FINAL
SITE INSPECTION REPORT
MARKLEY RANGE
FORMER FORT DEVENS ARMY INSTALLATION
DEVENS, MASSACHUSETTS

Prepared for

Army Base Realignment and Closure Division
U.S. Army Garrison Fort Devens

Contract Number: W91ZLK-05-D-0010
Delivery Order: 0002

September 2011

HGL
HydroGeoLogic, Inc

FINAL
SITE INSPECTION REPORT
MARKLEY RANGE
FORMER FORT DEVENS ARMY INSTALLATION
DEVENS, MASSACHUSETTS

Prepared for:

Army Base Realignment and Closure Division
U. S. Army Garrison Fort Devens
30 Quebec Street
Devens, Massachusetts 01432-4429

Prepared by:

HydroGeoLogic, Inc.
Northway 10 Executive Park
313 Ushers Road
Ballston Lake, New York 12019

Contract No. W91ZLK-05-D-0010
Delivery Order: 0002

September 2011

TABLE OF CONTENTS

Section		Page
1.0	INTRODUCTION	1-1
1.1	PROJECT OBJECTIVES	1-1
1.2	PROJECT SCOPE	1-1
2.0	SITE BACKGROUND	2-1
2.1	SITE LOCATION AND SETTING	2-1
2.2	MARKLEY RANGE SITE DESCRIPTION AND OPERATIONAL HISTORY	2-2
2.3	PREVIOUS INVESTIGATIONS AND SOURCE LOCATIONS	2-2
3.0	FIELD ACTIVITIES	3-1
3.1	GENERAL	3-1
3.2	SAMPLING LOCATIONS	3-3
4.0	LABORATORY DATA EVALUATION	4-1
4.1	ANALYSES	4-1
4.2	QUALITY CONTROL	4-1
4.3	DATA EVALUATION FOR SPRING 2010 SAMPLING EVENT	4-2
4.3.1	Explosives Analysis	4-2
4.3.2	Total Metals and Mercury Analysis	4-3
5.0	RISK SCREENING EVALUATION	5-1
5.1	PROJECT ACTION LEVELS	5-1
5.2	RESULTS OF HUMAN HEALTH RISK SCREENING	5-2
5.2.1	Comparison to Project Action Levels	5-2
5.2.2	Contaminants of Potential Concern	5-2
5.2.3	Risk Screening Results	5-3
5.2.3.1	Arsenic	5-3
5.2.3.2	Chromium	5-3
5.2.3.3	Lead	5-3
5.2.3.4	Total Site Risk	5-4
5.2.4	Groundwater Protection	5-4
5.2.5	Comparison to Background	5-5
5.3	ECOLOGICAL RISK SCREENING	5-6
5.3.1	Comparison to Ecological Screening Levels	5-6
5.3.2	Contaminants of Potential Environmental Concern	5-7
5.3.3	Risk Screening Results	5-7
5.3.3.1	Antimony	5-7
5.3.3.2	Arsenic	5-8
5.3.3.3	Copper	5-8
5.3.3.4	Lead	5-8
5.3.3.5	Vanadium	5-8

TABLE OF CONTENTS (continued)

Section		Page
	5.3.3.6 Ecological Risk Screening Summary	5-9
	5.3.4 Lead Fragment Evaluation	5-9
	5.3.5 Sediment Sample	5-9
	5.3.6 Comparison to Background	5-9
6.0	CONCEPTUAL SITE MODEL	6-1
7.0	CONCLUSIONS AND RECOMMENDATIONS	7-1
	7.1 HUMAN HEALTH RISK SCREENING	7-1
	7.2 ECOLOGICAL RECEPTOR SCREENING	7-1
	7.3 POTENTIAL CORRECTIVE ACTION (SOUTH BERM [DU-1] SOIL REMOVAL)	7-2
8.0	REFERENCES	8-1

LIST OF FIGURES

Figure 2.1	Site Location Map Former Fort Devens Army Installation
Figure 2.2	Former Markley Range Site Location Map
Figure 3.1	Former Markley Range Decision Units
Figure 3.2	Former Markley Range Particle Analysis Soil Sample Location Map
Figure 6.1	Flow Chart of Exposure Assessment for Conceptual Site Model

LIST OF TABLES

Table 5.1	Soil Analytical Data-Comparison to Project Action Levels with Groundwater Protective Soil Screening Levels
Table 5.2	Cancer Risks Associated with Arsenic Concentrations
Table 5.3	Cancer Risks Associated with Chromium Concentrations
Table 5.4	Total Screening Cancer Risks
Table 5.5	Soil Analytical Data - Comparison to Ecological Soil Screening Levels
Table 5.6	Ecological Risks Associated with Antimony Concentrations
Table 5.7	Ecological Risks Associated with Lead Concentrations
Table 5.8	Ecological Risks Associated with Vanadium Concentrations
Table 5.9	Ecological Screening Ratio Summary
Table 5.10	Lead Particle Screening Results for Grid Samples
Table 5.11	Sediment Data-Comparison to BTAG Benchmarks
Table 5.12	COPECs Identified in Wetland Sediments

LIST OF APPENDICES

APPENDIX A	Field Notes/Daily Quality Control Reports
APPENDIX B	Laboratory Analytical Data and Data Evaluation Report

LIST OF ACRONYMS AND ABBREVIATIONS

Army	U.S. Army Garrison Fort Devens
AOC	Area of Concern
ASR	Archives Search Report
ASTM	American Society for Testing and Materials
BAR	Browning Automatic Rifle
bgs	below ground surface
BRAC	Base Realignment and Closure
BTAG	Biological Technical Advisory Group
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CMR	Code of Massachusetts Regulations
COPC	contaminants of potential concern
COPEC	contaminants of potential ecological concern
CSM	conceptual site model
DAF	dilution and attenuation factors
DER	data evaluation report
DoD	Department of Defense
DQO	daily quality objective
DRFTA	Devens Reserve Forces Training Area
DU	decision unit
E&E	Ecology & Environment, Inc.
EcoSSL	Ecological Soil Screening Levels
ELAP	Environmental Laboratory Accreditation Program
EPC	exposure point concentration
HGL	HydroGeoLogic, Inc.
IEUBK	Integrated Exposure-Uptake Biokinetic Model
ISM	Incremental Sampling Method
LCS	laboratory control sample
LOAEL	lowest observed adverse effects levels
LOD	limit of detection
LOQ	limit of quantitation
MassDEP	Massachusetts Department of Environmental Protection
MassDevelopment	Massachusetts Development and Finance Agency
MC	munitions constituent
MCP	Massachusetts Contingency Plan
MDL	method detection limit
MEC	munitions and explosives of concern
mg/kg	milligrams per kilogram
mm	millimeter

MS	matrix spike
MSD	matrix spike duplicate
NELAP	National Environmental Laboratory Accreditation Program
NFA	no further action
NOAEL	no observed adverse effects levels
ORNL	Oak Ridge National Laboratory
OSWER	Office of Solid Waste and Emergency Response
%	percent
PAL	project action level
ppm	parts per million
QC	quality control
QSM	quality systems manual
RL	reporting limit
RSD	relative standard deviation
RSL	Regional Screening Level
SAR	small arms range
SI	site inspection
SSL	soil screening level
TAL	target analyte list
TAL-Denver	TestAmerica Laboratories in Denver, Colorado
TSCR	total screening cancer limit
TSHI	total screening hazard index
UFP-QAPP	Uniform Federal Policy Quality Assurance Project Plan
USACE	U.S. Army Corps of Engineers
USEPA	U.S. Environmental Protection Agency
UXO	unexploded ordnance
WP	Work Plan
XRF	x-ray fluorescence

FINAL
SITE INSPECTION REPORT
MARKLEY RANGE
FORMER FORT DEVENS ARMY INSTALLATION
DEVENS, MASSACHUSETTS

1.0 INTRODUCTION

HydroGeoLogic, Inc. (HGL) prepared this Site Inspection (SI) Report at Markley Range, Former Fort Devens Army Installation, Devens, Massachusetts, on behalf of the Army Base Realignment and Closure (BRAC) Division, U.S. Army Garrison Fort Devens (Army). The work was conducted under Contract W91ZLK-05-D-0010, Task Order 0002.

Markley Range was identified as a 1000-inch rifle and machine gun range in a 1995 Archives Search Report (ASR) prepared by the U.S. Army Corps of Engineers (USACE), (USACE, 1995). The SI focused on munitions constituents (MC), because munitions and explosives of concern (MEC) are not a concern at this site. Specific activities conducted in support of this effort include the development of a conceptual site model (CSM) and the collection of surface soil and sediment samples. HGL conducted the SI under the framework established by the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), in accordance with other investigative activities at Former Fort Devens.

1.1 PROJECT OBJECTIVES

The objective of the SI was to collect information necessary to identify whether Markley Range (1) requires a response action such as soil removal, or (2) qualifies for No Further Action (NFA). To achieve this objective, HGL:

- Established individual sample area decision units (DU);
- Collected soil and sediment samples to confirm the presence or absence of MC;
- Screened analytical results and identified Contaminants of Potential Concern (COPC);
- Performed cumulative human health and risk screening; and
- Developed a CSM for the Markley Range.

1.2 PROJECT SCOPE

The SI summarizes the field activities and analytical results, and provides an evaluation of the data, as well as the CSM. HGL used a total site risk approach to evaluate sampling data for potential risk to human health and the environment.

HGL collected soil and sediment in the presumed berm areas, the firing areas, and the down range area. A sediment sample was collected from a wetland located to the east of the former range. Based on the site's previous use, soil and sediment samples were analyzed for metals and

explosives. To perform the SI, HGL divided the former range area into six distinct decision units and evaluated each unit separately. HGL conducted human health and ecological risk screening to evaluate SI data for detected contaminants. To assess the potential threat posed to human health by contaminants found in soil and sediment at Markley Range, the soil and sediment data were evaluated in accordance with the U.S. Environmental Protection Agency's (USEPA) Soil Screening Guidance (USEPA, 1996) and the USEPA's Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites (USEPA, 2002). The site inspection followed the data quality objective (DQO) process.

2.0 SITE BACKGROUND

2.1 SITE LOCATION AND SETTING

Devens is located in the towns of Ayer and Shirley in Middlesex County and Harvard and Lancaster in Worcester County, Massachusetts, approximately 35 miles northwest of Boston, Massachusetts (Figure 2.1). The installation occupied approximately 9,260 acres. Prior to official base closure, Devens was divided into the North Post, Main Post, and South Post. Route 2 divides the South Post from the Main Post. The Nashua River runs through the North, Main, and South Posts. The area surrounding Devens is largely rural residential property.

Camp Devens was established in 1917 as a temporary training area for soldiers during World War I. Prior to 1917, the area was occupied by residential homes and farmland. In 1932, the site was named Fort Devens and made a permanent installation with the primary mission of commanding, training, and providing logistical support for non-divisional troop units. The installation also supported the Army Readiness Regional and National Guard units in the New England area. Devens was used for a variety of training missions between 1917 and 1990. Pursuant to CERCLA, as amended by the Superfund Amendments and Reauthorization Act of 1986, Devens was placed on the National Priorities List on November 21, 1989, because of environmental contamination at several sites.

Devens was identified for cessation of operations and closure under Public Law 101-510, the Defense BRAC Act of 1990, and officially closed in March 1996. As part of the Devens BRAC program, portions of the property formerly occupied by Fort Devens were retained by the Army for reserve forces training and renamed the Devens Reserve Forces Training Area (DRFTA). Areas not retained as part of DRFTA were, or are in the process of being, transferred to new owners for reuse and redevelopment.

In May 1996, portions of the Main and North Posts, and all of the South Post, were realigned as the DRFTA. A total of 5,181.64 acres (344.94 acres of the Main Post enclave and 4,836.70 acres of the South Post) was retained as the DRFTA with an additional 444.10 acres pending lease or transfer. Also in 1996, 3,040.4 acres were either leased (686.4 acres) or transferred (2,354 acres) to the Massachusetts Development and Finance Agency (MassDevelopment), Devens Commerce Center. Additional property transfers occurred in 1997, 1998 and 1999 to various entities. The DRFTA was subsequently renamed U.S. Army Garrison Fort Devens.

Markley Range abuts the northern perimeter of Red Tail Golf Club and is located on property owned and managed by MassDevelopment. It is currently zoned for open space/recreation use and, per MassDevelopment, there are no plans to change the zoning in the foreseeable future. North of the former Markley Range, across Barnum Road, the area is zoned industrial and trade, and includes an Anheuser Busch distribution building and the 94th Regional Readiness Command (U.S. Army Reserves).

2.2 MARKLEY RANGE SITE DESCRIPTION AND OPERATIONAL HISTORY

According to the 1995 ASR (USACE, 1995), Markley Range is a former rifle and machine gun range that was operational from the 1920s through the 1940s, and possibly into the mid-1950s. A 1942 range location map in the ASR identified the Markley Range as a "1000-Inch Rifle and Machine Gun Range," with target storage, observation and other support structures. Subsequent range maps (1950s era) identify the Markley Range as a "1000-inch BAR and carbine range". BAR is Army terminology for "Browning Automatic Rifle". The former small arms range (SAR) is located outside the currently designated U.S. Army Garrison Fort Devens, and the area that includes the former range is owned and managed by MassDevelopment.

Markley Range is located south of Barnum Road and approximately 750 feet east of Robbins Pond (Figure 2.2). Cold Spring Brook is located to the south and east of the former range and flows generally to the east. Based on preliminary site observations of local topography and drainage features, it appears that groundwater flows east to southeast in the vicinity of the former range. An overgrown and unimproved gravel road leads from Barnum Road to a partial clearing that represents the remnants of Markley Range. No buildings or structures remain at the site. The site includes scattered open sandy areas and a sandy former backstop/berm area at the southern end of the presumed range. The former range area is surrounded by brushy overgrowth and a wetland area is located approximately 100 feet east of the range.

HGL reviewed aerial photographs of the former Markley Range area from 1965, 1980, and 2007. Photographs dating back to the likely period of operation were not available. HGL's review indicated that Markley Range may have been active into the early 1960s due to observed ground scarring in the 1965 aerial photo and the absence of vegetation; however, the construction of the Davao housing area immediately downrange of the Markley range in the early 1960s suggests the range was largely abandoned once the housing area was developed. Features noted on the 1965 photograph reveal a potential east-west firing orientation, with a possible firing line at the eastern end of the site and backstop at the western edge. The interpreted berm in the 1965 era photograph is likely a ricochet berm and not a primary target berm. The 1965 era aerial photo is inconclusive as to the true range orientation; however, the 1000-inch range description heavily favors a north-south orientation. An east-west orientation exceeds target placement for a 1000-inch range and no natural backstop (hillside) is located at the western end of the range. The site is shown as fully abandoned and overgrown in the 1980 aerial photo. The 2007 photograph showed the range area as generally revegetated, and the remnant site features, although mostly obliterated, confirm the likely firing line at the northern end of the range with a backstop at the southern end. In addition, site observations during a decision unit grid layout visit revealed a remnant bullet distribution along the presumed southern berm with no physical evidence of a former east-west firing orientation.

2.3 PREVIOUS INVESTIGATIONS AND SOURCE LOCATIONS

No previous site inspections or investigations have been performed at Markley Range.

3.0 FIELD ACTIVITIES

3.1 GENERAL

This section summarizes the soil and sediment sampling HGL conducted at the Markley Range during this SI. Per the SI Work Plan (WP), no groundwater sampling was performed during this SI. HGL performed an unexploded ordnance (UXO) and total metals sweep at the Markley Range prior to initiating intrusive site activities. The metals sweep focused on the presumed berm/target areas to detect spent rounds and non-ferrous metals, and helped establish the perimeter of the former berm areas. A single UXO which was identified as a 3-inch Stokes mortar, was discovered. Per the Fort Devens Accident Prevention Plan/Site Safety & Health Plan, the Devens Fire Department was contacted. Within 1-hour of being contacted, the Devens Police arrived on site and removed the UXO for disposal. No additional UXO was discovered. During the metals sweep, bullets and spent casings were observed at the surface at the south berm and a few pieces of discarded, unidentified, iron debris were found in various areas. After completing the UXO and metals sweep, HGL delineated and staked the area identified for sample collection. HGL collected soil samples using an Incremental Sampling Method (ISM) methodology. The ISM approach was developed primarily for evaluating energetic compounds at military ranges but has been applied successfully to detecting a wide range of compounds, including metals. The ISM approach more thoroughly accounts for firing range heterogeneities and provides a better coverage of the investigative area than either traditional composite sampling or random grab sampling. In addition, the ISM approach for explosives samples helped minimize fundamental error due to compositional heterogeneity by processing the entire ISM sample through air drying, sieving, and mechanical grinding in a puck mill grinder. The ISM approach for metals samples was similar but eliminated the puck mill step due to potential positive or negative bias of the data.

Using ISM methodology, HGL subdivided the sample areas into six individual decision units as shown on Figure 3.1. The decision units include:

- South Berm (DU-1);
- West Berm (DU-2);
- North Firing Line (DU-3);
- East Firing Line (DU-4);
- Down Range (DU-5); and
- Uphill of the South Berm (DU-6).

HGL collected samples at the firing lines, berms and down range areas from 2 to 4 inches below ground surface (bgs). HGL removed the upper 2 inches of soil cover prior to collecting the desired ISM interval because the Markley Range has been inactive since the late 1950s and the upper 2 inches of soil cover were likely deposited over the intervening period. The samples were submitted to the U.S. Army and processed by Method 8330B protocol as detailed in the SIWP. The soil samples from all six decision units were analyzed for the Target Analyte List (TAL) metals per USEPA SW-846 Methods (SW) 6010C, 6020A and 7471B.

In addition to the standard TAL metal analyses for the firing lines, the greater than (>) 2 millimeter (mm) size fraction remaining on the 10 mesh sieve screen after ISM sample prep (Method 8330B) was analyzed for a subset of the TAL metals (arsenic, copper, lead and antimony). Because energetic compounds are typically found at the firing lines of SARs, soil samples from the two firing line decision units were analyzed for explosives via USEPA Method 8330B.

HGL also collected a composite sediment sample using the 7-sample wheel approach described in the SIWP. The sample was collected from within the unnamed wetland area located east of the site and analyzed for TAL metals and explosives. The samples were collected from the upper 3 inches of the sediment layer with a disposable hand scoop. Approximately four times the required amount of sample volume was collected and mixed in a mixing bowl. Large rocks, greater than 1 centimeter in diameter, and twigs were removed. The bowl was mixed three times to homogenize the material and provide a representative sample. The sample submitted for analysis was contained in six 8-ounce soil jars (two jars for the parent soil sample, two jars for the MS, and two jars for the MSD). The wetland area is downgradient of the former range. HGL collected the sample at the most probable drainage point relative to the site based on the topography. The location of the sediment sample in the SIWP figure was field-proven to be incorrect and was moved to the correct location depicted in Figure 3.2.

Samples for particle analysis were collected and analyzed from the west berm (DU-2), south berm (DU-1) and the backstop/hillside adjacent to the south berm (DU-6) following similar procedures developed, approved, and implemented at the nearby Bryant Range (Weston, 2006). Three grids (1-foot x 1-foot x 1-inch deep) were placed in each of the three decision units for use during collection of the soil samples. The grids were placed either in areas where bullets and casing were observed (DU-1) or in areas having lithology consistent with a target berm (DU-1, DU-6, DU-2). An additional grid sample outside the range area was collected to determine a reference background concentration. A few bullets were collected to determine a reference lead particle concentration.

After the grid samples were collected, they were submitted to GeoTesting Express, Inc., for sieving in accordance American Society for Testing and Materials (ASTM) Method D422. Particles passing the 2.8 mm sieve but retained on the 0.50 mm sieve were returned to HGL for further analysis. The below protocol, as implemented at the Bryant Range, was followed by HGL in order to analyze all the sieved samples:

1. A portion of the sample was placed on a white piece of paper.
2. The sample was pressed using a stainless steel spoon.
3. The sample was dragged across the paper while applying pressure.
4. If a particle left a black streak across the paper, the particle was then isolated and screened using an XRF unit.
5. If a black particle's lead concentration was greater than 28 milligrams per kilogram (mg/kg), its concentration was recorded.
6. If the particle concentration was greater than 1,000 mg/kg, the particle was counted as a lead particle.

7. Steps 1 through 6 were continued until the entire 0.50 mm to 2.80 mm sample was sorted.

Prior to sorting and analyzing the sieved samples, HGL analyzed lead bullets to determine a reference lead concentration and a sample collected from outside the range area was also analyzed to determine a lead background concentration. The bullets were analyzed intact and in pieces, between 0.5 and 2.8 mm, after being deformed and broken. The reference lead concentration derived from the lead bullets by HGL was higher than the value determined for the Bryant Range investigation. Therefore, HGL used the value derived for Bryant Range to be conservative in the particle analysis.

The following naming convention was used for samples submitted to TestAmerica for laboratory analysis:

MRBM	= Markley Range Berm
MRFL	= Markley Range Firing Line
MRRep	= Markley Range Replicate
MR-SD	= Markley Range Sediment

Field notes and data quality control reports are included as Appendix A.

3.2 SAMPLING LOCATIONS

HGL developed a systematic random sampling grid for each decision unit. The decision units are shown in Figures 3.1 and 3.2. The grids were designed to have equally spaced points within each grid. Although each grid differed in size and dimension and had a different number of interior points, the total number of points was similar for each grid. Further, HGL designed the grids as rectangles rather than the more common squares, providing more points in the long dimension compared to the short dimension. The details of each grid include:

South Berm Decision Unit (DU-1)
Dimension: 190 feet EW x 30 feet NS
Area: 5,700 square feet
Grid spacing: 10 feet
Total number of grid points: 80

West Berm Decision Unit (DU-2)
Dimension: 24 feet EW x 102 feet NS
Area: 2,448 square feet
Grid spacing: 6 feet
Total number of grid points: 90

North Firing Line Decision Unit (DU-3)
Dimension: 112 feet EW x 28 feet NS
Area: 3,136 square feet

Grid spacing: 7 feet
Total number of grid points: 81

East Firing Line Decision Unit (DU-4)
Dimension: 30 feet EW x 78 feet NS
Area: 2,340 square feet
Grid spacing: 6 feet
Total number of grid points: 81

Downrange Decision Unit (DU-5)
Dimension: 91 feet EW x 35 feet NS
Area: 3,185 square feet
Grid spacing: 7 feet
Total number of grid points: 84

Uphill of the South Berm Decision Unit (DU-6)
Dimension: 176 feet EW x 44 feet NS
Area: 7,744 square feet
Grid spacing: 11 feet
Total number of grid points: 85

HGL obtained one sample increment from each of the grid points within a decision unit. The sample increments were collected by core barrels and subsequently transferred to a sample collection bag. Each ISM sample bag from a decision unit consisted of a minimum of one kilogram of soil. HGL collected one primary analytical sample from each decision unit, as well as a deep-zone 40- increment sample subset from the primary (southern) target berm decision unit. Two replicate ISM samples were collected from the north firing line (DU-3) in order to calculate both sampling and USEPA method SW8330B processing precision by calculating the percent (%) relative standard deviation (RSD).

To address potential ecological risks to grit-eating birds, HGL conducted a lead fragment count analysis on samples collected from the two berm/target area decision units (DU-1 and DU-2) and the decision unit uphill from the primary (southern) decision unit (DU-6). HGL collected three samples from each of the three decision units, and had the soil sieved to isolate particles in the 0.5 mm to 2.8 mm size range. The sieved sample was then evaluated by dragging the sample on a particle by particle basis across a piece of white paper. Particles that streaked black were isolated and further evaluated with an x-ray fluorescence (XRF) to determine if the particle was a lead fragment. These protocols were approved and implemented at nearby Bryant Range (Weston, 2006). Particle analysis sample locations are depicted on Figure 3.2. Analysis results are discussed in Section 5.3.4.

The location of the sediment sample composited from the adjacent wetland area is shown on Figures 3.1 and 3.2.

4.0 LABORATORY DATA EVALUATION

TestAmerica Laboratory in Denver (TAL-Denver), Colorado, was the primary contract laboratory used for the analysis of soil and sediment samples collected by HGL during the spring 2010 event. TAL-Denver is Department of Defense (DoD) Environmental Laboratory Accreditation Program (ELAP)-compliant with the most recently published version of the *DoD Quality Systems Manual (QSM) for Environmental Laboratories, Version 4.1* (DoD Environmental Data Quality Workgroup, 2009) and holds current National Environmental Laboratory Accreditation Program (NELAP) accreditation for all applicable analytical methods.

4.1 ANALYSES

Samples from each decision unit and the wetland were analyzed for the following:

- South Berm (DU-1) – TAL metals and mercury by USEPA Methods SW6010C, SW6020A and SW7471B;
- West Berm (DU-2) – TAL metals and mercury by USEPA Methods SW6010C, SW6020A and SW7471B;
- North Firing Line (DU-3) – TAL metals and mercury by USEPA Methods SW6010C, SW6020A and SW7471B, and explosives by USEPA Method SW8330B;
- East Firing Line (DU-4) – TAL metals and mercury by USEPA Methods SW6010C, SW6020A and SW7471B, and explosives by USEPA Method SW8330B;
- Down Range (DU-5) – TAL metals and mercury by USEPA Methods SW6010C, SW6020A and SW7471B, and explosives by USEPA Method SW8330B;
- Uphill of DU-1 (DU-6) – TAL metals and mercury by USEPA Methods SW6010C, SW6020A and SW7471B; and
- Wetland Sediment – TAL metals and mercury by USEPA Methods SW6010C, SW6020A and SW7471B, and explosives by USEPA Method SW8330A.

All TAL metals and mercury results for soil samples consisting of the less than (<) 2 mm sieve fraction are reported in this site investigation. For soil samples consisting of the >2 mm sieve fraction, only the antimony, arsenic, copper, and lead results are reported per the SIWP (HGL, 2010).

4.2 QUALITY CONTROL

All data analyses, collection and validation were performed per the approved Uniform Federal Policy Quality Assurance Project Plan (UFP-QAPP) (HGL, 2009). Due to laboratory transcription and calculation errors and an internal software malfunction, the data packages for the soil and sediment samples were revised on three separate instances, dating 07/21/2010, 10/04/2010, and 10/12/2010. Each re-issued data package was immediately and thoroughly re-evaluated by HGL to determine what, if any, qualification revisions were necessary. Detailed descriptions of each instance, the resulting qualification effects on the data, and the course of action per re-issued data package are discussed in the Data Evaluation Report (DER) and final validation reports posted in

Appendix B. All data used for this SI report and risk assessment were determined to be acceptable by the HGL Project Chemist.

4.3 DATA EVALUATION FOR SPRING 2010 SAMPLING EVENT

HGL evaluated all analytical results from the spring 2010 sampling event for data acceptability in accordance with the Markley Range UFP-QAPP (HGL, 2009), USEPA Region I data validation guidelines (USEPA Region I, 1989, 1996a, and 1996b), and the DoD QSM, version 4.1 (DoD Environmental Data Quality Workgroup, 2009). When available, the acceptance criteria stated in the Markley Range UFP-QAPP (HGL, 2009) were taken from the DoD QSM, version 4.1 (DoD Environmental Data Quality Workgroup, 2009); for analytes not listed in the DoD QSM the laboratory's defined acceptance limits were used. The DER and final validation reports for the sampling event are presented in Appendix B. The findings of the DER are summarized below. Note that the DER (Appendix B) and Section 4.3 summaries include all reported results for each sample, including results for non-target analytes. Results between the calculated method detection limit (MDL) or limit of detection (LOD), which is new DoD QSM version 4.1 terminology, and the reporting limit (RL) or limit of quantitation (LOQ), which is also from the new DoD QSM version 4.1 terminology, are considered estimated values and were qualified J by the laboratory. These concentrations are of less quantitative significance and not discussed in the following summaries, unless the J qualifier was changed due to an associated quality control (QC) issue.

4.3.1 Explosives Analysis

- A continuing calibration curve is a QC element not within the scope of the Level II validation performed for the Markley Range samples in sample delivery group 280-3087-1. The non-standard (**Q**) qualifiers applied by the laboratory to the RDX and 2,4,6-trinitrotoluene non-detections for the following samples were removed: MRREP1-SO101-0409, MRFLDU3-SO200-(2-4)-0409, MRFLDU4-SO200-(2-4)-0409, MRREP2-SO102-0409, and MRDU5-SO200-(2-4)-0409.

- The non-standard qualifiers (**Q**) applied by the laboratory for a high surrogate recovery or a high Laboratory Control Sample (LCS) recovery were removed from the 3-nitrotoluene and 2,4,6-trinitrotoluene non-detections in sample MRFLDU4-SO200-(2-4)-0409, and the RDX non-detection in sample MR-SD200-0409, respectively.

- The (**J**) qualifiers applied by the laboratory for high Matrix Spike Duplicate (MSD) recoveries were removed from the 2-amino-4,6-dinitrotoluene and nitrobenzene non-detections in parent sample MRDU5-SO200-(2-4)-0409.

- The non-standard qualifiers (**M**) applied by the laboratory to denote that manual integration was performed were removed from the following results: the 2,4,6-trinitrotoluene non-detection in sample MRFLDU3-SO200-(2-4)-0409; the nitroglycerin non-detection in sample MRDU5-SO200-(2-4)-0409; and the tetryl detection in sample MR-SD200-0409.

- TAL-Denver incorrectly reported analyte non-detections as the LOD, where the value associated with the **U** qualifier should be the RL or LOQ. The explosives results for all samples were affected with the following exceptions: tetryl in sample MR-SD200-0409; and 2,4-dinitrotoluene in samples MRFLDU4-SO200-(2-4)-0409 and MRDU5-SO200-(2-4)-0409.

4.3.2 Total Metals and Mercury Analysis

- Post digestion spikes, serial dilutions, and interference check samples are **QC** elements not within the scope of the Level II validation performed for the Markley Range samples in SDGs 280-3084-1 and 280-3087-1. The non-standard (**Q**) qualifiers applied to the antimony, cadmium, cobalt, and nickel results for the following samples were removed: MR-SD200-0409, MRBMDU1-SO200-(2-4)-0409, MRBMDU1-SO200-(16-18)-0409, MRBMDU2-SO200-(2-4)-0409, MRDU5-SO200-(2-4)-0409, and MRBMDU6-SO200-(2-4)-0409; the >2 mm sieve fraction for samples MRREP1-SO101-0409, MRFLDU3-SO200-(2-4)-0409, MRFLDU4-SO200-(2-4)-0409, and MRREP2-SO102-0409; and the <2 mm sieve fraction for samples MRREP1-SO101-0409, MRFLDU3-SO200-(2-4)-0409, MRFLDU4-SO200-(2-4)-0409, and MRREP2-SO102-0409.

- The (**J**) qualifiers applied by the laboratory for Matrix Spike (MS)/MSD recoveries and RPDs outside of the project limits were removed for the following: total aluminum, manganese, and iron in sample MR-SD200-0409; and total aluminum, iron, lead, and manganese in sample MRDU5-SO200-(2-4)-0409.

- On account of low MS and MSD recoveries, the total antimony result in sample MR-SD200-0409 was qualified as estimated (**J**).

- Due to low MS and MSD recoveries, the total antimony, copper and zinc results in the following samples were qualified as estimated (**J**): MRBMDU1-SO200-(2-4)-0409, MRBMDU1-SO200-(16-18)-0409, MRBMDU2-SO200-(2-4)-0409, MRDU5-SO200-(2-4)-0409, and MRBMDU6-SO200-(2-4)-0409; the >2 mm sieve fraction for samples MRREP1-SO101-0409, MRFLDU3-SO200-(2-4)-0409, MRFLDU4-SO200-(2-4)-0409, and MRREP2-SO102-0409; and the <2 mm sieve fraction for samples MRREP1-SO101-0409, MRFLDU3-SO200-(2-4)-0409, MRFLDU4-SO200-(2-4)-0409, and MRREP2-SO102-0409.

- As a result of method blank contamination, the total antimony results in the >2 mm sieve fraction for samples MRREP1-SO101-0409, MRFLDU3-SO200-(2-4)-0409, and MRREP2-SO102-0409 were qualified as not detected (**U**).

- Samples MRREP1-SO101-0409 and MRREP2-SO102-0409 were the ISM replicates of parent sample MRFLDU3-SO200-(2-4)-0409. On account of an unacceptable %RSD for the <2 mm sieve fraction of these field replicates, target metal mercury was qualified as estimated (**J**) for samples MRREP1-SO101-0409 and MRREP2-SO102-0409.

- Due to unacceptable RSDs for the >2 mm sieve fraction of field ISM replicates MRREP1-SO101-0409, MRREP2-SO102-0409, and MRFLDU3-SO200-(2-4)-0409, target metals calcium, magnesium, potassium, manganese, and silver were qualified as estimated detections (**J**) or estimated non-detections (**UJ**).

- TAL-Denver incorrectly reported analyte non-detections as the LOD; per the Markley Range UFP-QAPP, the value associated with the U qualifier should be the RL or LOQ. The following results were affected: sodium in samples MR-SD200-0409, MRBMDU1-SO200-(2-4)-0409, MRBMDU1-SO200-(16-18)-0409, MRBMDU2-SO200-(2-4)-0409, MRDU5-SO200-(2-4)-0409, and MRBMDU6-SO200-(2-4)-0409; the >2 mm sieve fraction for samples MRREP1-SO101-0409, MRFLDU3-SO200-(2-4)-0409, MRFLDU4-SO200-(2-4)-0409, and MRREP2-SO102-0409; and the <2 mm sieve fraction for samples MRREP1-SO101-0409, MRFLDU3-SO200-(2-4)-0409, MRFLDU4-SO200-(2-4)-0409, and MRREP2-SO102-0409; silver in samples MR-SD200-0409, MRREP1-SO101-0409 (>2 mm sieve fraction), and MRFLDU4-SO200-(2-4)-0409 (<2 mm and >2 mm sieve fractions); mercury in samples MRBMDU1-SO200-(16-18)-0409, MRFLDU3-SO200-(2-4)-0409 (>2 mm sieve fraction), and MRFLDU4-SO200-(2-4)-0409 (>2 mm sieve fraction).

5.0 RISK SCREENING EVALUATION

5.1 PROJECT ACTION LEVELS

Project action levels (PAL) were applied as screening values and defined as the lower concentration of either: 1) the USEPA Regional Screening Levels for Residential Soil; or 2) the Massachusetts Contingency Plan (MCP) S-1/GW-1 standards (Massachusetts Department of Environmental Protection [MassDEP], 2009b). The MCP soil screening values are those published in Subpart I (Risk Characterization), in Table 2 cited in 310 Code of Massachusetts Regulation (CMR) 40.0975(6)(a). HGL selected the appropriate human health risk screening based on the pathways and populations for each media. HGL compared the analytical results from each decision unit to the PALs to identify COPCs. Contaminants with a detected concentration greater than the PAL were retained as COPCs. The risk screening was performed with the unrestricted (residential) PAL. The analysis followed the DQO decision rule for human health screening presented in SIWP Figure 6.1 (HGL, 2010). PALs are included in both Table 5.1 herein and SIWP Table 6.1.

To perform the risk screening for carcinogens, the exposure point concentration (EPC) for a chemical was divided by its carcinogen-based PAL, and then multiplied by the associated risk level of 10^{-6} to yield an estimate of the screening cancer risk for each carcinogenic chemical. HGL defined an EPC as the analytical result of the COPC in each decision unit. The screening cancer risk for each chemical was then added together to yield an estimate of the total screening cancer risk (TSCR). The TSCR was considered acceptable if it fell within the USEPA target risk range of 10^{-6} to 10^{-4}. For those chemicals with PALs that are based on non-carcinogenic effects, the exposure point concentration for each chemical was divided by its non-carcinogenic PAL to yield an estimate of the screening hazard quotient for each non-carcinogenic chemical. The screening hazard quotient for each chemical was then added together to yield an estimate of the total screening hazard index (TSHI). The TSHI was considered acceptable if it was equal to or less than 1.

The first step of the ecological risk screening confirmed that the site provides habitat to aquatic and/or terrestrial life based on the description and physical characteristics of the area. The screening evaluation considered exposure of ecological receptors to the site soil and sediment.

The EPCs for soil and sediment concentrations were compared to the USEPA Ecological Soil Screening Levels (EcoSSL) (USEPA, 2007), a site specific ecological screening value for lead, and the USEPA Region 3 Biological Technical Advisory Group (BTAG) Freshwater Sediment Screening benchmarks (USEPA Region 3, 2006), respectively. Alternate screening values were not considered for contaminants detected in sediment where a BTAG value was not available. BTAG values were not available for a number of metals and explosives constituents as detailed in Table 5.11 and were not detected above PAL or background levels at the primary decision units. Contaminants that exceeded their screening values were considered to be contaminants of potential ecological concern (COPEC). The EPC was divided by either the EcoSSL or the Region 3 BTAG benchmark to yield a ratio. This ratio was considered acceptable if it was less than 1.0.

HGL performed an evaluation of the lead fragment count data from the two berm/target areas to

address the ecological risks to grit-eating birds. The lead fragment was compared to the range of lead shot remedial goals listed in MassDEP's *Assessment of Ecological Risk Associated with Lead Shot at Trap, Skeet and Sporting Clay Ranges* (MassDEP, 2009a), which specifies a range of 3 to 13 shot/ft^2.

The analytical data obtained from each decision unit sampling was also compared to the USEPA groundwater protective risk-based soil screening levels to determine whether an exceedance of the PAL was identified for a particular compound during the initial screening. Table 5.1 provides the groundwater protective soil screening levels (SSL). For this comparison, SSLs based on the tap water Regional Screening Level (RSL) were used. Because lead does not have a tap water RSL, the MCL-based SSL was used for this metal.

5.2 RESULTS OF HUMAN HEALTH RISK SCREENING

5.2.1 Comparison to Project Action Levels

Chemicals present at concentrations above the corresponding PAL are considered to be COPC and subject to additional evaluation. Those chemicals not identified as COPCs do not require additional evaluation and are not discussed in the remainder of this human health risk screening. Analytical data from this sampling program are presented in Table 5.1 and are compared to the associated PAL.

Prior to performing the site screening, HGL revised the PALs presented in the original SIWP to reference the current RSLs (May 2010 edition), with the exception of thallium. The December 2009 and May 2010 RSL tables do not include a value for thallium in residential soil, and therefore, HGL used the value of 5.1 mg/kg listed in the April 2009 table. The SIWP listed MCP values as "NA" when no value was presented in Table 2 of Subpart I of the MCP. In these cases, HGL used the screening values (S-1 soils) from the Oil and Hazardous Materials List (MCP Subpart P, 40 CMR 1600) to supplement those values presented in Subpart I. Note that the Subpart P values are intended to identify releases; however, it was determined appropriate to use these values instead of "NA". The PALs presented in Table 5.1 reflect the PALs that were revised based on the updated RSLs and supplemental information from MCP Subpart P.

5.2.2 Contaminants of Potential Concern

Based on a comparison to the revised PALs, HGL identified the following metals as COPCs at one or more of the decision units within the Markley Range: lead at a single decision unit (South Berm) and arsenic and chromium at all six decision units. There were no vanadium exceedances. Table 5.1 of the SIWP incorrectly listed a vanadium PAL of 5.5 mg/kg. This value represents the RSL for metallic vanadium and is not found in the environment and is not associated with small arms components. The correct RSL is 390 mg/kg, and thus, there were no vanadium exceedances. All other metals were either not detected or detected below the associated PAL at all sites. All explosives results were non-detections except for the 2,4-dinitrotoluene detections at the East Firing Line and Down Range decision units. Both detected concentrations were below the associated PAL. No explosives were retained as COPCs for the human health risk screening.

5.2.3 Risk Screening Results

The samples collected from the North Firing Line and East Firing Line decision units were sieved at the laboratory prior to extraction and analysis. The resulting fractions consisted of particles that passed through a 10-mesh (2 mm) sieve and particles that were retained by the sieve. For those decision units with results reported for two particle size ranges, the fraction that passed through the sieve (particle size less than 2 mm) was considered the fraction that would have the greatest impact on human health.

Two samples were collected at the South Berm decision unit, one from 2 to 4 inches bgs and one from 16 to 18 inches bgs. For these two samples HGL used the higher value for each target analyte to perform the COPC risk screening.

5.2.3.1 Arsenic

The arsenic results for each decision unit were above the PAL. Arsenic is evaluated as a carcinogen with an RSL of 0.39 mg/kg, which corresponds to a cancer risk that is below the USEPA risk assessment range of 10^{-6} to 10^{-4}. The screening cancer risk associated with each decision unit is presented in Table 5.2.

5.2.3.2 Chromium

The chromium results for each decision unit were above the PAL. Chromium is evaluated as a carcinogen with an RSL of 0.29 mg/kg (as chromium VI), which corresponds to a cancer risk that is below the USEPA risk assessment range of 10^{-6} to 10^{-4}. Table 5.3 presents the screening cancer risk associated with each decision unit.

5.2.3.3 Lead

The lead concentration for the South Berm decision unit was 1,100 mg/kg, which exceeds the PAL and background concentration range. HGL collected the sample, identified as MRBMDU1-SO300-(16-18)-0409, from 16 to 18 inches bgs. Lead is considered a non-carcinogenic hazard; however, no reference dose has been established. Although there is no reference dose for lead, the potential effects of lead are established through USEPA's blood-lead modeling. The residential soil RSL of 400 mg/kg listed for lead is the value presented in a USEPA directive from the Office of Solid Waste and Emergency Response (OSWER) (USEPA, 1994) and the subsequent clarification (USEPA, 1998).

According to the User's Guide to the RSL Tables:

> *EPA, therefore, evaluates lead exposure by using blood-lead modeling, such as the Integrated Exposure-Uptake Biokinetic Model (IEUBK). The EPA Office of Solid Waste has also released a detailed directive on risk assessment and cleanup of residential soil lead. The directive recommends that soil lead levels less than 400 mg/kg are generally safe for residential use. Above that level, the document suggests collecting data and modeling blood-lead levels with the IEUBK model.*

> *For the purposes of screening, therefore, 400 mg/kg is recommended for residential soils.*

(http://www.epa.gov/reg3hwmd/risk/human/rb-concentration_table/usersguide.htm)

5.2.3.4 Total Site Risk

HGL determined the total cancer risk for each decision unit by summing the cancer risk associated with each COPC evaluated as a carcinogen. Arsenic and chromium are the two COPCs associated with cancer risk for the decision units at Markley Range and Table 5.4 presents the total screening cancer risk for each decision unit.

The total screening cancer risk for each decision unit is less than 1×10^{-4}, which is considered to be acceptable under the site decision rules.

There were no COPC-associated non-cancer hazards at the site.

Lead is a special case, and neither a cancer risk nor a hazard quotient can be calculated for this COPC. The EPA has established a lead screening level of 400 mg/kg in residential soils. The lead concentration in soil at the South Berm decision unit is 1,100 mg/kg and potentially poses a threat to human health. It should be noted that the ISM results represent the central tendencies of contaminant distribution within the particular decision unit.

5.2.4 Groundwater Protection

Because groundwater data were not collected from the site, HGL used SSLs to assess the potential for chemicals in the soil to threaten human health via the groundwater pathway. The RSL table provides SSLs that are protective of chemical migration to groundwater. These SSLs are based on generic groundwater dilution and attenuation factors (DAF) provided in the USEPA Soil Screening Guidance (USEPA, 1996). The SSLs presented in the RSL table are based on a DAF of 1, which is an unreasonably conservative value to use as a comparison level. A site-specific DAF has not been calculated; however, a DAF of 20 is generally considered to be protective under most scenarios.

The arsenic SSL is 0.0013 mg/kg and the chromium SSL (as chromium VI) is 0.00083 mg/kg. The arsenic and chromium soil concentrations are above the SSL at each decision unit, and the soil concentrations are also above the SSL modified by a DAF of 20. This indicates that the concentrations of these two COPCs have a potential to affect the underlying groundwater when evaluated against risk-based criteria; however, the background level of arsenic was established at 2.1 mg/kg to 19 mg/kg at Devens which exceeds the SSL. Chromium detection limits of 2.0 mg/kg established during the background investigation did not allow for an adequate determination of background concentrations for chromium.

No risk-based SSL has been established for lead. The lead concentrations detected at the site were compared to the MCL-based SSL of 14 mg/kg listed in the USEPA RSL table. All site lead results are above this value. A DAF of 20 produces an adjusted SSL of 280 mg/kg, whereas the

MCP Method 1 Soil Standard for lead is 300 mg/kg. According to 310 CMR 40.0975, the specific numerical standards are a function of both the soil and the ground water category identified at the site. The MCP-based PAL for this site is that listed for S-1 soils overlying GW-1 groundwater, which are the most conservative soil and groundwater exposure categories. The only lead concentration that exceeds the MCL-based SSL (DAF 20) and the MCP Method 1 Soil Standard is the 1,100 mg/kg concentration in the subsurface soil (16 to 18 inches) for the South Berm decision unit. Based on this evaluation, the lead concentration in the subsurface soil at the South Berm shows a potential to have an adverse impact on the underlying groundwater. The soil lead concentrations for the other decision units are below the concentration considered protective of groundwater.

The vanadium SSL is 2.6 mg/kg. This value is based on a DAF of 1. A DAF of 1 results in a conservative screening value for assessing the potential for a soil constituent to leach to groundwater at concentrations that could pose a threat. A DAF of 20 is generally considered protective when evaluating this migration pathway. With a DAF of 20, the vanadium SSL increases to 52 mg/kg. All vanadium detections were less than 52 mg/kg, suggesting a limited potential for vanadium in soil to adversely affect the quality of the underlying groundwater.

Based on the evaluation of the SSLs, lead is the primary COPC which requires further evaluation for its impact on the site's groundwater.

5.2.5 Comparison to Background

Ecology and Environment (E&E) summarized the soil background data set at Fort Devens (E&E, 1994) and reported the background values as ranges. The background ranges for those metals identified as COPCs (COPCs identified based on PAL exceedances) are:

- Arsenic: 2.1 mg/kg to 19 mg/kg;
- Chromium: Not detected (detection limit of 2.0 mg/kg) to 33.0 mg/kg; and
- Lead: Not detected (detection limit of 5.36 mg/kg) to 48.0 mg/kg.

Additionally, the background ranges for those metals identified as COPCs were compared to the USEPA Eco-SSL database (based on the average arithmetic mean for states in the state of Massachusetts).

- Arsenic: 8.6 mg/kg;
- Chromium: 39.5 mg/kg; and
- Lead: 12.5 mg/kg.

The arsenic concentrations reported at all sites were within the background range with the exception of the 20 mg/kg concentration reported in the >2 mm fraction of sample MRFLDU4-SO200-(2-4)-0409. This concentration is only slightly above the background range; the concentration in the associated <2 mm fraction of this sample was 8.5 mg/kg, and the total arsenic concentration at this sample location is expected to be within the range reported by the background study and the USEPA Eco-SSL database.

The chromium results reported at all sites were within the background range presented in the background study, as well as reported in the USEPA Eco-SSL database. Note that the background ranges reported by E&E are empirical and do not include a calculation of confidence levels or other statistical levels for use in comparisons. If a more rigorous statistical determination of the background metal concentrations becomes available, the arsenic and chromium results at this site should be re-evaluated.

The lead concentrations in the site soils ranged from within the background range to over 20 times the background range, for the South Berm decision unit. The lead concentrations in the site soils also exceeded the USEPA Eco-SSL database stats for lead in the Massachusetts area, with one concentration being over 80 times the background range. The site hazards determined at the South Berm decision unit are considered to be representative of site contamination and are not attributable to background conditions. Although several other decision units also showed lead concentrations above the background range, the impact of potential contamination was determined not to pose a threat to human health via direct exposure or groundwater impact.

5.3 ECOLOGICAL RISK SCREENING

5.3.1 Comparison to Ecological Screening Levels

The ecological risk screening was performed in accordance with the decision rule flow chart presented in SIWP Figure 6.2 (HGL, 2010). Analytical data from this sampling program are presented in Table 5.6 along with the associated ecological screening value. Those chemicals that are present above the corresponding ecological screening value at any location are considered to be COPECs and are subject to additional evaluation. Those chemicals that were not identified as COPECs are not discussed in the remainder of this ecological risk screening.

For lead, it was determined that the lowest Eco-SSL was not an appropriate screening value because the source of lead is metallic lead shot. The Eco-SSLs were developed to address inorganic lead, not metallic lead (USEPA, 2005). If the contaminant source is metallic lead, such as the form of lead associated with lead shot, USEPA recommends that a site-specific evaluation be performed (USEPA, 2005). The literature includes several ecological risk assessments (ERAs) for lead shot associated with former ranges. One of them, prepared for Range 17 at Patuxent Research Refuge in Maryland, included the development of no observed adverse effects levels (NOAELs) and lowest observed adverse effects levels (LOAELs) that were applied to Bryant Range. Bryant Range is located 1.2 miles from Markley Range, and has habitat and receptors similar to those at Markley Range. Based on the similarities between the two ranges, the toxicity reference values applied to Bryant Range should also be applicable to Markley Range. The Patuxent Research Refuge ERA developed NOAELs and LOAELs for earthworms, insect-eating birds (American robin), and insect-eating mammals (short-tailed shrew) (U.S. Fish and Wildlife Service and USEPA, 2004). The geometric mean of the NOAELs and LOAELs for these three receptors, 118 mg/kg, was identified as the screening level for lead at Markley Range.

Where an Eco-SSL was not available for an analyte, HGL consulted supplemental data sources to establish alternative screening criteria in order to be able to perform a screening for these parameters. The Eco-SSL selected for mercury was 0.1 mg/kg, based on a toxicity study

performed on earthworms (Oak Ridge National Laboratory [ORNL], 1997a). The Eco-SSL selected for thallium was 1.0 mg/kg, based on a toxicity study performed on plants (ORNL, 1997b). The Eco-SSL of 0.66 mg/kg selected for 2,4-dinitrotoluene was established by the Ontario Ministry of Environment and Energy for residential/parkland land use (Ontario screening values incorporate both human health and ecological effects) (USEPA, 2003).

5.3.2 Contaminants of Potential Environmental Concern

Based on a comparison to the ecological benchmarks, the following metals were identified as COPECs at one or more of the decision units within the Markley Range:

- Antimony at the South Berm, East Firing Line, and Uphill DU-1;
- Arsenic at the East Firing Line;
- Copper at the South Berm;
- Lead at the South Berm, East Firing Range, Down Range, and Uphill DU-1; and
- Vanadium at all decision units except the East Firing Line.

All other metals were either not detected or detected below the associated ecological screening value for all sites. All explosives results were non-detections except for the 2,4-dinitrotoluene detections at the East Firing Line and Down Range decision units. Both detected concentrations were below the associated ecological screening value. No explosives were retained as COPECs for the ecological risk screening.

5.3.3 Risk Screening Results

The samples collected from all decision units were processed at the laboratory prior to extraction and analysis. The resulting fractions consisted of particles that passed through a 10-mesh (2 mm) sieve and those particles that were retained by the sieve. For those decision units with results reported for two particle size ranges, (i.e., the firing range decision units), the fraction that passed through the sieve (particle size less than 2 mm) is considered the fraction that will have the greatest impact on ecological receptors. Due to concerns about toxicity to birds ingesting lead shot fragments, HGL performed a separate evaluation of lead particles for the two berm and one uphill decision units by evaluating particles passing through a 2.8 mm sieve but retained on a 0.50 mm sieve.

Two samples were collected at the South Berm decision unit, one from 2 to 4 inches bgs and one from 16 to 18 inches bgs. HGL used the higher value from these two samples to perform the risk screening for each COPEC.

5.3.3.1 Antimony

The antimony results for the South Berm, East Firing Line, and Uphill of DU-1 decision units were above the Eco-SSL of 0.27 mg/kg. Table 5.6 presents the screening ecological risk associated with each decision unit.

Antimony was originally selected as a COPEC at the East Firing Line based on an exceedance of the Eco-SSL in the >2 mm fraction of sample MRFLDU4-SO200-(2-4)-0409. The concentration in the <2 mm fraction of this sample was less than the Eco-SSL and this metal was eliminated as a COPEC at the East Firing Line decision unit. The antimony risk ratio for the Uphill DU-1 decision unit did not exceed 1 and this metal was eliminated as a COPEC from this decision unit as well.

5.3.3.2 Arsenic

Arsenic was originally selected as a COPEC at the East Firing Line based on an exceedance of the Eco-SSL in the >2 mm fraction of sample MRFLDU4-SO200-(2-4)-0409. The concentration in the <2 mm fraction of this sample was less than the Eco-SSL and this metal was eliminated as a COPEC at the East Firing Line decision unit.

5.3.3.3 Copper

The maximum copper result of 61 mg/kg at the South Berm decision unit was above the Eco-SSL of 28 mg/kg. The calculated risk ratio was 2.

5.3.3.4 Lead

The screening ecological risks associated with each decision unit are presented in Table 5.8. As described previously, the screening value of 118 mg/kg was obtained from a risk assessment prepared for a trap and skeet range at the Patuxent Research Refuge in Maryland. This risk assessment developed NOAELs and LOAELs for the earthworm, the American robin, and the short-tailed shrew. The screening level of 118 mg/kg was calculated as the geometric mean of the NOAELs and LOAELs identified for the three receptors. As shown in Table 5.7, the lead detections at the East Firing Line (110 mg/kg) and Down Range (120 mg/kg) were less than or approximately equal to the screening value, indicating that the lead in these DUs would not pose an ecological threat. In the Uphill DU-1, the lead concentration of 160 mg/kg was only slightly greater than the screening value of 118 mg/kg. In addition, this detection was less than the LOAELs (260 mg/kg for the earthworm; 320 mg/kg for the robin; and 440 mg/kg for the short-tailed shrew) calculated in the Patuxent Research Refuge risk assessment (USFWS and USEPA, 2004). Based on comparison to the LOAELs, the lead in Uphill DU-1 poses minimal threat to ecological receptors.

The average lead concentration at the South Berm, 685 mg/kg, was approximately 6 times the screening value and was greater than all the LOAELs calculated in the Patuxent Research Refuge risk assessment. This comparison suggests that lead at the South Berm could pose an ecological risk.

5.3.3.5 Vanadium

The vanadium results at each decision unit except the East Firing Line were above the Eco-SSL of 7.8 mg/kg. The screening ecological risks associated with each decision unit are presented in Table 5.8.

The vanadium risk ratio for each decision unit except the North Firing Line did not exceed 1; therefore, this metal is eliminated as a COPEC from all other decision units.

5.3.3.6 Ecological Risk Screening Summary

The chemical-specific screening ecological risk ratios for each decision unit are summarized in Table 5.9. Only ecological risk ratios greater than 1 are presented.

As described in Section 5.3.3.4, lead at the South Berm may pose a threat to ecological receptors. Lead at the East Firing Line, Down Range, and Uphill decision units appear to pose no to minimal threat to ecological receptors.

5.3.4 Lead Fragment Evaluation

HGL used a particle analysis to address concerns regarding bird ingestion of grit. The effects of lead shot ingestion vary with the type and amount of food, sex, age, and size of each bird. A particle analysis was performed following the procedures implemented and approved for nearby Bryant Range (Weston, 2006). The analysis was conducted in accordance with the 2009 MassDEP guidance, based on the grain size evaluated (0.5 mm to 2.8) and screening the data on a per square foot basis (3 to 13 lead particles/square foot screening criterion).

Three lead particle samples were collected from each of the following decision units: South Berm (DU-1), West Berm (DU-2), and Uphill of the South Berm DU-1 (DU-6). The analytical results from the nine samples are shown in Table 5.10. All decision unit samples, with the exception of one sample from DU-1, were below the 3 to 13 range. The lower end of the screening criterion of 3 to 13 particles per square foot (MassDEP, 2009a) was exceeded in one sample from DU-1. The one DU-1 sample had six particles identified as lead fragments, where a particle was counted as a lead fragment if the XRF reading was 1,000 parts per million (ppm) or above.

5.3.5 Sediment Sample

A single sediment sample was collected from the wetland to the east of the site and the results are shown in Table 5.11. The sediment results were compared to the USEPA Region 3 BTAG Freshwater Sediment Screening benchmarks (USEPA Region 3, 2010). This comparison indicated concentrations in the sediment that were greater than the BTAG values for antimony, arsenic, cadmium, copper, lead, manganese, nickel, and selenium. The exceedances for antimony and selenium are uncertain, however, because the data is an estimate and not a definitive value. The ratios are presented in Table 5.12.

The cadmium and selenium risk ratios did not exceed 1; these metals are eliminated as COPECs.

5.3.6 Comparison to Background

E&E summarized the soil background data set at Fort Devens (E&E, 1994) and reported the background values as ranges. The background ranges for those metals identified as COPECs (COPECs identified based on exceedance of ecological SSLs) are:

- Antimony: Not detected (detection limit of 0.5 mg/kg);
- Copper: Not detected (detection limit of 1.0 mg/kg) to 13.5 mg/kg;
- Lead: Not detected (detection limit of 5.36 mg/kg) to 48.0 mg/kg; and
- Vanadium: Not detected (detection limit of 2.0 mg/kg) to 32.3 mg/kg.

Antimony and copper were retained as COPECs for the South Berm decision unit only. The antimony concentration for the South Berm soils was above the detection limit reported in the background samples, and the copper concentration was above the background range. The lead concentrations in site soils ranged from within the background range at the West Berm decision unit to over 20 times above the background range at the South Berm decision unit. The lead site hazards determined at each decision unit except the West Berm are considered to be representative of site contamination and are not attributable to background conditions. The vanadium results reported for all sites were within the range reported by the background study.

Note that the background ranges reported by E&E are empirical and do not include calculations of confidence levels or other statistical levels for use in comparisons. If a more rigorous statistical determination of the background metal concentrations becomes available, the copper, lead, and vanadium results at this site should be re-evaluated.

6.0 CONCEPTUAL SITE MODEL

HGL developed a CSM based on an evaluation of historical records, the type of munitions-related activities that were conducted at Markley Range, the potential nature and extent of any MC contamination, potential pathways of exposure to current and future human and ecological receptors, and the results of the completed soil and sediment analyses, as part of this Site Inspection.

Figure 6.1 presents a flow chart of the exposure assessment, which details the primary sources, primary release mechanism, secondary source, secondary release mechanism, pathways, and exposure routes and receptors.

Historical site use and findings from other SAR investigations indicate that metals were the most likely COPCs to be present at the site. The Markley Range was divided into six decision units based on a review of historical operations, and aerial photographs that suggested there may have been two firing range orientations, one east-to-west, and the primary 1,000-inch range, which is believed to have been oriented north-to-south.

Typical components of a SAR include a firing line, range floor, short shot (area in front of the primary impact berm), primary impact berm, high shot (area behind the primary impact berm), hill slope, and an airborne dispersion area. These features were not entirely evident at the Markley Range due to historical activities at the site. The south berm (DU-1) was identified based on the elongated narrow sandy area, which had a natural hill slope just south of its location. The opposing firing line (DU-3) was established perpendicular to the primary target berm (south berm – DU-1) based on a 1,000 inch range. The west berm and corresponding east firing line were evaluated; however, no physical evidence was present onsite to conclusively identify their former existence.

Based on range maps, the Markley Range was identified as a "1000-inch Rifle and Machine Gun Range" and a "1000-inch BAR and Carbine Range." BAR is an acronym for Browning Automatic Rifle. Browning automatic rifles were used by the U.S. military beginning in 1918 and extending into the Vietnam War. There were several BAR models issued for the U.S. military but all appear to have used 0.30-06 (7.72x63mm) Springfield ammunition. Other ammunition, beyond the 0.30-06, was also likely used at the Markley Range.

Boring logs from the nearby Areas of Concern (AOC) 32 and 43A and the Devens Consolidation Landfill, indicate a subsurface geology that consists of poorly sorted sands/silty sands and a predominant overburden lithology with bedrock encountered at varying depths. Groundwater within the overburden soils was found between 16 and 21 feet bgs; however, a few locations did not have groundwater present in the overburden or else the groundwater was present at the overburden/bedrock boundary. The subsurface conditions at the Markley Range are likely to share similar attributes with those at AOCs 32 and 43A and the Devens Consolidation Landfill.

Following the performance of the SI and evaluating the available analytical data, the total screening cancer risk at each decision unit is considered to be acceptable under the site decision rules. However, the lead concentration in soil at the South Berm decision unit is 1,100 mg/kg and

potentially poses a threat to human health. The Markley Firing Range is zoned for open space/recreational use, and therefore, potential exposure pathways include inhalation of wind-borne dust and direct dermal contact with the soil.

The concentrations of lead at the South Berm decision unit also show a potential to have an adverse impact on the underlying groundwater. One possible exposure pathway would be for lead and other metals to leach out of the soil and into groundwater. The groundwater could eventually discharge to Cold Spring Brook or the wetland located east of the firing range and affect aquatic and terrestrial organisms. Cold Spring Brook is located to the south and east of the former range and flows generally to the east. Based on site observations of local topography and drainage features, it appears that groundwater flows east to southeast in the vicinity of the former range.

A sediment sample collected from the wetland east of the site indicates that antimony, arsenic, copper, lead, manganese, and nickel are present at concentrations potentially harmful to the ecological receptors. Additional information is needed to determine whether the metals in the wetlands are attributable to this site. Additional samples are recommended to confirm the results of the original sample.

The lead, copper, and antimony concentrations at the South Berm decision unit indicate a potential risk to ecological receptors.

The lead particle evaluation meant to address the issue of grit ingestion by fowl focused on the three decision units where lead shot would likely be found: the South Berm, West Berm, and Uphill decision units. The results of the evaluation indicate that the particles identified as lead fragments at the three decision units were within or below the 3 to 13 particle range. The results are within the range considered to be protective of avian species and no additional site actions are required.

7.0 CONCLUSIONS AND RECOMMENDATIONS

The CERCLA SI of the former Markley Range is complete. The following sections provide a summary of the SI findings and present a suggested corrective action based on the findings of the SI.

7.1 HUMAN HEALTH RISK SCREENING

COPCs at the site included arsenic and chromium at all six decision units, and lead at the South Berm. The concentrations of arsenic and chromium at the site are consistent with background concentrations. Although the risk screening for human health due to soil contact and groundwater impact indicate that the site concentrations of these metals are above the screening criteria at all decision units, these impacts are not attributable to site-related sources. Based on the information currently available, these metals concentrations require no response action.

The lead concentrations at the South Berm decision unit indicate a potential risk to human health due to soil contact and impact on the underlying groundwater. HGL recommends installing temporary monitoring points at the South Berm decision unit to determine whether lead concentrations in the soil have had an adverse effect on the groundwater. Information collected from the boring log would help define the subsurface geology and hydrogeology and enhance the CSM. A collection of groundwater samples from temporary monitoring points would confirm the CSM exposure pathway for lead and other metals to leach out of the soil and into groundwater. HGL recommends that up to four temporary groundwater points be installed to determine the groundwater flow path and analytical samples collected as required. Additionally, a temporary monitoring point is required in the wetland near the sediment collection location, based on the ecological receptor screening detailed in Section 7.1.2.

7.2 ECOLOGICAL RECEPTOR SCREENING

The final list of COPECs at the site includes antimony, copper, and lead at the South Berm decision unit, and vanadium at all decision units except the East Firing Line. At a minimum, the South Berm will likely require a remedial action due to the elevated concentration of lead found in soils at that decision unit.

The concentrations of vanadium at the site are consistent with background concentrations. Although the ecological risk screening indicates that the site concentrations of vanadium are above the screening criteria at most decision units, these impacts are not attributable to site-related sources. No response action should be considered to address vanadium concentrations, based on the information currently available.

The results of the lead particle evaluation indicate that the number of identified lead fragments at the three affected decision units (South Berm, West Berm, and Uphill DU-1) with the exception of one sample at DU-1 was below the lower range of 3 to 13 particle range. One sample at DU-1 contained six particles which placed it within the 3 to 13 stated range. As recommended in Section 7.3 below, DU-1 is likely to require a removal action due to lead exceedances.

Otherwise, the number of identified lead particles is within the range considered to be protective of avian species.

The results of the sediment sample collected in the wetland to the east of the firing range indicate that antimony, arsenic, copper, lead, manganese, and nickel are present at concentrations that result in an ecological risk ratio greater than 1. It should also be noted that antimony analytical result was an estimate and not a definitive value.

Additional information is needed to determine whether the metals in the wetlands are attributable to this site and confirm the CSM. It is recommended that future investigations of the wetland sediments focus on characterizing the potential drainage pathways (migration routes) between the site and the wetland, and collecting sufficient data from within the wetland to assess sediment ecological risk.

7.3 POTENTIAL CORRECTIVE ACTION (SOUTH BERM [DU-1] SOIL REMOVAL)

A targeted soil removal action is recommended for the DU-1 decision unit based on the detected lead exceedance at this location. The recommended removal action is not intended as an interim remedial action but as a remedial action that will allow site closure based on achieving the Target Cleanup Goals and there are no associated groundwater or sediment issues at the site. In addition to soil removal at DU-1, hand dug test pits of up to 18 inches is recommended at DU-6 (uphill overshot area) to confirm the absence of bullets and bullet fragments at depth within this DU; however, corrective action at DU-6 is not required at this time.

If soil removal at DU-1 is performed, the guidelines established at the nearby Bryant Range SAR would be used. A removal action was conducted at Bryant Range to remediate the elevated lead present on site. The primary project goal consisted of reducing concentrations of lead in soil to below established Target Cleanup Goals so that the remaining conditions would be protective of human health and the environment. The secondary goal was to return the site to pre-remedial topographical and ecological conditions following site restoration. It was determined that lead was the major risk driver at the site; all other contaminants of concern were typically co-located with lead and any remediation of lead would directly result in the reduction of ancillary contaminant of concern risks.

Based on a most-likely case excavation depth scenario of 2 feet bgs at DU-1, 11,400 cubic feet (422 cubic yards) of soil would be excavated (190 feet x 30 feet x 2 feet). The excavation at DU-1 would be directed based on results from a portable XRF analyzer, with additional samples submitted to an off-site laboratory for analysis. Soils identified as non-hazardous would be transported to a local landfill. Soils identified as hazardous would be transported to a facility that would treat and dispose the waste. Following the completion of remedial excavation activities, site restoration would be performed at DU-1. Site restoration would likely consist of regrading the excavation to match the local topography and reseeding the site with the appropriate native plant species.

8.0 REFERENCES

Ecology & Environment, Inc. (E&E), 1994. *Remedial Investigations Report, Functional Area II, General Information, Vol IV of IV Appendices, Fort Devens, Massachusetts*. August.

HydroGeoLogic, Inc. (HGL), 2008. *Accident Prevention Plan, Environmental Remediation Services at Former Fort Devens Army Installation, Devens, Massachusetts*. December.

HGL, 2009. *Generic Quality Assurance Project Plan, Area of Contamination 50, Environmental Remediation Services at Former Fort Devens Army Installation, Devens, Massachusetts*. February.

HGL, 2010. *Site Inspection Work Plan, Markley Range, Former Fort Devens Army Installation, Devens, Massachusetts*. January.

Massachusetts Department of Environmental Protection (MassDEP), 2009a. *Assessment of Ecological Risk Associated with Lead Shot at Trap, Skeet & Sporting Clay Ranges*, Office of Research and Standards, May.

MassDEP, 2009b. *Massachusetts Contingency Plan, 310 CMR 40*. June.

Oak Ridge National Laboratory (ORNL), 1997a. *Toxicological Benchmarks for Contaminants of Potential Concern for Effects on Soil and Litter Invertebrates and Heterotrophic Process: 1997 Revision*. ES/ER/TM-126/R2. November.

ORNL, 1997b. *Toxicological Benchmarks for Screening Contaminants of Potential Concern for Effects on Terrestrial Plants: 1997 Revision*. ES/ER/TM-85/R3. November.

U.S. Army Corps of Engineers (USACE), 1994. *Engineer Manual (EM) 200-1-3, Requirements for the Preparation of Sampling and Analysis Plans*.

USACE, 1995. *Archives Search Report Findings, Fort Devens, Ayer, Massachusetts*, May.

U.S. Department of Defense Environmental Data Quality Workgroup, 2009. *Department of Defense Quality Systems Manual for Environmental Laboratories version 4.1*, June.

U.S. Environmental Protection Agency (USEPA) - Region 1, 1989. *Region I Laboratory Data Validation Functional Guidelines for Evaluating Inorganics Analyses*. The USEPA Data Review Workgroup, February.

USEPA, 1992. *Guidance to Management of Investigation-Derived Wastes*, Publication 9345.3-03FS. January.

USEPA, 1994. *Revised Interim Soil Lead Guidance for CERLCA Sites and RCRA Corrective Action Facilities*. OSWER Directive 9355.4-12. August.

USEPA - Region 1, 1996a. *Region I, EPA-New England Data Validation Functional Guidelines for Evaluating Environmental Analyses*. Quality Assurance Unit, December.

USEPA - Region 1, 1996b. *Part I – Data Validation Manual: The Data Quality System*. Quality Assurance Unit, December.

USEPA, 1996. *Soil Screening Guidance: User's Guide*. Publication 9355.4-23, July.

USEPA - Region 4, 2001. *Environmental Investigations Standard Operating Procedures and Quality Assurance Manual*.

USEPA, 2002. *Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites*. OSWER 9355.4-24, December.

USEPA, 2002. *Calculating Upper Confidence Limits for Exposure Point Concentrations at Hazardous Waste Sites*, OSWER 9285.6-10, December.

USEPA, 2003. Guidance for Developing Ecological Soil Screening Levels; Attachment 1-1: Review of Existing Soil Screening Benchmarks. OSWER Directive 9285.7-55. November.

USEPA, 2005. *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846, Third Edition, through update IIIB*. Office of Solid Waste and Emergency Response, June.

USEPA - Region 3, 2006. Risk-Based Concentration Table, April.

USEPA, 2007. *Guidance for Developing Ecological Soil Screening Levels*, OSWER 9285.7-55, April.

USEPA, 2009. Regional Screening Level Table. April. [Note – superseded by May 2010 RSL Table]

USEPA, 2009. Regional Screening Level Table. December. [Note – superseded by May 2010 RSL Table]

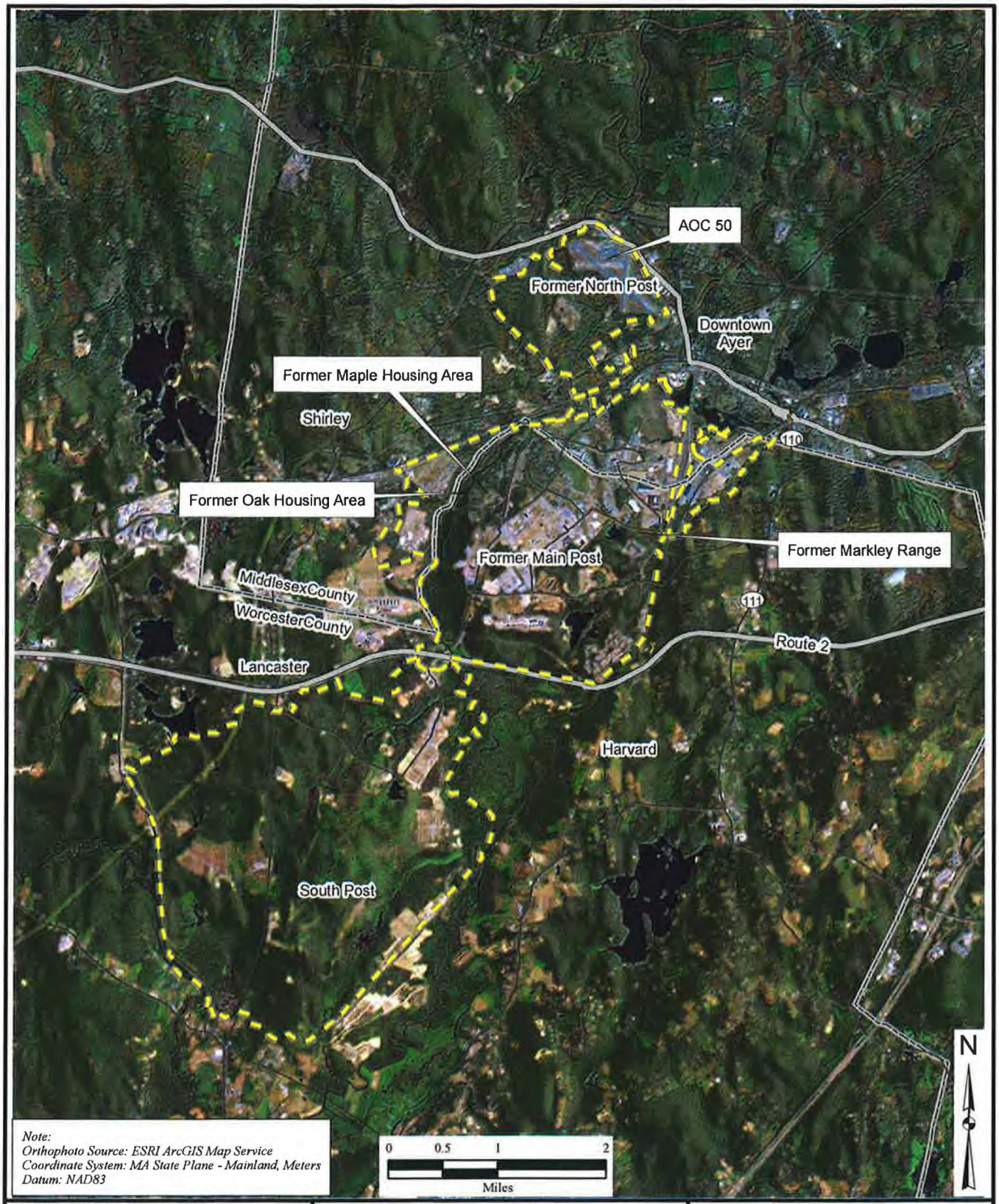
USEPA, 2010a. Regional Screening Level Table. May. http://www.epa.gov/reg3hwmd/risk/human/rbconcentration_table/Generic_Tables/index.htm

USEPA, 2010b. Regional Screening Level Table User's Guide. May. http://www.epa.gov/reg3hwmd/risk/human/rb-concentration_table/usersguide.htm

USEPA Region 3, 2010. Biological Technical Advisory Group Freshwater Sediment Screening Tables. May. http://www.epa.gov/reg3hwmd/risk/eco/btag/sbv/fw/screenbench.htm

Weston, 2006. Final Bryant Range Action Memorandum. April.

FIGURES



Note:
Orthophoto Source: ESRI ArcGIS Map Service
Coordinate System: MA State Plane - Mainland, Meters
Datum: NAD83

X:\AE10\Ft_Devens\2010_Markley_SI
Site_Loc.mxd
Revised: 11/19/10 CNL
Source: HGL GIS, ESRI, USACE, MASS.Gov

HGL HydroGeoLogic, Inc

Legend

- Former Fort Devens Boundary
- Highway
- Major Road
- County Line

Figure 2.1
Site Location Map
Former Fort Devens
Army Installation

Figure 2.2
Former Markley Range Site Location Map

Legend

Markley Range Site (Approximate Boundary)

Note:
Orthophoto Source: ESRI ArcGIS Map Service
Coordinate System: MA State Plane - Mainland, Meters
Datum: NAD83

X:\AE10\Ft_Devens\2010_Markley_SI\Markley_Site_Layout.mxd
Revised: 11/19/10 CNL
Source: HGL GIS, ESRI, USACE, MASS.Gov

HGL HydroGeoLogic, Inc

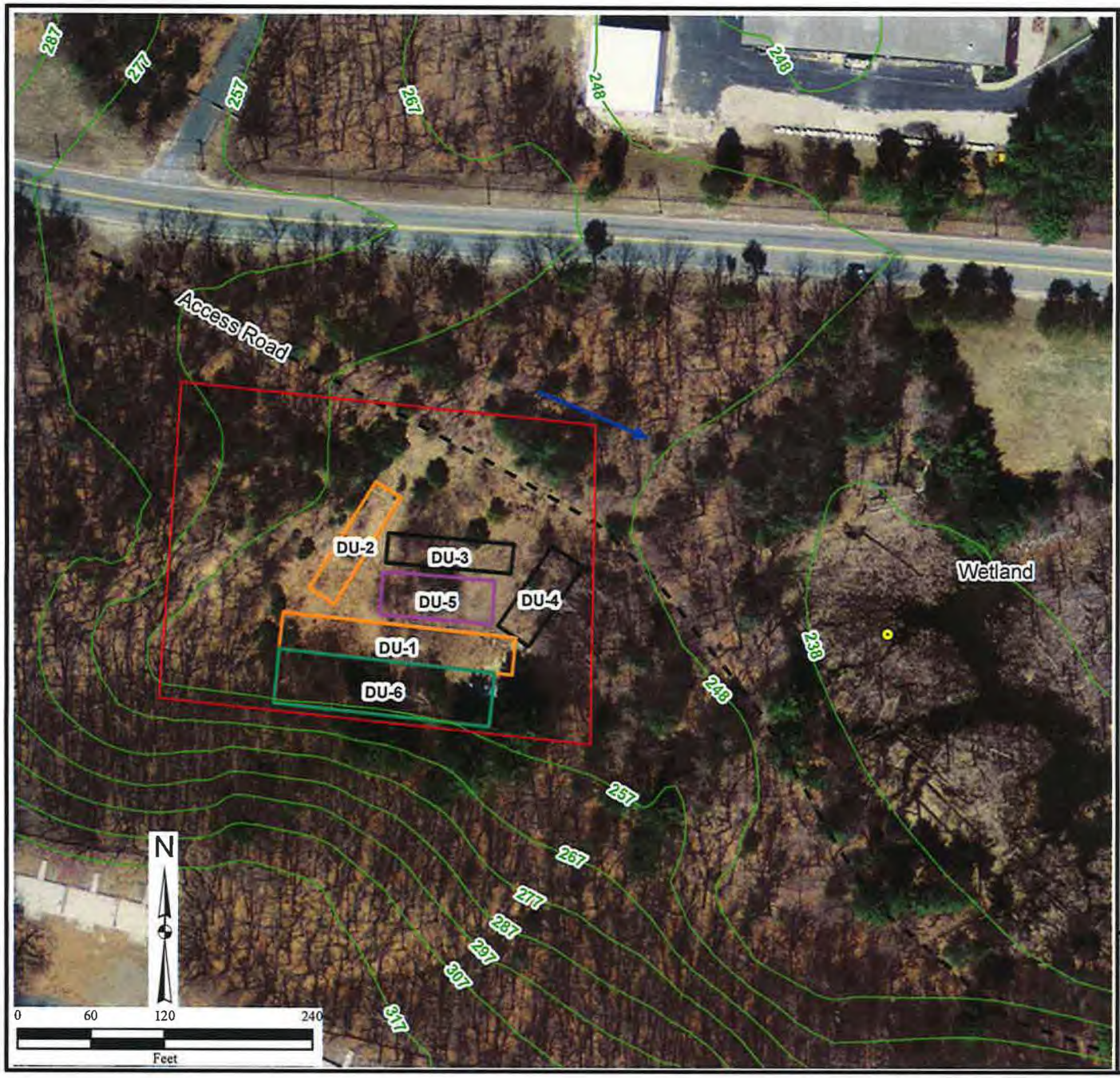


Figure 3.1
Former Markley Range Decision Units

Legend

- Sediment Sample Location
- Access Road
- Major Road
- Topographic Contour
- Presumed Berm
- Presumed Firing Line
- Downrange Area
- Hillside/Backstop
- Markley Range Site (Approximate Boundary)
- Presumed Groundwater Flow Direction

Note:
Orthophoto Source: ESRI ArcGIS Map Service
Coordinate System: MA State Plane - Mainland, Meters
Datum: NAD83

X:\AE10\Ft_Devens\2010_Markley_SI\Former_Markley_DU.mxd
Revised: 11/19/10 CNL
Source: HGL GIS, ESRI, USACE, MASS.Gov

HGL HydroGeoLogic, Inc

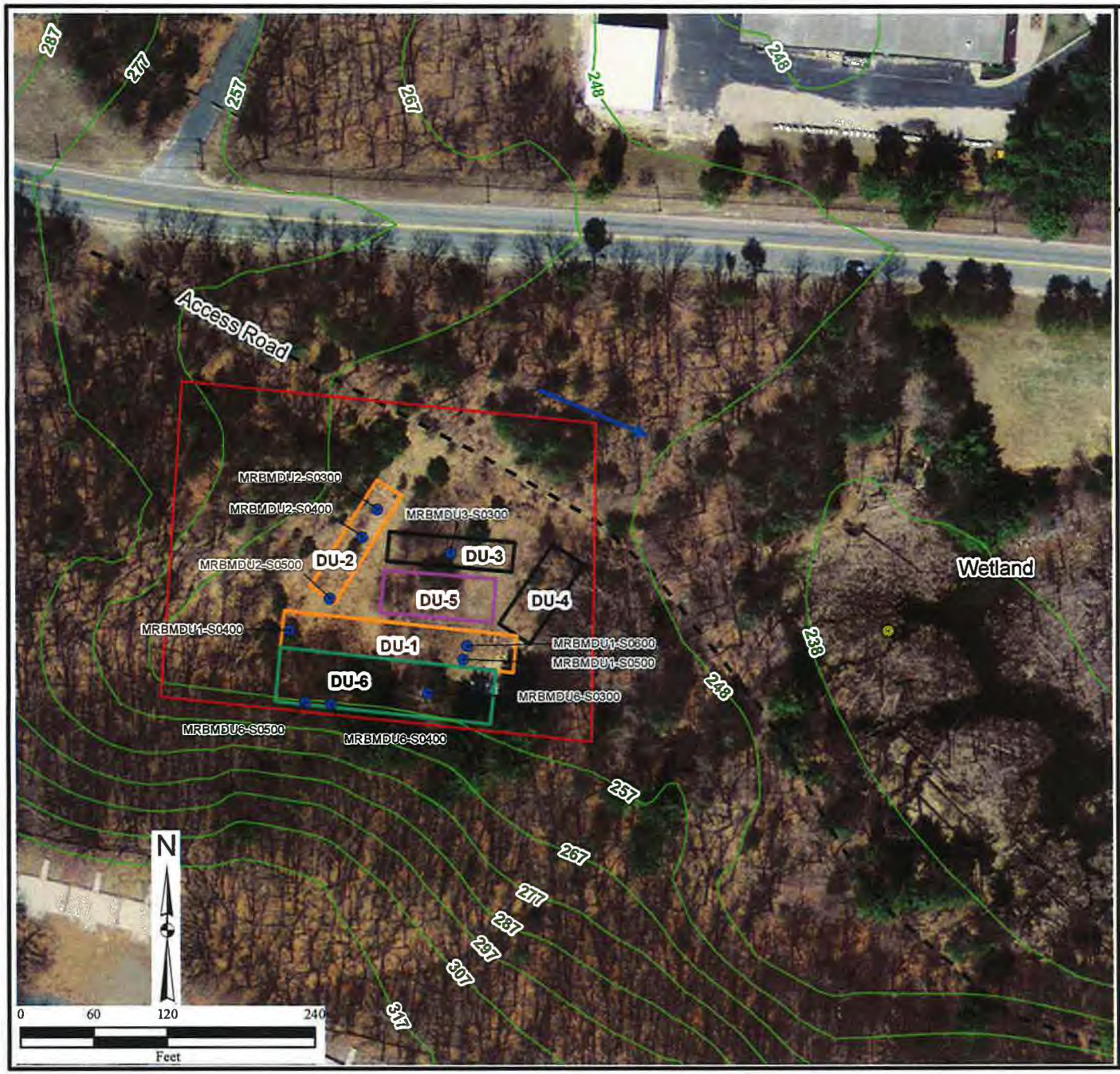


Figure 3.2
Former Markley Range Particle Analysis Soil Sample Location Map

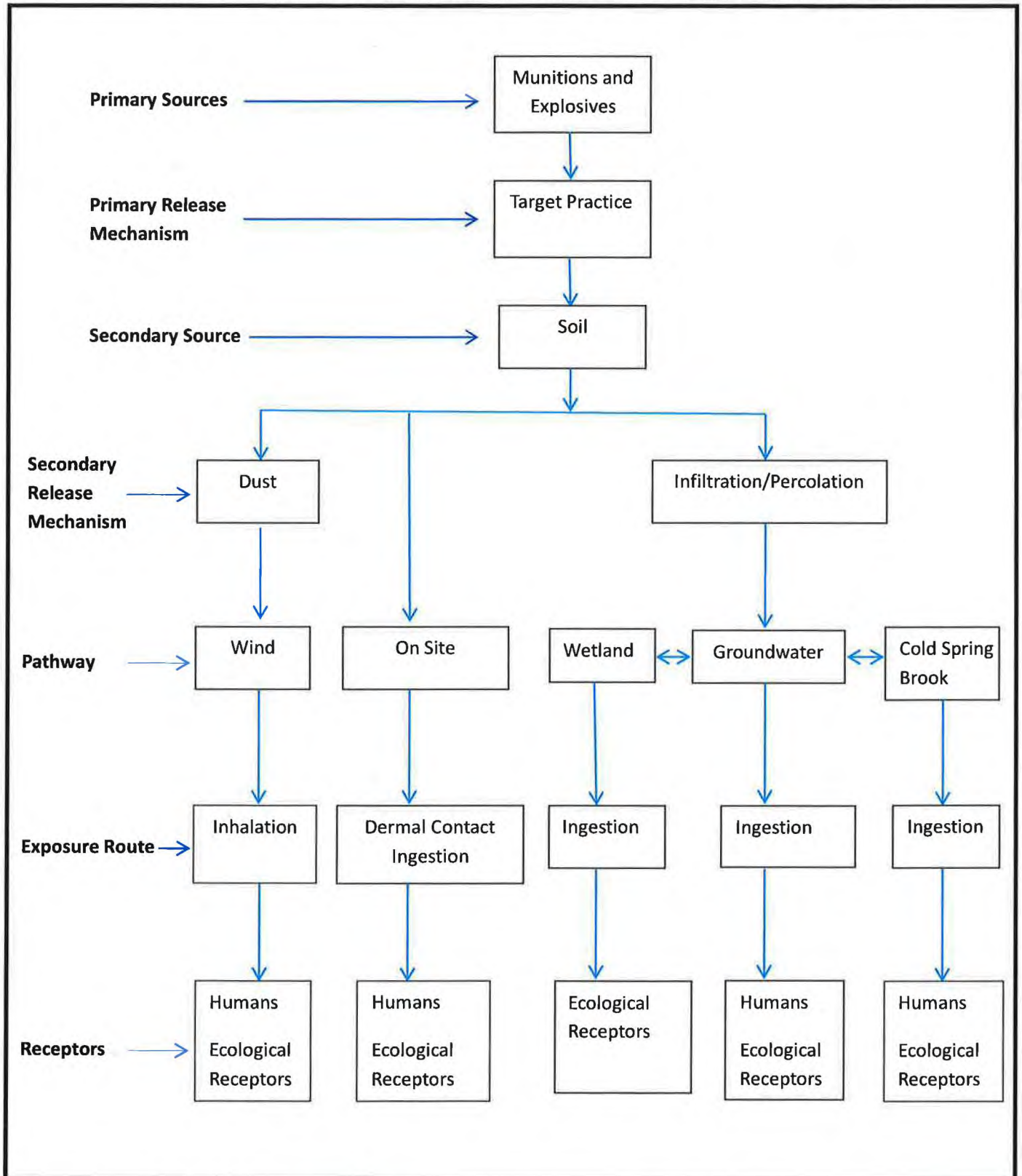
Legend

- Sediment Sample Location
- Particle Analysis Soil Sample
- Access Road
- Major Road
- Topographic Contour
- Presumed Berm
- Presumed Firing Line
- Downrange Area
- Hillside/Backstop
- Markley Range Site (Approximate Boundary)
- Presumed Groundwater Flow Direction

Note:
Orthophoto Source: ESRI ArcGIS Map Service
Coordinate System: MA State Plane - Mainland, Meters
Datum: NAD83

X:\AE10\Ft_Devens\2010_Markley_SI\PA_Soil_Sample_Locs.mxd
Revised: 11/19/10 CNL
Source: HGL GIS, ESRI, USACE, MASS.Gov

HGL HydroGeoLogic, Inc



X:\AE10\Ft_Devens\2010_Markley_SI
Exposure_Flowchart.cdr
Revised: 11/19/2010 CNL
Source:

HGL HydroGeoLogic, Inc

Figure 6.1
Flow Chart of Exposure Assessment for Conceptual Site Model

TABLES

Table 5.2
Cancer Risks Associated with Arsenic Concentrations

Decision Unit	Maximum Concentration (mg/kg)	Cancer Risk
DU-1: South Berm	11	3×10^{-5}
DU-2: West Berm	15	4×10^{-5}
DU-3: North Firing Line	12	3×10^{-5}
DU-4: East Firing Line	8.5	2×10^{-5}
DU-5: Down Range	11	3×10^{-5}
DU-6: Uphill DU-1	10	3×10^{-5}

Table 5.3
Cancer Risks Associated with Chromium Concentrations

Decision Unit	Maximum Concentration (mg/kg)	Cancer Risk
DU-1: South Berm	12	4×10^{-5}
DU-2: West Berm	15	5×10^{-5}
DU-3: North Firing Line	14	5×10^{-5}
DU-4: East Firing Line	8.4	3×10^{-5}
DU-5: Down Range	13	4×10^{-5}
DU-6: Uphill DU-1	11	4×10^{-5}

Table 5.4
Total Screening Cancer Risks

Decision Unit	Arsenic Cancer Risk	Chromium Cancer Risk	Total Screening Cancer Risk
DU-1: South Berm	3×10^{-5}	4×10^{-5}	7×10^{-5}
DU-2: West Berm	4×10^{-5}	5×10^{-5}	9×10^{-5}
DU-3: North Firing Line	3×10^{-5}	5×10^{-5}	8×10^{-5}
DU-4: East Firing Line	2×10^{-5}	3×10^{-5}	5×10^{-5}
DU-5: Down Range	3×10^{-5}	4×10^{-5}	7×10^{-5}
DU-6: Uphill DU-1	3×10^{-5}	4×10^{-5}	7×10^{-5}

Table 5.6
Ecological Risks Associated with Antimony Concentrations

Decision Unit	Maximum Concentration (mg/kg)	Ecological Risk Ratio
DU-1: South Berm	6.8	25
DU-4: East Firing Line	0.23	<1
DU-6: Uphill DU-1	0.36	1

Table 5.7
Ecological Risks Associated with Lead Concentrations

Decision Unit	Average Concentration (mg/kg)	Ecological Risk Ratio
DU-1: South Berm	685	7
DU-4: East Firing Line	110	1.1
DU-5: Down Range	120	1.2
DU-6: Uphill DU-1	160	1.6

Table 5.8
Ecological Risks Associated with Vanadium Concentrations

Decision Unit	Maximum Concentration (mg/kg)	Ecological Risk Ratio
DU-1: South Berm	10	1
DU-2: West Berm	11	1
DU-3: North Firing Line	14	2
DU-5: Down Range	11	1
DU-6: Uphill DU-1	9.2	1

Table 5.9
Ecological Screening Ratio Summary

Decision Unit	Antimony Ecological Risk Ratio	Copper Ecological Risk Ratio	Lead Ecological Risk Ratio	Vanadium Ecological Risk Ratio
DU-1: South Berm	25	2	7	--
DU-3: North Firing Line	--	--	--	2
DU-4: East Firing Line	--	--	1.1	--
DU-5: Down Range	--	--	1.2	--
DU-6: Uphill DU-1	--	--	1.6	--

Table 5.11
Sediment Data-Comparison to BTAG Benchmarks
Site Inspection
Markley Range

Sediment Sample Location		Wetland	
Sample ID		MR-SD200-0409	
Analyte	BTAG Sediment Screening Level		
Units	mg/kg		
Total Metals (SW6010C)		Result	Qual
Lead	35.8	380	
Aluminum	NA	11,000	
Antimony	2	3.3	J
Arsenic	9.8	27	
Barium	NA	210	
Beryllium	NA	0.66	J
Cadmium	0.99	1.3	
Calcium	NA	8,800	
Chromium	43.4	17	
Cobalt	50	22	
Copper	31.6	49	
Iron	20,000	13,000	
Magnesium	NA	2,200	
Manganese	460	1,800	
Nickel	22.7	40	
Potassium	NA	950	J
Selenium	2	2.6	J
Silver	1	1.1	U
Sodium	NA	5,500	U
Thallium	NA	1.3	
Vanadium	NA	23	
Zinc	121	93	
Mercury (by 7471A)	0.18	0.15	J
Explosives (8330B)			
2,4,6-Trinitrotoluene	0.092	0.24	U
2,4-Dinitrotoluene	0.0416	0.24	U
2,6-Dinitrotoluene	NA	0.24	U
2-Amino-4,6-dinitrotoluene	NA	0.24	U
2-Nitrotoluene	NA	0.24	U
3-Nitrotoluene	NA	0.48	U
4-Amino-2,6-dinitrotoluene	NA	0.24	U
4-Nitrotoluene	4.06	0.38	U
HMX	NA	0.24	U
Nitrobenzene	NA	0.24	U
Tetryl	NA	0.077	J
RDX	0.013	0.25	U
1,3,5-Trinitrobenzene	NA	0.24	U
1,3-Dinitrobenzene	NA	0.24	U
Nitroglycerin	NA	4.9	U
PETN	NA	3.8	U

Notes:
USEPA = U.S. Environmental Protection Agency
mg/Kg = milligrams per kilogram
NA = Not Available
http://www.epa.gov/reg3hwmd/risk/eco/btag/sbv/fwsed/screenbench.htm
Exceedance of USEPA Sediment Screening Levels (BTAG).

Table 5.12
COPECs Identified in Wetland Sediments

Analyte	Concentration (mg/kg)	BTAG Value (mg/kg)	Ecological Risk Ratio
Antimony	3.3	2	2
Arsenic	27	9.8	3
Cadmium	1.3	0.99	1
Copper	49	31.6	2
Lead	380	35.8	11
Manganese	1,800	460	4
Nickel	40	22.7	2
Selenium	2.6	2	1

APPENDIX A

FIELD NOTES/DAILY QUALITY CONTROL REPORTS

HGL
HydroGeoLogic, Inc
Exceeding Expectations

DAILY QUALITY CONTROL REPORT

Date 4-29-10

	S	M	T	W	Th	F	S
Weather					SUNNY		
Temp					60°		
Wind							
Humidity							

USACE PROJECT MANAGER: ROBERT SIMEONE.
PROJECT: MANKLOY RANGE SITE INSPECTION

CONTRACT NUMBER: W91ZLK-05-D-0010

MIKE JACKSON (HGL)
VANNESSA COLLOCA (HGL)
RYAN MACKAY (GFS)
HUGH SENSE (COER)

VISITORS:
HUI LIANG (DEP)
GINNY LOMBARDO (EPA)
DAVID CHAFFIN (DEP)

Equipment Onsite:
MULTI-INCREMENTAL SAMPLING TOOL (EVC MIS TOOL)
WHITE METAL DETECTOR
PERSONAL DATA PAN
SCALE

Work Performed:
OER PERFORMS UXO CLEARANCE. FINDS UXO IDENTIFIED AS 3-INCH STOKES MORTAR (NO FUSE). CONTACT FIRE CHIEF. POLICE RESPOND. UXO REMOVED FROM SITE. CLEAR BRUSH. FLAG GRID ON HILLSIDE (DU-6). COLLECT MIS SAMPLES AT DU-2, DU-4 AND DU-5.

Signature: Michael D. Jackson

HGL
HydroGeoLogic, Inc
Exceeding Expectations

Date 4-29-10

PROJECT: MARKLEY RANGE SITE INSPECTION

CONTRACT NUMBER: W91ZLK-05-D-0010

Quality Control Activities (including field calibrations):

Health and Safety Level Activities:
HEALTH & SAFETY MEETING. EVACUATE AREA WHEN UXO FOUND.

Problems Encountered/Corrective Action Taken:
UXO FOUND. EVACUATE SITE AND MAKE PHONE CALLS. UXO REMOVED FROM SITE AND WORK PROCEEDS

Special Notes

Signature: Michael D. Jordan Title: GEOLOGIST

HGL
HydroGeoLogic, Inc
Exceeding Expectations

DAILY QUALITY CONTROL REPORT

Date 4-30-10

	S	M	T	W	Th	F	S
Weather						Sunny	
Temp						50°	
Wind							
Humidity							

USACE PROJECT MANAGER: ROBERT SIMEONE
PROJECT: MARKLEY RANGE SITE INSPECTION

CONTRACT NUMBER: W91ZLK-05-D-0010

MIKE JACKSON (HGL)
VANESSA COLLOCA (HGL)
RYAN MACKAY (GFS)
HUGH SEASE (OER)

VISITORS: MARK KOENIG (USACE)
DAVID CHAFFIN (DEP)

Equipment Onsite:
MULTI-INCREMENTAL SAMPLING TOOL (ENC MFS TOOL)
GEOPROBE MANUALLY SAMPLING SETUP (DU-1 → 18"-20" SAMPLE)
WHITE METAL DETECTOR
PERSONAL DATA PAN
SCALE

Work Performed:
OER (HUGH SEASE) PERFORMS UXO CLEARANCE. COLLECT MFS SOIL SAMPLES AT DU-3, DU-6 AND DU-1. REPLICATE MFS SAMPLES COLLECTED AT DU-3 (REP1 AND REP2). COLLECT SEDIMENT SAMPLE AT NEARBY WETLAND. INVESTIGATE AREA WEST OF DU-1/DU-2 WITH OER. SAMPLES PREPPED AND TRANSFERED TO TEST AMERICA LABORATORY COURIER. SAMPLES COLLECTED FOR PARTICLE ANALYSIS AT THE WEST BERM (DU-2), SOUTH BERM (DU-1) AND AREA UPHILL OF DU-1 (DU-6).

