02/16/2011 2206
Cadmium	ND	0.40	0.38		1	96	75-125	02/16/2011 2206
Chromium	ND	2.0	1.9		1	95	75-125	02/16/2011 2206
Lead	ND	0.40	0.39		1	97	75-125	02/16/2011 2206
Potassium	ND	40	40		1	99	75-125	02/16/2011 2206
Selenium	ND	0.40	0.41		1	102	75-125	02/16/2011 2206
Silver	ND	0.40	0.39		1	97	75-125	02/16/2011 2206
Zinc	ND	2.0	2.0		1	99	75-125	02/16/2011 2206

PQL = Practical quantitation limit

P = The RPD between two GC columns exceeds 40%

N - Recovery is out of criteria

ND = Not detected at or above the MDL

J = Estimated result < PQL and \geq MDL

+ - RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

TAL Metals - MSD

Sample ID: MB16011-008MD

Matrix: Aqueous

Batch: 52899

Prep Method: 3005A

Analytical Method: 6010C

Prep Date: 02/16/2011 1220

Parameter	Sample Amount (mg/L)	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
Arsenic	0.0048	0.40	0.40		1	99	1.1	75-125	20	02/16/2011 2210
Barium	0.015	2.0	2.0		1	98	0.46	75-125	20	02/16/2011 2210
Cadmium	ND	0.40	0.38		1	95	0.80	75-125	20	02/16/2011 2210
Chromium	ND	2.0	1.9		1	95	0.53	75-125	20	02/16/2011 2210
Lead	ND	0.40	0.39		1	98	0.51	75-125	20	02/16/2011 2210
Potassium	ND	40	40		1	101	1.4	75-125	20	02/16/2011 2210
Selenium	ND	0.40	0.40		1	99	3.5	75-125	20	02/16/2011 2210
Silver	ND	0.40	0.38		1	96	0.31	75-125	20	02/16/2011 2210
Zinc	ND	2.0	2.0		1	98	1.2	75-125	20	02/16/2011 2210

PQL = Practical quantitation limit

P = The RPD between two GC columns exceeds 40%

N - Recovery is out of criteria

ND = Not detected at or above the MDL

J = Estimated result < PQL and \geq MDL

+ - RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

TAL Metals - MB

Sample ID: MQ52939-001

Batch: 52939

Analytical Method: 7470A

Matrix: Aqueous

Prep Method: 7470A

Prep Date: 02/16/2011 1815

Parameter	Result	Q	Dil	PQL	MDL	Units	Analysis Date
Mercury	ND		1	0.00010	0.000053	mg/L	02/16/2011 2145

PQL = Practical quantitation limit

P = The RPD between two GC columns exceeds 40%

N - Recovery is out of criteria

ND = Not detected at or above the MDL

J = Estimated result < PQL and \geq MDL

+ - RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

TAL Metals - LCS

Sample ID: MQ52939-002

Matrix: Aqueous

Batch: 52939

Prep Method: 7470A

Analytical Method: 7470A

Prep Date: 02/16/2011 1815

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Mercury	0.0020	0.0020		1	98	85-115	02/16/2011 2148

PQL = Practical quantitation limit

P = The RPD between two GC columns exceeds 40%

N - Recovery is out of criteria

ND = Not detected at or above the MDL

J = Estimated result < PQL and \geq MDL

+ - RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

TAL Metals - LCSD

Sample ID: MQ52939-003

Batch: 52939

Analytical Method: 7470A

Matrix: Aqueous

Prep Method: 7470A

Prep Date: 02/16/2011 1815

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
Mercury	0.0020	0.0018		1	90	9.1	85-115	20	02/16/2011 2150

PQL = Practical quantitation limit

P = The RPD between two GC columns exceeds 40%

N - Recovery is out of criteria

ND = Not detected at or above the MDL

J = Estimated result < PQL and \geq MDL

+ - RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

TAL Metals - MS

Sample ID: MB16011-008MS

Matrix: Aqueous

Batch: 52939

Prep Method: 7470A

Analytical Method: 7470A

Prep Date: 02/16/2011 1815

Parameter	Sample Amount (mg/L)	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Mercury	ND	0.0020	0.0020		1	100	85-115	02/16/2011 2217

PQL = Practical quantitation limit

P = The RPD between two GC columns exceeds 40%

N - Recovery is out of criteria

ND = Not detected at or above the MDL

J = Estimated result < PQL and \geq MDL

+ - RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

TAL Metals - MSD

Sample ID: MB16011-008MD

Matrix: Aqueous

Batch: 52939

Prep Method: 7470A

Analytical Method: 7470A

Prep Date: 02/16/2011 1815

Parameter	Sample Amount (mg/L)	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
Mercury	ND	0.0020	0.0020		1	98	2.0	85-115	20	02/16/2011 2220

PQL = Practical quantitation limit

P = The RPD between two GC columns exceeds 40%

N - Recovery is out of criteria

ND = Not detected at or above the MDL

J = Estimated result < PQL and \geq MDL

+ - RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

TAL Metals - MS

Sample ID: MB16011-009MS

Matrix: Aqueous

Batch: 52939

Prep Method: 7470A

Analytical Method: 7470A

Prep Date: 02/16/2011 1815

Parameter	Sample Amount (mg/L)	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Mercury	ND	0.0020	0.0020		1	100	85-115	02/16/2011 2227

PQL = Practical quantitation limit

P = The RPD between two GC columns exceeds 40%

N - Recovery is out of criteria

ND = Not detected at or above the MDL

J = Estimated result < PQL and \geq MDL

+ - RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

SHEALY ENVIRONMENTAL SERVICES, INC.

Shealy Environmental Services, Inc.
 Document Number: F-AD-016
 Revision Number: 6

Page 1 of 1
 Replaces Date: 06/22/06
 Effective Date: 05/29/07

Sample Receipt Checklist (SRC)

Client: Tetra Tech Cooler Inspected by/date: CC 7/16/11 Lot #: MB 16012
MB 16011

Means of receipt: <input type="checkbox"/> SESI <input type="checkbox"/> Client <input type="checkbox"/> UPS <input checked="" type="checkbox"/> FedEx <input type="checkbox"/> Airborne Exp <input type="checkbox"/> Other		
Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>	1. Were custody seals present on the cooler?	
Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>	2. If custody seals were present, were they intact and unbroken?	
Cooler ID/temperature upon receipt <u>1-0</u> °C <u>1-8</u> °C <u>/</u> °C <u>/</u> °C <u>1-4</u> °C <u>/</u> °C <u>/</u> °C <u>/</u> °C		
Method: <input type="checkbox"/> Temperature Blank <input checked="" type="checkbox"/> Against Bottles		
Method of coolant: <input checked="" type="checkbox"/> Wet Ice <input type="checkbox"/> Blue Ice <input type="checkbox"/> Dry Ice <input type="checkbox"/> None		
If response is No (or Yes for 14, 15, 16), an explanation/resolution must be provided.		
Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input checked="" type="checkbox"/>	3. If temperature of any cooler exceeded 6.0°C, was Project Manager notified? PM notified by SRC, phone, note (circle one), other: _____ (For coolers received via commercial courier, PMs are to be notified immediately.)	
Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>	4. Is the commercial courier's packing slip attached to this form?	
Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA <input type="checkbox"/>	5. Were proper custody procedures (relinquished/received) followed?	
Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>	6. Were sample IDs listed?	
Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>	7. Was collection date & time listed?	
Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>	8. Were tests to be performed listed on the COC or was quote # provided?	
Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>	9. Did all samples arrive in the proper containers for each test?	
Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>	10. Did all container label information (ID, date, time) agree with COC?	
Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>	11. Did all containers arrive in good condition (unbroken, lids on, etc.)?	
Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>	12. Was adequate sample volume available?	
Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA <input type="checkbox"/>	13. Were all samples received within 1/2 the holding time or 48 hours, whichever comes first?	
Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA <input type="checkbox"/>	14. Were any samples containers missing?	
Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA <input type="checkbox"/>	15. Were there any excess samples not listed on COC?	
Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input checked="" type="checkbox"/>	16. Were bubbles present > "pca-size" (1/4" or 6mm in diameter) in any VOA vials?	
Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>	17. Were all metals/O&G/HEM/nutrient samples received at a pH of <2?	
Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input checked="" type="checkbox"/>	18. Were all cyanide and/or sulfide samples received at a pH >12?	
Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>	19. Were all applicable NH3/TKN/cyanide/phenol/BNA/pest/PCB/herb (<0.2mg/L) and toxicity (<0.1mg/L) samples free of residual chlorine?	
Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input checked="" type="checkbox"/>	20. Were collection temperatures documented on the COC for NC samples?	
Sample Preservation (Must be completed for any sample(s) incorrectly preserved or with headspace.)		
Sample(s) _____ were received incorrectly preserved and were adjusted accordingly in sample receiving with _____ (H ₂ SO ₄ , HNO ₃ , HCl, NaOH) with the SR # (number) _____		
Sample(s) _____ were received with bubbles >6 mm in diameter.		
Sample(s) _____ were received with TRC >0.2 mg/L for NH3/TKN/cyanide/BNA/pest/PCB/herb.		
Toxicity sample(s) _____ were received with TRC >0.1 mg/L and were analyzed by method 330.5.		

Corrective Action taken, if necessary:

Was client notified: Yes No
 SESI employee: _____
 Comments: _____

Did client respond: Yes No
 Date of response: _____

Report of Analysis

Tetra Tech EM Inc.
1955 Evergreen Boulevard
Building 200, Suite 300
Duluth, GA 30096
Attention: Jessica Vickers

Project Name: Agrium Fire

Lot Number: MB16012
Date Completed: 02/22/2011



Nisreen Saikaly
Project Manager



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The following non-paginated documents are considered part of this report: Chain of Custody Record and Sample Receipt Checklist.

* MB16012 *

SHEALY ENVIRONMENTAL SERVICES, INC.

SC DHEC No: 32010

NELAC No: E87653

NC DEHNR No: 329

Case Narrative
Tetra Tech EM Inc.
Lot Number: MB16012

This Report of Analysis contains the analytical result(s) for the sample(s) listed on the Sample Summary following this Case Narrative. The sample receiving date is documented in the header information associated with each sample.

Sample receipt, sample analysis, and data review have been performed in accordance with the most current approved NELAC standards, the Shealy Environmental Services, Inc. ("Shealy") Quality Assurance Management Plan (QAMP), standard operating procedures (SOPs), and Shealy policies. Any exceptions to the NELAC standards, the QAMP, SOPs or policies are qualified on the results page or discussed below.

If you have any questions regarding this report please contact the Shealy Project Manager listed on the cover page.

SHEALY ENVIRONMENTAL SERVICES, INC.

Sample Summary Tetra Tech EM Inc. Lot Number: MB16012

Sample Number	Sample ID	Matrix	Date Sampled	Date Received
001	SW-01-021511	Aqueous	02/15/2011 1507	02/16/2011
002	SW-02-021511	Aqueous	02/15/2011 1527	02/16/2011
003	SW-03-021511	Aqueous	02/15/2011 1357	02/16/2011
004	SW-03-021511DUP	Aqueous	02/15/2011 1357	02/16/2011
005	SW-04-021511	Aqueous	02/15/2011 1345	02/16/2011
006	SW-05-021511	Aqueous	02/15/2011 1337	02/16/2011
007	SW-06-021511	Aqueous	02/15/2011 1322	02/16/2011
008	SW-07-021511	Aqueous	02/15/2011 1242	02/16/2011
009	SW-08-021511	Aqueous	02/15/2011 1315	02/16/2011
010	SW-09-021511	Aqueous	02/15/2011 1219	02/16/2011
011	SW-10-021511	Aqueous	02/15/2011 1515	02/16/2011

(11 samples)

SHEALY ENVIRONMENTAL SERVICES, INC.

Executive Summary

Tetra Tech EM Inc.

Lot Number: MB16012

Sample	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
002	SW-02-021511	Aqueous	BOD, 5 day	SM 5210B	2.4		mg/L	6
004	SW-03-021511DUP	Aqueous	BOD, 5 day	SM 5210B	2.4		mg/L	8
005	SW-04-021511	Aqueous	BOD, 5 day	SM 5210B	2.5		mg/L	9
006	SW-05-021511	Aqueous	BOD, 5 day	SM 5210B	3.3		mg/L	10
011	SW-10-021511	Aqueous	BOD, 5 day	SM 5210B	88		mg/L	15

(5 detections)

Inorganic non-metals

Client: Tetra Tech EM Inc.	Laboratory ID: MB16012-001
Description: SW-01-021511	Matrix: Aqueous
Date Sampled: 02/15/2011 1507	
Date Received: 02/16/2011	

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(BOD, 5 day) SM 5210B	1	02/21/2011 1156	SMH	02/16/2011 1154	6197

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
BOD, 5 day		SM 5210B	ND		2.0	mg/L	1

PQL = Practical quantitation limit

B = Detected in the method blank

E = Quantitation of compound exceeded the calibration range

ND = Not detected at or above the PQL

J = Estimated result < PQL and ≥ MDL

P = The RPD between two GC columns exceeds 40%

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

N = Recovery is out of criteria

H = Out of holding time

Inorganic non-metals

Client: Tetra Tech EM Inc.	Laboratory ID: MB16012-002
Description: SW-02-021511	Matrix: Aqueous
Date Sampled: 02/15/2011 1527	
Date Received: 02/16/2011	

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(BOD, 5 day) SM 5210B	1	02/21/2011 1156	SMH	02/16/2011 1154	6197

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
BOD, 5 day		SM 5210B	2.4		2.0	mg/L	1

PQL = Practical quantitation limit

B = Detected in the method blank

E = Quantitation of compound exceeded the calibration range

ND = Not detected at or above the PQL

J = Estimated result < PQL and \geq MDL

P = The RPD between two GC columns exceeds 40%

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

N = Recovery is out of criteria

H = Out of holding time

Inorganic non-metals

Client: Tetra Tech EM Inc.	Laboratory ID: MB16012-003
Description: SW-03-021511	Matrix: Aqueous
Date Sampled: 02/15/2011 1357	
Date Received: 02/16/2011	

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(BOD, 5 day) SM 5210B	1	02/21/2011 1405	SMH	02/16/2011 1503	6198

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
BOD, 5 day		SM 5210B	ND		2.0	mg/L	1

PQL = Practical quantitation limit

B = Detected in the method blank

E = Quantitation of compound exceeded the calibration range

ND = Not detected at or above the PQL

J = Estimated result < PQL and ≥ MDL

P = The RPD between two GC columns exceeds 40%

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

N = Recovery is out of criteria

H = Out of holding time

Inorganic non-metals

Client: Tetra Tech EM Inc.	Laboratory ID: MB16012-004
Description: SW-03-021511DUP	Matrix: Aqueous
Date Sampled: 02/15/2011 1357	
Date Received: 02/16/2011	

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(BOD, 5 day) SM 5210B	1	02/21/2011 1405	SMH	02/16/2011 1503	6198

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
BOD, 5 day		SM 5210B	2.4		2.0	mg/L	1

PQL = Practical quantitation limit

B = Detected in the method blank

E = Quantitation of compound exceeded the calibration range

ND = Not detected at or above the PQL

J = Estimated result < PQL and \geq MDL

P = The RPD between two GC columns exceeds 40%

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

N = Recovery is out of criteria

H = Out of holding time

Inorganic non-metals

Client: Tetra Tech EM Inc.	Laboratory ID: MB16012-005
Description: SW-04-021511	Matrix: Aqueous
Date Sampled: 02/15/2011 1345	
Date Received: 02/16/2011	

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(BOD, 5 day) SM 5210B	1	02/21/2011 1405	SMH	02/16/2011 1503	6198

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
BOD, 5 day		SM 5210B	2.5		2.0	mg/L	1