Signature: Michael D. Jackson

HGL
HydroGeoLogic, Inc
Exceeding Expectations

Date 4/30/10

PROJECT: MARKLEY RANGE

CONTRACT NUMBER: W91ZLK-05-D-0010

Quality Control Activities (including field calibrations):

Health and Safety Level Activities:
Health & SAFETY MEETING

Problems Encountered/Corrective Action Taken:
NO PROBLEMS ENCOUNTERED

Special Notes

Signature: Michael D. [illegible] Title: Geologist

Location Markley Range Date 4-29-10
Project / Client Devens / USACE

huge sease
r mackay
v colloca

Arrival: 0800
Personnel: Mike Jackson (HGL)
Purpose: MIS Sampling
Weather: 60°, clear, sunny

40 Set up sampling tool (multi-incremental EVC MIS tool)
2cm diameter / 5cm (2in) long coring
h-sease UXO sweep (pink flag area) DU-3

57 Blue flagging uphill - 80 flags
toe - 10 grade (10ft uphill)
metals concentrated 2-4 inches
both berms

112 Clear area - small brush.
50 x 190 = 9500 ft²

Location Markley Range Date 4-29-10
Project / Client Devens / USACE

1000 UXO discovered near surface. Call Bobs. Call Pete Dalton. HUGH Sease (COE) Contacts Fire chief. Police Responds no fuse on 3-inch stokes mortar. Police remove from site.
1030 Back down to site. Ginny Lombardo & Lori onsite.
Flag berm on hill - blue flag
1332 Begin Sampling every 11ft at pink flagging. 44 x 190 @ DU-2
1350 Stop Sampling - fix auger Mike @ hotel for spare parts
1400 Auger fixed. Finish Sampling DU-2
1512 Finish DU-2
1531 Begin DU-4 sampling
Pink flagging - sandy soils
1600 Finish DU-4

Location Dover, MA Date 4-29-10
Project / Client Markley Range / USACE

1610 Begin DU-5
1629 End Sampling DU-5
16 Soils Sandy - some clay
1730 R Mackay leaving site
16 End sampling day
3 Grids Complete -
16 Equipment decomed.
1750 mjackson, h. sease + v colloca leave site

Reed D. [illegible]
4-29-10

Location Markley Range Date 4-30-10 17
Project / Client USACE

Arrival: 0710
Personnel: Mike Jackson (HGL)
Vanessa Colloca (HGL)
Ryan McKay (GFS)
Hugh Sease (OER)
Purpose: Markley Site Inspection
Weather: 50°, clear
- Health & Safety meeting
- Hugh Sease Clearing DU-3
0740 Start DU-3
Personal Data Ram
Conc: 0.007 mg/m³
TWA 0.006 mg/m³
0815 Dove collecting DU-3
Parent sample
0830 Start Replicate 1
(DU-3)
Actual 0.035 mg/m³
0.005
~~0854~~ Finish Rep 1 (1325 time on COC)
0905 Start Rep 2
(Rep of DU-3) (1420 time on COC)

Location Markley Range Date 4-30-10
Project / Client Devens / USACE

4.2 0.025 mg/m3
0.006 mg/m3
0940 Done with Rep 2
(Replicate at DU-3)
1015 Mark Koenig on
site (USACE).
1000 Start collecting
DU6
1040 Done at DU6
1055 Mark Koenig Departs
1100 Start DU-1
0.043 mg/m3
0.023 mg/m3
1135 Done collecting DU-1
(2-4 inches).
1320 Done collecting
DU-1 (18-20 inches)
1335 Collect sediment
sample (Explosives &
TAL metals) (+MS/MSD)

1335 Investigate berm (pine tree area)
looks bulldozed - mounds - 3 hits
electric conduit, piping + wiring -

Location Markley Range Date 4-30-10
Project / Client Devens / USACE

no other hits, no anomalies
discovered. approximate 8-12
inches of leaf coverage prior
to soil layer.
END 1400

~~Mark Koenig @ usace.gov~~
Mark.r.Koenig@usarmycorps.army.mil
Sent CoCs

Depart Markley
~~1400~~ Rapid Refill to drop sediment
sample w/ Test America

1416 Return to Markley to collect
two sift samples (1a and 1a)

1432 Depart Markley

[signature]
4-30-10

APPENDIX B

LABORATORY ANALYTICAL DATA
AND
DATA EVALUATION REPORT

DATA EVALUATION REPORT

Data Evaluation Report
for
Markley Range at the Former Fort Devens Army Installation
Site Inspection Samples
Collected April 2010

Introduction

HydroGeoLogic, Inc. (HGL) collected one sediment and nine soil samples from Markley Range at the Former Fort Devens Army Installation, Devens, Massachusetts, on April 29, 2010, through April 30, 2010. The samples were analyzed at the Test America Laboratory (TAL) in Denver, Colorado, for explosives, total metals and mercury.

The samples were analyzed for the following site-specific parameter list:

Markley Range:

- Explosives (discrete sampling protocol) by SW-846 Method 8330A;
- Explosives (multi-incremental sample [MIS] preparation protocol) by SW-846 Method 8330B;
- Total metals by SW-846 Methods 6010C and 6020A; and
- Total mercury by SW-846 Method 7471B.

A complete set of analytical results, including final data qualifiers, is presented in the attached table.

The results were evaluated for acceptability in accordance with the laboratory's defined acceptance limits and the acceptance criteria presented in the *Markley Range Addendum* to the *Generic Quality Assurance Project Plan, Area of Contamination 50, Environmental Remediation Services at Former Fort Devens Army Installation, Devens, Massachusetts* (HGL, 2009) (QAPP). Data qualification was performed in accordance with the QAPP requirements and the applicable protocols presented in *Region I, EPA-New England Data Validation Functional Guidelines for Evaluating Environmental Analyses* (EPA Region I, 1996).

On 07/21/2010, TAL-Denver notified HGL that the Markley Range data contained in sample delivery groups (SDGs) 280-3084-1 and 280-3087-1 was not qualified properly by the Laboratory Information Management System (LIMS) software. Due to this laboratory software error, detections between the method detection limit (MDL) and limit of detection (LOD) were qualified as not detected (U). The proper convention according to the Department of Defense (DoD) Quality Systems Manual (QSM) for Laboratories, version 4.1, is to qualify these detections as estimated (J). This error affected one or more target explosives and metals in all submitted samples and was corrected by the laboratory on 07/22/2010. All results were re-evaluated by HGL on 07/29/10 to determine if any qualification revisions were necessary. The revised validation produced three additional target metal contaminants in one method blank and an elevated relative standard deviation (RSD) for silver in one field replicate group. Both revisions required additional qualification as detailed in this data evaluation report (DER) and the final validation reports.

On 10/04/2010, TAL-Denver notified HGL that a second set of revisions were required for the metals reports in SDGs 280-3084-1 and 280-3087-1. Due to a laboratory transcription and calculation error, the mercury reporting limit (RL) used in the original data packages, dated 06/18/10, and the revised data packages, dated 07/22/10, was not calculated properly and was actually half of the correct value. As a

result of this error, the mercury detections for six samples required a notation change from "no qualifier" to estimated (J), per the DoD QSM version 4.1 protocol for concentrations between the MDL and RL. The qualifier corrections were properly performed by the laboratory on 10/01/2010. All results were re-evaluated by HGL on 10/06/2010 to determine if any qualification revisions were necessary. The revised validation produced one change to the review performed on 07/29/2010 and is discussed in the following sections and the final validation reports.

On 10/12/2010, when performing a routine quality control evaluation of the Markley Range database, the HGL Database Specialist and Project Chemist noted an anomaly with the values reported for the silver non-detections in samples 280-3087-5, 280-3087-8 and 280-3087-9. On the same day, it was brought to the attention of TAL-Denver that the silver values were larger than the reported RL. The laboratory determined on 10/25/2010 that the RLs for all SW-846 Methods 6010C and 6020A metals in SDG 280-3087-1 were calculated incorrectly by the LIMS software and, just as for the mercury RLs in the second revision, were actually half of the correct value. As a result of this error, the antimony, cadmium, selenium, silver, and/or thallium detections for all samples in SDG 280-3087-1 required a notation change from "no qualifier" to estimated (J), per the DoD QSM version 4.1 protocol for concentrations between the MDL and RL. The qualifier corrections were properly performed by the laboratory on 10/25/2010. All results were re-evaluated by HGL on 10/26/2010 to determine if any qualification revisions were necessary. The revised validation produced one change to the review performed on 10/06/2010 and is discussed in the following sections and the final validation reports.

Sample Shipment and Receipt

The samples were shipped to the laboratory via overnight courier after the sampling event concluded on April 30, 2010. The laboratory noted that the sample cooler was packed with sufficient quantities of ice while in the field, and all samples were appropriately preserved in accordance with the requirements presented in Table 1.

Holding Times

All samples were extracted and analyzed in accordance with the methods and holding time requirements presented in Table 1.

Equipment Blanks

Equipment blanks, also known as rinsate blanks, are samples of analyte-free water that are poured over reusable sampling equipment to confirm decontamination efficacy. Equipment blanks are associated with all samples collected at a site using the same type of reusable equipment employed to collect the blank. No equipment blanks were associated with the soil and sediment samples collected from Markley Range during this sampling event.

Explosives Analysis

One sediment sample was collected by a discrete sampling protocol and analyzed for explosives using EPA SW-846 Method 8330A. Three soil samples were prepared by an MIS protocol and analyzed for explosives using EPA SW-846 Method 8330B. In addition, the laboratory prepared two field replicates (MRREP1-SO101-0409 and MRREP2-SO102-0409, replicates of sample MRFLDU3-SO200-(2-4)-0409) by the MIS protocol and analyzed the replicates for explosives using EPA SW-846 Method 8330B.

Laboratory Method and Leachate Blanks: Three laboratory method blanks and one leachate blank were associated with the samples from Markley Range. All four blanks were free from contamination.

Field Duplicate Sample Results: The MIS replicate samples MRREP1-SO101-0409 and MRREP2-SO102-0409 were collected within the same MIS grid as sample MRFLDU3-SO200-(2-4)-0409. All explosives results for the three samples were non-detections and showed acceptable precision.

Surrogate Results: All surrogate recoveries were within the project acceptance limits, with one exception.

Surrogate 1,2-dinitrobenzene was recovered above the upper control limit for sample MRFLDU4-SO200-(2-4)-0409 in the confirmation column from which two target explosives were reported. Both target explosives were non-detections and no qualification was required. The non-standard Q qualifiers applied by the laboratory were removed.

Matrix Spike/Matrix Spike Duplicate (MS/MSD) Results: Two sets of MS/MSD samples were analyzed for explosives. All recovery and precision criteria were met in the MS/MSD analyses performed on sample MR-SD200-0409.

The recovery and precision criteria were also met in the MS/MSD analyses performed on sample MRDU5-SO200-(2-4)-0409 with the exception of recoveries above the upper control limit for 2-amino-4,6-dinitrotoluene and nitrobenzene. Since the 2-amino-4,6-dinitrotoluene and nitrobenzene recoveries in the associated LCS standards met the project acceptance criteria, qualification was only required for the parent sample. The 2-amino-4,6-dinitrotoluene and nitrobenzene results for sample MRDU5-SO200-(2-4)-0409 were non-detections; no qualification was required and the laboratory-applied J qualifiers were removed.

Laboratory Control Sample (LCS) Results: Six LCS standards were analyzed for explosives, and all resulting recoveries met the project control limits with the following exception.

The LCS analyzed on 06/04/10 for RDX had a recovery above the upper control limit in the primary column; the RDX result for sample MR-SD200-0409 was a non-detection; no qualification was required and the non-standard Q qualifier applied by the laboratory was removed.

Manual Integrations: Due to manual integrations, target explosives were qualified by the laboratory with non-standard M flags that do not conform to the Markley Range QAPP protocols and the DoD QSM, version 4.1. Since no quality control (QC) discrepancies were noted for the manually integrated analytes, the non-standard M qualifiers were removed.

Total Metals and Mercury Analysis

One sediment sample was collected by a discrete sampling protocol and analyzed for total metals using EPA SW-846 Methods 6010C, 6020A and 7470A (mercury). Seven soil samples were collected and analyzed for total metals using EPA SW-846 Methods 6010C, 6020A and 7470A (mercury). In addition, the laboratory analyzed two field replicates (MRREP1-SO101-0409 and MRREP2-SO102-0409, replicates of sample MRFLDU3-SO200-(2-4)-0409).

At HGL's request, the laboratory divided samples MRFLDU3-SO200-(2-4)-0409, MRFLDU4-SO200-(2-4)-0409, MRREP1-SO101-0409, and MRREP2-SO102-0409 into separate sieve fractions, greater than (>) 2 millimeter (mm) particle size and less than (<) 2 mm particle size. Each sieve fraction was assigned a laboratory identification (ID) and analyzed as an individual sample; for instance, sample MRFLDU3-

SO200-(2-4)-0409 was assigned a laboratory ID of 280-3087-6 for the <2 mm sieve fraction and an ID of 280-3087-7 for the >2 mm sieve fraction. Therefore, although nine soil samples were collected (seven samples and two field replicates), thirteen samples were analyzed for total metals using EPA SW-846 Methods 6010C, 6020A and 7470A (mercury). All soil samples were prepared by the MIS protocol.

Method Blank Results: Eight method blanks were associated with the samples from Markley Range. Five of the blanks were free from contamination.

The method blank analyzed on 05/11/10, associated with the sediment sample, had a detection above the MDL for total magnesium. The magnesium result for sample MR-SD200-0409 was a detection above the action level and no qualification was required.

The method blank analyzed on 05/13/10, associated with the sediment sample, had a detection above the MDL for total copper. The copper result for sample MR-SD200-0409 was a detection above the action level and no qualification was required.

The method blank analyzed on 06/05/10, associated with the MIS soil samples, had detections above the respective MDL for total antimony, chromium, manganese, and nickel. The antimony results for the >2 mm sieve fraction of samples MRREP1-SO101-0409, MRFLDU3-SO200-(2-4)-0409, and MRREP2-SO102-0409 were detections less than the action level and were qualified **U**. All other antimony results and all chromium, manganese and nickel results were detections above the respective action level and no qualification was required.

Field Duplicate Sample Results: The MIS replicate samples MRREP1-SO101-0409 and MRREP2-SO102-0409 were collected within the same MIS grid as sample MRFLDU3-SO200-(2-4)-0409. For target metals in the <2 mm sieve fraction, the calculated RSDs met the project control criteria with the exception of silver and mercury. After the laboratory RL correction on 10/01/10, the mercury result for sample MRFLDU3-SO200-(2-4)-0409 was a detection qualified J for a concentration between the MDL and RL, and no additional qualification was required; the mercury results for samples MRREP1-SO101-0409 and MRREP2-SO102-0409 were detections above the RL and were qualified **J**. After the laboratory RL correction on 10/25/10, the silver result for sample MRREP2-SO102-0409 was a detection qualified J for a concentration between the MDL and RL, and no additional qualification was required; the silver results for samples MRREP1-SO101-0409 and MRFLDU3-SO200-(2-4)-0409 were also detections qualified J for concentrations between the MDL and RL, and no additional qualification was required.

For target metals in the >2 mm sieve fraction, the calculated RSDs met the project control criteria with the exception of calcium, magnesium, potassium, manganese, and silver. The calcium, magnesium, potassium, manganese, and silver results for samples MRFLDU3-SO200-(2-4)-0409, MRREP1-SO101-0409 and MRREP2-SO102-0409 were qualified **J** for detections and **UJ** for non-detections.

Matrix Spike/Matrix Spike Duplicate (MS/MSD) Results: Two sets of MS/MSD samples were analyzed for all target metals. The recovery and precision criteria were met in the MS/MSD analyses performed on sample MR-SD200-0409 with the exception of recoveries and a relative percent difference (RPD) outside of the project control criteria for aluminum, iron, antimony, and manganese. Since the aluminum, iron and manganese concentrations in sample MR-SD200-0409 were greater than four times that of the respective spike, the resulting recoveries and RPDs were not applicable, and no qualification was required. The laboratory-applied J qualifiers were removed from the aluminum, iron and manganese results in sample MR-SD200-0409. The antimony result for sample MR-SD200-0409 was a detection greater than the RL and was qualified **J**.

The recovery and precision criteria were also met in the MS/MSD analyses performed on sample MRDU5-SO200-(2-4)-0409 with the exception of recoveries outside of the project acceptance limits for aluminum, iron, antimony, copper, lead, manganese, and zinc. Since the aluminum, iron, lead, and manganese concentrations in sample MRDU5-SO200-(2-4)-0409 were greater than four times that of the respective spike, the resulting recoveries and RPDs were not applicable, and no qualification was required. The laboratory-applied J qualifiers were removed from the aluminum, iron, lead, and manganese results in sample MRDU5-SO200-(2-4)-0409. The antimony, copper, and zinc results for all MIS soil samples were detections and were qualified J; detections already flagged J for concentrations between the MDL and RL did not require additional qualification.

LCS/LCSD Results: Eight LCS standards were analyzed for target metals, and all eight yielded recoveries within the project QC limits.

CONCLUSIONS

Data packages were reviewed for adherence to acceptable laboratory practices. Based on the elements evaluated (including holding times, blank sample results, surrogate recoveries, replicate samples, MS/MSD recoveries and precision, and LCS/LCSD recoveries and precision), all data may be reported and used without qualification, except as summarized below.

Explosives Analysis

- A continuing calibration curve is a quality control element not within the scope of the Level II validation performed for the Markley Range samples in sample delivery group (SDG) 280-3087-1. The non-standard (Q) qualifiers applied by the laboratory to the RDX and 2,4,6-trinitrotoluene non-detections for the following samples were removed: MRREP1-SO101-0409, MRFLDU3-SO200-(2-4)-0409, MRFLDU4-SO200-(2-4)-0409, MRREP2-SO102-0409, and MRDU5-SO200-(2-4)-0409.

- The non-standard qualifiers (Q) applied by the laboratory for a high surrogate recovery were removed from the 3-nitrotoluene and 2,4,6-trinitrotoluene non-detections in sample MRFLDU4-SO200-(2-4)-0409.

- The non-standard qualifier (Q) applied by the laboratory for a high LCS recovery was removed from the RDX non-detection in sample MR-SD200-0409.

- The (J) qualifiers applied by the laboratory for high MSD recoveries were removed from the 2-amino-4,6-dinitrotoluene and nitrobenzene non-detections in parent sample MRDU5-SO200-(2-4)-0409.

- The non-standard qualifiers (M) applied by the laboratory to denote that manual integration was performed were removed from the following results: the 2,4,6-trinitrotoluene non-detection in sample MRFLDU3-SO200-(2-4)-0409; the nitroglycerin non-detection in sample MRDU5-SO200-(2-4)-0409; and the Tetryl detection in sample MR-SD200-0409.

- TAL-Denver incorrectly reported analyte non-detections as the LOD, where the value associated with the U qualifier should be the RL. The explosives results for all samples were affected with the following exceptions: Tetryl in sample MR-SD200-0409; and 2,4-dinitrotoluene in samples MRFLDU4-SO200-(2-4)-0409 and MRDU5-SO200-(2-4)-0409.

Total Metals and Mercury Analysis

- Post digestion spikes, serial dilutions, and interference check samples are quality control elements not within the scope of the Level II validation performed for the Markley Range samples in SDGs 280-3084-1 and 280-3087-1. The non-standard (Q) qualifiers applied to the antimony, cadmium, cobalt, and nickel results for the following samples were removed: MR-SD200-0409, MRBMDU1-SO200-(2-4)-0409, MRBMDU1-SO200-(16-18)-0409, MRBMDU2-SO200-(2-4)-0409, MRDU5-SO200-(2-4)-0409, and MRBMDU6-SO200-(2-4)-0409; the >2 mm sieve fraction for samples MRREP1-SO101-0409, MRFLDU3-SO200-(2-4)-0409, MRFLDU4-SO200-(2-4)-0409, and MRREP2-SO102-0409; and the <2 mm sieve fraction for samples MRREP1-SO101-0409, MRFLDU3-SO200-(2-4)-0409, MRFLDU4-SO200-(2-4)-0409, and MRREP2-SO102-0409.

- The (J) qualifiers applied by the laboratory for MS/MSD recoveries and RPDs outside of the project limits were removed for the following: total aluminum, manganese, and iron in sample MR-SD200-0409; and total aluminum, iron, lead, and manganese in sample MRDU5-SO200-(2-4)-0409.

- Due to low MS and MSD recoveries, the total antimony result in sample MR-SD200-0409 was qualified as estimated (J).

- Due to low MS and MSD recoveries, the total antimony, copper and zinc results in the following samples were qualified as estimated (J): MRBMDU1-SO200-(2-4)-0409, MRBMDU1-SO200-(16-18)-0409, MRBMDU2-SO200-(2-4)-0409, MRDU5-SO200-(2-4)-0409, and MRBMDU6-SO200-(2-4)-0409; the >2 mm sieve fraction for samples MRREP1-SO101-0409, MRFLDU3-SO200-(2-4)-0409, MRFLDU4-SO200-(2-4)-0409, and MRREP2-SO102-0409; and the <2 mm sieve fraction for samples MRREP1-SO101-0409, MRFLDU3-SO200-(2-4)-0409, MRFLDU4-SO200-(2-4)-0409, and MRREP2-SO102-0409.

- As a result of method blank contamination, the total antimony results in the >2 mm sieve fraction for samples MRREP1-SO101-0409, MRFLDU3-SO200-(2-4)-0409, and MRREP2-SO102-0409 were qualified as not detected (U).

- Due to an unacceptable RSD for the <2 mm sieve fraction of field replicates MRREP1-SO101-0409, MRREP2-SO102-0409, and MRFLDU3-SO200-(2-4)-0409, target metal mercury was qualified as estimated (J) for samples MRREP1-SO101-0409 and MRREP2-SO102-0409.

- Due to unacceptable RSDs for the >2 mm sieve fraction of field replicates MRREP1-SO101-0409, MRREP2-SO102-0409, and MRFLDU3-SO200-(2-4)-0409, target metals calcium, magnesium, potassium, manganese, and silver were qualified as estimated detections (J) or estimated non-detections (UJ).

- TAL-Denver incorrectly reported analyte non-detections as the LOD, where the value associated with the U qualifier should be the RL. The following results were affected: sodium in samples MR-SD200-0409, MRBMDU1-SO200-(2-4)-0409, MRBMDU1-SO200-(16-18)-0409, MRBMDU2-SO200-(2-4)-0409, MRDU5-SO200-(2-4)-0409, and MRBMDU6-SO200-(2-4)-0409; the >2 mm sieve fraction for samples MRREP1-SO101-0409, MRFLDU3-SO200-(2-4)-0409, MRFLDU4-SO200-(2-4)-0409, and MRREP2-SO102-0409; and the <2 mm sieve fraction for samples MRREP1-SO101-0409, MRFLDU3-SO200-(2-4)-0409, MRFLDU4-SO200-(2-4)-0409,

and MRREP2-SO102-0409; silver in samples MR-SD200-0409, MRREP1-SO101-0409 (>2 mm sieve fraction), and MRFLDU4-SO200-(2-4)-0409 (<2 mm and >2 mm sieve fractions); mercury in samples MRBMDU1-SO200-(16-18)-0409, MRFLDU3-SO200-(2-4)-0409 (>2 mm sieve fraction), and MRFLDU4-SO200-(2-4)-0409 (>2 mm sieve fraction).

TABLE 1
Sample Preparation and Analysis Methods, Containers, Holding Times, and Preservatives

Parameter	Analytical Method	Sample Container	Preservation	Holding Time
Soil Samples				
Explosives	SW8330B	1 x 1-gal plastic bag	4 °C	14 Days to extraction; 40 days from extraction to analysis
Metals	SW6010C, SW6020A, and SW7471B	1 x 1-gal plastic bag	4 °C	6 Months (28 days for mercury)
Sediment Samples				
Explosives	SW8330A	2 x 8 oz glass jar	4 °C	14 Days to extraction; 40 days from extraction to analysis
Metals	SW6010C, SW6020A, and SW7471B	2 x 8 oz glass jar	4 °C	6 Months (28 days for mercury)

°C - Degrees Celsius
gal - gallon
oz - ounce

Explosives - Discrete Sample Preparation
SW-846 Method 8330A
Level II Review

Site: Former Fort Devens, MA - Markley Range	SDG #: 280-3084-1
Laboratory: Test America - Denver	Date: 06/23/10 / 07/29/10 (re-validation)
HydroGeoLogic, Inc. Reviewer: Brooke Francis HGL Peer Reviewer: Denise Rivers (06/30/10 and 08/05/10)	Project: AE1002.11.04

Client Sample ID	Laboratory Sample ID	Preparation Batch	Matrix
MR-SD200-0409	280-3084-1	280-14610	Sediment

Narrative and Completeness Review – The case narrative and data package were checked for completeness. No discrepancies were noted. The narrative stated that two continuing calibration standards yielded RDX recoveries above the acceptance criteria. This particular QC element is outside the scope of a Level II data review and was not evaluated.

As noted in the revised case narrative, due to an error with the laboratory software, detections between the MDL and limit of detection (LOD) were inadvertently flagged U. The proper convention according to the Department of Defense Quality Systems Manual (DoD QSM) version 4.1 is to qualify these detections as J. This error appears to only affect the Tetryl detection for sample MR-SD200-0409 and was corrected by the laboratory on 07/22/10.

Qualification: None required.

Sample Delivery and Condition – The sample arrived intact at the laboratory, and in acceptable condition and temperature. Proper custody was documented.

Qualification: None required.

Holding Times – The sample was extracted within the 14-day holding time required by the QAPP and analyzed within 40 days.

Qualification: None required.

Surrogates – All surrogate recoveries were within the control limits specified in the QAPP.

Qualification: None required.

Laboratory Control Samples – Two LCSs are associated with the sample in this SDG. The LCSs for batch 280-14610 met all %R acceptance limits established in the QAPP. The RDX result for sample MR-SD200-0409 was qualified UQ by the laboratory for a high recovery on the primary column; by comparison, the reported LCS from the secondary column contained a passing recovery for RDX.

Since the RDX result for sample MR-SD200-0409 is a non-detection, no qualification is required and the laboratory-applied Q qualifier should be removed.

> ***Qualification:*** **The non-standard Q qualifier applied by the laboratory to the RDX result for sample MR-SD200-0409 was removed.**

MS/MSD – Matrix spike and matrix spike duplicate analyses were performed for all target explosives on sample MR-SD200-0409 from this SDG. All %R and RPD results met the control limits established in the QAPP.

> *Qualification:* None required.

Method Blank – Two method blanks are associated with the sample in this SDG. The method blanks analyzed on 06/03/10 and 06/04/10 for batch 280-14610 were free from contamination.

> *Qualification:* None required.

Equipment Blank – An equipment blank was not submitted with the sample in this SDG.

> *Qualification:* None required.

Field Duplicate – A field duplicate was not submitted with the sample in this SDG.

> *Qualification:* None required.

Compound Quantitation – Non-detected analyte results were reported as "LOD U". The reporting limit (RL, also identified as a limit of quantitation - LOQ) was provided on the reporting pages, and these results should be considered the equivalent of "RL U" in accordance with the QAPP. Analytes detected between the RL and MDL were reported as J-qualified results by the laboratory. These J qualifiers were retained unless superseded by a more severe qualifier. Due to manual integration, target analyte Tetryl was qualified by the laboratory with a non-standard M flag. As this flag does not conform to the DoD QSM and Markley Range QAPP protocols and no QC issues affect the Tetryl result, this M qualifier should be removed.

> ***Qualification:*** **Non-detected values are changed to the RL listed by the laboratory in adherence to the QAPP protocol. The laboratory-applied M qualifier was removed from the Tetryl result for sample MR-SD200-0409.**

Qualification Summary Table: (all values reported in mg/Kg):

Sample ID	Analyte	Lab Value	Lab Qualifier	Validated Value	Validated Qualifier
MR-SD200-0409	RDX	0.086	U Q	0.25	U
	Tetryl	0.077	J M	0.077	J
	Varies	0.086	U	0.24	U
	3-Nitrotoluene	0.086	U	0.48	U
	4-Nitrotoluene	0.17	U	0.38	U
	PETN	0.86	U	3.8	U

Sample ID	Analyte	Lab Value	Lab Qualifier	Validated Value	Validated Qualifier
	Nitroglycerin	0.48	U	4.9	U

Only environmental samples and field duplicates are included in the above table. MS/MSDs and field blanks are used to evaluate the sample data but are not qualified during the review process.

Total Metals and Mercury - Discrete Sample Preparation
SW-846 Method 6010C (ICP Metals),
SW-846 Method 6020A (ICP-MS Metals), and
SW-846 Method 7471B (Mercury)
Level II Review

Site: Former Fort Devens, MA - Markley Range	SDG #: 280-3084-1
Laboratory: Test America - Denver	Date: 06/23/10, 07/29/10 (re-validation), 10/06/10 (second re-validation)
HydroGeoLogic, Inc. Reviewer: Brooke Francis HGL Peer Reviewer: Denise Rivers (06/30/10, 08/05/10, and 10/06/10)	Project: AE1002.11.04

Client Sample ID	Laboratory Sample ID	Analysis Batch	Matrix
MR-SD200-0409	280-3084-1	280-15054; 280-15246; 280-14830	Sediment

Narrative and Completeness Review - The case narrative and data package were checked for completeness. No discrepancies were noted. As noted in the revised case narrative from 07/22/10, due to an error with the laboratory software, detections between the MDL and limit of detection (LOD) were inadvertently flagged U. The proper convention according to the Department of Defense Quality Systems Manual (DoD QSM) version 4.1 is to qualify these detections as J. This error appears to only affect the beryllium and selenium results for sample MR-SD200-0409 and was properly corrected by the laboratory.

As noted in the revised case narrative from 10/01/10, the initial preparation amount for mercury was inaccurately recorded by the laboratory analyst, which yielded a reporting limit (RL, also identified as a limit of quantitation - LOQ) that was half of the correct value. This error only affected the target metal mercury and was properly corrected. The mercury result for sample MR-SD200-0409 is now identified as a detection between the MDL and RL and was qualified J by the laboratory per the DoD QSM version 4.1.

Although issues were discussed in the case narrative for the associated post digestion spikes, serial dilutions, and ICSA check solutions, these particular QC elements are outside the scope for Level II data validation and were not evaluated. Therefore, the non-standard Q qualifiers applied by the laboratory for antimony, cadmium, cobalt, and nickel exceedances in the associated ICSA should be removed.

> *Qualification:* **The non-standard Q qualifiers applied by the laboratory to the antimony, cadmium, cobalt, and nickel results in sample MR-SD200-0409 are removed.**

Sample Delivery and Condition - The sample arrived intact at the laboratory, and in acceptable condition and temperature. Proper custody was documented.

> *Qualification:* None required.

Holding Times - The sample was analyzed within the six-month (ICP and ICP-MS metals) and 28-day (mercury) holding times required by the QAPP for solid samples.

Qualification: None required.

Laboratory Duplicate - Laboratory duplicate analyses were not requested or performed on the sample from this SDG.

Qualification: None required.

Laboratory Control Sample - Three LCSs are associated with the sample in this SDG and were analyzed as follows: on 05/08/10 for batch 280-14830, on 05/11/10 for batch 280-15054, and on 05/13/10 for batch 280-15246. All %R results met the control limits established in the QAPP.

Qualification: None required.

MS/MSD - Matrix spike and matrix spike duplicate analyses were performed for all target metals on sample MR-SD200-0409 from this SDG. For the mercury MS/MSD in batch 280-14830, all %R and RPD results were within the acceptance limits established by the QAPP.

For the ICP metal MS/MSD in batch 280-15054, the %R and RPD results were within the acceptance limits established by the QAPP with the exception of aluminum (320% MS and 181% MSD) and iron (203% MS, -54% MSD, and 22% RPD). Since the aluminum and iron results for parent sample MR-SD200-0409 are greater than 4x the amount spiked, the recovery and precision results are not applicable and no qualification is required. The laboratory-applied J qualifiers should be removed from the aluminum and iron results in sample MR-SD200-0409.

For the ICP-MS metal MS/MSD in batch 280-15246, the %R and RPD results were within the acceptance limits established by the QAPP with the exception of antimony (68% MS and 71% MSD) and manganese (256% MS and 302% MSD). The antimony result for sample MR-SD200-0409 is a detection above the PQL and should be qualified J. Since the manganese result for parent sample MR-SD200-0409 is greater than 4x the amount spiked, the recovery and precision results are not applicable and no qualification is required. The laboratory-applied J qualifier should be removed from the manganese result in sample MR-SD200-0409.

Qualification: **The laboratory-applied J qualifiers are removed from the aluminum, manganese, and iron results in sample MR-SD200-0409. The antimony result for sample MR-SD200-0409 is qualified J.**

Method Blank - Three method blanks are associated with the sample in this SDG and were analyzed as follows: on 05/08/10 for batch 280-14830, on 05/11/10 for batch 280-15054, and on 05/13/10 for batch 280-15246. The method blank for batch 280-14830 was free from mercury contamination.

The method blank for batch 280-15054 (ICP metals) was also free from contamination with the exception of magnesium (4.04 mg/Kg), yielding an action level of 20.20 mg/Kg. The magnesium result for sample MR-SD200-0409 is a detection above the action level and no qualification is required.

The method blank for batch 280-15246(ICP-MS metals) was free from contamination with the exception of copper (0.874 mg/Kg), yielding an action level of 4.37 mg/Kg. The copper result for

sample MR-SD200-0409 is a detection above the action level and no qualification is required.

Qualification: None required.

Field Blanks - An equipment blank was not submitted with the sample in this SDG.

Qualification: None required.

Field Duplicate - A field duplicate was not submitted with the sample in this SDG.

Qualification: None required.

Compound Quantitation - Non-detected analyte results were reported as "LOD U". The reporting limit (RL, also identified as a limit of quantitation - LOQ) was provided on the reporting pages, and these results should be considered the equivalent of "RL U" in accordance with the QAPP. Analyte detections below the RL were reported as J-qualified results. These J qualifiers were retained unless superseded by a more severe qualifier.

Qualification: Non-detected values are changed to the RL listed by the laboratory in adherence to the QAPP protocol.

Qualification Summary Table (all concentrations in mg/Kg):

Sample	Analyte	Lab Value	Lab Qualifier	Validated Value	Validated Qualifier
MR-SD200-0409	Aluminum	11,000	J	11,000	--
	Iron	13,000	J	13,000	--
	Sodium	1100	U	5500	U
	Antimony	3.3	QJ	3.3	J
	Cadmium	1.3	Q	1.3	--
	Cobalt	22	Q	22	--
	Manganese	1800	J	1800	--
	Nickel	40	Q	40	--
	Silver	0.65	U	1.1	U

Only environmental samples and field duplicates are included in the above table. MS/MSDs and field blanks are used to evaluate the sample data but are not qualified during the review process.

Explosives – Multi-Incremental Sample (MIS) Preparation
SW-846 Method 8330B
Level II Review

Site: Former Fort Devens, MA – Markley Range	SDG #: 280-3087-1
Laboratory: Test America - Denver	Date: 06/24/10 / 07/29/10 (re-validation)
HydroGeoLogic, Inc. Reviewer: Brooke Francis HGL Peer Reviewer: Denise Rivers (07/01/10 and 08/05/10)	Project: AE1002.11.04

Client Sample ID	Laboratory Sample ID	Preparation Batch	Matrix
MRREP1-SO101-0409	280-3087-4	280-14909	Soil
MRFLDU3-SO200-(2-4)-0409	280-3087-6	280-14909	Soil
MRFLDU4-SO200-(2-4)-0409	280-3087-8	280-14909	Soil
MRREP2-SO102-0409	280-3087-10	280-14909	Soil
MRDU5-SO200-(2-4)-0409	280-3087-12	280-14909	Soil

Narrative and Completeness Review – The case narrative and data package were checked for completeness. No discrepancies were noted. As noted in the revised case narrative, due to an error with the laboratory software, detections between the MDL and limit of detection (LOD) were inadvertently flagged U. The proper convention according to the Department of Defense Quality Systems Manual (DoD QSM) version 4.1 is to qualify these detections as J. This error did not appear to affect any of the explosives results for all samples in this SDG.

The narrative stated that target analytes RDX and 2,4,6-trinitrotoluene were above the acceptance criteria for one or more continuing calibration curves (CCV) associated with batch 280-14909; this particular QC element is not within the scope of Level II data validation and was not evaluated. Therefore, all non-standard Q qualifiers applied by the laboratory for the RDX and 2,4,6-trinitrotoluene exceedances should be removed.

> *Qualification:* **The laboratory-applied Q qualifiers were removed from all RDX and 2,4,6-trinitrotoluene results associated with this SDG.**

Sample Delivery and Condition – All samples arrived intact at the laboratory, and in acceptable condition and temperature. The laboratory incorrectly transcribed all client sample IDs; according to the chain of custody (CoC), the sample matrix notation within the ID was "SO," such as MRREP1-SO101-0409. However, the laboratory reported the matrix as "S0," such as MRREP1-S0101-0409. The matrix notations stated on the CoC were used throughout this validation report. Proper custody was documented.

> *Qualification:* None required.

Holding Times - All samples were extracted within the 14-day holding time required by the QAPP for solid samples and analyzed within 40 days.

Qualification: None required.

Surrogates - The surrogate recoveries were within the control limits established in the QAPP, with one exception. According to the case narrative, sample MRFLDU4-SO200-(2-4)-0409 yielded a high recovery for surrogate 1,2-dinitrobenzene (133%) in the confirmation column from which two target explosives were reported. The 3-nitrotoluene and 2,4,6-trinitrotoluene results for sample MRFLDU4-SO200-(2-4)-0409 are non-detections and no qualification is required; the non-standard Q qualifiers applied by the laboratory should be removed.

***Qualification:* The laboratory-applied Q qualifiers were removed from the 3-nitrotoluene and 2,4,6-trinitrotoluene results in sample MRFLDU4-SO200-(2-4)-0409.**

Laboratory Control Samples - Two LCSs and two LCSs using standard reference material (SRM) are associated with the samples in this SDG. The LCSs and LCS-SRMs for batch 280-14909 met all %R control limits established in the QAPP.

Qualification: None required.

MS/MSD - Matrix spike/matrix spike duplicate analyses were performed on sample MRDU5-SO200-(2-4)-0409 from this SDG. The %R and RPD results met the control limits established by the QAPP with the exception of high recoveries for 2-amino-4,6-dinitrotoluene (126% MSD) and nitrobenzene (126% MSD). Qualification of the above target analyte results in all other samples from this site does not appear necessary, as the %Rs for the corresponding LCSs were within the QAPP control criteria. The 2-amino-4,6-dinitrotoluene and nitrobenzene results for the parent sample are non-detections and no qualification is necessary; the laboratory-applied J qualifiers should be removed.

***Qualification:* The laboratory-applied J qualifiers for 2-amino-4,6-dinitrotoluene and nitrobenzene in sample MRDU5-SO200-(2-4)-0409 are removed.**

Method Blanks - One method blank and one leachate blank are associated with the samples in this SDG. Both the method blank and leachate blank were analyzed on 06/04/10 for batch 280-14909 and were free from contamination.

Qualification: None required.

Equipment Blank - An equipment blank was not submitted with the samples in this SDG.

Qualification: None required.

Field Duplicate - The MIS replicate samples MRREP1-SO101-0409 and MRREP2-SO102-0409 were collected within the same MIS grid as sample MRFLDU3-SO200-(2-4)-0409. All results for the three samples were non-detections.

Qualification: None required.

Compound Quantitation - Non-detected analyte results were reported as "LOD U". The reporting limit (RL, also identified as a limit of quantitation - LOQ) was provided on the reporting pages, and these results should be considered the equivalent of "RL U" in accordance with the QAPP. Analytes detected between the RL and MDL were reported as J-qualified results by the laboratory. These J qualifiers were retained unless superseded by a more severe qualifier. Due to manual integration, target analyte 2,4,6-trinitrotoluene in sample MRFLDU3-SO200-(2-4)-0409 and nitroglycerin in sample MRDU5-SO200-(2-4)-0409 were qualified by the laboratory with a non-standard M flag. As this flag does not conform to the DoD QSM and Markley Range QAPP protocols and no QC issues affect the 2,4,6-trinitrotoluene and nitroglycerin results, these M qualifiers should be removed.

> ***Qualification:*** **Non-detected values are changed to the RL listed by the laboratory in adherence to the QAPP protocol. The laboratory-applied M qualifiers were removed from the 2,4,6-trinitrotoluene and nitroglycerin results in samples MRFLDU3-SO200-(2-4)-0409 and MRDU5-SO200-(2-4)-0409, respectively.**

Qualification Summary Table: (all values reported in μg/Kg)

Sample ID	Analyte	Lab Value	Lab Qualifier	HGL Value	HGL Qualifier
MRREP1-SO101-0409	Varies	0.037	U	0.093	U
	Varies	0.074	U	0.19	U
	Nitroglycerin	0.37	U	1.9	U
	Nitrobenzene	0.074	U	1.9	U
	4-Nitrotoluene	0.093	U	0.19	U
	RDX	0.074	UQ	0.19	U
	PETN	0.37	U	1.9	U
	2,4,6-Trinitrotoluene	0.037	UQ	0.093	U
MRFLDU3-SO200-(2-4)-0409	Varies	0.037	U	0.093	U
	Varies	0.075	U	0.19	U
	Nitroglycerin	0.37	U	1.9	U
	Nitrobenzene	0.075	U	1.9	U
	4-Nitrotoluene	0.093	U	0.19	U
	RDX	0.075	UQ	0.19	U
	PETN	0.37	U	1.9	U
	2,4,6-Trinitrotoluene	0.037	UMQ	0.093	U
MRFLDU4-SO20-(2-4)-0409	Varies	0.039	U	0.097	U
	Varies	0.077	U	0.19	U
	Nitroglycerin	0.39	U	1.9	U
	Nitrobenzene	0.077	U	1.9	U
	4-Nitrotoluene	0.097	U	0.19	U
	RDX	0.077	UQ	0.19	U
	PETN	0.39	U	1.9	U

	3-Nitrotoluene	0.077	UQ	0.19	U
	2,4,6-Trinitrotoluene	0.039	UQ	0.097	U
MRREP2-SO102-0409	Varies	0.038	U	0.096	U
	Varies	0.077	U	0.19	U
	Nitroglycerin	0.38	U	1.9	U
	Nitrobenzene	0.077	U	1.9	U
	4-Nitrotoluene	0.096	U	0.19	U
	RDX	0.077	UQ	0.19	U
	PETN	0.38	U	1.9	U
	2,4,6-Trinitrotoluene	0.038	UQ	0.096	U
MRDU5-SO200-(2-4)-0409	Varies	0.039	U	0.097	U
	Varies	0.078	U	0.19	U
	2-Amino-4,6-dinitrotoluene	0.039	UJ	0.097	U
Sample ID	Analyte	Lab Value	Lab Qualifier	HGL Value	HGL Qualifier
MRDU5-SO200-(2-4)-0409 (continued)	Nitroglycerin	0.39	UM	1.9	U
	Nitrobenzene	0.078	UJ	1.9	U
	4-Nitrotoluene	0.097	U	0.19	U
	RDX	0.078	UQ	0.19	U
	PETN	0.39	U	1.9	U
	2,4,6-Trinitrotoluene	0.039	UQ	0.097	U

Only environmental samples and field duplicates are included in the above table. MS/MSDs and field blanks are used to evaluate the sample data but are not qualified during the review process.

Total Metals and Mercury - Multi-Incremental Sample (MIS) Preparation
SW-846 Method 6010C (ICP Metals),
SW-846 Method 6020A (ICP-MS Metals), and
SW-846 Method 7471B (Mercury)
Level II Review

Site: Former Fort Devens, MA – Markley Range	SDG #: 280-3087-1
Laboratory: Test America - Denver	Date: 06/25/10, 07/29/10 (re-validation), 10/06/10 (second re-validation), 10/26/10 (third re-validation)
HydroGeoLogic, Inc. Reviewer: Brooke Francis HGL Peer Reviewer: Denise Rivers (07/01/10, 08/05/10, 10/06/10, 10/26/10)	Project: AE1002.11.04

Client Sample ID	Laboratory Sample ID	Preparation Batch	Matrix
MRBMDU1-SO200-(2-4)-0409	280-3087-1	280-17869; 280-17867; 280-14758	Soil
MRBMDU1-SO300-(16-18)-0409	280-3087-2	280-17869; 280-17867; 280-14758	Soil
MRBMDU2-SO200-(2-4)-0409	280-3087-3	280-17869; 280-17867; 280-14758	Soil
MRREP1-SO101-0409	280-3087-4 (1)	280-17869; 280-17867; 280-14758	Soil
	280-3087-5 (2)	280-17869; 280-17867; 280-14758	Soil
MRFLDU3-SO200-(2-4)-0409	280-3087-6 (1)	280-17869; 280-17867; 280-14758	Soil
	280-3087-7 (2)	280-17869; 280-17867; 280-14758	Soil
MRFLDU4-SO200-(2-4)-0409	280-3087-8 (1)	280-17869; 280-17867; 280-14758	Soil
	280-3087-9 (2)	280-17869; 280-17867; 280-14758	Soil
MRREP2-SO102-0409	280-3087-10 (1)	280-17869; 280-17867; 280-14758	Soil
	280-3087-11 (2)	280-17869; 280-17867; 280-14758	Soil
MRDU5-SO200-(2-4)-0409	280-3087-12	280-17869; 280-17867; 280-14758	Soil
MRBMDU6-SO200-(2-4)-0409	280-3087-13	280-17869; 280-17867; 280-14758	Soil

(1) <2 mm sieve fraction
(2) >2 mm sieve fraction

Narrative and Completeness Review – The case narrative and data package were checked for completeness. No discrepancies were noted. As noted in the revised case narrative from 07/22/10, due to an error with the laboratory software, detections between the MDL and limit of detection (LOD) were inadvertently flagged U. The proper convention according to the Department of Defense Quality Systems Manual (DoD QSM) version 4.1 is to qualify these detections as J. This error appears to only affect the following results and was properly corrected by the laboratory: the silver results for samples MRBMDU1-SO200-(2-4)-0409, MRBMDU1-SO300-(16-18)-0409, MRBMDU2-SO200-(2-4)-0409, MRREP1-SO101-0409 (<2 mm fraction), MRFLDU3-SO200-(2-4)-0409 (<2 mm and >2 mm fractions), MRREP2-SO102-0409 (<2 mm fraction), MRDU5-SO200-(2-4)-0409, and MRBMDU6-SO200-(2-4)-0409; and the selenium result for sample MRBMDU1-SO300-(16-18)-0409.

As noted in the revised case narrative from 10/01/10, the initial preparation amount for mercury was inaccurately recorded by the laboratory analyst, which yielded a reporting limit (RL, also identified as a limit of quantitation - LOQ) that was half of the correct value. This error only affected the target metal mercury and was properly corrected. The mercury results for samples MRBMDU2-SO200-(2-4)-0409, MRFLDU3-SO200-(2-4)-0409 (<2 mm fraction), MRFLDU4-SO200-(2-4)-0409 (<2 mm fraction), MRREP2-SO102-0409 (>2 mm fraction), and MRBMDU6-SO200-(2-4)-0409 are now identified as detections between the MDL and RL and were qualified J by the laboratory per the DoD QSM version 4.1.

As noted in the revised case narrative from 10/05/10, the RLs for all SW6010C and SW6020A metals were half of the correct values due to a calculation glitch within the laboratory's LIMS software. This error affected target metals antimony, cadmium, selenium, silver, and/or thallium for all samples and was properly corrected. The following detections are now qualified J for concentrations between the MDL and revised RL per the DoD QSM version 4.1: antimony in samples MRBMDU2-SO200-(2-4)-0409, MRREP1-SO101-0409 (<2 mm fraction), and MRFLDU3-SO200-(2-4)-0409 (<2 mm fraction); cadmium in samples MRBMDU1-SO300-(16-18)-0409, MRFLDU4-SO200-(2-4)-0409 (<2 mm fraction), and MRBMDU6-SO200-(2-4)-0409; selenium in samples MRBMDU1-SO200-(2-4)-0409, MRBMDU2-SO200-(2-4)-0409, MRREP1-SO101-0409 (<2 mm and >2 mm fractions), MRFLDU3-SO200-(2-4)-0409 (<2 mm and >2 mm fractions), MRFLDU4-SO200-(2-4)-0409 (<2 mm and >2 mm fractions), MRREP2-SO102-0409 (<2 mm and >2 mm fractions), MRDU5-SO200-(2-4)-0409, and MRBMDU6-SO200-(2-4)-0409; silver in samples MRBMDU1-SO200-(2-4)-0409, MRBMDU1-SO300-(16-18)-0409, and MRREP2-SO102-0409 (<2 mm fraction); and thallium in samples MRBMDU1-SO200-(2-4)-0409, MRBMDU1-SO300-(16-18)-0409, MRBMDU2-SO200-(2-4)-0409, MRREP1-SO101-0409 (<2 mm and >2 mm fractions), MRFLDU3-SO200-(2-4)-0409 (<2 mm and >2 mm fractions), MRFLDU4-SO200-(2-4)-0409 (<2 mm and >2 mm fractions), MRREP2-SO102-0409 (<2 mm and >2 mm fractions), MRDU5-SO200-(2-4)-0409, and MRBMDU6-SO200-(2-4)-0409.

Although issues were discussed in the case narrative for the associated post digestion spikes, serial dilutions, and ICSA check solutions, these particular QC elements are outside the scope for Level II data validation and were not evaluated. Therefore, the non-standard Q qualifiers applied by the laboratory for antimony, cadmium, cobalt, and nickel exceedances in the associated ICSA should be removed.

> ***Qualification:*** **The non-standard Q qualifiers applied by the laboratory to the antimony, cadmium, cobalt, and nickel results for all samples in this SDG are removed.**

Sample Delivery and Condition – All samples arrived intact at the laboratory, and in acceptable condition and temperature. The laboratory incorrectly transcribed all client sample IDs; according to the chain of custody (CoC), the sample matrix notation within the ID was "SO," such as MRREP1-SO101-0409. However, the laboratory reported the matrix as "S0," such as MRREP1-S0101-0409. The matrix notations stated on the CoC were used throughout this validation report. Proper custody was documented.

Qualification: None required.

Holding Times – All samples were analyzed within the six-month (ICP and ICP-MS metals) and 28-day (mercury) holding times required by the QAPP for solid samples.

Qualification: None required.

Laboratory Duplicate – Laboratory duplicate analyses were not requested or performed on a sample from this SDG.

Qualification: None required.

Laboratory Control Samples – Five LCSs are associated with the samples in this SDG and were analyzed as follows: on 05/11/10 for batch 280-14758, on 06/05/10 for batch 280-17867, and on 06/03/10, 06/07/10, and 06/10/10 for batch 280-17869. All %R results met the control limits established in the QAPP.

Qualification: None required.

MS/MSD – Matrix spike and matrix spike duplicate analyses were performed for all target metals on sample MRDU5-SO200-(2-4)-0409 from this SDG. For the mercury MS/MSD in batch 280-14758, all %R and RPD results were within the acceptance limits established by the QAPP.

For the ICP metal MS/MSDs in batch 280-17869, the %R and RPD results were within the acceptance limits established by the QAPP with the exception of aluminum (397% MS and 742% MSD) and iron (-326% MS and 69% MSD). Since the aluminum and iron results for parent sample MRDU5-SO200-(2-4)-0409 are greater than 4x the amount spiked, the recovery and precision results are not applicable and no qualification is required. The laboratory-applied J qualifiers should be removed from the aluminum and iron results in sample MRDU5-SO200-(2-4)-0409.

For the ICP-MS metal MS/MSD in batch 280-17867, the %R and RPD results were within the acceptance limits established by the QAPP with the following exceptions: antimony (17% MS and 18% MSD), copper (-7% MS and -17% MSD), lead (44% MS and 215% MSD), manganese (79% MSD), and zinc (68% MS and 70% MSD). Since the lead and manganese results for parent sample MRDU5-SO200-(2-4)-0409 are greater than 4x the amount spiked, the recovery and precision results are not applicable and no qualification is required. The laboratory-applied J qualifiers should be removed from the lead and manganese results in sample MRDU5-SO200-(2-4)-0409. The antimony, copper, and zinc results for all samples associated with batch 280-17867 are detections and should be qualified J; detections already flagged J for concentrations between the MDL and RL do not require additional qualification.

***Qualification:* The laboratory-applied J qualifiers for aluminum, iron, lead, and manganese in sample MRDU5-SO200-(2-4)-0409 are removed. The antimony, copper,**

and zinc results for all samples associated with batch 280-17867 are qualified J; antimony detections already flagged J for concentrations between the MDL and RL did not require additional qualification.

Method Blanks - Five method blanks are associated with the samples in this SDG and were analyzed as follows: on 05/11/10 for batch 280-14758, on 06/05/10 for batch 280-17867, and on 06/03/10, 06/07/10, and 06/10/10 for batch 280-17869. The four method blanks associated with batches 280-14758 (mercury) and 280-17869 (ICP metals) were all free from contamination.

The method blank for batch 280-17867 (ICP-MS metals) was also free from contamination with the following exceptions: antimony, chromium, manganese, and nickel. The table below details the contamination concentrations and the associated action levels.

ANALYTE:	CONCENTRATION (mg/kg):	ACTION LEVEL (mg/kg):
Antimony	0.0151	0.0755
Chromium	0.237	1.185
Manganese	0.0384	0.1920
Nickel	0.0661	0.3305

The antimony results for the >2 mm fraction of samples MRREP1-SO101-0409, MRFLDU3-SO200-(2-4)-0409, and MRREP2-SO102-0409 are detections less than the action level and should be qualified U. All other antimony results and all chromium, manganese and nickel results are detections above the respective action level, and no qualification is required.

Qualification: **The antimony results for the >2 mm fraction of samples MRREP1-SO101-0409, MRFLDU3-SO200-(2-4)-0409, and MRREP2-SO102-0409 are qualified U.**

Field Blanks - An equipment blank was not submitted with the samples in this SDG.

Qualification: None required.

Field Duplicate - The MIS replicate samples MRREP1-SO101-0409 and MRREP2-SO102-0409 were collected within the same MIS grid as sample MRFLDU3-SO200-(2-4)-0409. The calculated %RSDs were below the 20% control limit for the <2 mm sieve fraction, with the exception of silver (31.9%) and mercury (26.7%). All silver results were detections already qualified J for concentrations between the MDL and RL, and no additional qualification was required. The mercury result for sample MRFLDU3-SO200-(2-4)-0409 was already qualified J by the laboratory for a concentration between the MDL and RL, and no additional qualification was required; the other two mercury results are detections above the RL and should be qualified J.

The calculated %RSDs were below the 20% control limit for the >2 mm sieve fraction with the following exceptions: calcium (53.7%), magnesium (23.4%), potassium (38.8%), manganese (20.7%), and silver (138.6%). The calcium, magnesium, potassium, manganese, and silver results for all three samples should be qualified J for detections and UJ for non-detections; detections already flagged J for concentrations between the MDL and RL do not require additional qualification.

Qualification: **The mercury results for the <2 mm sieve fraction of samples MRREP1-SO101-0409 and MRREP2-SO102-0409 are qualified J. The calcium, magnesium, potassium, manganese, and silver results for the >2 mm sieve fraction of samples**

MRREP1-SO101-0409, MRREP2-SO102-0409, and MRFLDU3-SO200-(2-4)-0409 are qualified J (detections) or UJ (non-detections).

Compound Quantitation – Non-detected analyte results were reported as "LOD U". The reporting limit (RL, also identified as a limit of quantitation - LOQ) was provided on the reporting pages, and these results should be considered the equivalent of "RL U" in accordance with the QAPP. Analyte detections below the RL were reported as J-qualified results. These J qualifiers were retained unless superseded by a more severe qualifier. Due to an elevated lead concentration, sample MRBMDU1-SO300-(16-18)-0409 was analyzed at a dilution factor of 10x and the laboratory-applied D qualifier denoting the dilution should be removed. Only the diluted lead result was reported and the laboratory adjusted the RL appropriately.

Qualification: **Non-detected values are changed to the RL listed by the laboratory in adherence to the QAPP protocol. The D qualifier applied by the laboratory to the lead result for sample MRBMDU1-SO300-(16-18)-0409 was removed.**

Qualification Summary Table (all concentrations in mg/Kg):

Sample	Analyte	Lab Value	Lab Qualifier	Validated Value	Validated Qualifier
MRBMDU1-SO200-(2-4)-0409	Sodium	100	U	500	U
	Antimony	0.83	Q	0.83	J
	Cadmium	0.12	Q	0.12	--
	Cobalt	2.7	Q	2.7	--
	Copper	44	--	44	J
Sample	Analyte	Lab Value	Lab Qualifier	Validated Value	Validated Qualifier
MRBMDU1-SO200-(2-4)-0409 (continued)	Nickel	11	Q	11	--
	Zinc	23	--	23	J
MRBMDU1-SO300-(16-18)-0409	Sodium	98	U	490	U
	Antimony	6.8	Q	6.8	J
	Cadmium	0.067	J Q	0.067	J
	Cobalt	2.3	Q	2.3	--
	Copper	61	--	61	J
	Nickel	10	Q	10	--
	Zinc	14	--	14	J
	Lead	1100	D	1100	--
	Mercury	0.0080	U	0.016	U
MRBMDU2-SO200-(2-4)-0409	Sodium	98	U	490	U
	Antimony	0.10	J Q	0.10	J
	Cadmium	0.12	Q	0.12	--
	Cobalt	3.7	Q	3.7	--
	Copper	18	--	18	J
	Nickel	14	Q	14	--
	Zinc	25	--	25	J
MRREP1-SO101-0409 (<2 mm Fraction)	Sodium	98	U	490	U
	Antimony	0.11	J Q	0.11	J
	Cadmium	0.14	Q	0.14	--
	Cobalt	3.1	Q	3.1	--

	Copper	11	--	11	J
	Nickel	13	Q	13	--
	Zinc	27	--	27	J
	Mercury	0.019	--	0.019	J
MRREP1-SO101-0409 (>2 mm Fraction)	Calcium	730	--	730	J
	Magnesium	6800	--	6800	J
	Potassium	580	--	580	J
	Sodium	99	U	500	U
	Antimony	0.053	J Q	0.20	U
	Cadmium	0.13	Q	0.13	--
	Cobalt	5.0	Q	5.0	--
	Copper	9.2	--	9.2	J
	Manganese	240	--	240	J
	Nickel	22	Q	22	--
	Silver	0.059	U	0.099	UJ
	Zinc	28	--	28	J
	Mercury	0.0072	U	0.015	U
MRFLDU3-SO200-(2-4)-0409 (<2 mm Fraction)	Sodium	100	U	500	U
	Antimony	0.11	J Q	0.11	J
	Cadmium	0.12	Q	0.12	--
	Cobalt	3.1	Q	3.1	--
	Copper	10	--	10	J
	Nickel	12	Q	12	--
	Zinc	25	--	25	J
MRFLDU3-SO200-(2-4)-0409 (>2 mm Fraction)	Calcium	1900	--	1900	J
	Magnesium	5700	--	5700	J
	Potassium	1100	--	1100	J
	Sodium	98	U	490	U
	Antimony	0.056	J Q	0.20	U
Sample	Analyte	Lab Value	Lab Qualifier	Validated Value	Validated Qualifier
MRFLDU3-SO200-(2-4)-0409 (>2 mm Fraction) (continued)	Cadmium	0.18	Q	0.18	--
	Cobalt	5.3	Q	5.3	--
	Copper	12	--	12	J
	Manganese	230	--	230	J
	Nickel	25	Q	25	--
	Zinc	37	--	37	J
	Mercury	0.0078	U	0.016	U
MRFLDU4-SO200-(2-4)-0409 (<2 mm Fraction)	Sodium	99	U	500	U
	Antimony	0.23	Q	0.23	J
	Cadmium	0.094	J Q	0.094	J
	Cobalt	2.0	Q	2.0	--
	Copper	20	--	20	J
	Nickel	7.6	Q	7.6	--
	Silver	0.059	U	0.099	U
	Zinc	15	--	15	J
MRFLDU4-SO200-(2-4)-0409	Sodium	98	U	490	U
	Antimony	0.36	Q	0.36	J

(>2 mm Fraction)	Cadmium	0.14	Q	0.14	--
	Cobalt	3.7	Q	3.7	--
	Copper	18	--	18	J
	Nickel	20	Q	20	--
	Silver	0.060	U	0.10	U
	Zinc	31	--	31	J
	Mercury	0.0081	U	0.016	U
MRREP2-SO102-0409 (<2 mm Fraction)	Sodium	100	U	500	U
	Antimony	0.091	J Q	0.091	J
	Cadmium	0.11	Q	0.11	--
	Cobalt	3.1	Q	3.1	--
	Copper	12	--	12	J
	Nickel	12	Q	12	--
	Zinc	26	--	26	J
	Mercury	0.015	--	0.015	J
MRREP2-SO102-0409 (>2 mm Fraction)	Calcium	900	--	900	J
	Magnesium	4200	--	4200	J
	Potassium	600	--	600	J
	Sodium	100	U	500	U
	Antimony	0.058	J Q	0.20	U
	Cadmium	0.15	Q	0.15	--
	Cobalt	5.5	Q	5.5	--
	Copper	13	--	13	J
	Manganese	330	--	330	J
	Nickel	24	Q	24	--
	Silver	0.55	--	0.55	J
	Zinc	28	--	28	J
MRDU5-SO200-(2-4)-0409	Sodium	99	U	490	U
	Aluminum	5700	J	5700	--
	Iron	7800	J	7800	--
	Antimony	0.17	Q J	0.17	J
	Cadmium	0.13	Q	0.13	--
	Cobalt	3.0	Q	3.0	--
	Lead	120	J	120	--
Sample	Analyte	Lab Value	Lab Qualifier	Validated Value	Validated Qualifier
MRDU5-SO200-(2-4)-0409 (continued)	Manganese	120	J	120	--
	Nickel	11	Q	11	--
MRBMDU6-SO200-(2-4)-0409	Sodium	99	U	490	U
	Antimony	0.36	Q	0.36	J
	Cadmium	0.089	J Q	0.089	J
	Cobalt	2.5	Q	2.5	--
	Copper	21	--	21	J
	Nickel	10	Q	10	--
	Zinc	20	--	20	J

Only environmental samples and field duplicates are included in the above table. MS/MSDs and field blanks are used to evaluate the sample data but are not qualified during the review process.

Sediment Data
Site Inspection
Markley Range

Sediment Sample Location		Wetland	
Sample ID		MR-SD200-0409	
Analyte	BTAG Sediment Screening Level		
Units	mg/kg		
Total Metals (SW6010C)		Result	Qual
Lead	35.8	380	
Aluminum	NA	11,000	
Antimony	2	3.3	J
Arsenic	9.8	27	
Barium	NA	210	
Beryllium	NA	0.66	J
Cadmium	0.99	1.3	
Calcium	NA	8,800	
Chromium	43.4	17	
Cobalt	50	22	
Copper	31.6	49	
Iron	20,000	13,000	
Magnesium	NA	2,200	
Manganese	460	1,800	
Nickel	22.7	40	
Potassium	NA	950	J
Selenium	2	2.6	J
Silver	1	1.1	U
Sodium	NA	5,500	U
Thallium	NA	1.3	
Vanadium	NA	23	
Zinc	121	93	
Mercury (by 7471A)	0.18	0.15	J
Explosives (8330A)			
2,4,6-Trinitrotoluene	0.092	0.24	U
2,4-Dinitrotoluene	0.0416	0.24	U
2,6-Dinitrotoluene	NA	0.24	U
2-Amino-4,6-dinitrotoluene	NA	0.24	U
2-Nitrotoluene	NA	0.24	U
3-Nitrotoluene	NA	0.48	U
4-Amino-2,6-dinitrotoluene	NA	0.24	U
4-Nitrotoluene	4.06	0.38	U
HMX	NA	0.24	U
Nitrobenzene	NA	0.24	U
Tetryl	NA	0.077	J
RDX	0.013	0.25	U
1,3,5-Trinitrobenzene	NA	0.24	U
1,3-Dinitrobenzene	NA	0.24	U
Nitroglycerin	NA	4.9	U
PETN	NA	3.8	U

Notes:
MCP = Massachusetts Contingency Plan
USEPA = U.S. Environmental Protection Agency
mg/Kg = milligrams per kilogram
NA = Not Available
1 = EPA Region III BTAG, Freshwater Sediment Screening Benchmarks, 8/2006 -
http://www.epa.gov/reg3hwmd/risk/eco/btag/sbv/fwsed/screenbench.htm
Exceedance of USEPA Sediment Screening Levels (BTAG).
The background range of Lead in sediment at Devens, after removing "outliers", is 3.5 to 12.5 mg/kg.
The background range of Arsenic in sediment at Devens, after removing "outliers", is 0.80 to 26 mg/kg.
The background range of Nickel in sediment at Devens, after removing "outliers", is < 1.7 to 18.6 mg/kg.
Background study found in "AOC50 RI Rpt 2000 Vol.III.pdf" (appendix). Originally in 1994 RI Report (Fort Devens FAII Vol. IV, Appendix K, Revision I).

LABORATORY ANALYTICAL DATA

This appendix or attachment can be found on the enclosed disk in its entirety.

HGL
HydroGeoLogic, Inc
Exceeding Expectations

Albany Operations

September 7, 2011

Mr. Robert Simeone
BRAC Environmental Coordinator
U.S. Army Garrison Fort Devens
30 Quebec Street
Bldg. 666, Room #132
Devens, Massachusetts 01432-4479

Re: U. S. Army Garrison Fort Devens, Devens, Massachusetts
Final Site Inspection Report, Markley Range, Former Fort Devens Army Installation, Devens, Massachusetts
Contract Number: W911ZLK-05-D-0010

Dear Mr. Simeone:

HydroGeoLogic, Inc. (HGL) is pleased to submit one (1) hard copy and one (1) electronic copy of the full Final Site Inspection Report for Markley Range, for the above referenced contract at the former Fort Devens Army Installation. The final document was generated based on revisions made in response to comments received on the May 2011 draft final report. The comments and comment responses are included in the enclosed document folder.

Copies of the final report were also submitted to Ms. Mary Ellen Iorio (USACE), Ms. Ginny Lombardo (USEPA), Mr. David Chaffin (MassDEP), Ms. Hui Laing (MassDep), Mr. Ron Ostrowski (MassDevelopment), Ms. Deborah Gevalt (MassDevelopment), Ms. Julia Corenzwit (RAB Co-Chair), Ms. Laurie Nehring (PACE), and Mr. Richard Doherty, (Engineering and Consultant Resources), Mr. James Greacen (Mabbett & Associates), Ms. Mary Anne Lucht (Ayer Public Library), Ms. Lisa Dagdiglan (Harvard Public Library).

If you have any questions regarding the enclosed document, please call me at (518) 877-0390.

Sincerely,

Peter I. Dacyk, P.G.
Project Manager

Northway 10 Executive Park, 313 Ushers Road, Ballston Lake, NY 12019
Phone: (518) 877-0390 Fax: (518) 877-0414
www.hgl.com

HGL
HydroGeoLogic, Inc.
Exceeding Expectations

September 7, 2011

Mr. Richard Doherty
Engineering and Consultant Resources
P.O. Box 966
Acton, MA 01720

Re: U. S. Army Garrison Fort Devens, Devens, Massachusetts
Final Site Inspection Report, Markley Range, Former Fort Devens Army Installation, Devens, Massachusetts
Contract Number: W911ZLK-05-D-0010

Dear Mr. Doherty:

On behalf of the U.S. Army, HydroGeoLogic, Inc. (HGL) is pleased to submit one (1) electronic copy of the Final Site Inspection Report for Markley Range, for the above referenced contract at the former Fort Devens Army Installation. This Final Site Inspection Report incorporates all comments received after BCT review of the Draft Final Report.

If you have any questions regarding the enclosed document, please call Mr. Robert Simeone, BRAC Environmental Coordinator at (978) 796-2205 or me at (518) 877-0390.

Sincerely,

Peter I. Dacyk, P.G.
Project Manager

Northway 10 Executive Park, 313 Ushers Road, Ballston Lake, NY 12019
Phone: (518) 877-0390 Fax: (518) 877-0414
www.hgl.com

HGL

Exceeding Expectations

September 7, 2011

Ms. Deborah Gevalt
MassDevelopment
Haley & Aldrich, Inc.
465 Medford Street
Boston, MA 02129

Re: U. S. Army Garrison Fort Devens, Devens, Massachusetts
Final Site Inspection Report, Markley Range, Former Fort Devens Army Installation, Devens, Massachusetts
Contract Number: W911ZLK-05-D-0010

Dear Ms. Gevalt:

On behalf of the U.S. Army, HydroGeoLogic, Inc. (HGL) is pleased to submit one (1) hard copy and one (1) electronic copy of the Final Site Inspection Report for Markley Range, for the above referenced contract at the former Fort Devens Army Installation. This Final Site Inspection Report incorporates all comments received after BCT review of the Draft Final Report.

Copies were also submitted to Mr. Robert Simeone (BEC), Ms. Mary Ellen Iorio (USACE), Ms. Ginny Lombardo (USEPA), Ms. Hui Liang (MassDEP), Mr. David Chaffin (MassDEP), Mr. Ron Ostrowski (MassDevelopment), Ms. Julia Corenzwit (RAB Co-Chair), Ms. Laurie Nehring (PACE), and Mr. Richard Doherty, (Engineering and Consultant Resources), Mr. James Greacen (Mabbett & Associates), Ms. Mary Anne Lucht (Ayer Public Library), Ms. Lisa Dagdiglan (Harvard Public Library).

If you have any questions regarding the enclosed document, please call Mr. Robert Simeone, BRAC Environmental Coordinator at (978) 796-2205 or me at (518) 877-0390.

Sincerely,

Peter I. Dacyk, P.G.
Project Manager

Northway 10 Executive Park, 313 Ushers Road, Ballston Lake, NY 12019
Phone: (518) 877-0390 Fax: (518) 877-0414
www.hgl.com

HGL

Exceeding Expectations

September 7, 2011

Ms. Hui Liang
Massachusetts Department of Environmental Protection
627 Main Street
Worcester, MA 01605

Re: U. S. Army Garrison Fort Devens, Devens, Massachusetts
Final Site Inspection Report, Markley Range, Former Fort Devens Army Installation, Devens, Massachusetts
Contract Number: W911ZLK-05-D-0010

Dear Ms. Liang:

On behalf of the U.S. Army, HydroGeoLogic, Inc. (HGL) is pleased to submit one (1) hard copy and one (1) electronic copy of the Final Site Inspection Report for Markley Range, for the above referenced contract at the former Fort Devens Army Installation. This Final Site Inspection Report incorporates all comments received after BCT review of the Draft Final Report.

Copies were also submitted to Mr. Robert Simeone (BEC), Ms. Mary Ellen Iorio (USACE), Ms. Ginny Lombardo (USEPA), Mr. David Chaffin (MassDEP), Mr. Ron Ostrowski (MassDevelopment), Ms. Deborah Gevalt (MassDevelopment), Ms. Julia Corenzwit (RAB Co-Chair), Ms. Laurie Nehring (PACE), and Mr. Richard Doherty, (Engineering and Consultant Resources) Mr. James Greacen (Mabbett & Associates), Ms. Mary Anne Lucht (Ayer Public Library), Ms. Lisa Dagdiglan (Harvard Public Library).

If you have any questions regarding the enclosed document, please call Mr. Robert Simeone, BRAC Environmental Coordinator at (978) 796-2205 or me at (518) 877-0390.

Sincerely,

Peter I. Dacyk, P.G.
Project Manager

Northway 10 Executive Park, 313 Ushers Road, Ballston Lake, NY 12019
Phone: (518) 877-0390 Fax: (518) 877-0414
www.hgl.com

HGL

Exceeding Expectations

September 7,2011

Mr. David Chaffin
Massachusetts Department of Environmental Protection
One Winter Street
Boston, MA 02114-2023

Re: U. S. Army Garrison Fort Devens, Devens, Massachusetts
Final Site Inspection Report, Markley Range, Former Fort Devens Army Installation, Devens, Massachusetts
Contract Number: W911ZLK-05-D-0010

Dear Mr. Chaffin:

On behalf of the U.S. Army, HydroGeoLogic, Inc. (HGL) is pleased to submit one (1) hard copy and one (1) electronic copy of the Final Site Inspection Report for Markley Range, for the above referenced contract at the former Fort Devens Army Installation. This Final Site Inspection Report incorporates all comments received after BCT review of the Draft Final Report.

Copies were also submitted to Mr. Robert Simeone (BEC), Ms. Mary Ellen Iorio (USACE), Ms. Ginny Lombardo (USEPA), Ms. Hui Liang (MassDEP), Mr. Ron Ostrowski (MassDevelopment), Ms. Deborah Gevalt (MassDevelopment), Ms. Julia Corenzwit (RAB Co-Chair), Ms. Laurie Nehring (PACE), and Mr. Richard Doherty, (Engineering and Consultant Resources) Mr. James Greacen (Mabbett & Associates), Ms. Mary Anne Lucht (Ayer Public Library), Ms. Lisa Dagdiglan (Harvard Public Library).

If you have any questions regarding the enclosed document, please call Mr. Robert Simeone, BRAC Environmental Coordinator at (978) 796-2205 or me at (518) 877-0390.

Sincerely,

Peter I. Dacyk, P.G.
Project Manager

Northway 10 Executive Park, 313 Ushers Road, Ballston Lake, NY 12019
Phone: (518) 877-0390 Fax: (518) 877-0414
www.hgl.com

HGL
Exceeding Expectations

September 7, 2011

Ms. Ginny Lombardo
U.S. Environmental Agency
5 Post Office Square, Suite 100
Mail Code OSRR07-3
Boston, MA 02109-3912

Re: U. S. Army Garrison Fort Devens, Devens, Massachusetts
Final Site Inspection Report, Markley Range, Former Fort Devens Army Installation, Devens, Massachusetts
Contract Number: W911ZLK-05-D-0010

Dear Ms. Lombardo:

On behalf of the Army, HydroGeoLogic, Inc. (HGL) is pleased to submit one (1) hard copy and one (1) electronic copy of the Final Site Inspection Report for Markley Range, for the above referenced contract at the former Fort Devens Army Installation. This Final Site Inspection Report incorporates all comments received after BCT review of the Draft Final Report.

Copies were also submitted to Mr. Robert Simeone (BRAC), Ms. Mary Ellen Iorio (USACE), Ms. Hui Liang (MassDEP), Mr. David Chaffin (MassDEP), Mr. Ron Ostrowski (MassDevelopment), Ms. Deborah Gevalt (MassDevelopment), Ms. Julia Corenzwit (RAB Co-Chair), Ms. Laurie Nehring (PACE), and Mr. Richard Doherty, (Engineering and Consultant Resources), Mr. James Greacen (Mabbett & Associates), Ms. Mary Anne Lucht (Ayer Public Library), Ms. Lisa Dagdiglan (Harvard Public Library).

If you have any questions regarding the enclosed document, please call Mr. Robert Simeone, BRAC Environmental Coordinator at (978) 796-2205 or me at (518) 877-0390.

Sincerely,

Peter I. Dacyk, P.G.
Project Manager

Northway 10 Executive Park, 313 Ushers Road, Ballston Lake, NY 12019
Phone: (518) 877-0390 Fax: (518) 877-0414
www.hgl.com

HGL

Exceeding Expectations

September 7, 2011

Ms. Maryellen Iorio
Project Manager
U.S. Army Corps of Engineers
New England District
696 Virginia Road
Concord, Massachusetts 01742-2751

Re: U. S. Army Garrison Fort Devens, Devens, Massachusetts
Final Site Inspection Report, Markley Range, Former Fort Devens Army Installation, Devens, Massachusetts
Contract Number: W911ZLK-05-D-0010

Dear Ms. Iorio:

HydroGeoLogic Inc. (HGL) is pleased to submit two (2) hard copies and one (1) electronic copy of the Final Site Inspection Report for Markley Range, for the above referenced contract at the former Fort Devens Army Installation. This Final Site Inspection Report incorporates all comments received after BCT review of the Draft Final Report.

Copies were also submitted to Mr. Robert Simeone (BEC), Ms. Ginny Lombardo (USEPA), Mr. David Chaffin (MassDEP), Ms. Hui Laing (MassDEP), Mr. Ron Ostrowski (MassDevelopment), Deborah Gevalt (MassDevelopment), Ms. Julia Corenzwit (RAB Co-Chair), Ms. Laurie Nehring (PACE), and Mr. Richard Doherty, (Engineering and Consultant Resources), Mr. James Greacen (Mabbett & Associates), Ms. Mary Anne Lucht (Ayer Public Library), Ms. Lisa Dagdiglan (Harvard Public Library).

If you have any questions regarding the enclosed document, please call me at (518) 877-0390.

Sincerely,

Peter I. Dacyk, P.G.
Project Manager

Northway 10 Executive Park, 313 Ushers Road, Ballston Lake, NY 12019
Phone: (518) 877-0390 Fax: (518) 877-0414
www.hgl.com

HGL

Exceeding Expectations

September 7, 2011

Julia Corenzwit (RAB Co-Chair)
5 Brilaina Court
Ayer, MA 01432

Re: U. S. Army Garrison Fort Devens, Devens, Massachusetts
Final Site Inspection Report, Markley Range, Former Fort Devens Army Installation, Devens, Massachusetts
Contract Number: W911ZLK-05-D-0010

Dear Ms. Corenzwit:

On behalf of the U.S. Army, HydroGeoLogic, Inc. (HGL) is pleased to submit one (1) hard copy and one (1) electronic copy of the Final Site Inspection Report for Markley Range, for the above referenced contract at the former Fort Devens Army Installation. This Final Site Inspection Report incorporates all comments received after BCT review of the Draft Final Report.

If you have any questions regarding the enclosed document, please call Mr. Robert Simeone, BRAC Environmental Coordinator at (978) 796-2205 or me at (518) 877-0390.

Sincerely,

Peter I. Dacyk, P.G.
Project Manager

Northway 10 Executive Park, 313 Ushers Road, Ballston Lake, NY 12019
Phone: (518) 877-0390 Fax: (518) 877-0414
www.hgl.com

HGL
HydroGeoLogic, Inc.
Exceeding Expectations

September 7, 2011

Ms. Laurie Nehring
PACE
35 Highland Ave.
Ayer, MA 01432

Re: U. S. Army Garrison Fort Devens, Devens, Massachusetts
Final Site Inspection Report, Markley Range, Former Fort Devens Army Installation, Devens, Massachusetts
Contract Number: W911ZLK-05-D-0010

Dear Ms. Nehring:

On behalf of the U.S. Army, HydroGeoLogic, Inc. (HGL) is pleased to submit one (1) hard copy and one (1) electronic copy of the Final Site Inspection Report for Markley Range, for the above referenced contract at the former Fort Devens Army Installation. This Final Site Inspection Report incorporates all comments received after BCT review of the Draft Final Report.

If you have any questions regarding the enclosed document, please call Mr. Robert Simeone, BRAC Environmental Coordinator at (978) 796-2205 or me at (518) 877-0390.

Sincerely,

Peter I. Dacyk, P.G.
Project Manager

Northway 10 Executive Park, 313 Ushers Road, Ballston Lake, NY 12019
Phone: (518) 877-0390 Fax: (518) 877-0414
www.hgl.com

HGL

Exceeding Expectations

September 7, 2011

Mr. Ron Ostrowski
MassDevelopment
Devens Commerce Center
33 Andrews Parkway
Devens, MA 01432

Re: U. S. Army Garrison Fort Devens, Devens, Massachusetts
Final Site Inspection Report, Markley Range, Former Fort Devens Army Installation, Devens, Massachusetts
Contract Number: W911ZLK-05-D-0010

Dear Mr. Ostrowski:

On behalf of the U.S. Army, HydroGeoLogic, Inc. (HGL) is pleased to submit two (2) hard copies of the Final Site Inspection Report for Markley Range, for the above referenced contract at the former Fort Devens Army Installation. This Final Site Inspection Report incorporates all comments received after BCT review of the Draft Final Report.

Copies were also submitted to Mr. Robert Simeone (BEC), Ms. Mary Ellen Iorio (USACE), Ms. Ginny Lombardo (USEPA), Ms. Hui Liang (MassDEP), Mr. David Chaffin (MassDEP), Ms. Deborah Gevalt (MassDevelopment), Ms. Julia Corenzwit (RAB Co-Chair), Ms. Laurie Nehring (PACE), and Mr. Richard Doherty, (Engineering and Consultant Resources), Mr. James Greacen (Mabbett & Associates), Ms. Mary Anne Lucht (Ayer Public Library), Ms. Lisa Dagdiglan (Harvard Public Library).

If you have any questions regarding the enclosed document, please call Mr. Robert Simeone, BRAC Environmental Coordinator at (978) 796-2205 or me at (518) 877-0390.

Sincerely,

Peter I. Dacyk, P.G.
Project Manager

Northway 10 Executive Park, 313 Ushers Road, Ballston Lake, NY 12019
Phone: (518) 877-0390 Fax: (518) 877-0414
www.hgl.com

HGL

Exceeding Expectations

September 7, 2011

Mr. James Greacen
Director
Site Assessment and Remediation Group
Mabbett & Associates, Inc
5 Alfred Circle
Bedford, MA 01730-2318

Re: U. S. Army Garrison Fort Devens, Devens, Massachusetts
Final Site Inspection Report, Markley Range, Former Fort Devens Army Installation, Devens, Massachusetts
Contract Number: W911ZLK-05-D-0010

Dear Mr. Greacen:

On behalf of the U.S. Army, HydroGeoLogic, Inc. (HGL) is pleased to submit one (1) hard copy and one (1) electronic copy of the Final Site Inspection Report for Markley Range, for the above referenced contract at the former Fort Devens Army Installation. This Final Site Inspection Report incorporates all comments received after BCT review of the Draft Final Report.

If you have any questions regarding the enclosed document, please call Mr. Robert Simeone, BRAC Environmental Coordinator at (978) 796-2205 or me at (518) 877-0390.

Sincerely,

Peter I. Dacyk, P.G.
Project Manager

Northway 10 Executive Park, 313 Ushers Road, Ballston Lake, NY 12019
Phone: (518) 877-0390 Fax: (518) 877-0414
www.hgl.com

HGL
HydroGeoLogic, Inc.
Exceeding Expectations

September 7, 2011

Ms. Lisa Dagdiglan
Harvard Public Library
4 Pond Road
Harvard, MA 01451

Re: U. S. Army Garrison Fort Devens, Devens, Massachusetts
Final Site Inspection Report, Markley Range, Former Fort Devens Army Installation, Devens, Massachusetts
Contract Number: W911ZLK-05-D-0010

Dear Ms. Dagdiglan:

On behalf of the U.S. Army, HydroGeoLogic, Inc. (HGL) is pleased to submit one (1) hard copy and one (1) electronic copy of the Final Site Inspection Report for Markley Range, for the above referenced contract at the former Fort Devens Army Installation. This Final Site Inspection Report incorporates all comments received after BCT review of the Draft Final Report.

If you have any questions regarding the enclosed document, please call Mr. Robert Simeone, BRAC Environmental Coordinator at (978) 796-2205 or me at (518) 877-0390.

Sincerely,

Peter I. Dacyk, P.G.
Project Manager

Northway 10 Executive Park, 313 Ushers Road, Ballston Lake, NY 12019
Phone: (518) 877-0390 Fax: (518) 877-0414
www.hgl.com

HGL
HydroGeoLogic, Inc.
Exceeding Expectations

September 7, 2011

Ms. Mary Anne Lucht
Ayer Public Library
26 East Main Street
Ayer, MA 01432

Re: U. S. Army Garrison Fort Devens, Devens, Massachusetts
Final Site Inspection Report, Markley Range, Former Fort Devens Army Installation, Devens, Massachusetts
Contract Number: W911ZLK-05-D-0010

Dear Ms. Lucht:

On behalf of the U.S. Army, HydroGeoLogic, Inc. (HGL) is pleased to submit one (1) hard copy and one (1) electronic copy of the Final Site Inspection Report for Markley Range, for the above referenced contract at the former Fort Devens Army Installation. This Final Site Inspection Report incorporates all comments received after BCT review of the Draft Final Report.

If you have any questions regarding the enclosed document, please call Mr. Robert Simeone, BRAC Environmental Coordinator at (978) 796-2205 or me at (518) 877-0390.

Sincerely,

Peter I. Dacyk, P.G.
Project Manager

Northway 10 Executive Park, 313 Ushers Road, Ballston Lake, NY 12019
Phone: (518) 877-0390 Fax: (518) 877-0414
www.hgl.com

Document Title: Draft Final Site Inspection Report Markley Range
Version: May 2011
Reviewers: David Chaffin (DC), MassDEP; Ginny Lombardo (GL), USEPA

Reviewer	Cmt. #	Comment	Location		Comment Response
			Sec.	Page	
DC	2.	The recommended scope of investigation for DU-6 is inadequate for an assessment of the potential presence of bullets, bullet fragments, and associated metals contamination. Based on the removal action conducted at Bryant Range, which appears to have a similar history of use, a preliminary investigation would require an effort sufficient to locate a 1-foot-thick layer of bullets at depths ranging from 2 to 5 feet below the surface (the depth of the bullet layer may have been increased by post-range erosion of material from higher elevations). MassDEP recommends an approach similar to that used at Bryant Range, where test pits were excavated to depths of 4 to 6 feet in the impact berm using an excavator. An excavator or backhoe should be used to cut exploratory test pits at a maximum spacing of 25 feet across DU-6. The test pits should extend from the toe of the slope to a height of 10 feet above the toe and reach a depth of 5 feet into the slope. One of the test pits should be located directly downrange of the area in DU-1 where numerous large caliber (0.50?) bullet fragments were observed at the ground surface. If bullet pockets or a bullet layer are encountered in any of the test pits, further investigation would be required to assess the extent of bullets and associated metals contamination.	7.3		As stated in comment #1, the Army does not believe the hillside to be the primary impact berm for the former Markley Range (1000-inch Small Arms Range). However, the Army will further investigate the potential of a bullet zone. Lead exceedances at DU-1 require additional action at the site and the Army can further investigate the hillside (DU-6) at that time. If no bullet zones are found during the investigation, the Army will consider DU-6 as requiring no additional action. Details of the investigation methodology will be provided in the Removal Action Work Plan.
U.S. Environmental Protection Agency (USEPA)					
GL	3.	Response to Comment No. 11: The text revision provided in the response could not be found in the text of the above-referenced document.			Sections 5.3.3.6 and 7.2 referenced in EPA comment #11 were clarified to indicate that only DU-1 (south berm) may pose a possible ecological risk due to the detected lead concentration.

Document Title: Draft Final Site Inspection Report Markley Range
Version: May 2011
Reviewers: David Chaffin (DC), MassDEP; Ginny Lombardo (GL), USEPA

Reviewer	Cmt. #	Comment	Location		Comment Response
			Sec.	Page	
Massachusetts Department of Environmental Protection (MassDEP)					
DC	1.	Based on lack of evidence indicating that a primary impact berm was located in DU-1 and the presence of the steep natural slope extending more than 60 feet above the floor area immediately south of DU-1, the report should acknowledge the possibility that the existing slope (DU-6) was the primary impact area at Markley Range. Such a configuration was used at Bryant Range and IA-7.	6.0		Although the original impact berm was removed from the site sometime after the range was decommissioned in the late 1950's, evidence of the berm's original location is provided in aerial photos taken when the site configuration was still visible. In addition, physical evidence remaining on site lends credence to the presumed berm location through the concentration of bullet fragments and elevated lead corresponding to the likely impact berm. The hillside located behind the impact berm is not suitable as a primary backstop due to the potential ricochet hazard posed by rocks, uneven surfaces, and tree stumps. The hillside was likely used as an overshot area behind the primary target berm. In addition, no bullets were found in the hillside area but were concentrated in the sandy area representing the likely location of the primary berm. However, as discussed in comment #2, the Army will further investigate the hillside area during a likely removal action at DU-1.

Document Title: Draft Final Site Inspection Report Markley Range
Version: May 2011
Reviewers: David Chaffin (DC), MassDEP; Ginny Lombardo (GL), USEPA

Reviewer	Cmt. #	Comment	Location		Comment Response
			Sec.	Page	
GL	7.	In the last sentence, please replace the words "sediment conditions" with "sediment ecological risk". That is, change the last sentence from "It is recommended that future investigation of the wetland sediments focus on characterizing the potential drainage pathways (migration routes) between the site and the wetland, and collecting sufficient data from within the wetland to assess sediment conditions." to "It is recommended that future investigation of the wetland sediments focus on characterizing the potential drainage pathways (migration routes) between the site and the wetland, and collecting sufficient data from within the wetland to assess sediment ecological risk."	7.2		The reference sentence was modified per the recommendation.

Document Title: Draft Final Site Inspection Report Markley Range
Version: May 2011
Reviewers: David Chaffin (DC), MassDEP; Ginny Lombardo (GL), USEPA

Reviewer	Cmt. #	Comment	Location		Comment Response
			Sec.	Page	
GL	4.	Please change the 4th sentence from "As shown in Table 5.8, the lead detections in the East Firing Line..." to "As shown in Table 5.7, the maximum lead detections in the East Firing Line..."	5.3.3.4		The sentence was corrected as noted.
GL	5.	In the 2nd paragraph, please change the sentence from "The screening criterion of 3 to 13 particles per square foot (MassDEP, 2009b) was not exceeded in any of the decision unit samples." to "The screening criterion of 3 to 13 particles per square foot (MassDEP, 2009a) was exceeded in only one decision unit by one sample from DU-1." The changes are necessitated due to an incorrect reference citation (MassDEP, 2009b, instead of MassDEP, 2009a) and the presence of six particles in the DU-1 sample. Please revise the paragraph to avoid any redundancy that may occur with this change.	5.3.4		The reference was corrected and the text in Sections 5.3.4 and 7.2 was updated.
GL	6.	The next-to-last paragraph indicates that "Additional sampling is necessary to confirm whether or not the original sample results are potentially harmful to the ecological receptors". Please change the sentence to the equivalent of "Additional sampling and ecological risk evaluation of the sample results are necessary to confirm whether or not the original sampling results are potentially harmful to ecological receptors."	7.2		Section 7.2 was revised to indicate that additional sampling is recommended to confirm the initial results of the wetland sediment sample and further evaluate the pathway between the former range and the wetland area. Once additional sampling is performed, the Army will complete the ecological risk screening assessment.

HGL

Exceeding Expectations

September 7, 2011

Mr. Robert Simeone
BRAC Environmental Coordinator
U.S. Army Garrison Fort Devens
30 Quebec Street
Bldg. 666, Room #132
Devens, Massachusetts 01432-4479

Re: U. S. Army Garrison Fort Devens, Devens, Massachusetts
Final Site Inspection Report, Markley Range, Former Fort Devens Army Installation, Devens, Massachusetts
Contract Number: W911ZLK-05-D-0010

Dear Mr. Simeone:

HydroGeoLogic, Inc. (HGL) is pleased to submit one (1) hard copy and one (1) electronic copy of the full Final Site Inspection Report for Markley Range, for the above referenced contract at the former Fort Devens Army Installation. The final document was generated based on revisions made in response to comments received on the May 2011 draft final report. The comments and comment responses are included in the enclosed document folder.

Copies of the final report were also submitted to Ms. Mary Ellen Iorio (USACE), Ms. Ginny Lombardo (USEPA), Mr. David Chaffin (MassDEP), Ms. Hui Laing (MassDep), Mr. Ron Ostrowski (MassDevelopment), Ms. Deborah Gevalt (MassDevelopment), Ms. Julia Corenzwit (RAB Co-Chair), Ms. Laurie Nehring (PACE), and Mr. Richard Doherty, (Engineering and Consultant Resources), Mr. James Greacen (Mabbett & Associates), Ms. Mary Anne Lucht (Ayer Public Library), Ms. Lisa Dagdiglan (Harvard Public Library).

If you have any questions regarding the enclosed document, please call me at (518) 877-0390.

Sincerely,

Peter I. Dacyk, P.G.
Project Manager

Northway 10 Executive Park, 313 Ushers Road, Ballston Lake, NY 12019
Phone: (518) 877-0390 Fax: (518) 877-0414
www.hgl.com

COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE OF ENERGY & ENVIRONMENTAL AFFAIRS
DEPARTMENT OF ENVIRONMENTAL PROTECTION
ONE WINTER STREET, BOSTON, MA 02108 617-292-5500

DEVAL L. PATRICK
Governor

TIMOTHY P. MURRAY
Lieutenant Governor

IAN A. BOWLES
Secretary

LAURIE BURT
Commissioner

Mr. Robert J. Simeone
BRAC Environmental Coordinator
DOA – Devens Reserve Forces Training Area
30 Quebec Street, P.O. Box 30
Devens, MA 01443

Re: Site Inspection Work Plan
Markley Range Site
Former Fort Devens Installation
RTN No. 2-0000662
December 9, 2009

Dear Mr. Simeone:

The Massachusetts Department of Environmental Protection (MassDEP), Bureau of Waste Site Cleanup, reviewed the draft final document: *Site Inspection Work Plan, Markley Range, Former Fort Devens Army Installation, Devens, Massachusetts*, received November 18, 2009. Comments are attached.

If you have any questions about this letter, I can be reached at 617-348-4005.

Sincerely,

D. Chaffin

David Chaffin
Federal Facilities Project Manager
Bureau of Waste Site Cleanup

cc: W. Brawner, USA-BRAC
G. Lombardo, USEPA
R. Ostrowski, Mass Development
Restoration Advisory Board

This information is available in alternate format. Call Donald M. Gomes, ADA Coordinator at 617-556-1057. TDD Service - 1-800-298-2207.

MassDEP on the World Wide Web: http://www.mass.gov/dep
Printed on Recycled Paper

MASSDEP COMMENTS ON
DRAFT FINAL SITE INSPECTION WORK PLAN
MARKLEY RANGE
FORMER FORT DEVENS ARMY INSTALLATION (RTN 2-0000662)
DECEMBER 9, 2009

1. Section 3.2: To support a clearer understanding of site conditions, the plan should identify the current owner of the site property.

2. Section 5.2: The plan should identify the method that will be used to conduct the UXO sweep.

3. Section 5.2: Metal detectors have significant limitations for the detection and delineation of spent ammunition (e.g., depth of detection, fragment size, metal composition, and operator variability). Consequently, while the proposed metal detector sweep may be helpful for locating near-surface metal and delineating areas where concentrated metal is present, negative findings would not be sufficient to support the conclusion that spent ammunition is not present at the site.

4. Section 5.2: Limiting the depth of soil sampling to the shallowest 3 inches or 12 inches (depending on area) is inconsistent with the site history, which indicates that the former berm areas have been disturbed (Section 3.2). The plan should account for the possibility that deeper contamination may exist in the presumed former berm areas, firing lines, and floor areas (e.g., due to spreading, reworking, or coverage during demolition work).

5. Section 5.3: The proposed sediment sample should be collected from a location most likely to receive drainage or discharge from the site, and the sample should be analyzed for all of the potential site contaminants (metals and explosives) or the work plan should explain why explosives analysis is not necessary.

6. Section 5.4.6: The plan should specify the percent relative standard deviation (%RSD) value that will be used to assess the replicate samples (refer to Appendix D, Section 4.1).

7. Section 5.4.11: At a minimum, analytical data validation should meet the requirements of a USEPA Region I Tier II data validation effort.

8. Section 6.0: Risks that exceed the state cancer-risk limit [1×10^{-5}, 310 CMR 40.0993(6)] would not be acceptable.

9. Table 6.1: The MCP Method 1 standards for explosives (2,4-DNT, HMX, and RDX) are incorrect. The correct values should be listed here and where cited elsewhere in the plan.

10. Table 6.1: Project action levels that were not selected as specified in Section 6.0 (the lower of the USEPA regional screening levels or MCP S-1/GW-1 standards) should be corrected (e.g., copper).

11. Section 2.7: To provide an opportunity to confirm sample locations and observe field activities, please provide 7-day notice prior to initiating sampling.

COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE OF ENERGY & ENVIRONMENTAL AFFAIRS
DEPARTMENT OF ENVIRONMENTAL PROTECTION
ONE WINTER STREET, BOSTON, MA 02108 617-292-5500

DEVAL L. PATRICK
Governor

TIMOTHY P. MURRAY
Lieutenant Governor

IAN A. BOWLES
Secretary

LAURIE BURT
Commissioner

September 16, 2009

Mr. Robert Simeone
BRAC Environmental Office
30 Quebec Street, Box 100
Devens, MA 01432

RE: Draft Site Inspection Work Plan, Markley Range
Former Fort Devens Army Installation, Devens, MA

Dear Mr.Simeone:

The Massachusetts Department of Environmental Protection (MassDEP) has reviewed the Draft Site Inspection Work Plan for Markley Range dated August 2009 for the Markley Range at the Former Fort Devens Army Installation. MassDEP has the following comments:

1. An explanation of why an unexploded ordnance (UXO) technician will not be used as part of the Site Inspection (SI) needs to be included in the Work Plan.

2. According to the Archives Search Report (ASR) dated May 1995, "in approximately 1983, 37 mm projectiles were found in the area of the range east of Robbins Pond." The range located east of Robbins Pond is the Markley Range. There is no mention of the discovery of 37 mm projectiles in the Work Plan. The findings of 37 mm projectiles should be investigated further and a UXO technician should be on-site to clear sampling locations.

3. There is no mention of the current or future uses of the Markley Range. A statement discussing the current and planned future use of the Markley Range should be included in the Work Plan.

4. The Work Plan should explain the rationale for collecting different numbers of samples from each of the berm areas. According to Figure 5.1, three soil samples will be collected from one berm area and four soil samples will be collected from the other berm area.

This information is available in alternate format. Call Donald M. Gomes, ADA Coordinator at 617-556-1057. TDD# 1-866-539-7622 or 1-617-574-6868.

MassDEP on the World Wide Web: http://www.mass.gov/dep
Printed on Recycled Paper

5. The Site Inspection should include an effort to determine if the presumed primary source of contamination at the site, lead-bearing machine gun and rifle ammunition, is present on-site. If the results from this effort do not rule-out the presence of spent ammunition, the scope of the SI should be expanded to determine if spent ammunition is present.

6. Section 5.2: The locations of the berm/backstop soil samples should be targeted to locations that received the most concentrated fire, and in addition to sampling the surface at these locations, soil samples should be collected from a representative depth range that is based on the estimated depth of penetration associated with the ammunition used at the site.

7. Section 5.4.11: At a minimum, analytical data validation should meet the requirements of a USEPA Region I Tier II data validation effort.

8. Section 6.0: While the "total site risk approach" described here may be sufficient to demonstrate that a remedial investigation is necessary, it may not be sufficient to demonstrate that a remedial investigation is not necessary. In particular, the use of an exposure point concentration based on the results of all the samples collected from the site could mask the presence of a significant release on a portion of the site, a concern compounded by the collection of composite samples.

9. Table 2.1: To provide an opportunity to confirm sample locations and observe field activities, please provide 14-day notice prior to initiating sampling.

MassDEP thanks you for the opportunity to comment. If you have any questions regarding this letter please contact me at 617-292-5865.

Very truly yours,

Jennifer Roberge
Federal Facilities
Bureau of Waste Site Cleanup

cc: Mary Ellen Iorio, USACE
Ginny Lombardo, USEPA
Ron Ostrowski, MassDevelopment
Anne Malewicz, MassDEP Federal Facilities Section Chief
David Chaffin, MassDEP
Peter I. Dacyk, HydroGeoLogic, Inc.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 1
1 CONGRESS STREET, SUITE 1100
BOSTON, MASSACHUSETTS 02114-2023

September 23, 2009

Mr. Robert Simeone
BRAC Environmental Coordinator
BRAC Environmental Office
30 Quebec Street, Box 100
Devens, MA 01434

Re: **Draft Site Inspection Work Plan**
Markley Range
Former Fort Devens Army Installation
August 2009

Dear Mr. Simeone:

EPA has completed its review of the "Site Inspection Work Plan, Markley Range, Former Fort Devens Army Installation," dated August 2009 (SI WP). The SI WP was prepared by HydroGeoLogic Inc., on behalf of the Army.