PQL = Practical quantitation limit

B = Detected in the method blank

E = Quantitation of compound exceeded the calibration range

ND = Not detected at or above the PQL

J = Estimated result < PQL and \geq MDL

P = The RPD between two GC columns exceeds 40%

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

N = Recovery is out of criteria

H = Out of holding time

Inorganic non-metals

Client: Tetra Tech EM Inc.	Laboratory ID: MB16012-006
Description: SW-05-021511	Matrix: Aqueous
Date Sampled: 02/15/2011 1337	
Date Received: 02/16/2011	

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(BOD, 5 day) SM 5210B	1	02/21/2011 1405	SMH	02/16/2011 1503	6198

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
BOD, 5 day		SM 5210B	3.3		2.0	mg/L	1

PQL = Practical quantitation limit

B = Detected in the method blank

E = Quantitation of compound exceeded the calibration range

ND = Not detected at or above the PQL

J = Estimated result < PQL and ≥ MDL

P = The RPD between two GC columns exceeds 40%

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

N = Recovery is out of criteria

H = Out of holding time

Inorganic non-metals

Client: Tetra Tech EM Inc.	Laboratory ID: MB16012-007
Description: SW-06-021511	Matrix: Aqueous
Date Sampled: 02/15/2011 1322	
Date Received: 02/16/2011	

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(BOD, 5 day) SM 5210B	1	02/21/2011 1405	SMH	02/16/2011 1503	6198

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
BOD, 5 day		SM 5210B	ND		2.0	mg/L	1

PQL = Practical quantitation limit

B = Detected in the method blank

E = Quantitation of compound exceeded the calibration range

ND = Not detected at or above the PQL

J = Estimated result < PQL and ≥ MDL

P = The RPD between two GC columns exceeds 40%

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

N = Recovery is out of criteria

H = Out of holding time

Inorganic non-metals

Client: Tetra Tech EM Inc.	Laboratory ID: MB16012-008
Description: SW-07-021511	Matrix: Aqueous
Date Sampled: 02/15/2011 1242	
Date Received: 02/16/2011	

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(BOD, 5 day) SM 5210B	1	02/21/2011 1405	SMH	02/16/2011 1503	6198

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
BOD, 5 day		SM 5210B	ND		2.0	mg/L	1

PQL = Practical quantitation limit B = Detected in the method blank E = Quantitation of compound exceeded the calibration range
 ND = Not detected at or above the PQL J = Estimated result < PQL and ≥ MDL P = The RPD between two GC columns exceeds 40%
 Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W" N = Recovery is out of criteria H = Out of holding time

Inorganic non-metals

Client: Tetra Tech EM Inc.	Laboratory ID: MB16012-009
Description: SW-08-021511	Matrix: Aqueous
Date Sampled: 02/15/2011 1315	
Date Received: 02/16/2011	

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(BOD, 5 day) SM 5210B	1	02/21/2011 1405	SMH	02/16/2011 1503	6198

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
BOD, 5 day		SM 5210B	ND		2.0	mg/L	1

PQL = Practical quantitation limit

B = Detected in the method blank

E = Quantitation of compound exceeded the calibration range

ND = Not detected at or above the PQL

J = Estimated result < PQL and \geq MDL

P = The RPD between two GC columns exceeds 40%

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

N = Recovery is out of criteria

H = Out of holding time

Inorganic non-metals

Client: Tetra Tech EM Inc.	Laboratory ID: MB16012-010
Description: SW-09-021511	Matrix: Aqueous
Date Sampled: 02/15/2011 1219	
Date Received: 02/16/2011	

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(BOD, 5 day) SM 5210B	1	02/21/2011 1405	SMH	02/16/2011 1503	6198

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
BOD, 5 day		SM 5210B	ND		2.0	mg/L	1

PQL = Practical quantitation limit

B = Detected in the method blank

E = Quantitation of compound exceeded the calibration range

ND = Not detected at or above the PQL

J = Estimated result < PQL and \geq MDL

P = The RPD between two GC columns exceeds 40%

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

N = Recovery is out of criteria

H = Out of holding time

Inorganic non-metals

Client: Tetra Tech EM Inc.	Laboratory ID: MB16012-011
Description: SW-10-021511	Matrix: Aqueous
Date Sampled: 02/15/2011 1515	
Date Received: 02/16/2011	

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(BOD, 5 day) SM 5210B	1	02/21/2011 1405	SMH	02/16/2011 1503	6198

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
BOD, 5 day		SM 5210B	88		2.0	mg/L	1

PQL = Practical quantitation limit B = Detected in the method blank E = Quantitation of compound exceeded the calibration range
 ND = Not detected at or above the PQL J = Estimated result < PQL and ≥ MDL P = The RPD between two GC columns exceeds 40%
 Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W" N = Recovery is out of criteria H = Out of holding time

QC Summary



Chain of Custody Record

Shealy Environmental Services, Inc.

106 Vantage Point Drive

West Columbia, South Carolina 29172

Telephone No. (803) 791-9700 Fax No. (803) 791-9111

www.shealylab.com

Number **03227**

Client TETRA TECH			Report to Contact JESSICA VICKERS			Sampler (Printed Name)			Quote No.			
Address 1955 EVERGREEN BLVD			Telephone No. / Fax No. / Email 678 775-3104			Waybill No.			Page 1 of 2			
City DULUTH	State GA	Zip Code 30096	Preservative 1. Unpres. 4. HNO3 7. NaOH 2. NaOH/ZnA 5. HCL 3. H2SO4 6. Na Thio.						Number of Containers			
Project Name AGRIVM FIRE			Project Number			P.O Number			Bottle (See Instructions on back)			
Sample ID / Description (Containers for each sample may be combined on one line)			Date	Time	G-Grab Ca-Composite	Matrix GW DW WW SW Other			Analysis NAME H2SO4 HNO3 BOD, DO, PH COD/Mn, MnO3 TKN / Phos RCA metals Hexavalent Chromium	Preservative		
SW-01-021511			2/15/11		G					Lot No. MB16011		
SW-02-021511					G					Remarks / Cooler ID MB16012		
SW-03-021511					G					All analysis quick TAT		
SW-03-021511-Dup					G					SW-01-021511 and		
SW-04-021511					G					SW-02-021511		
SW-05-021511					G					have 4 sample containers		
SW-06-021511					G							
SW-07-021511					G					MS/MSD		
SW-08-021511					G							
SW-09-021511					G							
Turn Around Time Required (Prior lab approval required for expedited TAT) <input type="checkbox"/> Standard <input type="checkbox"/> Rush (Please Specify)			Sample Disposal <input type="checkbox"/> Return to Client <input type="checkbox"/> Disposal by Lab			QC Requirements (Specify)			Possible Hazard Identification <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison <input type="checkbox"/> Unknown			
1. Relinquished by / Sampler			Date	Time	1. Received by			Date	Time			
2. Relinquished by			Date	Time	2. Received by			Date	Time			
3. Relinquished by			Date	Time	3. Received by			Date	Time			
4. Relinquished by FEDIX 2-16-11			Date 2-16-11	Time 0905	4. Laboratory Received by <i>[Signature]</i>			Date 2-16-11	Time 0905			
Note: All samples are retained for six weeks from receipt unless other arrangements are made.						LAB USE ONLY Received on Ice (Check) <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Ice Pack			Receipt Temp. 1.0 °C Temp. Blank <input type="checkbox"/> Y <input type="checkbox"/> N			
									1.0 1.8			

SHEALY ENVIRONMENTAL SERVICES, INC.

Shealy Environmental Services, Inc.
 Document Number: F-AD-016
 Revision Number: 6

Page 1 of 1
 Replaces Date: 06/22/06
 Effective Date: 05/29/07

Sample Receipt Checklist (SRC)

Client: Tetra Tech

Cooler Inspected by/date: CC 7/16/11 Lot #: MB 16012

Means of receipt: <input type="checkbox"/> SESI <input type="checkbox"/> Client <input type="checkbox"/> UPS <input checked="" type="checkbox"/> FedEx <input type="checkbox"/> Airborne Exp <input type="checkbox"/> Other		
Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>	1. Were custody seals present on the cooler?	
Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>	2. If custody seals were present, were they intact and unbroken?	
Cooler ID/temperature upon receipt <u>1-0</u> °C <u>1-8</u> °C <u>1</u> °C <u>1</u> °C <u>1-U</u> °C <u>1</u> °C <u>1</u> °C <u>1</u> °C		
Method: <input type="checkbox"/> Temperature Blank <input checked="" type="checkbox"/> Against Bottles Method of coolant: <input checked="" type="checkbox"/> Wet Ice <input type="checkbox"/> Blue Ice <input type="checkbox"/> Dry Ice <input type="checkbox"/> None		
If response is No (or Yes for 14, 15, 16), an explanation/resolution must be provided.		
Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input checked="" type="checkbox"/>	3. If temperature of any cooler exceeded 6.0°C, was Project Manager notified? PM notified by SRC, phone, note (circle one), other: _____ (For coolers received via commercial courier, PMs are to be notified immediately.)	
Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>	4. Is the commercial courier's packing slip attached to this form?	
Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA <input type="checkbox"/>	5. Were proper custody procedures (relinquished/received) followed?	
Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>	6. Were sample IDs listed?	
Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>	7. Was collection date & time listed?	
Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>	8. Were tests to be performed listed on the COC or was quote # provided?	
Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>	9. Did all samples arrive in the proper containers for each test?	
Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>	10. Did all container label information (ID, date, time) agree with COC?	
Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>	11. Did all containers arrive in good condition (unbroken, lids on, etc.)?	
Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>	12. Was adequate sample volume available?	
Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA <input type="checkbox"/>	13. Were all samples received within 1/2 the holding time or 48 hours, whichever comes first?	
Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA <input type="checkbox"/>	14. Were any samples containers missing?	
Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA <input type="checkbox"/>	15. Were there any excess samples not listed on COC?	
Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input checked="" type="checkbox"/>	16. Were bubbles present > "pea-size" (1/4" or 6mm in diameter) in any VOA vials?	
Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>	17. Were all metals/O&G/HEM/nutrient samples received at a pH of <2?	
Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input checked="" type="checkbox"/>	18. Were all cyanide and/or sulfide samples received at a pH >12?	
Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>	19. Were all applicable NH3/TKN/cyanide/phenol/BNA/pest/PCB/herb (<0.2mg/L) and toxicity (<0.1mg/L) samples free of residual chlorine?	
Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input checked="" type="checkbox"/>	20. Were collection temperatures documented on the COC for NC samples?	
Sample Preservation (Must be completed for any sample(s) incorrectly preserved or with headspace.)		
Sample(s) _____ were received incorrectly preserved and were adjusted accordingly in sample receiving with _____ (H ₂ SO ₄ , HNO ₃ , HCl, NaOH) with the SR # (number)		
Sample(s) _____ were received with bubbles >6 mm in diameter.		
Sample(s) _____ were received with TRC >0.2 mg/L for NH3/TKN/cyanide/BNA/pest/PCB/herb.		
Toxicity sample(s) _____ were received with TRC >0.1 mg/L and were analyzed by method 330.5.		

Corrective Action taken, if necessary:

Was client notified: Yes No

SESI employee: _____

Comments: _____

Did client respond: Yes No

Date of response: _____

Report of Analysis

Tetra Tech EM Inc.
1955 Evergreen Boulevard
Building 200, Suite 300
Duluth, GA 30096
Attention: Jessica Vickers

Project Name: Agrium

Lot Number: MB17032
Date Completed: 02/18/2011



Nisreen Saikaly
Project Manager



This report shall not be reproduced, except in its entirety, without the written approval of Shealy Environmental Services, Inc.

The following non-paginated documents are considered part of this report: Chain of Custody Record and Sample Receipt Checklist.

* MB17032 *

SHEALY ENVIRONMENTAL SERVICES, INC.

SC DHEC No: 32010

NELAC No: E87653

NC DEHNR No: 329

Case Narrative
Tetra Tech EM Inc.
Lot Number: MB17032

This Report of Analysis contains the analytical result(s) for the sample(s) listed on the Sample Summary following this Case Narrative. The sample receiving date is documented in the header information associated with each sample.

Sample receipt, sample analysis, and data review have been performed in accordance with the most current approved NELAC standards, the Shealy Environmental Services, Inc. ("Shealy") Quality Assurance Management Plan (QAMP), standard operating procedures (SOPs), and Shealy policies. Any exceptions to the NELAC standards, the QAMP, SOPs or policies are qualified on the results page or discussed below.

If you have any questions regarding this report please contact the Shealy Project Manager listed on the cover page.

SHEALY ENVIRONMENTAL SERVICES, INC.

Sample Summary Tetra Tech EM Inc. Lot Number: MB17032

Sample Number	Sample ID	Matrix	Date Sampled	Date Received
001	02-SD-021611	Solid	02/16/2011 1215	02/17/2011
002	02-SD-021611-DUP	Solid	02/16/2011 1215	02/17/2011
003	05-SD-021611	Solid	02/16/2011 1132	02/17/2011
004	07-SD-021611	Solid	02/16/2011 1555	02/17/2011

(4 samples)

SHEALY ENVIRONMENTAL SERVICES, INC.

Executive Summary

Tetra Tech EM Inc.

Lot Number: MB17032

Sample	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
001	02-SD-021611	Solid	Hexavalent Chromium	7196A	0.98	BJ	mg/kg	5
001	02-SD-021611	Solid	Arsenic	6010C	3.0		mg/kg	6
001	02-SD-021611	Solid	Barium	6010C	110		mg/kg	6
001	02-SD-021611	Solid	Cadmium	6010C	1.6		mg/kg	6
001	02-SD-021611	Solid	Chromium	6010C	33		mg/kg	6
001	02-SD-021611	Solid	Lead	6010C	47	B	mg/kg	6
001	02-SD-021611	Solid	Mercury	7471B	0.051	J	mg/kg	6
001	02-SD-021611	Solid	Selenium	6010C	0.65	J	mg/kg	6
001	02-SD-021611	Solid	Silver	6010C	0.26	J	mg/kg	6
001	02-SD-021611	Solid	Zinc	6010C	470		mg/kg	6
002	02-SD-021611-DUP	Solid	Hexavalent Chromium	7196A	2.4	BJ	mg/kg	7
002	02-SD-021611-DUP	Solid	Arsenic	6010C	3.2		mg/kg	8
002	02-SD-021611-DUP	Solid	Barium	6010C	120		mg/kg	8
002	02-SD-021611-DUP	Solid	Cadmium	6010C	1.9		mg/kg	8
002	02-SD-021611-DUP	Solid	Chromium	6010C	47		mg/kg	8
002	02-SD-021611-DUP	Solid	Lead	6010C	53	B	mg/kg	8
002	02-SD-021611-DUP	Solid	Mercury	7471B	0.052	J	mg/kg	8
002	02-SD-021611-DUP	Solid	Zinc	6010C	600		mg/kg	8
003	05-SD-021611	Solid	Barium	6010C	2.7		mg/kg	10
003	05-SD-021611	Solid	Cadmium	6010C	0.029	J	mg/kg	10
003	05-SD-021611	Solid	Chromium	6010C	1.8		mg/kg	10
003	05-SD-021611	Solid	Lead	6010C	4.1	B	mg/kg	10
003	05-SD-021611	Solid	Zinc	6010C	5.9		mg/kg	10
004	07-SD-021611	Solid	Hexavalent Chromium	7196A	2.8	B	mg/kg	11
004	07-SD-021611	Solid	Arsenic	6010C	1.0		mg/kg	12
004	07-SD-021611	Solid	Barium	6010C	15		mg/kg	12
004	07-SD-021611	Solid	Chromium	6010C	58		mg/kg	12
004	07-SD-021611	Solid	Lead	6010C	50	B	mg/kg	12
004	07-SD-021611	Solid	Mercury	7471B	0.016	J	mg/kg	12
004	07-SD-021611	Solid	Zinc	6010C	20		mg/kg	12

(30 detections)

Inorganic non-metals

Client: Tetra Tech EM Inc.	Laboratory ID: MB17032-001
Description: 02-SD-021611	Matrix: Solid
Date Sampled: 02/16/2011 1215	% Solids: 36.9 02/18/2011 0802
Date Received: 02/17/2011	

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3060A	(Hexavalent C) 7196A	1	02/18/2011 1600	SNM	02/17/2011 1513	53034

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Hexavalent Chromium	18540-29-9	7196A	0.98	BJ	2.7	0.68	mg/kg	1

PQL = Practical quantitation limit B = Detected in the method blank E = Quantitation of compound exceeded the calibration range
 ND = Not detected at or above the MDL J = Estimated result < PQL and ≥ MDL P = The RPD between two GC columns exceeds 40%
 Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W" N = Recovery is out of criteria H = Out of holding time

TAL Metals

Client: Tetra Tech EM Inc.	Laboratory ID: MB17032-001
Description: 02-SD-021611	Matrix: Solid
Date Sampled: 02/16/2011 1215	% Solids: 36.9 02/18/2011 0802
Date Received: 02/17/2011	

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		7471B	1	02/18/2011 0008	KJC	02/17/2011 2102	53040
1	3050B	6010C	1	02/18/2011 1314	CDF	02/17/2011 1656	52995

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Arsenic	7440-38-2	6010C	3.0		1.2	0.46	mg/kg	1
Barium	7440-39-3	6010C	110		3.2	0.22	mg/kg	1
Cadmium	7440-43-9	6010C	1.6		0.25	0.026	mg/kg	1
Chromium	7440-47-3	6010C	33		0.62	0.13	mg/kg	1
Lead	7439-92-1	6010C	47	B	1.2	0.23	mg/kg	1
Mercury	7439-97-6	7471B	0.051	J	0.22	0.016	mg/kg	1
Selenium	7782-49-2	6010C	0.65	J	1.2	0.43	mg/kg	1
Silver	7440-22-4	6010C	0.26	J	0.62	0.10	mg/kg	1
Zinc	7440-66-6	6010C	470		6.2	0.84	mg/kg	1

PQL = Practical quantitation limit B = Detected in the method blank E = Quantitation of compound exceeded the calibration range
 ND = Not detected at or above the MDL J = Estimated result < PQL and ≥ MDL P = The RPD between two GC columns exceeds 40%
 Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W" N = Recovery is out of criteria H = Out of holding time

Inorganic non-metals

Client: Tetra Tech EM Inc.	Laboratory ID: MB17032-002
Description: 02-SD-021611-DUP	Matrix: Solid
Date Sampled: 02/16/2011 1215	% Solids: 32.3 02/18/2011 0802
Date Received: 02/17/2011	

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3060A	(Hexavalent C) 7196A	1	02/18/2011 1600	SNM	02/17/2011 1513	53034

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Hexavalent Chromium	18540-29-9	7196A	2.4	BJ	3.1	0.78	mg/kg	1

PQL = Practical quantitation limit B = Detected in the method blank E = Quantitation of compound exceeded the calibration range
 ND = Not detected at or above the MDL J = Estimated result < PQL and ≥ MDL P = The RPD between two GC columns exceeds 40%
 Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W" N = Recovery is out of criteria H = Out of holding time

TAL Metals

Client: Tetra Tech EM Inc.	Laboratory ID: MB17032-002
Description: 02-SD-021611-DUP	Matrix: Solid
Date Sampled: 02/16/2011 1215	% Solids: 32.3 02/18/2011 0802
Date Received: 02/17/2011	

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		7471B	1	02/18/2011 0010	KJC	02/17/2011 2102	53040
1	3050B	6010C	1	02/18/2011 1320	CDF	02/17/2011 1656	52995

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Arsenic	7440-38-2	6010C	3.2		1.4	0.54	mg/kg	1
Barium	7440-39-3	6010C	120		3.7	0.26	mg/kg	1
Cadmium	7440-43-9	6010C	1.9		0.29	0.030	mg/kg	1
Chromium	7440-47-3	6010C	47		0.72	0.15	mg/kg	1
Lead	7439-92-1	6010C	53	B	1.4	0.27	mg/kg	1
Mercury	7439-97-6	7471B	0.052	J	0.25	0.018	mg/kg	1
Selenium	7782-49-2	6010C	ND		1.4	0.50	mg/kg	1
Silver	7440-22-4	6010C	ND		0.72	0.12	mg/kg	1
Zinc	7440-66-6	6010C	600		7.2	0.98	mg/kg	1

PQL = Practical quantitation limit B = Detected in the method blank E = Quantitation of compound exceeded the calibration range
 ND = Not detected at or above the MDL J = Estimated result < PQL and ≥ MDL P = The RPD between two GC columns exceeds 40%
 Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W" N = Recovery is out of criteria H = Out of holding time

Inorganic non-metals

Client: Tetra Tech EM Inc.	Laboratory ID: MB17032-003
Description: 05-SD-021611	Matrix: Solid
Date Sampled: 02/16/2011 1132	% Solids: 85.0 02/18/2011 0802
Date Received: 02/17/2011	

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3060A	(Hexavalent C) 7196A	1	02/18/2011 1600	SNM	02/17/2011 1513	53034

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Hexavalent Chromium	18540-29-9	7196A	ND		1.2	0.30	mg/kg	1

PQL = Practical quantitation limit

B = Detected in the method blank

E = Quantitation of compound exceeded the calibration range

ND = Not detected at or above the MDL

J = Estimated result < PQL and ≥ MDL

P = The RPD between two GC columns exceeds 40%

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

N = Recovery is out of criteria

H = Out of holding time

TAL Metals

Client: Tetra Tech EM Inc.	Laboratory ID: MB17032-003
Description: 05-SD-021611	Matrix: Solid
Date Sampled: 02/16/2011 1132	% Solids: 85.0 02/18/2011 0802
Date Received: 02/17/2011	

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		7471B	1	02/18/2011 0012	KJC	02/17/2011 2102	53040
1	3050B	6010C	1	02/18/2011 1326	CDF	02/17/2011 1656	52995

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Arsenic	7440-38-2	6010C	ND		0.57	0.22	mg/kg	1
Barium	7440-39-3	6010C	2.7		1.5	0.10	mg/kg	1
Cadmium	7440-43-9	6010C	0.029	J	0.11	0.012	mg/kg	1
Chromium	7440-47-3	6010C	1.8		0.29	0.058	mg/kg	1
Lead	7439-92-1	6010C	4.1	B	0.57	0.11	mg/kg	1
Mercury	7439-97-6	7471B	ND		0.093	0.0066	mg/kg	1
Selenium	7782-49-2	6010C	ND		0.57	0.20	mg/kg	1
Silver	7440-22-4	6010C	ND		0.29	0.048	mg/kg	1
Zinc	7440-66-6	6010C	5.9		2.9	0.39	mg/kg	1

PQL = Practical quantitation limit B = Detected in the method blank E = Quantitation of compound exceeded the calibration range
 ND = Not detected at or above the MDL J = Estimated result < PQL and ≥ MDL P = The RPD between two GC columns exceeds 40%
 Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W" N = Recovery is out of criteria H = Out of holding time

Inorganic non-metals

Client: Tetra Tech EM Inc.	Laboratory ID: MB17032-004
Description: 07-SD-021611	Matrix: Solid
Date Sampled: 02/16/2011 1555	% Solids: 51.2 02/18/2011 0802
Date Received: 02/17/2011	

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3060A	(Hexavalent C) 7196A	1	02/18/2011 1600	SNM	02/17/2011 1513	53034

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Hexavalent Chromium	18540-29-9	7196A	2.8	B	2.0	0.49	mg/kg	1

PQL = Practical quantitation limit

B = Detected in the method blank

E = Quantitation of compound exceeded the calibration range

ND = Not detected at or above the MDL

J = Estimated result < PQL and ≥ MDL

P = The RPD between two GC columns exceeds 40%

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

N = Recovery is out of criteria

H = Out of holding time

TAL Metals

Client: Tetra Tech EM Inc.	Laboratory ID: MB17032-004
Description: 07-SD-021611	Matrix: Solid
Date Sampled: 02/16/2011 1555	% Solids: 51.2 02/18/2011 0802
Date Received: 02/17/2011	

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		7471B	1	02/18/2011 0014	KJC	02/17/2011 2102	53040
1	3050B	6010C	1	02/18/2011 1332	CDF	02/17/2011 1656	52995

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Arsenic	7440-38-2	6010C	1.0		0.96	0.36	mg/kg	1
Barium	7440-39-3	6010C	15		2.5	0.17	mg/kg	1
Cadmium	7440-43-9	6010C	ND		0.19	0.020	mg/kg	1
Chromium	7440-47-3	6010C	58		0.48	0.097	mg/kg	1
Lead	7439-92-1	6010C	50	B	0.96	0.18	mg/kg	1
Mercury	7439-97-6	7471B	0.016	J	0.15	0.011	mg/kg	1
Selenium	7782-49-2	6010C	ND		0.96	0.33	mg/kg	1
Silver	7440-22-4	6010C	ND		0.48	0.080	mg/kg	1
Zinc	7440-66-6	6010C	20		4.8	0.65	mg/kg	1

PQL = Practical quantitation limit

B = Detected in the method blank

E = Quantitation of compound exceeded the calibration range

ND = Not detected at or above the MDL

J = Estimated result < PQL and ≥ MDL

P = The RPD between two GC columns exceeds 40%

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

N = Recovery is out of criteria

H = Out of holding time

QC Summary

Inorganic non-metals - MB

Sample ID: MQ53034-001

Batch: 53034

Analytical Method: 7196A

Matrix: Solid

Prep Method: 3060A

Prep Date: 02/17/2011 1513

Parameter	Result	Q	Dil	PQL	MDL	Units	Analysis Date
Hexavalent Chromium	0.36	J	1	1.0	0.25	mg/kg	02/18/2011 1600

PQL = Practical quantitation limit

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

ND = Not detected at or above the MDL

J = Estimated result < PQL and \geq MDL

+ - RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Inorganic non-metals - LCS

Sample ID: MQ53034-002

Matrix: Solid

Batch: 53034

Prep Method: 3060A

Analytical Method: 7196A

Prep Date: 02/17/2011 1513

Parameter	Spike Amount (mg/kg)	Result (mg/kg)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Hexavalent Chromium	4.0	4.3		1	107	90-110	02/18/2011 1600

PQL = Practical quantitation limit

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

ND = Not detected at or above the MDL

J = Estimated result < PQL and \geq MDL

+ - RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Inorganic non-metals - LCSD

Sample ID: MQ53034-003

Matrix: Solid

Batch: 53034

Prep Method: 3060A

Analytical Method: 7196A

Prep Date: 02/17/2011 1513

Parameter	Spike Amount (mg/kg)	Result (mg/kg)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
Hexavalent Chromium	4.0	4.0		1	99	7.8	90-110	20	02/18/2011 1600

PQL = Practical quantitation limit

P = The RPD between two GC columns exceeds 40%

N - Recovery is out of criteria

ND = Not detected at or above the MDL

J = Estimated result < PQL and \geq MDL

+ - RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Inorganic non-metals - MS

Sample ID: MB17032-003MS

Batch: 53034

Analytical Method: 7196A

Matrix: Solid

Prep Method: 3060A

Prep Date: 02/17/2011 1513

Parameter	Sample Amount (mg/kg)	Spike Amount (mg/kg)	Result (mg/kg)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Hexavalent Chromium	ND	0.12	0.85	N	1	720	70-130	02/18/2011 1600

PQL = Practical quantitation limit

P = The RPD between two GC columns exceeds 40%

N - Recovery is out of criteria

ND = Not detected at or above the MDL

J = Estimated result < PQL and \geq MDL

+ - RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Inorganic non-metals - MSD

Sample ID: MB17032-003MD

Matrix: Solid

Batch: 53034

Prep Method: 3060A

Analytical Method: 7196A

Prep Date: 02/17/2011 1513

Parameter	Sample Amount (mg/kg)	Spike Amount (mg/kg)	Result (mg/kg)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
Hexavalent Chromium	ND	0.12	0.56	N _i +	1	480	40	70-130	20	02/18/2011 1600

PQL = Practical quantitation limit

P = The RPD between two GC columns exceeds 40%

N - Recovery is out of criteria

ND = Not detected at or above the MDL

J = Estimated result < PQL and \geq MDL

+ - RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Inorganic non-metals - MS

Sample ID: MB17032-004MS

Matrix: Solid

Batch: 53034

Prep Method: 3060A

Analytical Method: 7196A

Prep Date: 02/17/2011 1513

Parameter	Sample Amount (mg/kg)	Spike Amount (mg/kg)	Result (mg/kg)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Hexavalent Chromium	2.8	7.8	ND	N	1	-36	70-130	02/18/2011 1600

PQL = Practical quantitation limit

P = The RPD between two GC columns exceeds 40%

N - Recovery is out of criteria

ND = Not detected at or above the MDL

J = Estimated result < PQL and \geq MDL

+ - RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Inorganic non-metals - MSD

Sample ID: MB17032-004MD

Matrix: Solid

Batch: 53034

Prep Method: 3060A

Analytical Method: 7196A

Prep Date: 02/17/2011 1513

Parameter	Sample Amount (mg/kg)	Spike Amount (mg/kg)	Result (mg/kg)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
Hexavalent Chromium	2.8	7.8	ND	N	1	-36	0.00	70-130	20	02/18/2011 1600

PQL = Practical quantitation limit

P = The RPD between two GC columns exceeds 40%

N - Recovery is out of criteria

ND = Not detected at or above the MDL

J = Estimated result < PQL and \geq MDL

+ - RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

TAL Metals - MB

Sample ID: MQ52995-001

Matrix: Solid

Batch: 52995

Prep Method: 3050B

Analytical Method: 6010C

Prep Date: 02/17/2011 1656

Parameter	Result	Q	Dil	PQL	MDL	Units	Analysis Date
Arsenic	ND		1	0.50	0.19	mg/kg	02/18/2011 1255
Barium	ND		1	1.3	0.091	mg/kg	02/18/2011 1255
Cadmium	ND		1	0.10	0.011	mg/kg	02/18/2011 1255
Chromium	ND		1	0.25	0.051	mg/kg	02/18/2011 1255
Lead	0.39	J	1	0.50	0.093	mg/kg	02/18/2011 1255
Selenium	ND		1	0.50	0.17	mg/kg	02/18/2011 1255
Silver	ND		1	0.25	0.042	mg/kg	02/18/2011 1255
Zinc	ND		1	2.5	0.34	mg/kg	02/18/2011 1255

PQL = Practical quantitation limit

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

ND = Not detected at or above the MDL

J = Estimated result < PQL and \geq MDL

+ - RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

TAL Metals - LCS

Sample ID: MQ52995-002

Matrix: Solid

Batch: 52995

Prep Method: 3050B

Analytical Method: 6010C

Prep Date: 02/17/2011 1656

Parameter	Spike Amount (mg/kg)	Result (mg/kg)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Arsenic	250	270		1	108	80-120	02/18/2011 1302
Barium	500	530		1	106	80-120	02/18/2011 1302
Cadmium	50	53		1	107	80-120	02/18/2011 1302
Chromium	250	270		1	107	80-120	02/18/2011 1302
Lead	250	260		1	102	80-120	02/18/2011 1302
Selenium	50	53		1	106	80-120	02/18/2011 1302
Silver	250	270		1	107	80-120	02/18/2011 1302
Zinc	100	110		1	109	80-120	02/18/2011 1302