Markley Range is a former rifle and machine gun range. EPA requests that the locations of the former firing points and impact berms be supported with visual observations and surveying with an all-metal detector, possibly in conjunction with XRF, and that the results of this effort be incorporated in the SI WP. EPA's primary concern with the SI WP is that the proposed composite sampling scheme will not adequately address issues with lead fragments and heterogeneity of lead particles is site soils. This issue is widely recognized by ITRC, EPA, and U S Army Corps of Engineers and acknowledged in guidance documents related to sampling at MMRP sites. EPA requests that the Army either take a statistically defensible number of discrete soil samples for the TAL metals and SVOCs or utilize the multi-increment sampling approach for these constituents consistent with what is planned for the energetics sampling.

EPA recommends that the Army consult with U S Army Corps of Engineer – New England District personnel working on investigations of small arms firing ranges at the Massachusetts Military Reservation (MMR) and U S Army Corps of Engeers – CCREL personnel working on research efforts related to multi-increment sampling.

AR60CR 2009091 USEPA

If you require further assistance or clarification feel free to contact me at lombardo.ginny@epa.gov or (617) 918-1754.

Sincerely,

Ginny Lombardo

Ginny Lombardo
Remedial Project Manager
Federal Facilities Superfund Section

cc: David Chaffin, MassDEP
Ron Ostrowski, MassDevelopment
Marilyn McMillan, Ayer Board of Health
Richard Doherty, ECR Consulting, Inc.
Laurie Nehring, PACE
Julie Corenzwit, PACE

EPA Comments on
Draft Site Inspection Work Plan
Markley Range
Former Fort Devens Army Installation
August 2009

General Comments:

1. There is no data in the SI WP on observations of bullets or lead fragments. EPA recalls that the Army completed a reconnaissance inspection of the Markley Range and that they found no obvious signs of bullets or large fragments and it was concluded that the berm material was likely removed when the range was closed. Please confirm whether a reconnaissance inspection occurred and detail the findings of the recon in the SI WP. The SI WP does note a "sandy backstop/berm area at the southern end of the presumed range." Assuming that there are no obvious visual signs of bullets or large fragments to confirm the locations of the former impact berms, EPA recommends that the area be surveyed with an all metal detector, possibly used in conjunction with XRF sampling. The results from the surveying, along with visual observations, should be used to support that the sample locations are accurately targeting the former impact berms.

2. As noted above, EPA is assuming that the impact berm material has been mostly removed and that the area noted in the SI WP as the impact berm is what is considered to be the base of the former impact berm. Due to issues with lead fragments and heterogeneity, the material that served as the base of the impact berm or any berm material that may remain on site will likely have lead fragments that will likely not be adequately accounted for by 5-point composites. This issue is widely recognized by ITRC, EPA, and U S Army Corps of Engineers and acknowledged in guidance documents related to sampling at MMRP sites. EPA requests that the Army either take a statistically defensible number of discrete soil samples for the TAL metals and SVOC or utilize the multi-increment sampling approach for these constituents consistent with what is planned for the energetics sampling. To determine a statistically adequate number of discrete samples, the Army should consider using the Visual Sampling Plan (VSP) program (http://vsp.pnl.gov).

   Although Method 8330B is designed for multi-increment sampling for energetic residues, EPA proposes that these methods could be used for all soil sampling efforts at the Markley Range. If Army chooses MIS over discrete sampling, EPA recommends that the impact areas and firing points be considered individual decision units and a separate decision unit be established for the remainder of the site. Refer to US Army Corps of Engineers Interim Guidance 09-02, *Implementation of Incremental Sampling (IS) of Soil for the Military Munitions Response Program* (20 July 2009), which supports the use of MIS at MMRP projects at the PA/SI as well as RI stage. The MIS sampling approach described in Section 5.4 (page 5-2) of the SI WP for firing line samples for energetics analysis can be followed for the samples collected for TAL metals and SVOCs (after revised to address Specific Comment 3). The Army should consider the cautions discussed in Section 9.1.4.1 of the U S Army Corps of Engineers Interim Guidance 09-02 related to grinding of the metals samples. EPA recommends that grinding of metals samples is still preferable (see attached article,

"*The effects of grinding methods on metals concentrations in soils*," July 2008), but cautions that a ceramic puck mill be used in place of a metal one. Note that U S Army Corps of Engineers – CCREL is currently conducting research on the application of MIS sampling for metals. Army should consider consulting with CCREL on the SI WP. In addition, for the MIS metals samples, EPA requires that a representative number of the sample portions screened out as >2mm be analyzed for arsenic, copper, lead and antimony. It is also recommended that the Army consult with U S Army Corp of Engineer – New England District on the application of MIS sampling at small arms firing ranges, as the Corps has been successfully applying this approach at multiple SAFRs at the Massachusetts Military Reservation (MMR) for energetics and metals.

3. For the Removal Action at the former Bryant Range, ecological risks to grit-eating birds was also considered by establishing a cleanup goal for particulate lead expressed as the number of lead particles in a particular size range per square foot. This ecological risk exposure pathway needs to be addressed in the SI WP.

4. The SI WP does not include groundwater sampling. Section 6.0 indicates that "*a lead TCLP soil sample will be used to evaluate potential impacts to groundwater*." The TCLP test is not always accurately predictive of leaching, especially in sandy soils that receive acid rain in New England. In addition, this does not address the potential for groundwater contamination from other potential site COCs (e.g., arsenic, antimony, SVOCs, explosives). EPA requests that groundwater sampling immediately downgradient of the impact berms be incorporated into the SI WP.

5. Were 50 caliber munitions used or potentially used at the Markley Range? Findings at other SAFRs have shown that 50 caliber munitions from post-WWII could contain perchlorate. If perchlorate-containing munitions were potentially used at the range, perchlorate sampling should be incorporated in the SI WP.

Specific Comments:

1. Page 3-2, Section 3.2: Include information in this Section on the current property owner, when the property was transferred (with a reference to the parcel name), and redevelopment and reuse plans for the property and surrounding properties.

2. Page 5-1, Section 5.2: Samples from the firing point and down range area are proposed to be collected from 0 to 6 inches bgs and samples from the impact berm areas are proposed to be collected from 0 to 10 inches bgs. What is the basis of these depths? Consider Section 7.1.3 of U S Army Corps of Engineers Interim Guidance 09-02 when determining the MIS sampling approach for sampling at subsurface soils. Consider consulting with U S Army Corps of Engineers – New England District personnel involved in the MMR SAFR investigations to address MIS sampling procedures to address subsurface contamination.

3. Page 5-2, Section 5.4: In the description of the MIS sampling procedure, it is stated that the sample will be "based on approximately 30 incremental samples." Method 8330B and US Army Corps of Engineers Interim Guidance 09-02 indicate that 30 increments is the

minimum number of increments recommended. EPA requests that a minimum of 50 increments be collected for the MIS samples. In addition, Method 8330B and the Interim Guidance 09-02 request triplicate multi-increment samples be collected from a representative number of grids in order to evaluate percent relative standard deviation (RSD) and to estimate mean concentrations. Each replicate of multi-increment samples should be collected starting at different corners of the selected grid or different random start locations within the same corner. Generally, EPA expects RSD to be less than 20%. EPA recommends that coring tools be utilized for sample collection. The laboratory protocol in the Method 8330B Appendix B guidance should also be followed, which provides for sieving, grinding the <2 mm fraction, analyzing a 10-g subsample (by taking 30 or more increments from the entire ground, mixed, sample), and analyzing triplicate subsamples for every 5 to 20 samples processed.

4. Page 6-1, Section 6.0: It is stated that potential threats to human health will be evaluated in accordance with the Site Screening Process (SSP; USACE, 2004). Please add the reference for this citation to the reference list in Section 7.0. Confirm that background will not be used to screen out COPCs or COPECs prior to risk-based screening. EPA recognizes that remediation will not be required for chemicals that do not exceed background concentrations. If background will be used to screen out chemicals prior to risk-based screening, which is contrary to EPA guidance, please provide a detailed description of the sampling and methodology that will be used to estimate background. EPA prefers the use of ProUCL v4 to compare site concentrations with background to identify chemicals that exceed background. Please confirm that risk screening for human health will use the residential soil values from the EPA Regional Screening Levels (http://www.epa.gov/reg3hwmd/risk/human/rb-concentration_table/Generic_Tables/pdf/master_sl_table_run_APRIL2009.pdf). The text in the fifth paragraph of section 6.0 describing the methods for calculating TSCR and TSHI should be revised to the following:

   "*To perform the risk screening for carcinogens, the exposure point concentration (EPC) for a chemical will be divided by its carcinogen-based PAL and then multiplied by the associated risk level of 10^{-6} to yield an estimate of the screening cancer risk for each carcinogenic chemical. The screening cancer risk for each chemical will then be added together to yield an estimate of the total screening cancer risk (TSCR). The TSCR will be considered acceptable if it falls within the USEPA target risk range of 10^{-6} to 10^{-4}. For those chemicals with PALs that are based on non-carcinogenic effects, the exposure point concentration for each chemical will be divided by its non-carcinogenic PAL to yield an estimate of the screening hazard quotient for each non-carcinogenic chemical. The screening hazard quotient for each chemical will then be added together to yield an estimate of the total screening hazard index (TSHI). The TSHI will be considered acceptable if it is equal to or less than 1.*"

5. Table 6.1: This table should include residential soil risk screening levels and risk-based leaching SSLs from the EPA regional screening levels (http://www.epa.gov/reg3hwmd/risk/human/rb-concentration_table/Generic_Tables/pdf/master_sl_table_run_APRIL2009.pdf). In addition, the table should include soil screening levels for terrestrial ecological receptors (e.g. EPA's

EcoSSLs) and sediment (EPA Region 3 BTAG). The table should identify the source of each screening level by footnote or citation in additional column(s).

Table 5.1
Soil Analytical Data-Comparison to Project Action Levels with Groundwater Protective Soil Screening Levels
Site Inspection
Markley Range

Soil Sample Location			DU-1 (South Berm)				DU-2 (West Berm)		DU-3 (North Firing Line)												DU-4 (East FL)				DU-5 (Down Range)		DU-6 (Uphill DU-1)	
Sample ID[1]			MRBMDU1-SO200-(2-4)-0409		MRBMDU1-SO300-(16-18)-0409		MRBMDU2-SO200-(2-4)-0409		MRFLDU3-SO200-(2-4)-0409		MRFLDU3-SO200-(2-4)-0409 (>2mm fraction)		MRREP1-SO101-0409		MRREP1-SO101-0409 (>2mm fraction)		MRREP2-SO102-0409		MRREP2-SO102-0409 (>2mm fraction)		MRFLDU4-SO200-(2-4)-0409		MRFLDU4-SO200-(2-4)-0409 (>2mm fraction)		MRDU5-SO200-(2-4)-0409		MRBMDU6-SO200-(2-4)-0409	
Analyte	Project Action Level	USEPA Protection of Groundwater Soil Risk-based SSL																										
Units	mg/kg	mg/kg																										
Total Metals (SW6010C)			Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
Lead	300	14	270		1,100		41		52		33		65		29		60		28		110		100		120		160	
Aluminum	77,000	55,000	5,600		4,400		6,600		5,900		NA		6,200		NA		5,800		NA		4,900		NA		5,700		5,400	
Antimony	20	0.66	0.83	J	6.8	J	0.10	J	0.11	J	0.020	U	0.11	J	0.020	U	0.091	J	0.020	U	0.23	J	0.36	J	0.17	J	0.36	J
Arsenic	0.39	0.0013	11		10		15		11		17		12		16		12		18		8.5		20		11		10	
Barium	1,000	300	12		8.7		16		13		NA		15		NA		15		NA		11		NA		15		11	
Beryllium	100	58	0.23		0.20		0.37		0.22		NA		0.24		NA		0.25		NA		0.21		NA		0.28		0.23	
Cadmium	2	1.40	0.12		0.067	J	0.12		0.12		NA		0.14		NA		0.11		NA		0.094	J	NA		0.13		0.089	J
Calcium	NA	NA	420		360		400		510		NA		550		NA		500		NA		350		NA		520		370	
Chromium (as VI)	0.29	0.00083	12		8.6		15		13		NA		14		NA		13		NA		8.4		NA		13		11	
Cobalt	23	0.49	2.7		2.3		3.7		3.1		NA		3.1		NA		3.1		NA		2.0		NA		3.0		2.5	
Copper	1,000	51	44	J	61	J	18	J	10	J	12	J	11	J	9.2	J	12	J	13	J	20	J	18	J	28	J	21	J
Iron	55,000	640	7,200		5,800		9,300		8,100		NA		8,500		NA		8,400		NA		6,100		NA		7,800		6,800	
Magnesium	NA	NA	1,900		1,500		2,600		2,100		NA		2,200		NA		2,200		NA		1,400		NA		2,100		1,700	
Manganese	1800	57	110		87		150		120		NA		130		NA		130		NA		90		NA		120		89	
Nickel	20	48	11		10		14		12		NA		13		NA		12		NA		7.6		NA		11		10	
Potassium	NA	NA	440		380		600		490		NA		530		NA		480		NA		350		NA		520		400	
Selenium	390	0.95	0.37	J	0.24	J	0.41	J	0.37	J	NA		0.41	J	NA		0.40	J	NA		0.28	J	NA		0.38	J	0.34	J
Silver	100	1.60	0.050	J	0.053	J	0.028	J	0.027	J	NA		0.036	J	NA		0.051	J	NA		0.099	U	NA		0.041	J	0.035	J
Sodium	NA	NA	500	U	490	U	490	U	500	U	NA		490	U	NA		500	U	NA		500	U	NA		490	U	490	U
Thallium	5.1	0.17	0.079	J	0.052	J	0.072	J	0.060	J	NA		0.065	J	NA		0.063	J	NA		0.049	J	NA		0.067	J	0.062	J
Vanadium	390	2.6	10		6.5		11		12		NA		14		NA		13		NA		7.1		NA		11		9.2	
Zinc	2,500	680	23	J	14	J	25	J	25	J	NA		27	J	NA		26	J	NA		15	J	NA		28	J	20	J
Mercury (by 7471A)	20	0.03	0.016		0.016	U	0.012	J	0.011	J	NA		0.019	J	NA		0.015	J	NA		0.011	J	NA		0.018		0.012	J
Explosives (8330B)																												
2,4,6-Trinitrotoluene	19	0.0087	NA		NA		NA		0.093	U	NA		0.093	U	NA		0.096	U	NA		0.097	U	NA		0.097	U	NA	
2,4-Dinitrotoluene	0.7	0.0002	NA		NA		NA		0.093	U	NA		0.093	U	NA		0.096	U	NA		0.33		NA		0.026	J	NA	
2,6-Dinitrotoluene	0.7	0.034	NA		NA		NA		0.093	U	NA		0.093	U	NA		0.096	U	NA		0.097	U	NA		0.097	U	NA	
2-Amino-4,6-dinitrotoluene	150	0.029	NA		NA		NA		0.093	U	NA		0.093	U	NA		0.096	U	NA		0.097	U	NA		0.097	U	NA	
2-Nitrotoluene	2.9	0.0003	NA		NA		NA		0.19	U	NA		0.19	U	NA		0.19	U	NA		0.19	U	NA		0.19	U	NA	
3-Nitrotoluene	6.1	0.60	NA		NA		NA		0.19	U	NA		0.19	U	NA		0.19	U	NA		0.19	U	NA		0.19	U	NA	
4-Amino-2,6-dinitrotoluene	150	73	NA		NA		NA		0.093	U	NA		0.093	U	NA		0.096	U	NA		0.097	U	NA		0.097	U	NA	
4-Nitrotoluene	30	0.0034	NA		NA		NA		0.19	U	NA		0.19	U	NA		0.19	U	NA		0.19	U	NA		0.19	U	NA	
HMX	2	7.10	NA		NA		NA		0.093	U	NA		0.093	U	NA		0.096	U	NA		0.097	U	NA		0.097	U	NA	
Nitrobenzene	4.8	0.0001	NA		NA		NA		1.9	U	NA		1.9	U	NA		1.9	U	NA		1.9	U	NA		1.9	U	NA	
Tetryl	240	0.65	NA		NA		NA		0.19	U	NA		0.19	U	NA		0.19	U	NA		0.19	U	NA		0.19	U	NA	
RDX	1	0.0004	NA		NA		NA		0.19	U	NA		0.19	U	NA		0.19	U	NA		0.19	U	NA		0.19	U	NA	
1,3,5-Trinitrobenzene	2200	2.60	NA		NA		NA		0.093	U	NA		0.093	U	NA		0.096	U	NA		0.097	U	NA		0.097	U	NA	
1,3-Dinitrobenzene	6.1	0.0023	NA		NA		NA		0.093	U	NA		0.093	U	NA		0.096	U	NA		0.097	U	NA		0.097	U	NA	
Nitroglycerin	6.1	0.0017	NA		NA		NA		1.9	U	NA		1.9	U	NA		1.9	U	NA		1.9	U	NA		1.9	U	NA	
PETN	NA	NA	NA		NA		NA		1.9	U	NA		1.9	U	NA		1.9	U	NA		1.9	U	NA		1.9	U	NA	

Notes:
SSL = Soil Screening Levels.
USEPA = U.S. Environmental Protection Agency
mg/kg = milligrams per kilogram
NA = Not analyzed for in this sample
Exceedance of PAL
The background range of arsenic in soil at Devens, after removing "outliers", is 2.1 to 19 mg/kg.
(It should be noted that a nearby background soil sample had Arsenic at 25 mg/kg and was identified as an "outlier".)
The background range of chromium in soil at Devens, after removing "outliers", is ND to 33 mg/kg.
The background range of lead in soil at Devens, after removing "outliers", is <5.36 to 48 mg/kg.
The background range of vanadium in soil at Devens, after removing "outliers", is ND to 32.3 mg/kg.
Background study found in "AOC50 RI Rpt 2000 Vol.III.pdf" (appendix). Originally in 1994 RI Report (Fort Devens FAII Vol. IV, Appendix K, Revision I).

Table 5.5
Soil Analytical Data-Comparision to Ecological Soil Screening Levels
Site Inspection
Markley Range

Soil Sample Location		DU-1 (South Berm)				DU-2 (West Berm)		DU-3 (North Firing Line)												DU-4 (East FL)				DU-5 (Down Range)		DU-6 (Uphill DU-1)	
Sample ID[1]		MRBMDU1-SO200-(2-4)-0409		MRBMDU1-SO300-(16-18)-0409		MRBMDU2-SO200-(2-4)-0409		MRFLDU3-SO200-(2-4)-0409		MRFLDU3-SO200-(2-4)-0409 (>2mm fraction)		MRREP1-SO101-0409		MRREP1-SO101-0409 (>2mm fraction)		MRREP2-SO102-0409		MRREP2-SO102-0409 (>2mm fraction)		MRFLDU4-SO200-(2-4)-0409		MRFLDU4-SO200-(2-4)-0409 (>2mm fraction)		MRDU5-SO200-(2-4)-0409		MRBMDU6-SO200-(2-4)-0409	
Analyte	Ecological SSL																										
Units	mg/kg																										
Total Metals (SW6010C)		Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
Lead	118[2]	270		1,100		41		52		33		65		29		60		28		110		100		120		160	
Aluminum	NA	5,600		4,400		6,600		5,900		NA		6,200		NA		5,800		NA		4,900		NA		5,700		5,400	
Antimony	0.27	0.83	J	6.8	J	0.10	J	0.11	J	0.020	U	0.11	J	0.020	U	0.091	J	0.020	U	0.23	J	0.36	J	0.17	J	0.36	J
Arsenic	18	11		10		15		11		17		12		16		12		18		8.5		20		11		10	
Barium	330	12		8.7		16		13		NA		15		NA		15		NA		11		NA		15		11	
Beryllium	21	0.23		0.20		0.37		0.22		NA		0.24		NA		0.25		NA		0.21		NA		0.28		0.23	
Cadmium	0.36	0.12		0.067	J	0.12		0.12		NA		0.14		NA		0.11		NA		0.094	J	NA		0.13		0.089	J
Calcium	NA	420		360		400		510		NA		550		NA		500		NA		350		NA		520		370	
Chromium (as VI)	26	12		8.6		15		13		NA		14		NA		13		NA		8.4		NA		13		11	
Cobalt	13	2.7		2.3		3.7		3.1		NA		3.1		NA		3.1		NA		2.0		NA		3.0		2.5	
Copper	28	44	J	61	J	18	J	10	J	12	J	11	J	9.2	J	12	J	13	J	20	J	18	J	28	J	21	J
Iron	NA	7,200		5,800		9,300		8,100		NA		8,500		NA		8,400		NA		6,100		NA		7,800		6,800	
Magnesium	NA	1,900		1,500		2,600		2,100		NA		2,200		NA		2,200		NA		1,400		NA		2,100		1,700	
Manganese	220	110		87		150		120		NA		130		NA		130		NA		90		NA		120		89	
Nickel	38	11		10		14		12		NA		13		NA		12		NA		7.6		NA		11		10	
Potassium	NA	440		380		600		490		NA		530		NA		480		NA		350		NA		520		400	
Selenium	0.52	0.37	J	0.24	J	0.41	J	0.37	J	NA		0.41	J	NA		0.40	J	NA		0.28	J	NA		0.38	J	0.34	J
Silver	4.2	0.050	J	0.053	J	0.028	J	0.027	J	NA		0.036	J	NA		0.051	J	NA		0.099	U	NA		0.041	J	0.035	J
Sodium	NA	500	U	490	U	490	U	500	U	NA		490	U	NA		500	U	NA		500	U	NA		490	U	490	U
Thallium	1	0.079	J	0.052	J	0.072	J	0.060	J	NA		0.065	J	NA		0.063	J	NA		0.049	J	NA		0.067	J	0.062	J
Vanadium	7.8	10		6.5		11		12		NA		14		NA		13		NA		7.1		NA		11		9.2	
Zinc	46	23	J	14	J	25	J	25	J	NA		27	J	NA		26	J	NA		15	J	NA		28	J	20	J
Mercury (by 7471A)	0.1	0.016		0.016	U	0.012	J	0.011	J	NA		0.019	J	NA		0.015	J	NA		0.011	J	NA		0.018		0.012	J
Explosives (8330B)																											
2,4,6-Trinitrotoluene	NA	NA		NA		NA		0.093	U	NA		0.093	U	NA		0.096	U	NA		0.097	U	NA		0.097	U	NA	
2,4-Dinitrotoluene	0.66	NA		NA		NA		0.093	U	NA		0.093	U	NA		0.096	U	NA		0.33		NA		0.026	U	NA	
2,6-Dinitrotoluene	NA	NA		NA		NA		0.093	U	NA		0.093	U	NA		0.096	U	NA		0.097	U	NA		0.097	U	NA	
2-Amino-4,6-dinitrotoluene	NA	NA		NA		NA		0.093	U	NA		0.093	U	NA		0.096	U	NA		0.097	U	NA		0.097	U	NA	
2-Nitrotoluene	NA	NA		NA		NA		0.19	U	NA		0.19	U	NA		0.19	U	NA		0.19	U	NA		0.19	U	NA	
3-Nitrotoluene	NA	NA		NA		NA		0.19	U	NA		0.19	U	NA		0.19	U	NA		0.19	U	NA		0.19	U	NA	
4-Amino-2,6-dinitrotoluene	NA	NA		NA		NA		0.093	U	NA		0.093	U	NA		0.096	U	NA		0.097	U	NA		0.097	U	NA	
4-Nitrotoluene	NA	NA		NA		NA		0.19	U	NA		0.19	U	NA		0.19	U	NA		0.19	U	NA		0.19	U	NA	
HMX	NA	NA		NA		NA		0.093	U	NA		0.093	U	NA		0.096	U	NA		0.097	U	NA		0.097	U	NA	
Nitrobenzene	NA	NA		NA		NA		1.9	U	NA		1.9	U	NA		1.9	U	NA		1.9	U	NA		1.9	U	NA	
Tetryl	NA	NA		NA		NA		0.19	U	NA		0.19	U	NA		0.19	U	NA		0.19	U	NA		0.19	U	NA	
RDX	NA	NA		NA		NA		0.19	U	NA		0.19	U	NA		0.19	U	NA		0.19	U	NA		0.19	U	NA	
1,3,5-Trinitrobenzene	NA	NA		NA		NA		0.093	U	NA		0.093	U	NA		0.096	U	NA		0.097	U	NA		0.097	U	NA	
1,3-Dinitrobenzene	NA	NA		NA		NA		0.093	U	NA		0.093	U	NA		0.096	U	NA		0.097	U	NA		0.097	U	NA	
Nitroglycerin	NA	NA		NA		NA		1.9	U	NA		1.9	U	NA		1.9	U	NA		1.9	U	NA		1.9	U	NA	
PETN	NA	NA		NA		NA		1.9	U	NA		1.9	U	NA		1.9	U	NA		1.9	U	NA		1.9	U	NA	

Notes:

SSL = Soil Screening Level.

mg/kg = milligrams per kilogram

NA = Not analyzed for in this sample

Exceedance of Ecological Screening Value/EcoSSL

The background range of arsenic in soil at Devens, after removing "outliers", is 2.1 to 19 mg/kg.

(It should be noted that a nearby background soil sample had Arsenic at 25 mg/kg and was identified as an "outlier".)

The background range of chromium in soil at Devens, after removing "outliers", is ND to 33 mg/kg.

The background range of lead in soil at Devens, after removing "outliers", is <5.36 to 48 mg/kg.

The background range of vanadium in soil at Devens, after removing "outliers", is ND to 32.3 mg/kg.

Background study found in "AOC50 RI Rpt 2000 Vol_III.pdf" (appendix). Originally in 1994 RI Report (Fort Devens FAII Vol. IV, Appendix K, Revision I).

[1] Sample depths are located within parentheses within the Sample ID. Sample depth is in inches and is below ground surface. Sample depths for QA/QC samples are identical to the parent sample depths.

[2] 118mg/kg value based on EPA comments on 2005 Draft Action Memorandum for Bryant Range (IA-6) Small Arms Range at Devens.

Table 5.10
Lead Particle Screening Results for Grid Samples[1]
Site Inspection
Markley Range

Sample ID	Area	Sample Interval (inches-bgs)	Lead Evaluation: No. of Particles with Black Streak	Lead Evaluation: XRF on Particles (mg/kg)	Lead Evaluation: # of Lead Particles[g]/ft[2]	Final Assessment
Sample Analysis						
MRBMDU1-SO400-0-1-0410	DU-1 (South Berm)	0 - 1	4	49 to 469	0	Insignificant Risk
MRBMDU1-SO500-0-1-0410	DU-1 (South Berm)	0 - 1	9	94 to 2,643 (1 particle >1000[b])	1	Below range of 3 to 13, Insignificant Risk
MRBMDU1-SO600-0-1-0410	DU-1 (South Berm)	0 - 1	14	94 to 339,487 (6 particles >1,000[c])	6	In range of 3 to 13, insignificant risk
MRBMDU2-SO300-0-1-0410	DU-2 (West Berm)	0 - 1	7	35 to 225	0	Insignificant Risk
MRBMDU2-SO500-0-1-0410	DU-2 (West Berm)	0 - 1	10	60 to 109,843 (1 particle > 1,000[c])	1	Below range of 3 to 13, Insignificant Risk
MRBMDU2-SO400-0-1-0410	DU-2 (West Berm)	0 - 1	11	38 to 796	0	Insignificant Risk
MRBMDU6-SO400-0-1-0410	DU-6 (Backstop/Hillside adjacent/uphill to DU-1)	0 - 1	2	1,963[b] and 2,051[d]	2	Below range of 3 to 13, Insignificant Risk
MRBMDU6-SO300-0-1-0410	DU-6 (Backstop/Hillside adjacent/uphill to DU-1)	0 - 1	14	47 to 267	0	Insignificant Risk
MRBMDU6-SO500-0-1-0410	DU-6 (Backstop/Hillside adjacent/uphill to DU-1)	0 - 1	4	80 to 14,084 (1 particle >1,000[a])	1	Below range of 3 to 13, Insignificant Risk
Bullet Analysis						
Bullet 1 (fragment)	DU-1 (South Berm)			20,960 to 194,021	NA	
Bullet 2 (largest)	DU-1 (South Berm)			12,356 to 19,450	NA	
Bullet 3 (looks most like bullet in group)	DU-1 (South Berm)			26,984 to 341,913	NA	
Bullet 4 (fragment/oxidized)	DU-1 (South Berm)			11,408 to 22,187	NA	
Lead Fragments (Bullet 3)	DU-1 (South Berm)			3,984 to 132,994	NA	
Reference Sample Analysis						
MRBMDU3-SO500-0-1-0410	DU-3 (North Firing Line)	0 - 1	11	20 to 2,485 (1 particle > 1,000)	1	
REF1[f]	Forest area east of Markley Range	0 - 1	3	28 to 109	0	
Blank Paper	NA	NA	NA	42 to 44	NA	

Notes

[a] - Particle at 14,084 at DU-6 had a "brownish" streak, not black.
[b] - Particle >1,000 appears to be coal.
[c] - The 6 particles are also >100,000. Some particles malleable.
[d] - Appears to be "black" roundish shot pellet (black BB).
[e] - Appears to be bullet fragment.
[f] - Sample collected from forest area east of site. Sample not sieved, pick out 0.5 to 2.8 mm particles from sample (mostly humic matter).
[g]-A particle with a XRF reading of 1,000 or greater was counted as a lead particle (fragment).

[1]-Sampling grid design = 1 foot x 1 foot x 1-inch deep. Soil was removed and collected from groundsurface to 1-inch bgs from the entire 1 foot x 1 foot square grid area.

XRF = X-Ray Fluorescence
mg/kg = milligrams per kilogram
NA = not applicable
mm = millimeter
Particles analyzed were between 0.50 mm and 2.80 mm in size
Sample interval - top of sample interval. Sample interval was 1-inch in thickness
No. of Particles = number of particles that streaked black which were analyzed with the XRF
Paper Test (Black Streak) = particles were dragged across white paper to determine streak color. Particles which streaked black were further evaluated by XRF.

XRF on Particle - XRF results on particles. Each particle was screened to determine its lead concentration. Lead particles should provide elevated levels above 1,000 based on Bryant Range Report. Analyses of bullets for Markley Range indicates, based on bullet fragments, 3,984 instead of 1,000. Use 1,000 value from Bryant Range to be conservative.
Bullets screened 4 times. Analysis of the flat end of the bullet normally resulted in the high end result.
inches-bgs = inches below ground surface

Soil Analytical Data
Site Inspection
Markley Range

Soil Sample Location			DU-1 (South Berm)				DU-2 (West Berm)		DU-3 (North Firing Line)												DU-4 (East FL)				DU-5 (Down Range)		DU-6 (Uphill DU-1)	
Sample ID			MRBMDU1-SO200-(2-4)-0409		MRBMDU1-SO300-(16-18)-0409		MRBMDU2-SO200-(2-4)-0409		MRFLDU3-SO200-(2-4)-0409		MRFLDU3-SO200-(2-4)-0409 (>2mm fraction)		MRREP1-SO101-0409		MRREP1-SO101-0409 (>2mm fraction)		MRREP2-SO102-0409		MRREP2-SO102-0409 (>2mm fraction)		MRFLDU4-SO200-(2-4)-0409		MRFLDU4-SO200-(2-4)-0409 (>2mm fraction)		MRDU5-SO200-(2-4)-0409		MRBMDU6-SO200-(2-4)-0409	
Analyte	USEPA Protection of Groundwater Soil Risk-based SSL	Project Action Level																										
Units	mg/Kg	mg/Kg																										
Total Metals (SW6010C)			Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
Lead	14	300	270		1,100		41		52		33		65		29		60		28		110		100		120		160	
Aluminum	55,000	77,000	5,600		4,400		6,600		5,900		NA		6,200		NA		5,800		NA		4,900		NA		5,700		5,400	
Antimony	0.66	20	0.83	J	6.8	J	0.10	J	0.11	J	0.20	U	0.11	J	0.20	U	0.091	J	0.20	U	0.23	J	0.36	J	0.17	J	0.36	J
Arsenic	0.0013	0.39	11		10		15		11		17		12		16		12		18		8.5		20		11		10	
Barium	300	1,000	12		8.7		16		13		NA		15		NA		15		NA		11		NA		15		11	
Beryllium	58	100	0.23		0.20		0.37		0.22		NA		0.24		NA		0.25		NA		0.21		NA		0.28		0.23	
Cadmium	1.40	2	0.12		0.067	J	0.12		0.12		NA		0.14		NA		0.11		NA		0.094	J	NA		0.13		0.089	J
Calcium	NA	NA	420		360		400		510		NA		550		NA		500		NA		350		NA		520		370	
Chromium (as VI)	0.0083	0.29	12		8.6		15		13		NA		14		NA		13		NA		8.4		NA		13		11	
Cobalt	0.49	23	2.7		2.3		3.7		3.1		NA		3.1		NA		3.1		NA		2.0		NA		3.0		2.5	
Copper	51	1,000	44	J	61	J	18	J	10	J	12	J	11	J	9.2	J	12	J	13	J	20	J	18	J	28	J	21	J
Iron	640	55,000	7,200		5,800		9,300		8,100		NA		8,500		NA		8,400		NA		6,100		NA		7,800		6,800	
Magnesium	NA	NA	1,900		1,500		2,600		2,100		NA		2,200		NA		2,200		NA		1,400		NA		2,100		1,700	
Manganese	57	1,800	110		87		150		120		NA		130		NA		130		NA		90		NA		120		89	
Nickel	48	20	11		10		14		12		NA		13		NA		12		NA		7.6		NA		11		10	
Potassium	NA	NA	440		380		600		490		NA		530		NA		480		NA		350		NA		520		400	
Selenium	0.95	390	0.37	J	0.24	J	0.41	J	0.37	J	NA		0.41	J	NA		0.40	J	NA		0.28	J	NA		0.38	J	0.34	J
Silver	1.60	100	0.050	J	0.053	J	0.028	J	0.027	J	NA		0.036	J	NA		0.051	J	NA		0.099	U	NA		0.041	J	0.035	J
Sodium	NA	NA	500	U	490	U	490	U	500	U	NA		490	U	NA		500	U	NA		500	U	NA		490	U	490	U
Thallium	0.17	5.1	0.079	J	0.052	J	0.072	J	0.060	J	NA		0.065	J	NA		0.063	J	NA		0.049	J	NA		0.067	J	0.062	J
Vanadium	2.6	5.5	10		6.5		11		12		NA		14		NA		13		NA		7.1		NA		11		9.2	
Zinc	680	2,500	23	J	14	J	25	J	25	J	NA		27	J	NA		26	J	NA		15	J	NA		28	J	20	J
Mercury (by 7471A)	0.03	20	0.016		0.016	U	0.012	J	0.011	J	NA		0.019	J	NA		0.015	J	NA		0.011	J	NA		0.018		0.012	J
Explosives (8330B)																												
2,4,6-Trinitrotoluene	0.0087	19	NA		NA		NA		0.093	U	NA		0.093	U	NA		0.096	U	NA		0.097	U	NA		0.097	U	NA	
2,4-Dinitrotoluene	0.0002	0.7	NA		NA		NA		0.093	U	NA		0.093	U	NA		0.096	U	NA		0.33		NA		0.026	J	NA	
2,6-Dinitrotoluene	0.034	0.7	NA		NA		NA		0.093	U	NA		0.093	U	NA		0.096	U	NA		0.097	U	NA		0.097	U	NA	
2-Amino-4,6-dinitrotoluene	0.029	150	NA		NA		NA		0.093	U	NA		0.093	U	NA		0.096	U	NA		0.097	U	NA		0.097	U	NA	
2-Nitrotoluene	0.0003	2.9	NA		NA		NA		0.19	U	NA		0.19	U	NA		0.19	U	NA		0.19	U	NA		0.19	U	NA	
3-Nitrotoluene	0.60	6.1	NA		NA		NA		0.19	U	NA		0.19	U	NA		0.19	U	NA		0.19	U	NA		0.19	U	NA	
4-Amino-2,6-dinitrotoluene	73	150	NA		NA		NA		0.093	U	NA		0.093	U	NA		0.096	U	NA		0.097	U	NA		0.097	U	NA	
4-Nitrotoluene	0.0034	30	NA		NA		NA		0.19	U	NA		0.19	U	NA		0.19	U	NA		0.19	U	NA		0.19	U	NA	
HMX	7.10	2.0	NA		NA		NA		0.093	U	NA		0.093	U	NA		0.096	U	NA		0.097	U	NA		0.097	U	NA	
Nitrobenzene	0.0001	4.8	NA		NA		NA		1.9	U	NA		1.9	U	NA		1.9	U	NA		1.9	U	NA		1.9	U	NA	
Tetryl	0.65	240	NA		NA		NA		0.19	U	NA		0.19	U	NA		0.19	U	NA		0.19	U	NA		0.19	U	NA	
RDX	0.0004	1.0	NA		NA		NA		0.19	U	NA		0.19	U	NA		0.19	U	NA		0.19	U	NA		0.19	U	NA	
1,3,5-Trinitrobenzene	2.60	2,200	NA		NA		NA		0.093	U	NA		0.093	U	NA		0.096	U	NA		0.097	U	NA		0.097	U	NA	
1,3-Dinitrobenzene	0.0023	6.1	NA		NA		NA		0.093	U	NA		0.093	U	NA		0.096	U	NA		0.097	U	NA		0.097	U	NA	
Nitroglycerin	0.0017	6.1	NA		NA		NA		1.9	U	NA		1.9	U	NA		1.9	U	NA		1.9	U	NA		1.9	U	NA	
PETN	NA	NA	NA		NA		NA		1.9	U	NA		1.9	U	NA		1.9	U	NA		1.9	U	NA		1.9	U	NA	

Notes:

MCP = Massachusetts Contingency Plan

USEPA = U.S. Environmental Protection Agency

mg/Kg = milligrams per kilogram

NA = not analyzed for in this sample

Exceedance of PAL. HGL to calculate EPC for PAL exceedances and compare to EcoSSLs.

The background range of arsenic in soil at Devens, after removing "outliers", is 2.1 to 19 mg/kg.

It should be noted that a nearby background soil sample had Arsenic at 25 mg/kg and was identified as an "outlier".

The background range of Chromium in soil at Devens, after removing "outliers", is ND to 33 mg/kg.

The background range of Lead in soil at Devens, after removing "outliers", is <5.36 to 48 mg/kg.

The background range of vanadium in soil at Devens, after removing "outliers", is ND to 32.3 mg/kg.

Background study found in "AOC50 RI Rpt 2000 Vol.III.pdf" (appendix). Originally in 1994 RI Report (Fort Devens FAII Vol. IV, Appendix K, Revision I).

ANALYTICAL REPORT

Job Number: 280-3084-1

Job Description: Markley Range - Discrete

For:
HydroGeoLogic Inc
Northway 10 Executive Park
313 Ushers Rd.
Ballston Lake, NY 12019

Attention: Mr. Mike Jackson

Approved for release.
Elaine Walker
Project Manager I
10/1/2010 4:50 PM

Elaine Walker
Project Manager I
elaine.walker@testamericainc.com
10/01/2010
Revision: 2

The test results in this report relate only to the samples in this report and meet all requirements of NELAC, with any exceptions noted. Pursuant to NELAP, this report shall not be reproduced except in full, without the written approval of the laboratory. All questions regarding this report should be directed to the TestAmerica Denver Project Manager.

The Lab Certification ID# is E87667.

Reporting limits are adjusted for sample size used, dilutions and moisture content if applicable.

TestAmerica Laboratories, Inc.
TestAmerica Denver 4955 Yarrow Street, Arvada, CO 80002
Tel (303) 736-0100 Fax (303) 431-7171 www.testamericainc.com

Table of Contents

Cover Title Page 1

Data Summaries 5

- Report Narrative 5
- Manual Integration Summary 7
- Sample Summary 31
- Executive Summary 32
- Method Summary 33
- Method / Analyst Summary 34
- Sample Datasheets 35
- Surrogate Summary 39
- QC Data Summary 40
- Data Qualifiers 55
- QC Association Summary 56
- Lab Chronicle 58

Organic Sample Data 61

- HPLC/IC 61
  - Method 8330A 61
    - Method 8330A QC Summary 62
    - Method 8330A Sample Data 70
    - Standards Data 73
      - Method 8330A ICAL Data 73
      - Method 8330A CCAL Data 89
    - Raw QC Data 113
      - Method 8330A Blank Data 113
      - Method 8330A LCS/LCSD Data 116
      - Method 8330A MS/MSD Data 119

Table of Contents

Method 8330A Run Logs 123

Method 8330A Prep Data 129

Inorganic Sample Data 131

Metals Data 131

Met Cover Page 132

Met Sample Data 133

Met QC Data 134

Met ICV/CCV 134

Met CRQL 142

Met Blanks 145

Met ICSA/ICSAB 151

Met MS/MSD/PDS 155

Met LCS/LCSD 158

Met Serial Dilution 161

Met MDL 164

Met IECF 170

Met Linear Ranges 176

Met Preparation Log 178

Met Analysis Run Log 181

Met ICP/MS Tune 199

Met ICP/MS Int Stds 200

Met Prep Data 201

General Chemistry Data 204

Gen Chem Cover Page 205

Gen Chem MDL 206

Gen Chem Analysis Run Log 207

Table of Contents

Gen Chem Prep Data 210

Shipping and Receiving Documents 211

Sample Receipt Checklist 213

CASE NARRATIVE
Client: HydroGeoLogic Inc.
Project: Markley Range - Discrete
Report Number: 280-3084-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

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

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT

One sample was received on 05/01/2010; the sample arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 1.9oC.

This report only contains results for the discrete sample received together with samples for MIS preparation. The samples for MIS analyses are reported under a separate job (280-3087-1).

MS/MSD analyses were requested on sample MR-SD200-0409 (280-3084-1) for 8330 Explosives and TAL Metals analyses.

EXPLOSIVES

The following sample was air dried and sieved per the procedure; however, the sample contained material that would not pass through the sieve: MR-SD200-0409 (280-3084-1). This material was removed and not extracted. The material appeared to be rock and/ or vegetation.

Sample MR-SD200-0409 (280-3084-1) was analyzed for explosives in accordance with EPA SW-846 Method 8330A. The samples were leached on 05/04/2010, prepared on 05/10/2010 and analyzed on 06/04/2010.

The continuing calibration verification (CCV) for RDX recovered above the upper control limit. The samples associated with this CCV were non-detect for the affected analyte; therefore, the data have been reported.

CCV 1 is in control
CCV 2 RDX 88%
CCV 3 RDX 90%

RDX failed the recovery criteria high for LCS 280-14610/12-A. The associated sample was ND for RDX, and has been flagged “Q”. RDX and picric acid are co-eluting, causing the high recoveries in the CCV, LCS, and MS/MSD samples. The LCS was reported from instrument Q with passing results. The MS/MSD has been reported from instrument X3, and is in control.

No other difficulties were encountered during the explosives analysis.

All other quality control parameters were within the acceptance limits.

METALS (ICP)

Sample MR-SD200-0409 (280-3084-1) was analyzed for Metals (ICP) in accordance with EPA SW-846 Method 6010C. The samples were prepared and analyzed on 05/11/2010.

Magnesium was detected in method blank MB 280-14632/1-A at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged “J”. However, because the result concentration was less than ½ the reporting limit, no corrective action was necessary.

Aluminum and Iron failed the recovery criteria high for the MS of sample MR-SD200-0409MS (280-3084-1) in batch 280-15054. For the MSD of sample MR-SD200-0409MSD (280-3084-1) in batch 280-15054, Iron failed the recovery criteria low. Aluminum failed the recovery criteria high. Also, Iron exceeded the RPD limit. The presence of the '4' qualifier in the report indicates where the analyte concentration in the unspiked sample exceeded four times the spiking amount.

The Post Digestion Spike (PDS) is needed for sodium and potassium because all of the samples within the batch were less than 50x the respective LODs.

No other difficulties were encountered during the metals analysis.

All other quality control parameters were within the acceptance limits.

METALS (ICPMS)

Sample MR-SD200-0409 (280-3084-1) was analyzed for metals (ICPMS) in accordance with SW846 6020A. The samples were prepared on 05/11/2010 and analyzed on 05/13/2010.

Copper was detected in method blank MB 280-14634/1-A at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged “J”. However, because the result concentration was less than ½ the reporting limit, no corrective action was necessary.

Antimony failed the recovery criteria low for the MS of sample MR-SD200-0409MS (280-3084-1) in batch 280-15246. Manganese failed the recovery criteria high. Antimony failed the recovery criteria low for the MSD of sample MR-SD200-0409MSD (280-3084-1) in batch 280-15246. Manganese failed the recovery criteria high. The presence of the '4' qualifier in the report indicates where the analyte concentration in the unspiked sample exceeded four times the spiking amount.

The serial dilution and post digestion spike were within the established control limits. All of the samples within the batch are less than 50x the respective LODs for silver, arsenic, beryllium, cadmium, chromium, copper, nickel, antimony, selenium, thallium, vanadium, and zinc, and thus the PDS applies. There are samples within the batch that are over 50x the respective LODs for barium, cobalt, manganese, and lead, and thus the PDS does not apply.

The ICSA solution used as the ICP-MS interference check standard shows results for several metals at levels above the DoD acceptance limits (>LOD). In this case the initial ICSA solution was above the DoD acceptance limits for cadmium, cobalt, nickel, and antimony. We believe the solution contains trace impurities of these elements and that the results are not artifacts of matrix interference. This result agrees with those found by the manufacturer of the ICSA solution. The associated sample results have been flagged “Q” for these analytes.

No other difficulties were encountered during the metals analysis.

All other quality control parameters were within the acceptance limits.

MERCURY (CVAA)

Sample MR-SD200-0409 (280-3084-1) was analyzed for mercury (CVAA) in accordance with EPA SW-846 Method 7471B. The samples were prepared and analyzed on 05/08/2010.

No difficulties were encountered during the mercury analysis.

All quality control parameters were within the acceptance limits.

PERCENT SOLIDS

Sample MR-SD200-0409 (280-3084-1) was analyzed for percent solids in accordance with EPA SW846 3550C. The samples were analyzed on 05/04/2010.

No difficulties were encountered during the % solids analysis.

All quality control parameters were within the acceptance limits.

Revision 1 - July 22, 2010

In late March, an internal LIMS programming change to rounding and significant figures inadvertently impacted the reporting convention of the DoD QSM 4.1. As a result, values detected between the MDL and LOD were flagged “U” at the LOD concentration rather than “J” with the actual result reported, as required in the QSM 4.1 manual. The problem was corrected on June 11, 2011. Jobs reported during the time frame required revision in order to correct the data for any missing “J” value results.

Revision 2 - October 1, 2010

The original report calculated the Mercury data using an initial prep amount of 0.3 grams, which was half of the actual initial prep amount (0.6 grams). The initial prep amount for all Mercury samples was changed to 0.6 grams, which doubled the reporting limits on the Sample reports.

HPLC/IC MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-3084-1

SDG No.:

Instrument ID: HPLC_Q Analysis Batch Number: 8112

Lab Sample ID: IC 280-8112/2 Client Sample ID:

Date Analyzed: 03/17/10 15:22 Lab File ID: 003-0301.D GC Column: Luna-phenylhe ID: 4.6(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
2,6-diamino-4-nitrotoluene	3.89	Baseline Event	lahrc	03/18/10 06:50

YG 6/8/10

8330A

HPLC/IC MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-3084-1

SDG No.:

Instrument ID: HPLC_Q Analysis Batch Number: 18232

Lab Sample ID: CCV 280-18232/2 Client Sample ID:

Date Analyzed: 06/05/10 00:15 Lab File ID: 002-1001.D GC Column: Luna-phenylhe ID: 4.6(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Nitrobenzene	10.69	Baseline Event	dybash	06/07/10 07:52
1,2-Dinitrobenzene	11.50	Baseline Event	dybash	06/07/10 07:52
4-Amino-2,6-dinitrotoluene	15.32	Baseline Event	dybash	06/07/10 07:53
m-Nitrotoluene	15.85	Baseline Event	dybash	06/07/10 07:53
2-Amino-4,6-dinitrotoluene	16.20	Baseline Event	dybash	06/07/10 07:53
1,3,5-Trinitrobenzene	16.81	Baseline Event	dybash	06/07/10 07:53
2,6-Dinitrotoluene	17.75	Baseline Event	dybash	06/07/10 07:53

JG 6/8/10

8330A

HPLC/IC MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-3084-1

SDG No.:

Instrument ID: HPLC_X3 Analysis Batch Number: 17891

Lab Sample ID: IC 280-17891/1 Client Sample ID:

Date Analyzed: 05/26/10 21:02 Lab File ID: 002-0201.D GC Column: UltraCarb5uOD ID: 4.6(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
HMX	7.78	Split Peak	lahrc	05/27/10 09:15
2,4-diamino-6-nitrotoluene	7.85	Split Peak	lahrc	05/27/10 09:15
RDX	10.06	Baseline Event	lahrc	05/27/10 11:37
1,3,5-Trinitrobenzene	11.59	Baseline Event	lahrc	05/27/10 11:37
1,2-Dinitrobenzene	12.17	Baseline Event	lahrc	05/27/10 11:37
1,3-Dinitrobenzene	12.64	Baseline Event	lahrc	05/27/10 11:37
Nitrobenzene	13.25	Baseline Event	lahrc	05/27/10 11:37
Tetryl	13.51	Baseline Event	lahrc	05/27/10 11:37
2,4,6-Trinitrotoluene	14.17	Baseline Event	lahrc	05/27/10 11:37
4-Amino-2,6-dinitrotoluene	14.49	Baseline Event	lahrc	05/27/10 11:37
2-Amino-4,6-dinitrotoluene	14.78	Baseline Event	lahrc	05/27/10 11:37
2,6-Dinitrotoluene	15.02	Baseline Event	lahrc	05/27/10 11:37
2,4-Dinitrotoluene	15.23	Baseline Event	lahrc	05/27/10 11:37
o-Nitrotoluene	16.21	Baseline Event	lahrc	05/27/10 11:37
p-Nitrotoluene	16.71	Baseline Event	lahrc	05/27/10 11:37
m-Nitrotoluene	17.29	Baseline Event	lahrc	05/27/10 11:37

JG 6/8/10

8330A

HPLC/IC MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-3084-1

SDG No.:

Instrument ID: HPLC_X3 Analysis Batch Number: 17891

Lab Sample ID: IC 280-17891/2 Client Sample ID:

Date Analyzed: 05/26/10 21:25 Lab File ID: 003-0301.D GC Column: UltraCarb5uOD ID: 4.6(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
RDX	10.07	Baseline Event	lahrc	05/27/10 11:34
1,3,5-Trinitrobenzene	11.59	Baseline Event	lahrc	05/27/10 11:34
1,2-Dinitrobenzene	12.18	Baseline Event	lahrc	05/27/10 11:34
1,3-Dinitrobenzene	12.65	Baseline Event	lahrc	05/27/10 11:34
Tetryl	13.51	Baseline Event	lahrc	05/27/10 11:34
2,4,6-Trinitrotoluene	14.17	Baseline Event	lahrc	05/27/10 11:34
4-Amino-2,6-dinitrotoluene	14.49	Baseline Event	lahrc	05/27/10 11:34
2-Amino-4,6-dinitrotoluene	14.78	Baseline Event	lahrc	05/27/10 11:34
2,6-Dinitrotoluene	15.03	Baseline Event	lahrc	05/27/10 11:34
2,4-Dinitrotoluene	15.23	Baseline Event	lahrc	05/27/10 11:34
o-Nitrotoluene	16.22	Baseline Event	lahrc	05/27/10 11:34
p-Nitrotoluene	16.71	Baseline Event	lahrc	05/27/10 11:34
m-Nitrotoluene	17.30	Baseline Event	lahrc	05/27/10 11:34

YG 6/8/10

8330A

HPLC/IC MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-3084-1

SDG No.:

Instrument ID: HPLC_X3 Analysis Batch Number: 17891

Lab Sample ID: IC 280-17891/3 Client Sample ID:

Date Analyzed: 05/26/10 21:49 Lab File ID: 004-0401.D GC Column: UltraCarb5uOD ID: 4.6(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
RDX	10.08	Baseline Event	lahrc	05/27/10 11:34
1,3,5-Trinitrobenzene	11.61	Baseline Event	lahrc	05/27/10 11:34
1,2-Dinitrobenzene	12.19	Baseline Event	lahrc	05/27/10 11:34
1,3-Dinitrobenzene	12.65	Baseline Event	lahrc	05/27/10 11:34
Nitrobenzene	13.27	Baseline Event	lahrc	05/27/10 11:34
Tetryl	13.52	Baseline Event	lahrc	05/27/10 11:34
2,4,6-Trinitrotoluene	14.19	Baseline Event	lahrc	05/27/10 11:34
4-Amino-2,6-dinitrotoluene	14.50	Baseline Event	lahrc	05/27/10 11:34
2-Amino-4,6-dinitrotoluene	14.79	Baseline Event	lahrc	05/27/10 11:34
2,6-Dinitrotoluene	15.04	Baseline Event	lahrc	05/27/10 11:34
2,4-Dinitrotoluene	15.25	Baseline Event	lahrc	05/27/10 11:34
o-Nitrotoluene	16.23	Baseline Event	lahrc	05/27/10 11:34
p-Nitrotoluene	16.73	Baseline Event	lahrc	05/27/10 11:34
m-Nitrotoluene	17.31	Baseline Event	lahrc	05/27/10 11:34

yl 6/8/10

8330A

HPLC/IC MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-3084-1

SDG No.:

Instrument ID: HPLC_X3 Analysis Batch Number: 17891

Lab Sample ID: IC 280-17891/4 Client Sample ID:

Date Analyzed: 05/26/10 22:12 Lab File ID: 005-0501.D GC Column: UltraCarb5uOD ID: 4.6(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
RDX	10.08	Baseline Event	lahrc	05/27/10 11:34
1,3,5-Trinitrobenzene	11.61	Baseline Event	lahrc	05/27/10 11:34
1,2-Dinitrobenzene	12.19	Baseline Event	lahrc	05/27/10 11:34
1,3-Dinitrobenzene	12.66	Baseline Event	lahrc	05/27/10 11:34
Nitrobenzene	13.26	Baseline Event	lahrc	05/27/10 11:34
Tetryl	13.52	Baseline Event	lahrc	05/27/10 11:34
2,4,6-Trinitrotoluene	14.19	Baseline Event	lahrc	05/27/10 11:34
4-Amino-2,6-dinitrotoluene	14.50	Baseline Event	lahrc	05/27/10 11:34
2-Amino-4,6-dinitrotoluene	14.80	Baseline Event	lahrc	05/27/10 11:34
2,6-Dinitrotoluene	15.04	Baseline Event	lahrc	05/27/10 11:34
2,4-Dinitrotoluene	15.25	Baseline Event	lahrc	05/27/10 11:34
o-Nitrotoluene	16.23	Baseline Event	lahrc	05/27/10 11:34
p-Nitrotoluene	16.74	Baseline Event	lahrc	05/27/10 11:34
m-Nitrotoluene	17.32	Baseline Event	lahrc	05/27/10 11:34

JG 6/8/10

8330A

HPLC/IC MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-3084-1

SDG No.:

Instrument ID: HPLC_X3 Analysis Batch Number: 17891

Lab Sample ID: IC 280-17891/5 Client Sample ID:

Date Analyzed: 05/26/10 22:36 Lab File ID: 006-0601.D GC Column: UltraCarb5uOD ID: 4.6(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
1,3,5-Trinitrobenzene	11.61	Baseline Event	lahrc	05/27/10 09:15
1,2-Dinitrobenzene	12.19	Baseline Event	lahrc	05/27/10 09:15
1,3-Dinitrobenzene	12.66	Baseline Event	lahrc	05/27/10 09:15
Nitrobenzene	13.26	Baseline Event	lahrc	05/27/10 09:15
Tetryl	13.52	Baseline Event	lahrc	05/27/10 09:16
2,4,6-Trinitrotoluene	14.18	Baseline Event	lahrc	05/27/10 09:16
4-Amino-2,6-dinitrotoluene	14.50	Baseline Event	lahrc	05/27/10 09:16
2-Amino-4,6-dinitrotoluene	14.78	Baseline Event	lahrc	05/27/10 09:16
2,6-Dinitrotoluene	15.03	Baseline Event	lahrc	05/27/10 09:16
2,4-Dinitrotoluene	15.24	Baseline Event	lahrc	05/27/10 09:16
o-Nitrotoluene	16.22	Baseline Event	lahrc	05/27/10 09:16
p-Nitrotoluene	16.72	Baseline Event	lahrc	05/27/10 09:16
m-Nitrotoluene	17.30	Baseline Event	lahrc	05/27/10 09:16

Lab Sample ID: IC 280-17891/7 Client Sample ID:

Date Analyzed: 05/26/10 23:23 Lab File ID: 008-0801.D GC Column: UltraCarb5uOD ID: 4.6(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
HMX	7.78	Baseline Event	lahrc	05/27/10 09:16
2,4-diamino-6-nitrotoluene	7.92	Baseline Event	lahrc	05/27/10 09:16
p-Nitrotoluene	16.74	Baseline Event	lahrc	05/27/10 11:42
m-Nitrotoluene	17.32	Baseline Event	lahrc	05/27/10 11:42

gb 6/8/10

8330A

HPLC/IC MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-3084-1

SDG No.:

Instrument ID: HPLC_X3 Analysis Batch Number: 17891

Lab Sample ID: IC 280-17891/8 Client Sample ID:

Date Analyzed: 05/26/10 23:46 Lab File ID: 009-0901.D GC Column: UltraCarb5uOD ID: 4.6(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
HMX	7.78	Baseline Event	lahrc	05/27/10 09:16
RDX	10.07	Baseline Event	lahrc	05/27/10 09:17
2,6-Dinitrotoluene	15.03	Baseline Event	lahrc	05/27/10 09:18
2,4-Dinitrotoluene	15.25	Baseline Event	lahrc	05/27/10 12:10

JG 6/8/10

8330A

HPLC/IC MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-3084-1

SDG No.:

Instrument ID: HPLC_X3 Analysis Batch Number: 18009

Lab Sample ID: LCS 280-14610/12-A Client Sample ID:

Date Analyzed: 06/03/10 21:32 Lab File ID: 030-3001.D GC Column: UltraCarb5uOD ID: 4.6(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
HMX	7.57	Baseline Event	dybash	06/04/10 05:57
RDX	9.93	Split Peak	dybash	06/04/10 05:57

Lab Sample ID: 280-3084-1 Client Sample ID: MR-SD200-0409

Date Analyzed: 06/04/10 00:40 Lab File ID: 038-3801.D GC Column: UltraCarb5uOD ID: 4.6(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Tetryl	13.32	Baseline Event	dybash	06/04/10 06:02

Lab Sample ID: 280-3084-1 MS Client Sample ID: MR-SD200-0409 MS

Date Analyzed: 06/04/10 01:03 Lab File ID: 039-3901.D GC Column: UltraCarb5uOD ID: 4.6(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
HMX	7.58	Baseline Event	dybash	06/04/10 06:03
RDX	9.91	Baseline Event	dybash	06/04/10 06:03
1,3,5-Trinitrobenzene	11.42	Baseline Event	dybash	06/04/10 06:04
1,2-Dinitrobenzene	11.99	Baseline Event	dybash	06/04/10 06:04
1,3-Dinitrobenzene	12.47	Baseline Event	dybash	06/04/10 06:04
Nitrobenzene	13.08	Baseline Event	dybash	06/04/10 06:04
Tetryl	13.29	Baseline Event	dybash	06/04/10 06:04
2,4,6-Trinitrotoluene	13.93	Baseline Event	dybash	06/04/10 06:04
4-Amino-2,6-dinitrotoluene	14.25	Baseline Event	dybash	06/04/10 06:04
2-Amino-4,6-dinitrotoluene	14.52	Baseline Event	dybash	06/04/10 06:04
2,6-Dinitrotoluene	14.77	Baseline Event	dybash	06/04/10 06:04
2,4-Dinitrotoluene	14.95	Baseline Event	dybash	06/04/10 06:04
o-Nitrotoluene	15.93	Baseline Event	dybash	06/04/10 06:04
p-Nitrotoluene	16.41	Baseline Event	dybash	06/04/10 06:04
m-Nitrotoluene	16.97	Baseline Event	dybash	06/04/10 06:04

8330A

HPLC/IC MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-3084-1

SDG No.:

Instrument ID: HPLC_X3 Analysis Batch Number: 18009

Lab Sample ID: 280-3084-1 MSD Client Sample ID: MR-SD200-0409 MSD

Date Analyzed: 06/04/10 01:27 Lab File ID: 040-4001.D GC Column: UltraCarb5uOD ID: 4.6(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
HMX	7.56	Baseline Event	dybash	06/04/10 06:07
RDX	9.91	Split Peak	dybash	06/04/10 06:07
1,3,5-Trinitrobenzene	11.43	Baseline Event	dybash	06/04/10 06:06
1,2-Dinitrobenzene	12.00	Baseline Event	dybash	06/04/10 06:06
1,3-Dinitrobenzene	12.47	Baseline Event	dybash	06/04/10 06:06
Nitrobenzene	13.08	Baseline Event	dybash	06/04/10 06:06
Tetryl	13.29	Baseline Event	dybash	06/04/10 06:06
2,4,6-Trinitrotoluene	13.94	Baseline Event	dybash	06/04/10 06:06
4-Amino-2,6-dinitrotoluene	14.26	Baseline Event	dybash	06/04/10 06:06
2-Amino-4,6-dinitrotoluene	14.52	Baseline Event	dybash	06/04/10 06:06
2,4-Dinitrotoluene	14.96	Baseline Event	dybash	06/04/10 06:06
o-Nitrotoluene	15.94	Baseline Event	dybash	06/04/10 06:06
p-Nitrotoluene	16.42	Baseline Event	dybash	06/04/10 06:06

JL 6/8/10

8330A

HPLC/IC MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-3084-1

SDG No.:

Instrument ID: HPLC_X3 Analysis Batch Number: 18009

Lab Sample ID: CCV 280-18009/4 Client Sample ID:

Date Analyzed: 06/04/10 01:50 Lab File ID: 002-4101.D GC Column: UltraCarb5uOD ID: 4.6(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
1,3,5-Trinitrobenzene	11.44	Baseline Event	dybash	06/04/10 06:11
1,2-Dinitrobenzene	12.02	Baseline Event	dybash	06/04/10 06:11
1,3-Dinitrobenzene	12.50	Baseline Event	dybash	06/04/10 06:11
Nitrobenzene	13.10	Baseline Event	dybash	06/04/10 06:11
Tetryl	13.32	Baseline Event	dybash	06/04/10 06:11
2,4,6-Trinitrotoluene	13.96	Baseline Event	dybash	06/04/10 06:11
4-Amino-2,6-dinitrotoluene	14.29	Baseline Event	dybash	06/04/10 06:11
2-Amino-4,6-dinitrotoluene	14.56	Baseline Event	dybash	06/04/10 06:11
2,6-Dinitrotoluene	14.80	Baseline Event	dybash	06/04/10 06:11
2,4-Dinitrotoluene	14.99	Baseline Event	dybash	06/04/10 06:11
o-Nitrotoluene	15.96	Baseline Event	dybash	06/04/10 06:11
p-Nitrotoluene	16.44	Baseline Event	dybash	06/04/10 06:11

yb 6/8/10

8330A

HPLC/IC MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-3084-1

SDG No.:

Instrument ID: HPLC_Q Analysis Batch Number: 8112

Lab Sample ID: IC 280-8112/1 Client Sample ID:

Date Analyzed: 03/17/10 14:50 Lab File ID: 002-0201.D GC Column: Luna-phenylhe ID: 4.6(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
PETN	22.81	Baseline Event	lahrc	03/18/10 07:02

Lab Sample ID: IC 280-8112/2 Client Sample ID:

Date Analyzed: 03/17/10 15:22 Lab File ID: 003-0301.D GC Column: Luna-phenylhe ID: 4.6(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
2,6-diamino-4-nitrotoluene	3.89	Baseline Event	lahrc	03/18/10 06:50

Lab Sample ID: IC 280-8112/6 Client Sample ID:

Date Analyzed: 03/17/10 17:30 Lab File ID: 007-0701.D GC Column: Luna-phenylhe ID: 4.6(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
PETN	22.88	Baseline Event	lahrc	03/18/10 07:03

Lab Sample ID: IC 280-8112/7 Client Sample ID:

Date Analyzed: 03/17/10 18:02 Lab File ID: 008-0801.D GC Column: Luna-phenylhe ID: 4.6(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
PETN	22.91	Baseline Event	lahrc	03/18/10 07:03

Lab Sample ID: IC 280-8112/8 Client Sample ID:

Date Analyzed: 03/17/10 18:34 Lab File ID: 009-0901.D GC Column: Luna-phenylhe ID: 4.6(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
PETN	22.90	Baseline Event	lahrc	03/18/10 07:03

HPLC/IC MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-3084-1

SDG No.:

Instrument ID: HPLC_Q Analysis Batch Number: 8112

Lab Sample ID: ICV 280-8112/9 Client Sample ID:

Date Analyzed: 03/17/10 19:06 Lab File ID: 010-1001.D GC Column: Luna-phenylhe ID: 4.6(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
2,6-diamino-4-nitrotoluene	3.91	Baseline Event	lahrc	03/18/10 06:53
2,4-diamino-6-nitrotoluene	4.32	Baseline Event	lahrc	03/18/10 06:53
Picric acid	5.24	Baseline Event	lahrc	03/18/10 06:53

HPLC/IC MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-3084-1

SDG No.:

Instrument ID: HPLC_Q Analysis Batch Number: 18232

Lab Sample ID: CCV 280-18232/2 Client Sample ID:

Date Analyzed: 06/05/10 00:15 Lab File ID: 002-1001.D GC Column: Luna-phenylhe ID: 4.6(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Nitrobenzene	10.69	Baseline Event	dybash	06/07/10 07:52
1,2-Dinitrobenzene	11.50	Baseline Event	dybash	06/07/10 07:52
4-Amino-2,6-dinitrotoluene	15.32	Baseline Event	dybash	06/07/10 07:53
3-Nitrotoluene	15.85	Baseline Event	dybash	06/07/10 07:53
2-Amino-4,6-dinitrotoluene	16.20	Baseline Event	dybash	06/07/10 07:53
1,3,5-Trinitrobenzene	16.81	Baseline Event	dybash	06/07/10 07:53
2,6-Dinitrotoluene	17.75	Baseline Event	dybash	06/07/10 07:53

HPLC/IC MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-3084-1

SDG No.:

Instrument ID: HPLC_X3 Analysis Batch Number: 17472

Lab Sample ID: IC 280-17472/4 Client Sample ID:

Date Analyzed: 05/26/10 22:12 Lab File ID: 005-0501.D GC Column: UltraCarb5uOD ID: 4.6(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Nitroglycerin	13.61	Baseline Event	lahrc	05/28/10 11:03

Lab Sample ID: IC 280-17472/5 Client Sample ID:

Date Analyzed: 05/26/10 22:36 Lab File ID: 006-0601.D GC Column: UltraCarb5uOD ID: 4.6(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Nitroglycerin	13.61	Baseline Event	lahrc	05/28/10 11:03

Lab Sample ID: IC 280-17472/6 Client Sample ID:

Date Analyzed: 05/26/10 22:59 Lab File ID: 007-0701.D GC Column: UltraCarb5uOD ID: 4.6(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Nitroglycerin	13.61	Baseline Event	lahrc	05/28/10 11:03

Lab Sample ID: ICV 280-17472/9 Client Sample ID:

Date Analyzed: 05/27/10 00:10 Lab File ID: 010-1001.D GC Column: UltraCarb5uOD ID: 4.6(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Nitroglycerin	13.62	Baseline Event	lahrc	05/28/10 11:04

HPLC/IC MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-3084-1

SDG No.:

Instrument ID: HPLC_X3 Analysis Batch Number: 17891

Lab Sample ID: IC 280-17891/1 Client Sample ID:

Date Analyzed: 05/26/10 21:02 Lab File ID: 002-0201.D GC Column: UltraCarb5uOD ID: 4.6(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
HMX	7.78	Split Peak	lahrc	05/27/10 09:15
2,4-diamino-6-nitrotoluene	7.85	Split Peak	lahrc	05/27/10 09:15
RDX	10.06	Baseline Event	lahrc	05/27/10 11:37
1,3,5-Trinitrobenzene	11.59	Baseline Event	lahrc	05/27/10 11:37
1,2-Dinitrobenzene	12.17	Baseline Event	lahrc	05/27/10 11:37
1,3-Dinitrobenzene	12.64	Baseline Event	lahrc	05/27/10 11:37
Nitrobenzene	13.25	Baseline Event	lahrc	05/27/10 11:37
Tetryl	13.51	Baseline Event	lahrc	05/27/10 11:37
2,4,6-Trinitrotoluene	14.17	Baseline Event	lahrc	05/27/10 11:37
4-Amino-2,6-dinitrotoluene	14.49	Baseline Event	lahrc	05/27/10 11:37
2-Amino-4,6-dinitrotoluene	14.78	Baseline Event	lahrc	05/27/10 11:37
2,6-Dinitrotoluene	15.02	Baseline Event	lahrc	05/27/10 11:37
2,4-Dinitrotoluene	15.23	Baseline Event	lahrc	05/27/10 11:37
2-Nitrotoluene	16.21	Baseline Event	lahrc	05/27/10 11:37
4-Nitrotoluene	16.71	Baseline Event	lahrc	05/27/10 11:37
3-Nitrotoluene	17.29	Baseline Event	lahrc	05/27/10 11:37

HPLC/IC MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-3084-1

SDG No.:

Instrument ID: HPLC_X3 Analysis Batch Number: 17891

Lab Sample ID: IC 280-17891/2 Client Sample ID:

Date Analyzed: 05/26/10 21:25 Lab File ID: 003-0301.D GC Column: UltraCarb5uOD ID: 4.6(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
RDX	10.07	Baseline Event	lahrc	05/27/10 11:34
1,3,5-Trinitrobenzene	11.59	Baseline Event	lahrc	05/27/10 11:34
1,2-Dinitrobenzene	12.18	Baseline Event	lahrc	05/27/10 11:34
1,3-Dinitrobenzene	12.65	Baseline Event	lahrc	05/27/10 11:34
Tetryl	13.51	Baseline Event	lahrc	05/27/10 11:34
2,4,6-Trinitrotoluene	14.17	Baseline Event	lahrc	05/27/10 11:34
4-Amino-2,6-dinitrotoluene	14.49	Baseline Event	lahrc	05/27/10 11:34
2-Amino-4,6-dinitrotoluene	14.78	Baseline Event	lahrc	05/27/10 11:34
2,6-Dinitrotoluene	15.03	Baseline Event	lahrc	05/27/10 11:34
2,4-Dinitrotoluene	15.23	Baseline Event	lahrc	05/27/10 11:34
2-Nitrotoluene	16.22	Baseline Event	lahrc	05/27/10 11:34
4-Nitrotoluene	16.71	Baseline Event	lahrc	05/27/10 11:34
3-Nitrotoluene	17.30	Baseline Event	lahrc	05/27/10 11:34

HPLC/IC MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-3084-1

SDG No.:

Instrument ID: HPLC_X3 Analysis Batch Number: 17891

Lab Sample ID: IC 280-17891/3 Client Sample ID:

Date Analyzed: 05/26/10 21:49 Lab File ID: 004-0401.D GC Column: UltraCarb5uOD ID: 4.6(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
RDX	10.08	Baseline Event	lahrc	05/27/10 11:34
1,3,5-Trinitrobenzene	11.61	Baseline Event	lahrc	05/27/10 11:34
1,2-Dinitrobenzene	12.19	Baseline Event	lahrc	05/27/10 11:34
1,3-Dinitrobenzene	12.65	Baseline Event	lahrc	05/27/10 11:34
Nitrobenzene	13.27	Baseline Event	lahrc	05/27/10 11:34
Tetryl	13.52	Baseline Event	lahrc	05/27/10 11:34
2,4,6-Trinitrotoluene	14.19	Baseline Event	lahrc	05/27/10 11:34
4-Amino-2,6-dinitrotoluene	14.50	Baseline Event	lahrc	05/27/10 11:34
2-Amino-4,6-dinitrotoluene	14.79	Baseline Event	lahrc	05/27/10 11:34
2,6-Dinitrotoluene	15.04	Baseline Event	lahrc	05/27/10 11:34
2,4-Dinitrotoluene	15.25	Baseline Event	lahrc	05/27/10 11:34
2-Nitrotoluene	16.23	Baseline Event	lahrc	05/27/10 11:34
4-Nitrotoluene	16.73	Baseline Event	lahrc	05/27/10 11:34
3-Nitrotoluene	17.31	Baseline Event	lahrc	05/27/10 11:34

HPLC/IC MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-3084-1

SDG No.:

Instrument ID: HPLC_X3 Analysis Batch Number: 17891

Lab Sample ID: IC 280-17891/4 Client Sample ID:

Date Analyzed: 05/26/10 22:12 Lab File ID: 005-0501.D GC Column: UltraCarb5uOD ID: 4.6(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
RDX	10.08	Baseline Event	lahrc	05/27/10 11:34
1,3,5-Trinitrobenzene	11.61	Baseline Event	lahrc	05/27/10 11:34
1,2-Dinitrobenzene	12.19	Baseline Event	lahrc	05/27/10 11:34
1,3-Dinitrobenzene	12.66	Baseline Event	lahrc	05/27/10 11:34
Nitrobenzene	13.26	Baseline Event	lahrc	05/27/10 11:34
Tetryl	13.52	Baseline Event	lahrc	05/27/10 11:34
2,4,6-Trinitrotoluene	14.19	Baseline Event	lahrc	05/27/10 11:34
4-Amino-2,6-dinitrotoluene	14.50	Baseline Event	lahrc	05/27/10 11:34
2-Amino-4,6-dinitrotoluene	14.80	Baseline Event	lahrc	05/27/10 11:34
2,6-Dinitrotoluene	15.04	Baseline Event	lahrc	05/27/10 11:34
2,4-Dinitrotoluene	15.25	Baseline Event	lahrc	05/27/10 11:34
2-Nitrotoluene	16.23	Baseline Event	lahrc	05/27/10 11:34
4-Nitrotoluene	16.74	Baseline Event	lahrc	05/27/10 11:34
3-Nitrotoluene	17.32	Baseline Event	lahrc	05/27/10 11:34

HPLC/IC MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-3084-1

SDG No.:

Instrument ID: HPLC_X3 Analysis Batch Number: 17891

Lab Sample ID: IC 280-17891/5 Client Sample ID:

Date Analyzed: 05/26/10 22:36 Lab File ID: 006-0601.D GC Column: UltraCarb5uOD ID: 4.6(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
1,3,5-Trinitrobenzene	11.61	Baseline Event	lahrc	05/27/10 09:15
1,2-Dinitrobenzene	12.19	Baseline Event	lahrc	05/27/10 09:15
1,3-Dinitrobenzene	12.66	Baseline Event	lahrc	05/27/10 09:15
Nitrobenzene	13.26	Baseline Event	lahrc	05/27/10 09:15
Tetryl	13.52	Baseline Event	lahrc	05/27/10 09:16
2,4,6-Trinitrotoluene	14.18	Baseline Event	lahrc	05/27/10 09:16
4-Amino-2,6-dinitrotoluene	14.50	Baseline Event	lahrc	05/27/10 09:16
2-Amino-4,6-dinitrotoluene	14.78	Baseline Event	lahrc	05/27/10 09:16
2,6-Dinitrotoluene	15.03	Baseline Event	lahrc	05/27/10 09:16
2,4-Dinitrotoluene	15.24	Baseline Event	lahrc	05/27/10 09:16
2-Nitrotoluene	16.22	Baseline Event	lahrc	05/27/10 09:16
4-Nitrotoluene	16.72	Baseline Event	lahrc	05/27/10 09:16
3-Nitrotoluene	17.30	Baseline Event	lahrc	05/27/10 09:16

Lab Sample ID: IC 280-17891/7 Client Sample ID:

Date Analyzed: 05/26/10 23:23 Lab File ID: 008-0801.D GC Column: UltraCarb5uOD ID: 4.6(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
HMX	7.78	Baseline Event	lahrc	05/27/10 09:16
2,4-diamino-6-nitrotoluene	7.92	Baseline Event	lahrc	05/27/10 09:16
4-Nitrotoluene	16.74	Baseline Event	lahrc	05/27/10 11:42
3-Nitrotoluene	17.32	Baseline Event	lahrc	05/27/10 11:42

HPLC/IC MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-3084-1

SDG No.:

Instrument ID: HPLC_X3 Analysis Batch Number: 17891

Lab Sample ID: IC 280-17891/8 Client Sample ID:

Date Analyzed: 05/26/10 23:46 Lab File ID: 009-0901.D GC Column: UltraCarb5uOD ID: 4.6(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
HMX	7.78	Baseline Event	lahrc	05/27/10 09:16
RDX	10.07	Baseline Event	lahrc	05/27/10 09:17
2,6-Dinitrotoluene	15.03	Baseline Event	lahrc	05/27/10 09:18
2,4-Dinitrotoluene	15.25	Baseline Event	lahrc	05/27/10 12:10

HPLC/IC MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-3084-1

SDG No.:

Instrument ID: HPLC_X3 Analysis Batch Number: 18009

Lab Sample ID: LCS 280-14610/12-A Client Sample ID:

Date Analyzed: 06/03/10 21:32 Lab File ID: 030-3001.D GC Column: UltraCarb5uOD ID: 4.6(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
HMX	7.57	Baseline Event	dybash	06/04/10 05:57
RDX	9.93	Split Peak	dybash	06/04/10 05:57

Lab Sample ID: 280-3084-1 Client Sample ID: MR-SD200-0409

Date Analyzed: 06/04/10 00:40 Lab File ID: 038-3801.D GC Column: UltraCarb5uOD ID: 4.6(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Tetryl	13.32	Baseline Event	dybash	06/04/10 06:02

Lab Sample ID: 280-3084-1 MS Client Sample ID: MR-SD200-0409 MS

Date Analyzed: 06/04/10 01:03 Lab File ID: 039-3901.D GC Column: UltraCarb5uOD ID: 4.6(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
HMX	7.58	Baseline Event	dybash	06/04/10 06:03
RDX	9.91	Baseline Event	dybash	06/04/10 06:03
1,3,5-Trinitrobenzene	11.42	Baseline Event	dybash	06/04/10 06:04
1,2-Dinitrobenzene	11.99	Baseline Event	dybash	06/04/10 06:04
1,3-Dinitrobenzene	12.47	Baseline Event	dybash	06/04/10 06:04
Nitrobenzene	13.08	Baseline Event	dybash	06/04/10 06:04
Tetryl	13.29	Baseline Event	dybash	06/04/10 06:04
2,4,6-Trinitrotoluene	13.93	Baseline Event	dybash	06/04/10 06:04
4-Amino-2,6-dinitrotoluene	14.25	Baseline Event	dybash	06/04/10 06:04
2-Amino-4,6-dinitrotoluene	14.52	Baseline Event	dybash	06/04/10 06:04
2,6-Dinitrotoluene	14.77	Baseline Event	dybash	06/04/10 06:04
2,4-Dinitrotoluene	14.95	Baseline Event	dybash	06/04/10 06:04
2-Nitrotoluene	15.93	Baseline Event	dybash	06/04/10 06:04
4-Nitrotoluene	16.41	Baseline Event	dybash	06/04/10 06:04
3-Nitrotoluene	16.97	Baseline Event	dybash	06/04/10 06:04

HPLC/IC MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-3084-1

SDG No.:

Instrument ID: HPLC_X3 Analysis Batch Number: 18009

Lab Sample ID: 280-3084-1 MSD Client Sample ID: MR-SD200-0409 MSD

Date Analyzed: 06/04/10 01:27 Lab File ID: 040-4001.D GC Column: UltraCarb5uOD ID: 4.6(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
HMX	7.56	Baseline Event	dybash	06/04/10 06:07
RDX	9.91	Split Peak	dybash	06/04/10 06:07
1,3,5-Trinitrobenzene	11.43	Baseline Event	dybash	06/04/10 06:06
1,2-Dinitrobenzene	12.00	Baseline Event	dybash	06/04/10 06:06
1,3-Dinitrobenzene	12.47	Baseline Event	dybash	06/04/10 06:06
Nitrobenzene	13.08	Baseline Event	dybash	06/04/10 06:06
Tetryl	13.29	Baseline Event	dybash	06/04/10 06:06
2,4,6-Trinitrotoluene	13.94	Baseline Event	dybash	06/04/10 06:06
4-Amino-2,6-dinitrotoluene	14.26	Baseline Event	dybash	06/04/10 06:06
2-Amino-4,6-dinitrotoluene	14.52	Baseline Event	dybash	06/04/10 06:06
2,4-Dinitrotoluene	14.96	Baseline Event	dybash	06/04/10 06:06
2-Nitrotoluene	15.94	Baseline Event	dybash	06/04/10 06:06
4-Nitrotoluene	16.42	Baseline Event	dybash	06/04/10 06:06

Lab Sample ID: 280-3084-1 MSD Client Sample ID: MR-SD200-0409 MSD

Date Analyzed: 06/04/10 01:27 Lab File ID: 040-4001.D GC Column: UltraCarb5uOD ID: 4.6(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Nitroglycerin	13.40	Baseline Event	lahrc	06/11/10 09:03
PETN	17.02	Baseline Event	lahrc	06/11/10 09:03

HPLC/IC MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-3084-1

SDG No.:

Instrument ID: HPLC_X3 Analysis Batch Number: 18009

Lab Sample ID: CCV 280-18009/4 Client Sample ID:

Date Analyzed: 06/04/10 01:50 Lab File ID: 002-4101.D GC Column: UltraCarb5uOD ID: 4.6(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
1,3,5-Trinitrobenzene	11.44	Baseline Event	dybash	06/04/10 06:11
1,2-Dinitrobenzene	12.02	Baseline Event	dybash	06/04/10 06:11
1,3-Dinitrobenzene	12.50	Baseline Event	dybash	06/04/10 06:11
Nitrobenzene	13.10	Baseline Event	dybash	06/04/10 06:11
Tetryl	13.32	Baseline Event	dybash	06/04/10 06:11
2,4,6-Trinitrotoluene	13.96	Baseline Event	dybash	06/04/10 06:11
4-Amino-2,6-dinitrotoluene	14.29	Baseline Event	dybash	06/04/10 06:11
2-Amino-4,6-dinitrotoluene	14.56	Baseline Event	dybash	06/04/10 06:11
2,6-Dinitrotoluene	14.80	Baseline Event	dybash	06/04/10 06:11
2,4-Dinitrotoluene	14.99	Baseline Event	dybash	06/04/10 06:11
2-Nitrotoluene	15.96	Baseline Event	dybash	06/04/10 06:11
4-Nitrotoluene	16.44	Baseline Event	dybash	06/04/10 06:11

SAMPLE SUMMARY

Client: HydroGeoLogic Inc

Job Number: 280-3084-1

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
280-3084-1	MR-SD200-0409	Solid	04/30/2010 1335	05/01/2010 1030
280-3084-1MS	MR-SD200-0409	Solid	04/30/2010 1335	05/01/2010 1030
280-3084-1MSD	MR-SD200-0409	Solid	04/30/2010 1335	05/01/2010 1030

EXECUTIVE SUMMARY - Detections

Client: HydroGeoLogic Inc

Job Number: 280-3084-1

Lab Sample ID / Analyte	Client Sample ID	Result / Qualifier		Reporting Limit	Units	Method
280-3084-1	**MR-SD200-0409**					
Aluminum		11000	J	550	mg/Kg	6010C
Calcium		8800		1100	mg/Kg	6010C
Iron		13000	J	880	mg/Kg	6010C
Magnesium		2200		330	mg/Kg	6010C
Potassium		950	J	3300	mg/Kg	6010C
Antimony		3.3	Q J	2.2	mg/Kg	6020A
Arsenic		27		6.5	mg/Kg	6020A
Barium		210		2.7	mg/Kg	6020A
Beryllium		0.66	J	1.1	mg/Kg	6020A
Cadmium		1.3	Q	1.1	mg/Kg	6020A
Chromium		17		6.5	mg/Kg	6020A
Cobalt		22	Q	1.1	mg/Kg	6020A
Copper		49		27	mg/Kg	6020A
Lead		380		4.3	mg/Kg	6020A
Manganese		1800	J	11	mg/Kg	6020A
Nickel		40	Q	3.8	mg/Kg	6020A
Selenium		2.6	J	5.4	mg/Kg	6020A
Thallium		1.3		1.1	mg/Kg	6020A
Vanadium		23		5.4	mg/Kg	6020A
Zinc		93		27	mg/Kg	6020A
Mercury		0.15	J	0.20	mg/Kg	7471B
Percent Moisture		92		0.10	%	D 2216
Tetryl		0.077	J M	0.48	mg/Kg	8330A

METHOD SUMMARY

Client: HydroGeoLogic Inc

Job Number: 280-3084-1

Description	Lab Location	Method	Preparation Method
Matrix Solid			
Nitroaromatics and Nitramines	TAL DEN	SW846 8330A	
Preparation, Air drying	TAL DEN		Prep/Air Dry
Sieve and Ultrasonic Water Bath Extraction (Explosives)	TAL DEN		TAL-BUR Sieve/Ultrasoni
Metals (ICP)	TAL DEN	SW846 6010C	
Preparation, Metals	TAL DEN		SW846 3050B
Metals (ICP/MS)	TAL DEN	SW846 6020A	
Preparation, Metals	TAL DEN		SW846 3050B
Mercury in Solid or Semisolid Waste (Manual Cold Vapor Technique)	TAL DEN	SW846 7471B	
Preparation, Mercury	TAL DEN		SW846 7471B
Percent Moisture	TAL DEN	ASTM D 2216	

Lab References:

TAL DEN = TestAmerica Denver

Method References:

ASTM = ASTM International

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

TAL-BUR = TestAmerica Laboratories, Burlington, Facility Standard Operating Procedure.