PQL = Practical quantitation limit

P = The RPD between two GC columns exceeds 40%

N - Recovery is out of criteria

ND = Not detected at or above the MDL

J = Estimated result < PQL and \geq MDL

+ - RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

TAL Metals - LCSD

Sample ID: MQ52995-003

Matrix: Solid

Batch: 52995

Prep Method: 3050B

Analytical Method: 6010C

Prep Date: 02/17/2011 1656

Parameter	Spike Amount (mg/kg)	Result (mg/kg)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
Arsenic	250	270		1	107	1.3	80-120	20	02/18/2011 1308
Barium	500	530		1	105	0.96	80-120	20	02/18/2011 1308
Cadmium	50	53		1	106	1.3	80-120	20	02/18/2011 1308
Chromium	250	270		1	106	1.2	80-120	20	02/18/2011 1308
Lead	250	250		1	101	0.87	80-120	20	02/18/2011 1308
Selenium	50	52		1	105	1.0	80-120	20	02/18/2011 1308
Silver	250	260		1	106	1.0	80-120	20	02/18/2011 1308
Zinc	100	110		1	107	1.7	80-120	20	02/18/2011 1308

PQL = Practical quantitation limit

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

ND = Not detected at or above the MDL

J = Estimated result < PQL and \geq MDL

+ - RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

TAL Metals - MS

Sample ID: MB17032-004MS

Matrix: Solid

Batch: 52995

Prep Method: 3050B

Analytical Method: 6010C

Prep Date: 02/17/2011 1656

Parameter	Sample Amount (mg/kg)	Spike Amount (mg/kg)	Result (mg/kg)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Arsenic	1.0	470	500		1	108	75-125	02/18/2011 1338
Barium	15	940	1000		1	107	75-125	02/18/2011 1338
Cadmium	ND	94	99		1	106	75-125	02/18/2011 1338
Chromium	58	470	510		1	96	75-125	02/18/2011 1338
Lead	50	470	520		1	101	75-125	02/18/2011 1338
Selenium	ND	94	99		1	106	75-125	02/18/2011 1338
Silver	ND	470	500		1	107	75-125	02/18/2011 1338
Zinc	20	190	220		1	107	75-125	02/18/2011 1338

PQL = Practical quantitation limit

P = The RPD between two GC columns exceeds 40%

N - Recovery is out of criteria

ND = Not detected at or above the MDL

J = Estimated result < PQL and \geq MDL

+ - RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

TAL Metals - MSD

Sample ID: MB17032-004MD

Matrix: Solid

Batch: 52995

Prep Method: 3050B

Analytical Method: 6010C

Prep Date: 02/17/2011 1656

Parameter	Sample Amount (mg/kg)	Spike Amount (mg/kg)	Result (mg/kg)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
Arsenic	1.0	410	470		1	112	1.7	75-125	20	02/18/2011 1344
Barium	15	830	970		1	115	1.1	75-125	20	02/18/2011 1344
Cadmium	ND	83	93		1	112	0.75	75-125	20	02/18/2011 1344
Chromium	58	410	470		1	101	0.82	75-125	20	02/18/2011 1344
Lead	50	410	490		1	107	0.34	75-125	20	02/18/2011 1344
Selenium	ND	83	90		1	108	3.3	75-125	20	02/18/2011 1344
Silver	ND	410	470		1	114	0.054	75-125	20	02/18/2011 1344
Zinc	20	170	210		1	112	0.51	75-125	20	02/18/2011 1344

PQL = Practical quantitation limit

P = The RPD between two GC columns exceeds 40%

N - Recovery is out of criteria

ND = Not detected at or above the MDL

J = Estimated result < PQL and \geq MDL

+ - RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

TAL Metals - MB

Sample ID: MQ53040-001

Batch: 53040

Analytical Method: 7471B

Matrix: Solid

Prep Method: 7471B

Prep Date: 02/17/2011 2102

Parameter	Result	Q	Dil	PQL	MDL	Units	Analysis Date
Mercury	ND		1	0.083	0.0059	mg/kg	02/17/2011 2330

PQL = Practical quantitation limit

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

ND = Not detected at or above the MDL

J = Estimated result < PQL and \geq MDL

+ - RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

TAL Metals - LCS

Sample ID: MQ53040-002

Batch: 53040

Analytical Method: 7471B

Matrix: Solid

Prep Method: 7471B

Prep Date: 02/17/2011 2102

Parameter	Spike Amount (mg/kg)	Result (mg/kg)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Mercury	0.83	0.83		1	100	85-115	02/17/2011 2332

PQL = Practical quantitation limit

P = The RPD between two GC columns exceeds 40%

N - Recovery is out of criteria

ND = Not detected at or above the MDL

J = Estimated result < PQL and \geq MDL

+ - RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

TAL Metals - LCSD

Sample ID: MQ53040-003

Matrix: Solid

Batch: 53040

Prep Method: 7471B

Analytical Method: 7471B

Prep Date: 02/17/2011 2102

Parameter	Spike Amount (mg/kg)	Result (mg/kg)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
Mercury	0.83	0.83		1	100	0.00	85-115	20	02/17/2011 2334

PQL = Practical quantitation limit

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

ND = Not detected at or above the MDL

J = Estimated result < PQL and \geq MDL

+ - RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

TAL Metals - MS

Sample ID: MB17032-004MS

Matrix: Solid

Batch: 53040

Prep Method: 7471B

Analytical Method: 7471B

Prep Date: 02/17/2011 2102

Parameter	Sample Amount (mg/kg)	Spike Amount (mg/kg)	Result (mg/kg)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Mercury	0.016	1.3	1.6	N	1	123	85-115	02/18/2011 0020

PQL = Practical quantitation limit

P = The RPD between two GC columns exceeds 40%

N - Recovery is out of criteria

ND = Not detected at or above the MDL

J = Estimated result < PQL and \geq MDL

+ - RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

TAL Metals - MSD

Sample ID: MB17032-004MD

Matrix: Solid

Batch: 53040

Prep Method: 7471B

Analytical Method: 7471B

Prep Date: 02/17/2011 2102

Parameter	Sample Amount (mg/kg)	Spike Amount (mg/kg)	Result (mg/kg)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
Mercury	0.016	1.4	1.6		1	113	1.9	85-115	20	02/18/2011 0022

PQL = Practical quantitation limit

P = The RPD between two GC columns exceeds 40%

N - Recovery is out of criteria

ND = Not detected at or above the MDL

J = Estimated result < PQL and \geq MDL

+ - RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results



Chain of Custody Record

Shealy Environmental Services, Inc.

106 Vantage Point Drive

West Columbia, South Carolina 29172

Telephone No. (803) 791-9700 Fax No. (803) 791-9111

www.shealylab.com

Number **03224**

Client Tetra Tech			Report to Contact Jessica Vickers				Sampler (Printed Name) Eric Turner / Chris Jones				Quote No.				
Address 1955 Evergreen Blvd			Telephone No. / Fax No. / Email 678-775-3104 / Jessica.Vickers@tetratech.com				Waybill No.				Page 1 of 1				
City Dalton	State Ga	Zip Code 30094	Preservative									Number of Containers			
Project Name Agrium (TETRA TECH)			1. Unpres. 4. HNO3 7. NaOH 2. NaOH/ZnA 5. HCL 3. H2SO4 6. Na Tho.									Bottle (See instructions on back)			
Project Number		P.O Number		Matrix			Analysis					Preservative			
Sample ID / Description (Containers for each sample may be combined on one line)		Date	Time	G=Grab C=Composite	GW	DW						WW	Other	Lot No. MA17032	
02-SD-021611		2-16-11	1215	G										Remarks / Cooler ID Quide TAT	
02-SD-021611-Dup		}	1215	G											
05-SD-021611			1132	G											
07-SD-021611		↓	1555	G					MS/MSD						
Turn Around Time Required (Prior lab approval required for expedited TAT)			Sample Disposal			QC Requirements (Specify)			Possible Hazard Identification						
<input type="checkbox"/> Standard <input type="checkbox"/> Rush (Please Specify)			<input type="checkbox"/> Return to Client <input type="checkbox"/> Disposal by Lab						<input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison <input type="checkbox"/> Unknown						
1. Relinquished by / Sampler [Signature]			Date 2/16/11	Time 1700	1. Received by [Signature]			Date 2/16/11	Time 1700						
2. Relinquished by			Date	Time	2. Received by			Date	Time						
3. Relinquished by			Date	Time	3. Received by			Date	Time						
4. Relinquished by FedEx			Date 2/17/11	Time 0905	4. Laboratory Received by [Signature]			Date 2-17-11	Time 0905						
Note: All samples are retained for six weeks from receipt unless other arrangements are made.						LAB USE ONLY			Receipt Temp. 1.5 °C Temp. Blank <input type="checkbox"/> Y / <input checked="" type="checkbox"/> N						
						Received on Ice (Check) <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Ice Pack									

Report of Analysis

Tetra Tech EM Inc.
1955 Evergreen Boulevard
Building 200, Suite 300
Duluth, GA 30096
Attention: Jessica Vickers

Project Name: Agrium

Lot Number: MB17050
Date Completed: 02/22/2011



Nisreen Saikaly
Project Manager



This report shall not be reproduced, except in its entirety, without the written approval of Shealy Environmental Services, Inc.

The following non-paginated documents are considered part of this report: Chain of Custody Record and Sample Receipt Checklist.

* MB17050 *

SHEALY ENVIRONMENTAL SERVICES, INC.

SC DHEC No: 32010

NELAC No: E87653

NC DEHNR No: 329

Case Narrative Tetra Tech EM Inc. Lot Number: MB17050

This Report of Analysis contains the analytical result(s) for the sample(s) listed on the Sample Summary following this Case Narrative. The sample receiving date is documented in the header information associated with each sample.

Sample receipt, sample analysis, and data review have been performed in accordance with the most current approved NELAC standards, the Shealy Environmental Services, Inc. ("Shealy") Quality Assurance Management Plan (QAMP), standard operating procedures (SOPs), and Shealy policies. Any exceptions to the NELAC standards, the QAMP, SOPs or policies are qualified on the results page or discussed below.

If you have any questions regarding this report please contact the Shealy Project Manager listed on the cover page.

Hexavalent Chromium

The MS/MSD recoveries in batch 53342 were outside acceptance criteria. All other QA/QC criteria for the batch were within acceptance criteria and method control limits. The MS/MSD recovery results are attributed to matrix interference. The associated sample results were reported and no corrective action was required.

Metals

The MS/MSD recoveries in batch 53074 were outside acceptance criteria. All other QA/QC criteria for the batch were within acceptance criteria and method control limits. The MS/MSD recovery results are attributed to matrix interference. The associated sample results were reported and no corrective action was required.

TCLP Metals

The MS recoveries in batch 53207 and 53208 were outside acceptance criteria. All other QA/QC criteria for the batch were within acceptance criteria and method control limits. The MS/MSD recovery results are attributed to matrix interference. The associated sample results were reported and no corrective action was required.

SHEALY ENVIRONMENTAL SERVICES, INC.

Sample Summary Tetra Tech EM Inc. Lot Number: MB17050

Sample Number	Sample ID	Matrix	Date Sampled	Date Received
001	Zinc Oxide	Solid	02/17/2011 0950	02/17/2011
002	Zinc Oxide-Dup	Solid	02/17/2011 1001	02/17/2011
003	6-3-18 YAM	Solid	02/17/2011 1042	02/17/2011
004	Bulk Fertilizer	Solid	02/17/2011 1117	02/17/2011
005	8-16-24-RB TOB	Solid	02/17/2011 1132	02/17/2011
006	14-4-14-RB	Solid	02/17/2011 1205	02/17/2011

(6 samples)

SHEALY ENVIRONMENTAL SERVICES, INC.

Executive Summary

Tetra Tech EM Inc.

Lot Number: MB17050

Sample	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
001	Zinc Oxide	Solid	Cyanide - Total	9012B	0.99		mg/kg	7
001	Zinc Oxide	Solid	Hexavalent Chromium	7196A	0.93	J	mg/kg	7
001	Zinc Oxide	Solid	Barium	6010C	190		mg/kg	8
001	Zinc Oxide	Solid	Cadmium	6010C	840		mg/kg	8
001	Zinc Oxide	Solid	Chromium	6010C	1100	B	mg/kg	8
001	Zinc Oxide	Solid	Lead	6010C	530		mg/kg	8
001	Zinc Oxide	Solid	Mercury	7471B	1.3	B	mg/kg	8
001	Zinc Oxide	Solid	Selenium	6010C	21	BJ	mg/kg	8
001	Zinc Oxide	Solid	Silver	6010C	73		mg/kg	8
001	Zinc Oxide	Solid	Zinc	6010C	390000		mg/kg	8
001	Zinc Oxide	Solid	Barium	6010C	0.26		mg/L	9
001	Zinc Oxide	Solid	Cadmium	6010C	1.2		mg/L	9
001	Zinc Oxide	Solid	Lead	6010C	0.10		mg/L	9
001	Zinc Oxide	Solid	Mercury	7470A	0.00032		mg/L	9
001	Zinc Oxide	Solid	Silver	6010C	0.021	BJ	mg/L	9
001	Zinc Oxide	Solid	Zinc	6010C	550		mg/L	9
002	Zinc Oxide-Dup	Solid	Cyanide - Total	9012B	0.85		mg/kg	10
002	Zinc Oxide-Dup	Solid	Hexavalent Chromium	7196A	0.94	J	mg/kg	10
002	Zinc Oxide-Dup	Solid	Arsenic	6010C	20	J	mg/kg	11
002	Zinc Oxide-Dup	Solid	Barium	6010C	170		mg/kg	11
002	Zinc Oxide-Dup	Solid	Cadmium	6010C	890		mg/kg	11
002	Zinc Oxide-Dup	Solid	Chromium	6010C	1300	B	mg/kg	11
002	Zinc Oxide-Dup	Solid	Lead	6010C	390		mg/kg	11
002	Zinc Oxide-Dup	Solid	Mercury	7471B	1.2	B	mg/kg	11
002	Zinc Oxide-Dup	Solid	Silver	6010C	96		mg/kg	11
002	Zinc Oxide-Dup	Solid	Zinc	6010C	400000		mg/kg	11
002	Zinc Oxide-Dup	Solid	Barium	6010C	0.25		mg/L	12
002	Zinc Oxide-Dup	Solid	Cadmium	6010C	0.87		mg/L	12
002	Zinc Oxide-Dup	Solid	Lead	6010C	0.12		mg/L	12
002	Zinc Oxide-Dup	Solid	Mercury	7470A	0.00037		mg/L	12
002	Zinc Oxide-Dup	Solid	Silver	6010C	0.016	BJ	mg/L	12
002	Zinc Oxide-Dup	Solid	Zinc	6010C	600		mg/L	12
003	6-3-18 YAM	Solid	Cyanide - Total	9012B	0.38	J	mg/kg	13
003	6-3-18 YAM	Solid	Hexavalent Chromium	7196A	0.41	J	mg/kg	13
003	6-3-18 YAM	Solid	Arsenic	6010C	2.2		mg/kg	14
003	6-3-18 YAM	Solid	Barium	6010C	75		mg/kg	14
003	6-3-18 YAM	Solid	Cadmium	6010C	23		mg/kg	14
003	6-3-18 YAM	Solid	Chromium	6010C	54	B	mg/kg	14
003	6-3-18 YAM	Solid	Lead	6010C	7.4		mg/kg	14
003	6-3-18 YAM	Solid	Mercury	7471B	0.017	BJ	mg/kg	14
003	6-3-18 YAM	Solid	Selenium	6010C	1.3	B	mg/kg	14
003	6-3-18 YAM	Solid	Silver	6010C	0.78		mg/kg	14
003	6-3-18 YAM	Solid	Zinc	6010C	16000		mg/kg	14
003	6-3-18 YAM	Solid	Barium	6010C	0.046	J	mg/L	15
003	6-3-18 YAM	Solid	Cadmium	6010C	0.29		mg/L	15