METHOD / ANALYST SUMMARY

Client: HydroGeoLogic Inc

Job Number: 280-3084-1

Method	Analyst	Analyst ID
SW846 6010C	Trudell, Lynn-Anne	LT
SW846 6020A	Lill, Thomas E	TEL
SW846 7471B	Stoltz, Katie	KS
ASTM D 2216	Berry III, Paul B	PBB
SW846 8330A	Fiedler, Heather K	HKF

Client: HydroGeoLogic Inc

Job Number: 280-3084-1

Client Sample ID: **MR-SD200-0409**

Lab Sample ID: 280-3084-1

Client Matrix: Solid

Date Sampled: 04/30/2010 1335

Date Received: 05/01/2010 1030

8330A Nitroaromatics and Nitramines

Method:	8330A	Analysis Batch: 280-18009		Instrument ID:	HPLC_X3
Preparation:	Sieve/Ultrasoni	Prep Batch: 280-14610		Initial Weight/Volume:	2.10 g
Dilution:	1.0	Leachate Batch: 280-13796		Final Weight/Volume:	20000 uL
Date Analyzed:	06/04/2010 0040			Injection Volume:	100 uL
Date Prepared:	05/10/2010 1615			Result Type:	PRIMARY
Date Leached:	05/04/2010 1028				

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	DL	LOQ
2-Amino-4,6-dinitrotoluene		0.086	U	0.043	0.24
4-Amino-2,6-dinitrotoluene		0.086	U	0.037	0.24
2,4-Dinitrotoluene		0.086	U	0.047	0.24
2,6-Dinitrotoluene		0.086	U	0.052	0.24
2,4,6-Trinitrotoluene		0.086	U	0.055	0.24
3-Nitrotoluene		0.086	U	0.052	0.48
2-Nitrotoluene		0.086	U	0.080	0.24
4-Nitrotoluene		0.17	U	0.10	0.38
Nitrobenzene		0.086	U	0.058	0.24
1,3,5-Trinitrobenzene		0.086	U	0.068	0.24
1,3-Dinitrobenzene		0.086	U	0.058	0.24
HMX		0.086	U	0.074	0.24
RDX		0.086	U Q	0.081	0.25
Tetryl		0.077	J M	0.052	0.48
PETN		0.86	U	0.83	3.8
Nitroglycerin		0.48	U	0.18	4.9

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dinitrobenzene	107		83 - 122

Client: HydroGeoLogic Inc

Job Number: 280-3084-1

Client Sample ID: **MR-SD200-0409**

Lab Sample ID: 280-3084-1

Client Matrix: Solid

Date Sampled: 04/30/2010 1335

Date Received: 05/01/2010 1030

8330A Nitroaromatics and Nitramines

Method:	8330A	Analysis Batch: 280-18232		Instrument ID:	HPLC_Q
Preparation:	Sieve/Ultrasoni	Prep Batch: 280-14610		Initial Weight/Volume:	2.10 g
Dilution:	1.0	Leachate Batch: 280-13796		Final Weight/Volume:	20000 uL
Date Analyzed:	06/04/2010 2343			Injection Volume:	100 uL
Date Prepared:	05/10/2010 1615			Result Type:	SECONDARY
Date Leached:	05/04/2010 1028				

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dinitrobenzene	101		83 - 122

Client: HydroGeoLogic Inc

Job Number: 280-3084-1

Client Sample ID: **MR-SD200-0409**

Lab Sample ID: 280-3084-1

Client Matrix: Solid

% Moisture: 92.3

Date Sampled: 04/30/2010 1335

Date Received: 05/01/2010 1030

6010C Metals (ICP)

Method: 6010C
Preparation: 3050B
Dilution: 1.0
Date Analyzed: 05/11/2010 2241
Date Prepared: 05/11/2010 0800

Analysis Batch: 280-15054
Prep Batch: 280-14632

Instrument ID: MT_026
Lab File ID: 26C051110.txt
Initial Weight/Volume: 1.18 g
Final Weight/Volume: 100 mL

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	DL	LOQ
Aluminum		11000	J	17	550
Calcium		8800		160	1100
Iron		13000	J	42	880
Magnesium		2200		41	330
Potassium		950	J	450	3300
Sodium		1100	U	650	5500

6020A Metals (ICP/MS)

Method: 6020A
Preparation: 3050B
Dilution: 1.0
Date Analyzed: 05/13/2010 0138
Date Prepared: 05/11/2010 0800

Analysis Batch: 280-15246
Prep Batch: 280-14634

Instrument ID: MT_024
Lab File ID: 150AREF.D
Initial Weight/Volume: 1.20 g
Final Weight/Volume: 100 mL

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	DL	LOQ
Antimony		3.3	Q J	0.15	2.2
Arsenic		27		0.55	6.5
Barium		210		0.76	2.7
Beryllium		0.66	J	0.24	1.1
Cadmium		1.3	Q	0.10	1.1
Chromium		17		0.82	6.5
Cobalt		22	Q	0.072	1.1
Copper		49		0.77	27
Lead		380		0.20	4.3
Manganese		1800	J	0.36	11
Nickel		40	Q	0.27	3.8
Selenium		2.6	J	1.4	5.4
Silver		0.65	U	0.22	1.1
Thallium		1.3		0.038	1.1
Vanadium		23		0.42	5.4
Zinc		93		3.4	27

7471B Mercury in Solid or Semisolid Waste (Manual Cold Vapor Technique)

Method: 7471B
Preparation: 7471B
Dilution: 1.0
Date Analyzed: 05/08/2010 1233
Date Prepared: 05/08/2010 0730

Analysis Batch: 280-14830
Prep Batch: 280-13851

Instrument ID: MT_033
Lab File ID: 100508AA.txt
Initial Weight/Volume: 0.66 g
Final Weight/Volume: 50 mL

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	DL	LOQ
Mercury		0.15	J	0.065	0.20

General Chemistry

Client Sample ID: **MR-SD200-0409**

Lab Sample ID: 280-3084-1

Client Matrix: Solid

Date Sampled: 04/30/2010 1335

Date Received: 05/01/2010 1030

Analyte	Result	Qual	Units	LOQ	LOQ	Dil	Method
Percent Moisture	92		%	0.10	0.10	1.0	D 2216

Analysis Batch: 280-13777 Date Analyzed: 05/04/2010 0909 DryWt Corrected: N

Client: HydroGeoLogic Inc

Job Number: 280-3084-1

Surrogate Recovery Report

8330A Nitroaromatics and Nitramines

Client Matrix: Solid

Lab Sample ID	Client Sample ID	12DNB2 %Rec	12DNB1 %Rec
280-3084-1	MR-SD200-0409	101	
280-3084-1	MR-SD200-0409		107
MB 280-14610/11-A		101	
MB 280-14610/11-A			97
LCS 280-14610/12-A		103	
LCS 280-14610/12-A			98
280-3084-1 MS	MR-SD200-0409 MS		109M
280-3084-1 MSD	MR-SD200-0409 MSD		104M

Surrogate	Acceptance Limits
12DNB = 1,2-Dinitrobenzene	83-122

Client: HydroGeoLogic Inc

Job Number: 280-3084-1

Method Blank - Batch: 280-14610

Method: 8330A
Preparation: Sieve/Ultrasoni

Lab Sample ID: MB 280-14610/11-A
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 06/03/2010 2108
Date Prepared: 05/10/2010 1615

Analysis Batch: 280-18009
Prep Batch: 280-14610
Units: mg/Kg

Instrument ID: HPLC_X3
Lab File ID: 029-2901.D
Initial Weight/Volume: 2.00 g
Final Weight/Volume: 20000 uL
Injection Volume: 100 uL
Column ID: PRIMARY

Analyte	Result	Qual	DL	LOQ
2-Amino-4,6-dinitrotoluene	0.090	U	0.046	0.25
4-Amino-2,6-dinitrotoluene	0.090	U	0.039	0.25
2,4-Dinitrotoluene	0.090	U	0.050	0.25
2,6-Dinitrotoluene	0.090	U	0.054	0.25
2,4,6-Trinitrotoluene	0.090	U	0.058	0.25
m-Nitrotoluene	0.090	U	0.055	0.50
3-Nitrotoluene	0.090	U	0.055	0.50
o-Nitrotoluene	0.090	U	0.084	0.25
2-Nitrotoluene	0.090	U	0.084	0.25
p-Nitrotoluene	0.18	U	0.11	0.40
4-Nitrotoluene	0.18	U	0.11	0.40
Nitrobenzene	0.090	U	0.061	0.25
1,3,5-Trinitrobenzene	0.090	U	0.071	0.25
1,3-Dinitrobenzene	0.090	U	0.061	0.25
HMX	0.090	U	0.078	0.25
RDX	0.090	U	0.085	0.26
Tetryl	0.090	U	0.055	0.50
PETN	0.90	U	0.87	4.0
Nitroglycerin	0.50	U	0.19	5.1

Surrogate	% Rec	Acceptance Limits
1,2-Dinitrobenzene	97	83 - 122

Surrogate	% Rec	Acceptance Limits
1,2-Dinitrobenzene	101	83 - 122

Client: HydroGeoLogic Inc

Job Number: 280-3084-1

Lab Control Sample - Batch: 280-14610

Method: 8330A
Preparation: Sieve/Ultrasoni

Lab Sample ID: LCS 280-14610/12-A
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 06/03/2010 2132
Date Prepared: 05/10/2010 1615

Analysis Batch: 280-18009
Prep Batch: 280-14610
Units: mg/Kg

Instrument ID: HPLC_X3
Lab File ID: 030-3001.D
Initial Weight/Volume: 2.09 g
Final Weight/Volume: 20000 uL
Injection Volume: 100 uL
Column ID: PRIMARY

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
2-Amino-4,6-dinitrotoluene	2.39	2.72	114	80 - 125	
4-Amino-2,6-dinitrotoluene	2.39	2.42	101	80 - 125	
2,4-Dinitrotoluene	2.39	2.61	109	80 - 125	
2,6-Dinitrotoluene	2.39	2.12	89	80 - 120	
2,4,6-Trinitrotoluene	2.39	2.34	98	55 - 140	
m-Nitrotoluene	2.39	2.53	106	75 - 120	
3-Nitrotoluene	2.39	2.53	106	75 - 120	
o-Nitrotoluene	2.39	2.54	106	80 - 125	
2-Nitrotoluene	2.39	2.54	106	80 - 125	
p-Nitrotoluene	2.39	2.53	106	75 - 125	
4-Nitrotoluene	2.39	2.53	106	75 - 125	
Nitrobenzene	2.39	2.58	108	75 - 125	
1,3,5-Trinitrobenzene	2.39	2.40	100	75 - 125	
1,3-Dinitrobenzene	2.39	2.45	102	80 - 125	
HMX	2.39	2.43	101	75 - 125	M
Tetryl	2.39	2.36	99	10 - 150	
PETN	23.9	24.1	101	69 - 132	
Nitroglycerin	23.9	26.3	110	68 - 131	

Surrogate	% Rec	Acceptance Limits
1,2-Dinitrobenzene	98	83 - 122

Lab Control Sample - Batch: 280-14610

Method: 8330A
Preparation: Sieve/Ultrasoni

Lab Sample ID: LCS 280-14610/12-A
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 06/04/2010 2103
Date Prepared: 05/10/2010 1615

Analysis Batch: 280-18232
Prep Batch: 280-14610
Units: mg/Kg

Instrument ID: HPLC_Q
Lab File ID: 004-0401.D
Initial Weight/Volume: 2.09 g
Final Weight/Volume: 20000 uL
Injection Volume: 100 uL
Column ID: PRIMARY

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
RDX	2.39	2.62	109	70 - 135	

Surrogate	% Rec	Acceptance Limits
1,2-Dinitrobenzene	103	83 - 122

Client: HydroGeoLogic Inc

Job Number: 280-3084-1

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 280-14610

Method: 8330A
Preparation: Sieve/Ultrasoni

MS Lab Sample ID:	280-3084-1	Analysis Batch:	280-18009	Instrument ID:	HPLC_X3
Client Matrix:	Solid	Prep Batch:	280-14610	Lab File ID:	039-3901.D
Dilution:	1.0			Initial Weight/Volume:	2.07 g
Date Analyzed:	06/04/2010 0103			Final Weight/Volume:	20000 uL
Date Prepared:	05/10/2010 1615			Injection Volume:	100 uL
Date Leached:	05/04/2010 1028			Column ID:	PRIMARY

MSD Lab Sample ID:	280-3084-1	Analysis Batch:	280-18009	Instrument ID:	HPLC_X3
Client Matrix:	Solid	Prep Batch:	280-14610	Lab File ID:	040-4001.D
Dilution:	1.0			Initial Weight/Volume:	2.06 g
Date Analyzed:	06/04/2010 0127			Final Weight/Volume:	20000 uL
Date Prepared:	05/10/2010 1615			Injection Volume:	100 uL
Date Leached:	05/04/2010 1028			Column ID:	PRIMARY

	% Rec.						
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
2-Amino-4,6-dinitrotoluene	115	120	80 - 125	5	30	M	M
4-Amino-2,6-dinitrotoluene	95	100	80 - 125	5	30	M	M
2,4-Dinitrotoluene	101	104	80 - 125	3	30	M	M
2,6-Dinitrotoluene	96	96	80 - 120	0	30	M	M
2,4,6-Trinitrotoluene	99	99	55 - 140	1	30	M	M
m-Nitrotoluene	111	111	75 - 120	0	30	M	
o-Nitrotoluene	104	108	80 - 125	5	30	M	M
p-Nitrotoluene	105	106	75 - 125	2	30	M	M
Nitrobenzene	117	110	75 - 125	5	30	M	M
1,3,5-Trinitrobenzene	109	108	75 - 125	1	30	M	M
1,3-Dinitrobenzene	118	110	80 - 125	7	30	M	M
HMX	97	98	75 - 125	2	30	M	M
RDX	122	126	70 - 135	4	30	M	M
Tetryl	96	98	10 - 150	2	30	M	M
PETN	102	103	69 - 132	2	40		M
Nitroglycerin	104	105	68 - 131	2	30		M

Surrogate	MS % Rec		MSD % Rec		Acceptance Limits
1,2-Dinitrobenzene	109	M	104	M	83 - 122

Client: HydroGeoLogic Inc

Job Number: 280-3084-1

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 280-14610

Method: 8330A
Preparation: Sieve/Ultrasoni

MS Lab Sample ID:	280-3084-1	Units: mg/Kg	MSD Lab Sample ID:	280-3084-1
Client Matrix:	Solid		Client Matrix:	Solid
Dilution:	1.0		Dilution:	1.0
Date Analyzed:	06/04/2010 0103		Date Analyzed:	06/04/2010 0127
Date Prepared:	05/10/2010 1615		Date Prepared:	05/10/2010 1615
Date Leached:	05/04/2010 1028		Date Leached:	05/04/2010 1028

Analyte	Sample Result/Qual		MS Spike Amount	MSD Spike Amount	MS Result/Qual		MSD Result/Qual	
2-Amino-4,6-dinitrotoluene	0.086	U	2.42	2.43	2.78	M	2.92	M
4-Amino-2,6-dinitrotoluene	0.086	U	2.42	2.43	2.30	M	2.42	M
2,4-Dinitrotoluene	0.086	U	2.42	2.43	2.44	M	2.52	M
2,6-Dinitrotoluene	0.086	U	2.42	2.43	2.32	M	2.33	M
2,4,6-Trinitrotoluene	0.086	U	2.42	2.43	2.39	M	2.41	M
m-Nitrotoluene	0.086	U	2.42	2.43	2.69	M	2.69	
o-Nitrotoluene	0.086	U	2.42	2.43	2.50	M	2.63	M
p-Nitrotoluene	0.17	U	2.42	2.43	2.54	M	2.58	M
Nitrobenzene	0.086	U	2.42	2.43	2.82	M	2.67	M
1,3,5-Trinitrobenzene	0.086	U	2.42	2.43	2.64	M	2.62	M
1,3-Dinitrobenzene	0.086	U	2.42	2.43	2.84	M	2.66	M
HMX	0.086	U	2.42	2.43	2.34	M	2.39	M
RDX	0.086	U	2.42	2.43	2.95	M	3.07	M
Tetryl	0.077	J	2.42	2.43	2.40	M	2.45	M
PETN	0.86	U	24.2	24.3	24.5		25.1	M
Nitroglycerin	0.48	U	24.2	24.3	25.1		25.5	M

Client: HydroGeoLogic Inc

Job Number: 280-3084-1

Method Blank - Batch: 280-14632

Method: 6010C
Preparation: 3050B

Lab Sample ID: MB 280-14632/1-A
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 05/11/2010 2237
Date Prepared: 05/11/2010 0800

Analysis Batch: 280-15054
Prep Batch: 280-14632
Units: mg/Kg

Instrument ID: MT_026
Lab File ID: 26C051110.txt
Initial Weight/Volume: 1.00 g
Final Weight/Volume: 100 mL

Analyte	Result	Qual	DL	LOQ
Aluminum	3.0	U	1.6	50
Calcium	20.8	J	14	100
Iron	5.0	U	3.8	80
Magnesium	4.04	J	3.7	30
Potassium	50	U	41	300
Sodium	100	U	59	500

Lab Control Sample - Batch: 280-14632

Method: 6010C
Preparation: 3050B

Lab Sample ID: LCS 280-14632/2-A
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 05/11/2010 2239
Date Prepared: 05/11/2010 0800

Analysis Batch: 280-15054
Prep Batch: 280-14632
Units: mg/Kg

Instrument ID: MT_026
Lab File ID: 26C051110.txt
Initial Weight/Volume: 1.00 g
Final Weight/Volume: 100 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Aluminum	200	183	91	80 - 120	
Calcium	5000	4670	93	80 - 120	
Iron	100	94.5	94	80 - 120	
Magnesium	5000	4760	95	80 - 120	
Potassium	5000	4830	97	80 - 120	
Sodium	5000	5060	101	80 - 120	

Client: HydroGeoLogic Inc

Job Number: 280-3084-1

Post Digestion Spike - Batch: 280-14632

Method: 6010C
Preparation: 3050B

Lab Sample ID: 280-3084-1
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 05/11/2010 2250
Date Prepared: 05/11/2010 0800

Analysis Batch: 280-15054
Prep Batch: 280-14632
Units: mg/Kg

Instrument ID: MT_026
Lab File ID: 26C051110.txt
Initial Weight/Volume: 1.18 g
Final Weight/Volume: 100 mL

Analyte	Sample Result/Qual		Spike Amount	Result	% Rec.	Limit	Qual
Aluminum	11000		1080	11900	113	75 - 125	
Calcium	8800		21600	32300	109	75 - 125	
Iron	13000		1080	14300	NC	75 - 125	
Magnesium	2200		21600	26200	111	75 - 125	
Potassium	950	J	21600	24700	110	75 - 125	
Sodium	1100	U	21600	24000	111	75 - 125	

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 280-14632

Method: 6010C
Preparation: 3050B

MS Lab Sample ID: 280-3084-1
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 05/11/2010 2246
Date Prepared: 05/11/2010 0800

Analysis Batch: 280-15054
Prep Batch: 280-14632

Instrument ID: MT_026
Lab File ID: 26C051110.txt
Initial Weight/Volume: 1.09 g
Final Weight/Volume: 100 mL

MSD Lab Sample ID: 280-3084-1
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 05/11/2010 2248
Date Prepared: 05/11/2010 0800

Analysis Batch: 280-15054
Prep Batch: 280-14632

Instrument ID: MT_026
Lab File ID: 26C051110.txt
Initial Weight/Volume: 1.09 g
Final Weight/Volume: 100 mL

Analyte	% Rec. MS	% Rec. MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Aluminum	320	181	80 - 120	20	20	4	4
Calcium	94	88	80 - 120	6	20		
Iron	203	-54	80 - 120	22	20	4	4 J
Magnesium	96	90	80 - 120	7	20		
Potassium	97	92	80 - 120	5	20		
Sodium	97	93	80 - 120	5	20		

Client: HydroGeoLogic Inc

Job Number: 280-3084-1

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 280-14632

Method: 6010C
Preparation: 3050B

MS Lab Sample ID:	280-3084-1	Units: mg/Kg	MSD Lab Sample ID:	280-3084-1
Client Matrix:	Solid		Client Matrix:	Solid
Dilution:	1.0		Dilution:	1.0
Date Analyzed:	05/11/2010 2246		Date Analyzed:	05/11/2010 2248
Date Prepared:	05/11/2010 0800		Date Prepared:	05/11/2010 0800

Analyte	Sample Result/Qual		MS Spike Amount	MSD Spike Amount	MS Result/Qual		MSD Result/Qual	
Aluminum	11000		2380	2380	18400	4	15000	4
Calcium	8800		59600	59600	64900		61400	
Iron	13000		1190	1190	15600	4	12500	4 J
Magnesium	2200		59600	59600	59500		55600	
Potassium	950	J	59600	59600	58600		55700	
Sodium	1100	U	59600	59600	57800		55100	

Serial Dilution - Batch: 280-14632

Method: 6010C
Preparation: 3050B

Lab Sample ID:	280-3084-1	Analysis Batch:	280-15054	Instrument ID:	MT_026
Client Matrix:	Solid	Prep Batch:	280-14632	Lab File ID:	26C051110.txt
Dilution:	5.0	Units:	mg/Kg	Initial Weight/Volume:	1.18 g
Date Analyzed:	05/11/2010 2244			Final Weight/Volume:	100 mL
Date Prepared:	05/11/2010 0800				

Analyte	Sample Result/Qual		Result	%Diff	Limit	Qual
Aluminum	11000		11000	2.9	10	
Calcium	8800		9140	3.3	10	
Iron	13000		13600	3.5	10	
Magnesium	2200		2290	4.2	10	
Potassium	950	J	2800	NC		U
Sodium	1100	U	5500	NC		U

Client: HydroGeoLogic Inc

Job Number: 280-3084-1

Method Blank - Batch: 280-14634

Method: 6020A
Preparation: 3050B

Lab Sample ID: MB 280-14634/1-A
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 05/13/2010 0133
Date Prepared: 05/11/2010 0800

Analysis Batch: 280-15246
Prep Batch: 280-14634
Units: mg/Kg

Instrument ID: MT_024
Lab File ID: 148_BLK.D
Initial Weight/Volume: 1.00 g
Final Weight/Volume: 100 mL

Analyte	Result	Qual	DL	LOQ
Antimony	0.040	U Q	0.014	0.20
Arsenic	0.15	U	0.051	0.60
Barium	0.20	U	0.070	0.25
Beryllium	0.065	U	0.022	0.10
Cadmium	0.025	U Q	0.0094	0.10
Chromium	0.161	J	0.076	0.60
Cobalt	0.018	U Q	0.0066	0.10
Copper	0.874	J	0.071	2.5
Lead	0.050	U	0.018	0.40
Manganese	0.090	U	0.033	1.0
Nickel	0.0355	J Q	0.025	0.35
Selenium	0.25	U	0.13	0.50
Silver	0.060	U	0.020	0.10
Thallium	0.010	U	0.0035	0.10
Vanadium	0.10	U	0.038	0.50
Zinc	0.90	U	0.32	2.5

Client: HydroGeoLogic Inc

Job Number: 280-3084-1

Lab Control Sample - Batch: 280-14634

Method: 6020A
Preparation: 3050B

Lab Sample ID: LCS 280-14634/2-A
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 05/13/2010 0136
Date Prepared: 05/11/2010 0800

Analysis Batch: 280-15246
Prep Batch: 280-14634
Units: mg/Kg

Instrument ID: MT_024
Lab File ID: 149_LCS.D
Initial Weight/Volume: 1.00 g
Final Weight/Volume: 100 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Antimony	20.0	19.5	98	80 - 120	Q
Arsenic	20.0	19.1	95	80 - 120	
Barium	20.0	19.5	98	80 - 120	
Beryllium	20.0	18.5	93	80 - 120	
Cadmium	20.0	19.4	97	80 - 120	Q
Chromium	20.0	19.1	96	80 - 120	
Cobalt	20.0	18.9	95	80 - 120	Q
Copper	20.0	19.2	96	80 - 120	
Lead	20.0	19.4	97	80 - 120	
Manganese	20.0	19.4	97	80 - 120	
Nickel	20.0	19.7	98	80 - 120	Q
Selenium	20.0	19.2	96	80 - 120	
Silver	20.0	18.8	94	80 - 120	
Thallium	20.0	19.4	97	80 - 120	
Vanadium	20.0	18.6	93	80 - 120	
Zinc	20.0	19.1	95	80 - 120	

Client: HydroGeoLogic Inc

Job Number: 280-3084-1

Post Digestion Spike - Batch: 280-14634

Method: 6020A
Preparation: 3050B

Lab Sample ID: 280-3084-1
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 05/13/2010 0144
Date Prepared: 05/11/2010 0800

Analysis Batch: 280-15246
Prep Batch: 280-14634
Units: mg/Kg

Instrument ID: MT_024
Lab File ID: 152PDS.D
Initial Weight/Volume: 1.20 g
Final Weight/Volume: 100 mL

Analyte	Sample Result/Qual		Spike Amount	Result	% Rec.	Limit	Qual
Antimony	3.3		1080	1070	98	75 - 125	Q
Arsenic	27		1080	1100	99	75 - 125	
Barium	210		1080	1250	97	75 - 125	
Beryllium	0.66	J	1080	1050	97	75 - 125	
Cadmium	1.3		1080	1050	97	75 - 125	Q
Chromium	17		1080	1060	96	75 - 125	
Cobalt	22		1080	1050	95	75 - 125	Q
Copper	49		1080	1120	99	75 - 125	
Lead	380		1080	1410	95	75 - 125	
Manganese	1800		1080	2770	94	75 - 125	
Nickel	40		1080	1100	98	75 - 125	Q
Selenium	2.6	J	1080	1060	98	75 - 125	
Silver	0.65	U	270	257	95	75 - 125	
Thallium	1.3		1080	1050	97	75 - 125	
Vanadium	23		1080	1070	97	75 - 125	
Zinc	93		1080	1170	99	75 - 125	

Client: HydroGeoLogic Inc

Job Number: 280-3084-1

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 280-14634

Method: 6020A
Preparation: 3050B

MS Lab Sample ID:	280-3084-1	Analysis Batch:	280-15246	Instrument ID:	MT_024
Client Matrix:	Solid	Prep Batch:	280-14634	Lab File ID:	153_MS.D
Dilution:	1.0			Initial Weight/Volume:	1.02 g
Date Analyzed:	05/13/2010 0146			Final Weight/Volume:	100 mL
Date Prepared:	05/11/2010 0800				

MSD Lab Sample ID:	280-3084-1	Analysis Batch:	280-15246	Instrument ID:	MT_024
Client Matrix:	Solid	Prep Batch:	280-14634	Lab File ID:	154_MSD.D
Dilution:	1.0			Initial Weight/Volume:	1.00 g
Date Analyzed:	05/13/2010 0149			Final Weight/Volume:	100 mL
Date Prepared:	05/11/2010 0800				

	% Rec.						
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Antimony	68	71	80 - 120	6	20	Q J	Q J
Arsenic	100	102	80 - 120	4	20		
Barium	108	116	80 - 120	5	20		
Beryllium	96	99	80 - 120	6	20		
Cadmium	99	103	80 - 120	6	20	Q	Q
Chromium	99	101	80 - 120	4	20		
Cobalt	97	101	80 - 120	5	20	Q	Q
Copper	99	100	80 - 120	3	20		
Lead	92	99	80 - 120	4	20		
Manganese	256	302	80 - 120	5	20	4	4
Nickel	100	103	80 - 120	4	20	Q	Q
Selenium	98	98	80 - 120	2	20		
Silver	94	98	80 - 120	7	20		
Thallium	102	103	80 - 120	3	20		
Vanadium	96	98	80 - 120	3	20		
Zinc	97	99	80 - 120	3	20		

Client: HydroGeoLogic Inc

Job Number: 280-3084-1

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 280-14634

Method: 6020A
Preparation: 3050B

MS Lab Sample ID:	280-3084-1	Units: mg/Kg	MSD Lab Sample ID:	280-3084-1
Client Matrix:	Solid		Client Matrix:	Solid
Dilution:	1.0		Dilution:	1.0
Date Analyzed:	05/13/2010 0146		Date Analyzed:	05/13/2010 0149
Date Prepared:	05/11/2010 0800		Date Prepared:	05/11/2010 0800

Analyte	Sample Result/Qual		MS Spike Amount	MSD Spike Amount	MS Result/Qual		MSD Result/Qual	
Antimony	3.3		255	260	177	Q J	188	Q J
Arsenic	27		255	260	282		292	
Barium	210		255	260	481		507	
Beryllium	0.66	J	255	260	245		259	
Cadmium	1.3		255	260	252	Q	268	Q
Chromium	17		255	260	269		279	
Cobalt	22		255	260	270	Q	283	Q
Copper	49		255	260	300		309	
Lead	380		255	260	618		642	
Manganese	1800		255	260	2410	4	2540	4
Nickel	40		255	260	296	Q	307	Q
Selenium	2.6	J	255	260	253		257	
Silver	0.65	U	255	260	239		256	
Thallium	1.3		255	260	260		269	
Vanadium	23		255	260	268		277	
Zinc	93		255	260	341		350	

Client: HydroGeoLogic Inc

Job Number: 280-3084-1

Serial Dilution - Batch: 280-14634

Method: 6020A
Preparation: 3050B

Lab Sample ID: 280-3084-1
Client Matrix: Solid
Dilution: 5.0
Date Analyzed: 05/13/2010 0141
Date Prepared: 05/11/2010 0800

Analysis Batch: 280-15246
Prep Batch: 280-14634
Units: mg/Kg

Instrument ID: MT_024
Lab File ID: 151SDIL.D
Initial Weight/Volume: 1.20 g
Final Weight/Volume: 100 mL

Analyte	Sample Result/Qual		Result	%Diff	Limit	Qual
Antimony	3.3		3.62	NC		J Q
Arsenic	27		27.2	0.46	10	J
Barium	210		209	1.4	10	
Beryllium	0.66	J	3.5	NC		U
Cadmium	1.3		1.30	NC		J Q
Chromium	17		23.3	NC		J
Cobalt	22		22.2	1.9	10	Q
Copper	49		50.9	4.5	10	J
Lead	380		396	2.8	10	
Manganese	1800		1850	5.4	10	
Nickel	40		42.4	5.6	10	Q
Selenium	2.6	J	8.30	NC		J
Silver	0.65	U	3.2	NC		U
Thallium	1.3		1.38	NC		J
Vanadium	23		22.5	2.1	10	J
Zinc	93		94.2	NC		J

Client: HydroGeoLogic Inc

Job Number: 280-3084-1

Method Blank - Batch: 280-13851

Method: 7471B
Preparation: 7471B

Lab Sample ID: MB 280-13851/1-A
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 05/08/2010 1228
Date Prepared: 05/08/2010 0730

Analysis Batch: 280-14830
Prep Batch: 280-13851
Units: mg/Kg

Instrument ID: MT_033
Lab File ID: 100508AA.txt
Initial Weight/Volume: 0.60 g
Final Weight/Volume: 50 mL

Analyte	Result	Qual	DL	LOQ
Mercury	0.0083	U	0.0055	0.017

Lab Control Sample - Batch: 280-13851

Method: 7471B
Preparation: 7471B

Lab Sample ID: LCS 280-13851/2-A
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 05/08/2010 1230
Date Prepared: 05/08/2010 0730

Analysis Batch: 280-14830
Prep Batch: 280-13851
Units: mg/Kg

Instrument ID: MT_033
Lab File ID: 100508AA.txt
Initial Weight/Volume: 0.60 g
Final Weight/Volume: 50 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Mercury	0.417	0.420	101	80 - 120	

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 280-13851

Method: 7471B
Preparation: 7471B

MS Lab Sample ID: 280-3084-1
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 05/08/2010 1242
Date Prepared: 05/08/2010 0730

Analysis Batch: 280-14830
Prep Batch: 280-13851

Instrument ID: MT_033
Lab File ID: 100508AA.txt
Initial Weight/Volume: 0.61 g
Final Weight/Volume: 50 mL

MSD Lab Sample ID: 280-3084-1
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 05/08/2010 1244
Date Prepared: 05/08/2010 0730

Analysis Batch: 280-14830
Prep Batch: 280-13851

Instrument ID: MT_033
Lab File ID: 100508AA.txt
Initial Weight/Volume: 0.64 g
Final Weight/Volume: 50 mL

Analyte	% Rec. MS	% Rec. MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Mercury	96	91	80 - 120	10	20		

Client: HydroGeoLogic Inc

Job Number: 280-3084-1

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 280-13851

Method: 7471B
Preparation: 7471B

MS Lab Sample ID:	280-3084-1	Units: mg/Kg	MSD Lab Sample ID:	280-3084-1
Client Matrix:	Solid		Client Matrix:	Solid
Dilution:	1.0		Dilution:	1.0
Date Analyzed:	05/08/2010 1242		Date Analyzed:	05/08/2010 1244
Date Prepared:	05/08/2010 0730		Date Prepared:	05/08/2010 0730

Analyte	Sample Result/Qual	MS Spike Amount	MSD Spike Amount	MS Result/Qual	MSD Result/Qual
Mercury	0.15	5.32	5.07	5.28	4.76

Serial Dilution - Batch: 280-13851

Method: 7471B
Preparation: 7471B

Lab Sample ID:	280-3084-1	Analysis Batch:	280-14830	Instrument ID:	MT_033
Client Matrix:	Solid	Prep Batch:	280-13851	Lab File ID:	100508AA.txt
Dilution:	5.0	Units:	mg/Kg	Initial Weight/Volume:	0.66 g
Date Analyzed:	05/08/2010 1235			Final Weight/Volume:	50 mL
Date Prepared:	05/08/2010 0730				

Analyte	Sample Result/Qual		Result	%Diff	Limit	Qual
Mercury	0.15	J	0.49	NC	10	U

DATA REPORTING QUALIFIERS

Client: HydroGeoLogic Inc

Job Number: 280-3084-1

Lab Section	Qualifier	Description
Metals		
	J	Estimated: The analyte was positively identified; the quantitation is an estimation
	J	Estimated: The quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
	4	MS, MSD: The analyte present in the original sample is 4 times greater than the matrix spike concentration; therefore, control limits are not applicable.
	Q	One or more quality control criteria failed.
	U	Undetected at the Limit of Detection.
HPLC/IC		
	J	Estimated: The analyte was positively identified; the quantitation is an estimation
	M	Manual integrated compound.
	Q	One or more quality control criteria failed.
	U	Undetected at the Limit of Detection.

Client: HydroGeoLogic Inc

Job Number: 280-3084-1

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
Metals					
Prep Batch: 280-13851					
LCS 280-13851/2-A	Lab Control Sample	T	Solid	7471B	
MB 280-13851/1-A	Method Blank	T	Solid	7471B	
280-3084-1	MR-SD200-0409	T	Solid	7471B	
280-3084-1MS	Matrix Spike	T	Solid	7471B	
280-3084-1MSD	Matrix Spike Duplicate	T	Solid	7471B	
Prep Batch: 280-14632					
LCS 280-14632/2-A	Lab Control Sample	T	Solid	3050B	
MB 280-14632/1-A	Method Blank	T	Solid	3050B	
280-3084-1	MR-SD200-0409	T	Solid	3050B	
280-3084-1MS	Matrix Spike	T	Solid	3050B	
280-3084-1MSD	Matrix Spike Duplicate	T	Solid	3050B	
Prep Batch: 280-14634					
LCS 280-14634/2-A	Lab Control Sample	T	Solid	3050B	
MB 280-14634/1-A	Method Blank	T	Solid	3050B	
280-3084-1	MR-SD200-0409	T	Solid	3050B	
280-3084-1MS	Matrix Spike	T	Solid	3050B	
280-3084-1MSD	Matrix Spike Duplicate	T	Solid	3050B	
Analysis Batch:280-14830					
LCS 280-13851/2-A	Lab Control Sample	T	Solid	7471B	280-13851
MB 280-13851/1-A	Method Blank	T	Solid	7471B	280-13851
280-3084-1	MR-SD200-0409	T	Solid	7471B	280-13851
280-3084-1MS	Matrix Spike	T	Solid	7471B	280-13851
280-3084-1MSD	Matrix Spike Duplicate	T	Solid	7471B	280-13851
Analysis Batch:280-15054					
LCS 280-14632/2-A	Lab Control Sample	T	Solid	6010C	280-14632
MB 280-14632/1-A	Method Blank	T	Solid	6010C	280-14632
280-3084-1	MR-SD200-0409	T	Solid	6010C	280-14632
280-3084-1MS	Matrix Spike	T	Solid	6010C	280-14632
280-3084-1MSD	Matrix Spike Duplicate	T	Solid	6010C	280-14632
Analysis Batch:280-15246					
LCS 280-14634/2-A	Lab Control Sample	T	Solid	6020A	280-14634
MB 280-14634/1-A	Method Blank	T	Solid	6020A	280-14634
280-3084-1	MR-SD200-0409	T	Solid	6020A	280-14634
280-3084-1MS	Matrix Spike	T	Solid	6020A	280-14634
280-3084-1MSD	Matrix Spike Duplicate	T	Solid	6020A	280-14634

Report Basis

T = Total

Client: HydroGeoLogic Inc

Job Number: 280-3084-1

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
General Chemistry					
Analysis Batch:280-13777					
280-3084-1	MR-SD200-0409	T	Solid	D 2216	

Report Basis
T = Total

HPLC/IC					
Prep Batch: 280-13796					
280-3084-1	MR-SD200-0409	T	Solid	Prep/Air Dry	
280-3084-1MS	Matrix Spike	T	Solid	Prep/Air Dry	
280-3084-1MSD	Matrix Spike Duplicate	T	Solid	Prep/Air Dry	
Prep Batch: 280-14610					
LCS 280-14610/12-A	Lab Control Sample	T	Solid	Sieve/Ultrasoni	
MB 280-14610/11-A	Method Blank	T	Solid	Sieve/Ultrasoni	
280-3084-1	MR-SD200-0409	T	Solid	Sieve/Ultrasoni	280-13796
280-3084-1MS	Matrix Spike	T	Solid	Sieve/Ultrasoni	280-13796
280-3084-1MSD	Matrix Spike Duplicate	T	Solid	Sieve/Ultrasoni	280-13796
Analysis Batch:280-18009					
LCS 280-14610/12-A	Lab Control Sample	T	Solid	8330A	280-14610
MB 280-14610/11-A	Method Blank	T	Solid	8330A	280-14610
280-3084-1	MR-SD200-0409	T	Solid	8330A	280-14610
280-3084-1MS	Matrix Spike	T	Solid	8330A	280-14610
280-3084-1MSD	Matrix Spike Duplicate	T	Solid	8330A	280-14610
Analysis Batch:280-18232					
LCS 280-14610/12-A	Lab Control Sample	T	Solid	8330A	280-14610
MB 280-14610/11-A	Method Blank	T	Solid	8330A	280-14610
280-3084-1	MR-SD200-0409	T	Solid	8330A	280-14610

Report Basis
T = Total

Client: HydroGeoLogic Inc

Job Number: 280-3084-1

Laboratory Chronicle

Lab ID: **280-3084-1** **Client ID:** **MR-SD200-0409**

Sample Date/Time: 04/30/2010 13:35 Received Date/Time: 05/01/2010 10:30

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:Sieve/Ultrasoni	280-3084-C-1-D		280-18009	280-14610	05/10/2010 16:15	1	TAL DEN	ACF
A:8330A	280-3084-C-1-D		280-18009	280-14610	06/04/2010 00:40	1	TAL DEN	HKF
P:Sieve/Ultrasoni	280-3084-C-1-D		280-18232	280-14610	05/10/2010 16:15	1	TAL DEN	ACF
A:8330A	280-3084-C-1-D		280-18232	280-14610	06/04/2010 23:43	1	TAL DEN	HKF
P:3050B	280-3084-A-1-D		280-15054	280-14632	05/11/2010 08:00	1	TAL DEN	JW
A:6010C	280-3084-A-1-D		280-15054	280-14632	05/11/2010 22:41	1	TAL DEN	LT
P:3050B	280-3084-A-1-G		280-15246	280-14634	05/11/2010 08:00	1	TAL DEN	JW
A:6020A	280-3084-A-1-G		280-15246	280-14634	05/13/2010 01:38	1	TAL DEN	TEL
P:7471B	280-3084-A-1-A		280-14830	280-13851	05/08/2010 07:30	1	TAL DEN	KS
A:7471B	280-3084-A-1-A		280-14830	280-13851	05/08/2010 12:33	1	TAL DEN	KS
A:D 2216	280-3084-A-1		280-13777		05/04/2010 09:09	1	TAL DEN	PBB

Lab ID: **280-3084-1** **Client ID:** **MR-SD200-0409**

Sample Date/Time: 04/30/2010 13:35 Received Date/Time: 05/01/2010 10:30

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:Sieve/Ultrasoni	280-3084-C-1-E MS		280-18009	280-14610	05/10/2010 16:15	1	TAL DEN	ACF
A:8330A	280-3084-C-1-E MS		280-18009	280-14610	06/04/2010 01:03	1	TAL DEN	HKF
P:3050B	280-3084-A-1-E MS		280-15054	280-14632	05/11/2010 08:00	1	TAL DEN	JW
A:6010C	280-3084-A-1-E MS		280-15054	280-14632	05/11/2010 22:46	1	TAL DEN	LT
P:3050B	280-3084-A-1-H MS		280-15246	280-14634	05/11/2010 08:00	1	TAL DEN	JW
A:6020A	280-3084-A-1-H MS		280-15246	280-14634	05/13/2010 01:46	1	TAL DEN	TEL
P:7471B	280-3084-A-1-B MS		280-14830	280-13851	05/08/2010 07:30	1	TAL DEN	KS
A:7471B	280-3084-A-1-B MS		280-14830	280-13851	05/08/2010 12:42	1	TAL DEN	KS

Lab ID: **280-3084-1** **Client ID:** **MR-SD200-0409**

Sample Date/Time: 04/30/2010 13:35 Received Date/Time: 05/01/2010 10:30

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:Sieve/Ultrasoni	280-3084-C-1-F MSD		280-18009	280-14610	05/10/2010 16:15	1	TAL DEN	ACF
A:8330A	280-3084-C-1-F MSD		280-18009	280-14610	06/04/2010 01:27	1	TAL DEN	HKF
P:3050B	280-3084-A-1-F MSD		280-15054	280-14632	05/11/2010 08:00	1	TAL DEN	JW
A:6010C	280-3084-A-1-F MSD		280-15054	280-14632	05/11/2010 22:48	1	TAL DEN	LT
P:3050B	280-3084-A-1-I MSD		280-15246	280-14634	05/11/2010 08:00	1	TAL DEN	JW
A:6020A	280-3084-A-1-I MSD		280-15246	280-14634	05/13/2010 01:49	1	TAL DEN	TEL
P:7471B	280-3084-A-1-C MSD		280-14830	280-13851	05/08/2010 07:30	1	TAL DEN	KS
A:7471B	280-3084-A-1-C MSD		280-14830	280-13851	05/08/2010 12:44	1	TAL DEN	KS

Client: HydroGeoLogic Inc

Job Number: 280-3084-1

Laboratory Chronicle

Lab ID: **280-3084-1 SD** **Client ID:** **MR-SD200-0409**

Sample Date/Time: 04/30/2010 13:35 Received Date/Time: 05/01/2010 10:30

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:3050B	280-3084-A-1-D SD ^5		280-15054	280-14632	05/11/2010 08:00	5	TAL DEN	JW
A:6010C	280-3084-A-1-D SD ^5		280-15054	280-14632	05/11/2010 22:44	5	TAL DEN	LT
P:3050B	280-3084-A-1-D PDS		280-15054	280-14632	05/11/2010 08:00	1	TAL DEN	JW
A:6010C	280-3084-A-1-D PDS		280-15054	280-14632	05/11/2010 22:50	1	TAL DEN	LT
P:3050B	280-3084-A-1-G SD ^5		280-15246	280-14634	05/11/2010 08:00	5	TAL DEN	JW
A:6020A	280-3084-A-1-G SD ^5		280-15246	280-14634	05/13/2010 01:41	5	TAL DEN	TEL
P:3050B	280-3084-A-1-G PDS		280-15246	280-14634	05/11/2010 08:00	1	TAL DEN	JW
A:6020A	280-3084-A-1-G PDS		280-15246	280-14634	05/13/2010 01:44	1	TAL DEN	TEL
P:7471B	280-3084-A-1-A SD ^5		280-14830	280-13851	05/08/2010 07:30	5	TAL DEN	KS
A:7471B	280-3084-A-1-A SD ^5		280-14830	280-13851	05/08/2010 12:35	5	TAL DEN	KS

Lab ID: **MB** **Client ID:** **N/A**

Sample Date/Time: N/A Received Date/Time: N/A

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:Sieve/Ultrasoni	MB 280-14610/11-A		280-18009	280-14610	05/10/2010 16:15	1	TAL DEN	ACF
A:8330A	MB 280-14610/11-A		280-18009	280-14610	06/03/2010 21:08	1	TAL DEN	HKF
P:Sieve/Ultrasoni	MB 280-14610/11-A		280-18232	280-14610	05/10/2010 16:15	1	TAL DEN	ACF
A:8330A	MB 280-14610/11-A		280-18232	280-14610	06/04/2010 20:31	1	TAL DEN	HKF
P:3050B	MB 280-14632/1-A		280-15054	280-14632	05/11/2010 08:00	1	TAL DEN	JW
A:6010C	MB 280-14632/1-A		280-15054	280-14632	05/11/2010 22:37	1	TAL DEN	LT
P:3050B	MB 280-14634/1-A		280-15246	280-14634	05/11/2010 08:00	1	TAL DEN	JW
A:6020A	MB 280-14634/1-A		280-15246	280-14634	05/13/2010 01:33	1	TAL DEN	TEL
P:7471B	MB 280-13851/1-A		280-14830	280-13851	05/08/2010 07:30	1	TAL DEN	KS
A:7471B	MB 280-13851/1-A		280-14830	280-13851	05/08/2010 12:28	1	TAL DEN	KS

Client: HydroGeoLogic Inc

Job Number: 280-3084-1

Laboratory Chronicle

Lab ID: **LCS** **Client ID:** **N/A**

Sample Date/Time: N/A Received Date/Time: N/A

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:Sieve/Ultrasoni	LCS 280-14610/12-A		280-18009	280-14610	05/10/2010 16:15	1	TAL DEN	ACF
A:8330A	LCS 280-14610/12-A		280-18009	280-14610	06/03/2010 21:32	1	TAL DEN	HKF
P:Sieve/Ultrasoni	LCS 280-14610/12-A		280-18232	280-14610	05/10/2010 16:15	1	TAL DEN	ACF
A:8330A	LCS 280-14610/12-A		280-18232	280-14610	06/04/2010 21:03	1	TAL DEN	HKF
P:3050B	LCS 280-14632/2-A		280-15054	280-14632	05/11/2010 08:00	1	TAL DEN	JW
A:6010C	LCS 280-14632/2-A		280-15054	280-14632	05/11/2010 22:39	1	TAL DEN	LT
P:3050B	LCS 280-14634/2-A		280-15246	280-14634	05/11/2010 08:00	1	TAL DEN	JW
A:6020A	LCS 280-14634/2-A		280-15246	280-14634	05/13/2010 01:36	1	TAL DEN	TEL
P:7471B	LCS 280-13851/2-A		280-14830	280-13851	05/08/2010 07:30	1	TAL DEN	KS
A:7471B	LCS 280-13851/2-A		280-14830	280-13851	05/08/2010 12:30	1	TAL DEN	KS

Lab References:
TAL DEN = TestAmerica Denver

Method 8330A

Nitroaromatics and Nitramines (HPLC) by Method 8330A

FORM II
HPLC/IC SURROGATE RECOVERY

Lab Name: TestAmerica Denver Job No.: 280-3084-1

SDG No.:

Matrix: Solid Level: Low

GC Column (1): UltraCarb5u ID: 4.6 (mm) GC Column (2): Luna-phenyl 4.6 (mm)

Client Sample ID	Lab Sample ID	12DNB2 #	12DNB1 #
MR-SD200-0409	280-3084-1	101	
MR-SD200-0409	280-3084-1		107
	MB 280-14610/11-A	101	
	MB 280-14610/11-A		97
	LCS 280-14610/12-A	103	
	LCS 280-14610/12-A		98
MR-SD200-0409 MS	280-3084-1 MS		109 M
MR-SD200-0409 MSD	280-3084-1 MSD		104 M

	QC LIMITS
12DNB = 1,2-Dinitrobenzene	83-122

Column to be used to flag recovery values

FORM II 8330A

FORM III
HPLC/IC LAB CONTROL SAMPLE RECOVERY

Lab Name: TestAmerica Denver Job No.: 280-3084-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: 030-3001.D

Lab ID: LCS 280-14610/12-A Client ID:

COMPOUND	SPIKE ADDED (mg/Kg)	LCS CONCENTRATION (mg/Kg)	LCS % REC	QC LIMITS REC	#
2-Amino-4,6-dinitrotoluene	2.39	2.72	114	80-125	
4-Amino-2,6-dinitrotoluene	2.39	2.42	101	80-125	
2,4-Dinitrotoluene	2.39	2.61	109	80-125	
2,6-Dinitrotoluene	2.39	2.12	89	80-120	
2,4,6-Trinitrotoluene	2.39	2.34	98	55-140	
3-Nitrotoluene	2.39	2.53	106	75-120	
m-Nitrotoluene	2.39	2.53	106	75-120	
2-Nitrotoluene	2.39	2.54	106	80-125	
o-Nitrotoluene	2.39	2.54	106	80-125	
4-Nitrotoluene	2.39	2.53	106	75-125	
p-Nitrotoluene	2.39	2.53	106	75-125	
Nitrobenzene	2.39	2.58	108	75-125	
1,3,5-Trinitrobenzene	2.39	2.40	100	75-125	
1,3-Dinitrobenzene	2.39	2.45	102	80-125	
HMX	2.39	2.43	101	75-125	M
Tetryl	2.39	2.36	99	10-150	
PETN	23.9	24.1	101	69-132	
Nitroglycerin	23.9	26.3	110	68-131	

Column to be used to flag recovery and RPD values

FORM III 8330A

FORM III
HPLC/IC LAB CONTROL SAMPLE RECOVERY

Lab Name: TestAmerica Denver Job No.: 280-3084-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: 004-0401.D

Lab ID: LCS 280-14610/12-A Client ID:

COMPOUND	SPIKE ADDED (mg/Kg)	LCS CONCENTRATION (mg/Kg)	LCS % REC	QC LIMITS REC	#
RDX	2.39	2.62	109	70-135	

Column to be used to flag recovery and RPD values

FORM III 8330A

FORM III
HPLC/IC MATRIX SPIKE RECOVERY

Lab Name: TestAmerica Denver Job No.: 280-3084-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: 039-3901.D

Lab ID: 280-3084-1 MS Client ID: MR-SD200-0409 MS

COMPOUND	SPIKE ADDED (mg/Kg)	SAMPLE CONCENTRATION (mg/Kg)	MS CONCENTRATION (mg/Kg)	MS % REC	QC LIMITS REC	#
2-Amino-4,6-dinitrotoluene	2.42	0.086 U	2.78	115	80-125	M
4-Amino-2,6-dinitrotoluene	2.42	0.086 U	2.30	95	80-125	M
2,4-Dinitrotoluene	2.42	0.086 U	2.44	101	80-125	M
2,6-Dinitrotoluene	2.42	0.086 U	2.32	96	80-120	M
2,4,6-Trinitrotoluene	2.42	0.086 U	2.39	99	55-140	M
m-Nitrotoluene	2.42	0.086 U	2.69	111	75-120	M
o-Nitrotoluene	2.42	0.086 U	2.50	104	80-125	M
p-Nitrotoluene	2.42	0.17 U	2.54	105	75-125	M
Nitrobenzene	2.42	0.086 U	2.82	117	75-125	M
1,3,5-Trinitrobenzene	2.42	0.086 U	2.64	109	75-125	M
1,3-Dinitrobenzene	2.42	0.086 U	2.84	118	80-125	M
HMX	2.42	0.086 U	2.34	97	75-125	M
RDX	2.42	0.086 U	2.95	122	70-135	M
Tetryl	2.42	0.077 J	2.40	96	10-150	M
PETN	24.2	0.86 U	24.5	102	69-132	
Nitroglycerin	24.2	0.48 U	25.1	104	68-131	

Column to be used to flag recovery and RPD values

FORM III 8330A

FORM III
HPLC/IC MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: TestAmerica Denver Job No.: 280-3084-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: 040-4001.D

Lab ID: 280-3084-1 MSD Client ID: MR-SD200-0409 MSD

COMPOUND	SPIKE ADDED (mg/Kg)	MSD CONCENTRATION (mg/Kg)	MSD % REC	% RPD	QC LIMITS RPD	QC LIMITS REC	#
2-Amino-4,6-dinitrotoluene	2.43	2.92	120	5	30	80-125	M
4-Amino-2,6-dinitrotoluene	2.43	2.42	100	5	30	80-125	M
2,4-Dinitrotoluene	2.43	2.52	104	3	30	80-125	M
2,6-Dinitrotoluene	2.43	2.33	96	0	30	80-120	M
2,4,6-Trinitrotoluene	2.43	2.41	99	1	30	55-140	M
m-Nitrotoluene	2.43	2.69	111	0	30	75-120	
o-Nitrotoluene	2.43	2.63	108	5	30	80-125	M
p-Nitrotoluene	2.43	2.58	106	2	30	75-125	M
Nitrobenzene	2.43	2.67	110	5	30	75-125	M
1,3,5-Trinitrobenzene	2.43	2.62	108	1	30	75-125	M
1,3-Dinitrobenzene	2.43	2.66	110	7	30	80-125	M
HMX	2.43	2.39	98	2	30	75-125	M
RDX	2.43	3.07	126	4	30	70-135	M
Tetryl	2.43	2.45	98	2	30	10-150	M
PETN	24.3	25.1	103	2	40	69-132	M
Nitroglycerin	24.3	25.5	105	2	30	68-131	M

Column to be used to flag recovery and RPD values

FORM III 8330A

FORM IV
HPLC/IC METHOD BLANK SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-3084-1

SDG No.:

Lab Sample ID: MB 280-14610/11-A

Matrix: Solid Date Extracted: 05/10/2010 16:15

Lab File ID:(1) 029-2901.D Lab File ID:(2) 003-0301.D

Date Analyzed:(1) 06/03/2010 21:08 Date Analyzed:(2) 06/04/2010 20:31

Instrument ID:(1) HPLC_X3 Instrument ID:(2) HPLC_Q

GC Column:(1) UltraCarb5uO ID: 4.6(mm) GC Column:(2) Luna-phenylh ID: 4.6(mm)

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	DATE ANALYZED 1	DATE ANALYZED 2
	LCS 280-14610/12-A	06/03/2010 21:32	06/04/2010 21:03
MR-SD200-0409	280-3084-1	06/04/2010 00:40	
MR-SD200-0409 MS	280-3084-1 MS	06/04/2010 01:03	
MR-SD200-0409 MSD	280-3084-1 MSD	06/04/2010 01:27	

FORM X
IDENTIFICATION SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-3084-1

SDG No.:

Client Sample ID: MR-SD200-0409 Lab Sample ID: 280-3084-1

Instrument ID (1): HPLC_X3 Instrument ID (2): HPLC_Q

Date Analyzed (1): 06/04/2010 00:40 Date Analyzed (2): 06/04/2010 23:43

GC Column (1): UltraCarb5uOD ID: 4.6(mm) GC Column (2): Luna-phenylhe ID: 4.6(mm)

ANALYTE	COL	PEAK	RT	RT WINDOW		CONCENTRATION		RPD
				FROM	TO	PEAK	MEAN	
Tetryl	1		13.32	13.17	13.47	0.077		58.4
	2		21.57	21.29	21.59	0.14		

FORM X
IDENTIFICATION SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-3084-1

SDG No.:

Client Sample ID: Lab Sample ID: LCS 280-14610/12-A

Instrument ID (1): HPLC_X3 Instrument ID (2): HPLC_Q

Date Analyzed (1): 06/03/2010 21:32 Date Analyzed (2): 06/04/2010 21:03

GC Column (1): UltraCarb5uOD ID: 4.6(mm) GC Column (2): Luna-phenylhe ID: 4.6(mm)

ANALYTE	COL	PEAK	RT	RT WINDOW		CONCENTRATION		RPD
				FROM	TO	PEAK	MEAN	
HMX	1		7.57	7.51	7.81	2.43		0.1
	2		6.14	6.03	6.33	2.42		
RDX	1		9.93	9.77	10.07	3.44		27.2
	2		7.96	7.85	8.15	2.62		
1,3,5-Trinitrobenzene	1		11.45	11.29	11.59	2.40		5.0
	2		16.81	16.65	16.95	2.52		
1,3-Dinitrobenzene	1		12.48	12.35	12.65	2.45		3.8
	2		13.75	13.63	13.93	2.54		
Nitrobenzene	1		13.09	12.95	13.25	2.58		1.8
	2		10.62	10.53	10.83	2.53		
Tetryl	1		13.31	13.17	13.47	2.36		9.7
	2		21.50	21.29	21.59	2.60		
Nitroglycerin	1		13.41	13.33	13.63	26.3		12.1
	2		13.79	13.62	13.92	23.3		
2,4,6-Trinitrotoluene	1		13.96	13.81	14.11	2.34		10.6
	2		22.47	22.27	22.57	2.60		
4-Amino-2,6-dinitrotoluene	1		14.27	14.14	14.44	2.42		12.8
	2		15.28	15.17	15.47	2.75		
2-Amino-4,6-dinitrotoluene	1		14.53	14.41	14.71	2.72		4.4
	2		16.17	16.04	16.34	2.84		
2,6-Dinitrotoluene	1		14.81	14.65	14.95	2.12		15.9
	2		17.74	17.59	17.89	2.49		
2,4-Dinitrotoluene	1		14.98	14.84	15.14	2.61		0.1
	2		18.24	18.08	18.38	2.60		
2-Nitrotoluene	1		15.95	15.81	16.11	2.54		5.5
	2		14.66	14.53	14.83	2.40		
o-Nitrotoluene	1		15.95	15.81	16.11	2.54		5.5
	2		14.66	14.53	14.83	2.40		
4-Nitrotoluene	1		16.43	16.29	16.59	2.53		3.3
	2		14.95	14.83	15.13	2.45		
p-Nitrotoluene	1		16.43	16.29	16.59	2.53		3.3
	2		14.95	14.83	15.13	2.45		
3-Nitrotoluene	1		16.99	16.85	17.15	2.53		2.7
	2		15.82	15.68	15.98	2.46		
m-Nitrotoluene	1		16.99	16.85	17.15	2.53		2.7
	2		15.82	15.68	15.98	2.46		
PETN	1		17.05	17.03	17.33	24.1		7.3
	2		23.21	22.93	23.23	25.9		

FORM I
HPLC/IC ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver | Job No.: 280-3084-1

SDG No.:

Client Sample ID: MR-SD200-0409 | Lab Sample ID: 280-3084-1

Matrix: Solid | Lab File ID: 038-3801.D

Analysis Method: 8330A | Date Collected: 04/30/2010 13:35

Extraction Method: Sieve/Ultrasoni | Date Extracted: 05/10/2010 16:15

Sample wt/vol: 2.10(g) | Date Analyzed: 06/04/2010 00:40

Con. Extract Vol.: 20000(uL) | Dilution Factor: 1

Injection Volume: 100(uL) | GC Column: UltraCarb5uODS ID: 4.6(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 18009 | Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	DL
35572-78-2	2-Amino-4,6-dinitrotoluene	0.086	U	0.24	0.043
19406-51-0	4-Amino-2,6-dinitrotoluene	0.086	U	0.24	0.037
121-14-2	2,4-Dinitrotoluene	0.086	U	0.24	0.047
606-20-2	2,6-Dinitrotoluene	0.086	U	0.24	0.052
118-96-7	2,4,6-Trinitrotoluene	0.086	U	0.24	0.055
99-08-1	3-Nitrotoluene	0.086	U	0.48	0.052
88-72-2	2-Nitrotoluene	0.086	U	0.24	0.080
99-99-0	4-Nitrotoluene	0.17	U	0.38	0.10
98-95-3	Nitrobenzene	0.086	U	0.24	0.058
99-35-4	1,3,5-Trinitrobenzene	0.086	U	0.24	0.068
99-65-0	1,3-Dinitrobenzene	0.086	U	0.24	0.058
2691-41-0	HMX	0.086	U	0.24	0.074
121-82-4	RDX	0.086	U Q	0.25	0.081
479-45-8	Tetryl	0.077	J M	0.48	0.052

CAS NO.	SURROGATE	%REC	LIMITS	Q
528-29-0	1,2-Dinitrobenzene	107	83-122	

FORM I
HPLC/IC ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver
Job No.: 280-3084-1
SDG No.:
Client Sample ID: MR-SD200-0409
Lab Sample ID: 280-3084-1
Matrix: Solid
Lab File ID: 038-3801.D
Analysis Method: 8330A
Date Collected: 04/30/2010 13:35
Extraction Method: Sieve/Ultrasoni
Date Extracted: 05/10/2010 16:15
Sample wt/vol: 2.10(g)
Date Analyzed: 06/04/2010 00:40
Con. Extract Vol.: 20000(uL)
Dilution Factor: 1
Injection Volume: 100(uL)
GC Column: UltraCarb5uODS ID: 4.6(mm)
% Moisture:
GPC Cleanup:(Y/N) N
Analysis Batch No.: 18009
Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	DL
78-11-5	PETN	0.86	U	3.8	0.83
55-63-0	Nitroglycerin	0.48	U	4.9	0.18

FORM I
HPLC/IC ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver | Job No.: 280-3084-1

SDG No.:

Client Sample ID: MR-SD200-0409 | Lab Sample ID: 280-3084-1

Matrix: Solid | Lab File ID: 009-0901.D

Analysis Method: 8330A | Date Collected: 04/30/2010 13:35

Extraction Method: Sieve/Ultrasoni | Date Extracted: 05/10/2010 16:15

Sample wt/vol: 2.10(g) | Date Analyzed: 06/04/2010 23:43

Con. Extract Vol.: 20000(uL) | Dilution Factor: 1

Injection Volume: 100(uL) | GC Column: Luna-phenylhex ID: 4.6(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 18232 | Units: mg/Kg

CAS NO.	SURROGATE	%REC	LIMITS	Q
528-29-0	1,2-Dinitrobenzene	101	83-122	

FORM VI
HPLC/IC INITIAL CALIBRATION DATA
EXTERNAL STANDARD RETENTION TIME SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-3084-1 Analy Batch No.: 8112

SDG No.:

Instrument ID: HPLC_Q GC Column: Luna-phenyl ID: 4.6(mm) Heated Purge: (Y/N) N

Calibration Start Date: 03/17/2010 14:50 Calibration End Date: 03/17/2010 18:34 Calibration ID: 1013

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 280-8112/8	009-0901.D
Level 2	IC 280-8112/7	008-0801.D
Level 3	IC 280-8112/6	007-0701.D
Level 4	IC 280-8112/5	006-0601.D
Level 5	IC 280-8112/4	005-0501.D
Level 6	IC 280-8112/3	004-0401.D
Level 7	IC 280-8112/2	003-0301.D
Level 8	IC 280-8112/1	002-0201.D

ANALYTE	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 6	LVL 7	LVL 8			RT WINDOW	AVG RT
2,6-diamino-4-nitrotoluene	3.923	3.925	3.920	3.919	3.913	3.904	3.889	3.878			3.769 - 4.069	3.909
2,4-diamino-6-nitrotoluene	4.336	4.338	4.327	4.333	4.320	4.317	4.303	4.331			4.183 - 4.483	4.326
HMX	6.050	6.058	6.040	6.046	6.040	6.037	6.023	6.024			5.896 - 6.196	6.040
MNX	6.690	6.698	6.680	6.686	6.673	6.671	6.656	6.651			6.536 - 6.836	6.676
RDX	7.876	7.885	7.860	7.866	7.853	7.851	7.836	7.824			7.716 - 8.016	7.856
Nitrobenzene	10.503	10.511	10.494	10.493	10.480	10.471	10.449	10.438			10.343 - 10.643	10.480
3,5-Dinitroaniline	13.023	13.031	13.007	13.006	12.987	12.984	12.963	12.944			12.856 - 13.156	12.993
1,3-Dinitrobenzene	13.583	13.591	13.574	13.566	13.553	13.551	13.529	13.511			13.416 - 13.716	13.557
2-Nitrotoluene	14.450	14.458	14.440	14.433	14.420	14.411	14.396	14.371			14.283 - 14.583	14.422
4-Nitrotoluene	14.743	14.758	14.734	14.726	14.713	14.711	14.689	14.671			14.576 - 14.876	14.718
4-Amino-2,6-dinitrotoluene	15.030	15.045	15.020	15.013	15.000	14.997	14.976	14.958			14.863 - 15.163	15.005
3-Nitrotoluene	15.590	15.605	15.580	15.579	15.567	15.557	15.543	15.518			15.429 - 15.729	15.567
2-Amino-4,6-dinitrotoluene	15.916	15.931	15.907	15.899	15.893	15.884	15.863	15.838			15.749 - 16.049	15.892
1,3,5-Trinitrobenzene	16.610	16.611	16.594	16.586	16.580	16.571	16.556	16.531			16.436 - 16.736	16.580
2,6-Dinitrotoluene	17.476	17.491	17.467	17.466	17.460	17.451	17.429	17.398			17.316 - 17.616	17.455
2,4-Dinitrotoluene	17.990	17.998	17.974	17.973	17.960	17.951	17.936	17.904			17.823 - 18.123	17.961
Tetryl	21.183	21.191	21.160	21.159	21.160	21.144	21.129	21.091			21.009 - 21.309	21.152
2,4,6-Trinitrotoluene	22.183	22.198	22.174	22.166	22.167	22.151	22.129	22.098			22.016 - 22.316	22.158
1,2-Dinitrobenzene	11.263	11.285	11.260	11.259	11.247	11.244	11.223	11.211			11.109 - 11.409	11.249

FORM VI
HPLC/IC INITIAL CALIBRATION DATA
EXTERNAL STANDARD CURVE EVALUTION

Lab Name: TestAmerica Denver Job No.: 280-3084-1 Analy Batch No.: 8112

SDG No.:

Instrument ID: HPLC_Q GC Column: Luna-phenyl ID: 4.6(mm) Heated Purge: (Y/N) N

Calibration Start Date: 03/17/2010 14:50 Calibration End Date: 03/17/2010 18:34 Calibration ID: 1013

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 280-8112/8	009-0901.D
Level 2	IC 280-8112/7	008-0801.D
Level 3	IC 280-8112/6	007-0701.D
Level 4	IC 280-8112/5	006-0601.D
Level 5	IC 280-8112/4	005-0501.D
Level 6	IC 280-8112/3	004-0401.D
Level 7	IC 280-8112/2	003-0301.D
Level 8	IC 280-8112/1	002-0201.D

ANALYTE	RRF				CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 5	LVL 2 LVL 6	LVL 3 LVL 7	LVL 4 LVL 8		B	M1	M2								
2,6-diamino-4-nitrotoluene	323600 364333	369080 359407	366790 361913	363972 358146	Ave		358405				4.1					
2,4-diamino-6-nitrotoluene	239800 241010	260200 238910	245220 244545	235968 243898	Ave		243694				3.0					
HMX	154700 153103	152300 151991	151020 151357	151724 153884	Ave		152510				0.8					
MNX	225800 219435	213700 215931	216020 217739	217460 221623	Ave		218464				1.7					
RDX	196600 189218	189480 188260	188610 186818	189448 189648	Ave		189760				1.5					
Nitrobenzene	359400 366198	363080 368980	365560 369452	363732 374212	Ave		366327				1.2					
3,5-Dinitroaniline	441000 450585	458120 447029	451710 444755	423872 447765	Ave		445604				2.3					
1,3-Dinitrobenzene	566100 590375	581360 583409	583850 581824	585020 580744	Ave		581585				1.2					
2-Nitrotoluene	250900 229493	228000 228979	225140 229579	225128 229272	Ave		230811				3.6					
4-Nitrotoluene	225400 202583	205120 204937	203110 203705	203272 206002	Ave		206766				3.7					
4-Amino-2,6-dinitrotoluene	270900 264978	261600 262513	265760 264755	263516 260624	Ave		264331				1.2					
3-Nitrotoluene	231900 251390	247680 252060	250440 252296	248612 251639	Ave		248252				2.7					
2-Amino-4,6-dinitrotoluene	368600 352165	358900 351270	356850 352405	352164 349406	Ave		355220				1.8					
1,3,5-Trinitrobenzene	415900 418585	409440 414869	420990 415069	414704 417827	Ave		415923				0.8					

Note: The m1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
HPLC/IC INITIAL CALIBRATION DATA
EXTERNAL STANDARD CURVE EVALUTION

Lab Name: TestAmerica Denver Job No.: 280-3084-1 Analy Batch No.: 8112

SDG No.:

Instrument ID: HPLC_Q GC Column: Luna-phenyl ID: 4.6(mm) Heated Purge: (Y/N) N

Calibration Start Date: 03/17/2010 14:50 Calibration End Date: 03/17/2010 18:34 Calibration ID: 1013

ANALYTE	RRF				CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 5	LVL 2 LVL 6	LVL 3 LVL 7	LVL 4 LVL 8		B	M1	M2								
2,6-Dinitrotoluene	264500 261570	264660 259690	261210 259894	263188 264947	Ave		262457				0.8					
2,4-Dinitrotoluene	487400 504860	502120 501037	508200 501640	506204 512489	Ave		502994				1.5					
Tetryl	309400 313570	311220 312800	307070 309805	310408 316844	Ave		311390				1.0					
2,4,6-Trinitrotoluene	387200 383300	374760 385406	385260 378162	384036 388995	Ave		383390				1.2					
1,2-Dinitrobenzene	231000 250313	251260 250567	248070 250121	247400 253886	Ave		247827				2.9					

Note: The m1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
HPLC/IC INITIAL CALIBRATION DATA
EXTERNAL STANDARD RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Denver Job No.: 280-3084-1 Analy Batch No.: 8112

SDG No.:

Instrument ID: HPLC_Q GC Column: Luna-phenyl ID: 4.6(mm) Heated Purge: (Y/N) N

Calibration Start Date: 03/17/2010 14:50 Calibration End Date: 03/17/2010 18:34 Calibration ID: 1013

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 280-8112/8	009-0901.D
Level 2	IC 280-8112/7	008-0801.D
Level 3	IC 280-8112/6	007-0701.D
Level 4	IC 280-8112/5	006-0601.D
Level 5	IC 280-8112/4	005-0501.D
Level 6	IC 280-8112/3	004-0401.D
Level 7	IC 280-8112/2	003-0301.D
Level 8	IC 280-8112/1	002-0201.D

ANALYTE	CURVE TYPE	RESPONSE					CONCENTRATION (UG/ML)				
		LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5
2,6-diamino-4-nitrotoluene	Ave	3236 251585	18454 361913	36679 895365	90993	145733	0.0100 0.700	0.0500 1.00	0.100 2.50	0.250	0.400
2,4-diamino-6-nitrotoluene	Ave	2398 167237	13010 244545	24522 609746	58992	96404	0.0100 0.700	0.0500 1.00	0.100 2.50	0.250	0.400
HMX	Ave	1547 106394	7615 151357	15102 384710	37931	61241	0.0100 0.700	0.0500 1.00	0.100 2.50	0.250	0.400
MNX	Ave	2258 151152	10685 217739	21602 554057	54365	87774	0.0100 0.700	0.0500 1.00	0.100 2.50	0.250	0.400
RDX	Ave	1966 131782	9474 186818	18861 474120	47362	75687	0.0100 0.700	0.0500 1.00	0.100 2.50	0.250	0.400
Nitrobenzene	Ave	3594 258286	18154 369452	36556 935529	90933	146479	0.0100 0.700	0.0500 1.00	0.100 2.50	0.250	0.400
3,5-Dinitroaniline	Ave	4410 312920	22906 444755	45171 1119412	105968	180234	0.0100 0.700	0.0500 1.00	0.100 2.50	0.250	0.400
1,3-Dinitrobenzene	Ave	5661 408386	29068 581824	58385 1451861	146255	236150	0.0100 0.700	0.0500 1.00	0.100 2.50	0.250	0.400
2-Nitrotoluene	Ave	2509 160285	11400 229579	22514 573180	56282	91797	0.0100 0.700	0.0500 1.00	0.100 2.50	0.250	0.400
4-Nitrotoluene	Ave	2254 143456	10256 203705	20311 515004	50818	81033	0.0100 0.700	0.0500 1.00	0.100 2.50	0.250	0.400
4-Amino-2,6-dinitrotoluene	Ave	2709 183759	13080 264755	26576 651560	65879	105991	0.0100 0.700	0.0500 1.00	0.100 2.50	0.250	0.400
3-Nitrotoluene	Ave	2319 176442	12384 252296	25044 629097	62153	100556	0.0100 0.700	0.0500 1.00	0.100 2.50	0.250	0.400
2-Amino-4,6-dinitrotoluene	Ave	3686 245889	17945 352405	35685 873514	88041	140866	0.0100 0.700	0.0500 1.00	0.100 2.50	0.250	0.400
1,3,5-Trinitrobenzene	Ave	4159 290408	20472 415069	42099 1044567	103676	167434	0.0100 0.700	0.0500 1.00	0.100 2.50	0.250	0.400
2,6-Dinitrotoluene	Ave	2645 181783	13233 259894	26121 662367	65797	104628	0.0100 0.700	0.0500 1.00	0.100 2.50	0.250	0.400

FORM VI
HPLC/IC INITIAL CALIBRATION DATA
EXTERNAL STANDARD RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Denver Job No.: 280-3084-1 Analy Batch No.: 8112

SDG No.:

Instrument ID: HPLC_Q GC Column: Luna-phenyl ID: 4.6(mm) Heated Purge: (Y/N) N

Calibration Start Date: 03/17/2010 14:50 Calibration End Date: 03/17/2010 18:34 Calibration ID: 1013

ANALYTE	CURVE TYPE	RESPONSE					CONCENTRATION (UG/ML)				
		LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5
2,4-Dinitrotoluene	Ave	4874 350726	25106 501640	50820 1281223	126551	201944	0.0100 0.700	0.0500 1.00	0.100 2.50	0.250	0.400
Tetryl	Ave	3094 218960	15561 309805	30707 792109	77602	125428	0.0100 0.700	0.0500 1.00	0.100 2.50	0.250	0.400
2,4,6-Trinitrotoluene	Ave	3872 269784	18738 378162	38526 972487	96009	153320	0.0100 0.700	0.0500 1.00	0.100 2.50	0.250	0.400
1,2-Dinitrobenzene	Ave	2310 175397	12563 250121	24807 634715	61850	100125	0.0100 0.700	0.0500 1.00	0.100 2.50	0.250	0.400

Curve Type Legend:
Ave = Average

FORM VI
HPLC/IC INITIAL CALIBRATION DATA
EXTERNAL STANDARD RETENTION TIME SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-3084-1 Analy Batch No.: 8112

SDG No.:

Instrument ID: HPLC_Q GC Column: Luna-phenyl ID: 4.6(mm) Heated Purge: (Y/N) N

Calibration Start Date: 03/17/2010 14:50 Calibration End Date: 03/17/2010 18:34 Calibration ID: 1014

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 280-8112/8	009-0901.D
Level 2	IC 280-8112/7	008-0801.D
Level 3	IC 280-8112/6	007-0701.D
Level 4	IC 280-8112/5	006-0601.D
Level 5	IC 280-8112/4	005-0501.D
Level 6	IC 280-8112/3	004-0401.D
Level 7	IC 280-8112/2	003-0301.D
Level 8	IC 280-8112/1	002-0201.D

ANALYTE	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 6	LVL 7	LVL 8			RT WINDOW	AVG RT
Nitroglycerin	13.596	13.611	13.587	13.586	13.567	13.564	13.549	13.524			13.436 - 13.736	13.573
PETN	22.903	22.911	22.880	22.879	22.880	22.864	22.843	22.811			22.729 - 23.029	22.872

FORM VI
HPLC/IC INITIAL CALIBRATION DATA
EXTERNAL STANDARD CURVE EVALUTION

Lab Name: TestAmerica Denver Job No.: 280-3084-1 Analy Batch No.: 8112

SDG No.:

Instrument ID: HPLC_Q GC Column: Luna-phenyl ID: 4.6(mm) Heated Purge: (Y/N) N

Calibration Start Date: 03/17/2010 14:50 Calibration End Date: 03/17/2010 18:34 Calibration ID: 1014

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 280-8112/8	009-0901.D
Level 2	IC 280-8112/7	008-0801.D
Level 3	IC 280-8112/6	007-0701.D
Level 4	IC 280-8112/5	006-0601.D
Level 5	IC 280-8112/4	005-0501.D
Level 6	IC 280-8112/3	004-0401.D
Level 7	IC 280-8112/2	003-0301.D
Level 8	IC 280-8112/1	002-0201.D

ANALYTE	RRF				CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 5	LVL 2 LVL 6	LVL 3 LVL 7	LVL 4 LVL 8		B	M1	M2								
Nitroglycerin	197210 176300	174446 173946	173988 172939	176876 174020	Lin2	0	173486							0.9998		
PETN	135050 140125	139790 139051	139792 138515	139943 139880	Ave		139018				1.2					

Note: The m1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
HPLC/IC INITIAL CALIBRATION DATA
EXTERNAL STANDARD RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Denver Job No.: 280-3084-1 Analy Batch No.: 8112

SDG No.:

Instrument ID: HPLC_Q GC Column: Luna-phenyl ID: 4.6(mm) Heated Purge: (Y/N) N

Calibration Start Date: 03/17/2010 14:50 Calibration End Date: 03/17/2010 18:34 Calibration ID: 1014

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 280-8112/8	009-0901.D
Level 2	IC 280-8112/7	008-0801.D
Level 3	IC 280-8112/6	007-0701.D
Level 4	IC 280-8112/5	006-0601.D
Level 5	IC 280-8112/4	005-0501.D
Level 6	IC 280-8112/3	004-0401.D
Level 7	IC 280-8112/2	003-0301.D
Level 8	IC 280-8112/1	002-0201.D

ANALYTE	CURVE TYPE	RESPONSE					CONCENTRATION (UG/ML)				
		LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5
Nitroglycerin	Lin2	19721 1217620	87223 1729388	173988 4350504	442190	705199	0.100 7.00	0.500 10.0	1.00 25.0	2.50	4.00
PETN	Ave	13505 973360	69895 1385149	139792 3496994	349857	560501	0.100 7.00	0.500 10.0	1.00 25.0	2.50	4.00

Curve Type Legend:

Ave = Average
Lin2 = Linear 1/conc^2

FORM VI
HPLC/IC INITIAL CALIBRATION DATA
EXTERNAL STANDARD RETENTION TIME SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-3084-1 Analy Batch No.: 17891

SDG No.:

Instrument ID: HPLC_X3 GC Column: UltraCarb5u ID: 4.6(mm) Heated Purge: (Y/N) N

Calibration Start Date: 05/26/2010 21:02 Calibration End Date: 05/26/2010 21:02 Calibration ID: 1747

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 280-17891/8	009-0901.D
Level 2	IC 280-17891/7	008-0801.D
Level 3	IC 280-17891/6	007-0701.D
Level 4	IC 280-17891/5	006-0601.D
Level 5	IC 280-17891/4	005-0501.D
Level 6	IC 280-17891/3	004-0401.D
Level 7	IC 280-17891/2	003-0301.D
Level 8	IC 280-17891/1	002-0201.D

ANALYTE	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 6	LVL 7	LVL 8			RT WINDOW	AVG RT
2,6-diamino-4-nitrotoluene	7.412	7.409	7.413	7.404	7.404	7.399	7.394	7.384			7.254 - 7.554	7.402
HMX	7.779	7.783	7.787	7.784	7.778	7.779	7.774	7.778			7.634 - 7.934	7.780
2,4-diamino-6-nitrotoluene	7.919	7.923	7.933	7.924	7.918	7.919	7.907	7.851			7.774 - 8.074	7.912
MNX	9.232	9.236	9.240	9.237	9.231	9.226	9.220	9.211			9.087 - 9.387	9.229
RDX	10.072	10.083	10.087	10.084	10.078	10.079	10.067	10.064			9.934 - 10.234	10.077
1,3,5-Trinitrobenzene	11.612	11.616	11.613	11.610	11.611	11.606	11.594	11.591			11.460 - 11.760	11.607
1,3-Dinitrobenzene	12.659	12.656	12.660	12.657	12.658	12.652	12.647	12.638			12.507 - 12.807	12.653
Nitrobenzene	13.259	13.263	13.267	13.264	13.264	13.266	13.260	13.251			13.114 - 13.414	13.262
Tetryl	13.525	13.516	13.520	13.517	13.524	13.519	13.514	13.511			13.367 - 13.667	13.518
2,4,6-Trinitrotoluene	14.185	14.183	14.180	14.184	14.191	14.186	14.174	14.171			14.034 - 14.334	14.182
4-Amino-2,6-dinitrotoluene	14.492	14.503	14.493	14.497	14.504	14.499	14.494	14.491			14.347 - 14.647	14.497
2-Amino-4,6-dinitrotoluene	14.785	14.789	14.787	14.784	14.798	14.792	14.780	14.778			14.634 - 14.934	14.787
2,6-Dinitrotoluene	15.025	15.036	15.033	15.030	15.038	15.039	15.027	15.024			14.880 - 15.180	15.032
2,4-Dinitrotoluene	15.245	15.249	15.247	15.244	15.251	15.246	15.234	15.231			15.094 - 15.394	15.243
2-Nitrotoluene	16.225	16.229	16.227	16.217	16.231	16.226	16.220	16.211			16.067 - 16.367	16.223
4-Nitrotoluene	16.752	16.743	16.733	16.724	16.738	16.726	16.714	16.711			16.574 - 16.874	16.730
3-Nitrotoluene	17.319	17.316	17.320	17.304	17.324	17.312	17.300	17.291			17.154 - 17.454	17.311
1,2-Dinitrobenzene	12.185	12.196	12.193	12.190	12.191	12.192	12.180	12.171			12.040 - 12.340	12.187

FORM VI
HPLC/IC INITIAL CALIBRATION DATA
EXTERNAL STANDARD CURVE EVALUTION

Lab Name: TestAmerica Denver Job No.: 280-3084-1 Analy Batch No.: 17891

SDG No.:

Instrument ID: HPLC_X3 GC Column: UltraCarb5u ID: 4.6(mm) Heated Purge: (Y/N) N

Calibration Start Date: 05/26/2010 21:02 Calibration End Date: 05/26/2010 21:02 Calibration ID: 1747

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 280-17891/8	009-0901.D
Level 2	IC 280-17891/7	008-0801.D
Level 3	IC 280-17891/6	007-0701.D
Level 4	IC 280-17891/5	006-0601.D
Level 5	IC 280-17891/4	005-0501.D
Level 6	IC 280-17891/3	004-0401.D
Level 7	IC 280-17891/2	003-0301.D
Level 8	IC 280-17891/1	002-0201.D

ANALYTE	RRF				CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 5	LVL 2 LVL 6	LVL 3 LVL 7	LVL 4 LVL 8		B	M1	M2								
2,6-diamino-4-nitrotoluene	302600 283180	282260 282469	285290 281770	284932 280888	Ave		285424				2.5					
HMX	134900 127328	127540 124944	126490 125991	125640 162246	Qua	0	0	0						0.9999		
2,4-diamino-6-nitrotoluene	204200 186910	188840 188494	187560 187128	189848 157007	Qua	0	0	0						0.9997		
MNX	189000 181388	178900 180487	190140 180748	176864 179825	Ave		182169				2.6					
RDX	177900 153938	149640 153480	154410 152971	154872 152324	Lin2	0	151952							0.9996		
1,3,5-Trinitrobenzene	366300 346458	358960 341503	331980 339752	346632 338456	Ave		346255				3.3					
1,3-Dinitrobenzene	478800 459833	442980 453156	452420 450601	462184 447250	Ave		455903				2.4					
Nitrobenzene	312800 300900	290520 297540	292270 297077	298184 296426	Ave		298215				2.3					
Tetryl	297900 273745	271920 269731	269510 270718	269344 266842	Ave		273714				3.6					
2,4,6-Trinitrotoluene	366000 321083	330400 323743	334410 311890	317460 308262	Lin2	0	318195							0.9995		
4-Amino-2,6-dinitrotoluene	251900 221770	230800 223037	231730 210309	220344 208903	Lin2	0	218968							0.9989		
2-Amino-4,6-dinitrotoluene	336300 284520	282740 282227	287800 278264	285732 277825	Lin2	0	279847							0.9998		
2,6-Dinitrotoluene	279700 215575	218600 212513	218610 216824	214736 211453	Lin2	0	211961							0.9998		
2,4-Dinitrotoluene	484100 419380	423120 417154	417300 411896	421388 416752	Lin2	0	414494							0.9999		

Note: The m1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
HPLC/IC INITIAL CALIBRATION DATA
EXTERNAL STANDARD CURVE EVALUTION

Lab Name: TestAmerica Denver Job No.: 280-3084-1 Analy Batch No.: 17891

SDG No.:

Instrument ID: HPLC_X3 GC Column: UltraCarb5u ID: 4.6(mm) Heated Purge: (Y/N) N

Calibration Start Date: 05/26/2010 21:02 Calibration End Date: 05/26/2010 21:02 Calibration ID: 1747

ANALYTE	RRF				CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 5	LVL 2 LVL 6	LVL 3 LVL 7	LVL 4 LVL 8		B	M1	M2								
2-Nitrotoluene	223200 186708	189480 185269	188150 185000	187856 185211	Lin2	0	184765							0.9999		
4-Nitrotoluene	167600 164720	168200 164387	167150 163242	164864 165097	Ave		165658				1.1					
3-Nitrotoluene	272400 223873	225900 223411	229360 219249	228072 223102	Lin2	0	222095							0.9998		
1,2-Dinitrobenzene	236200 209028	197620 205376	203270 203195	209908 201003	Lin2	0	202918							0.9992		

Note: The m1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
HPLC/IC INITIAL CALIBRATION DATA
EXTERNAL STANDARD RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Denver Job No.: 280-3084-1 Analy Batch No.: 17891

SDG No.:

Instrument ID: HPLC_X3 GC Column: UltraCarb5u ID: 4.6(mm) Heated Purge: (Y/N) N

Calibration Start Date: 05/26/2010 21:02 Calibration End Date: 05/26/2010 21:02 Calibration ID: 1747

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 280-17891/8	009-0901.D
Level 2	IC 280-17891/7	008-0801.D
Level 3	IC 280-17891/6	007-0701.D
Level 4	IC 280-17891/5	006-0601.D
Level 5	IC 280-17891/4	005-0501.D
Level 6	IC 280-17891/3	004-0401.D
Level 7	IC 280-17891/2	003-0301.D
Level 8	IC 280-17891/1	002-0201.D

ANALYTE	CURVE TYPE	RESPONSE					CONCENTRATION (UG/ML)				
		LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5
2,6-diamino-4-nitrotoluene	Ave	3026 197728	14113 281770	28529 702219	71233	113272	0.0100 0.700	0.0500 1.00	0.100 2.50	0.250	0.400
HMX	Qua	1349 87461	6377 125991	12649 405616	31410	50931	0.0100 0.700	0.0500 1.00	0.100 2.50	0.250	0.400
2,4-diamino-6-nitrotoluene	Qua	2042 131946	9442 187128	18756 392517	47462	74764	0.0100 0.700	0.0500 1.00	0.100 2.50	0.250	0.400
MNX	Ave	1890 126341	8945 180748	19014 449562	44216	72555	0.0100 0.700	0.0500 1.00	0.100 2.50	0.250	0.400
RDX	Lin2	1779 107436	7482 152971	15441 380810	38718	61575	0.0100 0.700	0.0500 1.00	0.100 2.50	0.250	0.400
1,3,5-Trinitrobenzene	Ave	3663 239052	17948 339752	33198 846139	86658	138583	0.0100 0.700	0.0500 1.00	0.100 2.50	0.250	0.400
1,3-Dinitrobenzene	Ave	4788 317209	22149 450601	45242 1118124	115546	183933	0.0100 0.700	0.0500 1.00	0.100 2.50	0.250	0.400
Nitrobenzene	Ave	3128 208278	14526 297077	29227 741065	74546	120360	0.0100 0.700	0.0500 1.00	0.100 2.50	0.250	0.400
Tetryl	Ave	2979 188812	13596 270718	26951 667105	67336	109498	0.0100 0.700	0.0500 1.00	0.100 2.50	0.250	0.400
2,4,6-Trinitrotoluene	Lin2	3660 226620	16520 311890	33441 770655	79365	128433	0.0100 0.700	0.0500 1.00	0.100 2.50	0.250	0.400
4-Amino-2,6-dinitrotoluene	Lin2	2519 156126	11540 210309	23173 522258	55086	88708	0.0100 0.700	0.0500 1.00	0.100 2.50	0.250	0.400
2-Amino-4,6-dinitrotoluene	Lin2	3363 197559	14137 278264	28780 694562	71433	113808	0.0100 0.700	0.0500 1.00	0.100 2.50	0.250	0.400
2,6-Dinitrotoluene	Lin2	2797 148759	10930 216824	21861 528632	53684	86230	0.0100 0.700	0.0500 1.00	0.100 2.50	0.250	0.400
2,4-Dinitrotoluene	Lin2	4841 292008	21156 411896	41730 1041880	105347	167752	0.0100 0.700	0.0500 1.00	0.100 2.50	0.250	0.400
2-Nitrotoluene	Lin2	2232 129688	9474 185000	18815 463027	46964	74683	0.0100 0.700	0.0500 1.00	0.100 2.50	0.250	0.400

FORM VI
HPLC/IC INITIAL CALIBRATION DATA
EXTERNAL STANDARD RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Denver Job No.: 280-3084-1 Analy Batch No.: 17891

SDG No.:

Instrument ID: HPLC_X3 GC Column: UltraCarb5u ID: 4.6(mm) Heated Purge: (Y/N) N

Calibration Start Date: 05/26/2010 21:02 Calibration End Date: 05/26/2010 21:02 Calibration ID: 1747

ANALYTE	CURVE TYPE	RESPONSE					CONCENTRATION (UG/ML)				
		LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5
4-Nitrotoluene	Ave	1676 115071	8410 163242	16715 412743	41216	65888	0.0100 0.700	0.0500 1.00	0.100 2.50	0.250	0.400
3-Nitrotoluene	Lin2	2724 156388	11295 219249	22936 557755	57018	89549	0.0100 0.700	0.0500 1.00	0.100 2.50	0.250	0.400
1,2-Dinitrobenzene	Lin2	2362 143763	9881 203195	20327 502507	52477	83611	0.0100 0.700	0.0500 1.00	0.100 2.50	0.250	0.400

Curve Type Legend:

Ave = Average
Lin2 = Linear 1/conc^2
Qua = Quadratic

FORM VI
HPLC/IC INITIAL CALIBRATION DATA
EXTERNAL STANDARD RETENTION TIME SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-3084-1 Analy Batch No.: 17472

SDG No.:

Instrument ID: HPLC_X3 GC Column: UltraCarb5u ID: 4.6(mm) Heated Purge: (Y/N) N

Calibration Start Date: 05/26/2010 21:02 Calibration End Date: 05/26/2010 23:46 Calibration ID: 1708

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 280-17472/8	009-0901.D
Level 2	IC 280-17472/7	008-0801.D
Level 3	IC 280-17472/6	007-0701.D
Level 4	IC 280-17472/5	006-0601.D
Level 5	IC 280-17472/4	005-0501.D
Level 6	IC 280-17472/3	004-0401.D
Level 7	IC 280-17472/2	003-0301.D
Level 8	IC 280-17472/1	002-0201.D

ANALYTE	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 6	LVL 7	LVL 8			RT WINDOW	AVG RT
Nitroglycerin	13.605	13.609	13.607	13.610	13.611	13.612	13.607	13.598			13.460 - 13.760	13.607
PETN	17.459	17.463	17.453	17.430	17.458	17.446	17.434	17.424			17.280 - 17.580	17.446

FORM VI
HPLC/IC INITIAL CALIBRATION DATA
EXTERNAL STANDARD CURVE EVALUTION

Lab Name: TestAmerica Denver Job No.: 280-3084-1 Analy Batch No.: 17472

SDG No.:

Instrument ID: HPLC_X3 GC Column: UltraCarb5u ID: 4.6(mm) Heated Purge: (Y/N) N

Calibration Start Date: 05/26/2010 21:02 Calibration End Date: 05/26/2010 23:46 Calibration ID: 1708

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 280-17472/8	009-0901.D
Level 2	IC 280-17472/7	008-0801.D
Level 3	IC 280-17472/6	007-0701.D
Level 4	IC 280-17472/5	006-0601.D
Level 5	IC 280-17472/4	005-0501.D
Level 6	IC 280-17472/3	004-0401.D
Level 7	IC 280-17472/2	003-0301.D
Level 8	IC 280-17472/1	002-0201.D

ANALYTE	RRF				CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 5	LVL 2 LVL 6	LVL 3 LVL 7	LVL 4 LVL 8		B	M1	M2								
Nitroglycerin	133620 145977	136628 149451	146350 147962	145954 145240	Ave		143898				3.9					
PETN	151360 143125	151426 142668	145826 142280	144570 142420	Ave		145459				2.6					

Note: The m1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
HPLC/IC INITIAL CALIBRATION DATA
EXTERNAL STANDARD RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Denver Job No.: 280-3084-1 Analy Batch No.: 17472

SDG No.:

Instrument ID: HPLC_X3 GC Column: UltraCarb5u ID: 4.6(mm) Heated Purge: (Y/N) N

Calibration Start Date: 05/26/2010 21:02 Calibration End Date: 05/26/2010 23:46 Calibration ID: 1708

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 280-17472/8	009-0901.D
Level 2	IC 280-17472/7	008-0801.D
Level 3	IC 280-17472/6	007-0701.D
Level 4	IC 280-17472/5	006-0601.D
Level 5	IC 280-17472/4	005-0501.D
Level 6	IC 280-17472/3	004-0401.D
Level 7	IC 280-17472/2	003-0301.D
Level 8	IC 280-17472/1	002-0201.D

ANALYTE	CURVE TYPE	RESPONSE					CONCENTRATION (UG/ML)				
		LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5
Nitroglycerin	Ave	13362 1046159	68314 1479615	146350 3630993	364886	583907	0.100 7.00	0.500 10.0	1.00 25.0	2.50	4.00
PETN	Ave	15136 998676	75713 1422798	145826 3560500	361426	572501	0.100 7.00	0.500 10.0	1.00 25.0	2.50	4.00

Curve Type Legend:

Ave = Average

FORM VII
HPLC/IC CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Denver Job No.: 280-3084-1

SDG No.:

Lab Sample ID: ICV 280-8112/9 Calibration Date: 03/17/2010 19:06

Instrument ID: HPLC_Q Calib Start Date: 03/17/2010 14:50

GC Column: Luna-phenylhex ID: 4.60(mm) Calib End Date: 03/17/2010 18:34

Lab File ID: 010-1001.D Conc. Units: ug/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,6-diamino-4-nitrotoluene	Ave	358405	391050		0.436	0.400	9.1	15.0
2,4-diamino-6-nitrotoluene	Ave	243694	244178		0.401	0.400	0.2	15.0
Picric acid	Ave	163556	170705		0.417	0.400	4.4	15.0
HMX	Ave	152510	147470		0.387	0.400	-3.3	15.0
RDX	Ave	189760	196408		0.414	0.400	3.5	15.0
Nitrobenzene	Ave	366327	369720		0.404	0.400	0.9	15.0
1,3-Dinitrobenzene	Ave	581585	593163		0.408	0.400	2.0	15.0
2-Nitrotoluene	Ave	230811	227313		0.394	0.400	-1.5	15.0
4-Nitrotoluene	Ave	206766	201743		0.390	0.400	-2.4	15.0
4-Amino-2,6-dinitrotoluene	Ave	264331	278490		0.421	0.400	5.4	15.0
3-Nitrotoluene	Ave	248252	249798		0.402	0.400	0.6	15.0
2-Amino-4,6-dinitrotoluene	Ave	355220	392215		0.442	0.400	10.4	15.0
1,3,5-Trinitrobenzene	Ave	415923	419213		0.403	0.400	0.8	15.0
2,6-Dinitrotoluene	Ave	262457	267648		0.408	0.400	2.0	15.0
2,4-Dinitrotoluene	Ave	502994	519533		0.413	0.400	3.3	15.0
Tetryl	Ave	311390	325705		0.418	0.400	4.6	15.0
2,4,6-Trinitrotoluene	Ave	383390	390048		0.407	0.400	1.7	15.0
1,2-Dinitrobenzene	Ave	247827	256835		0.415	0.400	3.6	15.0

FORM VII
HPLC/IC CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-3084-1

SDG No.:

Lab Sample ID: ICV 280-8112/9 Calibration Date: 03/17/2010 19:06

Instrument ID: HPLC_Q Calib Start Date: 03/17/2010 14:50

GC Column: Luna-phenylhex ID: 4.60(mm) Calib End Date: 03/17/2010 18:34

Lab File ID: 010-1001.D

Analyte	RT	RT WINDOW	
		TO	FROM
2,6-diamino-4-nitrotoluene	3.91	3.77	4.07
2,4-diamino-6-nitrotoluene	4.32	4.18	4.48
Picric acid	5.24	5.12	5.42
HMX	6.05	5.90	6.20
RDX	7.87	7.72	8.02
Nitrobenzene	10.49	10.34	10.64
1,3-Dinitrobenzene	13.58	13.42	13.72
2-Nitrotoluene	14.44	14.28	14.58
4-Nitrotoluene	14.74	14.58	14.88
4-Amino-2,6-dinitrotoluene	15.03	14.86	15.16
3-Nitrotoluene	15.59	15.43	15.73
2-Amino-4,6-dinitrotoluene	15.92	15.75	16.05
1,3,5-Trinitrobenzene	16.60	16.44	16.74
2,6-Dinitrotoluene	17.48	17.32	17.62
2,4-Dinitrotoluene	17.99	17.82	18.12
Tetryl	21.19	21.01	21.31
2,4,6-Trinitrotoluene	22.20	22.02	22.32
1,2-Dinitrobenzene	11.26	11.11	11.41

FORM VII
HPLC/IC CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Denver Job No.: 280-3084-1

SDG No.:

Lab Sample ID: ICV 280-8112/9 Calibration Date: 03/17/2010 19:06

Instrument ID: HPLC_Q Calib Start Date: 03/17/2010 14:50

GC Column: Luna-phenylhex ID: 4.60(mm) Calib End Date: 03/17/2010 18:34

Lab File ID: 010-1001.D Conc. Units: ug/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Nitroglycerin	Lin2	177466	171839		3.95	4.00	-1.3	15.0
PETN	Ave	139018	136529		3.93	4.00	-1.8	15.0

FORM VII
HPLC/IC CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-3084-1

SDG No.:

Lab Sample ID: ICV 280-8112/9 Calibration Date: 03/17/2010 19:06

Instrument ID: HPLC_Q Calib Start Date: 03/17/2010 14:50

GC Column: Luna-phenylhex ID: 4.60(mm) Calib End Date: 03/17/2010 18:34

Lab File ID: 010-1001.D

Analyte	RT	RT WINDOW	
		TO	FROM
Nitroglycerin	13.59	13.44	13.74
PETN	22.90	22.73	23.03

FORM VII
HPLC/IC CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Denver Job No.: 280-3084-1

SDG No.:

Lab Sample ID: CCV 280-18232/1 Calibration Date: 06/04/2010 19:59

Instrument ID: HPLC_Q Calib Start Date: 03/17/2010 14:50

GC Column: UltraCarb5uODS ID: 4.60(mm) Calib End Date: 03/17/2010 18:34

Lab File ID: 002-0201.D Conc. Units: ug/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Picric acid	Ave	163556	162720		0.249	0.250	-0.5	15.0
HMX	Ave	152510	154956		0.254	0.250	1.6	15.0
RDX	Ave	189760	191164		0.252	0.250	0.7	15.0
Nitrobenzene	Ave	366327	374156		0.255	0.250	2.1	15.0
1,3-Dinitrobenzene	Ave	581585	590060		0.254	0.250	1.5	15.0
2-Nitrotoluene	Ave	230811	222704		0.241	0.250	-3.5	15.0
4-Nitrotoluene	Ave	206766	208796		0.252	0.250	1.0	15.0
4-Amino-2,6-dinitrotoluene	Ave	264331	267896		0.253	0.250	1.3	15.0
3-Nitrotoluene	Ave	248252	247508		0.249	0.250	-0.3	15.0
2-Amino-4,6-dinitrotoluene	Ave	355220	359348		0.253	0.250	1.2	15.0
1,3,5-Trinitrobenzene	Ave	415923	416288		0.250	0.250	0.1	15.0
2,6-Dinitrotoluene	Ave	262457	256424		0.244	0.250	-2.3	15.0
2,4-Dinitrotoluene	Ave	502994	504732		0.251	0.250	0.3	15.0
Tetryl	Ave	311390	305176		0.245	0.250	-2.0	15.0
2,4,6-Trinitrotoluene	Ave	383390	393088		0.256	0.250	2.5	15.0
1,2-Dinitrobenzene	Ave	247827	254468		0.257	0.250	2.7	15.0

FORM VII
HPLC/IC CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-3084-1

SDG No.:

Lab Sample ID: CCV 280-18232/1 Calibration Date: 06/04/2010 19:59

Instrument ID: HPLC_Q Calib Start Date: 03/17/2010 14:50

GC Column: UltraCarb5uODS ID: 4.60(mm) Calib End Date: 03/17/2010 18:34

Lab File ID: 002-0201.D

Analyte	RT	RT WINDOW	
		TO	FROM
Picric acid	5.63	5.41	5.71
HMX	6.18	6.03	6.33
RDX	8.01	7.85	8.15
Nitrobenzene	10.68	10.53	10.83
1,3-Dinitrobenzene	13.79	13.63	13.93
2-Nitrotoluene	14.71	14.53	14.83
4-Nitrotoluene	15.00	14.83	15.13
4-Amino-2,6-dinitrotoluene	15.32	15.17	15.47
3-Nitrotoluene	15.86	15.68	15.98
2-Amino-4,6-dinitrotoluene	16.21	16.04	16.34
1,3,5-Trinitrobenzene	16.83	16.65	16.95
2,6-Dinitrotoluene	17.77	17.59	17.89
2,4-Dinitrotoluene	18.27	18.08	18.38
Tetryl	21.49	21.29	21.59
2,4,6-Trinitrotoluene	22.48	22.27	22.57
1,2-Dinitrobenzene	11.50	11.34	11.64

FORM VII
HPLC/IC CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Denver Job No.: 280-3084-1

SDG No.:

Lab Sample ID: CCV 280-18232/1 Calibration Date: 06/04/2010 19:59

Instrument ID: HPLC_Q Calib Start Date: 03/17/2010 14:50

GC Column: UltraCarb5uODS ID: 4.60(mm) Calib End Date: 03/17/2010 18:34

Lab File ID: 002-0201.D Conc. Units: ug/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Nitroglycerin	Lin2	177466	170502		2.44	2.50	-2.2	15.0
PETN	Ave	139018	146902		2.64	2.50	5.7	15.0

FORM VII
HPLC/IC CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-3084-1

SDG No.:

Lab Sample ID: CCV 280-18232/1 Calibration Date: 06/04/2010 19:59

Instrument ID: HPLC_Q Calib Start Date: 03/17/2010 14:50

GC Column: UltraCarb5uODS ID: 4.60(mm) Calib End Date: 03/17/2010 18:34

Lab File ID: 002-0201.D

Analyte	RT	RT WINDOW	
		TO	FROM
Nitroglycerin	13.81	13.64	13.94
PETN	23.19	22.97	23.27

FORM VII
HPLC/IC CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Denver Job No.: 280-3084-1

SDG No.:

Lab Sample ID: CCV 280-18232/2 Calibration Date: 06/05/2010 00:15

Instrument ID: HPLC_Q Calib Start Date: 03/17/2010 14:50

GC Column: UltraCarb5uODS ID: 4.60(mm) Calib End Date: 03/17/2010 18:34

Lab File ID: 002-1001.D Conc. Units: ug/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Picric acid	Ave	163556	164548		0.252	0.250	0.6	15.0
HMX	Ave	152510	154724		0.254	0.250	1.5	15.0
RDX	Ave	189760	191512		0.252	0.250	0.9	15.0
Nitrobenzene	Ave	366327	342240		0.234	0.250	-6.6	15.0
1,3-Dinitrobenzene	Ave	581585	588560		0.253	0.250	1.2	15.0
2-Nitrotoluene	Ave	230811	219428		0.238	0.250	-4.9	15.0
4-Nitrotoluene	Ave	206766	210884		0.255	0.250	2.0	15.0
4-Amino-2,6-dinitrotoluene	Ave	264331	274920		0.260	0.250	4.0	15.0
3-Nitrotoluene	Ave	248252	235548		0.237	0.250	-5.1	15.0
2-Amino-4,6-dinitrotoluene	Ave	355220	336144		0.237	0.250	-5.4	15.0
1,3,5-Trinitrobenzene	Ave	415923	422832		0.254	0.250	1.7	15.0
2,6-Dinitrotoluene	Ave	262457	261872		0.249	0.250	-0.2	15.0
2,4-Dinitrotoluene	Ave	502994	519192		0.258	0.250	3.2	15.0
Tetryl	Ave	311390	289280		0.232	0.250	-7.1	15.0
2,4,6-Trinitrotoluene	Ave	383390	373296		0.243	0.250	-2.6	15.0
1,2-Dinitrobenzene	Ave	247827	266908		0.269	0.250	7.7	15.0

FORM VII
HPLC/IC CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-3084-1

SDG No.:

Lab Sample ID: CCV 280-18232/2 Calibration Date: 06/05/2010 00:15

Instrument ID: HPLC_Q Calib Start Date: 03/17/2010 14:50

GC Column: UltraCarb5uODS ID: 4.60(mm) Calib End Date: 03/17/2010 18:34

Lab File ID: 002-1001.D

Analyte	RT	RT WINDOW	
		TO	FROM
Picric acid	5.55	5.41	5.71
HMX	6.17	6.03	6.33
RDX	8.01	7.85	8.15
Nitrobenzene	10.69	10.53	10.83
1,3-Dinitrobenzene	13.79	13.63	13.93
2-Nitrotoluene	14.70	14.53	14.83
4-Nitrotoluene	14.99	14.83	15.13
4-Amino-2,6-dinitrotoluene	15.32	15.17	15.47
3-Nitrotoluene	15.85	15.68	15.98
2-Amino-4,6-dinitrotoluene	16.20	16.04	16.34
1,3,5-Trinitrobenzene	16.81	16.65	16.95
2,6-Dinitrotoluene	17.75	17.59	17.89
2,4-Dinitrotoluene	18.25	18.08	18.38
Tetryl	21.45	21.29	21.59
2,4,6-Trinitrotoluene	22.43	22.27	22.57
1,2-Dinitrobenzene	11.50	11.34	11.64

FORM VII
HPLC/IC CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Denver Job No.: 280-3084-1

SDG No.:

Lab Sample ID: CCV 280-18232/2 Calibration Date: 06/05/2010 00:15

Instrument ID: HPLC_Q Calib Start Date: 03/17/2010 14:50

GC Column: UltraCarb5uODS ID: 4.60(mm) Calib End Date: 03/17/2010 18:34

Lab File ID: 002-1001.D Conc. Units: ug/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Nitroglycerin	Lin2	177466	169271		2.43	2.50	-3.0	15.0
PETN	Ave	139018	143385		2.58	2.50	3.1	15.0

FORM VII
HPLC/IC CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-3084-1

SDG No.:

Lab Sample ID: CCV 280-18232/2 Calibration Date: 06/05/2010 00:15

Instrument ID: HPLC_Q Calib Start Date: 03/17/2010 14:50

GC Column: UltraCarb5uODS ID: 4.60(mm) Calib End Date: 03/17/2010 18:34

Lab File ID: 002-1001.D

Analyte	RT	RT WINDOW	
		TO	FROM
Nitroglycerin	13.79	13.64	13.94
PETN	23.12	22.97	23.27

FORM VII
HPLC/IC CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Denver Job No.: 280-3084-1

SDG No.:

Lab Sample ID: ICV 280-17891/9 Calibration Date: 05/27/2010 00:10

Instrument ID: HPLC_X3 Calib Start Date: 05/26/2010 21:02

GC Column: UltraCarb5uODS ID: 4.60(mm) Calib End Date: 05/26/2010 21:02

Lab File ID: 010-1001.D Conc. Units: ug/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,6-diamino-4-nitrotoluene	Ave	285424	305275		0.428	0.400	7.0	15.0
HMX	Qua	131885	122905		0.402	0.400	0.6	15.0
2,4-diamino-6-nitrotoluene	Qua	186248	188875		0.383	0.400	-4.3	15.0
RDX	Lin2	156192	156253		0.410	0.400	2.4	15.0
Picric acid	Qua	120692	127273		0.406	0.400	1.5	15.0
1,3,5-Trinitrobenzene	Ave	346255	342153		0.395	0.400	-1.2	15.0
1,3-Dinitrobenzene	Ave	455903	453635		0.398	0.400	-0.5	15.0
Nitrobenzene	Ave	298215	291060		0.390	0.400	-2.4	15.0
Tetryl	Ave	273714	283415		0.414	0.400	3.5	15.0
2,4,6-Trinitrotoluene	Lin2	326656	313498		0.393	0.400	-1.9	15.0
4-Amino-2,6-dinitrotoluene	Lin2	224849	221028		0.402	0.400	0.5	15.0
2-Amino-4,6-dinitrotoluene	Lin2	289426	308398		0.439	0.400	9.7	15.0
2,6-Dinitrotoluene	Lin2	223501	219370		0.411	0.400	2.7	15.0
2,4-Dinitrotoluene	Lin2	426386	427175		0.411	0.400	2.6	15.0
2-Nitrotoluene	Lin2	191359	186328		0.401	0.400	0.3	15.0
4-Nitrotoluene	Ave	165658	162850		0.393	0.400	-1.7	15.0
3-Nitrotoluene	Lin2	230671	222688		0.399	0.400	-0.3	15.0
1,2-Dinitrobenzene	Lin2	208200	205183		0.403	0.400	0.7	15.0

FORM VII
HPLC/IC CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-3084-1

SDG No.:

Lab Sample ID: ICV 280-17891/9 Calibration Date: 05/27/2010 00:10

Instrument ID: HPLC_X3 Calib Start Date: 05/26/2010 21:02

GC Column: UltraCarb5uODS ID: 4.60(mm) Calib End Date: 05/26/2010 21:02

Lab File ID: 010-1001.D

Analyte	RT	RT WINDOW	
		TO	FROM
2,6-diamino-4-nitrotoluene	7.40	7.25	7.55
HMX	7.77	7.63	7.93
2,4-diamino-6-nitrotoluene	7.91	7.77	8.07
RDX	10.07	9.93	10.23
Picric acid	10.35	10.29	10.59
1,3,5-Trinitrobenzene	11.61	11.46	11.76
1,3-Dinitrobenzene	12.66	12.51	12.81
Nitrobenzene	13.27	13.11	13.41
Tetryl	13.53	13.37	13.67
2,4,6-Trinitrotoluene	14.19	14.03	14.33
4-Amino-2,6-dinitrotoluene	14.51	14.35	14.65
2-Amino-4,6-dinitrotoluene	14.80	14.63	14.93
2,6-Dinitrotoluene	15.05	14.88	15.18
2,4-Dinitrotoluene	15.25	15.09	15.39
2-Nitrotoluene	16.23	16.07	16.37
4-Nitrotoluene	16.74	16.57	16.87
3-Nitrotoluene	17.33	17.15	17.45
1,2-Dinitrobenzene	12.20	12.04	12.34

FORM VII
HPLC/IC CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Denver Job No.: 280-3084-1

SDG No.:

Lab Sample ID: ICV 280-17472/9 Calibration Date: 05/27/2010 00:10

Instrument ID: HPLC_X3 Calib Start Date: 05/26/2010 21:02

GC Column: UltraCarb5uODS ID: 4.60(mm) Calib End Date: 05/26/2010 23:46

Lab File ID: 010-1001.D Conc. Units: ug/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Nitroglycerin	Ave	143898	147538		4.10	4.00	2.5	15.0
PETN	Ave	145459	141104		3.88	4.00	-3.0	15.0

FORM VII
HPLC/IC CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-3084-1

SDG No.:

Lab Sample ID: ICV 280-17472/9 Calibration Date: 05/27/2010 00:10

Instrument ID: HPLC_X3 Calib Start Date: 05/26/2010 21:02

GC Column: UltraCarb5uODS ID: 4.60(mm) Calib End Date: 05/26/2010 23:46

Lab File ID: 010-1001.D

Analyte	RT	RT WINDOW	
		TO	FROM
Nitroglycerin	13.62	13.46	13.76
PETN	17.47	17.28	17.58

FORM VII
HPLC/IC CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Denver Job No.: 280-3084-1

SDG No.:

Lab Sample ID: CCV 280-18009/3 Calibration Date: 06/03/2010 19:58

Instrument ID: HPLC_X3 Calib Start Date: 05/26/2010 21:02

GC Column: UltraCarb5uODS ID: 4.60(mm) Calib End Date: 05/26/2010 21:02

Lab File ID: 002-2601.D Conc. Units: ug/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
HMX	Qua	131885	129096		0.264	0.250	5.6	15.0
RDX	Lin2	156192	158252		0.259	0.250	3.5	15.0
Picric acid	Qua	120692	129860		0.261	0.250	4.4	15.0
1,3,5-Trinitrobenzene	Ave	346255	359812		0.260	0.250	3.9	15.0
1,3-Dinitrobenzene	Ave	455903	507712		0.278	0.250	11.4	15.0
Nitrobenzene	Ave	298215	302608		0.254	0.250	1.5	15.0
Tetryl	Ave	273714	309812		0.283	0.250	13.2	15.0
2,4,6-Trinitrotoluene	Lin2	326656	363712		0.284	0.250	13.7	15.0
4-Amino-2,6-dinitrotoluene	Lin2	224849	231764		0.263	0.250	5.2	15.0
2-Amino-4,6-dinitrotoluene	Lin2	289426	298720		0.265	0.250	6.0	15.0
2,6-Dinitrotoluene	Lin2	223501	225424		0.263	0.250	5.1	15.0
2,4-Dinitrotoluene	Lin2	426386	461072		0.276	0.250	10.6	15.0
2-Nitrotoluene	Lin2	191359	202164		0.271	0.250	8.6	15.0
4-Nitrotoluene	Ave	165658	174212		0.263	0.250	5.2	15.0
3-Nitrotoluene	Lin2	230671	216608		0.242	0.250	-3.4	15.0
1,2-Dinitrobenzene	Lin2	208200	224164		0.275	0.250	9.9	15.0

FORM VII
HPLC/IC CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-3084-1

SDG No.:

Lab Sample ID: CCV 280-18009/3 Calibration Date: 06/03/2010 19:58

Instrument ID: HPLC_X3 Calib Start Date: 05/26/2010 21:02

GC Column: UltraCarb5uODS ID: 4.60(mm) Calib End Date: 05/26/2010 21:02

Lab File ID: 002-2601.D

Analyte	RT	RT WINDOW	
		TO	FROM
HMX	7.69	7.49	7.79
RDX	9.96	9.75	10.05
Picric acid	10.08	9.93	10.23
1,3,5-Trinitrobenzene	11.50	11.28	11.58
1,3-Dinitrobenzene	12.53	12.33	12.63
Nitrobenzene	13.14	12.94	13.24
Tetryl	13.37	13.15	13.45
2,4,6-Trinitrotoluene	14.03	13.79	14.09
4-Amino-2,6-dinitrotoluene	14.33	14.13	14.43
2-Amino-4,6-dinitrotoluene	14.60	14.39	14.69
2,6-Dinitrotoluene	14.86	14.63	14.93
2,4-Dinitrotoluene	15.05	14.82	15.12
2-Nitrotoluene	16.02	15.79	16.09
4-Nitrotoluene	16.51	16.27	16.57
3-Nitrotoluene	17.08	16.83	17.13
1,2-Dinitrobenzene	12.06	11.85	12.15

FORM VII
HPLC/IC CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Denver Job No.: 280-3084-1

SDG No.:

Lab Sample ID: CCV 280-18009/3 Calibration Date: 06/03/2010 19:58

Instrument ID: HPLC_X3 Calib Start Date: 05/26/2010 21:02

GC Column: UltraCarb5uODS ID: 4.60(mm) Calib End Date: 05/26/2010 23:46

Lab File ID: 002-2601.D Conc. Units: ug/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Nitroglycerin	Ave	143898	161189		2.80	2.50	12.0	15.0
PETN	Ave	145459	142399		2.45	2.50	-2.1	15.0

FORM VII
HPLC/IC CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-3084-1

SDG No.:

Lab Sample ID: CCV 280-18009/3 Calibration Date: 06/03/2010 19:58

Instrument ID: HPLC_X3 Calib Start Date: 05/26/2010 21:02

GC Column: UltraCarb5uODS ID: 4.60(mm) Calib End Date: 05/26/2010 23:46

Lab File ID: 002-2601.D

Analyte	RT	RT WINDOW	
		TO	FROM
Nitroglycerin	13.46	13.25	13.55
PETN	17.14	16.86	17.16

FORM VII
HPLC/IC CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Denver Job No.: 280-3084-1

SDG No.:

Lab Sample ID: CCV 280-18009/4 Calibration Date: 06/04/2010 01:50

Instrument ID: HPLC_X3 Calib Start Date: 05/26/2010 21:02

GC Column: UltraCarb5uODS ID: 4.60(mm) Calib End Date: 05/26/2010 21:02

Lab File ID: 002-4101.D Conc. Units: ug/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Picric acid	Qua	120692	0.0000		0.000140	0.250	-100.0*	15.0
HMX	Qua	131885	127652		0.261	0.250	4.4	15.0
RDX	Lin2	156192	286760		0.470	0.250	88.1*	15.0
1,3,5-Trinitrobenzene	Ave	346255	346912		0.250	0.250	0.2	15.0
1,3-Dinitrobenzene	Ave	455903	472220		0.259	0.250	3.6	15.0
Nitrobenzene	Ave	298215	275276		0.231	0.250	-7.7	15.0
Tetryl	Ave	273714	275576		0.252	0.250	0.7	15.0
2,4,6-Trinitrotoluene	Lin2	326656	315664		0.246	0.250	-1.4	15.0
4-Amino-2,6-dinitrotoluene	Lin2	224849	224864		0.255	0.250	2.1	15.0
2-Amino-4,6-dinitrotoluene	Lin2	289426	302512		0.268	0.250	7.3	15.0
2,6-Dinitrotoluene	Lin2	223501	220864		0.257	0.250	2.9	15.0
2,4-Dinitrotoluene	Lin2	426386	406596		0.244	0.250	-2.6	15.0
2-Nitrotoluene	Lin2	191359	172800		0.232	0.250	-7.3	15.0
4-Nitrotoluene	Ave	165658	160756		0.243	0.250	-3.0	15.0
3-Nitrotoluene	Lin2	230671	209744		0.234	0.250	-6.5	15.0
1,2-Dinitrobenzene	Lin2	208200	212912		0.261	0.250	4.3	15.0

FORM VII
HPLC/IC CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-3084-1

SDG No.:

Lab Sample ID: CCV 280-18009/4 Calibration Date: 06/04/2010 01:50

Instrument ID: HPLC_X3 Calib Start Date: 05/26/2010 21:02

GC Column: UltraCarb5uODS ID: 4.60(mm) Calib End Date: 05/26/2010 21:02

Lab File ID: 002-4101.D

Analyte	RT	RT WINDOW	
		TO	FROM
Picric acid	0.00	9.93	10.23
HMX	7.66	7.49	7.79
RDX	9.92	9.75	10.05
1,3,5-Trinitrobenzene	11.44	11.28	11.58
1,3-Dinitrobenzene	12.50	12.33	12.63
Nitrobenzene	13.10	12.94	13.24
Tetryl	13.32	13.15	13.45
2,4,6-Trinitrotoluene	13.96	13.79	14.09
4-Amino-2,6-dinitrotoluene	14.29	14.13	14.43
2-Amino-4,6-dinitrotoluene	14.56	14.39	14.69
2,6-Dinitrotoluene	14.80	14.63	14.93
2,4-Dinitrotoluene	14.99	14.82	15.12
2-Nitrotoluene	15.96	15.79	16.09
4-Nitrotoluene	16.44	16.27	16.57
3-Nitrotoluene	17.00	16.83	17.13
1,2-Dinitrobenzene	12.02	11.85	12.15

FORM VII
HPLC/IC CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Denver Job No.: 280-3084-1

SDG No.:

Lab Sample ID: CCV 280-18009/4 Calibration Date: 06/04/2010 01:50

Instrument ID: HPLC_X3 Calib Start Date: 05/26/2010 21:02

GC Column: UltraCarb5uODS ID: 4.60(mm) Calib End Date: 05/26/2010 23:46

Lab File ID: 002-4101.D Conc. Units: ug/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Nitroglycerin	Ave	143898	156645		2.72	2.50	8.9	15.0
PETN	Ave	145459	140462		2.41	2.50	-3.4	15.0

FORM VII
HPLC/IC CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-3084-1

SDG No.:

Lab Sample ID: CCV 280-18009/4 Calibration Date: 06/04/2010 01:50

Instrument ID: HPLC_X3 Calib Start Date: 05/26/2010 21:02

GC Column: UltraCarb5uODS ID: 4.60(mm) Calib End Date: 05/26/2010 23:46

Lab File ID: 002-4101.D

Analyte	RT	RT WINDOW	
		TO	FROM
Nitroglycerin	13.42	13.25	13.55
PETN	17.03	16.86	17.16

FORM I
HPLC/IC ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver
Job No.: 280-3084-1
SDG No.:
Client Sample ID:
Lab Sample ID: MB 280-14610/11-A
Matrix: Solid
Lab File ID: 029-2901.D
Analysis Method: 8330A
Date Collected:
Extraction Method: Sieve/Ultrasoni
Date Extracted: 05/10/2010 16:15
Sample wt/vol: 2.00(g)
Date Analyzed: 06/03/2010 21:08
Con. Extract Vol.: 20000(uL)
Dilution Factor: 1
Injection Volume: 100(uL)
GC Column: UltraCarb5uODS ID: 4.6(mm)
% Moisture:
GPC Cleanup:(Y/N) N
Analysis Batch No.: 18009
Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	DL
35572-78-2	2-Amino-4,6-dinitrotoluene	0.090	U	0.25	0.046
19406-51-0	4-Amino-2,6-dinitrotoluene	0.090	U	0.25	0.039
121-14-2	2,4-Dinitrotoluene	0.090	U	0.25	0.050
606-20-2	2,6-Dinitrotoluene	0.090	U	0.25	0.054
118-96-7	2,4,6-Trinitrotoluene	0.090	U	0.25	0.058
99-08-1	3-Nitrotoluene	0.090	U	0.50	0.055
99-08-1	m-Nitrotoluene	0.090	U	0.50	0.055
88-72-2	2-Nitrotoluene	0.090	U	0.25	0.084
88-72-2	o-Nitrotoluene	0.090	U	0.25	0.084
99-99-0	4-Nitrotoluene	0.18	U	0.40	0.11
99-99-0	p-Nitrotoluene	0.18	U	0.40	0.11
98-95-3	Nitrobenzene	0.090	U	0.25	0.061
99-35-4	1,3,5-Trinitrobenzene	0.090	U	0.25	0.071
99-65-0	1,3-Dinitrobenzene	0.090	U	0.25	0.061
2691-41-0	HMX	0.090	U	0.25	0.078
121-82-4	RDX	0.090	U	0.26	0.085
479-45-8	Tetryl	0.090	U	0.50	0.055

CAS NO.	SURROGATE	%REC	LIMITS	Q
528-29-0	1,2-Dinitrobenzene	97	83-122	

FORM I
HPLC/IC ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver
Job No.: 280-3084-1
SDG No.:
Client Sample ID:
Lab Sample ID: MB 280-14610/11-A
Matrix: Solid
Lab File ID: 029-2901.D
Analysis Method: 8330A
Date Collected:
Extraction Method: Sieve/Ultrasoni
Date Extracted: 05/10/2010 16:15
Sample wt/vol: 2.00(g)
Date Analyzed: 06/03/2010 21:08
Con. Extract Vol.: 20000(uL)
Dilution Factor: 1
Injection Volume: 100(uL)
GC Column: UltraCarb5uODS ID: 4.6(mm)
% Moisture:
GPC Cleanup:(Y/N) N
Analysis Batch No.: 18009
Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	DL
78-11-5	PETN	0.90	U	4.0	0.87
55-63-0	Nitroglycerin	0.50	U	5.1	0.19

FORM I
HPLC/IC ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver
Job No.: 280-3084-1
SDG No.:
Client Sample ID:
Lab Sample ID: MB 280-14610/11-A
Matrix: Solid
Lab File ID: 003-0301.D
Analysis Method: 8330A
Date Collected:
Extraction Method: Sieve/Ultrasoni
Date Extracted: 05/10/2010 16:15
Sample wt/vol: 2.00(g)
Date Analyzed: 06/04/2010 20:31
Con. Extract Vol.: 20000(uL)
Dilution Factor: 1
Injection Volume: 100(uL)
GC Column: Luna-phenylhex ID: 4.6(mm)
% Moisture:
GPC Cleanup:(Y/N) N
Analysis Batch No.: 18232
Units: mg/Kg

CAS NO.	SURROGATE	%REC	LIMITS	Q
528-29-0	1,2-Dinitrobenzene	101	83-122	

FORM I
HPLC/IC ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver | Job No.: 280-3084-1

SDG No.:

Client Sample ID: | Lab Sample ID: LCS 280-14610/12-A

Matrix: Solid | Lab File ID: 030-3001.D

Analysis Method: 8330A | Date Collected:

Extraction Method: Sieve/Ultrasoni | Date Extracted: 05/10/2010 16:15

Sample wt/vol: 2.09(g) | Date Analyzed: 06/03/2010 21:32

Con. Extract Vol.: 20000(uL) | Dilution Factor: 1

Injection Volume: 100(uL) | GC Column: UltraCarb5uODS ID: 4.6(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 18009 | Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	DL
35572-78-2	2-Amino-4,6-dinitrotoluene	2.72		0.24	0.044
19406-51-0	4-Amino-2,6-dinitrotoluene	2.42		0.24	0.037
121-14-2	2,4-Dinitrotoluene	2.61		0.24	0.048
606-20-2	2,6-Dinitrotoluene	2.12		0.24	0.052
118-96-7	2,4,6-Trinitrotoluene	2.34		0.24	0.055
99-08-1	3-Nitrotoluene	2.53		0.48	0.052
99-08-1	m-Nitrotoluene	2.53		0.48	0.052
88-72-2	2-Nitrotoluene	2.54		0.24	0.080
88-72-2	o-Nitrotoluene	2.54		0.24	0.080
99-99-0	4-Nitrotoluene	2.53		0.38	0.10
99-99-0	p-Nitrotoluene	2.53		0.38	0.10
98-95-3	Nitrobenzene	2.58		0.24	0.059
99-35-4	1,3,5-Trinitrobenzene	2.40		0.24	0.068
99-65-0	1,3-Dinitrobenzene	2.45		0.24	0.058
2691-41-0	HMX	2.43	M	0.24	0.074
479-45-8	Tetryl	2.36		0.48	0.052

CAS NO.	SURROGATE	%REC	LIMITS	Q
528-29-0	1,2-Dinitrobenzene	98	83-122	

FORM I
HPLC/IC ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver
Job No.: 280-3084-1
SDG No.:
Client Sample ID:
Lab Sample ID: LCS 280-14610/12-A
Matrix: Solid
Lab File ID: 030-3001.D
Analysis Method: 8330A
Date Collected:
Extraction Method: Sieve/Ultrasoni
Date Extracted: 05/10/2010 16:15
Sample wt/vol: 2.09(g)
Date Analyzed: 06/03/2010 21:32
Con. Extract Vol.: 20000(uL)
Dilution Factor: 1
Injection Volume: 100(uL)
GC Column: UltraCarb5uODS ID: 4.6(mm)
% Moisture:
GPC Cleanup:(Y/N) N
Analysis Batch No.: 18009
Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	DL
78-11-5	PETN	24.1		3.8	0.84
55-63-0	Nitroglycerin	26.3		4.9	0.18

FORM I
HPLC/IC ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver
Job No.: 280-3084-1
SDG No.:
Client Sample ID:
Lab Sample ID: LCS 280-14610/12-A
Matrix: Solid
Lab File ID: 004-0401.D
Analysis Method: 8330A
Date Collected:
Extraction Method: Sieve/Ultrasoni
Date Extracted: 05/10/2010 16:15
Sample wt/vol: 2.09(g)
Date Analyzed: 06/04/2010 21:03
Con. Extract Vol.: 20000(uL)
Dilution Factor: 1
Injection Volume: 100(uL)
GC Column: Luna-phenylhex ID: 4.6(mm)
% Moisture:
GPC Cleanup:(Y/N) N
Analysis Batch No.: 18232
Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	DL
121-82-4	RDX	2.62		0.25	0.082

CAS NO.	SURROGATE	%REC	LIMITS	Q
528-29-0	1,2-Dinitrobenzene	103	83-122	

FORM I
HPLC/IC ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver | Job No.: 280-3084-1

SDG No.:

Client Sample ID: MR-SD200-0409 MS | Lab Sample ID: 280-3084-1 MS

Matrix: Solid | Lab File ID: 039-3901.D

Analysis Method: 8330A | Date Collected: 04/30/2010 13:35

Extraction Method: Sieve/Ultrasoni | Date Extracted: 05/10/2010 16:15

Sample wt/vol: 2.07(g) | Date Analyzed: 06/04/2010 01:03

Con. Extract Vol.: 20000(uL) | Dilution Factor: 1

Injection Volume: 100(uL) | GC Column: UltraCarb5uODS ID: 4.6(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 18009 | Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	DL
35572-78-2	2-Amino-4,6-dinitrotoluene	2.78	M	0.24	0.044
19406-51-0	4-Amino-2,6-dinitrotoluene	2.30	M	0.24	0.038
121-14-2	2,4-Dinitrotoluene	2.44	M	0.24	0.048
606-20-2	2,6-Dinitrotoluene	2.32	M	0.24	0.052
118-96-7	2,4,6-Trinitrotoluene	2.39	M	0.24	0.056
99-08-1	m-Nitrotoluene	2.69	M	0.48	0.053
88-72-2	o-Nitrotoluene	2.50	M	0.24	0.081
99-99-0	p-Nitrotoluene	2.54	M	0.39	0.11
98-95-3	Nitrobenzene	2.82	M	0.24	0.059
99-35-4	1,3,5-Trinitrobenzene	2.64	M	0.24	0.069
99-65-0	1,3-Dinitrobenzene	2.84	M	0.24	0.059
2691-41-0	HMX	2.34	M	0.24	0.075
121-82-4	RDX	2.95	M	0.25	0.083
479-45-8	Tetryl	2.40	M	0.48	0.053

CAS NO.	SURROGATE	%REC	LIMITS	Q
528-29-0	1,2-Dinitrobenzene	109	83-122	M

FORM I
HPLC/IC ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver
Job No.: 280-3084-1
SDG No.:
Client Sample ID: MR-SD200-0409 MS
Lab Sample ID: 280-3084-1 MS
Matrix: Solid
Lab File ID: 039-3901.D
Analysis Method: 8330A
Date Collected: 04/30/2010 13:35
Extraction Method: Sieve/Ultrasoni
Date Extracted: 05/10/2010 16:15
Sample wt/vol: 2.07(g)
Date Analyzed: 06/04/2010 01:03
Con. Extract Vol.: 20000(uL)
Dilution Factor: 1
Injection Volume: 100(uL)
GC Column: UltraCarb5uODS ID: 4.6(mm)
% Moisture:
GPC Cleanup:(Y/N) N
Analysis Batch No.: 18009
Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	DL
78-11-5	PETN	24.5		3.9	0.84
55-63-0	Nitroglycerin	25.1		4.9	0.19

FORM I
HPLC/IC ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver | Job No.: 280-3084-1

SDG No.:

Client Sample ID: MR-SD200-0409 MSD | Lab Sample ID: 280-3084-1 MSD

Matrix: Solid | Lab File ID: 040-4001.D

Analysis Method: 8330A | Date Collected: 04/30/2010 13:35

Extraction Method: Sieve/Ultrasoni | Date Extracted: 05/10/2010 16:15

Sample wt/vol: 2.06(g) | Date Analyzed: 06/04/2010 01:27

Con. Extract Vol.: 20000(uL) | Dilution Factor: 1

Injection Volume: 100(uL) | GC Column: UltraCarb5uODS ID: 4.6(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 18009 | Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	DL
35572-78-2	2-Amino-4,6-dinitrotoluene	2.92	M	0.24	0.044
19406-51-0	4-Amino-2,6-dinitrotoluene	2.42	M	0.24	0.038
121-14-2	2,4-Dinitrotoluene	2.52	M	0.24	0.048
606-20-2	2,6-Dinitrotoluene	2.33	M	0.24	0.053
118-96-7	2,4,6-Trinitrotoluene	2.41	M	0.24	0.056
99-08-1	m-Nitrotoluene	2.69		0.49	0.053
88-72-2	o-Nitrotoluene	2.63	M	0.24	0.082
99-99-0	p-Nitrotoluene	2.58	M	0.39	0.11
98-95-3	Nitrobenzene	2.67	M	0.24	0.060
99-35-4	1,3,5-Trinitrobenzene	2.62	M	0.24	0.069
99-65-0	1,3-Dinitrobenzene	2.66	M	0.24	0.059
2691-41-0	HMX	2.39	M	0.24	0.075
121-82-4	RDX	3.07	M	0.25	0.083
479-45-8	Tetryl	2.45	M	0.49	0.053

CAS NO.	SURROGATE	%REC	LIMITS	Q
528-29-0	1,2-Dinitrobenzene	104	83-122	M

FORM I
HPLC/IC ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver
Job No.: 280-3084-1
SDG No.:
Client Sample ID: MR-SD200-0409 MSD
Lab Sample ID: 280-3084-1 MSD
Matrix: Solid
Lab File ID: 040-4001.D
Analysis Method: 8330A
Date Collected: 04/30/2010 13:35
Extraction Method: Sieve/Ultrasoni
Date Extracted: 05/10/2010 16:15
Sample wt/vol: 2.06(g)
Date Analyzed: 06/04/2010 01:27
Con. Extract Vol.: 20000(uL)
Dilution Factor: 1
Injection Volume: 100(uL)
GC Column: UltraCarb5uODS ID: 4.6(mm)
% Moisture:
GPC Cleanup:(Y/N) N
Analysis Batch No.: 18009
Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	DL
78-11-5	PETN	25.1	M	3.9	0.85
55-63-0	Nitroglycerin	25.5	M	5.0	0.19

HPLC/IC ANALYSIS RUN LOG

Lab Name: TestAmerica Denver Job No.: 280-3084-1

SDG No.:

Instrument ID: HPLC_Q Start Date: 03/17/2010 14:50

Analysis Batch Number: 8112 End Date: 03/17/2010 23:22

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
IC 280-8112/1		03/17/2010 14:50	1	002-0201.D	Luna-phenylhex 4.6(mm)
IC 280-8112/1		03/17/2010 14:50	1	002-0201.D	Luna-phenylhex 4.6(mm)
IC 280-8112/2		03/17/2010 15:22	1	003-0301.D	Luna-phenylhex 4.6(mm)
IC 280-8112/2		03/17/2010 15:22	1	003-0301.D	Luna-phenylhex 4.6(mm)
IC 280-8112/3		03/17/2010 15:54	1	004-0401.D	Luna-phenylhex 4.6(mm)
IC 280-8112/3		03/17/2010 15:54	1	004-0401.D	Luna-phenylhex 4.6(mm)
IC 280-8112/4		03/17/2010 16:26	1	005-0501.D	Luna-phenylhex 4.6(mm)
IC 280-8112/4		03/17/2010 16:26	1	005-0501.D	Luna-phenylhex 4.6(mm)
IC 280-8112/5		03/17/2010 16:58	1	006-0601.D	Luna-phenylhex 4.6(mm)
IC 280-8112/5		03/17/2010 16:58	1	006-0601.D	Luna-phenylhex 4.6(mm)
IC 280-8112/6		03/17/2010 17:30	1	007-0701.D	Luna-phenylhex 4.6(mm)
IC 280-8112/6		03/17/2010 17:30	1	007-0701.D	Luna-phenylhex 4.6(mm)
IC 280-8112/7		03/17/2010 18:02	1	008-0801.D	Luna-phenylhex 4.6(mm)
IC 280-8112/7		03/17/2010 18:02	1	008-0801.D	Luna-phenylhex 4.6(mm)
IC 280-8112/8		03/17/2010 18:34	1	009-0901.D	Luna-phenylhex 4.6(mm)
IC 280-8112/8		03/17/2010 18:34	1	009-0901.D	Luna-phenylhex 4.6(mm)
ICV 280-8112/9		03/17/2010 19:06	1	010-1001.D	Luna-phenylhex 4.6(mm)
ICV 280-8112/9		03/17/2010 19:06	1	010-1001.D	Luna-phenylhex 4.6(mm)
ZZZZZ		03/17/2010 19:38	1		Luna-phenylhex 4.6(mm)
ZZZZZ		03/17/2010 20:10	1		Luna-phenylhex 4.6(mm)
ZZZZZ		03/17/2010 20:42	1		Luna-phenylhex 4.6(mm)
ZZZZZ		03/17/2010 21:14	1		Luna-phenylhex 4.6(mm)
ZZZZZ		03/17/2010 21:46	1		Luna-phenylhex 4.6(mm)
ZZZZZ		03/17/2010 22:18	1		Luna-phenylhex 4.6(mm)
ZZZZZ		03/17/2010 22:50	1		Luna-phenylhex 4.6(mm)
CCV 280-8112/17		03/17/2010 23:22	1		Luna-phenylhex 4.6(mm)

HPLC/IC ANALYSIS RUN LOG

Lab Name: TestAmerica Denver Job No.: 280-3084-1

SDG No.:

Instrument ID: HPLC_Q Start Date: 06/04/2010 19:59

Analysis Batch Number: 18232 End Date: 06/05/2010 05:03

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 280-18232/1		06/04/2010 19:59	1	002-0201.D	Luna-phenylhex 4.6(mm)
CCV 280-18232/1		06/04/2010 19:59	1	002-0201.D	Luna-phenylhex 4.6(mm)
MB 280-14610/11-A		06/04/2010 20:31	1	003-0301.D	Luna-phenylhex 4.6(mm)
MB 280-14610/11-A		06/04/2010 20:31	1	003-0301.D	Luna-phenylhex 4.6(mm)
LCS 280-14610/12-A		06/04/2010 21:03	1	004-0401.D	Luna-phenylhex 4.6(mm)
LCS 280-14610/12-A		06/04/2010 21:03	1	004-0401.D	Luna-phenylhex 4.6(mm)
ZZZZZ		06/04/2010 21:35	1		Luna-phenylhex 4.6(mm)
ZZZZZ		06/04/2010 22:07	1		Luna-phenylhex 4.6(mm)
ZZZZZ		06/04/2010 22:39	1		Luna-phenylhex 4.6(mm)
ZZZZZ		06/04/2010 23:11	1		Luna-phenylhex 4.6(mm)
280-3084-1	MR-SD200-0409	06/04/2010 23:43	1	009-0901.D	Luna-phenylhex 4.6(mm)
CCV 280-18232/2		06/05/2010 00:15	1	002-1001.D	Luna-phenylhex 4.6(mm)
CCV 280-18232/2		06/05/2010 00:15	1	002-1001.D	Luna-phenylhex 4.6(mm)
ZZZZZ		06/05/2010 00:47	1		Luna-phenylhex 4.6(mm)
ZZZZZ		06/05/2010 00:47	1		Luna-phenylhex 4.6(mm)
ZZZZZ		06/05/2010 01:19	1		Luna-phenylhex 4.6(mm)
ZZZZZ		06/05/2010 01:19	1		Luna-phenylhex 4.6(mm)
ZZZZZ		06/05/2010 01:51	1		Luna-phenylhex 4.6(mm)
ZZZZZ		06/05/2010 01:51	1		Luna-phenylhex 4.6(mm)
ZZZZZ		06/05/2010 02:23	1		Luna-phenylhex 4.6(mm)
ZZZZZ		06/05/2010 02:23	1		Luna-phenylhex 4.6(mm)
ZZZZZ		06/05/2010 02:55	1		Luna-phenylhex 4.6(mm)
ZZZZZ		06/05/2010 02:55	1		Luna-phenylhex 4.6(mm)
ZZZZZ		06/05/2010 03:27	1		Luna-phenylhex 4.6(mm)
ZZZZZ		06/05/2010 03:27	1		Luna-phenylhex 4.6(mm)
ZZZZZ		06/05/2010 03:59	1		Luna-phenylhex 4.6(mm)
ZZZZZ		06/05/2010 03:59	1		Luna-phenylhex 4.6(mm)
ZZZZZ		06/05/2010 04:31	1		Luna-phenylhex 4.6(mm)
ZZZZZ		06/05/2010 04:31	1		Luna-phenylhex 4.6(mm)
CCV 280-18232/3		06/05/2010 05:03	1		Luna-phenylhex 4.6(mm)
CCV 280-18232/3		06/05/2010 05:03	1		Luna-phenylhex 4.6(mm)

HPLC/IC ANALYSIS RUN LOG

Lab Name: TestAmerica Denver Job No.: 280-3084-1

SDG No.:

Instrument ID: HPLC_X3 Start Date: 05/26/2010 21:02

Analysis Batch Number: 17472 End Date: 05/27/2010 03:42

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
IC 280-17472/1		05/26/2010 21:02	1		UltraCarb5uODS 4.6(mm)
IC 280-17472/1		05/26/2010 21:02	1	002-0201.D	UltraCarb5uODS 4.6(mm)
IC 280-17472/2		05/26/2010 21:25	1		UltraCarb5uODS 4.6(mm)
IC 280-17472/2		05/26/2010 21:25	1	003-0301.D	UltraCarb5uODS 4.6(mm)
IC 280-17472/3		05/26/2010 21:49	1		UltraCarb5uODS 4.6(mm)
IC 280-17472/3		05/26/2010 21:49	1	004-0401.D	UltraCarb5uODS 4.6(mm)
IC 280-17472/4		05/26/2010 22:12	1		UltraCarb5uODS 4.6(mm)
IC 280-17472/4		05/26/2010 22:12	1	005-0501.D	UltraCarb5uODS 4.6(mm)
IC 280-17472/5		05/26/2010 22:36	1		UltraCarb5uODS 4.6(mm)
IC 280-17472/5		05/26/2010 22:36	1	006-0601.D	UltraCarb5uODS 4.6(mm)
IC 280-17472/6		05/26/2010 22:59	1		UltraCarb5uODS 4.6(mm)
IC 280-17472/6		05/26/2010 22:59	1	007-0701.D	UltraCarb5uODS 4.6(mm)
IC 280-17472/7		05/26/2010 23:23	1		UltraCarb5uODS 4.6(mm)
IC 280-17472/7		05/26/2010 23:23	1	008-0801.D	UltraCarb5uODS 4.6(mm)
IC 280-17472/8		05/26/2010 23:46	1		UltraCarb5uODS 4.6(mm)
IC 280-17472/8		05/26/2010 23:46	1	009-0901.D	UltraCarb5uODS 4.6(mm)
ICV 280-17472/9		05/27/2010 00:10	1		UltraCarb5uODS 4.6(mm)
ICV 280-17472/9		05/27/2010 00:10	1	010-1001.D	UltraCarb5uODS 4.6(mm)
IC 280-17472/10		05/27/2010 00:34	1		UltraCarb5uODS 4.6(mm)
IC 280-17472/11		05/27/2010 00:57	1		UltraCarb5uODS 4.6(mm)
IC 280-17472/12		05/27/2010 01:21	1		UltraCarb5uODS 4.6(mm)
IC 280-17472/13		05/27/2010 01:44	1		UltraCarb5uODS 4.6(mm)
IC 280-17472/14		05/27/2010 02:08	1		UltraCarb5uODS 4.6(mm)
IC 280-17472/15		05/27/2010 02:31	1		UltraCarb5uODS 4.6(mm)
IC 280-17472/16		05/27/2010 02:55	1		UltraCarb5uODS 4.6(mm)
IC 280-17472/17		05/27/2010 03:18	1		UltraCarb5uODS 4.6(mm)
ICV 280-17472/18		05/27/2010 03:42	1		UltraCarb5uODS 4.6(mm)

HPLC/IC ANALYSIS RUN LOG

Lab Name: TestAmerica Denver Job No.: 280-3084-1

SDG No.:

Instrument ID: HPLC_X3 Start Date: 05/26/2010 21:02

Analysis Batch Number: 17891 End Date: 05/27/2010 00:10

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
IC 280-17891/1		05/26/2010 21:02	1	002-0201.D	UltraCarb5uODS 4.6(mm)
IC 280-17891/2		05/26/2010 21:25	1	003-0301.D	UltraCarb5uODS 4.6(mm)
IC 280-17891/3		05/26/2010 21:49	1	004-0401.D	UltraCarb5uODS 4.6(mm)
IC 280-17891/4		05/26/2010 22:12	1	005-0501.D	UltraCarb5uODS 4.6(mm)
IC 280-17891/5		05/26/2010 22:36	1	006-0601.D	UltraCarb5uODS 4.6(mm)
IC 280-17891/6		05/26/2010 22:59	1	007-0701.D	UltraCarb5uODS 4.6(mm)
IC 280-17891/7		05/26/2010 23:23	1	008-0801.D	UltraCarb5uODS 4.6(mm)
IC 280-17891/8		05/26/2010 23:46	1	009-0901.D	UltraCarb5uODS 4.6(mm)
ICV 280-17891/9		05/27/2010 00:10	1	010-1001.D	UltraCarb5uODS 4.6(mm)

HPLC/IC ANALYSIS RUN LOG

Lab Name: TestAmerica Denver Job No.: 280-3084-1

SDG No.:

Instrument ID: HPLC_X3 Start Date: 06/03/2010 10:18

Analysis Batch Number: 18009 End Date: 06/04/2010 07:20

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 280-18009/1		06/03/2010 10:18	1		UltraCarb5uODS 4.6(mm)
CCV 280-18009/1		06/03/2010 10:18	1		UltraCarb5uODS 4.6(mm)
CCV 280-18009/5		06/03/2010 10:42	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		06/03/2010 11:05	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		06/03/2010 11:29	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		06/03/2010 11:52	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		06/03/2010 12:16	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		06/03/2010 12:39	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		06/03/2010 13:03	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		06/03/2010 13:26	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		06/03/2010 13:50	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		06/03/2010 14:13	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		06/03/2010 14:37	1		UltraCarb5uODS 4.6(mm)
CCV 280-18009/2		06/03/2010 15:00	1		UltraCarb5uODS 4.6(mm)
CCV 280-18009/6		06/03/2010 15:24	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		06/03/2010 15:47	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		06/03/2010 16:11	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		06/03/2010 17:45	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		06/03/2010 18:12	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		06/03/2010 18:38	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		06/03/2010 19:04	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		06/03/2010 19:31	1		UltraCarb5uODS 4.6(mm)
CCV 280-18009/3		06/03/2010 19:58	1	002-2601.D	UltraCarb5uODS 4.6(mm)
CCV 280-18009/3		06/03/2010 19:58	1	002-2601.D	UltraCarb5uODS 4.6(mm)
ZZZZZ		06/03/2010 20:45	1		UltraCarb5uODS 4.6(mm)
MB 280-14610/11-A		06/03/2010 21:08	1	029-2901.D	UltraCarb5uODS 4.6(mm)
MB 280-14610/11-A		06/03/2010 21:08	1	029-2901.D	UltraCarb5uODS 4.6(mm)
LCS 280-14610/12-A		06/03/2010 21:32	1	030-3001.D	UltraCarb5uODS 4.6(mm)
LCS 280-14610/12-A		06/03/2010 21:32	1	030-3001.D	UltraCarb5uODS 4.6(mm)
ZZZZZ		06/03/2010 21:55	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		06/03/2010 21:55	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		06/03/2010 21:55	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		06/03/2010 21:55	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		06/03/2010 22:19	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		06/03/2010 22:19	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		06/03/2010 22:42	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		06/03/2010 23:06	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		06/03/2010 23:29	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		06/03/2010 23:53	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		06/04/2010 00:16	1		UltraCarb5uODS 4.6(mm)
280-3084-1	MR-SD200-0409	06/04/2010 00:40	1	038-3801.D	UltraCarb5uODS 4.6(mm)
280-3084-1	MR-SD200-0409	06/04/2010 00:40	1	038-3801.D	UltraCarb5uODS 4.6(mm)
280-3084-1 MS	MR-SD200-0409 MS	06/04/2010 01:03	1	039-3901.D	UltraCarb5uODS 4.6(mm)
280-3084-1 MS	MR-SD200-0409 MS	06/04/2010 01:03	1	039-3901.D	UltraCarb5uODS 4.6(mm)
280-3084-1 MSD	MR-SD200-0409 MSD	06/04/2010 01:27	1	040-4001.D	UltraCarb5uODS 4.6(mm)

8330A

HPLC/IC ANALYSIS RUN LOG

Lab Name: TestAmerica Denver Job No.: 280-3084-1

SDG No.:

Instrument ID: HPLC_X3 Start Date: 06/03/2010 10:18

Analysis Batch Number: 18009 End Date: 06/04/2010 07:20

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
280-3084-1 MSD	MR-SD200-0409 MSD	06/04/2010 01:27	1	040-4001.D	UltraCarb5uODS 4.6(mm)
CCV 280-18009/4		06/04/2010 01:50	1	002-4101.D	UltraCarb5uODS 4.6(mm)
CCV 280-18009/4		06/04/2010 01:50	1	002-4101.D	UltraCarb5uODS 4.6(mm)
CCV 280-18009/7		06/04/2010 02:14	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		06/04/2010 03:01	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		06/04/2010 03:01	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		06/04/2010 03:24	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		06/04/2010 03:24	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		06/04/2010 03:48	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		06/04/2010 03:48	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		06/04/2010 04:11	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		06/04/2010 04:11	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		06/04/2010 04:35	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		06/04/2010 04:35	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		06/04/2010 04:58	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		06/04/2010 04:58	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		06/04/2010 05:22	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		06/04/2010 05:22	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		06/04/2010 05:45	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		06/04/2010 05:45	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		06/04/2010 06:09	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		06/04/2010 06:09	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		06/04/2010 06:32	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		06/04/2010 06:32	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		06/04/2010 06:56	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		06/04/2010 06:56	1		UltraCarb5uODS 4.6(mm)
CCV 280-18009/38		06/04/2010 07:20	1		UltraCarb5uODS 4.6(mm)

Organic Prep Worksheet

Batch Number: 280-14610
Method: Sieve/Ultrasoni
Analyst: Frey, Alan C

Date Open: May 10 2010 4:15PM
Batch End: May 11 2010 3:00PM

Lab ID	Client ID	Method Chain	Basis	Initial weight/volume of sample	Final weight/volume of sample	8330 LCS_00006	8330Surrogate_00013
280-3233-A-1-A			T	2.18 g	20000 uL		0.5 mL
280-3233-A-3-A			T	2.11 g	20000 uL		0.5 mL
580-19108-B-10-A			T	2.03 g	20000 uL		0.5 mL
580-19108-B-10-B~MS			T	2.30 g	20000 uL	0.5 mL	0.5 mL
580-19108-B-10-C~MSD			T	2.25 g	20000 uL	0.5 mL	0.5 mL
580-19108-B-13-A			T	2.08 g	20000 uL		0.5 mL
580-19108-B-15-A			T	2.26 g	20000 uL		0.5 mL
280-3084-C-1-A	MR-SD200-0409	Sieve/Ultrasoni, 8330A	T	2.10 g	20000 uL		0.5 mL
280-3084-C-1-B~MS	MR-SD200-0409	Sieve/Ultrasoni, 8330A	T	2.07 g	20000 uL	0.5 mL	0.5 mL
280-3084-C-1-C~MSD	MR-SD200-0409	Sieve/Ultrasoni, 8330A	T	2.06 g	20000 uL	0.5 mL	0.5 mL
MB~280-14610/11		Sieve/Ultrasoni, 8330A		2.00 g	20000 uL		0.5 mL
LCS~280-14610/12		Sieve/Ultrasoni, 8330A		2.09 g	20000 uL	0.5 mL	0.5 mL

Balance ID:	24750836
Blank Sand Lot #:	YW0488
Solvent Name:	A.ACN
Solvent Lot #:	1-7-11
Filter Type:	0.2um
Filter Lot #:	00105130
Pipette ID:	C
Witness:	HALL.K
Person's name who witnessed reagent drop:	HALL.K
Pipette ID for Solvent:	Exp-1
Sonication Start Date:	5/10/10
Sonication Start Time:	1630
Sonication End Date:	5/11/10
Sonication Stop Time:	1045
Minimum Temperature:	5 Degrees C
Maximum Temperature:	7 Degrees C
Minumum Temperature:	5
SOP Number:	DV-OP-0018

Organic Prep Worksheet

Batch Number: 280-14610
Method: Sieve/Ultrasoni
Analyst: Frey, Alan C

Date Open: May 10 2010 4:15PM
Batch End: May 11 2010 3:00PM

Comments

Lab ID	Client ID	Method Chain	Basis	Analysis comment
280-3233-A-1-A			T	
280-3233-A-3-A			T	
580-19108-B-10-A			T	
580-19108-B-10-B~MS			T	
580-19108-B-10-C~MSD			T	
580-19108-B-13-A			T	
580-19108-B-15-A			T	
280-3084-C-1-A	MR-SD200-0409	Sieve/Ultrasoni, 8330A	T	
280-3084-C-1-B~MS	MR-SD200-0409	Sieve/Ultrasoni, 8330A	T	
280-3084-C-1-C~MSD	MR-SD200-0409	Sieve/Ultrasoni, 8330A	T	
MB~280-14610/11		Sieve/Ultrasoni, 8330A		
LCS~280-14610/12		Sieve/Ultrasoni, 8330A		

Batch Comment: N/A

METALS

COVER PAGE
METALS

Lab Name: TestAmerica Denver Job Number: 280-3084-1

SDG No.:

Project: Markley Range - Discrete

Client Sample ID	Lab Sample ID
MR-SD200-0409	280-3084-1

Comments:

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: MR-SD200-0409
Lab Sample ID: 280-3084-1
Lab Name: TestAmerica Denver
Job No.: 280-3084-1
SDG ID.:
Matrix: Solid
Date Sampled: 04/30/2010 13:35
Reporting Basis: DRY
Date Received: 05/01/2010 10:30
% Solids: 7.7

CAS No.	Analyte	Conc.	LOQ	DL	Units	C	Q	DIL	Method
7429-90-5	Aluminum	11000	550	17	mg/Kg		J	1	6010C
7440-70-2	Calcium	8800	1100	160	mg/Kg			1	6010C
7439-89-6	Iron	13000	880	42	mg/Kg		J	1	6010C
7439-95-4	Magnesium	2200	330	41	mg/Kg			1	6010C
7440-09-7	Potassium	950	3300	450	mg/Kg	J		1	6010C
7440-23-5	Sodium	1100	5500	650	mg/Kg	U		1	6010C
7440-36-0	Antimony	3.3	2.2	0.15	mg/Kg		Q J	1	6020A
7440-38-2	Arsenic	27	6.5	0.55	mg/Kg			1	6020A
7440-39-3	Barium	210	2.7	0.76	mg/Kg			1	6020A
7440-41-7	Beryllium	0.66	1.1	0.24	mg/Kg	J		1	6020A
7440-43-9	Cadmium	1.3	1.1	0.10	mg/Kg		Q	1	6020A
7440-47-3	Chromium	17	6.5	0.82	mg/Kg			1	6020A
7440-48-4	Cobalt	22	1.1	0.072	mg/Kg		Q	1	6020A
7440-50-8	Copper	49	27	0.77	mg/Kg			1	6020A
7439-92-1	Lead	380	4.3	0.20	mg/Kg			1	6020A
7439-96-5	Manganese	1800	11	0.36	mg/Kg		J	1	6020A
7440-02-0	Nickel	40	3.8	0.27	mg/Kg		Q	1	6020A
7782-49-2	Selenium	2.6	5.4	1.4	mg/Kg	J		1	6020A
7440-22-4	Silver	0.65	1.1	0.22	mg/Kg	U		1	6020A
7440-28-0	Thallium	1.3	1.1	0.038	mg/Kg			1	6020A
7440-62-2	Vanadium	23	5.4	0.42	mg/Kg			1	6020A
7440-66-6	Zinc	93	27	3.4	mg/Kg			1	6020A
7439-97-6	Mercury	0.15	0.20	0.065	mg/Kg	J		1	7471B

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Denver Job No.: 280-3084-1

SDG No.:

ICV Source: ICP ICVH_00022 Concentration Units: ug/L

CCV Source: ICP CCVH_00053

Analyte	ICVH 280-15054/6 05/11/2010 14:44				CCVH 280-15054/37 05/11/2010 22:52							
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Aluminum	39600		40000	99	48900		50000	98				
Iron	77900		80000	97	48900		50000	98				
Sodium	41000		40000	102	252000		250000	101				

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Denver Job No.: 280-3084-1

SDG No.:

ICV Source: ICP ICVH_00022 Concentration Units: ug/L

CCV Source: ICP CCVH_00054

Analyte	ICVH 280-15054/6 05/11/2010 14:44				CCVH 280-15054/26 05/11/2010 22:28							
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Aluminum	39600		40000	99	48600		50000	97				
Iron	77900		80000	97	47700		50000	95				
Sodium	41000		40000	102	254000		250000	102				

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Denver Job No.: 280-3084-1

SDG No.:

ICV Source: ICP ICVL_00019 Concentration Units: ug/L

CCV Source: ICP CCVL_00049

Analyte	ICV 280-15054/7 05/11/2010 14:50				CCV 280-15054/27 05/11/2010 22:30				CCV 280-15054/38 05/11/2010 22:55			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Aluminum	260		250	104	495		500	99	497		500	99
Calcium	2060		2000	103	4870		5000	97	4890		5000	98
Iron	260		250	104	2390		2500	96	2420		2500	97
Magnesium	10400		10000	104	19800		20000	99	19800		20000	99
Potassium	20400		20000	102	49900		50000	100	50100		50000	100
Sodium	2110		2000	105	5270		5000	105	5260		5000	105

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Denver Job No.: 280-3084-1

SDG No.:

ICV Source: ICP LLCCV_00079 Concentration Units: ug/L

CCV Source: ICP LLCCV_00079

Analyte	ICVL 280-15054/12 05/11/2010 15:08				CCVL 280-15054/29 05/11/2010 22:35				CCVL 280-15054/40 05/11/2010 22:59			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Aluminum	113		100	113	94.9	J	100	95	101		100	101
Calcium	203		200	101	185	J	200	92	210		200	105
Iron	100		100	100	92.0	J	100	92	102		100	102
Magnesium	217		200	109	194	J	200	97	197	J	200	99
Potassium	3120		3000	104	2990	J	3000	100	2990	J	3000	100
Sodium	1080		1000	108	1180		1000	118	1180		1000	118

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Denver Job No.: 280-3084-1

SDG No.:

ICV Source: MS ICV_00073 Concentration Units: ug/L

CCV Source: MS CCV_00074

Analyte	ICV 280-15246/4 05/12/2010 18:59				CCV 280-15246/143 05/13/2010 01:22				CCV 280-15246/154 05/13/2010 01:52			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Antimony	39.3		40.0	98	49.2		50.0	98	49.4		50.0	99
Arsenic	40.4		40.0	101	49.5		50.0	99	49.3		50.0	99
Barium	39.5		40.0	99	49.5		50.0	99	50.0		50.0	100
Beryllium	40.7		40.0	102	49.9		50.0	100	47.7		50.0	95
Cadmium	40.5		40.0	101	49.3		50.0	99	49.3		50.0	99
Chromium	39.0		40.0	98	48.0		50.0	96	48.6		50.0	97
Cobalt	40.2		40.0	100	48.8		50.0	98	48.0		50.0	96
Copper	41.3		40.0	103	48.7		50.0	97	48.3		50.0	97
Lead	41.8		40.0	104	49.0		50.0	98	49.6		50.0	99
Manganese	40.3		40.0	101	48.3		50.0	97	48.8		50.0	98
Nickel	41.2		40.0	103	50.5		50.0	101	50.1		50.0	100
Selenium	39.9		40.0	100	49.3		50.0	99	52.5		50.0	105
Silver	39.8		40.0	99	48.7		50.0	97	48.5		50.0	97
Thallium	41.4		40.0	104	50.5		50.0	101	51.0		50.0	102
Vanadium	38.9		40.0	97	48.1		50.0	96	48.3		50.0	97
Zinc	40.4		40.0	101	49.7		50.0	99	49.7		50.0	99

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Denver Job No.: 280-3084-1

SDG No.:

ICV Source: MS LCCV dly_00072 Concentration Units: ug/L

CCV Source: MS LCCV dly_00072

Analyte	ICVL 280-15246/6 05/12/2010 19:05				CCVL 280-15246/146 05/13/2010 01:30				CCVL 280-15246/157 05/13/2010 02:00			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Antimony	2.08		2.00	104	2.10		2.00	105	2.10		2.00	105
Arsenic	5.14		5.00	103	5.12		5.00	102	5.19		5.00	104
Barium	1.00		1.00	100	1.02		1.00	102	1.07		1.00	107
Beryllium	1.07		1.00	107	1.05		1.00	105	0.736	J	1.00	74
Cadmium	1.05		1.00	105	1.01		1.00	101	1.11		1.00	111
Chromium	1.93	J	2.00	96	2.01		2.00	100	1.97	J	2.00	99
Cobalt	0.994	J	1.00	99	0.977	J	1.00	98	0.993	J	1.00	99
Copper	2.01		2.00	101	1.97	J	2.00	98	2.00		2.00	100
Lead	1.06		1.00	106	1.05		1.00	105	1.05		1.00	105
Manganese	0.994	J	1.00	99	0.999	J	1.00	100	0.986	J	1.00	99
Nickel	2.03		2.00	101	2.09		2.00	104	2.13		2.00	107
Selenium	5.21		5.00	104	5.24		5.00	105	5.63		5.00	113
Silver	5.00		5.00	100	5.08		5.00	102	5.14		5.00	103
Thallium	1.09		1.00	109	1.07		1.00	107	1.06		1.00	106
Vanadium	4.80	J	5.00	96	4.88	J	5.00	98	4.83	J	5.00	97
Zinc	10.1		10.0	101	10.1		10.0	101	10.1		10.0	101

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Denver Job No.: 280-3084-1

SDG No.:

ICV Source: Hg SoilICV_00025 Concentration Units: ug/L

CCV Source: Hg Soil CCV_00029

Analyte	ICV 280-14830/9 05/08/2010 09:49				CCV 280-14830/66 05/08/2010 12:12				CCV 280-14830/77 05/08/2010 12:37			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Mercury	6.47		7.00	92	5.05		5.00	101	5.14		5.00	103

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Denver Job No.: 280-3084-1

SDG No.:

ICV Source: Hg SoilICV_00025 Concentration Units: ug/L

CCV Source: Hg Soil CCV_00029

Analyte	CCV 280-14830/88 05/08/2010 13:03											
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Mercury	4.96		5.00	99								

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2B-IN
CRQL CHECK STANDARD
METALS

Lab Name: TestAmerica Denver Job No.: 280-3084-1

SDG No.:

Analysis Method: 6010C Instrument ID: MT_026

Lab Sample ID: CRI 280-15054/17 Concentration Units: ug/L

CRQL Check Standard Source: ICP ALT CRI_00085

Analyte	CRQL Check Standard				
	True	Found	Qualifiers	%R(1)	Limits
Aluminum	200	192		96	80-120
Calcium	400	401		100	80-120
Iron	60.0	62.4	J	104	80-120
Magnesium	400	426		106	80-120
Potassium	2000	2040	J	102	80-120
Sodium	2000	2050		103	80-120

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

FORM IIB-IN

2B-IN
CRQL CHECK STANDARD
METALS

Lab Name: TestAmerica Denver Job No.: 280-3084-1

SDG No.:

Analysis Method: 6020A Instrument ID: MT_024

Lab Sample ID: CRI 280-15246/9 Concentration Units: ug/L

CRQL Check Standard Source: MS RL STD_00077

Analyte	CRQL Check Standard				
	True	Found	Qualifiers	%R(1)	Limits
Antimony	1.00	0.990	J	99	80-120
Arsenic	1.00	1.01	J	101	80-120
Barium	1.00	0.974	J	97	80-120
Beryllium	1.00	1.03		103	80-120
Cadmium	1.00	0.943	J	94	80-120
Chromium	1.00	0.980	J	98	80-120
Cobalt	1.00	0.964	J	96	80-120
Copper	1.00	0.982	J	98	80-120
Lead	1.00	1.03		103	80-120
Manganese	1.00	0.991	J	99	80-120
Nickel	1.00	0.988	J	99	80-120
Selenium	1.00	0.921	J	92	80-120
Silver	1.00	0.949	J	95	80-120
Thallium	1.00	1.08		108	80-120
Vanadium	1.00	0.971	J	97	80-120
Zinc	10.0	10.4		104	80-120

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

FORM IIB-IN

2B-IN
CRQL CHECK STANDARD
METALS

Lab Name: TestAmerica Denver Job No.: 280-3084-1

SDG No.:

Analysis Method: 7471B Instrument ID: MT_033

Lab Sample ID: CRA 280-14830/10 Concentration Units: ug/L

CRQL Check Standard Source: Hg Soil RL_00025

Analyte	CRQL Check Standard				
	True	Found	Qualifiers	%R(1)	Limits
Mercury	0.200	0.166	J	83	50-150

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

FORM IIB-IN

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: TestAmerica Denver Job No.: 280-3084-1

SDG No.:

Concentration Units: ug/L

Analyte	RL	ICB 280-15054/13 05/11/2010 15:13		CCB 280-15054/28 05/11/2010 22:32		CCB 280-15054/39 05/11/2010 22:57			
		Found	C	Found	C	Found	C	Found	C
Aluminum	100	20	U	20	U	20	U		
Calcium	200	5.53	J	35	U	35	U		
Iron	100	40	U	40	U	40	U		
Magnesium	200	20	U	20	U	20	U		
Potassium	3000	400	U	400	U	400	U		
Sodium	1000	250	U	248	J	251	J		

Italicized analytes were not requested for this sequence.

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: TestAmerica Denver Job No.: 280-3084-1

SDG No.:

Concentration Units: ug/L

Analyte	RL	ICB 280-15246/8 05/12/2010 19:10		CCB 280-15246/145 05/13/2010 01:27		CCB 280-15246/155 05/13/2010 01:55			
		Found	C	Found	C	Found	C	Found	C
Antimony	2.0	0.20	U	0.20	U	0.20	U		
Arsenic	5.0	0.60	U	0.60	U	0.60	U		
Barium	1.0	0.85	U	0.85	U	0.85	U		
Beryllium	1.0	0.24	U	0.24	U	0.24	U		
Cadmium	1.0	0.12	U	0.12	U	0.12	U		
Chromium	2.0	1.5	U	1.5	U	1.5	U		
Cobalt	1.0	0.030	U	0.030	U	0.0180	J		
Copper	2.0	1.5	U	1.5	U	1.5	U		
Lead	1.0	0.50	U	0.50	U	0.50	U		
Manganese	1.0	0.90	U	0.90	U	0.90	U		
Nickel	2.0	0.90	U	0.90	U	0.90	U		
Selenium	5.0	2.0	U	2.0	U	2.0	U		
Silver	5.0	0.45	U	0.45	U	0.0284	J		
Thallium	1.0	0.060	U	0.060	U	0.0368	J		
Vanadium	5.0	0.40	U	0.40	U	0.40	U		
Zinc	10	6.0	U	6.0	U	6.0	U		

Italicized analytes were not requested for this sequence.

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: TestAmerica Denver Job No.: 280-3084-1

SDG No.:

Concentration Units: ug/L

Analyte	RL	ICB 280-14830/8 05/08/2010 09:47		CCB 280-14830/67 05/08/2010 12:14		CCB 280-14830/78 05/08/2010 12:40		CCB 280-14830/89 05/08/2010 13:05	
		Found	C	Found	C	Found	C	Found	C
Mercury	0.20	0.10	U	0.10	U	0.10	U	0.10	U

Italicized analytes were not requested for this sequence.

3-IN
METHOD BLANK
METALS

Lab Name: TestAmerica Denver Job No.: 280-3084-1

SDG No.:

Concentration Units: mg/Kg Lab Sample ID: MB 280-14632/1-A

Instrument Code: MT_026 Batch No.: 15054

CAS No.	Analyte	Concentration	C	Q	Method
7429-90-5	Aluminum	3.0	U		6010C
7440-70-2	Calcium	20.8	J		6010C
7439-89-6	Iron	5.0	U		6010C
7439-95-4	Magnesium	4.04	J		6010C
7440-09-7	Potassium	50	U		6010C
7440-23-5	Sodium	100	U		6010C

3-IN
METHOD BLANK
METALS

Lab Name: TestAmerica Denver Job No.: 280-3084-1

SDG No.:

Concentration Units: mg/Kg Lab Sample ID: MB 280-14634/1-A

Instrument Code: MT_024 Batch No.: 15246

CAS No.	Analyte	Concentration	C	Q	Method
7440-36-0	Antimony	0.040	U	Q	6020A
7440-38-2	Arsenic	0.15	U		6020A
7440-39-3	Barium	0.20	U		6020A
7440-41-7	Beryllium	0.065	U		6020A
7440-43-9	Cadmium	0.025	U	Q	6020A
7440-47-3	Chromium	0.161	J		6020A
7440-48-4	Cobalt	0.018	U	Q	6020A
7440-50-8	Copper	0.874	J		6020A
7439-92-1	Lead	0.050	U		6020A
7439-96-5	Manganese	0.090	U		6020A
7440-02-0	Nickel	0.0355	J	Q	6020A
7782-49-2	Selenium	0.25	U		6020A
7440-22-4	Silver	0.060	U		6020A
7440-28-0	Thallium	0.010	U		6020A
7440-62-2	Vanadium	0.10	U		6020A
7440-66-6	Zinc	0.90	U		6020A

3-IN
METHOD BLANK
METALS

Lab Name: TestAmerica Denver Job No.: 280-3084-1

SDG No.:

Concentration Units: mg/Kg Lab Sample ID: MB 280-13851/1-A

Instrument Code: MT_033 Batch No.: 14830

CAS No.	Analyte	Concentration	C	Q	Method
7439-97-6	Mercury	0.0083	U		7471B

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: TestAmerica Denver Job No.: 280-3084-1

SDG No.:

Lab Sample ID: ICSA 280-15054/19 Instrument ID: MT_026

Lab File ID: 26C051110.txt ICS Source: ICP ICSA_00016

Concentration Units: ug/L

Analyte	True Solution A	Found Solution A	Percent Recovery
Aluminum	**500000**	**523660**	**105**
Calcium	**500000**	**488780**	**98**
Iron	**200000**	**194370**	**97**
Magnesium	**500000**	**535510**	**107**
Potassium		**-29.4**	
Sodium		**35.0**	
Antimony		*-0.600*	
Arsenic		*5.95*	
Barium		*0.780*	
Beryllium		*-0.510*	
Boron		*-1.07*	
Cadmium		*-0.380*	
Chromium		*-0.230*	
Cobalt		*1.82*	
Copper		*7.42*	
Lead		*5.24*	
Lithium		*-1.33*	
Manganese		*4.49*	
Molybdenum		*-1.73*	
Nickel		*2.44*	
Phosphorus		*18.5*	
Selenium		*-0.980*	
Silicon		*0.840*	
Silver		*-0.210*	
SiO2		*1.80*	
Strontium		*-0.0600*	
Thallium		*-0.210*	
Tin		*0.670*	
Titanium		*-1.48*	
Vanadium		*4.33*	
Zinc		*13.5*	

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

FORM IVA-IN

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: TestAmerica Denver Job No.: 280-3084-1

SDG No.:

Lab Sample ID: ICSAB 280-15054/20 Instrument ID: MT_026

Lab File ID: 26C051110.txt ICS Source: ICP ICSAB_00010

Concentration Units: ug/L

Analyte	True Solution AB	Found Solution AB	Percent Recovery
Aluminum	**500000**	**507590**	**102**
Calcium	**500000**	**478340**	**96**
Iron	**200000**	**188840**	**94**
Magnesium	**500000**	**519690**	**104**
Potassium	**50000**	**51661**	**103**
Sodium	**50000**	**50997**	**102**
Sodium	**50000**	**51713**	**103**
Antimony	*1000*	*1028*	*103*
Arsenic	*2000*	*2090*	*104*
Barium	*500*	*500*	*100*
Beryllium	*500*	*483*	*97*
Boron	*2000*	*1961*	*98*
Cadmium	*1000*	*1053*	*105*
Chromium	*500*	*505*	*101*
Cobalt	*500*	*475*	*95*
Copper	*500*	*548*	*110*
Lead	*1000*	*975*	*98*
Lithium	*1000*	*1029*	*103*
Manganese	*500*	*522*	*104*
Molybdenum	*1000*	*966*	*97*
Nickel	*1000*	*957*	*96*
Phosphorus	*2000*	*2073*	*104*
Selenium	*5000*	*5091*	*102*
Silicon	*10000*	*9482*	*95*
Silver	*1000*	*1134*	*113*
SiO2	*21400*	*20291*	*95*
Strontium	*1000*	*991*	*99*
Thallium	*10000*	*9033*	*90*
Tin	*10000*	*9319*	*93*
Titanium	*1000*	*1032*	*103*
Vanadium	*500*	*524*	*105*
Zinc	*1000*	*1018*	*102*

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

FORM IVA-IN

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: TestAmerica Denver Job No.: 280-3084-1

SDG No.:

Lab Sample ID: ICSA 280-15246/88 Instrument ID: MT_024

Lab File ID: 089ICSA.D ICS Source: MS ICSA_00072

Concentration Units: ug/L

Analyte	True Solution A	Found Solution A	Percent Recovery
Antimony		**0.295**	
Arsenic		**0.307**	
Barium		**0.154**	
Beryllium		**0.0106**	
Cadmium		**0.329**	
Chromium		**1.20**	
Cobalt		**0.118**	
Copper		**0.243**	
Lead		**0.204**	
Manganese		**0.503**	
Nickel		**1.07**	
Selenium		**0.285**	
Silver		**0.129**	
Thallium		**0.0520**	
Vanadium		**-0.0247**	
Zinc		**2.76**	
Molybdenum	*2000*	*2135*	*107*
Tin		*-0.0777*	
Uranium		*0.0101*	

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

FORM IVA-IN

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: TestAmerica Denver Job No.: 280-3084-1

SDG No.:

Lab Sample ID: ICSAB 280-15246/89 Instrument ID: MT_024

Lab File ID: 090ICSB.D ICS Source: MS ICSAB_00074

Concentration Units: ug/L

Analyte	True Solution AB	Found Solution AB	Percent Recovery
Antimony	**100**	**102**	**102**
Arsenic	**100**	**105**	**105**
Barium	**100**	**104**	**104**
Beryllium	**100**	**111**	**111**
Cadmium	**100**	**95.7**	**96**
Chromium	**100**	**101**	**101**
Cobalt	**100**	**101**	**101**
Copper	**100**	**91.2**	**91**
Lead	**100**	**102**	**102**
Manganese	**100**	**97.0**	**97**
Nickel	**100**	**94.4**	**94**
Selenium	**100**	**105**	**105**
Silver	**100**	**80.2**	**80**
Thallium	**100**	**106**	**106**
Vanadium	**100**	**103**	**102**
Zinc	**100**	**101**	**101**
Molybdenum	*2100*	*2336*	*111*
Tin	*100*	*98.4*	*98*
Uranium	*100*	*117*	*117*

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

FORM IVA-IN

5A-IN
MATRIX SPIKE SAMPLE RECOVERY
METALS

Client ID: MR-SD200-0409 MS
Lab ID: 280-3084-1 MS
Lab Name: TestAmerica Denver
Job No.: 280-3084-1
SDG No.:
Matrix: Solid
Concentration Units: mg/Kg
% Solids: 7.7

Analyte	SSR	C	Sample Result (SR)	C	Spike Added (SA)	%R	Control Limit %R	Q	Method
Aluminum	18400		11000		2380	320	80-120	4	6010C
Calcium	64900		8800		59600	94	80-120		6010C
Iron	15600		13000		1190	203	80-120	4	6010C
Magnesium	59500		2200		59600	96	80-120		6010C
Potassium	58600		950	J	59600	97	80-120		6010C
Sodium	57800		1100	U	59600	97	80-120		6010C
Antimony	177		3.3		255	68	80-120	Q J	6020A
Arsenic	282		27		255	100	80-120		6020A
Barium	481		210		255	108	80-120		6020A
Beryllium	245		0.66	J	255	96	80-120		6020A
Cadmium	252		1.3		255	99	80-120	Q	6020A
Chromium	269		17		255	99	80-120		6020A
Cobalt	270		22		255	97	80-120	Q	6020A
Copper	300		49		255	99	80-120		6020A
Lead	618		380		255	92	80-120		6020A
Manganese	2410		1800		255	256	80-120	4	6020A
Nickel	296		40		255	100	80-120	Q	6020A
Selenium	253		2.6	J	255	98	80-120		6020A
Silver	239		0.65	U	255	94	80-120		6020A
Thallium	260		1.3		255	102	80-120		6020A
Vanadium	268		23		255	96	80-120		6020A
Zinc	341		93		255	97	80-120		6020A
Mercury	5.28		0.15	J	5.32	96	80-120		7471B

SSR = Spiked Sample Result

Calculations are performed before rounding to avoid round-off errors in calculated results.
Note - Results and Reporting Limits have been adjusted for dry weight.

FORM VA - IN

5A-IN
MATRIX SPIKE DUPLICATE SAMPLE RECOVERY
METALS

Client ID: MR-SD200-0409 MSD
Lab ID: 280-3084-1 MSD
Lab Name: TestAmerica Denver
Job No.: 280-3084-1
SDG No.:
Matrix: Solid
Concentration Units: mg/Kg
% Solids: 7.7

Analyte	(SDR)	C	Spike Added (SA)	%R	Control Limit %R	RPD	RPD Limit	Q	Method
Aluminum	15000		2380	181	80-120	20	20	4	6010C
Calcium	61400		59600	88	80-120	6	20		6010C
Iron	12500		1190	-54	80-120	22	20	4 J	6010C
Magnesium	55600		59600	90	80-120	7	20		6010C
Potassium	55700		59600	92	80-120	5	20		6010C
Sodium	55100		59600	93	80-120	5	20		6010C
Antimony	188		260	71	80-120	6	20	Q J	6020A
Arsenic	292		260	102	80-120	4	20		6020A
Barium	507		260	116	80-120	5	20		6020A
Beryllium	259		260	99	80-120	6	20		6020A
Cadmium	268		260	103	80-120	6	20	Q	6020A
Chromium	279		260	101	80-120	4	20		6020A
Cobalt	283		260	101	80-120	5	20	Q	6020A
Copper	309		260	100	80-120	3	20		6020A
Lead	642		260	99	80-120	4	20		6020A
Manganese	2540		260	302	80-120	5	20	4	6020A
Nickel	307		260	103	80-120	4	20	Q	6020A
Selenium	257		260	98	80-120	2	20		6020A
Silver	256		260	98	80-120	7	20		6020A
Thallium	269		260	103	80-120	3	20		6020A
Vanadium	277		260	98	80-120	3	20		6020A
Zinc	350		260	99	80-120	3	20		6020A
Mercury	4.76		5.07	91	80-120	10	20		7471B

SDR = Sample Duplicate Result

Calculations are performed before rounding to avoid round-off errors in calculated results.
Note - Results and Reporting Limits have been adjusted for dry weight.

FORM VD - IN

5B-IN
POST DIGESTION SPIKE SAMPLE RECOVERY
METALS

Client ID: MR-SD200-0409 PDS Lab ID: 280-3084-1 PDS

Lab Name: TestAmerica Denver Job No.: 280-3084-1

SDG No.:

Matrix: Solid Concentration Units: mg/Kg

Analyte	SSR	C	Sample Result (SR)	C	Spike Added (SA)	%R	Control Limit %R	Q	Method
Aluminum	11900		11000		1080	113	75-125		6010C
Calcium	32300		8800		21600	109	75-125		6010C
Iron	14300		13000		1080	NC	75-125		6010C
Magnesium	26200		2200		21600	111	75-125		6010C
Potassium	24700		950	J	21600	110	75-125		6010C
Sodium	24000		1100	U	21600	111	75-125		6010C
Antimony	1070		3.3		1080	98	75-125	Q	6020A
Arsenic	1100		27		1080	99	75-125		6020A
Barium	1250		210		1080	97	75-125		6020A
Beryllium	1050		0.66	J	1080	97	75-125		6020A
Cadmium	1050		1.3		1080	97	75-125	Q	6020A
Chromium	1060		17		1080	96	75-125		6020A
Cobalt	1050		22		1080	95	75-125	Q	6020A
Copper	1120		49		1080	99	75-125		6020A
Lead	1410		380		1080	95	75-125		6020A
Manganese	2770		1800		1080	94	75-125		6020A
Nickel	1100		40		1080	98	75-125	Q	6020A
Selenium	1060		2.6	J	1080	98	75-125		6020A
Silver	257		0.65	U	270	95	75-125		6020A
Thallium	1050		1.3		1080	97	75-125		6020A
Vanadium	1070		23		1080	97	75-125		6020A
Zinc	1170		93		1080	99	75-125		6020A

SSR = Spiked Sample Result

Calculations are performed before rounding to avoid round-off errors in calculated results.
Note - Results and Reporting Limits have been adjusted for dry weight.

FORM VB - IN

7A-IN
LAB CONTROL SAMPLE
METALS

Lab ID: LCS 280-14632/2-A

Lab Name: TestAmerica Denver Job No.: 280-3084-1

Sample Matrix: Solid LCS Source: ICP SPK 3A_00008

Analyte	Solid(mg/Kg)							
	True	Found	C	%R	Limits		Q	Method
Aluminum	200	183		91	80	120		6010C
Calcium	5000	4670		93	80	120		6010C
Iron	100	94.5		94	80	120		6010C
Magnesium	5000	4760		95	80	120		6010C
Potassium	5000	4830		97	80	120		6010C
Sodium	5000	5060		101	80	120		6010C

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

FORM VIIA - IN

7A-IN
LAB CONTROL SAMPLE
METALS

Lab ID: LCS 280-14634/2-A

Lab Name: TestAmerica Denver Job No.: 280-3084-1

Sample Matrix: Solid LCS Source: MS ICV-B HP_00002

Analyte	Solid(mg/Kg)							
	True	Found	C	%R	Limits		Q	Method
Antimony	20.0	19.5		98	80	120	Q	6020A
Arsenic	20.0	19.1		95	80	120		6020A
Barium	20.0	19.5		98	80	120		6020A
Beryllium	20.0	18.5		93	80	120		6020A
Cadmium	20.0	19.4		97	80	120	Q	6020A
Chromium	20.0	19.1		96	80	120		6020A
Cobalt	20.0	18.9		95	80	120	Q	6020A
Copper	20.0	19.2		96	80	120		6020A
Lead	20.0	19.4		97	80	120		6020A
Manganese	20.0	19.4		97	80	120		6020A
Nickel	20.0	19.7		98	80	120	Q	6020A
Selenium	20.0	19.2		96	80	120		6020A
Silver	20.0	18.8		94	80	120		6020A
Thallium	20.0	19.4		97	80	120		6020A
Vanadium	20.0	18.6		93	80	120		6020A
Zinc	20.0	19.1		95	80	120		6020A

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

FORM VIIA - IN

7A-IN
LAB CONTROL SAMPLE
METALS

Lab ID: LCS 280-13851/2-A

Lab Name: TestAmerica Denver Job No.: 280-3084-1

Sample Matrix: Solid LCS Source: Hg Daily Spk_00068

Analyte	Solid(mg/Kg)							
	True	Found	C	%R	Limits		Q	Method
Mercury	0.417	0.420		101	80	120		7471B

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

FORM VIIA - IN

8-IN
ICP-AES AND ICP-MS SERIAL DILUTIONS
METALS

Lab ID: 280-3084-1

SDG No:

Lab Name: TestAmerica Denver Job No: 280-3084-1

Matrix: Solid Concentration Units: mg/Kg

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	Method
Aluminum	11000		11000		2.9		6010C
Calcium	8800		9140		3.3		6010C
Iron	13000		13600		3.5		6010C
Magnesium	2200		2290		4.2		6010C
Potassium	950	J	2800	U	NC		6010C
Sodium	1100	U	5500	U	NC		6010C

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

FORM VIII-IN

8-IN
ICP-AES AND ICP-MS SERIAL DILUTIONS
METALS

Lab ID: 280-3084-1

SDG No:

Lab Name: TestAmerica Denver Job No: 280-3084-1

Matrix: Solid Concentration Units: mg/Kg

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	Method
Antimony	3.3		3.62	J	NC	Q	6020A
Arsenic	27		27.2	J	0.46		6020A
Barium	210		209		1.4		6020A
Beryllium	0.66	J	3.5	U	NC		6020A
Cadmium	1.3		1.30	J	NC	Q	6020A
Chromium	17		23.3	J	NC		6020A
Cobalt	22		22.2		1.9	Q	6020A
Copper	49		50.9	J	4.5		6020A
Lead	380		396		2.8		6020A
Manganese	1800		1850		5.4		6020A
Nickel	40		42.4		5.6	Q	6020A
Selenium	2.6	J	8.30	J	NC		6020A
Silver	0.65	U	3.2	U	NC		6020A
Thallium	1.3		1.38	J	NC		6020A
Vanadium	23		22.5	J	2.1		6020A
Zinc	93		94.2	J	NC		6020A

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

FORM VIII-IN

8-IN
ICP-AES AND ICP-MS SERIAL DILUTIONS
METALS

Lab ID: 280-3084-1

SDG No:

Lab Name: TestAmerica Denver Job No: 280-3084-1

Matrix: Solid Concentration Units: mg/Kg

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	Method
Mercury	0.15	J	0.49	U	NC		7471B

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

FORM VIII-IN

9-IN
DETECTION LIMITS
METALS

Lab Name: TestAmerica Denver Job Number: 280-3084-1

SDG Number:

Matrix: Solid Instrument ID: MT_026

Analysis Method: 6010C DL Date: 02/26/2010 15:45

Prep Method: 3050B

Leach Method:

Analyte	Wavelength/ Mass	LOQ (mg/Kg)	DL (mg/Kg)
Aluminum	167	50	1.55
Calcium	317.9	100	14.1
Iron	259.9	80	3.8
Magnesium	279	30	3.7
Potassium	766.4	300	41
Sodium	589.5	500	59

9-IN
CALIBRATION BLANK DETECTION LIMITS
METALS

Lab Name: TestAmerica Denver Job Number: 280-3084-1

SDG Number:

Matrix: Solid Instrument ID: MT_026

Analysis Method: 6010C XMDL Date: 02/26/2010 15:45

Analyte	Wavelength/ Mass	XRL (ug/L)	XMDL (ug/L)
Aluminum		100	18
Calcium		200	3.45
Iron		100	22
Magnesium		200	10.7
Potassium		3000	237
Sodium		1000	91.6

9-IN
DETECTION LIMITS
METALS

Lab Name: TestAmerica Denver Job Number: 280-3084-1

SDG Number:

Matrix: Solid Instrument ID: MT_024

Analysis Method: 6020A DL Date: 11/01/2009 00:00

Prep Method: 3050B

Leach Method:

Analyte	Wavelength/ Mass	LOQ (ug/Kg)	DL (ug/Kg)
Antimony	121	200	14
Arsenic	75	600	50.6
Barium	137	250	70.5
Beryllium	9	100	22.5
Cadmium	111	100	9.38
Chromium	52	600	76
Cobalt	59	100	6.63
Copper	63	2500	71.1
Lead	208	400	18.2
Manganese	55	1000	33
Nickel	60	350	25.3
Selenium	78	500	133
Silver	107	100	20.3
Thallium	205	100	3.51
Vanadium	51	500	38.5
Zinc	66	2500	316

9-IN
CALIBRATION BLANK DETECTION LIMITS
METALS

Lab Name: TestAmerica Denver Job Number: 280-3084-1

SDG Number:

Matrix: Solid Instrument ID: MT_024

Analysis Method: 6020A XMDL Date: 12/22/2009 10:16

Analyte	Wavelength/ Mass	XRL (ug/L)	XMDL (ug/L)
Antimony		2	0.07
Arsenic		5	0.21
Barium		1	0.29
Beryllium		1	0.08
Cadmium		1	0.04
Chromium		2	0.5
Cobalt		1	0.01
Copper		2	0.56
Lead		1	0.18
Manganese		1	0.31
Nickel		2	0.3
Selenium		5	0.7
Silver		5	0.015
Thallium		1	0.02
Vanadium		5	0.14
Zinc		10	2

9-IN
DETECTION LIMITS
METALS

Lab Name: TestAmerica Denver Job Number: 280-3084-1

SDG Number:

Matrix: Solid Instrument ID: MT_033

Analysis Method: 7471B DL Date: 11/01/2009 00:00

Prep Method: 7471B

Leach Method:

Analyte	Wavelength/ Mass	LOQ (mg/Kg)	DL (ug/Kg)
Mercury	253.7	0.017	5.53

9-IN
CALIBRATION BLANK DETECTION LIMITS
METALS

Lab Name: TestAmerica Denver Job Number: 280-3084-1

SDG Number:

Matrix: Solid Instrument ID: MT_033

Analysis Method: 7471B XMDL Date: 11/01/2009 00:00

Analyte	Wavelength/ Mass	XRL (ug/L)	XMDL (ug/L)
Mercury		0.204	0.0664

10-IN
ICP-AES INTERELEMENT CORRECTION FACTORS
METALS

Lab Name: TestAmerica Denver Job Number: 280-3084-1

SDG No.:

ICP-AES Instrument ID: MT_026 Date: 04/30/2010

Analyte	Wave Length	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd	Co	Cr	Cu	Fe	K
Aluminum	167.079													0.000714	
Aluminum	309.271														
Antimony	206.833		0.000012						0.000001			0.006920		0.000012	
Arsenic	189.042		-0.000027									-0.001070			
Barium	455.403														
Beryllium	313.042														
Bismuth	223.061											0.000652		-0.000021	
Boron	208.959														
Cadmium	228.802			0.003384							-0.004035				
Calcium	317.933														
Chromium	205.552						-0.002110								
Cobalt	228.616					-0.000135									
Copper	324.754														
Iron	259.940														
Iron	271.441										0.109000				
Lead	220.353		-0.000061										0.000046	0.000036	
Lithium	670.784								0.000010						
Magnesium	279.079														
Manganese	257.610														
Molybdenum	202.030														
Nickel	231.604														
Phosphorus	178.284														
Potassium	766.490														
Selenium	196.090								-0.000009					0.000004	
Silicon	288.158											0.000027			
Silver	328.068														
Sodium	589.592														
Sodium	818.326														
Strontium	407.771								0.000010						
Sulfur	182.034														

X-IN

10-IN
ICP-AES INTERELEMENT CORRECTION FACTORS
METALS

Lab Name: TestAmerica Denver Job Number: 280-3084-1

SDG No.:

ICP-AES Instrument ID: MT_026 Date: 04/30/2010

Analyte	Wave Length	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd	Co	Cr	Cu	Fe	K
Thallium	190.856										0.005895	0.000241			
Thorium	283.730									-0.000171		-0.000233		0.000731	
Tin	189.989														
Titanium	334.904											0.000169			
Uranium	370.152				0.001355							-0.002090		0.000260	
Vanadium	292.402											-0.0006627			
Zinc	206.200											-0.001730			
Zirconium	339.198													-0.000026	

10-IN
ICP-AES INTERELEMENT CORRECTION FACTORS
METALS

Lab Name: TestAmerica Denver Job Number: 280-3084-1

SDG No.:

ICP-AES Instrument ID: MT_026 Date: 04/30/2010

Analyte	Wave Length	Li	Mg	Mn	Mo	Na	Ni	P	Pb	S	Sb	Se	Si	SiO2	Sn
Aluminum	309.271		0.004310												
Aluminum	167.079														
Antimony	206.833				-0.002268										
Arsenic	189.042				-0.000564										
Barium	455.403														
Beryllium	313.042														
Bismuth	223.061														
Boron	208.959				0.045450										
Cadmium	228.802														
Calcium	317.933														
Chromium	205.552				0.000100		0.000046								
Cobalt	228.616				-0.001154		0.000049								
Copper	324.754														
Iron	259.940														
Iron	271.441														
Lead	220.353		0.000001		-0.001630		0.000200					0.000013	0.000124		
Lithium	670.784		0.000005												
Magnesium	279.079														
Manganese	257.610														
Molybdenum	202.030														
Nickel	231.604														
Phosphorus	178.284														
Potassium	766.490														
Selenium	196.090			0.000468											
Silicon	288.158				-0.005890										0.001650
Silver	328.068				-0.000308										
Sodium	818.326														
Sodium	589.592														
Strontium	407.771														
Sulfur	182.034			0.005840	0.000664										

X-IN

10-IN
ICP-AES INTERELEMENT CORRECTION FACTORS
METALS

Lab Name: TestAmerica Denver Job Number: 280-3084-1

SDG No.:

ICP-AES Instrument ID: MT_026 Date: 04/30/2010

Analyte	Wave Length	Li	Mg	Mn	Mo	Na	Ni	P	Pb	S	Sb	Se	Si	SiO2	Sn
Thallium	190.856			0.001981	-0.000286										
Thorium	283.730		-0.000007		0.000415		0.000139								
Tin	189.989														
Titanium	334.904		0.000010		0.000999										
Uranium	370.152				0.001220										
Vanadium	292.402			-0.004423											
Zinc	206.200														
Zirconium	339.198				0.000494								0.000018		

X-IN

10-IN
ICP-AES INTERELEMENT CORRECTION FACTORS
METALS

Lab Name: TestAmerica Denver Job Number: 280-3084-1

SDG No.:

ICP-AES Instrument ID: MT_026 Date: 04/30/2010

Analyte	Wave Length	Sr	Th	Ti	Tl	U	V	Zn	Zr						
Aluminum	167.079														
Aluminum	309.271														
Antimony	206.833					-0.00200			-0.001150						
Arsenic	189.042														
Barium	455.403								0.001060						
Beryllium	313.042			-0.000233											
Bismuth	223.061		-0.001680	-0.004040		-0.000669									
Boron	208.959														
Cadmium	228.802														
Calcium	317.933		-0.007489												
Chromium	205.552					0.000035									
Cobalt	228.616			0.001960											
Copper	324.754		0.003303						-0.009634						
Iron	259.940														
Iron	271.441						-0.45600		-0.128890						
Lead	220.353			-0.000765		0.000568									
Lithium	670.784														
Magnesium	279.079		-0.023880			-0.016250									
Manganese	257.610														
Molybdenum	202.030														
Nickel	231.604														
Phosphorus	178.284														
Potassium	766.490														
Selenium	196.090		-0.000475			-0.001609									
Silicon	288.158														
Silver	328.068		0.000391			0.000955			0.003886						
Sodium	589.592														
Sodium	818.326														
Strontium	407.771														
Sulfur	182.034														

X-IN

10-IN
ICP-AES INTERELEMENT CORRECTION FACTORS
METALS

Lab Name: TestAmerica Denver Job Number: 280-3084-1

SDG No.:

ICP-AES Instrument ID: MT_026 Date: 04/30/2010

Analyte	Wave Length	Sr	Th	Ti	Tl	U	V	Zn	Zr						
Thallium	190.856			-0.001473		-0.000656	0.000536								
Thorium	283.730					0.022555			0.012600						
Tin	189.989			-0.001430											
Titanium	334.904		0.006797			0.000660									
Uranium	370.152		-0.011281	0.003590											
Vanadium	292.402		0.001818	0.000957		-0.000553									
Zinc	206.200														
Zirconium	339.198		0.015360												

11-IN
ICP-AES AND ICP-MS LINEAR RANGES
METALS

Lab Name: TestAmerica Denver Job No: 280-3084-1

SDG No.:

Instrument ID: MT_026 Date: 04/27/2010 00:00

Analyte	Integ. Time (Sec.)	Concentration (mg/L)	Method
Aluminum		1000	6010C
Calcium		2000	6010C
Iron		2000	6010C
Magnesium		2000	6010C
Potassium		500	6010C
Sodium		10000	6010C

11-IN
ICP-AES AND ICP-MS LINEAR RANGES
METALS

Lab Name: TestAmerica Denver Job No: 280-3084-1

SDG No.:

Instrument ID: MT_024 Date: 04/04/2010 00:00

Analyte	Integ. Time (Sec.)	Concentration (ug/L)	Method
Antimony		4000	6020A
Arsenic		4000	6020A
Barium		4000	6020A
Beryllium		4000	6020A
Cadmium		4000	6020A
Chromium		4000	6020A
Cobalt		4000	6020A
Copper		4000	6020A
Lead		4000	6020A
Manganese		20000	6020A
Nickel		4000	6020A
Selenium		4000	6020A
Silver		4000	6020A
Thallium		4000	6020A
Vanadium		4000	6020A
Zinc		4000	6020A

12-IN
PREPARATION LOG
METALS

Lab Name: TestAmerica Denver Job No.: 280-3084-1

SDG No.:

Preparation Method: 3050B

Lab Sample ID	Preparation Date	Prep Batch	Initial Weight (g)	Initial Volume	Final Volume (mL)
MB 280-14632/1-A	05/11/2010 08:00	14632	1.00		100
LCS 280-14632/2-A	05/11/2010 08:00	14632	1.00		100
280-3084-1	05/11/2010 08:00	14632	1.18		100
280-3084-1 MS	05/11/2010 08:00	14632	1.09		100
280-3084-1 MSD	05/11/2010 08:00	14632	1.09		100

12-IN
PREPARATION LOG
METALS

Lab Name: TestAmerica Denver Job No.: 280-3084-1

SDG No.:

Preparation Method: 3050B

Lab Sample ID	Preparation Date	Prep Batch	Initial Weight (g)	Initial Volume	Final Volume (mL)
MB 280-14634/1-A	05/11/2010 08:00	14634	1.00		100
LCS 280-14634/2-A	05/11/2010 08:00	14634	1.00		100
280-3084-1	05/11/2010 08:00	14634	1.20		100
280-3084-1 MS	05/11/2010 08:00	14634	1.02		100
280-3084-1 MSD	05/11/2010 08:00	14634	1.00		100

12-IN
PREPARATION LOG
METALS

Lab Name: TestAmerica Denver Job No.: 280-3084-1

SDG No.:

Preparation Method: 7471B

Lab Sample ID	Preparation Date	Prep Batch	Initial Weight (g)	Initial Volume	Final Volume (mL)
MB 280-13851/1-A	05/08/2010 07:30	13851	0.60		50
LCS 280-13851/2-A	05/08/2010 07:30	13851	0.60		50
280-3084-1	05/08/2010 07:30	13851	0.66		50
280-3084-1 MS	05/08/2010 07:30	13851	0.61		50
280-3084-1 MSD	05/08/2010 07:30	13851	0.64		50

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Denver Job No.: 280-3084-1

SDG No.:

Instrument ID: MT_026 Method: 6010C

Start Date: 05/11/2010 14:32 End Date: 05/12/2010 00:23

Lab Sample ID	D/F	Type	Time	Analytes																			
				Al	Ca	Fe	K	Mg	Na														
ICIS 280-15054/1	1		14:32	X	X	X	X	X	X														
IC 280-15054/2			14:35	X	X	X	X	X	X														
IC 280-15054/3			14:37	X	X	X	X	X	X														
ZZZZZZ			14:39																				
ZZZZZZ			14:41																				
ICVH 280-15054/6	1		14:44	X	X	X	X	X	X														
ICV 280-15054/7	1		14:50	X	X	X	X	X	X														
ICVL 280-15054/8			14:53																				
CCVH 280-15054/9			14:55																				
CCV 280-15054/10			14:57																				
ICVL 280-15054/11			15:06																				
ICVL 280-15054/12	1		15:08	X	X	X	X	X	X														
ICB 280-15054/13	1		15:13	X	X	X	X	X	X														
CRI 280-15054/14			15:16																				
ZZZZZZ			15:22																				
CRI 280-15054/16			15:25																				
CRI 280-15054/17	1		15:31	X	X	X	X	X	X														
CRI 280-15054/18			15:33																				
ICSA 280-15054/19	1		15:39	X	X	X	X	X	X														
ICSAB 280-15054/20	1		15:42	X	X	X	X	X	X														
LRA 280-15054/21			15:45																				
CCVH 280-15054/22			15:47																				
CCV 280-15054/23			15:49																				
CCB 280-15054/24			15:51																				
CCVL 280-15054/25			15:54																				
CCVH 280-15054/26	1		22:28	X	X	X	X	X	X														
CCV 280-15054/27	1		22:30	X	X	X	X	X	X														
CCB 280-15054/28	1		22:32	X	X	X	X	X	X														
CCVL 280-15054/29	1		22:35	X	X	X	X	X	X														
MB 280-14632/1-A	1	T	22:37	X	X	X	X	X	X														
LCS 280-14632/2-A	1	T	22:39	X	X	X	X	X	X														
280-3084-1	1	T	22:41	X	X	X	X	X	X														
280-3084-1 SD	5	T	22:44	X	X	X	X	X	X														
280-3084-1 MS	1	T	22:46	X	X	X	X	X	X														
280-3084-1 MSD	1	T	22:48	X	X	X	X	X	X														
280-3084-1 PDS	1	T	22:50	X	X	X	X	X	X														
CCVH 280-15054/37	1		22:52	X	X	X	X	X	X														
CCV 280-15054/38	1		22:55	X	X	X	X	X	X														
CCB 280-15054/39	1		22:57	X	X	X	X	X	X														
CCVL 280-15054/40	1		22:59	X	X	X	X	X	X														
ZZZZZZ			23:02																				
ZZZZZZ			23:04																				

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Denver Job No.: 280-3084-1

SDG No.:

Instrument ID: MT_026 Method: 6010C

Start Date: 05/11/2010 14:32 End Date: 05/12/2010 00:23

Lab Sample ID	D/F	Type	Time	Analytes																			
				Al	Ca	Fe	K	Mg	Na														
ZZZZZZ			23:06																				
ZZZZZZ			23:08																				
ZZZZZZ			23:11																				
ZZZZZZ			23:13																				
ZZZZZZ			23:15																				
ZZZZZZ			23:17																				
ZZZZZZ			23:20																				
CCVH 280-15054/50			23:22																				
CCV 280-15054/51			23:24																				
CCB 280-15054/52			23:26																				
CCVL 280-15054/53			23:29																				
ZZZZZZ			23:31																				
ZZZZZZ			23:33																				
ZZZZZZ			23:36																				
ZZZZZZ			23:38																				
ZZZZZZ			23:40																				
ZZZZZZ			23:42																				
ZZZZZZ			23:45																				
ZZZZZZ			23:47																				
ZZZZZZ			23:49																				
ZZZZZZ			23:51																				
CCVH 280-15054/64			23:53																				
CCV 280-15054/65			23:56																				
CCB 280-15054/66			23:58																				
CCVL 280-15054/67			00:00																				
ZZZZZZ			00:02																				
ZZZZZZ			00:05																				
ZZZZZZ			00:07																				
ZZZZZZ			00:09																				
ZZZZZZ			00:12																				
ZZZZZZ			00:14																				
CCVH 280-15054/74			00:16																				
CCV 280-15054/75			00:18																				
CCB 280-15054/76			00:20																				
CCVL 280-15054/77			00:23																				

Prep Types
T = Total/NA

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Denver Job No.: 280-3084-1

SDG No.:

Instrument ID: MT_024 Method: 6020A

Start Date: 05/12/2010 18:48 End Date: 05/13/2010 09:03

Lab Sample ID	D/F	Type	Time	Analytes																			
				Ag	As	Ba	Be	Cd	Co	Cr	Cu	Mn	Ni	Pb	Sb	Se	Tl	V	Zn				
ITUNE 280-15246/1			18:48																				
IC 280-15246/2			18:54	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				
IC 280-15246/3			18:56	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				
ICV 280-15246/4	1		18:59	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				
ZZZZZZ			19:02																				
ICVL 280-15246/6	1		19:05	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				
ICB 280-15246/7			19:07																				
ICB 280-15246/8	1		19:10	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				
CRI 280-15246/9	1		19:13	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				
ZZZZZZ			19:16																				
ICSA 280-15246/11			19:18																				
ICSAB 280-15246/12			19:21																				
RINSE 280-15246/13			19:24																				
LRA 280-15246/14			19:27																				
RINSE 280-15246/15			19:29																				
CCV 280-15246/16			19:32																				
CCB 280-15246/17			19:35																				
CCVL 280-15246/18			19:37																				
ZZZZZZ			19:40																				
ZZZZZZ			19:43																				
ZZZZZZ			19:46																				
ZZZZZZ			19:48																				
ZZZZZZ			19:51																				
ZZZZZZ			19:54																				
ZZZZZZ			19:57																				
ZZZZZZ			19:59																				
ZZZZZZ			20:02																				
ZZZZZZ			20:05																				
CCV 280-15246/29			20:08																				
CCB 280-15246/30			20:11																				
ZZZZZZ			20:13																				
ZZZZZZ			20:16																				
ZZZZZZ			20:19																				
ZZZZZZ			20:22																				
ZZZZZZ			20:24																				
ZZZZZZ			20:27																				
ZZZZZZ			20:30																				
ZZZZZZ			20:33																				
ZZZZZZ			20:35																				
CCV 280-15246/40			20:38																				
CCB 280-15246/41			20:41																				
ZZZZZZ			20:43																				

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Denver Job No.: 280-3084-1

SDG No.:

Instrument ID: MT_024 Method: 6020A

Start Date: 05/12/2010 18:48 End Date: 05/13/2010 09:03

Lab Sample ID	D/F	Type	Time	Analytes																			
				Ag	As	Ba	Be	Cd	Co	Cr	Cu	Mn	Ni	Pb	Sb	Se	Tl	V	Zn				
ZZZZZZ			20:46																				
ZZZZZZ			20:49																				
ZZZZZZ			20:52																				
ZZZZZZ			20:54																				
ZZZZZZ			20:57																				
ZZZZZZ			21:00																				
ZZZZZZ			21:02																				
ZZZZZZ			21:05																				
CCV 280-15246/51			21:08																				
CCB 280-15246/52			21:11																				
ZZZZZZ			21:13																				
ZZZZZZ			21:16																				
ZZZZZZ			21:19																				
ZZZZZZ			21:22																				
ZZZZZZ			21:24																				
ZZZZZZ			21:27																				
ZZZZZZ			21:30																				
ZZZZZZ			21:33																				
ZZZZZZ			21:35																				
ZZZZZZ			21:38																				
CCV 280-15246/63			21:41																				
CCB 280-15246/64			21:44																				
CCB 280-15246/65			21:47																				
ZZZZZZ			21:49																				
ZZZZZZ			21:52																				
ZZZZZZ			21:55																				
ZZZZZZ			21:58																				
ZZZZZZ			22:00																				
ZZZZZZ			22:03																				
ZZZZZZ			22:06																				
ZZZZZZ			22:09																				
ZZZZZZ			22:11																				
CCV 280-15246/75			22:14																				
CCB 280-15246/76			22:17																				
CCB 280-15246/77			22:20																				
ZZZZZZ			22:22																				
ZZZZZZ			22:25																				
ZZZZZZ			22:28																				
ZZZZZZ			22:31																				
ZZZZZZ			22:33																				
ZZZZZZ			22:36																				
ZZZZZZ			22:39																				

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Denver Job No.: 280-3084-1

SDG No.:

Instrument ID: MT_024 Method: 6020A

Start Date: 05/12/2010 18:48 End Date: 05/13/2010 09:03

Lab Sample ID	D/F	Type	Time	Analytes																			
				Ag	As	Ba	Be	Cd	Co	Cr	Cu	Mn	Ni	Pb	Sb	Se	Tl	V	Zn				
CCV 280-15246/85			22:42																				
CCB 280-15246/86			22:45																				
CCB 280-15246/87			22:47																				
ICSA 280-15246/88	1		22:50	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				
ICSAB 280-15246/89	1		22:53	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				
RINSE 280-15246/90			22:56																				
CCV 280-15246/91			22:58																				
CCB 280-15246/92			23:01																				
CCVL 280-15246/93			23:04																				
ZZZZZZ			23:07																				
ZZZZZZ			23:09																				
ZZZZZZ			23:12																				
ZZZZZZ			23:15																				
ZZZZZZ			23:18																				
ZZZZZZ			23:20																				
ZZZZZZ			23:23																				
ZZZZZZ			23:26																				
ZZZZZZ			23:29																				
CCV 280-15246/103			23:31																				
CCB 280-15246/104			23:34																				
CCB 280-15246/105			23:37																				
ZZZZZZ			23:40																				
ZZZZZZ			23:42																				
ZZZZZZ			23:45																				
ZZZZZZ			23:48																				
ZZZZZZ			23:51																				
ZZZZZZ			23:53																				
ZZZZZZ			23:56																				
ZZZZZZ			23:59																				
ZZZZZZ			00:02																				
CCV 280-15246/115			00:05																				
CCB 280-15246/116			00:07																				
CCB 280-15246/117			00:10																				
ZZZZZZ			00:13																				
ZZZZZZ			00:16																				
ZZZZZZ			00:18																				
ZZZZZZ			00:21																				
ZZZZZZ			00:24																				
ZZZZZZ			00:26																				
ZZZZZZ			00:29																				
CCV 280-15246/125			00:32																				
CCB 280-15246/126			00:35																				