Executive Summary (Continued)

Lot Number: MB17050

Sample	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
003	6-3-18 YAM	Solid	Chromium	6010C	0.074		mg/L	15
003	6-3-18 YAM	Solid	Zinc	6010C	29		mg/L	15
004	Bulk Fertilizer	Solid	Cyanide - Total	9012B	0.20	J	mg/kg	16
004	Bulk Fertilizer	Solid	Hexavalent Chromium	7196A	1.5		mg/kg	16
004	Bulk Fertilizer	Solid	Arsenic	6010C	2.3		mg/kg	17
004	Bulk Fertilizer	Solid	Barium	6010C	32		mg/kg	17
004	Bulk Fertilizer	Solid	Cadmium	6010C	9.1		mg/kg	17
004	Bulk Fertilizer	Solid	Chromium	6010C	33	B	mg/kg	17
004	Bulk Fertilizer	Solid	Lead	6010C	2.8		mg/kg	17
004	Bulk Fertilizer	Solid	Mercury	7471B	0.0089	BJ	mg/kg	17
004	Bulk Fertilizer	Solid	Selenium	6010C	0.78	B	mg/kg	17
004	Bulk Fertilizer	Solid	Zinc	6010C	1800		mg/kg	17
004	Bulk Fertilizer	Solid	Arsenic	6010C	0.030	J	mg/L	18
004	Bulk Fertilizer	Solid	Barium	6010C	0.092	J	mg/L	18
004	Bulk Fertilizer	Solid	Cadmium	6010C	0.040		mg/L	18
004	Bulk Fertilizer	Solid	Chromium	6010C	0.024	J	mg/L	18
004	Bulk Fertilizer	Solid	Mercury	7470A	0.000058	J	mg/L	18
004	Bulk Fertilizer	Solid	Zinc	6010C	18		mg/L	18
005	8-16-24-RB TOB	Solid	Cyanide - Total	9012B	0.21	J	mg/kg	19
005	8-16-24-RB TOB	Solid	Hexavalent Chromium	7196A	1.1		mg/kg	19
005	8-16-24-RB TOB	Solid	Arsenic	6010C	2.5		mg/kg	20
005	8-16-24-RB TOB	Solid	Barium	6010C	7.4		mg/kg	20
005	8-16-24-RB TOB	Solid	Cadmium	6010C	3.0		mg/kg	20
005	8-16-24-RB TOB	Solid	Chromium	6010C	41	B	mg/kg	20
005	8-16-24-RB TOB	Solid	Lead	6010C	2.4		mg/kg	20
005	8-16-24-RB TOB	Solid	Mercury	7471B	0.0081	BJ	mg/kg	20
005	8-16-24-RB TOB	Solid	Selenium	6010C	0.52	B	mg/kg	20
005	8-16-24-RB TOB	Solid	Zinc	6010C	790		mg/kg	20
005	8-16-24-RB TOB	Solid	Arsenic	6010C	0.088	J	mg/L	21
005	8-16-24-RB TOB	Solid	Cadmium	6010C	0.093		mg/L	21
005	8-16-24-RB TOB	Solid	Chromium	6010C	0.41		mg/L	21
005	8-16-24-RB TOB	Solid	Zinc	6010C	9.8		mg/L	21
006	14-4-14-RB	Solid	Cyanide - Total	9012B	1.4		mg/kg	22
006	14-4-14-RB	Solid	Hexavalent Chromium	7196A	0.40	J	mg/kg	22
006	14-4-14-RB	Solid	Arsenic	6010C	1.4		mg/kg	23
006	14-4-14-RB	Solid	Barium	6010C	45		mg/kg	23
006	14-4-14-RB	Solid	Cadmium	6010C	17		mg/kg	23
006	14-4-14-RB	Solid	Chromium	6010C	41	B	mg/kg	23
006	14-4-14-RB	Solid	Lead	6010C	3.0		mg/kg	23
006	14-4-14-RB	Solid	Mercury	7471B	0.020	BJ	mg/kg	23
006	14-4-14-RB	Solid	Selenium	6010C	1.2	B	mg/kg	23
006	14-4-14-RB	Solid	Silver	6010C	0.49		mg/kg	23
006	14-4-14-RB	Solid	Zinc	6010C	3600		mg/kg	23
006	14-4-14-RB	Solid	Arsenic	6010C	0.027	J	mg/L	24
006	14-4-14-RB	Solid	Barium	6010C	0.047	J	mg/L	24
006	14-4-14-RB	Solid	Cadmium	6010C	0.65		mg/L	24
006	14-4-14-RB	Solid	Chromium	6010C	0.077		mg/L	24
006	14-4-14-RB	Solid	Zinc	6010C	35		mg/L	24

Executive Summary (Continued)

Lot Number: MB17050

Sample	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
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(93 detections)

Inorganic non-metals

Client: Tetra Tech EM Inc.	Laboratory ID: MB17050-001
Description: Zinc Oxide	Matrix: Solid
Date Sampled: 02/17/2011 0950	% Solids: 94.2 02/18/2011 0806
Date Received: 02/17/2011	

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(Cyanide - To) 9012B	1	02/18/2011 1347	SMH	02/18/2011 1100	53120
1	3060A	(Hexavalent C) 7196A	1	02/22/2011 1229	ARW	02/21/2011 0830	53342

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Cyanide - Total	57-12-5	9012B	0.99		0.53	0.066	mg/kg	1
Hexavalent Chromium	18540-29-9	7196A	0.93	J	1.1	0.27	mg/kg	1

PQL = Practical quantitation limit

B = Detected in the method blank

E = Quantitation of compound exceeded the calibration range

ND = Not detected at or above the MDL

J = Estimated result < PQL and ≥ MDL

P = The RPD between two GC columns exceeds 40%

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

N = Recovery is out of criteria

H = Out of holding time

TAL Metals

Client: Tetra Tech EM Inc.	Laboratory ID: MB17050-001
Description: Zinc Oxide	Matrix: Solid
Date Sampled: 02/17/2011 0950	% Solids: 94.2 02/18/2011 0806
Date Received: 02/17/2011	

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3050B	6010C	1	02/19/2011 0139	CDF	02/18/2011 0937	53074
1		7471B	1	02/18/2011 1143	KJC	02/18/2011 0930	53072
2	3050B	6010C	100	02/21/2011 2043	CDF	02/18/2011 0937	53074
3	3050B	6010C	200	02/21/2011 2231	KJC	02/18/2011 0937	53074

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Arsenic	7440-38-2	6010C	ND		52	19	mg/kg	2
Barium	7440-39-3	6010C	190		1.3	0.094	mg/kg	1
Cadmium	7440-43-9	6010C	840		10	1.1	mg/kg	2
Chromium	7440-47-3	6010C	1100	B	26	5.2	mg/kg	2
Lead	7439-92-1	6010C	530		52	9.6	mg/kg	2
Mercury	7439-97-6	7471B	1.3	B	0.087	0.0062	mg/kg	1
Selenium	7782-49-2	6010C	21	BJ	52	18	mg/kg	2
Silver	7440-22-4	6010C	73		26	4.3	mg/kg	2
Zinc	7440-66-6	6010C	390000		520	70	mg/kg	3

PQL = Practical quantitation limit B = Detected in the method blank E = Quantitation of compound exceeded the calibration range
 ND = Not detected at or above the MDL J = Estimated result < PQL and ≥ MDL P = The RPD between two GC columns exceeds 40%
 Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W" N = Recovery is out of criteria H = Out of holding time

TCLP Metals

Client: Tetra Tech EM Inc.	Laboratory ID: MB17050-001
Description: Zinc Oxide	Matrix: Solid
Date Sampled: 02/17/2011 0950	% Solids: 94.2 02/18/2011 0806
Date Received: 02/17/2011	

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Leachate Date
1	1311/7470A	7470A	1	02/21/2011 1349	BNW	02/21/2011 1015	53198	02/18/2011 1851
1	1311/3010A	6010C	10	02/21/2011 2313	KJC	02/21/2011 1026	53207	02/18/2011 1851
2	1311/3010A	6010C	20	02/22/2011 1309	CDF	02/21/2011 1026	53207	02/18/2011 1851

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Arsenic	7440-38-2	6010C	ND		0.10	0.023	mg/L	1
Barium	7440-39-3	6010C	0.26		0.25	0.023	mg/L	1
Cadmium	7440-43-9	6010C	1.2		0.020	0.0030	mg/L	1
Chromium	7440-47-3	6010C	ND		0.050	0.014	mg/L	1
Lead	7439-92-1	6010C	0.10		0.10	0.017	mg/L	1
Mercury	7439-97-6	7470A	0.00032		0.00020	0.000053	mg/L	1
Selenium	7782-49-2	6010C	ND		0.20	0.064	mg/L	2
Silver	7440-22-4	6010C	0.021	BJ	0.050	0.0090	mg/L	1
Zinc	7440-66-6	6010C	550		0.40	0.20	mg/L	2

PQL = Practical quantitation limit B = Detected in the method blank E = Quantitation of compound exceeded the calibration range
 ND = Not detected at or above the MDL J = Estimated result < PQL and ≥ MDL P = The RPD between two GC columns exceeds 40%
 Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W" N = Recovery is out of criteria H = Out of holding time

Inorganic non-metals

Client: Tetra Tech EM Inc.	Laboratory ID: MB17050-002
Description: Zinc Oxide-Dup	Matrix: Solid
Date Sampled: 02/17/2011 1001	% Solids: 93.6 02/18/2011 0806
Date Received: 02/17/2011	

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(Cyanide - To) 9012B	1	02/18/2011 1348	SMH	02/18/2011 1100	53120
1	3060A	(Hexavalent C) 7196A	1	02/22/2011 1229	ARW	02/21/2011 0830	53342

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Cyanide - Total	57-12-5	9012B	0.85		0.53	0.066	mg/kg	1
Hexavalent Chromium	18540-29-9	7196A	0.94	J	1.1	0.27	mg/kg	1

PQL = Practical quantitation limit

B = Detected in the method blank

E = Quantitation of compound exceeded the calibration range

ND = Not detected at or above the MDL

J = Estimated result < PQL and ≥ MDL

P = The RPD between two GC columns exceeds 40%

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

N = Recovery is out of criteria

H = Out of holding time

TAL Metals

Client: Tetra Tech EM Inc.	Laboratory ID: MB17050-002
Description: Zinc Oxide-Dup	Matrix: Solid
Date Sampled: 02/17/2011 1001	% Solids: 93.6 02/18/2011 0806
Date Received: 02/17/2011	

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3050B	6010C	1	02/19/2011 0143	CDF	02/18/2011 0937	53074
1		7471B	1	02/18/2011 1146	KJC	02/18/2011 0930	53072
2	3050B	6010C	100	02/21/2011 2050	CDF	02/18/2011 0937	53074
3	3050B	6010C	200	02/21/2011 2236	KJC	02/18/2011 0937	53074

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Arsenic	7440-38-2	6010C	20	J	53	20	mg/kg	2
Barium	7440-39-3	6010C	170		1.4	0.097	mg/kg	1
Cadmium	7440-43-9	6010C	890		11	1.1	mg/kg	2
Chromium	7440-47-3	6010C	1300	B	27	5.4	mg/kg	2
Lead	7439-92-1	6010C	390		53	9.9	mg/kg	2
Mercury	7439-97-6	7471B	1.2	B	0.087	0.0062	mg/kg	1
Selenium	7782-49-2	6010C	ND		53	18	mg/kg	2
Silver	7440-22-4	6010C	96		27	4.5	mg/kg	2
Zinc	7440-66-6	6010C	400000		530	72	mg/kg	3

PQL = Practical quantitation limit B = Detected in the method blank E = Quantitation of compound exceeded the calibration range
 ND = Not detected at or above the MDL J = Estimated result < PQL and ≥ MDL P = The RPD between two GC columns exceeds 40%
 Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W" N = Recovery is out of criteria H = Out of holding time

TCLP Metals

Client: Tetra Tech EM Inc.	Laboratory ID: MB17050-002
Description: Zinc Oxide-Dup	Matrix: Solid
Date Sampled: 02/17/2011 1001	% Solids: 93.6 02/18/2011 0806
Date Received: 02/17/2011	

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Leachate Date
1	1311/7470A	7470A	1	02/21/2011 1352	BNW	02/21/2011 1015	53198	02/18/2011 1851
1	1311/3010A	6010C	10	02/21/2011 2331	KJC	02/21/2011 1026	53207	02/18/2011 1851
2	1311/3010A	6010C	20	02/22/2011 1320	CDF	02/21/2011 1026	53207	02/18/2011 1851

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Arsenic	7440-38-2	6010C	ND		0.10	0.023	mg/L	1
Barium	7440-39-3	6010C	0.25		0.25	0.023	mg/L	1
Cadmium	7440-43-9	6010C	0.87		0.020	0.0030	mg/L	1
Chromium	7440-47-3	6010C	ND		0.050	0.014	mg/L	1
Lead	7439-92-1	6010C	0.12		0.10	0.017	mg/L	1
Mercury	7439-97-6	7470A	0.00037		0.00020	0.000053	mg/L	1
Selenium	7782-49-2	6010C	ND		0.20	0.064	mg/L	2
Silver	7440-22-4	6010C	0.016	BJ	0.050	0.0090	mg/L	1
Zinc	7440-66-6	6010C	600		0.40	0.20	mg/L	2

PQL = Practical quantitation limit B = Detected in the method blank E = Quantitation of compound exceeded the calibration range
 ND = Not detected at or above the MDL J = Estimated result < PQL and ≥ MDL P = The RPD between two GC columns exceeds 40%
 Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W" N = Recovery is out of criteria H = Out of holding time

Inorganic non-metals

Client: Tetra Tech EM Inc.	Laboratory ID: MB17050-003
Description: 6-3-18 YAM	Matrix: Solid
Date Sampled: 02/17/2011 1042	% Solids: 98.1 02/18/2011 0806
Date Received: 02/17/2011	

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(Cyanide - To) 9012B	1	02/18/2011 1349	SMH	02/18/2011 1100	53120
1	3060A	(Hexavalent C) 7196A	1	02/22/2011 1229	ARW	02/21/2011 0830	53342

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Cyanide - Total	57-12-5	9012B	0.38	J	0.51	0.063	mg/kg	1
Hexavalent Chromium	18540-29-9	7196A	0.41	J	1.0	0.26	mg/kg	1

PQL = Practical quantitation limit

B = Detected in the method blank

E = Quantitation of compound exceeded the calibration range

ND = Not detected at or above the MDL

J = Estimated result < PQL and ≥ MDL

P = The RPD between two GC columns exceeds 40%

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

N = Recovery is out of criteria

H = Out of holding time

TAL Metals

Client: Tetra Tech EM Inc.	Laboratory ID: MB17050-003
Description: 6-3-18 YAM	Matrix: Solid
Date Sampled: 02/17/2011 1042	% Solids: 98.1 02/18/2011 0806
Date Received: 02/17/2011	

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		7471B	1	02/18/2011 1148	KJC	02/18/2011 0930	53072
1	3050B	6010C	1	02/19/2011 0148	CDF	02/18/2011 0937	53074
2	3050B	6010C	50	02/21/2011 2056	CDF	02/18/2011 0937	53074

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Arsenic	7440-38-2	6010C	2.2		0.51	0.19	mg/kg	1
Barium	7440-39-3	6010C	75		1.3	0.092	mg/kg	1
Cadmium	7440-43-9	6010C	23		0.10	0.011	mg/kg	1
Chromium	7440-47-3	6010C	54	B	0.25	0.052	mg/kg	1
Lead	7439-92-1	6010C	7.4		0.51	0.095	mg/kg	1
Mercury	7439-97-6	7471B	0.017	BJ	0.081	0.0058	mg/kg	1
Selenium	7782-49-2	6010C	1.3	B	0.51	0.18	mg/kg	1
Silver	7440-22-4	6010C	0.78		0.25	0.043	mg/kg	1
Zinc	7440-66-6	6010C	16000		130	17	mg/kg	2

PQL = Practical quantitation limit B = Detected in the method blank E = Quantitation of compound exceeded the calibration range
 ND = Not detected at or above the MDL J = Estimated result < PQL and ≥ MDL P = The RPD between two GC columns exceeds 40%
 Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W" N = Recovery is out of criteria H = Out of holding time

Inorganic non-metals

Client: Tetra Tech EM Inc.	Laboratory ID: MB17050-004
Description: Bulk Fertilizer	Matrix: Solid
Date Sampled: 02/17/2011 1117	% Solids: 95.1 02/18/2011 0806
Date Received: 02/17/2011	

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(Cyanide - To) 9012B	1	02/18/2011 1355	SMH	02/18/2011 1100	53120
1	3060A	(Hexavalent C) 7196A	1	02/22/2011 1229	ARW	02/21/2011 0830	53342

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Cyanide - Total	57-12-5	9012B	0.20	J	0.53	0.065	mg/kg	1
Hexavalent Chromium	18540-29-9	7196A	1.5		1.1	0.26	mg/kg	1

PQL = Practical quantitation limit

B = Detected in the method blank

E = Quantitation of compound exceeded the calibration range

ND = Not detected at or above the MDL

J = Estimated result < PQL and ≥ MDL

P = The RPD between two GC columns exceeds 40%

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

N = Recovery is out of criteria

H = Out of holding time

TAL Metals

Client: Tetra Tech EM Inc.	Laboratory ID: MB17050-004
Description: Bulk Fertilizer	Matrix: Solid
Date Sampled: 02/17/2011 1117	% Solids: 95.1 02/18/2011 0806
Date Received: 02/17/2011	

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		7471B	1	02/18/2011 1156	KJC	02/18/2011 0930	53072
1	3050B	6010C	1	02/19/2011 0205	CDF	02/18/2011 0937	53074

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Arsenic	7440-38-2	6010C	2.3		0.50	0.19	mg/kg	1
Barium	7440-39-3	6010C	32		1.3	0.090	mg/kg	1
Cadmium	7440-43-9	6010C	9.1		0.10	0.010	mg/kg	1
Chromium	7440-47-3	6010C	33	B	0.25	0.051	mg/kg	1
Lead	7439-92-1	6010C	2.8		0.50	0.093	mg/kg	1
Mercury	7439-97-6	7471B	0.0089	BJ	0.078	0.0056	mg/kg	1
Selenium	7782-49-2	6010C	0.78	B	0.50	0.17	mg/kg	1
Silver	7440-22-4	6010C	ND		0.25	0.042	mg/kg	1
Zinc	7440-66-6	6010C	1800		2.5	0.34	mg/kg	1

PQL = Practical quantitation limit B = Detected in the method blank E = Quantitation of compound exceeded the calibration range
 ND = Not detected at or above the MDL J = Estimated result < PQL and ≥ MDL P = The RPD between two GC columns exceeds 40%
 Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W" N = Recovery is out of criteria H = Out of holding time

TCLP Metals

Client: Tetra Tech EM Inc.	Laboratory ID: MB17050-004
Description: Bulk Fertilizer	Matrix: Solid
Date Sampled: 02/17/2011 1117	% Solids: 95.1 02/18/2011 0806
Date Received: 02/17/2011	

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Leachate Date
1	1311/7470A	7470A	1	02/21/2011 1425	BNW	02/21/2011 1015	53199	02/18/2011 1851
1	1311/3010A	6010C	10	02/22/2011 1354	CDF	02/21/2011 1026	53208	02/18/2011 1851

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Arsenic	7440-38-2	6010C	0.030	J	0.10	0.023	mg/L	1
Barium	7440-39-3	6010C	0.092	J	0.25	0.023	mg/L	1
Cadmium	7440-43-9	6010C	0.040		0.020	0.0030	mg/L	1
Chromium	7440-47-3	6010C	0.024	J	0.050	0.014	mg/L	1
Lead	7439-92-1	6010C	ND		0.10	0.017	mg/L	1
Mercury	7439-97-6	7470A	0.000058	J	0.00020	0.000053	mg/L	1
Selenium	7782-49-2	6010C	ND		0.10	0.032	mg/L	1
Silver	7440-22-4	6010C	ND		0.050	0.0090	mg/L	1
Zinc	7440-66-6	6010C	18		0.20	0.10	mg/L	1

PQL = Practical quantitation limit B = Detected in the method blank E = Quantitation of compound exceeded the calibration range
 ND = Not detected at or above the MDL J = Estimated result < PQL and ≥ MDL P = The RPD between two GC columns exceeds 40%
 Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W" N = Recovery is out of criteria H = Out of holding time

Inorganic non-metals

Client: Tetra Tech EM Inc.	Laboratory ID: MB17050-005
Description: 8-16-24-RB TOB	Matrix: Solid
Date Sampled: 02/17/2011 1132	% Solids: 98.5 02/18/2011 0806
Date Received: 02/17/2011	

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(Cyanide - To) 9012B	1	02/18/2011 1356	SMH	02/18/2011 1100	53120
1	3060A	(Hexavalent C) 7196A	1	02/22/2011 1229	ARW	02/21/2011 0830	53342

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Cyanide - Total	57-12-5	9012B	0.21	J	0.51	0.063	mg/kg	1
Hexavalent Chromium	18540-29-9	7196A	1.1		1.0	0.26	mg/kg	1

PQL = Practical quantitation limit

B = Detected in the method blank

E = Quantitation of compound exceeded the calibration range

ND = Not detected at or above the MDL

J = Estimated result < PQL and ≥ MDL

P = The RPD between two GC columns exceeds 40%

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

N = Recovery is out of criteria

H = Out of holding time

TAL Metals

Client: Tetra Tech EM Inc.	Laboratory ID: MB17050-005
Description: 8-16-24-RB TOB	Matrix: Solid
Date Sampled: 02/17/2011 1132	% Solids: 98.5 02/18/2011 0806
Date Received: 02/17/2011	

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		7471B	1	02/18/2011 1203	KJC	02/18/2011 0930	53072
1	3050B	6010C	1	02/19/2011 0217	CDF	02/18/2011 0937	53074

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Arsenic	7440-38-2	6010C	2.5		0.50	0.19	mg/kg	1
Barium	7440-39-3	6010C	7.4		1.3	0.091	mg/kg	1
Cadmium	7440-43-9	6010C	3.0		0.10	0.011	mg/kg	1
Chromium	7440-47-3	6010C	41	B	0.25	0.051	mg/kg	1
Lead	7439-92-1	6010C	2.4		0.50	0.093	mg/kg	1
Mercury	7439-97-6	7471B	0.0081	BJ	0.082	0.0058	mg/kg	1
Selenium	7782-49-2	6010C	0.52	B	0.50	0.17	mg/kg	1
Silver	7440-22-4	6010C	ND		0.25	0.042	mg/kg	1
Zinc	7440-66-6	6010C	790		2.5	0.34	mg/kg	1

PQL = Practical quantitation limit

B = Detected in the method blank

E = Quantitation of compound exceeded the calibration range

ND = Not detected at or above the MDL

J = Estimated result < PQL and ≥ MDL

P = The RPD between two GC columns exceeds 40%

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

N = Recovery is out of criteria

H = Out of holding time

TCLP Metals

Client: Tetra Tech EM Inc.	Laboratory ID: MB17050-005
Description: 8-16-24-RB TOB	Matrix: Solid
Date Sampled: 02/17/2011 1132	% Solids: 98.5 02/18/2011 0806
Date Received: 02/17/2011	

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Leachate Date
1	1311/7470A	7470A	1	02/21/2011 1428	BNW	02/21/2011 1015	53199	02/18/2011 1851
1	1311/3010A	6010C	10	02/22/2011 1358	CDF	02/21/2011 1026	53208	02/18/2011 1851

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Arsenic	7440-38-2	6010C	0.088	J	0.10	0.023	mg/L	1
Barium	7440-39-3	6010C	ND		0.25	0.023	mg/L	1
Cadmium	7440-43-9	6010C	0.093		0.020	0.0030	mg/L	1
Chromium	7440-47-3	6010C	0.41		0.050	0.014	mg/L	1
Lead	7439-92-1	6010C	ND		0.10	0.017	mg/L	1
Mercury	7439-97-6	7470A	ND		0.00020	0.000053	mg/L	1
Selenium	7782-49-2	6010C	ND		0.10	0.032	mg/L	1
Silver	7440-22-4	6010C	ND		0.050	0.0090	mg/L	1
Zinc	7440-66-6	6010C	9.8		0.20	0.10	mg/L	1

PQL = Practical quantitation limit B = Detected in the method blank E = Quantitation of compound exceeded the calibration range
 ND = Not detected at or above the MDL J = Estimated result < PQL and ≥ MDL P = The RPD between two GC columns exceeds 40%
 Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W" N = Recovery is out of criteria H = Out of holding time

Inorganic non-metals

Client: Tetra Tech EM Inc.	Laboratory ID: MB17050-006
Description: 14-4-14-RB	Matrix: Solid
Date Sampled: 02/17/2011 1205	% Solids: 99.2 02/18/2011 0806
Date Received: 02/17/2011	

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(Cyanide - To) 9012B	1	02/18/2011 1356	SMH	02/18/2011 1100	53120
1	3060A	(Hexavalent C) 7196A	1	02/22/2011 1229	ARW	02/21/2011 0830	53342

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Cyanide - Total	57-12-5	9012B	1.4		0.50	0.062	mg/kg	1
Hexavalent Chromium	18540-29-9	7196A	0.40	J	1.0	0.25	mg/kg	1

PQL = Practical quantitation limit

B = Detected in the method blank

E = Quantitation of compound exceeded the calibration range

ND = Not detected at or above the MDL

J = Estimated result < PQL and ≥ MDL

P = The RPD between two GC columns exceeds 40%

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

N = Recovery is out of criteria

H = Out of holding time

TAL Metals

Client: Tetra Tech EM Inc.	Laboratory ID: MB17050-006
Description: 14-4-14-RB	Matrix: Solid
Date Sampled: 02/17/2011 1205	% Solids: 99.2 02/18/2011 0806
Date Received: 02/17/2011	

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		7471B	1	02/18/2011 1205	KJC	02/18/2011 0930	53072
1	3050B	6010C	1	02/19/2011 0220	CDF	02/18/2011 0937	53074
2	3050B	6010C	10	02/21/2011 2121	CDF	02/18/2011 0937	53074

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Arsenic	7440-38-2	6010C	1.4		0.50	0.19	mg/kg	1
Barium	7440-39-3	6010C	45		1.3	0.091	mg/kg	1
Cadmium	7440-43-9	6010C	17		0.10	0.011	mg/kg	1
Chromium	7440-47-3	6010C	41	B	0.25	0.051	mg/kg	1
Lead	7439-92-1	6010C	3.0		0.50	0.093	mg/kg	1
Mercury	7439-97-6	7471B	0.020	BJ	0.084	0.0059	mg/kg	1
Selenium	7782-49-2	6010C	1.2	B	0.50	0.17	mg/kg	1
Silver	7440-22-4	6010C	0.49		0.25	0.042	mg/kg	1
Zinc	7440-66-6	6010C	3600		25	3.4	mg/kg	2

PQL = Practical quantitation limit B = Detected in the method blank E = Quantitation of compound exceeded the calibration range
 ND = Not detected at or above the MDL J = Estimated result < PQL and ≥ MDL P = The RPD between two GC columns exceeds 40%
 Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W" N = Recovery is out of criteria H = Out of holding time

TCLP Metals

Client: Tetra Tech EM Inc.	Laboratory ID: MB17050-006
Description: 14-4-14-RB	Matrix: Solid
Date Sampled: 02/17/2011 1205	% Solids: 99.2 02/18/2011 0806
Date Received: 02/17/2011	

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Leachate Date
1	1311/7470A	7470A	1	02/21/2011 1431	BNW	02/21/2011 1015	53199	02/18/2011 1851
1	1311/3010A	6010C	10	02/22/2011 1401	CDF	02/21/2011 1026	53208	02/18/2011 1851

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Arsenic	7440-38-2	6010C	0.027	J	0.10	0.023	mg/L	1
Barium	7440-39-3	6010C	0.047	J	0.25	0.023	mg/L	1
Cadmium	7440-43-9	6010C	0.65		0.020	0.0030	mg/L	1
Chromium	7440-47-3	6010C	0.077		0.050	0.014	mg/L	1
Lead	7439-92-1	6010C	ND		0.10	0.017	mg/L	1
Mercury	7439-97-6	7470A	ND		0.00020	0.000053	mg/L	1
Selenium	7782-49-2	6010C	ND		0.10	0.032	mg/L	1
Silver	7440-22-4	6010C	ND		0.050	0.0090	mg/L	1
Zinc	7440-66-6	6010C	35		0.20	0.10	mg/L	1

PQL = Practical quantitation limit B = Detected in the method blank E = Quantitation of compound exceeded the calibration range
 ND = Not detected at or above the MDL J = Estimated result < PQL and ≥ MDL P = The RPD between two GC columns exceeds 40%
 Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W" N = Recovery is out of criteria H = Out of holding time

QC Summary

Inorganic non-metals - MB

Sample ID: MQ53120-001

Batch: 53120

Analytical Method: 9012B

Matrix: Solid

Prep Method: 9012B

Prep Date: 02/18/2011 1100

Parameter	Result	Q	Dil	PQL	MDL	Units	Analysis Date
Cyanide - Total	ND		1	0.50	0.062	mg/kg	02/18/2011 1343

PQL = Practical quantitation limit

P = The RPD between two GC columns exceeds 40%

N - Recovery is out of criteria

ND = Not detected at or above the MDL

J = Estimated result < PQL and \geq MDL

+ - RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Inorganic non-metals - LCS

Sample ID: MQ53120-002

Batch: 53120

Analytical Method: 9012B

Matrix: Solid

Prep Method: 9012B

Prep Date: 02/18/2011 1100

Parameter	Spike Amount (mg/kg)	Result (mg/kg)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Cyanide - Total	5.0	5.0		1	100	90-110	02/18/2011 1344

PQL = Practical quantitation limit

P = The RPD between two GC columns exceeds 40%

N - Recovery is out of criteria

ND = Not detected at or above the MDL

J = Estimated result < PQL and \geq MDL

+ - RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Inorganic non-metals - LCSD

Sample ID: MQ53120-003

Matrix: Solid

Batch: 53120

Prep Method: 9012B

Analytical Method: 9012B

Prep Date: 02/18/2011 1100

Parameter	Spike Amount (mg/kg)	Result (mg/kg)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
Cyanide - Total	5.0	5.1		1	102	2.5	90-110	20	02/18/2011 1344

PQL = Practical quantitation limit

P = The RPD between two GC columns exceeds 40%

N - Recovery is out of criteria

ND = Not detected at or above the MDL

J = Estimated result < PQL and \geq MDL

+ - RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Inorganic non-metals - Duplicate

Sample ID: MB17050-006DU

Batch: 53120

Analytical Method: 9012B

Matrix: Solid

Prep Method: 9012B

Prep Date: 02/18/2011 1100

Parameter	Sample Amount (mg/kg)	Result (mg/kg)	Q	Dil	% RPD	% RPD Limit	Analysis Date
Cyanide - Total	1.4	1.1		1	18	20	02/18/2011 1357

PQL = Practical quantitation limit

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

ND = Not detected at or above the MDL

J = Estimated result < PQL and \geq MDL

+ - RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Inorganic non-metals - MS