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Denver Job No.: 280-3084-1

SDG No.:

Instrument ID: MT_024 Method: 6020A

Start Date: 05/12/2010 18:48 End Date: 05/13/2010 09:03

Lab Sample ID	D/F	Type	Time	Analytes																			
				Ag	As	Ba	Be	Cd	Co	Cr	Cu	Mn	Ni	Pb	Sb	Se	Tl	V	Zn				
ZZZZZZ			00:38																				
ZZZZZZ			00:40																				
ZZZZZZ			00:43																				
ZZZZZZ			00:46																				
ZZZZZZ			00:49																				
ZZZZZZ			00:51																				
ZZZZZZ			00:54																				
CCV 280-15246/134			00:57																				
CCB 280-15246/135			01:00																				
CCB 280-15246/136			01:02																				
RINSE 280-15246/137			01:05																				
RINSE 280-15246/138			01:08																				
RINSE 280-15246/139			01:11																				
ZZZZZZ			01:13																				
IC 280-15246/141			01:16	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				
IC 280-15246/142	1		01:19	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				
CCV 280-15246/143	1		01:22	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				
CCB 280-15246/144			01:24																				
CCB 280-15246/145	1		01:27	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				
CCVL 280-15246/146	1		01:30	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				
MB 280-14634/1-A	1	T	01:33	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				
LCS 280-14634/2-A	1	T	01:36	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				
280-3084-1	1	T	01:38	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				
280-3084-1 SD	5	T	01:41	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				
280-3084-1 PDS	1	T	01:44	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				
280-3084-1 MS	1	T	01:46	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				
280-3084-1 MSD	1	T	01:49	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				
CCV 280-15246/154	1		01:52	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				
CCB 280-15246/155	1		01:55	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				
CCB 280-15246/156			01:57																				
CCVL 280-15246/157	1		02:00	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				
ZZZZZZ			02:03																				
ZZZZZZ			02:06																				
ZZZZZZ			02:08																				
ZZZZZZ			02:11																				
ZZZZZZ			02:14																				
ZZZZZZ			02:17																				
ZZZZZZ			02:19																				
ZZZZZZ			02:22																				
ZZZZZZ			02:25																				
ZZZZZZ			02:28																				
CCV 280-15246/168			02:30																				

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Denver Job No.: 280-3084-1

SDG No.:

Instrument ID: MT_024 Method: 6020A

Start Date: 05/12/2010 18:48 End Date: 05/13/2010 09:03

Lab Sample ID	D/F	Type	Time	Analytes																			
				Ag	As	Ba	Be	Cd	Co	Cr	Cu	Mn	Ni	Pb	Sb	Se	Tl	V	Zn				
CCB 280-15246/169			02:33																				
CCB 280-15246/170			02:36																				
CCVL 280-15246/171			02:39																				
ZZZZZZ			02:42																				
ZZZZZZ			02:44																				
ZZZZZZ			02:47																				
ZZZZZZ			02:50																				
ZZZZZZ			02:52																				
ZZZZZZ			02:55																				
ZZZZZZ			02:58																				
ZZZZZZ			03:01																				
ZZZZZZ			03:03																				
CCV 280-15246/181			03:06																				
CCB 280-15246/182			03:09																				
CCB 280-15246/183			03:11																				
CCVL 280-15246/184			03:14																				
RINSE 280-15246/185			03:17																				
RINSE 280-15246/186			03:20																				
RINSE 280-15246/187			03:22																				
ZZZZZZ			03:25																				
IC 280-15246/189			03:28	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				
IC 280-15246/190			03:31	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				
CCV 280-15246/191			03:33																				
CCB 280-15246/192			03:36																				
ZZZZZZ			03:39																				
ZZZZZZ			03:42																				
ZZZZZZ			03:44																				
ZZZZZZ			03:47																				
ZZZZZZ			03:50																				
CCV 280-15246/198			03:53																				
CCB 280-15246/199			03:55																				
ZZZZZZ			03:58																				
ZZZZZZ			04:01																				
ZZZZZZ			04:04																				
ZZZZZZ			04:06																				
ZZZZZZ			04:09																				
ZZZZZZ			04:12																				
CCV 280-15246/206			04:15																				
CCB 280-15246/207			04:17																				
ZZZZZZ			04:20																				
ZZZZZZ			04:23																				
ZZZZZZ			04:26																				

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Denver Job No.: 280-3084-1

SDG No.:

Instrument ID: MT_024 Method: 6020A

Start Date: 05/12/2010 18:48 End Date: 05/13/2010 09:03

Lab Sample ID	D/F	Type	Time	Analytes																			
				Ag	As	Ba	Be	Cd	Co	Cr	Cu	Mn	Ni	Pb	Sb	Se	Tl	V	Zn				
ZZZZZZ			04:28																				
ZZZZZZ			04:31																				
ZZZZZZ			04:34																				
ZZZZZZ			04:37																				
ZZZZZZ			04:39																				
CCV 280-15246/216			04:42																				
CCB 280-15246/217			04:45																				
ZZZZZZ			04:48																				
ZZZZZZ			04:51																				
ZZZZZZ			04:53																				
ZZZZZZ			04:56																				
ZZZZZZ			04:59																				
ZZZZZZ			05:02																				
CCV 280-15246/224			05:04																				
CCB 280-15246/225			05:07																				
ZZZZZZ			05:10																				
ZZZZZZ			05:13																				
ZZZZZZ			05:16																				
ZZZZZZ			05:18																				
ZZZZZZ			05:21																				
ZZZZZZ			05:24																				
ZZZZZZ			05:27																				
ZZZZZZ			05:30																				
CCV 280-15246/234			05:32																				
CCB 280-15246/235			05:35																				
RINSE 280-15246/236			05:38																				
RINSE 280-15246/237			05:41																				
RINSE 280-15246/238			05:43																				
ZZZZZZ			05:46																				
IC 280-15246/240			05:49	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				
IC 280-15246/241			05:52	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				
CCV 280-15246/242			05:54																				
CCB 280-15246/243			05:57																				
ZZZZZZ			06:00																				
ZZZZZZ			06:03																				
ZZZZZZ			06:05																				
ZZZZZZ			06:08																				
ZZZZZZ			06:11																				
ZZZZZZ			06:14																				
CCV 280-15246/250			06:16																				
CCB 280-15246/251			06:19																				
ZZZZZZ			06:22																				

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Denver Job No.: 280-3084-1

SDG No.:

Instrument ID: MT_024 Method: 6020A

Start Date: 05/12/2010 18:48 End Date: 05/13/2010 09:03

Lab Sample ID	D/F	Type	Time	Analytes																			
				Ag	As	Ba	Be	Cd	Co	Cr	Cu	Mn	Ni	Pb	Sb	Se	Tl	V	Zn				
ZZZZZZ			06:25																				
ZZZZZZ			06:28																				
ZZZZZZ			06:30																				
ZZZZZZ			06:33																				
CCV 280-15246/257			06:36																				
CCB 280-15246/258			06:39																				
RINSE 280-15246/259			06:42																				
RINSE 280-15246/260			06:44																				
RINSE 280-15246/261			06:47																				
ZZZZZZ			06:50																				
IC 280-15246/263			06:52	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				
IC 280-15246/264			06:55	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				
CCV 280-15246/265			06:58																				
CCB 280-15246/266			07:01																				
ZZZZZZ			07:03																				
ZZZZZZ			07:06																				
ZZZZZZ			07:09																				
ZZZZZZ			07:12																				
ZZZZZZ			07:15																				
ZZZZZZ			07:17																				
ZZZZZZ			07:20																				
ZZZZZZ			07:23																				
CCV 280-15246/275			07:26																				
CCB 280-15246/276			07:28																				
ZZZZZZ			07:31																				
ZZZZZZ			07:34																				
ZZZZZZ			07:37																				
ZZZZZZ			07:40																				
ZZZZZZ			07:42																				
ZZZZZZ			07:45																				
CCV 280-15246/283			07:48																				
CCB 280-15246/284			07:51																				
RINSE 280-15246/285			07:54																				
RINSE 280-15246/286			07:56																				
RINSE 280-15246/287			07:59																				
ZZZZZZ			08:02																				
IC 280-15246/289			08:05	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				
IC 280-15246/290			08:07	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				
CCV 280-15246/291			08:10																				
CCB 280-15246/292			08:13																				
ZZZZZZ			08:16																				
ZZZZZZ			08:18																				

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Denver Job No.: 280-3084-1

SDG No.:

Instrument ID: MT_024 Method: 6020A

Start Date: 05/12/2010 18:48 End Date: 05/13/2010 09:03

Lab Sample ID	D/F	Type	Time	Analytes																			
				Ag	As	Ba	Be	Cd	Co	Cr	Cu	Mn	Ni	Pb	Sb	Se	Tl	V	Zn				
ZZZZZZ			08:21																				
ZZZZZZ			08:24																				
ZZZZZZ			08:27																				
ZZZZZZ			08:30																				
ZZZZZZ			08:32																				
CCV 280-15246/300			08:35																				
CCB 280-15246/301			08:38																				
ZZZZZZ			08:41																				
ZZZZZZ			08:44																				
ZZZZZZ			08:46																				
ZZZZZZ			08:49																				
ZZZZZZ			08:52																				
ZZZZZZ			08:55																				
ZZZZZZ			08:57																				
CCV 280-15246/309			09:00																				
CCB 280-15246/310			09:03																				

Prep Types

T = Total/NA

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Denver Job No.: 280-3084-1

SDG No.:

Instrument ID: MT_033 Method: 7471B

Start Date: 05/08/2010 09:29 End Date: 05/08/2010 22:35

Lab Sample ID	D/F	Type	Time	Analytes																			
				Hg																			
STD0 280-14830/1 IC			09:29	X																			
STD1 280-14830/2 IC			09:31	X																			
STD2 280-14830/3 IC			09:34	X																			
STD3 280-14830/4 IC			09:36	X																			
STD4 280-14830/5 IC			09:38	X																			
STD5 280-14830/6 IC			09:41	X																			
STD6 280-14830/7 IC			09:43	X																			
ICB 280-14830/8	1		09:47	X																			
ICV 280-14830/9	1		09:49	X																			
CRA 280-14830/10	1		09:51	X																			
CCV 280-14830/11			09:54																				
CCB 280-14830/12			09:56																				
ZZZZZZ			09:58																				
ZZZZZZ			10:01																				
ZZZZZZ			10:03																				
ZZZZZZ			10:05																				
ZZZZZZ			10:08																				
ZZZZZZ			10:10																				
ZZZZZZ			10:12																				
ZZZZZZ			10:14																				
ZZZZZZ			10:17																				
CCV 280-14830/22			10:19																				
CCB 280-14830/23			10:21																				
ZZZZZZ			10:25																				
ZZZZZZ			10:27																				
ZZZZZZ			10:29																				
ZZZZZZ			10:42																				
ZZZZZZ			10:44																				
ZZZZZZ			10:47																				
ZZZZZZ			10:49																				
ZZZZZZ			10:51																				
ZZZZZZ			10:54																				
CCV 280-14830/33			10:56																				
CCB 280-14830/34			10:58																				
ZZZZZZ			11:01																				
ZZZZZZ			11:03																				
ZZZZZZ			11:05																				
ZZZZZZ			11:07																				
ZZZZZZ			11:10																				
ZZZZZZ			11:12																				
ZZZZZZ			11:14																				
ZZZZZZ			11:17																				

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Denver Job No.: 280-3084-1

SDG No.:

Instrument ID: MT_033 Method: 7471B

Start Date: 05/08/2010 09:29 End Date: 05/08/2010 22:35

Lab Sample ID	D/F	Type	Time	Analytes																			
				Hg																			
ZZZZZZ			11:19																				
CCV 280-14830/44			11:21																				
CCB 280-14830/45			11:24																				
ZZZZZZ			11:26																				
ZZZZZZ			11:28																				
ZZZZZZ			11:30																				
ZZZZZZ			11:33																				
ZZZZZZ			11:35																				
ZZZZZZ			11:37																				
ZZZZZZ			11:40																				
ZZZZZZ			11:42																				
ZZZZZZ			11:44																				
CCV 280-14830/55			11:47																				
CCB 280-14830/56			11:49																				
ZZZZZZ			11:51																				
ZZZZZZ			11:54																				
ZZZZZZ			11:56																				
ZZZZZZ			11:58																				
ZZZZZZ			12:00																				
ZZZZZZ			12:03																				
ZZZZZZ			12:05																				
ZZZZZZ			12:07																				
ZZZZZZ			12:10																				
CCV 280-14830/66	1		12:12	X																			
CCB 280-14830/67	1		12:14	X																			
ZZZZZZ			12:17																				
ZZZZZZ			12:19																				
ZZZZZZ			12:21																				
ZZZZZZ			12:24																				
ZZZZZZ			12:26																				
MB 280-13851/1-A	1	T	12:28	X																			
LCS 280-13851/2-A	1	T	12:30	X																			
280-3084-1	1	T	12:33	X																			
280-3084-1 SD	5	T	12:35	X																			
CCV 280-14830/77	1		12:37	X																			
CCB 280-14830/78	1		12:40	X																			
280-3084-1 MS	1	T	12:42	X																			
280-3084-1 MSD	1	T	12:44	X																			
ZZZZZZ			12:47																				
ZZZZZZ			12:49																				
ZZZZZZ			12:51																				
ZZZZZZ			12:54																				

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Denver Job No.: 280-3084-1

SDG No.:

Instrument ID: MT_033 Method: 7471B

Start Date: 05/08/2010 09:29 End Date: 05/08/2010 22:35

Lab Sample ID	D/F	Type	Time	Analytes																			
				Hg																			
ZZZZZZ			12:56																				
ZZZZZZ			12:58																				
ZZZZZZ			13:00																				
CCV 280-14830/88	1		13:03	X																			
CCB 280-14830/89	1		13:05	X																			
ZZZZZZ			13:07																				
ZZZZZZ			13:10																				
ZZZZZZ			13:12																				
ZZZZZZ			13:14																				
ZZZZZZ			13:17																				
ZZZZZZ			13:19																				
ZZZZZZ			13:21																				
ZZZZZZ			13:24																				
ZZZZZZ			13:26																				
ZZZZZZ			13:28																				
CCV 280-14830/100			13:31																				
CCB 280-14830/101			13:33																				
ZZZZZZ			13:35																				
ZZZZZZ			13:37																				
ZZZZZZ			13:40																				
ZZZZZZ			13:42																				
ZZZZZZ			13:44																				
ZZZZZZ			13:47																				
ZZZZZZ			13:49																				
ZZZZZZ			13:51																				
ZZZZZZ			13:54																				
ZZZZZZ			13:56																				
CCV 280-14830/112			13:58																				
CCB 280-14830/113			14:01																				
ZZZZZZ			14:03																				
ZZZZZZ			14:05																				
ZZZZZZ			14:08																				
ZZZZZZ			14:10																				
ZZZZZZ			14:12																				
ZZZZZZ			14:14																				
ZZZZZZ			14:17																				
ZZZZZZ			14:19																				
ZZZZZZ			14:21																				
CCV 280-14830/123			14:24																				
CCB 280-14830/124			14:26																				
ZZZZZZ			14:28																				
ZZZZZZ			14:31																				

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Denver Job No.: 280-3084-1

SDG No.:

Instrument ID: MT_033 Method: 7471B

Start Date: 05/08/2010 09:29 End Date: 05/08/2010 22:35

Lab Sample ID	D/F	Type	Time	Analytes																			
				Hg																			
ZZZZZZ			14:33																				
ZZZZZZ			14:35																				
ZZZZZZ			14:38																				
ZZZZZZ			14:40																				
ZZZZZZ			14:42																				
ZZZZZZ			14:45																				
ZZZZZZ			14:47																				
ZZZZZZ			14:49																				
CCV 280-14830/135			14:51																				
CCB 280-14830/136			14:54																				
ZZZZZZ			14:56																				
ZZZZZZ			14:58																				
ZZZZZZ			15:01																				
ZZZZZZ			15:03																				
ZZZZZZ			15:05																				
ZZZZZZ			15:08																				
ZZZZZZ			15:10																				
ZZZZZZ			15:12																				
ZZZZZZ			15:15																				
ZZZZZZ			15:17																				
CCV 280-14830/147			15:19																				
CCB 280-14830/148			15:22																				
ZZZZZZ			15:24																				
ZZZZZZ			15:26																				
ZZZZZZ			15:29																				
ZZZZZZ			15:31																				
ZZZZZZ			15:33																				
ZZZZZZ			15:35																				
ZZZZZZ			15:38																				
ZZZZZZ			15:40																				
ZZZZZZ			15:42																				
ZZZZZZ			15:45																				
CCV 280-14830/159			15:47																				
CCB 280-14830/160			15:49																				
ZZZZZZ			15:52																				
ZZZZZZ			15:54																				
ZZZZZZ			15:56																				
ZZZZZZ			15:59																				
ZZZZZZ			16:01																				
ZZZZZZ			16:03																				
ZZZZZZ			16:06																				
ZZZZZZ			16:08																				

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Denver Job No.: 280-3084-1

SDG No.:

Instrument ID: MT_033 Method: 7471B

Start Date: 05/08/2010 09:29 End Date: 05/08/2010 22:35

Lab Sample ID	D/F	Type	Time	Analytes																			
				Hg																			
ZZZZZZ			16:10																				
ZZZZZZ			16:17																				
CCV 280-14830/171			16:19																				
CCB 280-14830/172			16:21																				
ZZZZZZ			16:24																				
ZZZZZZ			16:26																				
ZZZZZZ			16:28																				
ZZZZZZ			16:31																				
ZZZZZZ			16:33																				
ZZZZZZ			16:35																				
ZZZZZZ			16:38																				
ZZZZZZ			16:40																				
ZZZZZZ			16:42																				
ZZZZZZ			16:44																				
CCV 280-14830/183			16:47																				
CCB 280-14830/184			16:49																				
ZZZZZZ			16:51																				
ZZZZZZ			16:54																				
ZZZZZZ			16:56																				
ZZZZZZ			16:58																				
ZZZZZZ			17:01																				
ZZZZZZ			17:03																				
ZZZZZZ			17:05																				
ZZZZZZ			17:08																				
ZZZZZZ			17:10																				
ZZZZZZ			17:12																				
CCV 280-14830/195			17:15																				
CCB 280-14830/196			17:17																				
ZZZZZZ			17:19																				
ZZZZZZ			17:22																				
ZZZZZZ			17:24																				
ZZZZZZ			17:26																				
ZZZZZZ			17:29																				
ZZZZZZ			17:31																				
ZZZZZZ			17:33																				
ZZZZZZ			17:36																				
ZZZZZZ			17:38																				
ZZZZZZ			17:40																				
CCV 280-14830/207			17:43																				
CCB 280-14830/208			17:45																				
ZZZZZZ			17:47																				
ZZZZZZ			17:50																				

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Denver Job No.: 280-3084-1

SDG No.:

Instrument ID: MT_033 Method: 7471B

Start Date: 05/08/2010 09:29 End Date: 05/08/2010 22:35

Lab Sample ID	D/F	Type	Time	Analytes																			
				Hg																			
ZZZZZZ			17:52																				
ZZZZZZ			17:54																				
ZZZZZZ			17:57																				
ZZZZZZ			17:59																				
ZZZZZZ			18:01																				
ZZZZZZ			18:04																				
ZZZZZZ			18:06																				
ZZZZZZ			18:08																				
CCV 280-14830/219			18:11																				
CCB 280-14830/220			18:13																				
ZZZZZZ			18:15																				
ZZZZZZ			18:18																				
ZZZZZZ			18:20																				
ZZZZZZ			18:22																				
ZZZZZZ			18:25																				
ZZZZZZ			18:27																				
ZZZZZZ			18:29																				
ZZZZZZ			18:32																				
ZZZZZZ			18:34																				
ZZZZZZ			18:36																				
CCV 280-14830/231			18:39																				
CCB 280-14830/232			18:41																				
ZZZZZZ			18:43																				
ZZZZZZ			18:46																				
ZZZZZZ			18:48																				
ZZZZZZ			18:50																				
ZZZZZZ			18:52																				
ZZZZZZ			18:55																				
ZZZZZZ			18:57																				
ZZZZZZ			18:59																				
ZZZZZZ			19:02																				
ZZZZZZ			19:04																				
CCV 280-14830/243			19:06																				
CCB 280-14830/244			19:09																				
ZZZZZZ			19:11																				
ZZZZZZ			19:13																				
ZZZZZZ			19:16																				
ZZZZZZ			19:18																				
ZZZZZZ			19:20																				
ZZZZZZ			19:22																				
ZZZZZZ			19:25																				
ZZZZZZ			19:27																				

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Denver Job No.: 280-3084-1

SDG No.:

Instrument ID: MT_033 Method: 7471B

Start Date: 05/08/2010 09:29 End Date: 05/08/2010 22:35

Lab Sample ID	D/F	Type	Time	Analytes																			
				Hg																			
ZZZZZZ			19:29																				
ZZZZZZ			19:32																				
CCV 280-14830/255			19:34																				
CCB 280-14830/256			19:36																				
ZZZZZZ			19:39																				
ZZZZZZ			19:41																				
ZZZZZZ			19:43																				
ZZZZZZ			19:46																				
ZZZZZZ			19:48																				
ZZZZZZ			19:50																				
ZZZZZZ			19:52																				
ZZZZZZ			19:55																				
ZZZZZZ			19:57																				
ZZZZZZ			19:59																				
CCV 280-14830/267			20:02																				
CCB 280-14830/268			20:04																				
ZZZZZZ			20:06																				
ZZZZZZ			20:09																				
ZZZZZZ			20:11																				
ZZZZZZ			20:13																				
ZZZZZZ			20:16																				
ZZZZZZ			20:18																				
ZZZZZZ			20:20																				
ZZZZZZ			20:22																				
ZZZZZZ			20:25																				
CCV 280-14830/278			20:27																				
CCB 280-14830/279			20:29																				
ZZZZZZ			20:32																				
ZZZZZZ			20:34																				
ZZZZZZ			20:36																				
ZZZZZZ			20:39																				
ZZZZZZ			20:41																				
ZZZZZZ			20:43																				
ZZZZZZ			20:46																				
ZZZZZZ			20:51																				
ZZZZZZ			20:54																				
ZZZZZZ			20:56																				
CCV 280-14830/290			21:00																				
CCB 280-14830/291			21:02																				
ZZZZZZ			21:05																				
ZZZZZZ			21:07																				
ZZZZZZ			21:09																				

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Denver Job No.: 280-3084-1

SDG No.:

Instrument ID: MT_033 Method: 7471B

Start Date: 05/08/2010 09:29 End Date: 05/08/2010 22:35

Lab Sample ID	D/F	Type	Time	Analytes																			
				Hg																			
ZZZZZZ			21:11																				
ZZZZZZ			21:14																				
ZZZZZZ			21:16																				
ZZZZZZ			21:18																				
ZZZZZZ			21:21																				
ZZZZZZ			21:23																				
ZZZZZZ			21:25																				
CCV 280-14830/302			21:28																				
CCB 280-14830/303			21:30																				
ZZZZZZ			21:32																				
ZZZZZZ			21:35																				
ZZZZZZ			21:37																				
ZZZZZZ			21:39																				
ZZZZZZ			21:41																				
ZZZZZZ			21:44																				
ZZZZZZ			21:46																				
ZZZZZZ			21:51																				
CCV 280-14830/312			21:53																				
CCB 280-14830/313			21:56																				
ZZZZZZ			21:58																				
ZZZZZZ			22:00																				
ZZZZZZ			22:03																				
CCV 280-14830/317			22:05																				
CCB 280-14830/318			22:07																				
ZZZZZZ			22:10																				
ZZZZZZ			22:12																				
ZZZZZZ			22:14																				
ZZZZZZ			22:16																				
ZZZZZZ			22:19																				
ZZZZZZ			22:21																				
ZZZZZZ			22:23																				
ZZZZZZ			22:26																				
ZZZZZZ			22:28																				
ZZZZZZ			22:30																				
CCV 280-14830/329			22:33																				
CCB 280-14830/330			22:35																				

Prep Types

T = Total/NA

14-IN
ICP-MS TUNE
METALS

Lab Name: TestAmerica Denver Job No.: 280-3084-1

SDG No.:

ICP-MS Instrument ID: MT_024 Analysis Date: 05/12/10

Lab ID: ITUNE 280-15246/1

Element - Mass	Avg. Measured Mass (amu)	Avg. Peak Width at Peak Height (amu)	% RSD	Q
Be-9	9.00	0.55	1.90	
Mg-24	24.00	0.60	0.42	
Co-59	59.00	0.60	0.67	
In-115	115.05	0.55	0.29	
Pb-208	208.00	0.55	1.11	
U-238	238.05	0.55	1.05	

15-IN
ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY
METALS

Lab Name: TestAmerica Denver Job No.: 280-3084-1

SDG No.:

ICP-MS Instrument ID: MT_024 Start Date: 05/12/2010 End Date: 05/13/2010

Lab Sample ID	Time	Internal Standards %RI For:									
		Element Li-6	Q	Element Sc	Q	Element Ge	Q	Element In	Q	Element Ho-165	Q
ICV 280-15246/4	18:59	99		97		96		98		98	
ICVL 280-15246/6	19:05	101		97		98		98		99	
ICB 280-15246/8	19:10	103		99		98		98		99	
CRI 280-15246/9	19:13	102		99		98		99		98	
ICSA 280-15246/88	22:50	61		63		65		67		69	
ICSAB 280-15246/89	22:53	54		60		61		66		68	
IC 280-15246/142	01:19	98		97		95		98		97	
CCV 280-15246/143	01:22	100		99		96		99		98	
CCB 280-15246/145	01:27	103		100		99		99		98	
CCVL 280-15246/146	01:30	104		100		98		99		97	
MB 280-14634/1-A	01:33	105		100		99		98		98	
LCS 280-14634/2-A	01:36	104		100		96		98		98	
280-3084-1	01:38	102		98		94		96		97	
280-3084-1 SD	01:41	103		98		96		98		97	
280-3084-1 PDS	01:44	100		95		91		96		96	
280-3084-1 MS	01:46	101		97		92		96		97	
280-3084-1 MSD	01:49	100		96		93		95		97	
CCV 280-15246/154	01:52	102		97		94		97		97	
CCB 280-15246/155	01:55	104		98		96		97		97	
CCVL 280-15246/157	02:00	104		98		96		96		98	

FORM XV - IN

Metals Worksheet

Batch Number: 280-13851
Method: 7471B
Analyst: Stoltz, Katie

Date Open: May 08 2010 7:30AM
Batch End: May 08 2010 8:45AM

Lab ID	Client ID	Method Chain	Basis	Initial weight/volume of sample	Final weight/volume of sample	Hg Daily Spk_00068
MB~280-13851/1		7471B, 7471B		0.60 g	50 mL	
LCS~280-13851/2		7471B, 7471B		0.60 g	50 mL	2.5 mL
280-3084-A-1	MR-SD200-0409	7471B, 7471B	T	0.66 g	50 mL	
280-3084-A-1~MS	MR-SD200-0409	7471B, 7471B	T	0.61 g	50 mL	2.5 mL
280-3084-A-1~MSD	MR-SD200-0409	7471B, 7471B	T	0.64 g	50 mL	2.5 mL

Acid used for pH adjustment:	NA
Nominal Amount Used:	NA g
SOP Number:	DVMT0016
Digestion Tube/Cup Lot #:	NA
Hot Block ID number:	NA
Hood ID or number:	HOOD-4
Balance ID:	24750837
Blank Soil Lot Number:	NA
Lot # of Nitric Acid:	J08035
ID number of the thermometer:	4205
Lot # of hydrochloric acid:	J07033
Potassium Permanganate Lot Number:	H16581
Sulfuric Acid Lot Number:	H35F03
Hydroxylamine Sulfate Lot Number:	NA
Potassium Persulfate Lot Number:	C17143
Stannous Chloride Lot Number:	H45642
Oven, Bath or Block Temperature 1:	94 Celsius
Oven, Bath or Block Temperature 2:	94 Celsius
NaCL Lot #:	G47617
Repittetor Volume Check:	YES
Aqua Regia Lot Number:	NA
Hydroxylamine Hydrochloride Lot:	H48608

Metals Worksheet

Batch Number: 280-14632
Method: 3050B
Analyst: Willms, Jay

Date Open: May 11 2010 8:00AM
Batch End: May 11 2010 1:00PM

Lab ID	Client ID	Method Chain	Basis	Initial weight/volume of sample	Final weight/volume of sample	ICP SPK 2A_00008	ICP SPK 3A_00008
MB~280-14632/1		3050B, 6010C		1.00 g	100 mL		
LCS~280-14632/2		3050B, 6010C		1.00 g	100 mL	1.0 mL	1.0 mL
280-3084-A-1	MR-SD200-0409	3050B, 6010C	T	1.18 g	100 mL		
280-3084-A-1~MS	MR-SD200-0409	3050B, 6010C	T	1.09 g	100 mL	1.0 mL	1.0 mL
280-3084-A-1~MSD	MR-SD200-0409	3050B, 6010C	T	1.09 g	100 mL	1.0 mL	1.0 mL

Digestion Tube/Cup Lot #:	A909LS288
Balance ID:	M28318
Hood ID or number:	08
Hot Block ID number:	06
Lot # of hydrochloric acid:	J07033
Lot # of Nitric Acid:	J10038
Hydrogen peroxide lot number:	G51A04
ID number of the thermometer:	7038
Temperature:	92 Degrees C
Pipette ID:	MET-007
Analyst:	JRW
Oven, Bath or Block Temperature 1:	92 Degrees C
Oven, Bath or Block Temperature 2:	95 Degrees C

Metals Worksheet

Batch Number: 280-14634
Method: 3050B
Analyst: Willms, Jay

Date Open: May 11 2010 8:00AM
Batch End: May 11 2010 1:00PM

Lab ID	Client ID	Method Chain	Basis	Initial weight/volume of sample	Final weight/volume of sample	MS ICV-A HP_00003	MS ICV-B HP_00002
MB~280-14634/1		3050B, 6020A		1.00 g	100 mL		
LCS~280-14634/2		3050B, 6020A		1.00 g	100 mL	1.0 mL	1.0 mL
280-3084-A-1	MR-SD200-0409	3050B, 6020A	T	1.20 g	100 mL		
280-3084-A-1~MS	MR-SD200-0409	3050B, 6020A	T	1.02 g	100 mL	1.0 mL	1.0 mL
280-3084-A-1~MSD	MR-SD200-0409	3050B, 6020A	T	1.00 g	100 mL	1.0 mL	1.0 mL

Balance ID:	M28318
Hood ID or number:	09
Hot Block ID number:	03
Lot # of Nitric Acid:	J10038
Hydrogen peroxide lot number:	H38J10
ID number of the thermometer:	908002400
Temperature:	95 Degrees C
Pipette ID:	MET-007
Analyst:	JRW
Oven, Bath or Block Temperature 1:	95 Degrees C
Oven, Bath or Block Temperature 2:	95 Degrees C

GENERAL CHEMISTRY

COVER PAGE
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job Number: 280-3084-1

SDG No.:

Project: Markley Range - Discrete

Client Sample ID	Lab Sample ID
MR-SD200-0409	280-3084-1

Comments:

9-IN
DETECTION LIMITS
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job Number: 280-3084-1

SDG Number:

Matrix: Solid Instrument ID: NOEQUIP

Analysis Method: D 2216 LOQ Date: 11/01/2009 00:00

Prep Method:

Leach Method:

Analyte	Wavelength/ Mass	LOQ (%)	
Percent Moisture		0.1	

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job No.: 280-3084-1

SDG No.:

Instrument ID: NOEQUIP Method: D 2216

Start Date: 05/04/2010 09:09 End Date: 05/04/2010 09:09

Lab Sample ID	D/F	Type	Time	Analytes																			
				Moist																			
ZZZZZZ			09:09																				
ZZZZZZ			09:09																				
ZZZZZZ			09:09																				
ZZZZZZ			09:09																				
ZZZZZZ			09:09																				
ZZZZZZ			09:09																				
ZZZZZZ			09:09																				
ZZZZZZ			09:09																				
ZZZZZZ			09:09																				
ZZZZZZ			09:09																				
ZZZZZZ			09:09																				
ZZZZZZ			09:09																				
ZZZZZZ			09:09																				
ZZZZZZ			09:09																				
ZZZZZZ			09:09																				
280-3084-1	1	T	09:09	X																			
ZZZZZZ			09:09																				
ZZZZZZ			09:09																				
ZZZZZZ			09:09																				
ZZZZZZ			09:09																				
ZZZZZZ			09:09																				
ZZZZZZ			09:09																				
ZZZZZZ			09:09																				
ZZZZZZ			09:09																				
ZZZZZZ			09:09																				
ZZZZZZ			09:09																				
ZZZZZZ			09:09																				
ZZZZZZ			09:09																				
ZZZZZZ			09:09																				
ZZZZZZ			09:09																				
ZZZZZZ			09:09																				
ZZZZZZ			09:09																				
ZZZZZZ			09:09																				
ZZZZZZ			09:09																				
ZZZZZZ			09:09																				
ZZZZZZ			09:09																				
ZZZZZZ			09:09																				
ZZZZZZ			09:09																				
ZZZZZZ			09:09																				
ZZZZZZ			09:09																				

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job No.: 280-3084-1

SDG No.:

Instrument ID: NOEQUIP Method: D 2216

Start Date: 05/04/2010 09:09 End Date: 05/04/2010 09:09

Lab Sample ID	D/F	Type	Time	Analytes																			
				Moist																			
ZZZZZZ			09:09																				
ZZZZZZ			09:09																				
ZZZZZZ			09:09																				
ZZZZZZ			09:09																				
ZZZZZZ			09:09																				
ZZZZZZ			09:09																				
ZZZZZZ			09:09																				
ZZZZZZ			09:09																				
ZZZZZZ			09:09																				
ZZZZZZ			09:09																				
ZZZZZZ			09:09																				
ZZZZZZ			09:09																				
ZZZZZZ			09:09																				
ZZZZZZ			09:09																				
ZZZZZZ			09:09																				
ZZZZZZ			09:09																				
ZZZZZZ			09:09																				
ZZZZZZ			09:09																				
ZZZZZZ			09:09																				
ZZZZZZ			09:09																				
ZZZZZZ			09:09																				
ZZZZZZ			09:09																				
ZZZZZZ			09:09																				
ZZZZZZ			09:09																				
ZZZZZZ			09:09																				
ZZZZZZ			09:09																				
ZZZZZZ			09:09																				
ZZZZZZ			09:09																				
ZZZZZZ			09:09																				
ZZZZZZ			09:09																				
ZZZZZZ			09:09																				
ZZZZZZ			09:09																				
ZZZZZZ			09:09																				
ZZZZZZ			09:09																				
ZZZZZZ			09:09																				

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job No.: 280-3084-1

SDG No.:

Instrument ID: NOEQUIP Method: D 2216

Start Date: 05/04/2010 09:09 End Date: 05/04/2010 09:09

Lab Sample ID	D/F	Type	Time	Analytes																			
				Moist																			
ZZZZZZ			09:09																				
ZZZZZZ			09:09																				
ZZZZZZ			09:09																				
ZZZZZZ			09:09																				
ZZZZZZ			09:09																				
ZZZZZZ			09:09																				
ZZZZZZ			09:09																				
ZZZZZZ			09:09																				
ZZZZZZ			09:09																				
ZZZZZZ			09:09																				
ZZZZZZ			09:09																				
ZZZZZZ			09:09																				
ZZZZZZ			09:09																				
ZZZZZZ			09:09																				
ZZZZZZ			09:09																				
ZZZZZZ			09:09																				

Prep Types

T = Total/NA

General Chemistry Worksheet

Batch Number: 280-13777
Method: Moisture
Analyst: Berry III, Paul B

Date Open: May 04 2010 9:09AM
Batch End:

Lab ID	Client ID	Method Chain	Basis	Dish ID	Empty Dish Weight	Mass of wet Sample	Mass of Dry Sample
280-2400-A-54			T	1	1.30 g	15.50 g	9.81 g
280-2400-A-54~DU			T	2	1.31 g	15.22 g	9.60 g
280-2400-A-98			T	3	1.28 g	15.36 g	13.89 g
280-2448-A-127			T	4	1.29 g	15.53 g	14.20 g
280-2448-A-129			T	5	1.29 g	15.89 g	15.02 g
280-2448-A-140			T	6	1.31 g	15.34 g	14.23 g
280-2500-A-24			T	7	1.31 g	15.72 g	14.16 g
280-2836-A-28			T	8	1.30 g	15.44 g	14.43 g
280-2836-B-30			T	9	1.29 g	15.12 g	13.74 g
280-2879-D-14			T	10	1.31 g	15.29 g	14.11 g
280-2879-C-15			T	11	1.33 g	15.48 g	14.29 g
280-3029-A-9			T	12	1.27 g	15.25 g	11.59 g
280-3059-B-22			T	13	1.29 g	15.40 g	14.15 g
280-3059-B-26			T	14	1.31 g	15.95 g	14.75 g
280-3059-B-36			T	15	1.28 g	15.66 g	14.69 g
280-3084-A-1	MR-SD200-0409	D 2216	T	16	1.25 g	16.57 g	2.43 g
280-2995-B-3			T	17	1.32 g	15.15 g	13.94 g
280-2995-B-3~DU			T	18	1.30 g	15.53 g	14.29 g
280-2995-B-4			T	19	1.28 g	15.15 g	14.10 g
280-3059-A-43			T	20	1.32 g	15.19 g	12.93 g
280-2960-A-37			T	21	1.29 g	15.28 g	14.66 g
280-2960-A-39			T	22	1.34 g	15.19 g	13.84 g
280-3062-C-36			T	23	1.32 g	17.25 g	13.71 g

Balance ID:	H31422 No Unit
Date samples were place in the oven:	5/4/10
Time samples were place in the oven:	12:30
Oven Temp when samples are put in oven:	103 Degrees C
Date samples were removed from oven:	5/5/10
Time Samples were removed from oven:	07:00
Oven Temp when samples removed from oven:	102 Degrees C
Oven ID:	Moist ove
ID number of the thermometer:	Moist ove

[redacted]

Chain of Custody Record

Sampler ID _____

Temperature on Receipt 1.9 [illegible] fm 5/1/10

Drinking Water? Yes ☐ No ☐

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

TAL-4124-280 (0508)

Client: HydroGeologic (HGL)	Project Manager: PETER DACIK	Date: 4-30-10	Chain of Custody Number: 130125
Address: 313 USHERS ROAD	Telephone Number (Area Code)/Fax Number: 518-877-0390 / 518-877-0414	Lab Number:	Page 1 of 1
City: BALLSTON LAKE; State: NY; Zip Code: 12019	Site Contact: MIKE JACKSON; Lab Contact: ELAINE WALKER		
Project Name and Location (State): MARKLEY RANGE DEVENS, MA	Carrier/Waybill Number:		
Contract/Purchase Order/Quote No.: AE1002			

Analysis (Attach list if more space is needed)

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	TAL METALS MIS	Explosives MIS	>2mm TAL METALS MIS	Explosives	TAL METALS	Special Instructions/ Conditions of Receipt
MRBMDU1-S0200-(2-4)-0409	4-30-10	1135				X							X					Onion Bag
MRBMDU1-S0300-(16-18)-0409	↓	1320				↓							↓					↓
MRBMDU2-S0200-(2-4)-0409	4-29-10	1512				↓							↓	X				(No explosives)
MRREP1-S0101-0409	4-30-10	1325				↓							↓	X	X			↓
MRFLDU3-S0200-(2-4)-0409	↓	0815				↓							↓	X	X			↓
MRFLDU4-S0200-(2-4)-0409	4-29-10	1600				↓							↓	X	X			↓
MRREP2-S0102-0409	4-30-10	1420				↓							↓	X	X			↓
MRDU5-S0200-(2-4)-0409	4-29-10	1629				↓							↓	X				↓
MRBMDU6-S0200-(2-4)-0409	4-30-10	1040				↓							↓					↓
MR-SD200-0409	↓	1335			X											X	X	2 → 8oz soil jars
MR-SD200MSD-0409	↓	↓			↓											↓	↓	↓
MR-SD200MS-0409	↓	↓			↓											↓	↓	↓

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal: ☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required: ☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☒ 21 Days ☐ Other _____

QC Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished By: [signature]	4-30-2010	1510	1. Received By: [signature]	4/30/10	1510
2. Relinquished By: [signature]	4/30/10	1630	2. Received By: [signature]	5/1/10	1030
3. Relinquished By:			3. Received By:		

Comments

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

Shipping and Receiving Documents

Login Sample Receipt Check List

Client: HydroGeoLogic Inc

Job Number: 280-3084-1

Login Number: 3084

List Source: TestAmerica Denver

Creator: Bindel, Aaron M

List Number: 1

Question	T / F/ NA	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	N/A	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	

ANALYTICAL REPORT

Job Number: 280-3087-1

Job Description: Markley Range - MIS

For:
HydroGeoLogic Inc
Northway 10 Executive Park
313 Ushers Rd.
Ballston Lake, NY 12019

Attention: Mr. Mike Jackson

Approved for release.
Elaine Walker
Project Manager I
10/25/2010 1:47 PM

Elaine Walker
Project Manager I
elaine.walker@testamericainc.com
10/25/2010
Revision: 3

The test results in this report relate only to the samples in this report and meet all requirements of NELAC, with any exceptions noted. Pursuant to NELAP, this report shall not be reproduced except in full, without the written approval of the laboratory. All questions regarding this report should be directed to the TestAmerica Denver Project Manager.

The Lab Certification ID# is E87667.

Reporting limits are adjusted for sample size used, dilutions and moisture content if applicable.

TestAmerica Laboratories, Inc.
TestAmerica Denver 4955 Yarrow Street, Arvada, CO 80002
Tel (303) 736-0100 Fax (303) 431-7171 www.testamericainc.com

Table of Contents

Cover Title Page 1

Data Summaries 4

- Report Narrative 4
- Manual Integration Summary 7
- Sample Summary 23
- Executive Summary 24
- Method Summary 33
- Method / Analyst Summary 34
- Sample Datasheets 35
- Surrogate Summary 67
- QC Data Summary 68
- Data Qualifiers 88
- QC Association Summary 89
- Lab Chronicle 95

Organic Sample Data 103

- HPLC/IC 103
  - Method 8330B 103
    - Method 8330B QC Summary 104
    - Method 8330B Sample Data 113
    - Standards Data 124
      - Method 8330B ICAL Data 124
      - Method 8330B CCAL Data 140
    - Raw QC Data 158
      - Method 8330B Blank Data 158
      - Method 8330B LCS/LCSD Data 162
      - Method 8330B MS/MSD Data 169

Table of Contents

Method 8330B Run Logs 173

Method 8330B Prep Data 179

Inorganic Sample Data 182

Metals Data 182

Met Cover Page 183

Met Sample Data 184

Met QC Data 197

Met ICV/CCV 197

Met CRQL 221

Met Blanks 224

Met ICSA/ICSAB 235

Met MS/MSD/PDS 243

Met LCS/LCSD 246

Met Serial Dilution 251

Met MDL 254

Met IECF 260

Met Linear Ranges 266

Met Preparation Log 268

Met Analysis Run Log 271

Met ICP/MS Tune 294

Met Prep Data 295

Shipping and Receiving Documents 299

Sample Receipt Checklist 301

CASE NARRATIVE
Client: HydroGeoLogic Inc.
Project: Markley Range - MIS
Report Number: 280-3087-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

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

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT

Nine samples were received on 05/01/2010; the samples arrived in good condition, properly preserved and on ice. The temperature of the cooler at receipt was 1.9oC.

This report only contains results for the MIS samples received together with a discrete sample for routine preparation and analyses. The report for the discrete sample is reported under a separate job (280-3084-1).

The following samples were logged twice (as separate laboratory samples), and analyzed for metals (one analysis for material that passed through the 10-mesh sieve, and a second analysis for material that did not pass through the sieve): MRREP1-S0101-0409, MRFLDU3-S0200-(2-4)-0409, MRFLDU4-S0200-(2-4)-0409, and MRREP2-S0102-0409. Laboratory samples 280-3084-4, 280-3084-6, 280-3084-8, and 280-3084-10 were the samples analyzed with material that passed through the sieve, and samples 280-3084-5, 280-3084-7, 280-3084-9, and 280-3084-11 were the samples analyzed with material that did not pass through the sieve.

The following samples were air dried and sieved per the procedure; however, the samples contained material that would not pass through the sieve: MRREP1-S0101-0409 (280-3087-4), MRFLDU3-S0200-(2-4)-0409 (280-3087-6), MRFLDU4-S0200-(2-4)-0409 (280-3087-8), MRREP2-S0102-0409 (280-3087-10), and MRDU5-S0200-(2-4)-0409 (280-3087-12). This material was removed and not extracted for explosives analyses. The material appeared to be rock and/or vegetation. This material was retained and analyzed for metals (samples 280-3084-5, 280-3084-7, 280-3084-9, and 280-3084-11).

EXPLOSIVES

Samples MRREP1-S0101-0409 (280-3087-4), MRFLDU3-S0200-(2-4)-0409 (280-3087-6), MRFLDU4-S0200-(2-4)-0409 (280-3087-8), MRREP2-S0102-0409 (280-3087-10) and MRDU5-S0200-(2-4)-0409 (280-3087-12) were analyzed for explosives in accordance with EPA SW-846 Method 8330B. The samples were leached on 05/04/2010, prepared on 05/11/2010 and analyzed on 06/04/2010 and 06/05/2010.

The continuing calibration verification (CCV) for RDX recovered above the upper control limit in prep batches 280-14610 and 280-14909. The samples associated with this CCV were non-detect for the affected analyte; therefore, the data have been reported.

CCV 1 is in control
CCV 2 RDX @ 88%
CCV 3 RDX @ 90%

RDX and picric acid are co-eluting. The LCS's are reported from instrument Q with passing results. The MS/MSD's were reported from instrument X3, which is in control. The associated samples are ND for RDX. In addition, 2,4,6-TNT was high for CCV3 at +21.1%. The associated sample results are flagged “Q” for the affected compounds.

The 1,2-Dinitrobenzene surrogate recovery for the following sample was outside the upper control limit: MRFLDU4-S0200-(2-4)-0409 (280-3087-8). This sample did not contain any target analytes; therefore, re-extraction and/or re-analysis were not performed. Sample 3087:8 failed for 1,2-Dinitrobenzene at 133%, with limits of 83-122%. This is the confirmation analysis where a couple of compounds (3-Nitrotoluene and 2,4,6-Trinitoluene) were reported, and were ND. The surrogate was within limits on the primary column, and the associated sample results have been flagged accordingly.

The matrix spike duplicate (MSD) recoveries for batch 280-14909, performed on sample MRDU5-S0200-(2-4)-0409 (280-3087-12), were outside control limits for 2-Amino-4,6-dinitrotoluene and Nitrobenzene. The associated laboratory control sample (LCS) recovery met acceptance criteria. The associated parent sample has been flagged accordingly.

The Nitrobenzene results for sample MRDU5-S0200-(2-4)-0409 (280-3087-12), the LCS, and the MS/MSD have been flagged “J” because the result concentrations in the LCS and MS/MSD samples were less than the reporting limit of 1.9 mg/kg.

No other difficulties were encountered during the explosives analyses.

All other quality control parameters were within the acceptance limits.

METALS - 6010C

Samples MRBMDU1-S0200-(2-4)-0409 (280-3087-1), MRBMDU1-S0300-(16-18)-0409 (280-3087-2), MRBMDU2-S0200-(2-4)-0409 (280-3087-3), MRREP1-S0101-0409 (280-3087-4), MRREP1-S0101-0409 (280-3087-5), MRFLDU3-S0200-(2-4)-0409 (280-3087-6), MRFLDU3-S0200-(2-4)-0409 (280-3087-7), MRFLDU4-S0200-(2-4)-0409 (280-3087-8), MRFLDU4-S0200-(2-4)-0409 (280-3087-9), MRREP2-S0102-0409 (280-3087-10), MRREP2-S0102-0409 (280-3087-11), MRDU5-S0200-(2-4)-0409 (280-3087-12) and MRBMDU6-S0200-(2-4)-0409 (280-3087-13) were analyzed for Metals in accordance with EPA SW-846 Method 6010C. The samples were leached on 05/04/2010, prepared on 06/03/2010 and analyzed on 06/04/2010 and 06/07/2010.

Iron failed the recovery criteria low for the MS and MSD of sample MRDU5-S0200-(2-4)-0409 (280-3087-12) in batch 280-18117. Aluminum failed the recovery criteria high in the MS and MSD. The associated laboratory control sample (LCS) recovery met acceptance criteria. The presence of the '4' qualifier in the report indicates where the analyte concentration in the unspiked sample exceeded four times the spiking amount.

The serial dilution (SD) performed for analytical batch 280-18117 was "NC" for Ca and K. The post digestion spike (PDS) was needed for Ca and K because the parent sample was less than 50x the respective MDLs, and was in control.

The serial dilution (SD) performed for analytical batch 280-18373 was “NC” for Na. The PDS was needed for Na because the parent sample was less than 50x the MDL, and was in control.

No other difficulties were encountered during the metals analyses.

All other quality control parameters were within the acceptance limits.

METALS - 6020A

Samples MRBMDU1-S0200-(2-4)-0409 (280-3087-1), MRBMDU1-S0300-(16-18)-0409 (280-3087-2), MRBMDU2-S0200-(2-4)-0409 (280-3087-3), MRREP1-S0101-0409 (280-3087-4), MRREP1-S0101-0409 (280-3087-5), MRFLDU3-S0200-(2-4)-0409 (280-3087-6), MRFLDU3-S0200-(2-4)-0409 (280-3087-7), MRFLDU4-S0200-(2-4)-0409 (280-3087-8), MRFLDU4-S0200-(2-4)-0409 (280-3087-9), MRREP2-S0102-0409 (280-3087-10), MRREP2-S0102-0409 (280-3087-11), MRDU5-S0200-(2-4)-0409 (280-3087-12) and MRBMDU6-S0200-(2-4)-0409 (280-3087-13) were analyzed for Metals in accordance with EPA SW-846 Method 6020. The samples were leached on 05/04/2010, prepared on 06/03/2010 and analyzed on 06/05/2010.

Chromium was detected in method blank MB 280-17867/1-A at a level that was above the method detection limit but below the reporting limit. The method blank result for chromium was 0.237 mg/kg, above one-half the normal TestAmerica reporting limit (0.3 mg/kg). However, all of the affected samples show chromium results that are over 35x higher than the level of contamination in the method blank. Therefore, the sample data is considered valid and is not negatively affected. The value should be considered an estimate, and has been flagged “J”. The associated samples results have been “B” flagged.

Sample MRBMDU1-S0300-(16-18)-0409 (280-3087-2)[10X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

The MS and MSD analyses for batch 280-18454, performed on sample MRDU5-S0200-(2-4)-0409 (280-3087-12), were outside the established control limits for antimony, copper, lead, manganese, and zinc. The associated laboratory control sample (LCS) recovery met acceptance criteria. The presence of the '4' qualifier in the report indicates where the analyte concentration in the unspiked sample exceeded four times the spiking amount.

The serial dilution and post digestion spike were in control for the requested elements. All of the samples in the batch were below 100x the respective MDLs for beryllium, cadmium, selenium, silver, thallium, and zinc, so the PDS applies. There were samples within the batch that were over 100x the respective MDLs for antimony, arsenic, barium, chromium, cobalt, copper, lead, manganese, nickel, and vanadium, and so the PDS is not applicable.

The ICSA solution used as the ICP-MS interference check standard shows results for several metals at levels above the DoD acceptance limits (>LOD). For prep batch 280-17867 the initial ICSA solution was above the DoD acceptance limits for antimony, cadmium, cobalt, and nickel. We believe the solution contains trace impurities of these elements and that the results are not artifacts of matrix interference. This result agrees with those found by the manufacturer of the ICSA solution. The associated sample results have been flagged “Q” for these analytes.

No other difficulties were encountered during the metals analyses.

All other quality control parameters were within the acceptance limits.

MERCURY - 7471B

Samples MRBMDU1-S0200-(2-4)-0409 (280-3087-1), MRBMDU1-S0300-(16-18)-0409 (280-3087-2), MRBMDU2-S0200-(2-4)-0409 (280-3087-3), MRREP1-S0101-0409 (280-3087-4), MRREP1-S0101-0409 (280-3087-5), MRFLDU3-S0200-(2-4)-0409 (280-3087-6),

MRFLDU3-S0200-(2-4)-0409 (280-3087-7), MRFLDU4-S0200-(2-4)-0409 (280-3087-8), MRFLDU4-S0200-(2-4)-0409 (280-3087-9), MRREP2-S0102-0409 (280-3087-10), MRREP2-S0102-0409 (280-3087-11), MRDU5-S0200-(2-4)-0409 (280-3087-12) and MRBMDU6-S0200-(2-4)-0409 (280-3087-13) were analyzed for mercury (CVAA) in accordance with EPA SW-846 Method 7471B. The samples were leached on 05/04/2010, prepared on 05/10/2010 and 05/11/2010 and analyzed on 05/11/2010.

No difficulties were encountered during the mercury analyses.

All quality control parameters were within the acceptance limits.

Revision 1 - July 22, 2010

In late March, an internal LIMS programming change to rounding and significant figures inadvertently impacted the reporting convention of the DoD QSM 4.1. As a result, values detected between the MDL and LOD were flagged “U” at the LOD concentration rather than “J” with the actual result reported, as required in the QSM 4.1 manual. The problem was corrected on June 11, 2011. Jobs reported during the time frame required revision in order to correct the data for any missing “J” value results.

Revision 2 - October 1, 2010

The original report calculated the Mercury data using an initial prep amount of 0.3 grams, which was half of the actual initial prep amount (0.6 grams). The initial prep amount for all Mercury samples was changed to 0.6 grams, which doubled the reporting limits on the Sample reports.

Revision 3 - October 5, 2010

The 6010C and 6020A metals reporting limits have been updated in this revision. Tne original reporting limits were listed at values that were 1/2 the actual values. No results have been changed as a result of these revised reporitng limits.

HPLC/IC MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-3087-1

SDG No.:

Instrument ID: HPLC_Q Analysis Batch Number: 8112

Lab Sample ID: IC 280-8112/1 Client Sample ID:

Date Analyzed: 03/17/10 14:50 Lab File ID: 002-0201.D GC Column: Luna-phenylhe ID: 4.6(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
PETN	22.81	Baseline Event	lahrc	03/18/10 07:02

Lab Sample ID: IC 280-8112/2 Client Sample ID:

Date Analyzed: 03/17/10 15:22 Lab File ID: 003-0301.D GC Column: Luna-phenylhe ID: 4.6(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
2,6-diamino-4-nitrotoluene	3.89	Baseline Event	lahrc	03/18/10 06:50

Lab Sample ID: IC 280-8112/6 Client Sample ID:

Date Analyzed: 03/17/10 17:30 Lab File ID: 007-0701.D GC Column: Luna-phenylhe ID: 4.6(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
PETN	22.88	Baseline Event	lahrc	03/18/10 07:03

Lab Sample ID: IC 280-8112/7 Client Sample ID:

Date Analyzed: 03/17/10 18:02 Lab File ID: 008-0801.D GC Column: Luna-phenylhe ID: 4.6(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
PETN	22.91	Baseline Event	lahrc	03/18/10 07:03

Lab Sample ID: IC 280-8112/8 Client Sample ID:

Date Analyzed: 03/17/10 18:34 Lab File ID: 009-0901.D GC Column: Luna-phenylhe ID: 4.6(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
PETN	22.90	Baseline Event	lahrc	03/18/10 07:03

gl 6/8/10

8330B

HPLC/IC MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-3087-1

SDG No.:

Instrument ID: HPLC_Q Analysis Batch Number: 8112

Lab Sample ID: ICV 280-8112/9 Client Sample ID:

Date Analyzed: 03/17/10 19:06 Lab File ID: 010-1001.D GC Column: Luna-phenylhe ID: 4.6(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Picric acid	5.24	Baseline Event	lahrc	03/18/10 06:53

8330B

JL 6/8/10

HPLC/IC MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-3087-1

SDG No.:

Instrument ID: HPLC_Q Analysis Batch Number: 18232

Lab Sample ID: CCV 280-18232/2 Client Sample ID:

Date Analyzed: 06/05/10 00:15 Lab File ID: 002-1001.D GC Column: Luna-phenylhe ID: 4.6(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Nitrobenzene	10.69	Baseline Event	dybash	06/07/10 07:52
1,2-Dinitrobenzene	11.50	Baseline Event	dybash	06/07/10 07:52
4-Amino-2,6-dinitrotoluene	15.32	Baseline Event	dybash	06/07/10 07:53
3-Nitrotoluene	15.85	Baseline Event	dybash	06/07/10 07:53
2-Amino-4,6-dinitrotoluene	16.20	Baseline Event	dybash	06/07/10 07:53
1,3,5-Trinitrobenzene	16.81	Baseline Event	dybash	06/07/10 07:53
2,6-Dinitrotoluene	17.75	Baseline Event	dybash	06/07/10 07:53

Lab Sample ID: LCSSRM 280-13801/9-B Client Sample ID:

Date Analyzed: 06/05/10 02:23 Lab File ID: 014-1401.D GC Column: Luna-phenylhe ID: 4.6(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
2,4,6-Trinitrotoluene	22.40	Baseline Event	dybash	06/07/10 07:55

Lab Sample ID: LCSSRM 280-13801/9-B Client Sample ID:

Date Analyzed: 06/05/10 02:23 Lab File ID: 014-1401.D GC Column: Luna-phenylhe ID: 4.6(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
PETN	23.11	Baseline Event	dybash	06/08/10 05:46

JL 6/8/10

8330B

HPLC/IC MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-3087-1

SDG No.:

Instrument ID: HPLC_Q Analysis Batch Number: 18232

Lab Sample ID: CCV 280-18232/3 Client Sample ID:

Date Analyzed: 06/05/10 05:03 Lab File ID: 002-1901.D GC Column: Luna-phenylhe ID: 4.6(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Nitrobenzene	10.68	Baseline Event	dybash	06/07/10 08:01
1,2-Dinitrobenzene	11.49	Baseline Event	dybash	06/07/10 08:01
4-Amino-2,6-dinitrotoluene	15.32	Baseline Event	dybash	06/07/10 08:00
2-Amino-4,6-dinitrotoluene	16.19	Baseline Event	dybash	06/07/10 08:00
1,3,5-Trinitrobenzene	16.80	Baseline Event	dybash	06/07/10 08:00

8330B

HPLC/IC MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-3087-1

SDG No.:

Instrument ID: HPLC_X3 Analysis Batch Number: 17472

Lab Sample ID: IC 280-17472/4 Client Sample ID:

Date Analyzed: 05/26/10 22:12 Lab File ID: 005-0501.D GC Column: UltraCarb5uOD ID: 4.6(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Nitroglycerin	13.61	Baseline Event	lahrc	05/28/10 11:03

Lab Sample ID: IC 280-17472/5 Client Sample ID:

Date Analyzed: 05/26/10 22:36 Lab File ID: 006-0601.D GC Column: UltraCarb5uOD ID: 4.6(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Nitroglycerin	13.61	Baseline Event	lahrc	05/28/10 11:03

Lab Sample ID: IC 280-17472/6 Client Sample ID:

Date Analyzed: 05/26/10 22:59 Lab File ID: 007-0701.D GC Column: UltraCarb5uOD ID: 4.6(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Nitroglycerin	13.61	Baseline Event	lahrc	05/28/10 11:03

JG 6/8/10

8330B

HPLC/IC MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-3087-1

SDG No.:

Instrument ID: HPLC_X3 Analysis Batch Number: 17891

Lab Sample ID: IC 280-17891/1 Client Sample ID:

Date Analyzed: 05/26/10 21:02 Lab File ID: 002-0201.D GC Column: UltraCarb5uOD ID: 4.6(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
HMX	7.78	Split Peak	lahrc	05/27/10 09:15
2,4-diamino-6-nitrotoluene	7.85	Split Peak	lahrc	05/27/10 09:15
RDX	10.06	Baseline Event	lahrc	05/27/10 11:37
1,3,5-Trinitrobenzene	11.59	Baseline Event	lahrc	05/27/10 11:37
1,2-Dinitrobenzene	12.17	Baseline Event	lahrc	05/27/10 11:37
1,3-Dinitrobenzene	12.64	Baseline Event	lahrc	05/27/10 11:37
Nitrobenzene	13.25	Baseline Event	lahrc	05/27/10 11:37
Tetryl	13.51	Baseline Event	lahrc	05/27/10 11:37
2,4,6-Trinitrotoluene	14.17	Baseline Event	lahrc	05/27/10 11:37
4-Amino-2,6-dinitrotoluene	14.49	Baseline Event	lahrc	05/27/10 11:37
2-Amino-4,6-dinitrotoluene	14.78	Baseline Event	lahrc	05/27/10 11:37
2,6-Dinitrotoluene	15.02	Baseline Event	lahrc	05/27/10 11:37
2,4-Dinitrotoluene	15.23	Baseline Event	lahrc	05/27/10 11:37
2-Nitrotoluene	16.21	Baseline Event	lahrc	05/27/10 11:37
4-Nitrotoluene	16.71	Baseline Event	lahrc	05/27/10 11:37
3-Nitrotoluene	17.29	Baseline Event	lahrc	05/27/10 11:37

JG 6/8/10

8330B

HPLC/IC MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-3087-1

SDG No.:

Instrument ID: HPLC_X3 Analysis Batch Number: 17891

Lab Sample ID: IC 280-17891/2 Client Sample ID:

Date Analyzed: 05/26/10 21:25 Lab File ID: 003-0301.D GC Column: UltraCarb5uOD ID: 4.6(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
RDX	10.07	Baseline Event	lahrc	05/27/10 11:34
1,3,5-Trinitrobenzene	11.59	Baseline Event	lahrc	05/27/10 11:34
1,2-Dinitrobenzene	12.18	Baseline Event	lahrc	05/27/10 11:34
1,3-Dinitrobenzene	12.65	Baseline Event	lahrc	05/27/10 11:34
Tetryl	13.51	Baseline Event	lahrc	05/27/10 11:34
2,4,6-Trinitrotoluene	14.17	Baseline Event	lahrc	05/27/10 11:34
4-Amino-2,6-dinitrotoluene	14.49	Baseline Event	lahrc	05/27/10 11:34
2-Amino-4,6-dinitrotoluene	14.78	Baseline Event	lahrc	05/27/10 11:34
2,6-Dinitrotoluene	15.03	Baseline Event	lahrc	05/27/10 11:34
2,4-Dinitrotoluene	15.23	Baseline Event	lahrc	05/27/10 11:34
2-Nitrotoluene	16.22	Baseline Event	lahrc	05/27/10 11:34
4-Nitrotoluene	16.71	Baseline Event	lahrc	05/27/10 11:34
3-Nitrotoluene	17.30	Baseline Event	lahrc	05/27/10 11:34

JG 6/8/10

8330B

HPLC/IC MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-3087-1

SDG No.:

Instrument ID: HPLC_X3 Analysis Batch Number: 17891

Lab Sample ID: IC 280-17891/3 Client Sample ID:

Date Analyzed: 05/26/10 21:49 Lab File ID: 004-0401.D GC Column: UltraCarb5uOD ID: 4.6(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
RDX	10.08	Baseline Event	lahrc	05/27/10 11:34
1,3,5-Trinitrobenzene	11.61	Baseline Event	lahrc	05/27/10 11:34
1,2-Dinitrobenzene	12.19	Baseline Event	lahrc	05/27/10 11:34
1,3-Dinitrobenzene	12.65	Baseline Event	lahrc	05/27/10 11:34
Nitrobenzene	13.27	Baseline Event	lahrc	05/27/10 11:34
Tetryl	13.52	Baseline Event	lahrc	05/27/10 11:34
2,4,6-Trinitrotoluene	14.19	Baseline Event	lahrc	05/27/10 11:34
4-Amino-2,6-dinitrotoluene	14.50	Baseline Event	lahrc	05/27/10 11:34
2-Amino-4,6-dinitrotoluene	14.79	Baseline Event	lahrc	05/27/10 11:34
2,6-Dinitrotoluene	15.04	Baseline Event	lahrc	05/27/10 11:34
2,4-Dinitrotoluene	15.25	Baseline Event	lahrc	05/27/10 11:34
2-Nitrotoluene	16.23	Baseline Event	lahrc	05/27/10 11:34
4-Nitrotoluene	16.73	Baseline Event	lahrc	05/27/10 11:34
3-Nitrotoluene	17.31	Baseline Event	lahrc	05/27/10 11:34

JL 6/8/10

8330B

HPLC/IC MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-3087-1

SDG No.:

Instrument ID: HPLC_X3 Analysis Batch Number: 17891

Lab Sample ID: IC 280-17891/4 Client Sample ID:

Date Analyzed: 05/26/10 22:12 Lab File ID: 005-0501.D GC Column: UltraCarb5uOD ID: 4.6(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
RDX	10.08	Baseline Event	lahrc	05/27/10 11:34
1,3,5-Trinitrobenzene	11.61	Baseline Event	lahrc	05/27/10 11:34
1,2-Dinitrobenzene	12.19	Baseline Event	lahrc	05/27/10 11:34
1,3-Dinitrobenzene	12.66	Baseline Event	lahrc	05/27/10 11:34
Nitrobenzene	13.26	Baseline Event	lahrc	05/27/10 11:34
Tetryl	13.52	Baseline Event	lahrc	05/27/10 11:34
2,4,6-Trinitrotoluene	14.19	Baseline Event	lahrc	05/27/10 11:34
4-Amino-2,6-dinitrotoluene	14.50	Baseline Event	lahrc	05/27/10 11:34
2-Amino-4,6-dinitrotoluene	14.80	Baseline Event	lahrc	05/27/10 11:34
2,6-Dinitrotoluene	15.04	Baseline Event	lahrc	05/27/10 11:34
2,4-Dinitrotoluene	15.25	Baseline Event	lahrc	05/27/10 11:34
2-Nitrotoluene	16.23	Baseline Event	lahrc	05/27/10 11:34
4-Nitrotoluene	16.74	Baseline Event	lahrc	05/27/10 11:34
3-Nitrotoluene	17.32	Baseline Event	lahrc	05/27/10 11:34

YL 6/8/10

8330B

HPLC/IC MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-3087-1

SDG No.:

Instrument ID: HPLC_X3 Analysis Batch Number: 17891

Lab Sample ID: IC 280-17891/5 Client Sample ID:

Date Analyzed: 05/26/10 22:36 Lab File ID: 006-0601.D GC Column: UltraCarb5uOD ID: 4.6(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
1,3,5-Trinitrobenzene	11.61	Baseline Event	lahrc	05/27/10 09:15
1,2-Dinitrobenzene	12.19	Baseline Event	lahrc	05/27/10 09:15
1,3-Dinitrobenzene	12.66	Baseline Event	lahrc	05/27/10 09:15
Nitrobenzene	13.26	Baseline Event	lahrc	05/27/10 09:15
Tetryl	13.52	Baseline Event	lahrc	05/27/10 09:16
2,4,6-Trinitrotoluene	14.18	Baseline Event	lahrc	05/27/10 09:16
4-Amino-2,6-dinitrotoluene	14.50	Baseline Event	lahrc	05/27/10 09:16
2-Amino-4,6-dinitrotoluene	14.78	Baseline Event	lahrc	05/27/10 09:16
2,6-Dinitrotoluene	15.03	Baseline Event	lahrc	05/27/10 09:16
2,4-Dinitrotoluene	15.24	Baseline Event	lahrc	05/27/10 09:16
2-Nitrotoluene	16.22	Baseline Event	lahrc	05/27/10 09:16
4-Nitrotoluene	16.72	Baseline Event	lahrc	05/27/10 09:16
3-Nitrotoluene	17.30	Baseline Event	lahrc	05/27/10 09:16

Lab Sample ID: IC 280-17891/7 Client Sample ID:

Date Analyzed: 05/26/10 23:23 Lab File ID: 008-0801.D GC Column: UltraCarb5uOD ID: 4.6(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
HMX	7.78	Baseline Event	lahrc	05/27/10 09:16
2,4-diamino-6-nitrotoluene	7.92	Baseline Event	lahrc	05/27/10 09:16
4-Nitrotoluene	16.74	Baseline Event	lahrc	05/27/10 11:42
3-Nitrotoluene	17.32	Baseline Event	lahrc	05/27/10 11:42

8330B

Ye 6/8/10

HPLC/IC MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-3087-1

SDG No.:

Instrument ID: HPLC_X3 Analysis Batch Number: 17891

Lab Sample ID: IC 280-17891/8 Client Sample ID:

Date Analyzed: 05/26/10 23:46 Lab File ID: 009-0901.D GC Column: UltraCarb5uOD ID: 4.6(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
HMX	7.78	Baseline Event	lahrc	05/27/10 09:16
RDX	10.07	Baseline Event	lahrc	05/27/10 09:17
2,6-Dinitrotoluene	15.03	Baseline Event	lahrc	05/27/10 09:18
2,4-Dinitrotoluene	15.25	Baseline Event	lahrc	05/27/10 12:10

JL 6/8/10

8330B

HPLC/IC MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-3087-1

SDG No.:

Instrument ID: HPLC_X3 Analysis Batch Number: 18009

Lab Sample ID: CCV 280-18009/4 Client Sample ID:

Date Analyzed: 06/04/10 01:50 Lab File ID: 002-4101.D GC Column: UltraCarb5uOD ID: 4.6(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
1,3,5-Trinitrobenzene	11.44	Baseline Event	dybash	06/04/10 06:11
1,2-Dinitrobenzene	12.02	Baseline Event	dybash	06/04/10 06:11
1,3-Dinitrobenzene	12.50	Baseline Event	dybash	06/04/10 06:11
Nitrobenzene	13.10	Baseline Event	dybash	06/04/10 06:11
Tetryl	13.32	Baseline Event	dybash	06/04/10 06:11
2,4,6-Trinitrotoluene	13.96	Baseline Event	dybash	06/04/10 06:11
4-Amino-2,6-dinitrotoluene	14.29	Baseline Event	dybash	06/04/10 06:11
2-Amino-4,6-dinitrotoluene	14.56	Baseline Event	dybash	06/04/10 06:11
2,6-Dinitrotoluene	14.80	Baseline Event	dybash	06/04/10 06:11
2,4-Dinitrotoluene	14.99	Baseline Event	dybash	06/04/10 06:11
2-Nitrotoluene	15.96	Baseline Event	dybash	06/04/10 06:11
4-Nitrotoluene	16.44	Baseline Event	dybash	06/04/10 06:11

YL 6/8/10

8330B

HPLC/IC MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-3087-1

SDG No.:

Instrument ID: HPLC_X3 Analysis Batch Number: 18009

Lab Sample ID: LCS 280-14909/11-A Client Sample ID:

Date Analyzed: 06/04/10 03:24 Lab File ID: 045-4501.D GC Column: UltraCarb5uOD ID: 4.6(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
HMX	7.56	Baseline Event	dybash	06/04/10 15:09
1,3,5-Trinitrobenzene	11.43	Baseline Event	dybash	06/04/10 15:09
1,2-Dinitrobenzene	12.00	Baseline Event	dybash	06/04/10 15:09
1,3-Dinitrobenzene	12.47	Baseline Event	dybash	06/04/10 15:09
Nitrobenzene	13.08	Baseline Event	dybash	06/04/10 15:09
Tetryl	13.30	Baseline Event	dybash	06/04/10 15:09
2,4,6-Trinitrotoluene	13.94	Baseline Event	dybash	06/04/10 15:09
4-Amino-2,6-dinitrotoluene	14.26	Baseline Event	dybash	06/04/10 15:09
2-Amino-4,6-dinitrotoluene	14.52	Baseline Event	dybash	06/04/10 15:09
2,6-Dinitrotoluene	14.78	Baseline Event	dybash	06/04/10 15:09
2,4-Dinitrotoluene	14.96	Baseline Event	dybash	06/04/10 15:09
4-Nitrotoluene	16.41	Baseline Event	dybash	06/04/10 16:16
3-Nitrotoluene	16.97	Baseline Event	dybash	06/04/10 16:16

Lab Sample ID: LCSSRM 280-13801/9-B Client Sample ID:

Date Analyzed: 06/04/10 04:11 Lab File ID: 047-4701.D GC Column: UltraCarb5uOD ID: 4.6(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
HMX	7.56	Baseline Event	dybash	06/04/10 08:57

Lab Sample ID: 280-3087-8 Client Sample ID: MRFLDU4-S0200-(2-4)-0409

Date Analyzed: 06/04/10 05:22 Lab File ID: 050-5001.D GC Column: UltraCarb5uOD ID: 4.6(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
2,4,6-Trinitrotoluene	13.95	Baseline Event	dybash	06/04/10 08:58

YG 6/8/10

8330B

HPLC/IC MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-3087-1

SDG No.:

Instrument ID: HPLC_X3 Analysis Batch Number: 18009

Lab Sample ID: 280-3087-12 Client Sample ID: MRDU5-S0200-(2-4)-0409

Date Analyzed: 06/04/10 06:09 Lab File ID: 052-5201.D GC Column: UltraCarb5uOD ID: 4.6(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Nitroglycerin	13.39	Baseline Event	dybash	06/04/10 15:07

Lab Sample ID: 280-3087-12 MS Client Sample ID: MRDU5-S0200-(2-4)-0409 MS

Date Analyzed: 06/04/10 06:32 Lab File ID: 053-5301.D GC Column: UltraCarb5uOD ID: 4.6(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
HMX	7.55	Baseline Event	dybash	06/04/10 15:10
1,3,5-Trinitrobenzene	11.41	Baseline Event	dybash	06/04/10 15:10
1,2-Dinitrobenzene	11.99	Baseline Event	dybash	06/04/10 15:10
1,3-Dinitrobenzene	12.45	Baseline Event	dybash	06/04/10 15:10
Nitrobenzene	13.07	Baseline Event	dybash	06/04/10 15:10
Tetryl	13.28	Baseline Event	dybash	06/04/10 15:10
2,4,6-Trinitrotoluene	13.92	Baseline Event	dybash	06/04/10 15:10
4-Amino-2,6-dinitrotoluene	14.25	Baseline Event	dybash	06/04/10 15:10
2-Amino-4,6-dinitrotoluene	14.51	Baseline Event	dybash	06/04/10 15:10
2,6-Dinitrotoluene	14.76	Baseline Event	dybash	06/04/10 15:10
2,4-Dinitrotoluene	14.94	Baseline Event	dybash	06/04/10 15:10
2-Nitrotoluene	15.91	Baseline Event	dybash	06/04/10 15:10

YL 6/8/10

8330B

HPLC/IC MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-3087-1

SDG No.:

Instrument ID: HPLC_X3 Analysis Batch Number: 18009

Lab Sample ID: 280-3087-12 MSD Client Sample ID: MRDU5-S0200-(2-4)-0409 MSD

Date Analyzed: 06/04/10 06:56 Lab File ID: 054-5401.D GC Column: UltraCarb5uOD ID: 4.6(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
HMX	7.55	Baseline Event	dybash	06/04/10 15:11
1,3,5-Trinitrobenzene	11.41	Baseline Event	dybash	06/04/10 15:11
1,2-Dinitrobenzene	11.98	Baseline Event	dybash	06/04/10 15:11
1,3-Dinitrobenzene	12.45	Baseline Event	dybash	06/04/10 15:11
Nitrobenzene	13.06	Baseline Event	dybash	06/04/10 15:11
Tetryl	13.27	Baseline Event	dybash	06/04/10 15:11
2,4,6-Trinitrotoluene	13.91	Baseline Event	dybash	06/04/10 15:11
4-Amino-2,6-dinitrotoluene	14.24	Baseline Event	dybash	06/04/10 15:11
2-Amino-4,6-dinitrotoluene	14.50	Baseline Event	dybash	06/04/10 15:11
2,6-Dinitrotoluene	14.76	Baseline Event	dybash	06/04/10 15:11
2,4-Dinitrotoluene	14.93	Baseline Event	dybash	06/04/10 15:11
2-Nitrotoluene	15.90	Baseline Event	dybash	06/04/10 15:11
4-Nitrotoluene	16.38	Baseline Event	dybash	06/04/10 15:11
3-Nitrotoluene	16.94	Baseline Event	dybash	06/04/10 15:11

YB 6/8/10

8330B

HPLC/IC MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-3087-1

SDG No.:

Instrument ID: HPLC_X3 Analysis Batch Number: 18009

Lab Sample ID: CCV 280-18009/38 Client Sample ID:

Date Analyzed: 06/04/10 07:20 Lab File ID: 002-5501.D GC Column: UltraCarb5uOD ID: 4.6(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
1,3,5-Trinitrobenzene	11.43	Baseline Event	dybash	06/04/10 15:13
1,2-Dinitrobenzene	12.00	Baseline Event	dybash	06/04/10 15:13
1,3-Dinitrobenzene	12.48	Baseline Event	dybash	06/04/10 15:13
Nitrobenzene	13.09	Baseline Event	dybash	06/04/10 15:13
Tetryl	13.30	Baseline Event	dybash	06/04/10 15:13
2,4,6-Trinitrotoluene	13.94	Baseline Event	dybash	06/04/10 15:13
4-Amino-2,6-dinitrotoluene	14.28	Baseline Event	dybash	06/04/10 15:13
2-Amino-4,6-dinitrotoluene	14.54	Baseline Event	dybash	06/04/10 15:13
2,6-Dinitrotoluene	14.78	Baseline Event	dybash	06/04/10 15:13
2,4-Dinitrotoluene	14.97	Baseline Event	dybash	06/04/10 15:13
2-Nitrotoluene	15.94	Baseline Event	dybash	06/04/10 15:13
4-Nitrotoluene	16.42	Baseline Event	dybash	06/04/10 15:13
3-Nitrotoluene	16.98	Baseline Event	dybash	06/04/10 15:13

JL 6/8/10

8330B

SAMPLE SUMMARY

Client: HydroGeoLogic Inc

Job Number: 280-3087-1

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
280-3087-1	MRBMDU1-S0200-(2-4)-0409	Solid	04/30/2010 1135	05/01/2010 1030
280-3087-2	MRBMDU1-S0300-(16-18)0409	Solid	04/30/2010 1320	05/01/2010 1030
280-3087-3	MRBMDU2-S0200-(2-4)-0409	Solid	04/29/2010 1512	05/01/2010 1030
280-3087-4	MRREP1-S0101-0409	Solid	04/30/2010 1325	05/01/2010 1030
280-3087-5	MRREP1-S0101-0409	Solid	04/30/2010 1325	05/01/2010 1030
280-3087-6	MRFLDU3-S0200-(2-4)-0409	Solid	04/30/2010 0815	05/01/2010 1030
280-3087-7	MRFLDU3-S0200-(2-4)-0409	Solid	04/30/2010 0815	05/01/2010 1030
280-3087-8	MRFLDU4-S0200-(2-4)-0409	Solid	04/29/2010 1600	05/01/2010 1030
280-3087-9	MRFLDU4-S0200-(2-4)-0409	Solid	04/29/2010 1600	05/01/2010 1030
280-3087-10	MRREP2-S0102-0409	Solid	04/30/2010 1420	05/01/2010 1030
280-3087-11	MRREP2-S0102-0409	Solid	04/30/2010 1420	05/01/2010 1030
280-3087-12	MRDU5-S0200-(2-4)-0409	Solid	04/29/2010 1629	05/01/2010 1030
280-3087-12MS	MRDU5-S0200-(2-4)-0409	Solid	04/29/2010 1629	05/01/2010 1030
280-3087-12MSD	MRDU5-S0200-(2-4)-0409	Solid	04/29/2010 1629	05/01/2010 1030
280-3087-13	MRBMDU6-S0200-(2-4)-0409	Solid	04/30/2010 1040	05/01/2010 1030

EXECUTIVE SUMMARY - Detections

Client: HydroGeoLogic Inc

Job Number: 280-3087-1

Lab Sample ID / Analyte	Client Sample ID	Result / Qualifier		Reporting Limit	Units	Method
280-3087-1	**MRBMDU1-S0200-(2-4)-0409**					
Aluminum		5600		50	mg/Kg	6010C
Calcium		420		100	mg/Kg	6010C
Iron		7200		80	mg/Kg	6010C
Magnesium		1900		30	mg/Kg	6010C
Potassium		440		300	mg/Kg	6010C
Antimony		0.83	Q	0.20	mg/Kg	6020A
Arsenic		11		0.60	mg/Kg	6020A
Barium		12		0.25	mg/Kg	6020A
Beryllium		0.23		0.10	mg/Kg	6020A
Cadmium		0.12	Q	0.10	mg/Kg	6020A
Chromium		12		0.60	mg/Kg	6020A
Cobalt		2.7	Q	0.10	mg/Kg	6020A
Copper		44		2.5	mg/Kg	6020A
Lead		270		0.40	mg/Kg	6020A
Manganese		110		1.0	mg/Kg	6020A
Nickel		11	Q	0.35	mg/Kg	6020A
Selenium		0.37	J	0.50	mg/Kg	6020A
Silver		0.050	J	0.10	mg/Kg	6020A
Thallium		0.079	J	0.10	mg/Kg	6020A
Vanadium		10		0.50	mg/Kg	6020A
Zinc		23		2.5	mg/Kg	6020A
Mercury		0.016		0.016	mg/Kg	7471B

EXECUTIVE SUMMARY - Detections

Client: HydroGeoLogic Inc

Job Number: 280-3087-1

Lab Sample ID / Analyte	Client Sample ID	Result / Qualifier		Reporting Limit	Units	Method
280-3087-2	**MRBMDU1-S0300-(16-18)0409**					
Aluminum		4400		49	mg/Kg	6010C
Calcium		360		98	mg/Kg	6010C
Iron		5800		79	mg/Kg	6010C
Magnesium		1500		29	mg/Kg	6010C
Potassium		380		290	mg/Kg	6010C
Antimony		6.8	Q	0.20	mg/Kg	6020A
Arsenic		10		0.59	mg/Kg	6020A
Barium		8.7		0.25	mg/Kg	6020A
Beryllium		0.20		0.099	mg/Kg	6020A
Cadmium		0.067	J Q	0.099	mg/Kg	6020A
Chromium		8.6		0.59	mg/Kg	6020A
Cobalt		2.3	Q	0.099	mg/Kg	6020A
Copper		61		2.5	mg/Kg	6020A
Lead		1100	D	4.0	mg/Kg	6020A
Manganese		87		0.99	mg/Kg	6020A
Nickel		10	Q	0.35	mg/Kg	6020A
Selenium		0.24	J	0.49	mg/Kg	6020A
Silver		0.053	J	0.099	mg/Kg	6020A
Thallium		0.052	J	0.099	mg/Kg	6020A
Vanadium		6.5		0.49	mg/Kg	6020A
Zinc		14		2.5	mg/Kg	6020A
280-3087-3	**MRBMDU2-S0200-(2-4)-0409**					
Aluminum		6600		49	mg/Kg	6010C
Calcium		400		98	mg/Kg	6010C
Iron		9300		79	mg/Kg	6010C
Magnesium		2600		29	mg/Kg	6010C
Potassium		600		290	mg/Kg	6010C
Antimony		0.10	J Q	0.20	mg/Kg	6020A
Arsenic		15		0.60	mg/Kg	6020A
Barium		16		0.25	mg/Kg	6020A
Beryllium		0.37		0.10	mg/Kg	6020A
Cadmium		0.12	Q	0.10	mg/Kg	6020A
Chromium		15		0.60	mg/Kg	6020A
Cobalt		3.7	Q	0.10	mg/Kg	6020A
Copper		18		2.5	mg/Kg	6020A
Lead		41		0.40	mg/Kg	6020A
Manganese		150		1.0	mg/Kg	6020A
Nickel		14	Q	0.35	mg/Kg	6020A
Selenium		0.41	J	0.50	mg/Kg	6020A
Silver		0.028	J	0.10	mg/Kg	6020A
Thallium		0.072	J	0.10	mg/Kg	6020A
Vanadium		11		0.50	mg/Kg	6020A
Zinc		25		2.5	mg/Kg	6020A
Mercury		0.012	J	0.015	mg/Kg	7471B

EXECUTIVE SUMMARY - Detections

Client: HydroGeoLogic Inc

Job Number: 280-3087-1

Lab Sample ID / Analyte	Client Sample ID	Result / Qualifier		Reporting Limit	Units	Method
280-3087-4	**MRREP1-S0101-0409**					
Aluminum		6200		49	mg/Kg	6010C
Calcium		550		98	mg/Kg	6010C
Iron		8500		79	mg/Kg	6010C
Magnesium		2200		29	mg/Kg	6010C
Potassium		530		290	mg/Kg	6010C
Antimony		0.11	J Q	0.20	mg/Kg	6020A
Arsenic		12		0.60	mg/Kg	6020A
Barium		15		0.25	mg/Kg	6020A
Beryllium		0.24		0.10	mg/Kg	6020A
Cadmium		0.14	Q	0.10	mg/Kg	6020A
Chromium		14		0.60	mg/Kg	6020A
Cobalt		3.1	Q	0.10	mg/Kg	6020A
Copper		11		2.5	mg/Kg	6020A
Lead		65		0.40	mg/Kg	6020A
Manganese		130		1.0	mg/Kg	6020A
Nickel		13	Q	0.35	mg/Kg	6020A
Selenium		0.41	J	0.50	mg/Kg	6020A
Silver		0.036	J	0.10	mg/Kg	6020A
Thallium		0.065	J	0.10	mg/Kg	6020A
Vanadium		14		0.50	mg/Kg	6020A
Zinc		27		2.5	mg/Kg	6020A
Mercury		0.019		0.016	mg/Kg	7471B
280-3087-5	**MRREP1-S0101-0409**					
Aluminum		9600		50	mg/Kg	6010C
Calcium		730		99	mg/Kg	6010C
Iron		19000		79	mg/Kg	6010C
Magnesium		6800		30	mg/Kg	6010C
Potassium		580		300	mg/Kg	6010C
Antimony		0.053	J Q	0.20	mg/Kg	6020A
Arsenic		16		0.59	mg/Kg	6020A
Barium		14		0.25	mg/Kg	6020A
Beryllium		0.28		0.099	mg/Kg	6020A
Cadmium		0.13	Q	0.099	mg/Kg	6020A
Chromium		27		0.59	mg/Kg	6020A
Cobalt		5.0	Q	0.099	mg/Kg	6020A
Copper		9.2		2.5	mg/Kg	6020A
Lead		29		0.39	mg/Kg	6020A
Manganese		240		0.99	mg/Kg	6020A
Nickel		22	Q	0.35	mg/Kg	6020A
Selenium		0.26	J	0.49	mg/Kg	6020A
Thallium		0.071	J	0.099	mg/Kg	6020A
Vanadium		17		0.49	mg/Kg	6020A
Zinc		28		2.5	mg/Kg	6020A

EXECUTIVE SUMMARY - Detections

Client: HydroGeoLogic Inc

Job Number: 280-3087-1

Lab Sample ID / Analyte	Client Sample ID	Result / Qualifier		Reporting Limit	Units	Method
280-3087-6	**MRFLDU3-S0200-(2-4)-0409**					
Aluminum		5900		50	mg/Kg	6010C
Calcium		510		100	mg/Kg	6010C
Iron		8100		80	mg/Kg	6010C
Magnesium		2100		30	mg/Kg	6010C
Potassium		490		300	mg/Kg	6010C
Antimony		0.11	J Q	0.20	mg/Kg	6020A
Arsenic		11		0.59	mg/Kg	6020A
Barium		13		0.25	mg/Kg	6020A
Beryllium		0.22		0.099	mg/Kg	6020A
Cadmium		0.12	Q	0.099	mg/Kg	6020A
Chromium		13		0.59	mg/Kg	6020A
Cobalt		3.1	Q	0.099	mg/Kg	6020A
Copper		10		2.5	mg/Kg	6020A
Lead		52		0.40	mg/Kg	6020A
Manganese		120		0.99	mg/Kg	6020A
Nickel		12	Q	0.35	mg/Kg	6020A
Selenium		0.37	J	0.50	mg/Kg	6020A
Silver		0.027	J	0.099	mg/Kg	6020A
Thallium		0.060	J	0.099	mg/Kg	6020A
Vanadium		12		0.50	mg/Kg	6020A
Zinc		25		2.5	mg/Kg	6020A
Mercury		0.011	J	0.014	mg/Kg	7471B
280-3087-7	**MRFLDU3-S0200-(2-4)-0409**					
Aluminum		8300		49	mg/Kg	6010C
Calcium		1900		98	mg/Kg	6010C
Iron		18000		79	mg/Kg	6010C
Magnesium		5700		30	mg/Kg	6010C
Potassium		1100		300	mg/Kg	6010C
Antimony		0.056	J Q	0.20	mg/Kg	6020A
Arsenic		17		0.60	mg/Kg	6020A
Barium		18		0.25	mg/Kg	6020A
Beryllium		0.28		0.10	mg/Kg	6020A
Cadmium		0.18	Q	0.10	mg/Kg	6020A
Chromium		30		0.60	mg/Kg	6020A
Cobalt		5.3	Q	0.10	mg/Kg	6020A
Copper		12		2.5	mg/Kg	6020A
Lead		33		0.40	mg/Kg	6020A
Manganese		230		1.0	mg/Kg	6020A
Nickel		25	Q	0.35	mg/Kg	6020A
Selenium		0.32	J	0.50	mg/Kg	6020A
Silver		0.026	J	0.10	mg/Kg	6020A
Thallium		0.082	J	0.10	mg/Kg	6020A
Vanadium		19		0.50	mg/Kg	6020A
Zinc		37		2.5	mg/Kg	6020A

EXECUTIVE SUMMARY - Detections

Client: HydroGeoLogic Inc

Job Number: 280-3087-1

Lab Sample ID / Analyte	Client Sample ID	Result / Qualifier		Reporting Limit	Units	Method
280-3087-8	**MRFLDU4-S0200-(2-4)-0409**					
Aluminum		4900		50	mg/Kg	6010C
Calcium		350		99	mg/Kg	6010C
Iron		6100		80	mg/Kg	6010C
Magnesium		1400		30	mg/Kg	6010C
Potassium		350		300	mg/Kg	6010C
Antimony		0.23	Q	0.20	mg/Kg	6020A
Arsenic		8.5		0.59	mg/Kg	6020A
Barium		11		0.25	mg/Kg	6020A
Beryllium		0.21		0.099	mg/Kg	6020A
Cadmium		0.094	J Q	0.099	mg/Kg	6020A
Chromium		8.4		0.59	mg/Kg	6020A
Cobalt		2.0	Q	0.099	mg/Kg	6020A
Copper		20		2.5	mg/Kg	6020A
Lead		110		0.40	mg/Kg	6020A
Manganese		90		0.99	mg/Kg	6020A
Nickel		7.6	Q	0.35	mg/Kg	6020A
Selenium		0.28	J	0.49	mg/Kg	6020A
Thallium		0.049	J	0.099	mg/Kg	6020A
Vanadium		7.1		0.49	mg/Kg	6020A
Zinc		15		2.5	mg/Kg	6020A
Mercury		0.011	J	0.016	mg/Kg	7471B
2,4-Dinitrotoluene		0.33		0.097	mg/Kg	8330B
280-3087-9	**MRFLDU4-S0200-(2-4)-0409**					
Aluminum		8000		49	mg/Kg	6010C
Calcium		1300		98	mg/Kg	6010C
Iron		15000		79	mg/Kg	6010C
Magnesium		5400		29	mg/Kg	6010C
Potassium		810		290	mg/Kg	6010C
Antimony		0.36	Q	0.20	mg/Kg	6020A
Arsenic		20		0.60	mg/Kg	6020A
Barium		16		0.25	mg/Kg	6020A
Beryllium		0.33		0.10	mg/Kg	6020A
Cadmium		0.14	Q	0.10	mg/Kg	6020A
Chromium		26		0.60	mg/Kg	6020A
Cobalt		3.7	Q	0.10	mg/Kg	6020A
Copper		18		2.5	mg/Kg	6020A
Lead		100		0.40	mg/Kg	6020A
Manganese		200		1.0	mg/Kg	6020A
Nickel		20	Q	0.35	mg/Kg	6020A
Selenium		0.33	J	0.50	mg/Kg	6020A
Thallium		0.060	J	0.10	mg/Kg	6020A
Vanadium		16		0.50	mg/Kg	6020A
Zinc		31		2.5	mg/Kg	6020A

EXECUTIVE SUMMARY - Detections

Client: HydroGeoLogic Inc

Job Number: 280-3087-1

Lab Sample ID / Analyte	Client Sample ID	Result / Qualifier		Reporting Limit	Units	Method
280-3087-10	**MRREP2-S0102-0409**					
Aluminum		5800		50	mg/Kg	6010C
Calcium		500		100	mg/Kg	6010C
Iron		8400		80	mg/Kg	6010C
Magnesium		2200		30	mg/Kg	6010C
Potassium		480		300	mg/Kg	6010C
Antimony		0.091	J Q	0.20	mg/Kg	6020A
Arsenic		12		0.60	mg/Kg	6020A
Barium		15		0.25	mg/Kg	6020A
Beryllium		0.25		0.099	mg/Kg	6020A
Cadmium		0.11	Q	0.099	mg/Kg	6020A
Chromium		13		0.60	mg/Kg	6020A
Cobalt		3.1	Q	0.099	mg/Kg	6020A
Copper		12		2.5	mg/Kg	6020A
Lead		60		0.40	mg/Kg	6020A
Manganese		130		0.99	mg/Kg	6020A
Nickel		12	Q	0.35	mg/Kg	6020A
Selenium		0.40	J	0.50	mg/Kg	6020A
Silver		0.051	J	0.099	mg/Kg	6020A
Thallium		0.063	J	0.099	mg/Kg	6020A
Vanadium		13		0.50	mg/Kg	6020A
Zinc		26		2.5	mg/Kg	6020A
Mercury		0.015		0.015	mg/Kg	7471B

EXECUTIVE SUMMARY - Detections

Client: HydroGeoLogic Inc

Job Number: 280-3087-1

Lab Sample ID / Analyte	Client Sample ID	Result / Qualifier		Reporting Limit	Units	Method
280-3087-11	**MRREP2-S0102-0409**					
Aluminum		6800		50	mg/Kg	6010C
Calcium		900		100	mg/Kg	6010C
Iron		14000		80	mg/Kg	6010C
Magnesium		4200		30	mg/Kg	6010C
Potassium		600		300	mg/Kg	6010C
Antimony		0.058	J Q	0.20	mg/Kg	6020A
Arsenic		18		0.59	mg/Kg	6020A
Barium		19		0.25	mg/Kg	6020A
Beryllium		0.23		0.099	mg/Kg	6020A
Cadmium		0.15	Q	0.099	mg/Kg	6020A
Chromium		23		0.59	mg/Kg	6020A
Cobalt		5.5	Q	0.099	mg/Kg	6020A
Copper		13		2.5	mg/Kg	6020A
Lead		28		0.40	mg/Kg	6020A
Manganese		330		0.99	mg/Kg	6020A
Nickel		24	Q	0.35	mg/Kg	6020A
Selenium		0.27	J	0.50	mg/Kg	6020A
Silver		0.55		0.099	mg/Kg	6020A
Thallium		0.082	J	0.099	mg/Kg	6020A
Vanadium		14		0.50	mg/Kg	6020A
Zinc		28		2.5	mg/Kg	6020A
Mercury		0.0086	J	0.014	mg/Kg	7471B

EXECUTIVE SUMMARY - Detections

Client: HydroGeoLogic Inc

Job Number: 280-3087-1

Lab Sample ID / Analyte	Client Sample ID	Result / Qualifier		Reporting Limit	Units	Method
280-3087-12	**MRDU5-S0200-(2-4)-0409**					
Aluminum		5700	J	49	mg/Kg	6010C
Calcium		520		99	mg/Kg	6010C
Iron		7800	J	79	mg/Kg	6010C
Magnesium		2100		30	mg/Kg	6010C
Potassium		520		300	mg/Kg	6010C
Antimony		0.17	Q J	0.20	mg/Kg	6020A
Arsenic		11		0.59	mg/Kg	6020A
Barium		15		0.25	mg/Kg	6020A
Beryllium		0.28		0.099	mg/Kg	6020A
Cadmium		0.13	Q	0.099	mg/Kg	6020A
Chromium		13		0.59	mg/Kg	6020A
Cobalt		3.0	Q	0.099	mg/Kg	6020A
Copper		28	J	2.5	mg/Kg	6020A
Lead		120	J	0.39	mg/Kg	6020A
Manganese		120	J	0.99	mg/Kg	6020A
Nickel		11	Q	0.35	mg/Kg	6020A
Selenium		0.38	J	0.49	mg/Kg	6020A
Silver		0.041	J	0.099	mg/Kg	6020A
Thallium		0.067	J	0.099	mg/Kg	6020A
Vanadium		11		0.49	mg/Kg	6020A
Zinc		28	J	2.5	mg/Kg	6020A
Mercury		0.018		0.015	mg/Kg	7471B
2,4-Dinitrotoluene		0.026	J	0.097	mg/Kg	8330B

EXECUTIVE SUMMARY - Detections

Client: HydroGeoLogic Inc

Job Number: 280-3087-1

Lab Sample ID / Analyte	Client Sample ID	Result / Qualifier		Reporting Limit	Units	Method
280-3087-13	**MRBMDU6-S0200-(2-4)-0409**					
Aluminum		5400		49	mg/Kg	6010C
Calcium		370		99	mg/Kg	6010C
Iron		6800		79	mg/Kg	6010C
Magnesium		1700		30	mg/Kg	6010C
Potassium		400		300	mg/Kg	6010C
Antimony		0.36	Q	0.20	mg/Kg	6020A
Arsenic		10		0.59	mg/Kg	6020A
Barium		11		0.25	mg/Kg	6020A
Beryllium		0.23		0.098	mg/Kg	6020A
Cadmium		0.089	J Q	0.098	mg/Kg	6020A
Chromium		11		0.59	mg/Kg	6020A
Cobalt		2.5	Q	0.098	mg/Kg	6020A
Copper		21		2.5	mg/Kg	6020A
Lead		160		0.39	mg/Kg	6020A
Manganese		89		0.98	mg/Kg	6020A
Nickel		10	Q	0.34	mg/Kg	6020A
Selenium		0.34	J	0.49	mg/Kg	6020A
Silver		0.035	J	0.098	mg/Kg	6020A
Thallium		0.062	J	0.098	mg/Kg	6020A
Vanadium		9.2		0.49	mg/Kg	6020A
Zinc		20		2.5	mg/Kg	6020A
Mercury		0.012	J	0.015	mg/Kg	7471B

METHOD SUMMARY

Client: HydroGeoLogic Inc

Job Number: 280-3087-1

Description	Lab Location	Method	Preparation Method
Matrix Solid			
Nitroaromatics and Nitramines (HPLC)	TAL DEN	SW846 8330B	
Extraction (Explosives) - Ring Puck	TAL DEN		SW846 8330
Sonication Extraction (Explosives)	TAL DEN		SW846 8330B
Metals (ICP)	TAL DEN	SW846 6010C	
Multi Incremental Sample Preparation	TAL DEN		EPA Increm, Prep
Preparation, Metals	TAL DEN		SW846 3050B
Metals (ICP/MS)	TAL DEN	SW846 6020A	
Multi Incremental Sample Preparation	TAL DEN		EPA Increm, Prep
Preparation, Metals	TAL DEN		SW846 3050B
Mercury in Solid or Semisolid Waste (Manual Cold Vapor Technique)	TAL DEN	SW846 7471B	
Multi Incremental Sample Preparation	TAL DEN		EPA Increm, Prep
Preparation, Mercury	TAL DEN		SW846 7471B

Lab References:

TAL DEN = TestAmerica Denver

Method References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

METHOD / ANALYST SUMMARY

Client: HydroGeoLogic Inc

Job Number: 280-3087-1

Method	Analyst	Analyst ID
SW846 6010C	Wells, David	DW
SW846 6020A	Lill, Thomas E	TEL
SW846 7471B	Grisdale, Christopher G	CGG
SW846 8330B	Fiedler, Heather K	HKF

Client: HydroGeoLogic Inc

Job Number: 280-3087-1

Client Sample ID: **MRREP1-S0101-0409**

Lab Sample ID: 280-3087-4

Client Matrix: Solid

Date Sampled: 04/30/2010 1325

Date Received: 05/01/2010 1030

8330B Nitroaromatics and Nitramines (HPLC)

Method:	8330B	Analysis Batch: 280-18009		Instrument ID:	HPLC_X3
Preparation:	8330B	Prep Batch: 280-14909		Initial Weight/Volume:	10.76 g
Dilution:	1.0	Leachate Batch: 280-13801		Final Weight/Volume:	40000 uL
Date Analyzed:	06/04/2010 0435			Injection Volume:	100 uL
Date Prepared:	05/11/2010 1820			Result Type:	PRIMARY
Date Leached:	05/04/2010 1039				

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	DL	LOQ
2-Amino-4,6-dinitrotoluene		0.037	U	0.031	0.093
4-Amino-2,6-dinitrotoluene		0.037	U	0.028	0.093
2,4-Dinitrotoluene		0.037	U	0.014	0.093
2,6-Dinitrotoluene		0.037	U	0.018	0.093
Nitroglycerin		0.37	U	0.20	1.9
2-Nitrotoluene		0.074	U	0.044	0.19
3-Nitrotoluene		0.074	U	0.059	0.19
Nitrobenzene		0.074	U	0.079	1.9
4-Nitrotoluene		0.093	U	0.034	0.19
1,3,5-Trinitrobenzene		0.037	U	0.013	0.093
1,3-Dinitrobenzene		0.037	U	0.015	0.093
HMX		0.037	U	0.021	0.093
RDX		0.074	U Q	0.040	0.19
Tetryl		0.074	U	0.041	0.19
PETN		0.37	U	0.46	1.9
2,4,6-Trinitrotoluene		0.037	U Q	0.029	0.093

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dinitrobenzene	103		83 - 122

Client: HydroGeoLogic Inc

Job Number: 280-3087-1

Client Sample ID: **MRFLDU3-S0200-(2-4)-0409**

Lab Sample ID: 280-3087-6

Client Matrix: Solid

Date Sampled: 04/30/2010 0815

Date Received: 05/01/2010 1030

8330B Nitroaromatics and Nitramines (HPLC)

Method:	8330B	Analysis Batch: 280-18009		Instrument ID:	HPLC_X3
Preparation:	8330B	Prep Batch: 280-14909		Initial Weight/Volume:	10.70 g
Dilution:	1.0	Leachate Batch: 280-13801		Final Weight/Volume:	40000 uL
Date Analyzed:	06/04/2010 0458			Injection Volume:	100 uL
Date Prepared:	05/11/2010 1820			Result Type:	PRIMARY
Date Leached:	05/04/2010 1039				

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	DL	LOQ
2-Amino-4,6-dinitrotoluene		0.037	U	0.031	0.093
4-Amino-2,6-dinitrotoluene		0.037	U	0.028	0.093
2,4-Dinitrotoluene		0.037	U	0.014	0.093
2,6-Dinitrotoluene		0.037	U	0.018	0.093
Nitroglycerin		0.37	U	0.20	1.9
2-Nitrotoluene		0.075	U	0.044	0.19
3-Nitrotoluene		0.075	U	0.060	0.19
Nitrobenzene		0.075	U	0.079	1.9
4-Nitrotoluene		0.093	U	0.034	0.19
1,3,5-Trinitrobenzene		0.037	U	0.013	0.093
1,3-Dinitrobenzene		0.037	U	0.016	0.093
HMX		0.037	U	0.021	0.093
RDX		0.075	U Q	0.040	0.19
Tetryl		0.075	U	0.041	0.19
PETN		0.37	U	0.46	1.9
2,4,6-Trinitrotoluene		0.037	U Q M	0.029	0.093

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dinitrobenzene	102		83 - 122

Client: HydroGeoLogic Inc

Job Number: 280-3087-1

Client Sample ID: **MRFLDU4-S0200-(2-4)-0409**

Lab Sample ID: 280-3087-8

Client Matrix: Solid

Date Sampled: 04/29/2010 1600

Date Received: 05/01/2010 1030

8330B Nitroaromatics and Nitramines (HPLC)

Method:	8330B	Analysis Batch: 280-18009		Instrument ID:	HPLC_X3
Preparation:	8330B	Prep Batch: 280-14909		Initial Weight/Volume:	10.36 g
Dilution:	1.0	Leachate Batch: 280-13801		Final Weight/Volume:	40000 uL
Date Analyzed:	06/04/2010 0522			Injection Volume:	100 uL
Date Prepared:	05/11/2010 1820			Result Type:	PRIMARY
Date Leached:	05/04/2010 1039				

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	DL	LOQ
2-Amino-4,6-dinitrotoluene		0.039	U	0.032	0.097
4-Amino-2,6-dinitrotoluene		0.039	U	0.029	0.097
2,4-Dinitrotoluene		0.33		0.014	0.097
2,6-Dinitrotoluene		0.039	U	0.018	0.097
Nitroglycerin		0.39	U	0.21	1.9
2-Nitrotoluene		0.077	U	0.046	0.19
Nitrobenzene		0.077	U	0.082	1.9
4-Nitrotoluene		0.097	U	0.035	0.19
1,3,5-Trinitrobenzene		0.039	U	0.013	0.097
1,3-Dinitrobenzene		0.039	U	0.016	0.097
HMX		0.039	U	0.022	0.097
RDX		0.077	U Q	0.042	0.19
Tetryl		0.077	U	0.042	0.19
PETN		0.39	U	0.48	1.9

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dinitrobenzene	106		83 - 122

Client: HydroGeoLogic Inc

Job Number: 280-3087-1

Client Sample ID: **MRFLDU4-S0200-(2-4)-0409**

Lab Sample ID: 280-3087-8

Client Matrix: Solid

Date Sampled: 04/29/2010 1600

Date Received: 05/01/2010 1030

8330B Nitroaromatics and Nitramines (HPLC)

Method:	8330B	Analysis Batch: 280-18232		Instrument ID:	HPLC_Q
Preparation:	8330B	Prep Batch: 280-14909		Initial Weight/Volume:	10.36 g
Dilution:	1.0	Leachate Batch: 280-13801		Final Weight/Volume:	40000 uL
Date Analyzed:	06/05/2010 0327			Injection Volume:	100 uL
Date Prepared:	05/11/2010 1820			Result Type:	PRIMARY
Date Leached:	05/04/2010 1039				

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	DL	LOQ
3-Nitrotoluene		0.077	U Q	0.062	0.19
2,4,6-Trinitrotoluene		0.039	U Q	0.030	0.097

Client: HydroGeoLogic Inc

Job Number: 280-3087-1

Client Sample ID: **MRREP2-S0102-0409**

Lab Sample ID: 280-3087-10

Client Matrix: Solid

Date Sampled: 04/30/2010 1420

Date Received: 05/01/2010 1030

8330B Nitroaromatics and Nitramines (HPLC)

Method:	8330B	Analysis Batch: 280-18009		Instrument ID:	HPLC_X3
Preparation:	8330B	Prep Batch: 280-14909		Initial Weight/Volume:	10.39 g
Dilution:	1.0	Leachate Batch: 280-13801		Final Weight/Volume:	40000 uL
Date Analyzed:	06/04/2010 0545			Injection Volume:	100 uL
Date Prepared:	05/11/2010 1820			Result Type:	PRIMARY
Date Leached:	05/04/2010 1039				

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	DL	LOQ
2-Amino-4,6-dinitrotoluene		0.038	U	0.032	0.096
4-Amino-2,6-dinitrotoluene		0.038	U	0.029	0.096
2,4-Dinitrotoluene		0.038	U	0.014	0.096
2,6-Dinitrotoluene		0.038	U	0.018	0.096
Nitroglycerin		0.38	U	0.21	1.9
2-Nitrotoluene		0.077	U	0.045	0.19
3-Nitrotoluene		0.077	U	0.062	0.19
Nitrobenzene		0.077	U	0.082	1.9
4-Nitrotoluene		0.096	U	0.035	0.19
1,3,5-Trinitrobenzene		0.038	U	0.013	0.096
1,3-Dinitrobenzene		0.038	U	0.016	0.096
HMX		0.038	U	0.022	0.096
RDX		0.077	U Q	0.041	0.19
Tetryl		0.077	U	0.042	0.19
PETN		0.38	U	0.47	1.9
2,4,6-Trinitrotoluene		0.038	U Q	0.030	0.096

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dinitrobenzene	101		83 - 122

Client: HydroGeoLogic Inc

Job Number: 280-3087-1

Client Sample ID: **MRDU5-S0200-(2-4)-0409**

Lab Sample ID: 280-3087-12

Client Matrix: Solid

Date Sampled: 04/29/2010 1629

Date Received: 05/01/2010 1030

8330B Nitroaromatics and Nitramines (HPLC)

Method:	8330B	Analysis Batch: 280-18009		Instrument ID:	HPLC_X3
Preparation:	8330B	Prep Batch: 280-14909		Initial Weight/Volume:	10.29 g
Dilution:	1.0	Leachate Batch: 280-13801		Final Weight/Volume:	40000 uL
Date Analyzed:	06/04/2010 0609			Injection Volume:	100 uL
Date Prepared:	05/11/2010 1820			Result Type:	PRIMARY
Date Leached:	05/04/2010 1039				

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	DL	LOQ
2-Amino-4,6-dinitrotoluene		0.039	U J	0.032	0.097
4-Amino-2,6-dinitrotoluene		0.039	U	0.029	0.097
2,4-Dinitrotoluene		0.026	J	0.014	0.097
2,6-Dinitrotoluene		0.039	U	0.019	0.097
Nitroglycerin		0.39	U M	0.21	1.9
2-Nitrotoluene		0.078	U	0.046	0.19
3-Nitrotoluene		0.078	U	0.062	0.19
Nitrobenzene		0.078	U J	0.083	1.9
4-Nitrotoluene		0.097	U	0.035	0.19
1,3,5-Trinitrobenzene		0.039	U	0.013	0.097
1,3-Dinitrobenzene		0.039	U	0.016	0.097
HMX		0.039	U	0.022	0.097
RDX		0.078	U Q	0.042	0.19
Tetryl		0.078	U	0.043	0.19
PETN		0.39	U	0.48	1.9
2,4,6-Trinitrotoluene		0.039	U Q	0.030	0.097

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dinitrobenzene	99		83 - 122

Client: HydroGeoLogic Inc

Job Number: 280-3087-1

Client Sample ID: **MRBMDU1-S0200-(2-4)-0409**

Lab Sample ID: 280-3087-1

Client Matrix: Solid

Date Sampled: 04/30/2010 1135

Date Received: 05/01/2010 1030

6010C Metals (ICP)

Method:	6010C	Analysis Batch: 280-18117		Instrument ID:	MT_026
Preparation:	3050B	Prep Batch: 280-17869		Lab File ID:	26b060310.txt
Dilution:	1.0	Leachate Batch: 280-13797		Initial Weight/Volume:	10.01 g
Date Analyzed:	06/04/2010 0001			Final Weight/Volume:	500 mL
Date Prepared:	06/03/2010 0830				
Date Leached:	05/04/2010 1029				

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	DL	LOQ
Aluminum		5600		1.5	50
Calcium		420		14	100
Iron		7200		3.8	80
Magnesium		1900		3.7	30
Potassium		440		41	300

Method:	6010C	Analysis Batch: 280-18373		Instrument ID:	MT_026
Preparation:	3050B	Prep Batch: 280-17869		Lab File ID:	26a060710.txt
Dilution:	1.0	Leachate Batch: 280-13797		Initial Weight/Volume:	10.01 g
Date Analyzed:	06/07/2010 1244			Final Weight/Volume:	500 mL
Date Prepared:	06/03/2010 0830				
Date Leached:	05/04/2010 1029				

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	DL	LOQ
Sodium		100	U	59	500

6020A Metals (ICP/MS)

Method:	6020A	Analysis Batch: 280-18454		Instrument ID:	MT_024
Preparation:	3050B	Prep Batch: 280-17867		Lab File ID:	037SMPL.D
Dilution:	1.0	Leachate Batch: 280-13797		Initial Weight/Volume:	10.04 g
Date Analyzed:	06/05/2010 1855			Final Weight/Volume:	500 mL
Date Prepared:	06/03/2010 0830				
Date Leached:	05/04/2010 1029				

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	DL	LOQ
Antimony		0.83	Q	0.014	0.20
Arsenic		11		0.050	0.60
Barium		12		0.070	0.25
Beryllium		0.23		0.022	0.10
Cadmium		0.12	Q	0.0093	0.10
Chromium		12		0.076	0.60
Cobalt		2.7	Q	0.0066	0.10
Copper		44		0.071	2.5
Lead		270		0.018	0.40
Manganese		110		0.033	1.0
Nickel		11	Q	0.025	0.35
Selenium		0.37	J	0.13	0.50
Silver		0.050	J	0.020	0.10
Thallium		0.079	J	0.0035	0.10
Vanadium		10		0.038	0.50
Zinc		23		0.31	2.5

Client: HydroGeoLogic Inc

Job Number: 280-3087-1

Client Sample ID: **MRBMDU1-S0200-(2-4)-0409**

Lab Sample ID: 280-3087-1

Client Matrix: Solid

Date Sampled: 04/30/2010 1135

Date Received: 05/01/2010 1030

7471B Mercury in Solid or Semisolid Waste (Manual Cold Vapor Technique)

Method:	7471B	Analysis Batch: 280-15007		Instrument ID:	MT_033
Preparation:	7471B	Prep Batch: 280-14758		Lab File ID:	100511AD.txt
Dilution:	1.0	Leachate Batch: 280-13797		Initial Weight/Volume:	3.22 g
Date Analyzed:	05/11/2010 2218			Final Weight/Volume:	250 mL
Date Prepared:	05/11/2010 1500				
Date Leached:	05/04/2010 1029				

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	DL	LOQ
Mercury		0.016		0.0052	0.016

Client: HydroGeoLogic Inc

Job Number: 280-3087-1

Client Sample ID: **MRBMDU1-S0300-(16-18)0409**

Lab Sample ID: 280-3087-2

Client Matrix: Solid

Date Sampled: 04/30/2010 1320

Date Received: 05/01/2010 1030

6010C Metals (ICP)

Method:	6010C	Analysis Batch: 280-18117		Instrument ID:	MT_026
Preparation:	3050B	Prep Batch: 280-17869		Lab File ID:	26b060310.txt
Dilution:	1.0	Leachate Batch: 280-13797		Initial Weight/Volume:	10.17 g
Date Analyzed:	06/04/2010 0003			Final Weight/Volume:	500 mL
Date Prepared:	06/03/2010 0830				
Date Leached:	05/04/2010 1029				

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	DL	LOQ
Aluminum		4400		1.5	49
Calcium		360		14	98
Iron		5800		3.7	79
Magnesium		1500		3.6	29
Potassium		380		40	290

Method:	6010C	Analysis Batch: 280-18373		Instrument ID:	MT_026
Preparation:	3050B	Prep Batch: 280-17869		Lab File ID:	26a060710.txt
Dilution:	1.0	Leachate Batch: 280-13797		Initial Weight/Volume:	10.17 g
Date Analyzed:	06/07/2010 1246			Final Weight/Volume:	500 mL
Date Prepared:	06/03/2010 0830				
Date Leached:	05/04/2010 1029				

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	DL	LOQ
Sodium		98	U	58	490

6020A Metals (ICP/MS)

Method:	6020A	Analysis Batch: 280-18454		Instrument ID:	MT_024
Preparation:	3050B	Prep Batch: 280-17867		Lab File ID:	038SMPL.D
Dilution:	1.0	Leachate Batch: 280-13797		Initial Weight/Volume:	10.12 g
Date Analyzed:	06/05/2010 1858			Final Weight/Volume:	500 mL
Date Prepared:	06/03/2010 0830				
Date Leached:	05/04/2010 1029				

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	DL	LOQ
Antimony		6.8	Q	0.014	0.20
Arsenic		10		0.050	0.59
Barium		8.7		0.070	0.25
Beryllium		0.20		0.022	0.099
Cadmium		0.067	J Q	0.0093	0.099
Chromium		8.6		0.075	0.59
Cobalt		2.3	Q	0.0066	0.099
Copper		61		0.070	2.5
Manganese		87		0.033	0.99
Nickel		10	Q	0.025	0.35
Selenium		0.24	J	0.13	0.49
Silver		0.053	J	0.020	0.099
Thallium		0.052	J	0.0035	0.099
Vanadium		6.5		0.038	0.49
Zinc		14		0.31	2.5

Client: HydroGeoLogic Inc

Job Number: 280-3087-1

Client Sample ID: **MRBMDU1-S0300-(16-18)0409**

Lab Sample ID: 280-3087-2

Client Matrix: Solid

Date Sampled: 04/30/2010 1320

Date Received: 05/01/2010 1030

6020A Metals (ICP/MS)

Method:	6020A	Analysis Batch: 280-18454		Instrument ID:	MT_024
Preparation:	3050B	Prep Batch: 280-17867		Lab File ID:	039SMPL.D
Dilution:	10	Leachate Batch: 280-13797		Initial Weight/Volume:	10.12 g
Date Analyzed:	06/05/2010 1900	Run Type:	DL	Final Weight/Volume:	500 mL
Date Prepared:	06/03/2010 0830				
Date Leached:	05/04/2010 1029				

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	DL	LOQ
Lead		1100	D	0.18	4.0

7471B Mercury in Solid or Semisolid Waste (Manual Cold Vapor Technique)

Method:	7471B	Analysis Batch: 280-15007		Instrument ID:	MT_033
Preparation:	7471B	Prep Batch: 280-14758		Lab File ID:	100511AD.txt
Dilution:	1.0	Leachate Batch: 280-13797		Initial Weight/Volume:	3.13 g
Date Analyzed:	05/11/2010 2220			Final Weight/Volume:	250 mL
Date Prepared:	05/11/2010 1500				
Date Leached:	05/04/2010 1029				

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	DL	LOQ
Mercury		0.0080	U	0.0053	0.016

Client: HydroGeoLogic Inc

Job Number: 280-3087-1

Client Sample ID: **MRBMDU2-S0200-(2-4)-0409**

Lab Sample ID: 280-3087-3

Client Matrix: Solid

Date Sampled: 04/29/2010 1512

Date Received: 05/01/2010 1030

6010C Metals (ICP)

Method:	6010C	Analysis Batch: 280-18117		Instrument ID:	MT_026
Preparation:	3050B	Prep Batch: 280-17869		Lab File ID:	26b060310.txt
Dilution:	1.0	Leachate Batch: 280-13797		Initial Weight/Volume:	10.19 g
Date Analyzed:	06/04/2010 0006			Final Weight/Volume:	500 mL
Date Prepared:	06/03/2010 0830				
Date Leached:	05/04/2010 1029				

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	DL	LOQ
Aluminum		6600		1.5	49
Calcium		400		14	98
Iron		9300		3.7	79
Magnesium		2600		3.6	29
Potassium		600		40	290

Method:	6010C	Analysis Batch: 280-18373		Instrument ID:	MT_026
Preparation:	3050B	Prep Batch: 280-17869		Lab File ID:	26a060710.txt
Dilution:	1.0	Leachate Batch: 280-13797		Initial Weight/Volume:	10.19 g
Date Analyzed:	06/07/2010 1248			Final Weight/Volume:	500 mL
Date Prepared:	06/03/2010 0830				
Date Leached:	05/04/2010 1029				

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	DL	LOQ
Sodium		98	U	58	490

6020A Metals (ICP/MS)

Method:	6020A	Analysis Batch: 280-18454		Instrument ID:	MT_024
Preparation:	3050B	Prep Batch: 280-17867		Lab File ID:	040SMPL.D
Dilution:	1.0	Leachate Batch: 280-13797		Initial Weight/Volume:	10.03 g
Date Analyzed:	06/05/2010 1903			Final Weight/Volume:	500 mL
Date Prepared:	06/03/2010 0830				
Date Leached:	05/04/2010 1029				

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	DL	LOQ
Antimony		0.10	J Q	0.014	0.20
Arsenic		15		0.050	0.60
Barium		16		0.070	0.25
Beryllium		0.37		0.022	0.10
Cadmium		0.12	Q	0.0094	0.10
Chromium		15		0.076	0.60
Cobalt		3.7	Q	0.0066	0.10
Copper		18		0.071	2.5
Lead		41		0.018	0.40
Manganese		150		0.033	1.0
Nickel		14	Q	0.025	0.35
Selenium		0.41	J	0.13	0.50
Silver		0.028	J	0.020	0.10
Thallium		0.072	J	0.0035	0.10
Vanadium		11		0.038	0.50
Zinc		25		0.32	2.5

Client: HydroGeoLogic Inc

Job Number: 280-3087-1

Client Sample ID: **MRBMDU2-S0200-(2-4)-0409**

Lab Sample ID: 280-3087-3

Client Matrix: Solid

Date Sampled: 04/29/2010 1512

Date Received: 05/01/2010 1030

7471B Mercury in Solid or Semisolid Waste (Manual Cold Vapor Technique)

Method:	7471B	Analysis Batch: 280-15007		Instrument ID:	MT_033
Preparation:	7471B	Prep Batch: 280-14758		Lab File ID:	100511AD.txt
Dilution:	1.0	Leachate Batch: 280-13797		Initial Weight/Volume:	3.38 g
Date Analyzed:	05/11/2010 2222			Final Weight/Volume:	250 mL
Date Prepared:	05/11/2010 1500				
Date Leached:	05/04/2010 1029				

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	DL	LOQ
Mercury		0.012	J	0.0049	0.015

Client: HydroGeoLogic Inc

Job Number: 280-3087-1

Client Sample ID: **MRREP1-S0101-0409**

Lab Sample ID: 280-3087-4

Client Matrix: Solid

Date Sampled: 04/30/2010 1325

Date Received: 05/01/2010 1030

6010C Metals (ICP)

Method:	6010C	Analysis Batch: 280-18117		Instrument ID:	MT_026
Preparation:	3050B	Prep Batch: 280-17869		Lab File ID:	26b060310.txt
Dilution:	1.0	Leachate Batch: 280-13797		Initial Weight/Volume:	10.18 g
Date Analyzed:	06/04/2010 0008			Final Weight/Volume:	500 mL
Date Prepared:	06/03/2010 0830				
Date Leached:	05/04/2010 1029				

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	DL	LOQ
Aluminum		6200		1.5	49
Calcium		550		14	98
Iron		8500		3.7	79
Magnesium		2200		3.6	29
Potassium		530		40	290

Method:	6010C	Analysis Batch: 280-18373		Instrument ID:	MT_026
Preparation:	3050B	Prep Batch: 280-17869		Lab File ID:	26a060710.txt
Dilution:	1.0	Leachate Batch: 280-13797		Initial Weight/Volume:	10.18 g
Date Analyzed:	06/07/2010 1250			Final Weight/Volume:	500 mL
Date Prepared:	06/03/2010 0830				
Date Leached:	05/04/2010 1029				

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	DL	LOQ
Sodium		98	U	58	490

6020A Metals (ICP/MS)

Method:	6020A	Analysis Batch: 280-18454		Instrument ID:	MT_024
Preparation:	3050B	Prep Batch: 280-17867		Lab File ID:	041SMPL.D
Dilution:	1.0	Leachate Batch: 280-13797		Initial Weight/Volume:	10.04 g
Date Analyzed:	06/05/2010 1906			Final Weight/Volume:	500 mL
Date Prepared:	06/03/2010 0830				
Date Leached:	05/04/2010 1029				

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	DL	LOQ
Antimony		0.11	J Q	0.014	0.20
Arsenic		12		0.050	0.60
Barium		15		0.070	0.25
Beryllium		0.24		0.022	0.10
Cadmium		0.14	Q	0.0093	0.10
Chromium		14		0.076	0.60
Cobalt		3.1	Q	0.0066	0.10
Copper		11		0.071	2.5
Lead		65		0.018	0.40
Manganese		130		0.033	1.0
Nickel		13	Q	0.025	0.35
Selenium		0.41	J	0.13	0.50
Silver		0.036	J	0.020	0.10
Thallium		0.065	J	0.0035	0.10
Vanadium		14		0.038	0.50
Zinc		27		0.31	2.5

Client: HydroGeoLogic Inc

Job Number: 280-3087-1

Client Sample ID: **MRREP1-S0101-0409**

Lab Sample ID: 280-3087-4

Client Matrix: Solid

Date Sampled: 04/30/2010 1325

Date Received: 05/01/2010 1030

7471B Mercury in Solid or Semisolid Waste (Manual Cold Vapor Technique)

Method:	7471B	Analysis Batch: 280-15007		Instrument ID:	MT_033
Preparation:	7471B	Prep Batch: 280-14758		Lab File ID:	100511AD.txt
Dilution:	1.0	Leachate Batch: 280-13797		Initial Weight/Volume:	3.17 g
Date Analyzed:	05/11/2010 2225			Final Weight/Volume:	250 mL
Date Prepared:	05/11/2010 1500				
Date Leached:	05/04/2010 1029				

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	DL	LOQ
Mercury		0.019		0.0052	0.016

Client: HydroGeoLogic Inc

Job Number: 280-3087-1

Client Sample ID: **MRREP1-S0101-0409**

Lab Sample ID: 280-3087-5

Client Matrix: Solid

Date Sampled: 04/30/2010 1325

Date Received: 05/01/2010 1030

6010C Metals (ICP)

Method:	6010C	Analysis Batch: 280-18117		Instrument ID:	MT_026
Preparation:	3050B	Prep Batch: 280-17869		Lab File ID:	26b060310.txt
Dilution:	1.0	Leachate Batch: 280-13797		Initial Weight/Volume:	10.09 g
Date Analyzed:	06/04/2010 0010			Final Weight/Volume:	500 mL
Date Prepared:	06/03/2010 0830				
Date Leached:	05/04/2010 1029				

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	DL	LOQ
Aluminum		9600		1.5	50
Calcium		730		14	99
Iron		19000		3.8	79
Magnesium		6800		3.7	30
Potassium		580		41	300

Method:	6010C	Analysis Batch: 280-18373		Instrument ID:	MT_026
Preparation:	3050B	Prep Batch: 280-17869		Lab File ID:	26a060710.txt
Dilution:	1.0	Leachate Batch: 280-13797		Initial Weight/Volume:	10.09 g
Date Analyzed:	06/07/2010 1253			Final Weight/Volume:	500 mL
Date Prepared:	06/03/2010 0830				
Date Leached:	05/04/2010 1029				

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	DL	LOQ
Sodium		99	U	58	500

6020A Metals (ICP/MS)

Method:	6020A	Analysis Batch: 280-18454		Instrument ID:	MT_024
Preparation:	3050B	Prep Batch: 280-17867		Lab File ID:	042SMPL.D
Dilution:	1.0	Leachate Batch: 280-13797		Initial Weight/Volume:	10.13 g
Date Analyzed:	06/05/2010 1908			Final Weight/Volume:	500 mL
Date Prepared:	06/03/2010 0830				
Date Leached:	05/04/2010 1029				

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	DL	LOQ
Antimony		0.053	J Q	0.014	0.20
Arsenic		16		0.050	0.59
Barium		14		0.070	0.25
Beryllium		0.28		0.022	0.099
Cadmium		0.13	Q	0.0093	0.099
Chromium		27		0.075	0.59
Cobalt		5.0	Q	0.0065	0.099
Copper		9.2		0.070	2.5
Lead		29		0.018	0.39
Manganese		240		0.033	0.99
Nickel		22	Q	0.025	0.35
Selenium		0.26	J	0.13	0.49
Silver		0.059	U	0.020	0.099
Thallium		0.071	J	0.0035	0.099
Vanadium		17		0.038	0.49
Zinc		28		0.31	2.5

Client: HydroGeoLogic Inc

Job Number: 280-3087-1

Client Sample ID: **MRREP1-S0101-0409**

Lab Sample ID: 280-3087-5

Client Matrix: Solid

Date Sampled: 04/30/2010 1325

Date Received: 05/01/2010 1030

7471B Mercury in Solid or Semisolid Waste (Manual Cold Vapor Technique)

Method:	7471B	Analysis Batch: 280-15007		Instrument ID:	MT_033
Preparation:	7471B	Prep Batch: 280-14758		Lab File ID:	100511AD.txt
Dilution:	1.0	Leachate Batch: 280-13797		Initial Weight/Volume:	3.47 g
Date Analyzed:	05/11/2010 2227			Final Weight/Volume:	250 mL
Date Prepared:	05/11/2010 1500				
Date Leached:	05/04/2010 1029				

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	DL	LOQ
Mercury		0.0072	U	0.0048	0.015

Client: HydroGeoLogic Inc

Job Number: 280-3087-1

Client Sample ID: **MRFLDU3-S0200-(2-4)-0409**

Lab Sample ID: 280-3087-6

Client Matrix: Solid

Date Sampled: 04/30/2010 0815

Date Received: 05/01/2010 1030

6010C Metals (ICP)

Method:	6010C	Analysis Batch: 280-18117		Instrument ID:	MT_026
Preparation:	3050B	Prep Batch: 280-17869		Lab File ID:	26b060310.txt
Dilution:	1.0	Leachate Batch: 280-13797		Initial Weight/Volume:	10.05 g
Date Analyzed:	06/04/2010 0013			Final Weight/Volume:	500 mL
Date Prepared:	06/03/2010 0830				
Date Leached:	05/04/2010 1029				

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	DL	LOQ
Aluminum		5900		1.5	50
Calcium		510		14	100
Iron		8100		3.8	80
Magnesium		2100		3.7	30
Potassium		490		41	300

Method:	6010C	Analysis Batch: 280-18373		Instrument ID:	MT_026
Preparation:	3050B	Prep Batch: 280-17869		Lab File ID:	26a060710.txt
Dilution:	1.0	Leachate Batch: 280-13797		Initial Weight/Volume:	10.05 g
Date Analyzed:	06/07/2010 1255			Final Weight/Volume:	500 mL
Date Prepared:	06/03/2010 0830				
Date Leached:	05/04/2010 1029				

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	DL	LOQ
Sodium		100	U	59	500

6020A Metals (ICP/MS)

Method:	6020A	Analysis Batch: 280-18454		Instrument ID:	MT_024
Preparation:	3050B	Prep Batch: 280-17867		Lab File ID:	043SMPL.D
Dilution:	1.0	Leachate Batch: 280-13797		Initial Weight/Volume:	10.10 g
Date Analyzed:	06/05/2010 1911			Final Weight/Volume:	500 mL
Date Prepared:	06/03/2010 0830				
Date Leached:	05/04/2010 1029				

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	DL	LOQ
Antimony		0.11	J Q	0.014	0.20
Arsenic		11		0.050	0.59
Barium		13		0.070	0.25
Beryllium		0.22		0.022	0.099
Cadmium		0.12	Q	0.0093	0.099
Chromium		13		0.075	0.59
Cobalt		3.1	Q	0.0066	0.099
Copper		10		0.070	2.5
Lead		52		0.018	0.40
Manganese		120		0.033	0.99
Nickel		12	Q	0.025	0.35
Selenium		0.37	J	0.13	0.50
Silver		0.027	J	0.020	0.099
Thallium		0.060	J	0.0035	0.099
Vanadium		12		0.038	0.50
Zinc		25		0.31	2.5

Client: HydroGeoLogic Inc

Job Number: 280-3087-1

Client Sample ID: **MRFLDU3-S0200-(2-4)-0409**

Lab Sample ID: 280-3087-6

Client Matrix: Solid

Date Sampled: 04/30/2010 0815

Date Received: 05/01/2010 1030

7471B Mercury in Solid or Semisolid Waste (Manual Cold Vapor Technique)

Method:	7471B	Analysis Batch: 280-15007		Instrument ID:	MT_033
Preparation:	7471B	Prep Batch: 280-14758		Lab File ID:	100511AD.txt
Dilution:	1.0	Leachate Batch: 280-13797		Initial Weight/Volume:	3.55 g
Date Analyzed:	05/11/2010 2229			Final Weight/Volume:	250 mL
Date Prepared:	05/11/2010 1500				
Date Leached:	05/04/2010 1029				

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	DL	LOQ
Mercury		0.011	J	0.0047	0.014

Client: HydroGeoLogic Inc

Job Number: 280-3087-1

Client Sample ID: **MRFLDU3-S0200-(2-4)-0409**

Lab Sample ID: 280-3087-7

Client Matrix: Solid

Date Sampled: 04/30/2010 0815

Date Received: 05/01/2010 1030

6010C Metals (ICP)

Method:	6010C	Analysis Batch: 280-18117		Instrument ID:	MT_026
Preparation:	3050B	Prep Batch: 280-17869		Lab File ID:	26b060310.txt
Dilution:	1.0	Leachate Batch: 280-13797		Initial Weight/Volume:	10.16 g
Date Analyzed:	06/04/2010 0015			Final Weight/Volume:	500 mL
Date Prepared:	06/03/2010 0830				
Date Leached:	05/04/2010 1029				

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	DL	LOQ
Aluminum		8300		1.5	49
Calcium		1900		14	98
Iron		18000		3.7	79
Magnesium		5700		3.6	30
Potassium		1100		40	300

Method:	6010C	Analysis Batch: 280-18373		Instrument ID:	MT_026
Preparation:	3050B	Prep Batch: 280-17869		Lab File ID:	26a060710.txt
Dilution:	1.0	Leachate Batch: 280-13797		Initial Weight/Volume:	10.16 g
Date Analyzed:	06/07/2010 1257			Final Weight/Volume:	500 mL
Date Prepared:	06/03/2010 0830				
Date Leached:	05/04/2010 1029				

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	DL	LOQ
Sodium		98	U	58	490

6020A Metals (ICP/MS)

Method:	6020A	Analysis Batch: 280-18454		Instrument ID:	MT_024
Preparation:	3050B	Prep Batch: 280-17867		Lab File ID:	044SMPL.D
Dilution:	1.0	Leachate Batch: 280-13797		Initial Weight/Volume:	10.05 g
Date Analyzed:	06/05/2010 1914			Final Weight/Volume:	500 mL
Date Prepared:	06/03/2010 0830				
Date Leached:	05/04/2010 1029				

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	DL	LOQ
Antimony		0.056	J Q	0.014	0.20
Arsenic		17		0.050	0.60
Barium		18		0.070	0.25
Beryllium		0.28		0.022	0.10
Cadmium		0.18	Q	0.0093	0.10
Chromium		30		0.076	0.60
Cobalt		5.3	Q	0.0066	0.10
Copper		12		0.071	2.5
Lead		33		0.018	0.40
Manganese		230		0.033	1.0
Nickel		25	Q	0.025	0.35
Selenium		0.32	J	0.13	0.50
Silver		0.026	J	0.020	0.10
Thallium		0.082	J	0.0035	0.10
Vanadium		19		0.038	0.50
Zinc		37		0.31	2.5

Client: HydroGeoLogic Inc

Job Number: 280-3087-1

Client Sample ID: **MRFLDU3-S0200-(2-4)-0409**

Lab Sample ID: 280-3087-7

Client Matrix: Solid

Date Sampled: 04/30/2010 0815

Date Received: 05/01/2010 1030

7471B Mercury in Solid or Semisolid Waste (Manual Cold Vapor Technique)

Method:	7471B	Analysis Batch: 280-15007		Instrument ID:	MT_033
Preparation:	7471B	Prep Batch: 280-14758		Lab File ID:	100511AD.txt
Dilution:	1.0	Leachate Batch: 280-13797		Initial Weight/Volume:	3.22 g
Date Analyzed:	05/11/2010 2232			Final Weight/Volume:	250 mL
Date Prepared:	05/11/2010 1500				
Date Leached:	05/04/2010 1029				

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	DL	LOQ
Mercury		0.0078	U	0.0052	0.016

Client: HydroGeoLogic Inc

Job Number: 280-3087-1

Client Sample ID: **MRFLDU4-S0200-(2-4)-0409**

Lab Sample ID: 280-3087-8

Client Matrix: Solid

Date Sampled: 04/29/2010 1600

Date Received: 05/01/2010 1030

6010C Metals (ICP)

Method:	6010C	Analysis Batch: 280-18117		Instrument ID:	MT_026
Preparation:	3050B	Prep Batch: 280-17869		Lab File ID:	26b060310.txt
Dilution:	1.0	Leachate Batch: 280-13797		Initial Weight/Volume:	10.06 g
Date Analyzed:	06/04/2010 0017			Final Weight/Volume:	500 mL
Date Prepared:	06/03/2010 0830				
Date Leached:	05/04/2010 1029				

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	DL	LOQ
Aluminum		4900		1.5	50
Calcium		350		14	99
Iron		6100		3.8	80
Magnesium		1400		3.7	30
Potassium		350		41	300

Method:	6010C	Analysis Batch: 280-18373		Instrument ID:	MT_026
Preparation:	3050B	Prep Batch: 280-17869		Lab File ID:	26a060710.txt
Dilution:	1.0	Leachate Batch: 280-13797		Initial Weight/Volume:	10.06 g
Date Analyzed:	06/07/2010 1300			Final Weight/Volume:	500 mL
Date Prepared:	06/03/2010 0830				
Date Leached:	05/04/2010 1029				

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	DL	LOQ
Sodium		99	U	59	500

6020A Metals (ICP/MS)

Method:	6020A	Analysis Batch: 280-18454		Instrument ID:	MT_024
Preparation:	3050B	Prep Batch: 280-17867		Lab File ID:	049SMPL.D
Dilution:	1.0	Leachate Batch: 280-13797		Initial Weight/Volume:	10.12 g
Date Analyzed:	06/05/2010 1927			Final Weight/Volume:	500 mL
Date Prepared:	06/03/2010 0830				
Date Leached:	05/04/2010 1029				

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	DL	LOQ
Antimony		0.23	Q	0.014	0.20
Arsenic		8.5		0.050	0.59
Barium		11		0.070	0.25
Beryllium		0.21		0.022	0.099
Cadmium		0.094	J Q	0.0093	0.099
Chromium		8.4		0.075	0.59
Cobalt		2.0	Q	0.0066	0.099
Copper		20		0.070	2.5
Lead		110		0.018	0.40
Manganese		90		0.033	0.99
Nickel		7.6	Q	0.025	0.35
Selenium		0.28	J	0.13	0.49
Silver		0.059	U	0.020	0.099
Thallium		0.049	J	0.0035	0.099
Vanadium		7.1		0.038	0.49
Zinc		15		0.31	2.5

Client: HydroGeoLogic Inc

Job Number: 280-3087-1

Client Sample ID: **MRFLDU4-S0200-(2-4)-0409**

Lab Sample ID: 280-3087-8

Client Matrix: Solid

Date Sampled: 04/29/2010 1600

Date Received: 05/01/2010 1030

7471B Mercury in Solid or Semisolid Waste (Manual Cold Vapor Technique)

Method:	7471B	Analysis Batch: 280-15007		Instrument ID:	MT_033
Preparation:	7471B	Prep Batch: 280-14758		Lab File ID:	100511AD.txt
Dilution:	1.0	Leachate Batch: 280-13797		Initial Weight/Volume:	3.18 g
Date Analyzed:	05/11/2010 2234			Final Weight/Volume:	250 mL
Date Prepared:	05/11/2010 1500				
Date Leached:	05/04/2010 1029				

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	DL	LOQ
Mercury		0.011	J	0.0052	0.016

Client: HydroGeoLogic Inc

Job Number: 280-3087-1

Client Sample ID: **MRFLDU4-S0200-(2-4)-0409**

Lab Sample ID: 280-3087-9

Client Matrix: Solid

Date Sampled: 04/29/2010 1600

Date Received: 05/01/2010 1030

6010C Metals (ICP)

Method:	6010C	Analysis Batch: 280-18117		Instrument ID:	MT_026
Preparation:	3050B	Prep Batch: 280-17869		Lab File ID:	26b060310.txt
Dilution:	1.0	Leachate Batch: 280-13797		Initial Weight/Volume:	10.17 g
Date Analyzed:	06/04/2010 0029			Final Weight/Volume:	500 mL
Date Prepared:	06/03/2010 0830				
Date Leached:	05/04/2010 1029				

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	DL	LOQ
Aluminum		8000		1.5	49
Calcium		1300		14	98
Iron		15000		3.7	79
Magnesium		5400		3.6	29
Potassium		810		40	290

Method:	6010C	Analysis Batch: 280-18373		Instrument ID:	MT_026
Preparation:	3050B	Prep Batch: 280-17869		Lab File ID:	26a060710.txt
Dilution:	1.0	Leachate Batch: 280-13797		Initial Weight/Volume:	10.17 g
Date Analyzed:	06/07/2010 1311			Final Weight/Volume:	500 mL
Date Prepared:	06/03/2010 0830				
Date Leached:	05/04/2010 1029				

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	DL	LOQ
Sodium		98	U	58	490

6020A Metals (ICP/MS)

Method:	6020A	Analysis Batch: 280-18454		Instrument ID:	MT_024
Preparation:	3050B	Prep Batch: 280-17867		Lab File ID:	050SMPL.D
Dilution:	1.0	Leachate Batch: 280-13797		Initial Weight/Volume:	10.05 g
Date Analyzed:	06/05/2010 1930			Final Weight/Volume:	500 mL
Date Prepared:	06/03/2010 0830				
Date Leached:	05/04/2010 1029				

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	DL	LOQ
Antimony		0.36	Q	0.014	0.20
Arsenic		20		0.050	0.60
Barium		16		0.070	0.25
Beryllium		0.33		0.022	0.10
Cadmium		0.14	Q	0.0093	0.10
Chromium		26		0.076	0.60
Cobalt		3.7	Q	0.0066	0.10
Copper		18		0.071	2.5
Lead		100		0.018	0.40
Manganese		200		0.033	1.0
Nickel		20	Q	0.025	0.35
Selenium		0.33	J	0.13	0.50
Silver		0.060	U	0.020	0.10
Thallium		0.060	J	0.0035	0.10
Vanadium		16		0.038	0.50
Zinc		31		0.31	2.5

Client: HydroGeoLogic Inc

Job Number: 280-3087-1

Client Sample ID: **MRFLDU4-S0200-(2-4)-0409**

Lab Sample ID: 280-3087-9

Client Matrix: Solid

Date Sampled: 04/29/2010 1600

Date Received: 05/01/2010 1030

7471B Mercury in Solid or Semisolid Waste (Manual Cold Vapor Technique)

Method:	7471B	Analysis Batch: 280-15007		Instrument ID:	MT_033
Preparation:	7471B	Prep Batch: 280-14758		Lab File ID:	100511AD.txt
Dilution:	1.0	Leachate Batch: 280-13797		Initial Weight/Volume:	3.10 g
Date Analyzed:	05/11/2010 2241			Final Weight/Volume:	250 mL
Date Prepared:	05/11/2010 1500				
Date Leached:	05/04/2010 1029				

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	DL	LOQ
Mercury		0.0081	U	0.0054	0.016

Client: HydroGeoLogic Inc

Job Number: 280-3087-1

Client Sample ID: **MRREP2-S0102-0409**

Lab Sample ID: 280-3087-10

Client Matrix: Solid

Date Sampled: 04/30/2010 1420

Date Received: 05/01/2010 1030

6010C Metals (ICP)

Method:	6010C	Analysis Batch: 280-18117		Instrument ID:	MT_026
Preparation:	3050B	Prep Batch: 280-17869		Lab File ID:	26b060310.txt
Dilution:	1.0	Leachate Batch: 280-13797		Initial Weight/Volume:	10.03 g
Date Analyzed:	06/04/2010 0031			Final Weight/Volume:	500 mL
Date Prepared:	06/03/2010 0830				
Date Leached:	05/04/2010 1029				

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	DL	LOQ
Aluminum		5800		1.5	50
Calcium		500		14	100
Iron		8400		3.8	80
Magnesium		2200		3.7	30
Potassium		480		41	300

Method:	6010C	Analysis Batch: 280-18373		Instrument ID:	MT_026
Preparation:	3050B	Prep Batch: 280-17869		Lab File ID:	26a060710.txt
Dilution:	1.0	Leachate Batch: 280-13797		Initial Weight/Volume:	10.03 g
Date Analyzed:	06/07/2010 1314			Final Weight/Volume:	500 mL
Date Prepared:	06/03/2010 0830				
Date Leached:	05/04/2010 1029				

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	DL	LOQ
Sodium		100	U	59	500

6020A Metals (ICP/MS)

Method:	6020A	Analysis Batch: 280-18454		Instrument ID:	MT_024
Preparation:	3050B	Prep Batch: 280-17867		Lab File ID:	051SMPL.D
Dilution:	1.0	Leachate Batch: 280-13797		Initial Weight/Volume:	10.07 g
Date Analyzed:	06/05/2010 1933			Final Weight/Volume:	500 mL
Date Prepared:	06/03/2010 0830				
Date Leached:	05/04/2010 1029				

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	DL	LOQ
Antimony		0.091	J Q	0.014	0.20
Arsenic		12		0.050	0.60
Barium		15		0.070	0.25
Beryllium		0.25		0.022	0.099
Cadmium		0.11	Q	0.0093	0.099
Chromium		13		0.075	0.60
Cobalt		3.1	Q	0.0066	0.099
Copper		12		0.071	2.5
Lead		60		0.018	0.40
Manganese		130		0.033	0.99
Nickel		12	Q	0.025	0.35
Selenium		0.40	J	0.13	0.50
Silver		0.051	J	0.020	0.099
Thallium		0.063	J	0.0035	0.099
Vanadium		13		0.038	0.50
Zinc		26		0.31	2.5

Client: HydroGeoLogic Inc

Job Number: 280-3087-1

Client Sample ID: **MRREP2-S0102-0409**

Lab Sample ID: 280-3087-10

Client Matrix: Solid

Date Sampled: 04/30/2010 1420

Date Received: 05/01/2010 1030

7471B Mercury in Solid or Semisolid Waste (Manual Cold Vapor Technique)

Method:	7471B	Analysis Batch: 280-15007		Instrument ID:	MT_033
Preparation:	7471B	Prep Batch: 280-14758		Lab File ID:	100511AD.txt
Dilution:	1.0	Leachate Batch: 280-13797		Initial Weight/Volume:	3.40 g
Date Analyzed:	05/11/2010 2243			Final Weight/Volume:	250 mL
Date Prepared:	05/11/2010 1500				
Date Leached:	05/04/2010 1029				

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	DL	LOQ
Mercury		0.015		0.0049	0.015

Client: HydroGeoLogic Inc

Job Number: 280-3087-1

Client Sample ID: **MRREP2-S0102-0409**

Lab Sample ID: 280-3087-11

Client Matrix: Solid

Date Sampled: 04/30/2010 1420

Date Received: 05/01/2010 1030

6010C Metals (ICP)

Method:	6010C	Analysis Batch: 280-18117		Instrument ID:	MT_026
Preparation:	3050B	Prep Batch: 280-17869		Lab File ID:	26b060310.txt
Dilution:	1.0	Leachate Batch: 280-13797		Initial Weight/Volume:	10.02 g
Date Analyzed:	06/04/2010 0034			Final Weight/Volume:	500 mL
Date Prepared:	06/03/2010 0830				
Date Leached:	05/04/2010 1038				

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	DL	LOQ
Aluminum		6800		1.5	50
Calcium		900		14	100
Iron		14000		3.8	80
Magnesium		4200		3.7	30
Potassium		600		41	300

Method:	6010C	Analysis Batch: 280-18373		Instrument ID:	MT_026
Preparation:	3050B	Prep Batch: 280-17869		Lab File ID:	26a060710.txt
Dilution:	1.0	Leachate Batch: 280-13797		Initial Weight/Volume:	10.02 g
Date Analyzed:	06/07/2010 1316			Final Weight/Volume:	500 mL
Date Prepared:	06/03/2010 0830				
Date Leached:	05/04/2010 1038				

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	DL	LOQ
Sodium		100	U	59	500

6020A Metals (ICP/MS)

Method:	6020A	Analysis Batch: 280-18454		Instrument ID:	MT_024
Preparation:	3050B	Prep Batch: 280-17867		Lab File ID:	052SMPL.D
Dilution:	1.0	Leachate Batch: 280-13797		Initial Weight/Volume:	10.10 g
Date Analyzed:	06/05/2010 1935			Final Weight/Volume:	500 mL
Date Prepared:	06/03/2010 0830				
Date Leached:	05/04/2010 1038				

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	DL	LOQ
Antimony		0.058	J Q	0.014	0.20
Arsenic		18		0.050	0.59
Barium		19		0.070	0.25
Beryllium		0.23		0.022	0.099
Cadmium		0.15	Q	0.0093	0.099
Chromium		23		0.075	0.59
Cobalt		5.5	Q	0.0066	0.099
Copper		13		0.070	2.5
Lead		28		0.018	0.40
Manganese		330		0.033	0.99
Nickel		24	Q	0.025	0.35
Selenium		0.27	J	0.13	0.50
Silver		0.55		0.020	0.099
Thallium		0.082	J	0.0035	0.099
Vanadium		14		0.038	0.50
Zinc		28		0.31	2.5

Client: HydroGeoLogic Inc

Job Number: 280-3087-1

Client Sample ID: **MRREP2-S0102-0409**

Lab Sample ID: 280-3087-11

Client Matrix: Solid

Date Sampled: 04/30/2010 1420

Date Received: 05/01/2010 1030

7471B Mercury in Solid or Semisolid Waste (Manual Cold Vapor Technique)

Method:	7471B	Analysis Batch: 280-15007		Instrument ID:	MT_033
Preparation:	7471B	Prep Batch: 280-14758		Lab File ID:	100511AD.txt
Dilution:	1.0	Leachate Batch: 280-13797		Initial Weight/Volume:	3.53 g
Date Analyzed:	05/11/2010 2246			Final Weight/Volume:	250 mL
Date Prepared:	05/11/2010 1500				
Date Leached:	05/04/2010 1038				

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	DL	LOQ
Mercury		0.0086	J	0.0047	0.014

Client: HydroGeoLogic Inc

Job Number: 280-3087-1

Client Sample ID: **MRDU5-S0200-(2-4)-0409**

Lab Sample ID: 280-3087-12

Client Matrix: Solid

Date Sampled: 04/29/2010 1629

Date Received: 05/01/2010 1030

6010C Metals (ICP)

Method:	6010C	Analysis Batch: 280-18117		Instrument ID:	MT_026
Preparation:	3050B	Prep Batch: 280-17869		Lab File ID:	26b060310.txt
Dilution:	1.0	Leachate Batch: 280-13797		Initial Weight/Volume:	10.15 g
Date Analyzed:	06/04/2010 0036			Final Weight/Volume:	500 mL
Date Prepared:	06/03/2010 0830				
Date Leached:	05/04/2010 1038				

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	DL	LOQ
Aluminum		5700	J	1.5	49
Calcium		520		14	99
Iron		7800	J	3.7	79
Magnesium		2100		3.6	30
Potassium		520		40	300

Method:	6010C	Analysis Batch: 280-18373		Instrument ID:	MT_026
Preparation:	3050B	Prep Batch: 280-17869		Lab File ID:	26a060710.txt
Dilution:	1.0	Leachate Batch: 280-13797		Initial Weight/Volume:	10.15 g
Date Analyzed:	06/07/2010 1318			Final Weight/Volume:	500 mL
Date Prepared:	06/03/2010 0830				
Date Leached:	05/04/2010 1038				

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	DL	LOQ
Sodium		99	U	58	490

6020A Metals (ICP/MS)

Method:	6020A	Analysis Batch: 280-18454		Instrument ID:	MT_024
Preparation:	3050B	Prep Batch: 280-17867		Lab File ID:	053AREF.D
Dilution:	1.0	Leachate Batch: 280-13797		Initial Weight/Volume:	10.13 g
Date Analyzed:	06/05/2010 1938			Final Weight/Volume:	500 mL
Date Prepared:	06/03/2010 0830				
Date Leached:	05/04/2010 1038				

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	DL	LOQ
Antimony		0.17	Q J	0.014	0.20
Arsenic		11		0.050	0.59
Barium		15		0.070	0.25
Beryllium		0.28		0.022	0.099
Cadmium		0.13	Q	0.0093	0.099
Chromium		13		0.075	0.59
Cobalt		3.0	Q	0.0065	0.099
Copper		28	J	0.070	2.5
Lead		120	J	0.018	0.39
Manganese		120	J	0.033	0.99
Nickel		11	Q	0.025	0.35
Selenium		0.38	J	0.13	0.49
Silver		0.041	J	0.020	0.099
Thallium		0.067	J	0.0035	0.099
Vanadium		11		0.038	0.49
Zinc		28	J	0.31	2.5

Client: HydroGeoLogic Inc

Job Number: 280-3087-1

Client Sample ID: **MRDU5-S0200-(2-4)-0409**

Lab Sample ID: 280-3087-12

Client Matrix: Solid

Date Sampled: 04/29/2010 1629

Date Received: 05/01/2010 1030

7471B Mercury in Solid or Semisolid Waste (Manual Cold Vapor Technique)

Method:	7471B	Analysis Batch: 280-15007		Instrument ID:	MT_033
Preparation:	7471B	Prep Batch: 280-14758		Lab File ID:	100511AD.txt
Dilution:	1.0	Leachate Batch: 280-13797		Initial Weight/Volume:	3.51 g
Date Analyzed:	05/11/2010 2248			Final Weight/Volume:	250 mL
Date Prepared:	05/11/2010 1500				
Date Leached:	05/04/2010 1038				

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	DL	LOQ
Mercury		0.018		0.0047	0.015

Client: HydroGeoLogic Inc

Job Number: 280-3087-1

Client Sample ID: **MRBMDU6-S0200-(2-4)-0409**

Lab Sample ID: 280-3087-13

Client Matrix: Solid

Date Sampled: 04/30/2010 1040

Date Received: 05/01/2010 1030

6010C Metals (ICP)

Method:	6010C	Analysis Batch: 280-18117		Instrument ID:	MT_026
Preparation:	3050B	Prep Batch: 280-17869		Lab File ID:	26b060310.txt
Dilution:	1.0	Leachate Batch: 280-13797		Initial Weight/Volume:	10.14 g
Date Analyzed:	06/04/2010 0047			Final Weight/Volume:	500 mL
Date Prepared:	06/03/2010 0830				
Date Leached:	05/04/2010 1045				

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	DL	LOQ
Aluminum		5400		1.5	49
Calcium		370		14	99
Iron		6800		3.7	79
Magnesium		1700		3.6	30
Potassium		400		40	300

Method:	6010C	Analysis Batch: 280-18373		Instrument ID:	MT_026
Preparation:	3050B	Prep Batch: 280-17869		Lab File ID:	26a060710.txt
Dilution:	1.0	Leachate Batch: 280-13797		Initial Weight/Volume:	10.14 g
Date Analyzed:	06/07/2010 1329			Final Weight/Volume:	500 mL
Date Prepared:	06/03/2010 0830				
Date Leached:	05/04/2010 1045				

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	DL	LOQ
Sodium		99	U	58	490

6020A Metals (ICP/MS)

Method:	6020A	Analysis Batch: 280-18454		Instrument ID:	MT_024
Preparation:	3050B	Prep Batch: 280-17867		Lab File ID:	058SMPL.D
Dilution:	1.0	Leachate Batch: 280-13797		Initial Weight/Volume:	10.17 g
Date Analyzed:	06/05/2010 1951			Final Weight/Volume:	500 mL
Date Prepared:	06/03/2010 0830				
Date Leached:	05/04/2010 1045				

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	DL	LOQ
Antimony		0.36	Q	0.014	0.20
Arsenic		10		0.050	0.59
Barium		11		0.069	0.25
Beryllium		0.23		0.022	0.098
Cadmium		0.089	J Q	0.0092	0.098
Chromium		11		0.075	0.59
Cobalt		2.5	Q	0.0065	0.098
Copper		21		0.070	2.5
Lead		160		0.018	0.39
Manganese		89		0.032	0.98
Nickel		10	Q	0.025	0.34
Selenium		0.34	J	0.13	0.49
Silver		0.035	J	0.020	0.098
Thallium		0.062	J	0.0035	0.098
Vanadium		9.2		0.038	0.49
Zinc		20		0.31	2.5

Client: HydroGeoLogic Inc

Job Number: 280-3087-1

Client Sample ID: **MRBMDU6-S0200-(2-4)-0409**

Lab Sample ID: 280-3087-13

Client Matrix: Solid

Date Sampled: 04/30/2010 1040

Date Received: 05/01/2010 1030

7471B Mercury in Solid or Semisolid Waste (Manual Cold Vapor Technique)

Method:	7471B	Analysis Batch: 280-15007		Instrument ID:	MT_033
Preparation:	7471B	Prep Batch: 280-14758		Lab File ID:	100511AD.txt
Dilution:	1.0	Leachate Batch: 280-13797		Initial Weight/Volume:	3.43 g
Date Analyzed:	05/11/2010 2257			Final Weight/Volume:	250 mL
Date Prepared:	05/11/2010 1500				
Date Leached:	05/04/2010 1045				

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	DL	LOQ
Mercury		0.012	J	0.0048	0.015

Client: HydroGeoLogic Inc

Job Number: 280-3087-1

Surrogate Recovery Report

8330B Nitroaromatics and Nitramines (HPLC)

Client Matrix: Solid

Lab Sample ID	Client Sample ID	12DNB1 %Rec	12DNB2 %Rec
280-3087-4	MRREP1-S0101-0409	103	
280-3087-6	MRFLDU3-S0200-(2-4)-0409		103
280-3087-6	MRFLDU3-S0200-(2-4)-0409	102	
280-3087-8	MRFLDU4-S0200-(2-4)-0409		133Q
280-3087-8	MRFLDU4-S0200-(2-4)-0409	106	
280-3087-10	MRREP2-S0102-0409		103
280-3087-10	MRREP2-S0102-0409	101	
280-3087-12	MRDU5-S0200-(2-4)-0409		115
280-3087-12	MRDU5-S0200-(2-4)-0409	99	
MB 280-14909/10-A			101
MB 280-14909/10-A		98	
PB 280-13801/8-B			104
PB 280-13801/8-B		99	
LCS 280-14909/11-A			105
LCS 280-14909/11-A		108M	
LCSSRM 280-13801/9-B			105
LCSSRM 280-13801/9-B		101	
280-3087-12 MS	MRDU5-S0200-(2-4)-0409 MS	102M	
280-3087-12 MSD	MRDU5-S0200-(2-4)-0409 MSD	108M	

Surrogate	Acceptance Limits
12DNB = 1,2-Dinitrobenzene	83-122

Client: HydroGeoLogic Inc

Job Number: 280-3087-1

Method Blank - Batch: 280-14909

Method: 8330B
Preparation: 8330B

Lab Sample ID: MB 280-14909/10-A
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 06/04/2010 0301
Date Prepared: 05/11/2010 1820

Analysis Batch: 280-18009
Prep Batch: 280-14909
Units: mg/Kg

Instrument ID: HPLC_X3
Lab File ID: 044-4401.D
Initial Weight/Volume: 10.37 g
Final Weight/Volume: 40000 uL
Injection Volume: 100 uL
Column ID: PRIMARY

Analyte	Result	Qual	DL	LOQ
2-Amino-4,6-dinitrotoluene	0.039	U	0.032	0.096
4-Amino-2,6-dinitrotoluene	0.039	U	0.029	0.096
2,4-Dinitrotoluene	0.039	U	0.014	0.096
2,6-Dinitrotoluene	0.039	U	0.018	0.096
Nitroglycerin	0.39	U	0.21	1.9
2-Nitrotoluene	0.077	U	0.046	0.19
3-Nitrotoluene	0.077	U	0.062	0.19
Nitrobenzene	0.077	U	0.082	1.9
4-Nitrotoluene	0.096	U	0.035	0.19
1,3,5-Trinitrobenzene	0.039	U	0.013	0.096
1,3-Dinitrobenzene	0.039	U	0.016	0.096
HMX	0.039	U	0.022	0.096
RDX	0.077	U	0.041	0.19
Tetryl	0.077	U	0.042	0.19
PETN	0.39	U	0.48	1.9
2,4,6-Trinitrotoluene	0.039	U	0.030	0.096

Surrogate	% Rec	Acceptance Limits
1,2-Dinitrobenzene	98	83 - 122

Client: HydroGeoLogic Inc

Job Number: 280-3087-1

Preparation / Extraction Blank - Batch: 280-14909

Method: 8330B
Preparation: 8330B

Lab Sample ID:	PB 280-13801/8-B	Analysis Batch:	280-18009	Instrument ID:	HPLC_X3
Client Matrix:	Solid	Prep Batch:	280-14909	Lab File ID:	046-4601.D
Dilution:	1.0	Units:	mg/Kg	Initial Weight/Volume:	10.38 g
Date Analyzed:	06/04/2010 0348			Final Weight/Volume:	40000 uL
Date Prepared:	05/11/2010 1820			Injection Volume:	100 uL
Date Leached:	05/11/2010 0918			Column ID:	PRIMARY

Analyte	Result	Qual	DL	LOQ
2-Amino-4,6-dinitrotoluene	0.039	U	0.032	0.096
4-Amino-2,6-dinitrotoluene	0.039	U	0.029	0.096
2,4-Dinitrotoluene	0.039	U	0.014	0.096
2,6-Dinitrotoluene	0.039	U	0.018	0.096
Nitroglycerin	0.39	U	0.21	1.9
2-Nitrotoluene	0.077	U	0.045	0.19
3-Nitrotoluene	0.077	U	0.062	0.19
Nitrobenzene	0.077	U	0.082	1.9
4-Nitrotoluene	0.096	U	0.035	0.19
1,3,5-Trinitrobenzene	0.039	U	0.013	0.096
1,3-Dinitrobenzene	0.039	U	0.016	0.096
HMX	0.039	U	0.022	0.096
RDX	0.077	U	0.041	0.19
Tetryl	0.077	U	0.042	0.19
PETN	0.39	U	0.47	1.9
2,4,6-Trinitrotoluene	0.039	U	0.030	0.096

Surrogate	% Rec	Acceptance Limits
1,2-Dinitrobenzene	99	83 - 122

Client: HydroGeoLogic Inc

Job Number: 280-3087-1

Lab Control Sample - Batch: 280-14909

Method: 8330B
Preparation: 8330B

Lab Sample ID: LCS 280-14909/11-A
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 06/04/2010 0324
Date Prepared: 05/11/2010 1820

Analysis Batch: 280-18009
Prep Batch: 280-14909
Units: mg/Kg

Instrument ID: HPLC_X3
Lab File ID: 045-4501.D
Initial Weight/Volume: 10.03 g
Final Weight/Volume: 40000 uL
Injection Volume: 100 uL
Column ID: PRIMARY

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
2-Amino-4,6-dinitrotoluene	0.997	1.14	115	80 - 125	M
4-Amino-2,6-dinitrotoluene	0.997	1.01	102	80 - 125	M
2,4-Dinitrotoluene	0.997	1.09	109	80 - 125	M
2,6-Dinitrotoluene	0.997	0.945	95	80 - 120	M
Nitroglycerin	9.97	11.2	113	68 - 131	
2-Nitrotoluene	0.997	1.06	107	80 - 125	
3-Nitrotoluene	0.997	1.10	111	75 - 120	M
Nitrobenzene	0.997	1.17	117	75 - 125	J M
4-Nitrotoluene	0.997	1.10	111	75 - 125	M
1,3,5-Trinitrobenzene	0.997	1.03	103	75 - 125	M
1,3-Dinitrobenzene	0.997	1.08	108	80 - 125	M
HMX	0.997	1.01	101	75 - 125	M
Tetryl	0.997	1.01	101	10 - 150	M
PETN	9.97	9.97	100	69 - 132	
2,4,6-Trinitrotoluene	0.997	0.970	97	55 - 140	M

Surrogate	% Rec		Acceptance Limits
1,2-Dinitrobenzene	108	M	83 - 122

LCS-Certified Reference Material - Batch:

Method: 8330B
Preparation: 8330B

Lab Sample ID: LCSSRM 280-13801/9-B
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 06/04/2010 0411
Date Prepared: 05/11/2010 1820
Date Leached: 05/11/2010 0918

Analysis Batch: 280-18009
Prep Batch: 280-14909
Units: mg/Kg

Instrument ID: HPLC_X3
Lab File ID: 047-4701.D
Initial Weight/Volume: 10.65 g
Final Weight/Volume: 40000 uL
Injection Volume: 100 uL
Column ID: PRIMARY

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
2-Amino-4,6-dinitrotoluene	0.650	0.700	108	56 - 108	
4-Amino-2,6-dinitrotoluene	0.946	0.883	93	46 - 98	
2,4-Dinitrotoluene	0.638	0.602	94	69 - 137	
2,6-Dinitrotoluene	1.32	1.46	111	60 - 121	
Nitroglycerin	1.00	1.02	102	60 - 115	J
2-Nitrotoluene	1.46	1.35	92	67 - 117	
3-Nitrotoluene	1.02	1.20	118	69 - 124	
Nitrobenzene	1.40	1.18	85	58 - 119	J M
4-Nitrotoluene	1.84	1.74	94	62 - 123	
1,3,5-Trinitrobenzene	0.701	0.698	100	58 - 116	
1,3-Dinitrobenzene	1.01	1.02	101	69 - 116	

Client: HydroGeoLogic Inc

Job Number: 280-3087-1

LCS-Certified Reference Material - Batch:

Method: 8330B
Preparation: 8330B

Lab Sample ID:	LCSSRM 280-13801/9-B	Analysis Batch:	280-18009	Instrument ID:	HPLC_X3
Client Matrix:	Solid	Prep Batch:	280-14909	Lab File ID:	047-4701.D
Dilution:	1.0	Units:	mg/Kg	Initial Weight/Volume:	10.65 g
Date Analyzed:	06/04/2010 0411			Final Weight/Volume:	40000 uL
Date Prepared:	05/11/2010 1820			Injection Volume:	100 uL
Date Leached:	05/11/2010 0918			Column ID:	PRIMARY

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
HMX	0.620	0.630	102	59 - 131	M
RDX	0.587	0.579	99	62 - 123	
2,4,6-Trinitrotoluene	0.810	0.764	94	69 - 120	

Surrogate	% Rec	Acceptance Limits
1,2-Dinitrobenzene	101	83 - 122

Lab Control Sample - Batch: 280-14909

Method: 8330B
Preparation: 8330B

Lab Sample ID:	LCS 280-14909/11-A	Analysis Batch:	280-18232	Instrument ID:	HPLC_Q
Client Matrix:	Solid	Prep Batch:	280-14909	Lab File ID:	012-1201.D
Dilution:	1.0	Units:	mg/Kg	Initial Weight/Volume:	10.03 g
Date Analyzed:	06/05/2010 0119			Final Weight/Volume:	40000 uL
Date Prepared:	05/11/2010 1820			Injection Volume:	100 uL
				Column ID:	PRIMARY

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
RDX	0.997	1.08	108	70 - 135	

Surrogate	% Rec	Acceptance Limits
1,2-Dinitrobenzene	105	83 - 122

LCS-Certified Reference Material - Batch:

Method: 8330B
Preparation: 8330B

Lab Sample ID:	LCSSRM 280-13801/9-B	Analysis Batch:	280-18232	Instrument ID:	HPLC_Q
Client Matrix:	Solid	Prep Batch:	280-14909	Lab File ID:	014-1401.D
Dilution:	1.0	Units:	mg/Kg	Initial Weight/Volume:	10.65 g
Date Analyzed:	06/05/2010 0223			Final Weight/Volume:	40000 uL
Date Prepared:	05/11/2010 1820			Injection Volume:	100 uL
Date Leached:	05/11/2010 0918			Column ID:	PRIMARY

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
PETN	1.00	0.814	81	60 - 115	J M

Surrogate	% Rec	Acceptance Limits
1,2-Dinitrobenzene	105	83 - 122

Client: HydroGeoLogic Inc

Job Number: 280-3087-1

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 280-14909

Method: 8330B
Preparation: 8330B

MS Lab Sample ID:	280-3087-12	Analysis Batch:	280-18009	Instrument ID:	HPLC_X3
Client Matrix:	Solid	Prep Batch:	280-14909	Lab File ID:	053-5301.D
Dilution:	1.0			Initial Weight/Volume:	10.58 g
Date Analyzed:	06/04/2010 0632			Final Weight/Volume:	40000 uL
Date Prepared:	05/11/2010 1820			Injection Volume:	100 uL
Date Leached:	05/04/2010 1042			Column ID:	PRIMARY

MSD Lab Sample ID:	280-3087-12	Analysis Batch:	280-18009	Instrument ID:	HPLC_X3
Client Matrix:	Solid	Prep Batch:	280-14909	Lab File ID:	054-5401.D
Dilution:	1.0			Initial Weight/Volume:	10.03 g
Date Analyzed:	06/04/2010 0656			Final Weight/Volume:	40000 uL
Date Prepared:	05/11/2010 1820			Injection Volume:	100 uL
Date Leached:	05/04/2010 1043			Column ID:	PRIMARY

	% Rec.						
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
2-Amino-4,6-dinitrotoluene	117	126	80 - 125	12	30	M	M J
4-Amino-2,6-dinitrotoluene	106	117	80 - 125	15	30	M	M
2,4-Dinitrotoluene	104	110	80 - 125	11	30	M	M
2,6-Dinitrotoluene	94	101	80 - 120	12	30	M	M
Nitroglycerin	111	117	68 - 130	11	30		
2-Nitrotoluene	108	106	80 - 125	4	30	M	M
3-Nitrotoluene	104	111	75 - 120	12	30		M
Nitrobenzene	118	126	75 - 125	12	30	J M	M J
4-Nitrotoluene	104	107	75 - 125	8	30		M
1,3,5-Trinitrobenzene	105	112	75 - 125	11	30	M	M
1,3-Dinitrobenzene	104	110	80 - 125	11	30	M	M
HMX	98	100	75 - 125	7	30	M	M
RDX	117	122	70 - 135	9	30		
Tetryl	92	102	10 - 150	15	30	M	M
PETN	100	105	69 - 132	10	30		
2,4,6-Trinitrotoluene	119	140	55 - 140	21	30	M	M

Surrogate	MS % Rec		MSD % Rec		Acceptance Limits
1,2-Dinitrobenzene	102	M	108	M	83 - 122

Client: HydroGeoLogic Inc

Job Number: 280-3087-1

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 280-14909

Method: 8330B
Preparation: 8330B

MS Lab Sample ID:	280-3087-12	Units: mg/Kg	MSD Lab Sample ID:	280-3087-12
Client Matrix:	Solid		Client Matrix:	Solid
Dilution:	1.0		Dilution:	1.0
Date Analyzed:	06/04/2010 0632		Date Analyzed:	06/04/2010 0656
Date Prepared:	05/11/2010 1820		Date Prepared:	05/11/2010 1820
Date Leached:	05/04/2010 1042		Date Leached:	05/04/2010 1043

Analyte	Sample Result/Qual		MS Spike Amount	MSD Spike Amount	MS Result/Qual		MSD Result/Qual	
2-Amino-4,6-dinitrotoluene	0.039	U	0.945	0.997	1.11	M	1.25	M J
4-Amino-2,6-dinitrotoluene	0.039	U	0.945	0.997	1.00	M	1.16	M
2,4-Dinitrotoluene	0.026	J	0.945	0.997	1.01	M	1.13	M
2,6-Dinitrotoluene	0.039	U	0.945	0.997	0.891	M	1.01	M
Nitroglycerin	0.39	U	9.45	9.97	10.5		11.7	
2-Nitrotoluene	0.078	U	0.945	0.997	1.02	M	1.06	M
3-Nitrotoluene	0.078	U	0.945	0.997	0.979		1.11	M
Nitrobenzene	0.078	U	0.945	0.997	1.11	J M	1.25	M J
4-Nitrotoluene	0.097	U	0.945	0.997	0.985		1.07	M
1,3,5-Trinitrobenzene	0.039	U	0.945	0.997	0.993	M	1.11	M
1,3-Dinitrobenzene	0.039	U	0.945	0.997	0.980	M	1.10	M
HMX	0.039	U	0.945	0.997	0.924	M	0.995	M
RDX	0.078	U	0.945	0.997	1.11		1.22	
Tetryl	0.078	U	0.945	0.997	0.872	M	1.01	M
PETN	0.39	U	9.45	9.97	9.41		10.4	
2,4,6-Trinitrotoluene	0.039	U	0.945	0.997	1.12	M	1.39	M

Client: HydroGeoLogic Inc

Job Number: 280-3087-1

Method Blank - Batch: 280-17869

Method: 6010C
Preparation: 3050B

Lab Sample ID: MB 280-17869/1-A
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 06/03/2010 2357
Date Prepared: 06/03/2010 0830

Analysis Batch: 280-18117
Prep Batch: 280-17869
Units: mg/Kg

Instrument ID: MT_026
Lab File ID: 26b060310.txt
Initial Weight/Volume: 10.00 g
Final Weight/Volume: 500 mL

Analyte	Result	Qual	DL	LOQ
Calcium	20	U	14	100
Iron	5.0	U	3.8	80
Magnesium	5.0	U	3.7	30
Potassium	50	U	41	300

Method Blank - Batch: 280-17869

Method: 6010C
Preparation: 3050B

Lab Sample ID: MB 280-17869/1-A
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 06/07/2010 1239
Date Prepared: 06/03/2010 0830

Analysis Batch: 280-18373
Prep Batch: 280-17869
Units: mg/Kg

Instrument ID: MT_026
Lab File ID: 26a060710.txt
Initial Weight/Volume: 10.00 g
Final Weight/Volume: 500 mL

Analyte	Result	Qual	DL	LOQ
Sodium	100	U	59	500

Method Blank - Batch: 280-17869

Method: 6010C
Preparation: 3050B

Lab Sample ID: MB 280-17869/1-A
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 06/10/2010 1127
Date Prepared: 06/03/2010 0830

Analysis Batch: 280-18884
Prep Batch: 280-17869
Units: mg/Kg

Instrument ID: MT_026
Lab File ID: 26A061010.txt
Initial Weight/Volume: 10.00 g
Final Weight/Volume: 500 mL

Analyte	Result	Qual	DL	LOQ
Aluminum	3.0	U	1.6	50

Client: HydroGeoLogic Inc

Job Number: 280-3087-1

Lab Control Sample - Batch: 280-17869

Method: 6010C
Preparation: 3050B

Lab Sample ID: LCS 280-17869/2-A
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 06/03/2010 2359
Date Prepared: 06/03/2010 0830

Analysis Batch: 280-18117
Prep Batch: 280-17869
Units: mg/Kg

Instrument ID: MT_026
Lab File ID: 26b060310.txt
Initial Weight/Volume: 10.00 g
Final Weight/Volume: 500 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Calcium	2500	2400	96	80 - 120	
Iron	50.0	50.7	101	80 - 120	J
Magnesium	2500	2380	95	80 - 120	
Potassium	2500	2430	97	80 - 120	

Lab Control Sample - Batch: 280-17869

Method: 6010C
Preparation: 3050B

Lab Sample ID: LCS 280-17869/2-A
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 06/07/2010 1242
Date Prepared: 06/03/2010 0830

Analysis Batch: 280-18373
Prep Batch: 280-17869
Units: mg/Kg

Instrument ID: MT_026
Lab File ID: 26a060710.txt
Initial Weight/Volume: 10.00 g
Final Weight/Volume: 500 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Sodium	2500	2520	101	80 - 120	

Lab Control Sample - Batch: 280-17869

Method: 6010C
Preparation: 3050B

Lab Sample ID: LCS 280-17869/2-A
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 06/10/2010 1129
Date Prepared: 06/03/2010 0830

Analysis Batch: 280-18884
Prep Batch: 280-17869
Units: mg/Kg

Instrument ID: MT_026
Lab File ID: 26A061010.txt
Initial Weight/Volume: 10.00 g
Final Weight/Volume: 500 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Aluminum	100	97.4	97	80 - 120	

Client: HydroGeoLogic Inc

Job Number: 280-3087-1

Post Digestion Spike - Batch: 280-17869

Method: 6010C
Preparation: 3050B

Lab Sample ID: 280-3087-12
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 06/04/2010 0045
Date Prepared: 06/03/2010 0830
Date Leached: 05/04/2010 1038

Analysis Batch: 280-18117
Prep Batch: 280-17869
Units: mg/Kg

Instrument ID: MT_026
Lab File ID: 26b060310.txt
Initial Weight/Volume: 10.15 g
Final Weight/Volume: 500 mL

Analyte	Sample Result/Qual	Spike Amount	Result	% Rec.	Limit	Qual
Aluminum	5700	48.3	5610	-179	75 - 125	J
Calcium	520	966	1410	92	75 - 125	
Iron	7800	48.3	7680	-291	75 - 125	J
Magnesium	2100	966	3030	92	75 - 125	
Potassium	520	966	1420	93	75 - 125	

Post Digestion Spike - Batch: 280-17869

Method: 6010C
Preparation: 3050B

Lab Sample ID: 280-3087-12
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 06/07/2010 1327
Date Prepared: 06/03/2010 0830
Date Leached: 05/04/2010 1038

Analysis Batch: 280-18373
Prep Batch: 280-17869
Units: mg/Kg

Instrument ID: MT_026
Lab File ID: 26a060710.txt
Initial Weight/Volume: 10.15 g
Final Weight/Volume: 500 mL

Analyte	Sample Result/Qual		Spike Amount	Result	% Rec.	Limit	Qual
Sodium	99	U	985	1100	111	75 - 125	

Client: HydroGeoLogic Inc

Job Number: 280-3087-1

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 280-17869

Method: 6010C
Preparation: 3050B

MS Lab Sample ID:	280-3087-12	Analysis Batch:	280-18117	Instrument ID:	MT_026
Client Matrix:	Solid	Prep Batch:	280-17869	Lab File ID:	26b060310.txt
Dilution:	1.0			Initial Weight/Volume:	10.03 g
Date Analyzed:	06/04/2010 0040			Final Weight/Volume:	500 mL
Date Prepared:	06/03/2010 0830				
Date Leached:	05/04/2010 1038				

MSD Lab Sample ID:	280-3087-12	Analysis Batch:	280-18117	Instrument ID:	MT_026
Client Matrix:	Solid	Prep Batch:	280-17869	Lab File ID:	26b060310.txt
Dilution:	1.0			Initial Weight/Volume:	10.02 g
Date Analyzed:	06/04/2010 0043			Final Weight/Volume:	500 mL
Date Prepared:	06/03/2010 0830				
Date Leached:	05/04/2010 1045				

	% Rec.						
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Aluminum	397	742	80 - 120	5	20	4	4
Calcium	90	92	80 - 120	2	20		
Iron	-326	69	80 - 120	3	20	4	4
Magnesium	91	92	80 - 120	0	20		
Potassium	92	94	80 - 120	2	20		

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 280-17869

Method: 6010C
Preparation: 3050B

MS Lab Sample ID:	280-3087-12	Analysis Batch:	280-18373	Instrument ID:	MT_026
Client Matrix:	Solid	Prep Batch:	280-17869	Lab File ID:	26a060710.txt
Dilution:	1.0			Initial Weight/Volume:	10.03 g
Date Analyzed:	06/07/2010 1323			Final Weight/Volume:	500 mL
Date Prepared:	06/03/2010 0830				
Date Leached:	05/04/2010 1038				

MSD Lab Sample ID:	280-3087-12	Analysis Batch:	280-18373	Instrument ID:	MT_026
Client Matrix:	Solid	Prep Batch:	280-17869	Lab File ID:	26a060710.txt
Dilution:	1.0			Initial Weight/Volume:	10.02 g
Date Analyzed:	06/07/2010 1325			Final Weight/Volume:	500 mL
Date Prepared:	06/03/2010 0830				
Date Leached:	05/04/2010 1045				

	% Rec.						
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Sodium	97	98	80 - 120	1	20		

Client: HydroGeoLogic Inc

Job Number: 280-3087-1

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 280-17869

Method: 6010C
Preparation: 3050B

MS Lab Sample ID:	280-3087-12	Units: mg/Kg	MSD Lab Sample ID:	280-3087-12
Client Matrix:	Solid		Client Matrix:	Solid
Dilution:	1.0		Dilution:	1.0
Date Analyzed:	06/04/2010 0040		Date Analyzed:	06/04/2010 0043
Date Prepared:	06/03/2010 0830		Date Prepared:	06/03/2010 0830
Date Leached:	05/04/2010 1038		Date Leached:	05/04/2010 1045

Analyte	Sample Result/Qual		MS Spike Amount	MSD Spike Amount	MS Result/Qual		MSD Result/Qual	
Aluminum	5700		99.7	99.8	6100	4	6440	4
Calcium	520		2490	2500	2770		2810	
Iron	7800		49.9	49.9	7660	4	7850	4
Magnesium	2100		2490	2500	4420		4440	
Potassium	520		2490	2500	2810		2860	

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 280-17869

Method: 6010C
Preparation: 3050B

MS Lab Sample ID:	280-3087-12	Units: mg/Kg	MSD Lab Sample ID:	280-3087-12
Client Matrix:	Solid		Client Matrix:	Solid
Dilution:	1.0		Dilution:	1.0
Date Analyzed:	06/07/2010 1323		Date Analyzed:	06/07/2010 1325
Date Prepared:	06/03/2010 0830		Date Prepared:	06/03/2010 0830
Date Leached:	05/04/2010 1038		Date Leached:	05/04/2010 1045

Analyte	Sample Result/Qual		MS Spike Amount	MSD Spike Amount	MS Result/Qual	MSD Result/Qual
Sodium	99	U	2490	2500	2430	2440

Client: HydroGeoLogic Inc

Job Number: 280-3087-1

Serial Dilution - Batch: 280-17869

Method: 6010C
Preparation: 3050B

Lab Sample ID: 280-3087-12
Client Matrix: Solid
Dilution: 5.0
Date Analyzed: 06/04/2010 0038
Date Prepared: 06/03/2010 0830
Date Leached: 05/04/2010 1038

Analysis Batch: 280-18117
Prep Batch: 280-17869
Units: mg/Kg

Instrument ID: MT_026
Lab File ID: 26b060310.txt
Initial Weight/Volume: 10.15 g
Final Weight/Volume: 500 mL

Analyte	Sample Result/Qual	Result	%Diff	Limit	Qual
Aluminum	5700	6190	8.5	10	D
Calcium	520	565	NC	10	D
Iron	7800	8100	3.6	10	D
Magnesium	2100	2310	7.7	10	D
Potassium	520	565	NC	10	J D

Serial Dilution - Batch: 280-17869

Method: 6010C
Preparation: 3050B

Lab Sample ID: 280-3087-12
Client Matrix: Solid
Dilution: 5.0
Date Analyzed: 06/07/2010 1320
Date Prepared: 06/03/2010 0830
Date Leached: 05/04/2010 1038

Analysis Batch: 280-18373
Prep Batch: 280-17869
Units: mg/Kg

Instrument ID: MT_026
Lab File ID: 26a060710.txt
Initial Weight/Volume: 10.15 g
Final Weight/Volume: 500 mL

Analyte	Sample Result/Qual		Result	%Diff	Limit	Qual
Sodium	99	U	490	NC	10	U

Client: HydroGeoLogic Inc

Job Number: 280-3087-1

Method Blank - Batch: 280-17867

Method: 6020A
Preparation: 3050B

Lab Sample ID: MB 280-17867/1-A
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 06/05/2010 1849
Date Prepared: 06/03/2010 0830

Analysis Batch: 280-18454
Prep Batch: 280-17867
Units: mg/Kg

Instrument ID: MT_024
Lab File ID: 035_BLK.D
Initial Weight/Volume: 10.00 g
Final Weight/Volume: 500 mL

Analyte	Result	Qual	DL	LOQ
Antimony	0.0151	J Q	0.014	0.20
Arsenic	0.15	U	0.051	0.60
Barium	0.20	U	0.070	0.25
Beryllium	0.065	U	0.022	0.10
Cadmium	0.025	U Q	0.0094	0.10
Chromium	0.237	J	0.076	0.60
Cobalt	0.018	U Q	0.0066	0.10
Copper	0.20	U	0.071	2.5
Lead	0.050	U	0.018	0.40
Manganese	0.0384	J	0.033	1.0
Nickel	0.0661	J Q	0.025	0.35
Selenium	0.25	U	0.13	0.50
Silver	0.060	U	0.020	0.10
Thallium	0.010	U	0.0035	0.10
Vanadium	0.10	U	0.038	0.50
Zinc	0.90	U	0.32	2.5

Client: HydroGeoLogic Inc

Job Number: 280-3087-1

Lab Control Sample - Batch: 280-17867

Method: 6020A
Preparation: 3050B

Lab Sample ID: LCS 280-17867/2-A
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 06/05/2010 1852
Date Prepared: 06/03/2010 0830

Analysis Batch: 280-18454
Prep Batch: 280-17867
Units: mg/Kg

Instrument ID: MT_024
Lab File ID: 036_LCS.D
Initial Weight/Volume: 10.00 g
Final Weight/Volume: 500 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Antimony	10.0	9.55	95	80 - 120	Q
Arsenic	10.0	9.23	92	80 - 120	
Barium	10.0	9.80	98	80 - 120	
Beryllium	10.0	9.20	92	80 - 120	
Cadmium	10.0	9.33	93	80 - 120	Q
Chromium	10.0	9.94	99	80 - 120	
Cobalt	10.0	9.84	98	80 - 120	Q
Copper	10.0	9.50	95	80 - 120	
Lead	10.0	9.86	99	80 - 120	
Manganese	10.0	9.69	97	80 - 120	
Nickel	10.0	9.63	96	80 - 120	Q
Selenium	10.0	9.16	92	80 - 120	
Silver	10.0	9.50	95	80 - 120	
Thallium	10.0	10.1	101	80 - 120	
Vanadium	10.0	9.77	98	80 - 120	
Zinc	10.0	9.20	92	80 - 120	

Client: HydroGeoLogic Inc

Job Number: 280-3087-1

Post Digestion Spike - Batch: 280-17867

Method: 6020A
Preparation: 3050B

Lab Sample ID: 280-3087-12
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 06/05/2010 1943
Date Prepared: 06/03/2010 0830
Date Leached: 05/04/2010 1038

Analysis Batch: 280-18454
Prep Batch: 280-17867
Units: mg/Kg

Instrument ID: MT_024
Lab File ID: 055PDS.D
Initial Weight/Volume: 10.13 g
Final Weight/Volume: 500 mL

Analyte	Sample Result/Qual		Spike Amount	Result	% Rec.	Limit	Qual
Antimony	0.17	J	49.4	49.8	100	75 - 125	Q
Arsenic	11		49.4	57.2	94	75 - 125	
Barium	15		49.4	66.4	105	75 - 125	
Beryllium	0.28		49.4	50.8	102	75 - 125	
Cadmium	0.13		49.4	47.5	96	75 - 125	Q
Chromium	13		49.4	58.5	92	75 - 125	
Cobalt	3.0		49.4	49.2	94	75 - 125	Q
Copper	28		49.4	70.5	87	75 - 125	
Lead	120		49.4	162	91	75 - 125	
Manganese	120		49.4	161	91	75 - 125	
Nickel	11		49.4	58.4	96	75 - 125	Q
Selenium	0.38	J	49.4	47.3	95	75 - 125	
Silver	0.041	J	12.3	11.8	95	75 - 125	
Thallium	0.067	J	49.4	49.8	101	75 - 125	
Vanadium	11		49.4	56.7	93	75 - 125	
Zinc	28		49.4	72.0	90	75 - 125	

Client: HydroGeoLogic Inc

Job Number: 280-3087-1

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 280-17867

Method: 6020A
Preparation: 3050B

MS Lab Sample ID:	280-3087-12	Analysis Batch:	280-18454	Instrument ID:	MT_024
Client Matrix:	Solid	Prep Batch:	280-17867	Lab File ID:	056_MS.D
Dilution:	1.0			Initial Weight/Volume:	10.02 g
Date Analyzed:	06/05/2010 1946			Final Weight/Volume:	500 mL
Date Prepared:	06/03/2010 0830				
Date Leached:	05/04/2010 1038				

MSD Lab Sample ID:	280-3087-12	Analysis Batch:	280-18454	Instrument ID:	MT_024
Client Matrix:	Solid	Prep Batch:	280-17867	Lab File ID:	057_MSD.D
Dilution:	1.0			Initial Weight/Volume:	10.06 g
Date Analyzed:	06/05/2010 1949			Final Weight/Volume:	500 mL
Date Prepared:	06/03/2010 0830				
Date Leached:	05/04/2010 1045				

	% Rec.						
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Antimony	17	18	80 - 120	2	20	Q J	Q J
Arsenic	94	95	80 - 120	0	20		
Barium	97	100	80 - 120	1	20		
Beryllium	106	101	80 - 120	5	20		
Cadmium	98	98	80 - 120	1	20	Q	Q
Chromium	94	94	80 - 120	0	20		
Cobalt	97	96	80 - 120	2	20	Q	Q
Copper	-7	-17	80 - 120	4	20	J	J
Lead	44	215	80 - 120	13	20	4	4
Manganese	110	79	80 - 120	2	20	4	4
Nickel	91	90	80 - 120	1	20	Q	Q
Selenium	91	89	80 - 120	3	20		
Silver	92	92	80 - 120	1	20		
Thallium	104	105	80 - 120	0	20		
Vanadium	99	98	80 - 120	1	20		
Zinc	68	70	80 - 120	1	20	J	J

Client: HydroGeoLogic Inc

Job Number: 280-3087-1

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 280-17867

Method: 6020A
Preparation: 3050B

MS Lab Sample ID:	280-3087-12	Units: mg/Kg	MSD Lab Sample ID:	280-3087-12
Client Matrix:	Solid		Client Matrix:	Solid
Dilution:	1.0		Dilution:	1.0
Date Analyzed:	06/05/2010 1946		Date Analyzed:	06/05/2010 1949
Date Prepared:	06/03/2010 0830		Date Prepared:	06/03/2010 0830
Date Leached:	05/04/2010 1038		Date Leached:	05/04/2010 1045

Analyte	Sample Result/Qual		MS Spike Amount	MSD Spike Amount	MS Result/Qual		MSD Result/Qual	
Antimony	0.17	J	9.98	9.94	1.91	Q J	1.94	Q J
Arsenic	11		9.98	9.94	20.1		20.1	
Barium	15		9.98	9.94	24.5		24.6	
Beryllium	0.28		9.98	9.94	10.9		10.3	
Cadmium	0.13		9.98	9.94	9.91	Q	9.83	Q
Chromium	13		9.98	9.94	22.4		22.3	
Cobalt	3.0		9.98	9.94	12.7	Q	12.5	Q
Copper	28		9.98	9.94	27.0	J	26.0	J
Lead	120		9.98	9.94	122	4	139	4
Manganese	120		9.98	9.94	127	4	124	4
Nickel	11		9.98	9.94	20.3	Q	20.2	Q
Selenium	0.38	J	9.98	9.94	9.51		9.27	
Silver	0.041	J	9.98	9.94	9.25		9.17	
Thallium	0.067	J	9.98	9.94	10.5		10.5	
Vanadium	11		9.98	9.94	20.6		20.4	
Zinc	28		9.98	9.94	34.4	J	34.6	J

Client: HydroGeoLogic Inc

Job Number: 280-3087-1

Serial Dilution - Batch: 280-17867

Method: 6020A
Preparation: 3050B

Lab Sample ID: 280-3087-12
Client Matrix: Solid
Dilution: 5.0
Date Analyzed: 06/05/2010 1941
Date Prepared: 06/03/2010 0830
Date Leached: 05/04/2010 1038

Analysis Batch: 280-18454
Prep Batch: 280-17867
Units: mg/Kg

Instrument ID: MT_024
Lab File ID: 054SDIL.D
Initial Weight/Volume: 10.13 g
Final Weight/Volume: 500 mL

Analyte	Sample Result/Qual		Result	%Diff	Limit	Qual
Antimony	0.17	J	0.204	NC	10	J D Q
Arsenic	11		11.1	3.9	10	D
Barium	15		15.0	1.6	10	D
Beryllium	0.28		0.312	NC	10	J D
Cadmium	0.13		0.136	NC	10	J D Q
Chromium	13		14.0	8.1	10	D
Cobalt	3.0		3.06	3.4	10	D Q
Copper	28		29.0	4.5	10	D
Lead	120		124	5.3	10	D
Manganese	120		123	5.8	10	D
Nickel	11		11.8	5.4	10	D Q
Selenium	0.38	J	1.2	NC	10	U
Silver	0.041	J	0.30	NC	10	U
Thallium	0.067	J	0.0644	NC	10	J D
Vanadium	11		10.7	0.50	10	D
Zinc	28		28.4	2.7	10	D

Client: HydroGeoLogic Inc

Job Number: 280-3087-1

Method Blank - Batch: 280-14758

Method: 7471B
Preparation: 7471B

Lab Sample ID: MB 280-14758/1-A
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 05/11/2010 2209
Date Prepared: 05/11/2010 1500

Analysis Batch: 280-15007
Prep Batch: 280-14758
Units: mg/Kg

Instrument ID: MT_033
Lab File ID: 100511AD.txt
Initial Weight/Volume: 3.00 g
Final Weight/Volume: 250 mL

Analyte	Result	Qual	DL	LOQ
Mercury	0.0083	U	0.0055	0.017

Lab Control Sample - Batch: 280-14758

Method: 7471B
Preparation: 7471B

Lab Sample ID: LCS 280-14758/2-A
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 05/11/2010 2216
Date Prepared: 05/11/2010 1500

Analysis Batch: 280-15007
Prep Batch: 280-14758
Units: mg/Kg

Instrument ID: MT_033
Lab File ID: 100511AD.txt
Initial Weight/Volume: 3.00 g
Final Weight/Volume: 250 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Mercury	0.417	0.408	98	80 - 120	

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 280-14758

Method: 7471B
Preparation: 7471B

MS Lab Sample ID: 280-3087-12
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 05/11/2010 2252
Date Prepared: 05/11/2010 1500
Date Leached: 05/04/2010 1038

Analysis Batch: 280-15007
Prep Batch: 280-14758

Instrument ID: MT_033
Lab File ID: 100511AD.txt
Initial Weight/Volume: 3.57 g
Final Weight/Volume: 250 mL

MSD Lab Sample ID: 280-3087-12
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 05/11/2010 2255
Date Prepared: 05/11/2010 1500
Date Leached: 05/04/2010 1045

Analysis Batch: 280-15007
Prep Batch: 280-14758

Instrument ID: MT_033
Lab File ID: 100511AD.txt
Initial Weight/Volume: 3.25 g
Final Weight/Volume: 250 mL

Analyte	% Rec. MS	% Rec. MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Mercury	98	89	80 - 120	0.4	20		

Client: HydroGeoLogic Inc

Job Number: 280-3087-1

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 280-14758

Method: 7471B
Preparation: 7471B

MS Lab Sample ID:	280-3087-12	Units: mg/Kg	MSD Lab Sample ID:	280-3087-12
Client Matrix:	Solid		Client Matrix:	Solid
Dilution:	1.0		Dilution:	1.0
Date Analyzed:	05/11/2010 2252		Date Analyzed:	05/11/2010 2255
Date Prepared:	05/11/2010 1500		Date Prepared:	05/11/2010 1500
Date Leached:	05/04/2010 1038		Date Leached:	05/04/2010 1045

Analyte	Sample Result/Qual	MS Spike Amount	MSD Spike Amount	MS Result/Qual	MSD Result/Qual
Mercury	0.018	0.350	0.385	0.361	0.362

Serial Dilution - Batch: 280-14758

Method: 7471B
Preparation: 7471B

Lab Sample ID:	280-3087-12	Analysis Batch:	280-15007	Instrument ID:	MT_033
Client Matrix:	Solid	Prep Batch:	280-14758	Lab File ID:	100511AD.txt
Dilution:	5.0	Units:	mg/Kg	Initial Weight/Volume:	3.51 g
Date Analyzed:	05/11/2010 2250			Final Weight/Volume:	250 mL
Date Prepared:	05/11/2010 1500				
Date Leached:	05/04/2010 1038				

Analyte	Sample Result/Qual	Result	%Diff	Limit	Qual
Mercury	0.018	0.036	NC	10	U

DATA REPORTING QUALIFIERS

Client: HydroGeoLogic Inc

Job Number: 280-3087-1

Lab Section	Qualifier	Description
Metals		
	J	Estimated: The analyte was positively identified; the quantitation is an estimation
	J	Estimated: The quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
	4	MS, MSD: The analyte present in the original sample is 4 times greater than the matrix spike concentration; therefore, control limits are not applicable.
	Q	One or more quality control criteria failed.
	D	The reported value is from a dilution.
	U	Undetected at the Limit of Detection.
HPLC/IC		
	J	Estimated: The analyte was positively identified; the quantitation is an estimation
	J	Estimated: The quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
	M	Manual integrated compound.
	Q	One or more quality control criteria failed.
	U	Undetected at the Limit of Detection.