Sample ID: MB17050-003MS

Batch: 53120

Analytical Method: 9012B

Matrix: Solid

Prep Method: 9012B

Prep Date: 02/18/2011 1100

Parameter	Sample Amount (mg/kg)	Spike Amount (mg/kg)	Result (mg/kg)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Cyanide - Total	0.38	5.1	4.6		1	83	70-130	02/18/2011 1350

PQL = Practical quantitation limit

P = The RPD between two GC columns exceeds 40%

N - Recovery is out of criteria

ND = Not detected at or above the MDL

J = Estimated result < PQL and \geq MDL

+ - RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Inorganic non-metals - MSD

Sample ID: MB17050-003MD

Matrix: Solid

Batch: 53120

Prep Method: 9012B

Analytical Method: 9012B

Prep Date: 02/18/2011 1100

Parameter	Sample Amount (mg/kg)	Spike Amount (mg/kg)	Result (mg/kg)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
Cyanide - Total	0.38	5.1	4.5		1	82	1.2	70-130	20	02/18/2011 1351

PQL = Practical quantitation limit

P = The RPD between two GC columns exceeds 40%

N - Recovery is out of criteria

ND = Not detected at or above the MDL

J = Estimated result < PQL and \geq MDL

+ - RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Inorganic non-metals - MB

Sample ID: MQ53342-001

Batch: 53342

Analytical Method: 7196A

Matrix: Solid

Prep Method: 3060A

Prep Date: 02/21/2011 830

Parameter	Result	Q	Dil	PQL	MDL	Units	Analysis Date
Hexavalent Chromium	ND		1	1.0	0.25	mg/kg	02/22/2011 1229

PQL = Practical quantitation limit

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

ND = Not detected at or above the MDL

J = Estimated result < PQL and \geq MDL

+ - RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Inorganic non-metals - LCS

Sample ID: MQ53342-002

Batch: 53342

Analytical Method: 7196A

Matrix: Solid

Prep Method: 3060A

Prep Date: 02/21/2011 830

Parameter	Spike Amount (mg/kg)	Result (mg/kg)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Hexavalent Chromium	4.0	3.6		1	90	90-110	02/22/2011 1229

PQL = Practical quantitation limit

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

ND = Not detected at or above the MDL

J = Estimated result < PQL and \geq MDL

+ - RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Inorganic non-metals - LCSD

Sample ID: MQ53342-003

Matrix: Solid

Batch: 53342

Prep Method: 3060A

Analytical Method: 7196A

Prep Date: 02/21/2011 830

Parameter	Spike Amount (mg/kg)	Result (mg/kg)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
Hexavalent Chromium	4.0	3.9		1	98	8.5	90-110	20	02/22/2011 1229

PQL = Practical quantitation limit

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

ND = Not detected at or above the MDL

J = Estimated result < PQL and \geq MDL

+ - RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Inorganic non-metals - MS

Sample ID: MB17050-001MS

Matrix: Solid

Batch: 53342

Prep Method: 3060A

Analytical Method: 7196A

Prep Date: 02/21/2011 830

Parameter	Sample Amount (mg/kg)	Spike Amount (mg/kg)	Result (mg/kg)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Hexavalent Chromium	0.93	4.2	5.7		1	113	70-130	02/22/2011 1229

PQL = Practical quantitation limit

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

ND = Not detected at or above the MDL

J = Estimated result < PQL and \geq MDL

+ - RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Inorganic non-metals - MS

Sample ID: MB17050-003MS

Matrix: Solid

Batch: 53342

Prep Method: 3060A

Analytical Method: 7196A

Prep Date: 02/21/2011 830

Parameter	Sample Amount (mg/kg)	Spike Amount (mg/kg)	Result (mg/kg)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Hexavalent Chromium	0.41	4.1	0.98	N	1	14	70-130	02/22/2011 1229

PQL = Practical quantitation limit

P = The RPD between two GC columns exceeds 40%

N - Recovery is out of criteria

ND = Not detected at or above the MDL

J = Estimated result < PQL and \geq MDL

+ - RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Inorganic non-metals - MSD

Sample ID: MB17050-003MD

Matrix: Solid

Batch: 53342

Prep Method: 3060A

Analytical Method: 7196A

Prep Date: 02/21/2011 830

Parameter	Sample Amount (mg/kg)	Spike Amount (mg/kg)	Result (mg/kg)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
Hexavalent Chromium	0.41	4.1	0.97	N	1	14	0.47	70-130	20	02/22/2011 1229

PQL = Practical quantitation limit

P = The RPD between two GC columns exceeds 40%

N - Recovery is out of criteria

ND = Not detected at or above the MDL

J = Estimated result < PQL and \geq MDL

+ - RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

TAL Metals - MB

Sample ID: MQ53074-001

Matrix: Solid

Batch: 53074

Prep Method: 3050B

Analytical Method: 6010C

Prep Date: 02/18/2011 937

Parameter	Result	Q	Dil	PQL	MDL	Units	Analysis Date
Arsenic	ND		1	0.50	0.19	mg/kg	02/19/2011 0127
Barium	ND		1	1.3	0.091	mg/kg	02/19/2011 0127
Cadmium	ND		1	0.10	0.011	mg/kg	02/19/2011 0127
Chromium	0.12	J	1	0.25	0.051	mg/kg	02/19/2011 0127
Lead	ND		1	0.50	0.093	mg/kg	02/19/2011 0127
Selenium	0.49	J	1	0.50	0.17	mg/kg	02/19/2011 0127
Silver	ND		1	0.25	0.042	mg/kg	02/19/2011 0127
Zinc	ND		1	2.5	0.34	mg/kg	02/19/2011 0127

PQL = Practical quantitation limit

P = The RPD between two GC columns exceeds 40%

N - Recovery is out of criteria

ND = Not detected at or above the MDL

J = Estimated result < PQL and \geq MDL

+ - RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

TAL Metals - LCS

Sample ID: MQ53074-002

Matrix: Solid

Batch: 53074

Prep Method: 3050B

Analytical Method: 6010C

Prep Date: 02/18/2011 937

Parameter	Spike Amount (mg/kg)	Result (mg/kg)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Arsenic	250	270		1	109	80-120	02/19/2011 0131
Barium	500	490		1	99	80-120	02/19/2011 0131
Cadmium	50	43		1	85	80-120	02/19/2011 0131
Chromium	250	260		1	105	80-120	02/19/2011 0131
Lead	250	220		1	86	80-120	02/19/2011 0131
Selenium	50	51		1	102	80-120	02/19/2011 0131
Silver	250	230		1	91	80-120	02/19/2011 0131
Zinc	100	110		1	112	80-120	02/19/2011 0131

PQL = Practical quantitation limit

P = The RPD between two GC columns exceeds 40%

N - Recovery is out of criteria

ND = Not detected at or above the MDL

J = Estimated result < PQL and \geq MDL

+ - RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

TAL Metals - LCSD

Sample ID: MQ53074-003

Matrix: Solid

Batch: 53074

Prep Method: 3050B

Analytical Method: 6010C

Prep Date: 02/18/2011 937

Parameter	Spike Amount (mg/kg)	Result (mg/kg)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
Arsenic	250	280		1	112	3.4	80-120	20	02/19/2011 0135
Barium	500	500		1	99	0.28	80-120	20	02/19/2011 0135
Cadmium	50	43		1	86	0.75	80-120	20	02/19/2011 0135
Chromium	250	250		1	102	2.6	80-120	20	02/19/2011 0135
Lead	250	220		1	87	0.77	80-120	20	02/19/2011 0135
Selenium	50	53		1	105	3.2	80-120	20	02/19/2011 0135
Silver	250	220		1	89	1.5	80-120	20	02/19/2011 0135
Zinc	100	110		1	112	0.28	80-120	20	02/19/2011 0135

PQL = Practical quantitation limit

P = The RPD between two GC columns exceeds 40%

N - Recovery is out of criteria

ND = Not detected at or above the MDL

J = Estimated result < PQL and \geq MDL

+ - RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

TAL Metals - MS

Sample ID: MB17050-003MS

Matrix: Solid

Batch: 53074

Prep Method: 3050B

Analytical Method: 6010C

Prep Date: 02/18/2011 937

Parameter	Sample Amount (mg/kg)	Spike Amount (mg/kg)	Result (mg/kg)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Arsenic	2.2	250	230		1	88	75-125	02/19/2011 0152
Barium	75	510	250	N	1	34	75-125	02/19/2011 0152
Cadmium	23	51	51	N	1	55	75-125	02/19/2011 0152
Chromium	54	250	280		1	91	75-125	02/19/2011 0152
Lead	7.4	250	190	N	1	73	75-125	02/19/2011 0152
Selenium	1.3	51	51		1	99	75-125	02/19/2011 0152
Silver	0.78	250	230		1	89	75-125	02/19/2011 0152
Zinc	16000	100	5500	N	50	-9930	75-125	02/21/2011 2102

PQL = Practical quantitation limit

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

ND = Not detected at or above the MDL

J = Estimated result < PQL and \geq MDL

+ - RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

TAL Metals - MSD

Sample ID: MB17050-003MD

Matrix: Solid

Batch: 53074

Prep Method: 3050B

Analytical Method: 6010C

Prep Date: 02/18/2011 937

Parameter	Sample Amount (mg/kg)	Spike Amount (mg/kg)	Result (mg/kg)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
Arsenic	2.2	230	220		1	94	2.7	75-125	20	02/19/2011 0156
Barium	75	470	200	N	1	26	19	75-125	20	02/19/2011 0156
Cadmium	23	47	100	N,+	1	164	68	75-125	20	02/19/2011 0156
Chromium	54	230	320		1	113	15	75-125	20	02/19/2011 0156
Lead	7.4	230	180		1	75	0.77	75-125	20	02/19/2011 0156
Selenium	1.3	47	48		1	101	1.8	75-125	20	02/19/2011 0156
Silver	0.78	230	230		1	96	3.2	75-125	20	02/19/2011 0156
Zinc	16000	94	5900	N	50	-10300	11	75-125	20	02/21/2011 2108

PQL = Practical quantitation limit

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

ND = Not detected at or above the MDL

J = Estimated result < PQL and \geq MDL

+ - RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

TCLP Metals - MB

Sample ID: MQ53207-001

Matrix: Solid

Batch: 53207

Prep Method: 1311/3010A

Analytical Method: 6010C

Prep Date: 02/21/2011 1026 Leachate Date: 02/18/2011 1851

Parameter	Result	Q	Dil	PQL	MDL	Units	Analysis Date
Arsenic	ND		10	0.10	0.023	mg/L	02/21/2011 2255
Barium	ND		10	0.25	0.023	mg/L	02/21/2011 2255
Cadmium	ND		10	0.020	0.0030	mg/L	02/21/2011 2255
Chromium	ND		10	0.050	0.014	mg/L	02/21/2011 2255
Lead	ND		10	0.10	0.017	mg/L	02/21/2011 2255
Selenium	0.047	J	10	0.10	0.032	mg/L	02/22/2011 1258
Silver	0.020	J	10	0.050	0.0090	mg/L	02/21/2011 2255
Zinc	ND		10	0.20	0.10	mg/L	02/21/2011 2255

PQL = Practical quantitation limit

P = The RPD between two GC columns exceeds 40%

N - Recovery is out of criteria

ND = Not detected at or above the MDL

J = Estimated result < PQL and \geq MDL

+ - RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

TCLP Metals - LCS

Sample ID: MQ53207-002

Matrix: Solid

Batch: 53207

Prep Method: 1311/3010A

Analytical Method: 6010C

Prep Date: 02/21/2011 1026 Leachate Date: 02/18/2011 1851

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Arsenic	5.0	5.1		10	102	80-120	02/21/2011 2301
Barium	10	11		10	106	80-120	02/21/2011 2301
Cadmium	1.0	1.0		10	102	80-120	02/21/2011 2301
Chromium	5.0	5.2		10	105	80-120	02/21/2011 2301
Lead	5.0	5.2		10	105	80-120	02/21/2011 2301
Selenium	1.0	1.1		10	107	80-120	02/22/2011 1302
Silver	5.0	5.2		10	103	80-120	02/21/2011 2301
Zinc	2.0	2.1		10	107	80-120	02/21/2011 2301

PQL = Practical quantitation limit

P = The RPD between two GC columns exceeds 40%

N - Recovery is out of criteria

ND = Not detected at or above the MDL

J = Estimated result < PQL and \geq MDL

+ - RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

TCLP Metals - LCSD

Sample ID: MQ53207-003

Matrix: Solid

Batch: 53207

Prep Method: 1311/3010A

Analytical Method: 6010C

Prep Date: 02/21/2011 1026 Leachate Date: 02/18/2011 1851

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
Arsenic	5.0	5.0		10	100	2.5	80-120	20	02/21/2011 2307
Barium	10	10		10	102	3.9	80-120	20	02/21/2011 2307
Cadmium	1.0	0.99		10	99	2.9	80-120	20	02/21/2011 2307
Chromium	5.0	5.1		10	101	3.1	80-120	20	02/21/2011 2307
Lead	5.0	5.1		10	102	2.5	80-120	20	02/21/2011 2307
Selenium	1.0	1.0		10	102	4.2	80-120	20	02/22/2011 1306
Silver	5.0	5.0		10	99	3.8	80-120	20	02/21/2011 2307
Zinc	2.0	2.1		10	104	2.8	80-120	20	02/21/2011 2307

PQL = Practical quantitation limit

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

ND = Not detected at or above the MDL

J = Estimated result < PQL and \geq MDL

+ - RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

TCLP Metals - MS

Sample ID: MB17050-001MS

Matrix: Solid

Batch: 53207

Prep Method: 1311/3010A

Analytical Method: 6010C

Prep Date: 02/21/2011 1026 Leachate Date: 02/18/2011 1851

Parameter	Sample Amount (mg/L)	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Arsenic	ND	5.0	5.1		10	101	75-125	02/21/2011 2319
Barium	0.26	10	11		10	104	75-125	02/21/2011 2319
Cadmium	1.2	1.0	2.2		10	96	75-125	02/21/2011 2319
Chromium	ND	5.0	5.1		10	102	75-125	02/21/2011 2319
Lead	0.10	5.0	5.2		10	102	75-125	02/21/2011 2319
Selenium	ND	1.0	1.2		20	116	75-125	02/22/2011 1313
Silver	0.021	5.0	4.7		10	94	75-125	02/21/2011 2319
Zinc	550	2.0	540	N	20	-279	75-125	02/22/2011 1313

PQL = Practical quantitation limit

P = The RPD between two GC columns exceeds 40%

N - Recovery is out of criteria

ND = Not detected at or above the MDL

J = Estimated result < PQL and \geq MDL

+ - RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

TCLP Metals - MB

Sample ID: MQ53208-001

Matrix: Solid

Batch: 53208

Prep Method: 1311/3010A

Analytical Method: 6010C

Prep Date: 02/21/2011 1026 Leachate Date: 02/18/2011 1851

Parameter	Result	Q	Dil	PQL	MDL	Units	Analysis Date
Arsenic	ND		10	0.10	0.023	mg/L	02/22/2011 1332
Barium	ND		10	0.25	0.023	mg/L	02/22/2011 1332
Cadmium	ND		10	0.020	0.0030	mg/L	02/22/2011 1332
Chromium	ND		10	0.050	0.014	mg/L	02/22/2011 1332
Lead	ND		10	0.10	0.017	mg/L	02/22/2011 1332
Selenium	0.041	J	10	0.10	0.032	mg/L	02/22/2011 1332
Silver	ND		10	0.050	0.0090	mg/L	02/22/2011 1332
Zinc	ND		10	0.20	0.10	mg/L	02/22/2011 1332

PQL = Practical quantitation limit

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

ND = Not detected at or above the MDL

J = Estimated result < PQL and \geq MDL

+ - RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

TCLP Metals - LCS

Sample ID: MQ53208-002

Matrix: Solid

Batch: 53208

Prep Method: 1311/3010A

Analytical Method: 6010C

Prep Date: 02/21/2011 1026 Leachate Date: 02/18/2011 1851

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Arsenic	5.0	5.1		10	101	80-120	02/22/2011 1336
Barium	10	10		10	100	80-120	02/22/2011 1336
Cadmium	1.0	0.94		10	94	80-120	02/22/2011 1336
Chromium	5.0	5.0		10	99	80-120	02/22/2011 1336
Lead	5.0	5.0		10	101	80-120	02/22/2011 1336
Selenium	1.0	1.0		10	100	80-120	02/22/2011 1336
Silver	5.0	4.9		10	99	80-120	02/22/2011 1336
Zinc	2.0	2.1		10	105	80-120	02/22/2011 1336

PQL = Practical quantitation limit

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

ND = Not detected at or above the MDL

J = Estimated result < PQL and \geq MDL

+ - RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

TCLP Metals - LCSD

Sample ID: MQ53208-003

Matrix: Solid

Batch: 53208

Prep Method: 1311/3010A

Analytical Method: 6010C

Prep Date: 02/21/2011 1026 Leachate Date: 02/18/2011 1851

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
Arsenic	5.0	5.2		10	103	2.2	80-120	20	02/22/2011 1339
Barium	10	10		10	104	3.1	80-120	20	02/22/2011 1339
Cadmium	1.0	0.97		10	97	2.8	80-120	20	02/22/2011 1339
Chromium	5.0	5.1		10	102	2.9	80-120	20	02/22/2011 1339
Lead	5.0	5.2		10	104	2.8	80-120	20	02/22/2011 1339
Selenium	1.0	1.0		10	101	0.62	80-120	20	02/22/2011 1339
Silver	5.0	5.1		10	102	2.7	80-120	20	02/22/2011 1339
Zinc	2.0	2.2		10	108	2.9	80-120	20	02/22/2011 1339

PQL = Practical quantitation limit

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

ND = Not detected at or above the MDL

J = Estimated result < PQL and \geq MDL

+ - RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

TCLP Metals - MS

Sample ID: MB17050-003MS

Matrix: Solid

Batch: 53208

Prep Method: 1311/3010A

Analytical Method: 6010C

Prep Date: 02/21/2011 1026 Leachate Date: 02/18/2011 1851

Parameter	Sample Amount (mg/L)	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Arsenic	ND	5.0	4.9		10	99	75-125	02/22/2011 1347
Barium	0.046	10	11		10	107	75-125	02/22/2011 1347
Cadmium	0.29	1.0	1.3		10	99	75-125	02/22/2011 1347
Chromium	0.074	5.0	5.3		10	105	75-125	02/22/2011 1347
Lead	ND	5.0	5.7		10	113	75-125	02/22/2011 1347
Selenium	ND	1.0	0.96		10	96	75-125	02/22/2011 1347
Silver	ND	5.0	5.4		10	109	75-125	02/22/2011 1347
Zinc	29	2.0	31	N	10	72	75-125	02/22/2011 1347

PQL = Practical quantitation limit

P = The RPD between two GC columns exceeds 40%

N - Recovery is out of criteria

ND = Not detected at or above the MDL

J = Estimated result < PQL and \geq MDL

+ - RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

TAL Metals - MB

Sample ID: MQ53072-001

Batch: 53072

Analytical Method: 7471B

Matrix: Solid

Prep Method: 7471B

Prep Date: 02/18/2011 930

Parameter	Result	Q	Dil	PQL	MDL	Units	Analysis Date
Mercury	0.0077	J	1	0.083	0.0059	mg/kg	02/18/2011 1137

PQL = Practical quantitation limit

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

ND = Not detected at or above the MDL

J = Estimated result < PQL and \geq MDL

+ - RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

TAL Metals - LCS

Sample ID: MQ53072-002

Batch: 53072

Analytical Method: 7471B

Matrix: Solid

Prep Method: 7471B

Prep Date: 02/18/2011 930

Parameter	Spike Amount (mg/kg)	Result (mg/kg)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Mercury	0.83	0.86		1	103	85-115	02/18/2011 1139

PQL = Practical quantitation limit

P = The RPD between two GC columns exceeds 40%

N - Recovery is out of criteria

ND = Not detected at or above the MDL

J = Estimated result < PQL and \geq MDL

+ - RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

TAL Metals - LCSD

Sample ID: MQ53072-003

Matrix: Solid

Batch: 53072

Prep Method: 7471B

Analytical Method: 7471B

Prep Date: 02/18/2011 930

Parameter	Spike Amount (mg/kg)	Result (mg/kg)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
Mercury	0.83	0.83		1	100	3.3	85-115	20	02/18/2011 1141

PQL = Practical quantitation limit

P = The RPD between two GC columns exceeds 40%

N - Recovery is out of criteria

ND = Not detected at or above the MDL

J = Estimated result < PQL and \geq MDL

+ - RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

TAL Metals - MS

Sample ID: MB17050-003MS

Matrix: Solid

Batch: 53072

Prep Method: 7471B

Analytical Method: 7471B

Prep Date: 02/18/2011 930

Parameter	Sample Amount (mg/kg)	Spike Amount (mg/kg)	Result (mg/kg)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Mercury	0.017	0.82	0.83		1	100	85-115	02/18/2011 1150

PQL = Practical quantitation limit

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

ND = Not detected at or above the MDL

J = Estimated result < PQL and \geq MDL

+ - RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

TAL Metals - MSD

Sample ID: MB17050-003MD

Matrix: Solid

Batch: 53072

Prep Method: 7471B

Analytical Method: 7471B

Prep Date: 02/18/2011 930

Parameter	Sample Amount (mg/kg)	Spike Amount (mg/kg)	Result (mg/kg)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
Mercury	0.017	0.71	0.76		1	106	1.7	85-115	20	02/18/2011 1152

PQL = Practical quantitation limit

P = The RPD between two GC columns exceeds 40%

N - Recovery is out of criteria

ND = Not detected at or above the MDL

J = Estimated result < PQL and \geq MDL

+ - RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

TCLP Metals - MB

Sample ID: MQ53198-001

Batch: 53198

Analytical Method: 7470A

Matrix: Solid

Prep Method: 1311/7470A

Prep Date: 02/21/2011 1015 Leachate Date: 02/18/2011 1851

Parameter	Result	Q	Dil	PQL	MDL	Units	Analysis Date
Mercury	ND		1	0.00020	0.000053	mg/L	02/21/2011 1340

PQL = Practical quantitation limit

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

ND = Not detected at or above the MDL

J = Estimated result < PQL and \geq MDL

+ - RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

TCLP Metals - LCS

Sample ID: MQ53198-002

Matrix: Solid

Batch: 53198

Prep Method: 1311/7470A

Analytical Method: 7470A

Prep Date: 02/21/2011 1015 Leachate Date: 02/18/2011 1851

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Mercury	0.0020	0.0020		1	102	85-115	02/21/2011 1343

PQL = Practical quantitation limit

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

ND = Not detected at or above the MDL

J = Estimated result < PQL and \geq MDL

+ - RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

TCLP Metals - LCSD

Sample ID: MQ53198-003

Matrix: Solid

Batch: 53198

Prep Method: 1311/7470A

Analytical Method: 7470A

Prep Date: 02/21/2011 1015 Leachate Date: 02/18/2011 1851

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
Mercury	0.0020	0.0020		1	101	1.5	85-115	20	02/21/2011 1346

PQL = Practical quantitation limit

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

ND = Not detected at or above the MDL

J = Estimated result < PQL and \geq MDL

+ - RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

TCLP Metals - MS

Sample ID: MB17050-002MS

Batch: 53198

Analytical Method: 7470A

Matrix: Solid

Prep Method: 1311/7470A

Prep Date: 02/21/2011 1015 Leachate Date: 02/18/2011 1851

Parameter	Sample Amount (mg/L)	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Mercury	0.00037	0.0020	0.0024		1	101	85-115	02/21/2011 1355

PQL = Practical quantitation limit

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

ND = Not detected at or above the MDL

J = Estimated result < PQL and \geq MDL

+ - RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

TCLP Metals - MB

Sample ID: MQ53199-001

Batch: 53199

Analytical Method: 7470A

Matrix: Solid

Prep Method: 1311/7470A

Prep Date: 02/21/2011 1015 Leachate Date: 02/18/2011 1851

Parameter	Result	Q	Dil	PQL	MDL	Units	Analysis Date
Mercury	ND		1	0.00020	0.000053	mg/L	02/21/2011 1402

PQL = Practical quantitation limit

P = The RPD between two GC columns exceeds 40%

N - Recovery is out of criteria

ND = Not detected at or above the MDL

J = Estimated result < PQL and \geq MDL

+ - RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

TCLP Metals - LCS

Sample ID: MQ53199-002

Batch: 53199

Analytical Method: 7470A

Matrix: Solid

Prep Method: 1311/7470A

Prep Date: 02/21/2011 1015 Leachate Date: 02/18/2011 1851

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Mercury	0.0020	0.0020		1	102	85-115	02/21/2011 1404

PQL = Practical quantitation limit

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

ND = Not detected at or above the MDL

J = Estimated result < PQL and \geq MDL

+ - RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

TCLP Metals - LCSD

Sample ID: MQ53199-003

Matrix: Solid

Batch: 53199

Prep Method: 1311/7470A

Analytical Method: 7470A

Prep Date: 02/21/2011 1015 Leachate Date: 02/18/2011 1851

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
Mercury	0.0020	0.0018		1	88	15	85-115	20	02/21/2011 1407

PQL = Practical quantitation limit

P = The RPD between two GC columns exceeds 40%

N - Recovery is out of criteria

ND = Not detected at or above the MDL

J = Estimated result < PQL and \geq MDL

+ - RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

TCLP Metals - MS

Sample ID: MB17050-003MS

Batch: 53199

Analytical Method: 7470A

Matrix: Solid

Prep Method: 1311/7470A

Prep Date: 02/21/2011 1015 Leachate Date: 02/18/2011 1851

Parameter	Sample Amount (mg/L)	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Mercury	ND	0.0020	0.0020		1	102	85-115	02/21/2011 1417

PQL = Practical quantitation limit

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

ND = Not detected at or above the MDL

J = Estimated result < PQL and \geq MDL

+ - RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results



Chain of Custody Record

SHEALY ENVIRONMENTAL SERVICES, INC.

106 Vantage Point Drive
West Columbia, South Carolina 29172
Telephone No. (803) 791-9700 Fax No. (803) 791-9111

Number 89652

Client: Tetra Tech
Report to Contact: Jessica Vickers
Address: 1955 Evergreen Blvd
City: Duluth, State: Ga, Zip Code: 30096
Project Name: Agrinum
Printed Name: Christopher Jones

Table with columns: Sample ID / Description, Date, Time, Matrix, No. of Containers by Preservative Type (Ultraclean, MSB04, PMA03, HCl, MCH, MSB5, RO), and Remarks / Cooler I.D. Rows include Zinc Oxide, Zinc Oxide-DUP, 6-3-18 YAM, Bulk Fertilizer, 8-16-24-RB TOB, 14-4-14-RB.

Possible Hazard Identification: Non-Hazard, Flammable, Skin Irritant, Poison, Unknown. Sample Disposal: Return to Client, Disposal by Lab.

Turn Around Time Required: Standard, Rush. Relinquished by: [Signature], Date: 2-17-11, Time: 1549. Received by: [Signature], Date: 2/17/11, Time: 17549.

Comments: LAB USE ONLY. Received on Ice (Circle) Yes. Ice Pack. Receipt Temp: 21.6 °C.

Shealy Environmental Services, Inc. 106 Vantage Point Drive West Columbia, SC 29172 (803) 791-9700 Fax (803) 791-9111 www.shealylab.com Level 1 Report V2.1

SHEALY ENVIRONMENTAL SERVICES, INC.

SHEALY ENVIRONMENTAL SERVICES, INC.

Shealy Environmental Services, Inc.
 Document Number: P-AD-015
 Revision Number: 6

Page 1 of 1
 Replaces Date: 09/22/06
 Effective Date: 05/29/07

Sample Receipt Checklist (SRC)

Client: Tetra Tech Cooler Inspected by/date: ELC / 2/19/11 Lot #: MB17050

Means of receipt: <input type="checkbox"/> SESI <input checked="" type="checkbox"/> Client <input type="checkbox"/> UPS <input type="checkbox"/> FedEx <input type="checkbox"/> Airborne Exp <input type="checkbox"/> Other			
Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	NA <input type="checkbox"/>	1. Were custody seals present on the cooler?
Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>	2. If custody seals were present, were they intact and unbroken?
Cooler ID/temperature upon receipt <u>21.6</u> °C / / °C / / °C / / °C			
Method: <input type="checkbox"/> Temperature Blank <input checked="" type="checkbox"/> Against Bottles			
Method of coolant: <input type="checkbox"/> Wet Ice <input type="checkbox"/> Blue Ice <input type="checkbox"/> Dry Ice <input checked="" type="checkbox"/> None			
If response is No (or Yes for 14, 15, 16), an explanation/resolution must be provided.			
Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>	3. If temperature of any cooler exceeded 6.0°C, was Project Manager notified? PM notified by SRC, phone, note (circle one), other: _____ (For coolers received via commercial courier, PMs are to be notified immediately.)
Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>	4. Is the commercial courier's packing slip attached to this form?
Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	NA <input type="checkbox"/>	5. Were proper custody procedures (relinquished/received) followed?
Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	NA <input type="checkbox"/>	6. Were sample IDs listed?
Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	NA <input type="checkbox"/>	7. Was collection date & time listed?
Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	NA <input type="checkbox"/>	8. Were tests to be performed listed on the COC or was quote # provided?
Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	NA <input type="checkbox"/>	9. Did all samples arrive in the proper containers for each test?
Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	NA <input type="checkbox"/>	10. Did all container label information (ID, date, time) agree with COC?
Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	NA <input type="checkbox"/>	11. Did all containers arrive in good condition (unbroken, lids on, etc.)?
Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	NA <input type="checkbox"/>	12. Was adequate sample volume available?
Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	NA <input type="checkbox"/>	13. Were all samples received within 1/2 the holding time or 48 hours, whichever comes first?
Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	NA <input type="checkbox"/>	14. Were any samples containers missing?
Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	NA <input type="checkbox"/>	15. Were there any excess samples not listed on COC?
Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>	16. Were bubbles present >"pea-size" (1/2" or 6mm in diameter) in any VOA vials?
Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>	17. Were all metals/O&G/HEM/nutrient samples received at a pH of <2?
Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>	18. Were all cyanide and/or sulfide samples received at a pH >12?
Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>	19. Were all applicable NH3/TKN/cyanide/phenol/BNA/pest/PCB/herb (<0.2mg/L) and toxicity (<0.1mg/L) samples free of residual chlorine?
Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>	20. Were collection temperatures documented on the COC for NC samples?
Sample Preservation (Must be completed for any sample(s) incorrectly preserved or with headspace.)			
Sample(s) _____ were received incorrectly preserved and were adjusted accordingly in sample receiving with _____ (H ₂ SO ₄ , HNO ₃ , HCl, NaOH) with the SR # (number) _____			
Sample(s) _____ were received with bubbles >6 mm in diameter.			
Sample(s) _____ were received with TRC >0.2 mg/L for NH3/TKN/cyanide/BNA/pest/PCB/herb.			
Toxicity sample(s) _____ were received with TRC >0.1 mg/L and were analyzed by method 330.5.			

Corrective Action taken, if necessary:

Was client notified: Yes No

Did client respond: Yes No

SESI employee: _____

Date of response: _____

Comments: _____