Client: HydroGeoLogic Inc

Job Number: 280-3087-1

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
Metals					
Prep Batch: 280-13797					
280-3087-1	MRBMDU1-S0200-(2-4)-0409	T	Solid	Increm, Prep	
280-3087-2	MRBMDU1-S0300-(16-18)0409	T	Solid	Increm, Prep	
280-3087-2DL	MRBMDU1-S0300-(16-18)0409	T	Solid	Increm, Prep	
280-3087-3	MRBMDU2-S0200-(2-4)-0409	T	Solid	Increm, Prep	
280-3087-4	MRREP1-S0101-0409	T	Solid	Increm, Prep	
280-3087-5	MRREP1-S0101-0409	T	Solid	Increm, Prep	
280-3087-6	MRFLDU3-S0200-(2-4)-0409	T	Solid	Increm, Prep	
280-3087-7	MRFLDU3-S0200-(2-4)-0409	T	Solid	Increm, Prep	
280-3087-8	MRFLDU4-S0200-(2-4)-0409	T	Solid	Increm, Prep	
280-3087-9	MRFLDU4-S0200-(2-4)-0409	T	Solid	Increm, Prep	
280-3087-10	MRREP2-S0102-0409	T	Solid	Increm, Prep	
280-3087-11	MRREP2-S0102-0409	T	Solid	Increm, Prep	
280-3087-12	MRDU5-S0200-(2-4)-0409	T	Solid	Increm, Prep	
280-3087-12MS	Matrix Spike	T	Solid	Increm, Prep	
280-3087-12MSD	Matrix Spike Duplicate	T	Solid	Increm, Prep	
280-3087-13	MRBMDU6-S0200-(2-4)-0409	T	Solid	Increm, Prep	
Prep Batch: 280-14758					
LCS 280-14758/2-A	Lab Control Sample	T	Solid	7471B	
MB 280-14758/1-A	Method Blank	T	Solid	7471B	
280-3087-1	MRBMDU1-S0200-(2-4)-0409	T	Solid	7471B	280-13797
280-3087-2	MRBMDU1-S0300-(16-18)0409	T	Solid	7471B	280-13797
280-3087-3	MRBMDU2-S0200-(2-4)-0409	T	Solid	7471B	280-13797
280-3087-4	MRREP1-S0101-0409	T	Solid	7471B	280-13797
280-3087-5	MRREP1-S0101-0409	T	Solid	7471B	280-13797
280-3087-6	MRFLDU3-S0200-(2-4)-0409	T	Solid	7471B	280-13797
280-3087-7	MRFLDU3-S0200-(2-4)-0409	T	Solid	7471B	280-13797
280-3087-8	MRFLDU4-S0200-(2-4)-0409	T	Solid	7471B	280-13797
280-3087-9	MRFLDU4-S0200-(2-4)-0409	T	Solid	7471B	280-13797
280-3087-10	MRREP2-S0102-0409	T	Solid	7471B	280-13797
280-3087-11	MRREP2-S0102-0409	T	Solid	7471B	280-13797
280-3087-12	MRDU5-S0200-(2-4)-0409	T	Solid	7471B	280-13797
280-3087-12MS	Matrix Spike	T	Solid	7471B	280-13797
280-3087-12MSD	Matrix Spike Duplicate	T	Solid	7471B	280-13797
280-3087-13	MRBMDU6-S0200-(2-4)-0409	T	Solid	7471B	280-13797

Client: HydroGeoLogic Inc

Job Number: 280-3087-1

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
Metals					
Analysis Batch:280-15007					
LCS 280-14758/2-A	Lab Control Sample	T	Solid	7471B	280-14758
MB 280-14758/1-A	Method Blank	T	Solid	7471B	280-14758
280-3087-1	MRBMDU1-S0200-(2-4)-0409	T	Solid	7471B	280-14758
280-3087-2	MRBMDU1-S0300-(16-18)0409	T	Solid	7471B	280-14758
280-3087-3	MRBMDU2-S0200-(2-4)-0409	T	Solid	7471B	280-14758
280-3087-4	MRREP1-S0101-0409	T	Solid	7471B	280-14758
280-3087-5	MRREP1-S0101-0409	T	Solid	7471B	280-14758
280-3087-6	MRFLDU3-S0200-(2-4)-0409	T	Solid	7471B	280-14758
280-3087-7	MRFLDU3-S0200-(2-4)-0409	T	Solid	7471B	280-14758
280-3087-8	MRFLDU4-S0200-(2-4)-0409	T	Solid	7471B	280-14758
280-3087-9	MRFLDU4-S0200-(2-4)-0409	T	Solid	7471B	280-14758
280-3087-10	MRREP2-S0102-0409	T	Solid	7471B	280-14758
280-3087-11	MRREP2-S0102-0409	T	Solid	7471B	280-14758
280-3087-12	MRDU5-S0200-(2-4)-0409	T	Solid	7471B	280-14758
280-3087-12MS	Matrix Spike	T	Solid	7471B	280-14758
280-3087-12MSD	Matrix Spike Duplicate	T	Solid	7471B	280-14758
280-3087-13	MRBMDU6-S0200-(2-4)-0409	T	Solid	7471B	280-14758
Prep Batch: 280-17867					
LCS 280-17867/2-A	Lab Control Sample	T	Solid	3050B	
MB 280-17867/1-A	Method Blank	T	Solid	3050B	
280-3087-1	MRBMDU1-S0200-(2-4)-0409	T	Solid	3050B	280-13797
280-3087-2	MRBMDU1-S0300-(16-18)0409	T	Solid	3050B	280-13797
280-3087-2DL	MRBMDU1-S0300-(16-18)0409	T	Solid	3050B	280-13797
280-3087-3	MRBMDU2-S0200-(2-4)-0409	T	Solid	3050B	280-13797
280-3087-4	MRREP1-S0101-0409	T	Solid	3050B	280-13797
280-3087-5	MRREP1-S0101-0409	T	Solid	3050B	280-13797
280-3087-6	MRFLDU3-S0200-(2-4)-0409	T	Solid	3050B	280-13797
280-3087-7	MRFLDU3-S0200-(2-4)-0409	T	Solid	3050B	280-13797
280-3087-8	MRFLDU4-S0200-(2-4)-0409	T	Solid	3050B	280-13797
280-3087-9	MRFLDU4-S0200-(2-4)-0409	T	Solid	3050B	280-13797
280-3087-10	MRREP2-S0102-0409	T	Solid	3050B	280-13797
280-3087-11	MRREP2-S0102-0409	T	Solid	3050B	280-13797
280-3087-12	MRDU5-S0200-(2-4)-0409	T	Solid	3050B	280-13797
280-3087-12MS	Matrix Spike	T	Solid	3050B	280-13797
280-3087-12MSD	Matrix Spike Duplicate	T	Solid	3050B	280-13797
280-3087-13	MRBMDU6-S0200-(2-4)-0409	T	Solid	3050B	280-13797

Client: HydroGeoLogic Inc

Job Number: 280-3087-1

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
Metals					
Prep Batch: 280-17869					
LCS 280-17869/2-A	Lab Control Sample	T	Solid	3050B	
MB 280-17869/1-A	Method Blank	T	Solid	3050B	
280-3087-1	MRBMDU1-S0200-(2-4)-0409	T	Solid	3050B	280-13797
280-3087-2	MRBMDU1-S0300-(16-18)0409	T	Solid	3050B	280-13797
280-3087-3	MRBMDU2-S0200-(2-4)-0409	T	Solid	3050B	280-13797
280-3087-4	MRREP1-S0101-0409	T	Solid	3050B	280-13797
280-3087-5	MRREP1-S0101-0409	T	Solid	3050B	280-13797
280-3087-6	MRFLDU3-S0200-(2-4)-0409	T	Solid	3050B	280-13797
280-3087-7	MRFLDU3-S0200-(2-4)-0409	T	Solid	3050B	280-13797
280-3087-8	MRFLDU4-S0200-(2-4)-0409	T	Solid	3050B	280-13797
280-3087-9	MRFLDU4-S0200-(2-4)-0409	T	Solid	3050B	280-13797
280-3087-10	MRREP2-S0102-0409	T	Solid	3050B	280-13797
280-3087-11	MRREP2-S0102-0409	T	Solid	3050B	280-13797
280-3087-12	MRDU5-S0200-(2-4)-0409	T	Solid	3050B	280-13797
280-3087-12MS	Matrix Spike	T	Solid	3050B	280-13797
280-3087-12MSD	Matrix Spike Duplicate	T	Solid	3050B	280-13797
280-3087-13	MRBMDU6-S0200-(2-4)-0409	T	Solid	3050B	280-13797
Analysis Batch:280-18117					
LCS 280-17869/2-A	Lab Control Sample	T	Solid	6010C	280-17869
MB 280-17869/1-A	Method Blank	T	Solid	6010C	280-17869
280-3087-1	MRBMDU1-S0200-(2-4)-0409	T	Solid	6010C	280-17869
280-3087-2	MRBMDU1-S0300-(16-18)0409	T	Solid	6010C	280-17869
280-3087-3	MRBMDU2-S0200-(2-4)-0409	T	Solid	6010C	280-17869
280-3087-4	MRREP1-S0101-0409	T	Solid	6010C	280-17869
280-3087-5	MRREP1-S0101-0409	T	Solid	6010C	280-17869
280-3087-6	MRFLDU3-S0200-(2-4)-0409	T	Solid	6010C	280-17869
280-3087-7	MRFLDU3-S0200-(2-4)-0409	T	Solid	6010C	280-17869
280-3087-8	MRFLDU4-S0200-(2-4)-0409	T	Solid	6010C	280-17869
280-3087-9	MRFLDU4-S0200-(2-4)-0409	T	Solid	6010C	280-17869
280-3087-10	MRREP2-S0102-0409	T	Solid	6010C	280-17869
280-3087-11	MRREP2-S0102-0409	T	Solid	6010C	280-17869
280-3087-12	MRDU5-S0200-(2-4)-0409	T	Solid	6010C	280-17869
280-3087-12MS	Matrix Spike	T	Solid	6010C	280-17869
280-3087-12MSD	Matrix Spike Duplicate	T	Solid	6010C	280-17869
280-3087-13	MRBMDU6-S0200-(2-4)-0409	T	Solid	6010C	280-17869

Client: HydroGeoLogic Inc

Job Number: 280-3087-1

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
Metals					
Analysis Batch:280-18373					
LCS 280-17869/2-A	Lab Control Sample	T	Solid	6010C	280-17869
MB 280-17869/1-A	Method Blank	T	Solid	6010C	280-17869
280-3087-1	MRBMDU1-S0200-(2-4)-0409	T	Solid	6010C	280-17869
280-3087-2	MRBMDU1-S0300-(16-18)0409	T	Solid	6010C	280-17869
280-3087-3	MRBMDU2-S0200-(2-4)-0409	T	Solid	6010C	280-17869
280-3087-4	MRREP1-S0101-0409	T	Solid	6010C	280-17869
280-3087-5	MRREP1-S0101-0409	T	Solid	6010C	280-17869
280-3087-6	MRFLDU3-S0200-(2-4)-0409	T	Solid	6010C	280-17869
280-3087-7	MRFLDU3-S0200-(2-4)-0409	T	Solid	6010C	280-17869
280-3087-8	MRFLDU4-S0200-(2-4)-0409	T	Solid	6010C	280-17869
280-3087-9	MRFLDU4-S0200-(2-4)-0409	T	Solid	6010C	280-17869
280-3087-10	MRREP2-S0102-0409	T	Solid	6010C	280-17869
280-3087-11	MRREP2-S0102-0409	T	Solid	6010C	280-17869
280-3087-12	MRDU5-S0200-(2-4)-0409	T	Solid	6010C	280-17869
280-3087-12MS	Matrix Spike	T	Solid	6010C	280-17869
280-3087-12MSD	Matrix Spike Duplicate	T	Solid	6010C	280-17869
280-3087-13	MRBMDU6-S0200-(2-4)-0409	T	Solid	6010C	280-17869
Analysis Batch:280-18454					
LCS 280-17867/2-A	Lab Control Sample	T	Solid	6020A	280-17867
MB 280-17867/1-A	Method Blank	T	Solid	6020A	280-17867
280-3087-1	MRBMDU1-S0200-(2-4)-0409	T	Solid	6020A	280-17867
280-3087-2	MRBMDU1-S0300-(16-18)0409	T	Solid	6020A	280-17867
280-3087-2DL	MRBMDU1-S0300-(16-18)0409	T	Solid	6020A	280-17867
280-3087-3	MRBMDU2-S0200-(2-4)-0409	T	Solid	6020A	280-17867
280-3087-4	MRREP1-S0101-0409	T	Solid	6020A	280-17867
280-3087-5	MRREP1-S0101-0409	T	Solid	6020A	280-17867
280-3087-6	MRFLDU3-S0200-(2-4)-0409	T	Solid	6020A	280-17867
280-3087-7	MRFLDU3-S0200-(2-4)-0409	T	Solid	6020A	280-17867
280-3087-8	MRFLDU4-S0200-(2-4)-0409	T	Solid	6020A	280-17867
280-3087-9	MRFLDU4-S0200-(2-4)-0409	T	Solid	6020A	280-17867
280-3087-10	MRREP2-S0102-0409	T	Solid	6020A	280-17867
280-3087-11	MRREP2-S0102-0409	T	Solid	6020A	280-17867
280-3087-12	MRDU5-S0200-(2-4)-0409	T	Solid	6020A	280-17867
280-3087-12MS	Matrix Spike	T	Solid	6020A	280-17867
280-3087-12MSD	Matrix Spike Duplicate	T	Solid	6020A	280-17867
280-3087-13	MRBMDU6-S0200-(2-4)-0409	T	Solid	6020A	280-17867
Analysis Batch:280-18884					
LCS 280-17869/2-A	Lab Control Sample	T	Solid	6010C	280-17869
MB 280-17869/1-A	Method Blank	T	Solid	6010C	280-17869

Report Basis

T = Total

Client: HydroGeoLogic Inc

Job Number: 280-3087-1

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
HPLC/IC					
Prep Batch: 280-13801					
LCSSRM 280-13801/9-B	LCS-Certified Reference Material	T	Solid	8330	
PB 280-13801/8-B	Preparation / Extraction Blank	T	Solid	8330	
280-3087-4	MRREP1-S0101-0409	T	Solid	8330	
280-3087-6	MRFLDU3-S0200-(2-4)-0409	T	Solid	8330	
280-3087-8	MRFLDU4-S0200-(2-4)-0409	T	Solid	8330	
280-3087-10	MRREP2-S0102-0409	T	Solid	8330	
280-3087-12	MRDU5-S0200-(2-4)-0409	T	Solid	8330	
280-3087-12MS	Matrix Spike	T	Solid	8330	
280-3087-12MSD	Matrix Spike Duplicate	T	Solid	8330	
Prep Batch: 280-14909					
LCS 280-14909/11-A	Lab Control Sample	T	Solid	8330B	
MB 280-14909/10-A	Method Blank	T	Solid	8330B	
LCSSRM 280-13801/9-B	LCS-Certified Reference Material	T	Solid	8330B	280-13801
PB 280-13801/8-B	Preparation / Extraction Blank	T	Solid	8330B	280-13801
280-3087-4	MRREP1-S0101-0409	T	Solid	8330B	280-13801
280-3087-6	MRFLDU3-S0200-(2-4)-0409	T	Solid	8330B	280-13801
280-3087-8	MRFLDU4-S0200-(2-4)-0409	T	Solid	8330B	280-13801
280-3087-10	MRREP2-S0102-0409	T	Solid	8330B	280-13801
280-3087-12	MRDU5-S0200-(2-4)-0409	T	Solid	8330B	280-13801
280-3087-12MS	Matrix Spike	T	Solid	8330B	280-13801
280-3087-12MSD	Matrix Spike Duplicate	T	Solid	8330B	280-13801
Analysis Batch:280-18009					
LCS 280-14909/11-A	Lab Control Sample	T	Solid	8330B	280-14909
LCSSRM 280-13801/9-B	LCS-Certified Reference Material	T	Solid	8330B	280-14909
MB 280-14909/10-A	Method Blank	T	Solid	8330B	280-14909
PB 280-13801/8-B	Preparation / Extraction Blank	T	Solid	8330B	280-14909
280-3087-4	MRREP1-S0101-0409	T	Solid	8330B	280-14909
280-3087-6	MRFLDU3-S0200-(2-4)-0409	T	Solid	8330B	280-14909
280-3087-8	MRFLDU4-S0200-(2-4)-0409	T	Solid	8330B	280-14909
280-3087-10	MRREP2-S0102-0409	T	Solid	8330B	280-14909
280-3087-12	MRDU5-S0200-(2-4)-0409	T	Solid	8330B	280-14909
280-3087-12MS	Matrix Spike	T	Solid	8330B	280-14909
280-3087-12MSD	Matrix Spike Duplicate	T	Solid	8330B	280-14909
Analysis Batch:280-18232					
LCS 280-14909/11-A	Lab Control Sample	T	Solid	8330B	280-14909
LCSSRM 280-13801/9-B	LCS-Certified Reference Material	T	Solid	8330B	280-14909
MB 280-14909/10-A	Method Blank	T	Solid	8330B	280-14909
PB 280-13801/8-B	Preparation / Extraction Blank	T	Solid	8330B	280-14909
280-3087-6	MRFLDU3-S0200-(2-4)-0409	T	Solid	8330B	280-14909
280-3087-8	MRFLDU4-S0200-(2-4)-0409	T	Solid	8330B	280-14909
280-3087-10	MRREP2-S0102-0409	T	Solid	8330B	280-14909
280-3087-12	MRDU5-S0200-(2-4)-0409	T	Solid	8330B	280-14909

Client: HydroGeoLogic Inc

Job Number: 280-3087-1

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch

Report Basis

T = Total

Client: HydroGeoLogic Inc

Job Number: 280-3087-1

Laboratory Chronicle

Lab ID: **280-3087-1** **Client ID:** **MRBMDU1-S0200-(2-4)-0409**

Sample Date/Time: 04/30/2010 11:35 Received Date/Time: 05/01/2010 10:30

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:3050B	280-3087-A-1-F		280-18117	280-17869	06/03/2010 08:30	1	TAL DEN	JW
A:6010C	280-3087-A-1-F		280-18117	280-17869	06/04/2010 00:01	1	TAL DEN	DW
P:3050B	280-3087-A-1-F		280-18373	280-17869	06/03/2010 08:30	1	TAL DEN	JW
A:6010C	280-3087-A-1-F		280-18373	280-17869	06/07/2010 12:44	1	TAL DEN	DW
P:3050B	280-3087-A-1-E		280-18454	280-17867	06/03/2010 08:30	1	TAL DEN	JW
A:6020A	280-3087-A-1-E		280-18454	280-17867	06/05/2010 18:55	1	TAL DEN	TEL
P:7471B	280-3087-A-1-D		280-15007	280-14758	05/11/2010 15:00	1	TAL DEN	KS
A:7471B	280-3087-A-1-D		280-15007	280-14758	05/11/2010 22:18	1	TAL DEN	CGG

Lab ID: **280-3087-2** **Client ID:** **MRBMDU1-S0300-(16-18)0409**

Sample Date/Time: 04/30/2010 13:20 Received Date/Time: 05/01/2010 10:30

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:3050B	280-3087-A-2-F		280-18117	280-17869	06/03/2010 08:30	1	TAL DEN	JW
A:6010C	280-3087-A-2-F		280-18117	280-17869	06/04/2010 00:03	1	TAL DEN	DW
P:3050B	280-3087-A-2-F		280-18373	280-17869	06/03/2010 08:30	1	TAL DEN	JW
A:6010C	280-3087-A-2-F		280-18373	280-17869	06/07/2010 12:46	1	TAL DEN	DW
P:3050B	280-3087-A-2-E		280-18454	280-17867	06/03/2010 08:30	1	TAL DEN	JW
A:6020A	280-3087-A-2-E		280-18454	280-17867	06/05/2010 18:58	1	TAL DEN	TEL
P:3050B	280-3087-A-2-E	DL	280-18454	280-17867	06/03/2010 08:30	10	TAL DEN	JW
A:6020A	280-3087-A-2-E	DL	280-18454	280-17867	06/05/2010 19:00	10	TAL DEN	TEL
P:7471B	280-3087-A-2-D		280-15007	280-14758	05/11/2010 15:00	1	TAL DEN	KS
A:7471B	280-3087-A-2-D		280-15007	280-14758	05/11/2010 22:20	1	TAL DEN	CGG

Lab ID: **280-3087-3** **Client ID:** **MRBMDU2-S0200-(2-4)-0409**

Sample Date/Time: 04/29/2010 15:12 Received Date/Time: 05/01/2010 10:30

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:3050B	280-3087-A-3-F		280-18117	280-17869	06/03/2010 08:30	1	TAL DEN	JW
A:6010C	280-3087-A-3-F		280-18117	280-17869	06/04/2010 00:06	1	TAL DEN	DW
P:3050B	280-3087-A-3-F		280-18373	280-17869	06/03/2010 08:30	1	TAL DEN	JW
A:6010C	280-3087-A-3-F		280-18373	280-17869	06/07/2010 12:48	1	TAL DEN	DW
P:3050B	280-3087-A-3-E		280-18454	280-17867	06/03/2010 08:30	1	TAL DEN	JW
A:6020A	280-3087-A-3-E		280-18454	280-17867	06/05/2010 19:03	1	TAL DEN	TEL
P:7471B	280-3087-A-3-D		280-15007	280-14758	05/11/2010 15:00	1	TAL DEN	KS
A:7471B	280-3087-A-3-D		280-15007	280-14758	05/11/2010 22:22	1	TAL DEN	CGG

Client: HydroGeoLogic Inc

Job Number: 280-3087-1

Laboratory Chronicle

Lab ID: **280-3087-4** **Client ID:** **MRREP1-S0101-0409**

Sample Date/Time: 04/30/2010 13:25 Received Date/Time: 05/01/2010 10:30

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:8330B	280-3087-A-4-F		280-18009	280-14909	05/11/2010 18:20	1	TAL DEN	ACF
A:8330B	280-3087-A-4-F		280-18009	280-14909	06/04/2010 04:35	1	TAL DEN	HKF
P:3050B	280-3087-A-4-H		280-18117	280-17869	06/03/2010 08:30	1	TAL DEN	JW
A:6010C	280-3087-A-4-H		280-18117	280-17869	06/04/2010 00:08	1	TAL DEN	DW
P:3050B	280-3087-A-4-H		280-18373	280-17869	06/03/2010 08:30	1	TAL DEN	JW
A:6010C	280-3087-A-4-H		280-18373	280-17869	06/07/2010 12:50	1	TAL DEN	DW
P:3050B	280-3087-A-4-G		280-18454	280-17867	06/03/2010 08:30	1	TAL DEN	JW
A:6020A	280-3087-A-4-G		280-18454	280-17867	06/05/2010 19:06	1	TAL DEN	TEL
P:7471B	280-3087-A-4-E		280-15007	280-14758	05/11/2010 15:00	1	TAL DEN	KS
A:7471B	280-3087-A-4-E		280-15007	280-14758	05/11/2010 22:25	1	TAL DEN	CGG

Lab ID: **280-3087-5** **Client ID:** **MRREP1-S0101-0409**

Sample Date/Time: 04/30/2010 13:25 Received Date/Time: 05/01/2010 10:30

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:3050B	280-3087-A-5-F		280-18117	280-17869	06/03/2010 08:30	1	TAL DEN	JW
A:6010C	280-3087-A-5-F		280-18117	280-17869	06/04/2010 00:10	1	TAL DEN	DW
P:3050B	280-3087-A-5-F		280-18373	280-17869	06/03/2010 08:30	1	TAL DEN	JW
A:6010C	280-3087-A-5-F		280-18373	280-17869	06/07/2010 12:53	1	TAL DEN	DW
P:3050B	280-3087-A-5-E		280-18454	280-17867	06/03/2010 08:30	1	TAL DEN	JW
A:6020A	280-3087-A-5-E		280-18454	280-17867	06/05/2010 19:08	1	TAL DEN	TEL
P:7471B	280-3087-A-5-D		280-15007	280-14758	05/11/2010 15:00	1	TAL DEN	KS
A:7471B	280-3087-A-5-D		280-15007	280-14758	05/11/2010 22:27	1	TAL DEN	CGG

Lab ID: **280-3087-6** **Client ID:** **MRFLDU3-S0200-(2-4)-0409**

Sample Date/Time: 04/30/2010 08:15 Received Date/Time: 05/01/2010 10:30

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:8330B	280-3087-A-6-F		280-18009	280-14909	05/11/2010 18:20	1	TAL DEN	ACF
A:8330B	280-3087-A-6-F		280-18009	280-14909	06/04/2010 04:58	1	TAL DEN	HKF
P:8330B	280-3087-A-6-F		280-18232	280-14909	05/11/2010 18:20	1	TAL DEN	ACF
A:8330B	280-3087-A-6-F		280-18232	280-14909	06/05/2010 02:55	1	TAL DEN	HKF
P:3050B	280-3087-A-6-H		280-18117	280-17869	06/03/2010 08:30	1	TAL DEN	JW
A:6010C	280-3087-A-6-H		280-18117	280-17869	06/04/2010 00:13	1	TAL DEN	DW
P:3050B	280-3087-A-6-H		280-18373	280-17869	06/03/2010 08:30	1	TAL DEN	JW
A:6010C	280-3087-A-6-H		280-18373	280-17869	06/07/2010 12:55	1	TAL DEN	DW
P:3050B	280-3087-A-6-G		280-18454	280-17867	06/03/2010 08:30	1	TAL DEN	JW
A:6020A	280-3087-A-6-G		280-18454	280-17867	06/05/2010 19:11	1	TAL DEN	TEL
P:7471B	280-3087-A-6-E		280-15007	280-14758	05/11/2010 15:00	1	TAL DEN	KS
A:7471B	280-3087-A-6-E		280-15007	280-14758	05/11/2010 22:29	1	TAL DEN	CGG

Client: HydroGeoLogic Inc

Job Number: 280-3087-1

Laboratory Chronicle

Lab ID: 280-3087-7 **Client ID:** MRFLDU3-S0200-(2-4)-0409

Sample Date/Time: 04/30/2010 08:15 Received Date/Time: 05/01/2010 10:30

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:3050B	280-3087-A-7-F		280-18117	280-17869	06/03/2010 08:30	1	TAL DEN	JW
A:6010C	280-3087-A-7-F		280-18117	280-17869	06/04/2010 00:15	1	TAL DEN	DW
P:3050B	280-3087-A-7-F		280-18373	280-17869	06/03/2010 08:30	1	TAL DEN	JW
A:6010C	280-3087-A-7-F		280-18373	280-17869	06/07/2010 12:57	1	TAL DEN	DW
P:3050B	280-3087-A-7-E		280-18454	280-17867	06/03/2010 08:30	1	TAL DEN	JW
A:6020A	280-3087-A-7-E		280-18454	280-17867	06/05/2010 19:14	1	TAL DEN	TEL
P:7471B	280-3087-A-7-D		280-15007	280-14758	05/11/2010 15:00	1	TAL DEN	KS
A:7471B	280-3087-A-7-D		280-15007	280-14758	05/11/2010 22:32	1	TAL DEN	CGG

Lab ID: 280-3087-8 **Client ID:** MRFLDU4-S0200-(2-4)-0409

Sample Date/Time: 04/29/2010 16:00 Received Date/Time: 05/01/2010 10:30

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:8330B	280-3087-A-8-F		280-18009	280-14909	05/11/2010 18:20	1	TAL DEN	ACF
A:8330B	280-3087-A-8-F		280-18009	280-14909	06/04/2010 05:22	1	TAL DEN	HKF
P:8330B	280-3087-A-8-F		280-18232	280-14909	05/11/2010 18:20	1	TAL DEN	ACF
A:8330B	280-3087-A-8-F		280-18232	280-14909	06/05/2010 03:27	1	TAL DEN	HKF
P:3050B	280-3087-A-8-H		280-18117	280-17869	06/03/2010 08:30	1	TAL DEN	JW
A:6010C	280-3087-A-8-H		280-18117	280-17869	06/04/2010 00:17	1	TAL DEN	DW
P:3050B	280-3087-A-8-H		280-18373	280-17869	06/03/2010 08:30	1	TAL DEN	JW
A:6010C	280-3087-A-8-H		280-18373	280-17869	06/07/2010 13:00	1	TAL DEN	DW
P:3050B	280-3087-A-8-G		280-18454	280-17867	06/03/2010 08:30	1	TAL DEN	JW
A:6020A	280-3087-A-8-G		280-18454	280-17867	06/05/2010 19:27	1	TAL DEN	TEL
P:7471B	280-3087-A-8-E		280-15007	280-14758	05/11/2010 15:00	1	TAL DEN	KS
A:7471B	280-3087-A-8-E		280-15007	280-14758	05/11/2010 22:34	1	TAL DEN	CGG

Lab ID: 280-3087-9 **Client ID:** MRFLDU4-S0200-(2-4)-0409

Sample Date/Time: 04/29/2010 16:00 Received Date/Time: 05/01/2010 10:30

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:3050B	280-3087-A-9-F		280-18117	280-17869	06/03/2010 08:30	1	TAL DEN	JW
A:6010C	280-3087-A-9-F		280-18117	280-17869	06/04/2010 00:29	1	TAL DEN	DW
P:3050B	280-3087-A-9-F		280-18373	280-17869	06/03/2010 08:30	1	TAL DEN	JW
A:6010C	280-3087-A-9-F		280-18373	280-17869	06/07/2010 13:11	1	TAL DEN	DW
P:3050B	280-3087-A-9-E		280-18454	280-17867	06/03/2010 08:30	1	TAL DEN	JW
A:6020A	280-3087-A-9-E		280-18454	280-17867	06/05/2010 19:30	1	TAL DEN	TEL
P:7471B	280-3087-A-9-D		280-15007	280-14758	05/11/2010 15:00	1	TAL DEN	KS
A:7471B	280-3087-A-9-D		280-15007	280-14758	05/11/2010 22:41	1	TAL DEN	CGG

Client: HydroGeoLogic Inc

Job Number: 280-3087-1

Laboratory Chronicle

Lab ID: **280-3087-10** **Client ID:** **MRREP2-S0102-0409**

Sample Date/Time: 04/30/2010 14:20 Received Date/Time: 05/01/2010 10:30

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:8330B	280-3087-A-10-F		280-18009	280-14909	05/11/2010 18:20	1	TAL DEN	ACF
A:8330B	280-3087-A-10-F		280-18009	280-14909	06/04/2010 05:45	1	TAL DEN	HKF
P:8330B	280-3087-A-10-F		280-18232	280-14909	05/11/2010 18:20	1	TAL DEN	ACF
A:8330B	280-3087-A-10-F		280-18232	280-14909	06/05/2010 03:59	1	TAL DEN	HKF
P:3050B	280-3087-A-10-H		280-18117	280-17869	06/03/2010 08:30	1	TAL DEN	JW
A:6010C	280-3087-A-10-H		280-18117	280-17869	06/04/2010 00:31	1	TAL DEN	DW
P:3050B	280-3087-A-10-H		280-18373	280-17869	06/03/2010 08:30	1	TAL DEN	JW
A:6010C	280-3087-A-10-H		280-18373	280-17869	06/07/2010 13:14	1	TAL DEN	DW
P:3050B	280-3087-A-10-G		280-18454	280-17867	06/03/2010 08:30	1	TAL DEN	JW
A:6020A	280-3087-A-10-G		280-18454	280-17867	06/05/2010 19:33	1	TAL DEN	TEL
P:7471B	280-3087-A-10-E		280-15007	280-14758	05/11/2010 15:00	1	TAL DEN	KS
A:7471B	280-3087-A-10-E		280-15007	280-14758	05/11/2010 22:43	1	TAL DEN	CGG

Lab ID: **280-3087-11** **Client ID:** **MRREP2-S0102-0409**

Sample Date/Time: 04/30/2010 14:20 Received Date/Time: 05/01/2010 10:30

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:3050B	280-3087-A-11-F		280-18117	280-17869	06/03/2010 08:30	1	TAL DEN	JW
A:6010C	280-3087-A-11-F		280-18117	280-17869	06/04/2010 00:34	1	TAL DEN	DW
P:3050B	280-3087-A-11-F		280-18373	280-17869	06/03/2010 08:30	1	TAL DEN	JW
A:6010C	280-3087-A-11-F		280-18373	280-17869	06/07/2010 13:16	1	TAL DEN	DW
P:3050B	280-3087-A-11-E		280-18454	280-17867	06/03/2010 08:30	1	TAL DEN	JW
A:6020A	280-3087-A-11-E		280-18454	280-17867	06/05/2010 19:35	1	TAL DEN	TEL
P:7471B	280-3087-A-11-D		280-15007	280-14758	05/11/2010 15:00	1	TAL DEN	KS
A:7471B	280-3087-A-11-D		280-15007	280-14758	05/11/2010 22:46	1	TAL DEN	CGG

Lab ID: **280-3087-12** **Client ID:** **MRDU5-S0200-(2-4)-0409**

Sample Date/Time: 04/29/2010 16:29 Received Date/Time: 05/01/2010 10:30

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:8330B	280-3087-A-12-P		280-18009	280-14909	05/11/2010 18:20	1	TAL DEN	ACF
A:8330B	280-3087-A-12-P		280-18009	280-14909	06/04/2010 06:09	1	TAL DEN	HKF
P:8330B	280-3087-A-12-P		280-18232	280-14909	05/11/2010 18:20	1	TAL DEN	ACF
A:8330B	280-3087-A-12-P		280-18232	280-14909	06/05/2010 04:31	1	TAL DEN	HKF
P:3050B	280-3087-A-12-X		280-18117	280-17869	06/03/2010 08:30	1	TAL DEN	JW
A:6010C	280-3087-A-12-X		280-18117	280-17869	06/04/2010 00:36	1	TAL DEN	DW
P:3050B	280-3087-A-12-X		280-18373	280-17869	06/03/2010 08:30	1	TAL DEN	JW
A:6010C	280-3087-A-12-X		280-18373	280-17869	06/07/2010 13:18	1	TAL DEN	DW
P:3050B	280-3087-A-12-U		280-18454	280-17867	06/03/2010 08:30	1	TAL DEN	JW
A:6020A	280-3087-A-12-U		280-18454	280-17867	06/05/2010 19:38	1	TAL DEN	TEL
P:7471B	280-3087-A-12-M		280-15007	280-14758	05/11/2010 15:00	1	TAL DEN	KS
A:7471B	280-3087-A-12-M		280-15007	280-14758	05/11/2010 22:48	1	TAL DEN	CGG

Client: HydroGeoLogic Inc

Job Number: 280-3087-1

Laboratory Chronicle

Lab ID: **280-3087-12** **Client ID:** **MRDU5-S0200-(2-4)-0409**

Sample Date/Time: 04/29/2010 16:29 Received Date/Time: 05/01/2010 10:30

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:8330B	280-3087-A-12-Q MS		280-18009	280-14909	05/11/2010 18:20	1	TAL DEN	ACF
A:8330B	280-3087-A-12-Q MS		280-18009	280-14909	06/04/2010 06:32	1	TAL DEN	HKF
P:3050B	280-3087-A-12-Y MS		280-18117	280-17869	06/03/2010 08:30	1	TAL DEN	JW
A:6010C	280-3087-A-12-Y MS		280-18117	280-17869	06/04/2010 00:40	1	TAL DEN	DW
P:3050B	280-3087-A-12-Y MS		280-18373	280-17869	06/03/2010 08:30	1	TAL DEN	JW
A:6010C	280-3087-A-12-Y MS		280-18373	280-17869	06/07/2010 13:23	1	TAL DEN	DW
P:3050B	280-3087-A-12-V MS		280-18454	280-17867	06/03/2010 08:30	1	TAL DEN	JW
A:6020A	280-3087-A-12-V MS		280-18454	280-17867	06/05/2010 19:46	1	TAL DEN	TEL
P:7471B	280-3087-A-12-S MS		280-15007	280-14758	05/11/2010 15:00	1	TAL DEN	KS
A:7471B	280-3087-A-12-S MS		280-15007	280-14758	05/11/2010 22:52	1	TAL DEN	CGG

Lab ID: **280-3087-12** **Client ID:** **MRDU5-S0200-(2-4)-0409**

Sample Date/Time: 04/29/2010 16:29 Received Date/Time: 05/01/2010 10:30

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:8330B	280-3087-A-12-R MSD		280-18009	280-14909	05/11/2010 18:20	1	TAL DEN	ACF
A:8330B	280-3087-A-12-R MSD		280-18009	280-14909	06/04/2010 06:56	1	TAL DEN	HKF
P:3050B	280-3087-A-12-Z MSD		280-18117	280-17869	06/03/2010 08:30	1	TAL DEN	JW
A:6010C	280-3087-A-12-Z MSD		280-18117	280-17869	06/04/2010 00:43	1	TAL DEN	DW
P:3050B	280-3087-A-12-Z MSD		280-18373	280-17869	06/03/2010 08:30	1	TAL DEN	JW
A:6010C	280-3087-A-12-Z MSD		280-18373	280-17869	06/07/2010 13:25	1	TAL DEN	DW
P:3050B	280-3087-A-12-W MSD		280-18454	280-17867	06/03/2010 08:30	1	TAL DEN	JW
A:6020A	280-3087-A-12-W MSD		280-18454	280-17867	06/05/2010 19:49	1	TAL DEN	TEL
P:7471B	280-3087-A-12-T MSD		280-15007	280-14758	05/11/2010 15:00	1	TAL DEN	KS
A:7471B	280-3087-A-12-T MSD		280-15007	280-14758	05/11/2010 22:55	1	TAL DEN	CGG

Client: HydroGeoLogic Inc

Job Number: 280-3087-1

Laboratory Chronicle

Lab ID: **280-3087-12 SD** **Client ID:** **MRDU5-S0200-(2-4)-0409**

Sample Date/Time: 04/29/2010 16:29 Received Date/Time: 05/01/2010 10:30

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:3050B	280-3087-A-12-X SD ^5		280-18117	280-17869	06/03/2010 08:30	5	TAL DEN	JW
A:6010C	280-3087-A-12-X SD ^5		280-18117	280-17869	06/04/2010 00:38	5	TAL DEN	DW
P:3050B	280-3087-A-12-X PDS		280-18117	280-17869	06/03/2010 08:30	1	TAL DEN	JW
A:6010C	280-3087-A-12-X PDS		280-18117	280-17869	06/04/2010 00:45	1	TAL DEN	DW
P:3050B	280-3087-A-12-X SD ^5		280-18373	280-17869	06/03/2010 08:30	5	TAL DEN	JW
A:6010C	280-3087-A-12-X SD ^5		280-18373	280-17869	06/07/2010 13:20	5	TAL DEN	DW
P:3050B	280-3087-A-12-X PDS		280-18373	280-17869	06/03/2010 08:30	1	TAL DEN	JW
A:6010C	280-3087-A-12-X PDS		280-18373	280-17869	06/07/2010 13:27	1	TAL DEN	DW
P:3050B	280-3087-A-12-U SD ^5		280-18454	280-17867	06/03/2010 08:30	5	TAL DEN	JW
A:6020A	280-3087-A-12-U SD ^5		280-18454	280-17867	06/05/2010 19:41	5	TAL DEN	TEL
P:3050B	280-3087-A-12-U PDS		280-18454	280-17867	06/03/2010 08:30	1	TAL DEN	JW
A:6020A	280-3087-A-12-U PDS		280-18454	280-17867	06/05/2010 19:43	1	TAL DEN	TEL
P:7471B	280-3087-A-12-M SD ^5		280-15007	280-14758	05/11/2010 15:00	5	TAL DEN	KS
A:7471B	280-3087-A-12-M SD ^5		280-15007	280-14758	05/11/2010 22:50	5	TAL DEN	CGG

Lab ID: **280-3087-13** **Client ID:** **MRBMDU6-S0200-(2-4)-0409**

Sample Date/Time: 04/30/2010 10:40 Received Date/Time: 05/01/2010 10:30

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:3050B	280-3087-A-13-H		280-18117	280-17869	06/03/2010 08:30	1	TAL DEN	JW
A:6010C	280-3087-A-13-H		280-18117	280-17869	06/04/2010 00:47	1	TAL DEN	DW
P:3050B	280-3087-A-13-H		280-18373	280-17869	06/03/2010 08:30	1	TAL DEN	JW
A:6010C	280-3087-A-13-H		280-18373	280-17869	06/07/2010 13:29	1	TAL DEN	DW
P:3050B	280-3087-A-13-G		280-18454	280-17867	06/03/2010 08:30	1	TAL DEN	JW
A:6020A	280-3087-A-13-G		280-18454	280-17867	06/05/2010 19:51	1	TAL DEN	TEL
P:7471B	280-3087-A-13-F		280-15007	280-14758	05/11/2010 15:00	1	TAL DEN	KS
A:7471B	280-3087-A-13-F		280-15007	280-14758	05/11/2010 22:57	1	TAL DEN	CGG

Client: HydroGeoLogic Inc

Job Number: 280-3087-1

Laboratory Chronicle

Lab ID: **MB** **Client ID:** **N/A**

Sample Date/Time: N/A Received Date/Time: N/A

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:8330B	MB 280-14909/10-A		280-18009	280-14909	05/11/2010 18:20	1	TAL DEN	ACF
A:8330B	MB 280-14909/10-A		280-18009	280-14909	06/04/2010 03:01	1	TAL DEN	HKF
P:8330B	MB 280-14909/10-A		280-18232	280-14909	05/11/2010 18:20	1	TAL DEN	ACF
A:8330B	MB 280-14909/10-A		280-18232	280-14909	06/05/2010 00:47	1	TAL DEN	HKF
P:3050B	MB 280-17869/1-A		280-18117	280-17869	06/03/2010 08:30	1	TAL DEN	JW
A:6010C	MB 280-17869/1-A		280-18117	280-17869	06/03/2010 23:57	1	TAL DEN	DW
P:3050B	MB 280-17869/1-A		280-18373	280-17869	06/03/2010 08:30	1	TAL DEN	JW
A:6010C	MB 280-17869/1-A		280-18373	280-17869	06/07/2010 12:39	1	TAL DEN	DW
P:3050B	MB 280-17869/1-A		280-18884	280-17869	06/03/2010 08:30	1	TAL DEN	JW
A:6010C	MB 280-17869/1-A		280-18884	280-17869	06/10/2010 11:27	1	TAL DEN	DW
P:3050B	MB 280-17867/1-A		280-18454	280-17867	06/03/2010 08:30	1	TAL DEN	JW
A:6020A	MB 280-17867/1-A		280-18454	280-17867	06/05/2010 18:49	1	TAL DEN	TEL
P:7471B	MB 280-14758/1-A		280-15007	280-14758	05/11/2010 15:00	1	TAL DEN	KS
A:7471B	MB 280-14758/1-A		280-15007	280-14758	05/11/2010 22:09	1	TAL DEN	CGG

Lab ID: **PB** **Client ID:** **N/A**

Sample Date/Time: N/A Received Date/Time: N/A

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:8330B	PB 280-13801/8-B		280-18009	280-14909	05/11/2010 18:20	1	TAL DEN	ACF
A:8330B	PB 280-13801/8-B		280-18009	280-14909	06/04/2010 03:48	1	TAL DEN	HKF
P:8330B	PB 280-13801/8-B		280-18232	280-14909	05/11/2010 18:20	1	TAL DEN	ACF
A:8330B	PB 280-13801/8-B		280-18232	280-14909	06/05/2010 01:51	1	TAL DEN	HKF

Lab ID: **LCS** **Client ID:** **N/A**

Sample Date/Time: N/A Received Date/Time: N/A

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:8330B	LCS 280-14909/11-A		280-18009	280-14909	05/11/2010 18:20	1	TAL DEN	ACF
A:8330B	LCS 280-14909/11-A		280-18009	280-14909	06/04/2010 03:24	1	TAL DEN	HKF
P:8330B	LCS 280-14909/11-A		280-18232	280-14909	05/11/2010 18:20	1	TAL DEN	ACF
A:8330B	LCS 280-14909/11-A		280-18232	280-14909	06/05/2010 01:19	1	TAL DEN	HKF
P:3050B	LCS 280-17869/2-A		280-18117	280-17869	06/03/2010 08:30	1	TAL DEN	JW
A:6010C	LCS 280-17869/2-A		280-18117	280-17869	06/03/2010 23:59	1	TAL DEN	DW
P:3050B	LCS 280-17869/2-A		280-18373	280-17869	06/03/2010 08:30	1	TAL DEN	JW
A:6010C	LCS 280-17869/2-A		280-18373	280-17869	06/07/2010 12:42	1	TAL DEN	DW
P:3050B	LCS 280-17869/2-A		280-18884	280-17869	06/03/2010 08:30	1	TAL DEN	JW
A:6010C	LCS 280-17869/2-A		280-18884	280-17869	06/10/2010 11:29	1	TAL DEN	DW
P:3050B	LCS 280-17867/2-A		280-18454	280-17867	06/03/2010 08:30	1	TAL DEN	JW
A:6020A	LCS 280-17867/2-A		280-18454	280-17867	06/05/2010 18:52	1	TAL DEN	TEL
P:7471B	LCS 280-14758/2-A		280-15007	280-14758	05/11/2010 15:00	1	TAL DEN	KS
A:7471B	LCS 280-14758/2-A		280-15007	280-14758	05/11/2010 22:16	1	TAL DEN	CGG

Client: HydroGeoLogic Inc

Job Number: 280-3087-1

Laboratory Chronicle

Lab ID: **LCSSRM** **Client ID:** **N/A**

Sample Date/Time: N/A Received Date/Time: N/A

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:8330B	LCSSRM 280-13801/9-B		280-18009	280-14909	05/11/2010 18:20	1	TAL DEN	ACF
A:8330B	LCSSRM 280-13801/9-B		280-18009	280-14909	06/04/2010 04:11	1	TAL DEN	HKF
P:8330B	LCSSRM 280-13801/9-B		280-18232	280-14909	05/11/2010 18:20	1	TAL DEN	ACF
A:8330B	LCSSRM 280-13801/9-B		280-18232	280-14909	06/05/2010 02:23	1	TAL DEN	HKF

Lab References:
TAL DEN = TestAmerica Denver

Method 8330B

Nitroaromatics and Nitramines (HPLC) by Method 8330B

FORM II
HPLC/IC SURROGATE RECOVERY

Lab Name: TestAmerica Denver Job No.: 280-3087-1

SDG No.:

Matrix: Solid Level: Low

GC Column (1): UltraCarb5u ID: 4.6 (mm) GC Column (2): Luna-phenyl 4.6 (mm)

Client Sample ID	Lab Sample ID	12DNB1 #	12DNB2 #
MRREP1-S0101-0409	280-3087-4	103	
MRFLDU3-S0200-(2-4)-0409	280-3087-6		103
MRFLDU3-S0200-(2-4)-0409	280-3087-6	102	
MRFLDU4-S0200-(2-4)-0409	280-3087-8		133 Q
MRFLDU4-S0200-(2-4)-0409	280-3087-8	106	
MRREP2-S0102-0409	280-3087-10		103
MRREP2-S0102-0409	280-3087-10	101	
MRDU5-S0200-(2-4)-0409	280-3087-12		115
MRDU5-S0200-(2-4)-0409	280-3087-12	99	
	MB 280-14909/10-A		101
	MB 280-14909/10-A	98	
	PB 280-13801/8-B		104
	PB 280-13801/8-B	99	
	LCS 280-14909/11-A		105
	LCS 280-14909/11-A	108 M	
	LCSSRM 280-13801/9-B		105
	LCSSRM 280-13801/9-B	101	
MRDU5-S0200-(2-4)-0409 MS	280-3087-12 MS	102 M	
MRDU5-S0200-(2-4)-0409 MSD	280-3087-12 MSD	108 M	

	QC LIMITS
12DNB = 1,2-Dinitrobenzene	83-122

Column to be used to flag recovery values

FORM II 8330B

FORM III
HPLC/IC LAB CONTROL SAMPLE RECOVERY

Lab Name: TestAmerica Denver Job No.: 280-3087-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: 045-4501.D

Lab ID: LCS 280-14909/11-A Client ID:

COMPOUND	SPIKE ADDED (mg/Kg)	LCS CONCENTRATION (mg/Kg)	LCS % REC	QC LIMITS REC	#
2-Amino-4,6-dinitrotoluene	0.997	1.14	115	80-125	M
4-Amino-2,6-dinitrotoluene	0.997	1.01	102	80-125	M
2,4-Dinitrotoluene	0.997	1.09	109	80-125	M
2,6-Dinitrotoluene	0.997	0.945	95	80-120	M
Nitroglycerin	9.97	11.2	113	68-131	
2-Nitrotoluene	0.997	1.06	107	80-125	
3-Nitrotoluene	0.997	1.10	111	75-120	M
Nitrobenzene	0.997	1.17 J	117	75-125	M
4-Nitrotoluene	0.997	1.10	111	75-125	M
1,3,5-Trinitrobenzene	0.997	1.03	103	75-125	M
1,3-Dinitrobenzene	0.997	1.08	108	80-125	M
HMX	0.997	1.01	101	75-125	M
Tetryl	0.997	1.01	101	10-150	M
PETN	9.97	9.97	100	69-132	
2,4,6-Trinitrotoluene	0.997	0.970	97	55-140	M

Column to be used to flag recovery and RPD values

FORM III 8330B

FORM III
HPLC/IC LAB CONTROL SAMPLE RECOVERY

Lab Name: TestAmerica Denver Job No.: 280-3087-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: 012-1201.D

Lab ID: LCS 280-14909/11-A Client ID:

COMPOUND	SPIKE ADDED (mg/Kg)	LCS CONCENTRATION (mg/Kg)	LCS % REC	QC LIMITS REC	#
RDX	0.997	1.08	108	70-135	

Column to be used to flag recovery and RPD values

FORM III 8330B

FORM III
HPLC/IC LCS-CERTIFIED REFERENCE MATERIAL RECOVERY

Lab Name: TestAmerica Denver Job No.: 280-3087-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: 047-4701.D

Lab ID: LCSSRM 280-13801/9-B Client ID:

COMPOUND	SPIKE ADDED (mg/Kg)	LCSSRM CONCENTRATION (mg/Kg)	LCSSR % REC	QC LIMITS REC	#
2-Amino-4,6-dinitrotoluene	0.650	0.700	108	56-108	
4-Amino-2,6-dinitrotoluene	0.946	0.883	93	46-98	
2,4-Dinitrotoluene	0.638	0.602	94	69-137	
2,6-Dinitrotoluene	1.32	1.46	111	60-121	
Nitroglycerin	1.00	1.02 J	102	60-115	
2-Nitrotoluene	1.46	1.35	92	67-117	
3-Nitrotoluene	1.02	1.20	118	69-124	
Nitrobenzene	1.40	1.18 J	85	58-119	M
4-Nitrotoluene	1.84	1.74	94	62-123	
1,3,5-Trinitrobenzene	0.701	0.698	100	58-116	
1,3-Dinitrobenzene	1.01	1.02	101	69-116	
HMX	0.620	0.630	102	59-131	M
RDX	0.587	0.579	99	62-123	
2,4,6-Trinitrotoluene	0.810	0.764	94	69-120	

Column to be used to flag recovery and RPD values

FORM III 8330B

FORM III
HPLC/IC LCS-CERTIFIED REFERENCE MATERIAL RECOVERY

Lab Name: TestAmerica Denver Job No.: 280-3087-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: 014-1401.D

Lab ID: LCSSRM 280-13801/9-B Client ID:

COMPOUND	SPIKE ADDED (mg/Kg)	LCSSRM CONCENTRATION (mg/Kg)	LCSSR % REC	QC LIMITS REC	#
PETN	1.00	0.814 J	81	60-115	M

Column to be used to flag recovery and RPD values

FORM III 8330B

FORM III
HPLC/IC MATRIX SPIKE RECOVERY

Lab Name: TestAmerica Denver Job No.: 280-3087-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: 053-5301.D

Lab ID: 280-3087-12 MS Client ID: MRDU5-S0200-(2-4)-0409 MS

COMPOUND	SPIKE ADDED (mg/Kg)	SAMPLE CONCENTRATION (mg/Kg)	MS CONCENTRATION (mg/Kg)	MS % REC	QC LIMITS REC	#
2-Amino-4,6-dinitrotoluene	0.945	0.039 U	1.11	117	80-125	M
4-Amino-2,6-dinitrotoluene	0.945	0.039 U	1.00	106	80-125	M
2,4-Dinitrotoluene	0.945	0.026 J	1.01	104	80-125	M
2,6-Dinitrotoluene	0.945	0.039 U	0.891	94	80-120	M
Nitroglycerin	9.45	0.39 U	10.5	111	68-130	
2-Nitrotoluene	0.945	0.078 U	1.02	108	80-125	M
3-Nitrotoluene	0.945	0.078 U	0.979	104	75-120	
Nitrobenzene	0.945	0.078 U	1.11 J	118	75-125	M
4-Nitrotoluene	0.945	0.097 U	0.985	104	75-125	
1,3,5-Trinitrobenzene	0.945	0.039 U	0.993	105	75-125	M
1,3-Dinitrobenzene	0.945	0.039 U	0.980	104	80-125	M
HMX	0.945	0.039 U	0.924	98	75-125	M
RDX	0.945	0.078 U	1.11	117	70-135	
Tetryl	0.945	0.078 U	0.872	92	10-150	M
PETN	9.45	0.39 U	9.41	100	69-132	
2,4,6-Trinitrotoluene	0.945	0.039 U	1.12	119	55-140	M

Column to be used to flag recovery and RPD values

FORM III 8330B

FORM III
HPLC/IC MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: TestAmerica Denver Job No.: 280-3087-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: 054-5401.D

Lab ID: 280-3087-12 MSD Client ID: MRDU5-S0200-(2-4)-0409 MSD

COMPOUND	SPIKE ADDED (mg/Kg)	MSD CONCENTRATION (mg/Kg)	MSD % REC	% RPD	QC LIMITS RPD	QC LIMITS REC	#
2-Amino-4,6-dinitrotoluene	0.997	1.25	126	12	30	80-125	M J
4-Amino-2,6-dinitrotoluene	0.997	1.16	117	15	30	80-125	M
2,4-Dinitrotoluene	0.997	1.13	110	11	30	80-125	M
2,6-Dinitrotoluene	0.997	1.01	101	12	30	80-120	M
Nitroglycerin	9.97	11.7	117	11	30	68-130	
2-Nitrotoluene	0.997	1.06	106	4	30	80-125	M
3-Nitrotoluene	0.997	1.11	111	12	30	75-120	M
Nitrobenzene	0.997	1.25 J	126	12	30	75-125	M J
4-Nitrotoluene	0.997	1.07	107	8	30	75-125	M
1,3,5-Trinitrobenzene	0.997	1.11	112	11	30	75-125	M
1,3-Dinitrobenzene	0.997	1.10	110	11	30	80-125	M
HMX	0.997	0.995	100	7	30	75-125	M
RDX	0.997	1.22	122	9	30	70-135	
Tetryl	0.997	1.01	102	15	30	10-150	M
PETN	9.97	10.4	105	10	30	69-132	
2,4,6-Trinitrotoluene	0.997	1.39	140	21	30	55-140	M

Column to be used to flag recovery and RPD values

FORM III 8330B

FORM IV
HPLC/IC METHOD BLANK SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-3087-1

SDG No.:

Lab Sample ID: MB 280-14909/10-A

Matrix: Solid Date Extracted: 05/11/2010 18:20

Lab File ID:(1) 044-4401.D Lab File ID:(2) 011-1101.D

Date Analyzed:(1) 06/04/2010 03:01 Date Analyzed:(2) 06/05/2010 00:47

Instrument ID:(1) HPLC_X3 Instrument ID:(2) HPLC_Q

GC Column:(1) UltraCarb5uO ID: 4.6(mm) GC Column:(2) Luna-phenylh ID: 4.6(mm)

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	DATE ANALYZED 1	DATE ANALYZED 2
	LCS 280-14909/11-A	06/04/2010 03:24	06/05/2010 01:19
	PB 280-13801/8-B	06/04/2010 03:48	06/05/2010 01:51
	LCSSRM 280-13801/9-B	06/04/2010 04:11	06/05/2010 02:23
MRREP1-S0101-0409	280-3087-4	06/04/2010 04:35	
MRFLDU3-S0200-(2-4)-0409	280-3087-6	06/04/2010 04:58	06/05/2010 02:55
MRFLDU4-S0200-(2-4)-0409	280-3087-8	06/04/2010 05:22	06/05/2010 03:27
MRREP2-S0102-0409	280-3087-10	06/04/2010 05:45	06/05/2010 03:59
MRDU5-S0200-(2-4)-0409	280-3087-12	06/04/2010 06:09	06/05/2010 04:31
MRDU5-S0200-(2-4)-0409 MS	280-3087-12 MS	06/04/2010 06:32	
MRDU5-S0200-(2-4)-0409 MSD	280-3087-12 MSD	06/04/2010 06:56	

FORM X
IDENTIFICATION SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-3087-1

SDG No.:

Client Sample ID: MRFLDU4-S0200-(2-4)-0409 Lab Sample ID: 280-3087-8

Instrument ID (1): HPLC_X3 Instrument ID (2): HPLC_Q

Date Analyzed (1): 06/04/2010 05:22 Date Analyzed (2): 06/05/2010 03:27

GC Column (1): UltraCarb5uOD ID: 4.6(mm) GC Column (2): Luna-phenylhe ID: 4.6(mm)

ANALYTE	COL	PEAK	RT	RT WINDOW		CONCENTRATION		RPD
				FROM	TO	PEAK	MEAN	
2,4-Dinitrotoluene	1		14.94	14.82	15.12	0.33		7.7
	2		18.16	18.08	18.38	0.36		

FORM X 8330B

FORM I
HPLC/IC ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver
Job No.: 280-3087-1
SDG No.:
Client Sample ID: MRREP1-S0101-0409
Lab Sample ID: 280-3087-4
Matrix: Solid
Lab File ID: 048-4801.D
Analysis Method: 8330B
Date Collected: 04/30/2010 13:25
Extraction Method: 8330B
Date Extracted: 05/11/2010 18:20
Sample wt/vol: 10.76(g)
Date Analyzed: 06/04/2010 04:35
Con. Extract Vol.: 40000(uL)
Dilution Factor: 1
Injection Volume: 100(uL)
GC Column: UltraCarb5uODS ID: 4.6(mm)
% Moisture:
GPC Cleanup:(Y/N) N
Analysis Batch No.: 18009
Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	DL
35572-78-2	2-Amino-4,6-dinitrotoluene	0.037	U	0.093	0.031
19406-51-0	4-Amino-2,6-dinitrotoluene	0.037	U	0.093	0.028
121-14-2	2,4-Dinitrotoluene	0.037	U	0.093	0.014
606-20-2	2,6-Dinitrotoluene	0.037	U	0.093	0.018
88-72-2	2-Nitrotoluene	0.074	U	0.19	0.044
99-08-1	3-Nitrotoluene	0.074	U	0.19	0.059
98-95-3	Nitrobenzene	0.074	U	1.9	0.079
99-99-0	4-Nitrotoluene	0.093	U	0.19	0.034
99-35-4	1,3,5-Trinitrobenzene	0.037	U	0.093	0.013
99-65-0	1,3-Dinitrobenzene	0.037	U	0.093	0.015
2691-41-0	HMX	0.037	U	0.093	0.021
121-82-4	RDX	0.074	U Q	0.19	0.040
479-45-8	Tetryl	0.074	U	0.19	0.041
118-96-7	2,4,6-Trinitrotoluene	0.037	U Q	0.093	0.029

CAS NO.	SURROGATE	%REC	LIMITS	Q
528-29-0	1,2-Dinitrobenzene	103	83-122	

FORM I
HPLC/IC ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver
Job No.: 280-3087-1
SDG No.:
Client Sample ID: MRREP1-S0101-0409
Lab Sample ID: 280-3087-4
Matrix: Solid
Lab File ID: 048-4801.D
Analysis Method: 8330B
Date Collected: 04/30/2010 13:25
Extraction Method: 8330B
Date Extracted: 05/11/2010 18:20
Sample wt/vol: 10.76(g)
Date Analyzed: 06/04/2010 04:35
Con. Extract Vol.: 40000(uL)
Dilution Factor: 1
Injection Volume: 100(uL)
GC Column: UltraCarb5uODS ID: 4.6(mm)
% Moisture:
GPC Cleanup:(Y/N) N
Analysis Batch No.: 18009
Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	DL
55-63-0	Nitroglycerin	0.37	U	1.9	0.20
78-11-5	PETN	0.37	U	1.9	0.46

FORM I
HPLC/IC ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver | Job No.: 280-3087-1

SDG No.:

Client Sample ID: MRFLDU3-S0200-(2-4)-0409 | Lab Sample ID: 280-3087-6

Matrix: Solid | Lab File ID: 049-4901.D

Analysis Method: 8330B | Date Collected: 04/30/2010 08:15

Extraction Method: 8330B | Date Extracted: 05/11/2010 18:20

Sample wt/vol: 10.70(g) | Date Analyzed: 06/04/2010 04:58

Con. Extract Vol.: 40000(uL) | Dilution Factor: 1

Injection Volume: 100(uL) | GC Column: UltraCarb5uODS ID: 4.6(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 18009 | Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	DL
35572-78-2	2-Amino-4,6-dinitrotoluene	0.037	U	0.093	0.031
19406-51-0	4-Amino-2,6-dinitrotoluene	0.037	U	0.093	0.028
121-14-2	2,4-Dinitrotoluene	0.037	U	0.093	0.014
606-20-2	2,6-Dinitrotoluene	0.037	U	0.093	0.018
88-72-2	2-Nitrotoluene	0.075	U	0.19	0.044
99-08-1	3-Nitrotoluene	0.075	U	0.19	0.060
98-95-3	Nitrobenzene	0.075	U	1.9	0.079
99-99-0	4-Nitrotoluene	0.093	U	0.19	0.034
99-35-4	1,3,5-Trinitrobenzene	0.037	U	0.093	0.013
99-65-0	1,3-Dinitrobenzene	0.037	U	0.093	0.016
2691-41-0	HMX	0.037	U	0.093	0.021
121-82-4	RDX	0.075	U Q	0.19	0.040
479-45-8	Tetryl	0.075	U	0.19	0.041
118-96-7	2,4,6-Trinitrotoluene	0.037	U Q M	0.093	0.029

CAS NO.	SURROGATE	%REC	LIMITS	Q
528-29-0	1,2-Dinitrobenzene	102	83-122	

FORM I
HPLC/IC ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver
Job No.: 280-3087-1
SDG No.:
Client Sample ID: MRFLDU3-S0200-(2-4)-0409
Lab Sample ID: 280-3087-6
Matrix: Solid
Lab File ID: 049-4901.D
Analysis Method: 8330B
Date Collected: 04/30/2010 08:15
Extraction Method: 8330B
Date Extracted: 05/11/2010 18:20
Sample wt/vol: 10.70(g)
Date Analyzed: 06/04/2010 04:58
Con. Extract Vol.: 40000(uL)
Dilution Factor: 1
Injection Volume: 100(uL)
GC Column: UltraCarb5uODS ID: 4.6(mm)
% Moisture:
GPC Cleanup:(Y/N) N
Analysis Batch No.: 18009
Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	DL
55-63-0	Nitroglycerin	0.37	U	1.9	0.20
78-11-5	PETN	0.37	U	1.9	0.46

FORM I
HPLC/IC ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver | Job No.: 280-3087-1

SDG No.:

Client Sample ID: MRFLDU4-S0200-(2-4)-0409 | Lab Sample ID: 280-3087-8

Matrix: Solid | Lab File ID: 050-5001.D

Analysis Method: 8330B | Date Collected: 04/29/2010 16:00

Extraction Method: 8330B | Date Extracted: 05/11/2010 18:20

Sample wt/vol: 10.36(g) | Date Analyzed: 06/04/2010 05:22

Con. Extract Vol.: 40000(uL) | Dilution Factor: 1

Injection Volume: 100(uL) | GC Column: UltraCarb5uODS ID: 4.6(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 18009 | Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	DL
35572-78-2	2-Amino-4,6-dinitrotoluene	0.039	U	0.097	0.032
19406-51-0	4-Amino-2,6-dinitrotoluene	0.039	U	0.097	0.029
121-14-2	2,4-Dinitrotoluene	0.33		0.097	0.014
606-20-2	2,6-Dinitrotoluene	0.039	U	0.097	0.018
88-72-2	2-Nitrotoluene	0.077	U	0.19	0.046
98-95-3	Nitrobenzene	0.077	U	1.9	0.082
99-99-0	4-Nitrotoluene	0.097	U	0.19	0.035
99-35-4	1,3,5-Trinitrobenzene	0.039	U	0.097	0.013
99-65-0	1,3-Dinitrobenzene	0.039	U	0.097	0.016
2691-41-0	HMX	0.039	U	0.097	0.022
121-82-4	RDX	0.077	U Q	0.19	0.042
479-45-8	Tetryl	0.077	U	0.19	0.042

CAS NO.	SURROGATE	%REC	LIMITS	Q
528-29-0	1,2-Dinitrobenzene	106	83-122	

FORM I
HPLC/IC ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver
Job No.: 280-3087-1
SDG No.:
Client Sample ID: MRFLDU4-S0200-(2-4)-0409
Lab Sample ID: 280-3087-8
Matrix: Solid
Lab File ID: 050-5001.D
Analysis Method: 8330B
Date Collected: 04/29/2010 16:00
Extraction Method: 8330B
Date Extracted: 05/11/2010 18:20
Sample wt/vol: 10.36(g)
Date Analyzed: 06/04/2010 05:22
Con. Extract Vol.: 40000(uL)
Dilution Factor: 1
Injection Volume: 100(uL)
GC Column: UltraCarb5uODS ID: 4.6(mm)
% Moisture:
GPC Cleanup:(Y/N) N
Analysis Batch No.: 18009
Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	DL
55-63-0	Nitroglycerin	0.39	U	1.9	0.21
78-11-5	PETN	0.39	U	1.9	0.48

FORM I
HPLC/IC ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver
Job No.: 280-3087-1
SDG No.:
Client Sample ID: MRFLDU4-S0200-(2-4)-0409
Lab Sample ID: 280-3087-8
Matrix: Solid
Lab File ID: 016-1601.D
Analysis Method: 8330B
Date Collected: 04/29/2010 16:00
Extraction Method: 8330B
Date Extracted: 05/11/2010 18:20
Sample wt/vol: 10.36(g)
Date Analyzed: 06/05/2010 03:27
Con. Extract Vol.: 40000(uL)
Dilution Factor: 1
Injection Volume: 100(uL)
GC Column: Luna-phenylhex ID: 4.6(mm)
% Moisture:
GPC Cleanup:(Y/N) N
Analysis Batch No.: 18232
Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	DL
99-08-1	3-Nitrotoluene	0.077	U Q	0.19	0.062
118-96-7	2,4,6-Trinitrotoluene	0.039	U Q	0.097	0.030

FORM I
HPLC/IC ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver | Job No.: 280-3087-1

SDG No.:

Client Sample ID: MRREP2-S0102-0409 | Lab Sample ID: 280-3087-10

Matrix: Solid | Lab File ID: 051-5101.D

Analysis Method: 8330B | Date Collected: 04/30/2010 14:20

Extraction Method: 8330B | Date Extracted: 05/11/2010 18:20

Sample wt/vol: 10.39(g) | Date Analyzed: 06/04/2010 05:45

Con. Extract Vol.: 40000(uL) | Dilution Factor: 1

Injection Volume: 100(uL) | GC Column: UltraCarb5uODS ID: 4.6(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 18009 | Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	DL
35572-78-2	2-Amino-4,6-dinitrotoluene	0.038	U	0.096	0.032
19406-51-0	4-Amino-2,6-dinitrotoluene	0.038	U	0.096	0.029
121-14-2	2,4-Dinitrotoluene	0.038	U	0.096	0.014
606-20-2	2,6-Dinitrotoluene	0.038	U	0.096	0.018
88-72-2	2-Nitrotoluene	0.077	U	0.19	0.045
99-08-1	3-Nitrotoluene	0.077	U	0.19	0.062
98-95-3	Nitrobenzene	0.077	U	1.9	0.082
99-99-0	4-Nitrotoluene	0.096	U	0.19	0.035
99-35-4	1,3,5-Trinitrobenzene	0.038	U	0.096	0.013
99-65-0	1,3-Dinitrobenzene	0.038	U	0.096	0.016
2691-41-0	HMX	0.038	U	0.096	0.022
121-82-4	RDX	0.077	U Q	0.19	0.041
479-45-8	Tetryl	0.077	U	0.19	0.042
118-96-7	2,4,6-Trinitrotoluene	0.038	U Q	0.096	0.030

CAS NO.	SURROGATE	%REC	LIMITS	Q
528-29-0	1,2-Dinitrobenzene	101	83-122	

FORM I
HPLC/IC ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver
Job No.: 280-3087-1
SDG No.:
Client Sample ID: MRREP2-S0102-0409
Lab Sample ID: 280-3087-10
Matrix: Solid
Lab File ID: 051-5101.D
Analysis Method: 8330B
Date Collected: 04/30/2010 14:20
Extraction Method: 8330B
Date Extracted: 05/11/2010 18:20
Sample wt/vol: 10.39(g)
Date Analyzed: 06/04/2010 05:45
Con. Extract Vol.: 40000(uL)
Dilution Factor: 1
Injection Volume: 100(uL)
GC Column: UltraCarb5uODS ID: 4.6(mm)
% Moisture:
GPC Cleanup:(Y/N) N
Analysis Batch No.: 18009
Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	DL
55-63-0	Nitroglycerin	0.38	U	1.9	0.21
78-11-5	PETN	0.38	U	1.9	0.47

FORM I
HPLC/IC ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver | Job No.: 280-3087-1

SDG No.:

Client Sample ID: MRDU5-S0200-(2-4)-0409 | Lab Sample ID: 280-3087-12

Matrix: Solid | Lab File ID: 052-5201.D

Analysis Method: 8330B | Date Collected: 04/29/2010 16:29

Extraction Method: 8330B | Date Extracted: 05/11/2010 18:20

Sample wt/vol: 10.29(g) | Date Analyzed: 06/04/2010 06:09

Con. Extract Vol.: 40000(uL) | Dilution Factor: 1

Injection Volume: 100(uL) | GC Column: UltraCarb5uODS ID: 4.6(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 18009 | Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	DL
35572-78-2	2-Amino-4,6-dinitrotoluene	0.039	U J	0.097	0.032
19406-51-0	4-Amino-2,6-dinitrotoluene	0.039	U	0.097	0.029
121-14-2	2,4-Dinitrotoluene	0.026	J	0.097	0.014
606-20-2	2,6-Dinitrotoluene	0.039	U	0.097	0.019
88-72-2	2-Nitrotoluene	0.078	U	0.19	0.046
99-08-1	3-Nitrotoluene	0.078	U	0.19	0.062
98-95-3	Nitrobenzene	0.078	U J	1.9	0.083
99-99-0	4-Nitrotoluene	0.097	U	0.19	0.035
99-35-4	1,3,5-Trinitrobenzene	0.039	U	0.097	0.013
99-65-0	1,3-Dinitrobenzene	0.039	U	0.097	0.016
2691-41-0	HMX	0.039	U	0.097	0.022
121-82-4	RDX	0.078	U Q	0.19	0.042
479-45-8	Tetryl	0.078	U	0.19	0.043
118-96-7	2,4,6-Trinitrotoluene	0.039	U Q	0.097	0.030

CAS NO.	SURROGATE	%REC	LIMITS	Q
528-29-0	1,2-Dinitrobenzene	99	83-122	

FORM I
HPLC/IC ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver
Job No.: 280-3087-1
SDG No.:
Client Sample ID: MRDU5-S0200-(2-4)-0409
Lab Sample ID: 280-3087-12
Matrix: Solid
Lab File ID: 052-5201.D
Analysis Method: 8330B
Date Collected: 04/29/2010 16:29
Extraction Method: 8330B
Date Extracted: 05/11/2010 18:20
Sample wt/vol: 10.29(g)
Date Analyzed: 06/04/2010 06:09
Con. Extract Vol.: 40000(uL)
Dilution Factor: 1
Injection Volume: 100(uL)
GC Column: UltraCarb5uODS ID: 4.6(mm)
% Moisture:
GPC Cleanup:(Y/N) N
Analysis Batch No.: 18009
Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	DL
55-63-0	Nitroglycerin	0.39	U M	1.9	0.21
78-11-5	PETN	0.39	U	1.9	0.48

FORM VI
HPLC/IC INITIAL CALIBRATION DATA
EXTERNAL STANDARD RETENTION TIME SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-3087-1 Analy Batch No.: 8112

SDG No.:

Instrument ID: HPLC_Q GC Column: Luna-phenyl ID: 4.6(mm) Heated Purge: (Y/N) N

Calibration Start Date: 03/17/2010 14:50 Calibration End Date: 03/17/2010 18:34 Calibration ID: 1013

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 280-8112/8	009-0901.D
Level 2	IC 280-8112/7	008-0801.D
Level 3	IC 280-8112/6	007-0701.D
Level 4	IC 280-8112/5	006-0601.D
Level 5	IC 280-8112/4	005-0501.D
Level 6	IC 280-8112/3	004-0401.D
Level 7	IC 280-8112/2	003-0301.D
Level 8	IC 280-8112/1	002-0201.D

ANALYTE	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 6	LVL 7	LVL 8			RT WINDOW	AVG RT
2,6-diamino-4-nitrotoluene	3.923	3.925	3.920	3.919	3.913	3.904	3.889	3.878			3.769 - 4.069	3.909
2,4-diamino-6-nitrotoluene	4.336	4.338	4.327	4.333	4.320	4.317	4.303	4.331			4.183 - 4.483	4.326
HMX	6.050	6.058	6.040	6.046	6.040	6.037	6.023	6.024			5.896 - 6.196	6.040
MNX	6.690	6.698	6.680	6.686	6.673	6.671	6.656	6.651			6.536 - 6.836	6.676
RDX	7.876	7.885	7.860	7.866	7.853	7.851	7.836	7.824			7.716 - 8.016	7.856
Nitrobenzene	10.503	10.511	10.494	10.493	10.480	10.471	10.449	10.438			10.343 - 10.643	10.480
3,5-Dinitroaniline	13.023	13.031	13.007	13.006	12.987	12.984	12.963	12.944			12.856 - 13.156	12.993
1,3-Dinitrobenzene	13.583	13.591	13.574	13.566	13.553	13.551	13.529	13.511			13.416 - 13.716	13.557
2-Nitrotoluene	14.450	14.458	14.440	14.433	14.420	14.411	14.396	14.371			14.283 - 14.583	14.422
4-Nitrotoluene	14.743	14.758	14.734	14.726	14.713	14.711	14.689	14.671			14.576 - 14.876	14.718
4-Amino-2,6-dinitrotoluene	15.030	15.045	15.020	15.013	15.000	14.997	14.976	14.958			14.863 - 15.163	15.005
3-Nitrotoluene	15.590	15.605	15.580	15.579	15.567	15.557	15.543	15.518			15.429 - 15.729	15.567
2-Amino-4,6-dinitrotoluene	15.916	15.931	15.907	15.899	15.893	15.884	15.863	15.838			15.749 - 16.049	15.892
1,3,5-Trinitrobenzene	16.610	16.611	16.594	16.586	16.580	16.571	16.556	16.531			16.436 - 16.736	16.580
2,6-Dinitrotoluene	17.476	17.491	17.467	17.466	17.460	17.451	17.429	17.398			17.316 - 17.616	17.455
2,4-Dinitrotoluene	17.990	17.998	17.974	17.973	17.960	17.951	17.936	17.904			17.823 - 18.123	17.961
Tetryl	21.183	21.191	21.160	21.159	21.160	21.144	21.129	21.091			21.009 - 21.309	21.152
2,4,6-Trinitrotoluene	22.183	22.198	22.174	22.166	22.167	22.151	22.129	22.098			22.016 - 22.316	22.158
1,2-Dinitrobenzene	11.263	11.285	11.260	11.259	11.247	11.244	11.223	11.211			11.109 - 11.409	11.249

FORM VI
HPLC/IC INITIAL CALIBRATION DATA
EXTERNAL STANDARD CURVE EVALUTION

Lab Name: TestAmerica Denver Job No.: 280-3087-1 Analy Batch No.: 8112

SDG No.:

Instrument ID: HPLC_Q GC Column: Luna-phenyl ID: 4.6(mm) Heated Purge: (Y/N) N

Calibration Start Date: 03/17/2010 14:50 Calibration End Date: 03/17/2010 18:34 Calibration ID: 1013

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 280-8112/8	009-0901.D
Level 2	IC 280-8112/7	008-0801.D
Level 3	IC 280-8112/6	007-0701.D
Level 4	IC 280-8112/5	006-0601.D
Level 5	IC 280-8112/4	005-0501.D
Level 6	IC 280-8112/3	004-0401.D
Level 7	IC 280-8112/2	003-0301.D
Level 8	IC 280-8112/1	002-0201.D

ANALYTE	RRF				CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 5	LVL 2 LVL 6	LVL 3 LVL 7	LVL 4 LVL 8		B	M1	M2								
2,6-diamino-4-nitrotoluene	323600 364333	369080 359407	366790 361913	363972 358146	Ave		358405				4.1					
2,4-diamino-6-nitrotoluene	239800 241010	260200 238910	245220 244545	235968 243898	Ave		243694				3.0					
HMX	154700 153103	152300 151991	151020 151357	151724 153884	Ave		152510				0.8					
MNX	225800 219435	213700 215931	216020 217739	217460 221623	Ave		218464				1.7					
RDX	196600 189218	189480 188260	188610 186818	189448 189648	Ave		189760				1.5					
Nitrobenzene	359400 366198	363080 368980	365560 369452	363732 374212	Ave		366327				1.2					
3,5-Dinitroaniline	441000 450585	458120 447029	451710 444755	423872 447765	Ave		445604				2.3					
1,3-Dinitrobenzene	566100 590375	581360 583409	583850 581824	585020 580744	Ave		581585				1.2					
2-Nitrotoluene	250900 229493	228000 228979	225140 229579	225128 229272	Ave		230811				3.6					
4-Nitrotoluene	225400 202583	205120 204937	203110 203705	203272 206002	Ave		206766				3.7					
4-Amino-2,6-dinitrotoluene	270900 264978	261600 262513	265760 264755	263516 260624	Ave		264331				1.2					
3-Nitrotoluene	231900 251390	247680 252060	250440 252296	248612 251639	Ave		248252				2.7					
2-Amino-4,6-dinitrotoluene	368600 352165	358900 351270	356850 352405	352164 349406	Ave		355220				1.8					
1,3,5-Trinitrobenzene	415900 418585	409440 414869	420990 415069	414704 417827	Ave		415923				0.8					

Note: The m1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
HPLC/IC INITIAL CALIBRATION DATA
EXTERNAL STANDARD CURVE EVALUTION

Lab Name: TestAmerica Denver Job No.: 280-3087-1 Analy Batch No.: 8112

SDG No.:

Instrument ID: HPLC_Q GC Column: Luna-phenyl ID: 4.6(mm) Heated Purge: (Y/N) N

Calibration Start Date: 03/17/2010 14:50 Calibration End Date: 03/17/2010 18:34 Calibration ID: 1013

ANALYTE	RRF				CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 5	LVL 2 LVL 6	LVL 3 LVL 7	LVL 4 LVL 8		B	M1	M2								
2,6-Dinitrotoluene	264500 261570	264660 259690	261210 259894	263188 264947	Ave		262457				0.8					
2,4-Dinitrotoluene	487400 504860	502120 501037	508200 501640	506204 512489	Ave		502994				1.5					
Tetryl	309400 313570	311220 312800	307070 309805	310408 316844	Ave		311390				1.0					
2,4,6-Trinitrotoluene	387200 383300	374760 385406	385260 378162	384036 388995	Ave		383390				1.2					
1,2-Dinitrobenzene	231000 250313	251260 250567	248070 250121	247400 253886	Ave		247827				2.9					

Note: The m1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
HPLC/IC INITIAL CALIBRATION DATA
EXTERNAL STANDARD RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Denver Job No.: 280-3087-1 Analy Batch No.: 8112

SDG No.:

Instrument ID: HPLC_Q GC Column: Luna-phenyl ID: 4.6(mm) Heated Purge: (Y/N) N

Calibration Start Date: 03/17/2010 14:50 Calibration End Date: 03/17/2010 18:34 Calibration ID: 1013

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 280-8112/8	009-0901.D
Level 2	IC 280-8112/7	008-0801.D
Level 3	IC 280-8112/6	007-0701.D
Level 4	IC 280-8112/5	006-0601.D
Level 5	IC 280-8112/4	005-0501.D
Level 6	IC 280-8112/3	004-0401.D
Level 7	IC 280-8112/2	003-0301.D
Level 8	IC 280-8112/1	002-0201.D

ANALYTE	CURVE TYPE	RESPONSE					CONCENTRATION (UG/ML)				
		LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5
2,6-diamino-4-nitrotoluene	Ave	3236 251585	18454 361913	36679 895365	90993	145733	0.0100 0.700	0.0500 1.00	0.100 2.50	0.250	0.400
2,4-diamino-6-nitrotoluene	Ave	2398 167237	13010 244545	24522 609746	58992	96404	0.0100 0.700	0.0500 1.00	0.100 2.50	0.250	0.400
HMX	Ave	1547 106394	7615 151357	15102 384710	37931	61241	0.0100 0.700	0.0500 1.00	0.100 2.50	0.250	0.400
MNX	Ave	2258 151152	10685 217739	21602 554057	54365	87774	0.0100 0.700	0.0500 1.00	0.100 2.50	0.250	0.400
RDX	Ave	1966 131782	9474 186818	18861 474120	47362	75687	0.0100 0.700	0.0500 1.00	0.100 2.50	0.250	0.400
Nitrobenzene	Ave	3594 258286	18154 369452	36556 935529	90933	146479	0.0100 0.700	0.0500 1.00	0.100 2.50	0.250	0.400
3,5-Dinitroaniline	Ave	4410 312920	22906 444755	45171 1119412	105968	180234	0.0100 0.700	0.0500 1.00	0.100 2.50	0.250	0.400
1,3-Dinitrobenzene	Ave	5661 408386	29068 581824	58385 1451861	146255	236150	0.0100 0.700	0.0500 1.00	0.100 2.50	0.250	0.400
2-Nitrotoluene	Ave	2509 160285	11400 229579	22514 573180	56282	91797	0.0100 0.700	0.0500 1.00	0.100 2.50	0.250	0.400
4-Nitrotoluene	Ave	2254 143456	10256 203705	20311 515004	50818	81033	0.0100 0.700	0.0500 1.00	0.100 2.50	0.250	0.400
4-Amino-2,6-dinitrotoluene	Ave	2709 183759	13080 264755	26576 651560	65879	105991	0.0100 0.700	0.0500 1.00	0.100 2.50	0.250	0.400
3-Nitrotoluene	Ave	2319 176442	12384 252296	25044 629097	62153	100556	0.0100 0.700	0.0500 1.00	0.100 2.50	0.250	0.400
2-Amino-4,6-dinitrotoluene	Ave	3686 245889	17945 352405	35685 873514	88041	140866	0.0100 0.700	0.0500 1.00	0.100 2.50	0.250	0.400
1,3,5-Trinitrobenzene	Ave	4159 290408	20472 415069	42099 1044567	103676	167434	0.0100 0.700	0.0500 1.00	0.100 2.50	0.250	0.400
2,6-Dinitrotoluene	Ave	2645 181783	13233 259894	26121 662367	65797	104628	0.0100 0.700	0.0500 1.00	0.100 2.50	0.250	0.400

FORM VI
HPLC/IC INITIAL CALIBRATION DATA
EXTERNAL STANDARD RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Denver Job No.: 280-3087-1 Analy Batch No.: 8112

SDG No.:

Instrument ID: HPLC_Q GC Column: Luna-phenyl ID: 4.6(mm) Heated Purge: (Y/N) N

Calibration Start Date: 03/17/2010 14:50 Calibration End Date: 03/17/2010 18:34 Calibration ID: 1013

ANALYTE	CURVE TYPE	RESPONSE					CONCENTRATION (UG/ML)				
		LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5
2,4-Dinitrotoluene	Ave	4874 350726	25106 501640	50820 1281223	126551	201944	0.0100 0.700	0.0500 1.00	0.100 2.50	0.250	0.400
Tetryl	Ave	3094 218960	15561 309805	30707 792109	77602	125428	0.0100 0.700	0.0500 1.00	0.100 2.50	0.250	0.400
2,4,6-Trinitrotoluene	Ave	3872 269784	18738 378162	38526 972487	96009	153320	0.0100 0.700	0.0500 1.00	0.100 2.50	0.250	0.400
1,2-Dinitrobenzene	Ave	2310 175397	12563 250121	24807 634715	61850	100125	0.0100 0.700	0.0500 1.00	0.100 2.50	0.250	0.400

Curve Type Legend:
Ave = Average

FORM VI
HPLC/IC INITIAL CALIBRATION DATA
EXTERNAL STANDARD RETENTION TIME SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-3087-1 Analy Batch No.: 8112

SDG No.:

Instrument ID: HPLC_Q GC Column: Luna-phenyl ID: 4.6(mm) Heated Purge: (Y/N) N

Calibration Start Date: 03/17/2010 14:50 Calibration End Date: 03/17/2010 18:34 Calibration ID: 1014

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 280-8112/8	009-0901.D
Level 2	IC 280-8112/7	008-0801.D
Level 3	IC 280-8112/6	007-0701.D
Level 4	IC 280-8112/5	006-0601.D
Level 5	IC 280-8112/4	005-0501.D
Level 6	IC 280-8112/3	004-0401.D
Level 7	IC 280-8112/2	003-0301.D
Level 8	IC 280-8112/1	002-0201.D

ANALYTE	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 6	LVL 7	LVL 8			RT WINDOW	AVG RT
Nitroglycerin	13.596	13.611	13.587	13.586	13.567	13.564	13.549	13.524			13.436 - 13.736	13.573
PETN	22.903	22.911	22.880	22.879	22.880	22.864	22.843	22.811			22.729 - 23.029	22.872

FORM VI
HPLC/IC INITIAL CALIBRATION DATA
EXTERNAL STANDARD CURVE EVALUTION

Lab Name: TestAmerica Denver Job No.: 280-3087-1 Analy Batch No.: 8112

SDG No.:

Instrument ID: HPLC_Q GC Column: Luna-phenyl ID: 4.6(mm) Heated Purge: (Y/N) N

Calibration Start Date: 03/17/2010 14:50 Calibration End Date: 03/17/2010 18:34 Calibration ID: 1014

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 280-8112/8	009-0901.D
Level 2	IC 280-8112/7	008-0801.D
Level 3	IC 280-8112/6	007-0701.D
Level 4	IC 280-8112/5	006-0601.D
Level 5	IC 280-8112/4	005-0501.D
Level 6	IC 280-8112/3	004-0401.D
Level 7	IC 280-8112/2	003-0301.D
Level 8	IC 280-8112/1	002-0201.D

ANALYTE	RRF				CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 5	LVL 2 LVL 6	LVL 3 LVL 7	LVL 4 LVL 8		B	M1	M2								
Nitroglycerin	197210 176300	174446 173946	173988 172939	176876 174020	Lin2	0	173486							0.9998		
PETN	135050 140125	139790 139051	139792 138515	139943 139880	Ave		139018				1.2					

Note: The m1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
HPLC/IC INITIAL CALIBRATION DATA
EXTERNAL STANDARD RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Denver Job No.: 280-3087-1 Analy Batch No.: 8112

SDG No.:

Instrument ID: HPLC_Q GC Column: Luna-phenyl ID: 4.6(mm) Heated Purge: (Y/N) N

Calibration Start Date: 03/17/2010 14:50 Calibration End Date: 03/17/2010 18:34 Calibration ID: 1014

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 280-8112/8	009-0901.D
Level 2	IC 280-8112/7	008-0801.D
Level 3	IC 280-8112/6	007-0701.D
Level 4	IC 280-8112/5	006-0601.D
Level 5	IC 280-8112/4	005-0501.D
Level 6	IC 280-8112/3	004-0401.D
Level 7	IC 280-8112/2	003-0301.D
Level 8	IC 280-8112/1	002-0201.D

ANALYTE	CURVE TYPE	RESPONSE					CONCENTRATION (UG/ML)				
		LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5
Nitroglycerin	Lin2	19721 1217620	87223 1729388	173988 4350504	442190	705199	0.100 7.00	0.500 10.0	1.00 25.0	2.50	4.00
PETN	Ave	13505 973360	69895 1385149	139792 3496994	349857	560501	0.100 7.00	0.500 10.0	1.00 25.0	2.50	4.00

Curve Type Legend:

Ave = Average
Lin2 = Linear 1/conc^2

FORM VI
HPLC/IC INITIAL CALIBRATION DATA
EXTERNAL STANDARD RETENTION TIME SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-3087-1 Analy Batch No.: 17891

SDG No.:

Instrument ID: HPLC_X3 GC Column: UltraCarb5u ID: 4.6(mm) Heated Purge: (Y/N) N

Calibration Start Date: 05/26/2010 21:02 Calibration End Date: 05/26/2010 21:02 Calibration ID: 1747

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 280-17891/8	009-0901.D
Level 2	IC 280-17891/7	008-0801.D
Level 3	IC 280-17891/6	007-0701.D
Level 4	IC 280-17891/5	006-0601.D
Level 5	IC 280-17891/4	005-0501.D
Level 6	IC 280-17891/3	004-0401.D
Level 7	IC 280-17891/2	003-0301.D
Level 8	IC 280-17891/1	002-0201.D

ANALYTE	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 6	LVL 7	LVL 8			RT WINDOW	AVG RT
2,6-diamino-4-nitrotoluene	7.412	7.409	7.413	7.404	7.404	7.399	7.394	7.384			7.254 - 7.554	7.402
HMX	7.779	7.783	7.787	7.784	7.778	7.779	7.774	7.778			7.634 - 7.934	7.780
2,4-diamino-6-nitrotoluene	7.919	7.923	7.933	7.924	7.918	7.919	7.907	7.851			7.774 - 8.074	7.912
MNX	9.232	9.236	9.240	9.237	9.231	9.226	9.220	9.211			9.087 - 9.387	9.229
RDX	10.072	10.083	10.087	10.084	10.078	10.079	10.067	10.064			9.934 - 10.234	10.077
1,3,5-Trinitrobenzene	11.612	11.616	11.613	11.610	11.611	11.606	11.594	11.591			11.460 - 11.760	11.607
1,3-Dinitrobenzene	12.659	12.656	12.660	12.657	12.658	12.652	12.647	12.638			12.507 - 12.807	12.653
Nitrobenzene	13.259	13.263	13.267	13.264	13.264	13.266	13.260	13.251			13.114 - 13.414	13.262
Tetryl	13.525	13.516	13.520	13.517	13.524	13.519	13.514	13.511			13.367 - 13.667	13.518
2,4,6-Trinitrotoluene	14.185	14.183	14.180	14.184	14.191	14.186	14.174	14.171			14.034 - 14.334	14.182
4-Amino-2,6-dinitrotoluene	14.492	14.503	14.493	14.497	14.504	14.499	14.494	14.491			14.347 - 14.647	14.497
2-Amino-4,6-dinitrotoluene	14.785	14.789	14.787	14.784	14.798	14.792	14.780	14.778			14.634 - 14.934	14.787
2,6-Dinitrotoluene	15.025	15.036	15.033	15.030	15.038	15.039	15.027	15.024			14.880 - 15.180	15.032
2,4-Dinitrotoluene	15.245	15.249	15.247	15.244	15.251	15.246	15.234	15.231			15.094 - 15.394	15.243
2-Nitrotoluene	16.225	16.229	16.227	16.217	16.231	16.226	16.220	16.211			16.067 - 16.367	16.223
4-Nitrotoluene	16.752	16.743	16.733	16.724	16.738	16.726	16.714	16.711			16.574 - 16.874	16.730
3-Nitrotoluene	17.319	17.316	17.320	17.304	17.324	17.312	17.300	17.291			17.154 - 17.454	17.311
1,2-Dinitrobenzene	12.185	12.196	12.193	12.190	12.191	12.192	12.180	12.171			12.040 - 12.340	12.187

FORM VI
HPLC/IC INITIAL CALIBRATION DATA
EXTERNAL STANDARD CURVE EVALUTION

Lab Name: TestAmerica Denver Job No.: 280-3087-1 Analy Batch No.: 17891

SDG No.:

Instrument ID: HPLC_X3 GC Column: UltraCarb5u ID: 4.6(mm) Heated Purge: (Y/N) N

Calibration Start Date: 05/26/2010 21:02 Calibration End Date: 05/26/2010 21:02 Calibration ID: 1747

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 280-17891/8	009-0901.D
Level 2	IC 280-17891/7	008-0801.D
Level 3	IC 280-17891/6	007-0701.D
Level 4	IC 280-17891/5	006-0601.D
Level 5	IC 280-17891/4	005-0501.D
Level 6	IC 280-17891/3	004-0401.D
Level 7	IC 280-17891/2	003-0301.D
Level 8	IC 280-17891/1	002-0201.D

ANALYTE	RRF				CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 5	LVL 2 LVL 6	LVL 3 LVL 7	LVL 4 LVL 8		B	M1	M2								
2,6-diamino-4-nitrotoluene	302600 283180	282260 282469	285290 281770	284932 280888	Ave		285424				2.5					
HMX	134900 127328	127540 124944	126490 125991	125640 162246	Qua	0	0	0						0.9999		
2,4-diamino-6-nitrotoluene	204200 186910	188840 188494	187560 187128	189848 157007	Qua	0	0	0						0.9997		
MNX	189000 181388	178900 180487	190140 180748	176864 179825	Ave		182169				2.6					
RDX	177900 153938	149640 153480	154410 152971	154872 152324	Lin2	0	151952							0.9996		
1,3,5-Trinitrobenzene	366300 346458	358960 341503	331980 339752	346632 338456	Ave		346255				3.3					
1,3-Dinitrobenzene	478800 459833	442980 453156	452420 450601	462184 447250	Ave		455903				2.4					
Nitrobenzene	312800 300900	290520 297540	292270 297077	298184 296426	Ave		298215				2.3					
Tetryl	297900 273745	271920 269731	269510 270718	269344 266842	Ave		273714				3.6					
2,4,6-Trinitrotoluene	366000 321083	330400 323743	334410 311890	317460 308262	Lin2	0	318195							0.9995		
4-Amino-2,6-dinitrotoluene	251900 221770	230800 223037	231730 210309	220344 208903	Lin2	0	218968							0.9989		
2-Amino-4,6-dinitrotoluene	336300 284520	282740 282227	287800 278264	285732 277825	Lin2	0	279847							0.9998		
2,6-Dinitrotoluene	279700 215575	218600 212513	218610 216824	214736 211453	Lin2	0	211961							0.9998		
2,4-Dinitrotoluene	484100 419380	423120 417154	417300 411896	421388 416752	Lin2	0	414494							0.9999		

Note: The m1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
HPLC/IC INITIAL CALIBRATION DATA
EXTERNAL STANDARD CURVE EVALUTION

Lab Name: TestAmerica Denver Job No.: 280-3087-1 Analy Batch No.: 17891

SDG No.:

Instrument ID: HPLC_X3 GC Column: UltraCarb5u ID: 4.6(mm) Heated Purge: (Y/N) N

Calibration Start Date: 05/26/2010 21:02 Calibration End Date: 05/26/2010 21:02 Calibration ID: 1747

ANALYTE	RRF				CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 5	LVL 2 LVL 6	LVL 3 LVL 7	LVL 4 LVL 8		B	M1	M2								
2-Nitrotoluene	223200 186708	189480 185269	188150 185000	187856 185211	Lin2	0	184765							0.9999		
4-Nitrotoluene	167600 164720	168200 164387	167150 163242	164864 165097	Ave		165658				1.1					
3-Nitrotoluene	272400 223873	225900 223411	229360 219249	228072 223102	Lin2	0	222095							0.9998		
1,2-Dinitrobenzene	236200 209028	197620 205376	203270 203195	209908 201003	Lin2	0	202918							0.9992		

Note: The m1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
HPLC/IC INITIAL CALIBRATION DATA
EXTERNAL STANDARD RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Denver Job No.: 280-3087-1 Analy Batch No.: 17891

SDG No.:

Instrument ID: HPLC_X3 GC Column: UltraCarb5u ID: 4.6(mm) Heated Purge: (Y/N) N

Calibration Start Date: 05/26/2010 21:02 Calibration End Date: 05/26/2010 21:02 Calibration ID: 1747

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 280-17891/8	009-0901.D
Level 2	IC 280-17891/7	008-0801.D
Level 3	IC 280-17891/6	007-0701.D
Level 4	IC 280-17891/5	006-0601.D
Level 5	IC 280-17891/4	005-0501.D
Level 6	IC 280-17891/3	004-0401.D
Level 7	IC 280-17891/2	003-0301.D
Level 8	IC 280-17891/1	002-0201.D

ANALYTE	CURVE TYPE	RESPONSE					CONCENTRATION (UG/ML)				
		LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5
2,6-diamino-4-nitrotoluene	Ave	3026 197728	14113 281770	28529 702219	71233	113272	0.0100 0.700	0.0500 1.00	0.100 2.50	0.250	0.400
HMX	Qua	1349 87461	6377 125991	12649 405616	31410	50931	0.0100 0.700	0.0500 1.00	0.100 2.50	0.250	0.400
2,4-diamino-6-nitrotoluene	Qua	2042 131946	9442 187128	18756 392517	47462	74764	0.0100 0.700	0.0500 1.00	0.100 2.50	0.250	0.400
MNX	Ave	1890 126341	8945 180748	19014 449562	44216	72555	0.0100 0.700	0.0500 1.00	0.100 2.50	0.250	0.400
RDX	Lin2	1779 107436	7482 152971	15441 380810	38718	61575	0.0100 0.700	0.0500 1.00	0.100 2.50	0.250	0.400
1,3,5-Trinitrobenzene	Ave	3663 239052	17948 339752	33198 846139	86658	138583	0.0100 0.700	0.0500 1.00	0.100 2.50	0.250	0.400
1,3-Dinitrobenzene	Ave	4788 317209	22149 450601	45242 1118124	115546	183933	0.0100 0.700	0.0500 1.00	0.100 2.50	0.250	0.400
Nitrobenzene	Ave	3128 208278	14526 297077	29227 741065	74546	120360	0.0100 0.700	0.0500 1.00	0.100 2.50	0.250	0.400
Tetryl	Ave	2979 188812	13596 270718	26951 667105	67336	109498	0.0100 0.700	0.0500 1.00	0.100 2.50	0.250	0.400
2,4,6-Trinitrotoluene	Lin2	3660 226620	16520 311890	33441 770655	79365	128433	0.0100 0.700	0.0500 1.00	0.100 2.50	0.250	0.400
4-Amino-2,6-dinitrotoluene	Lin2	2519 156126	11540 210309	23173 522258	55086	88708	0.0100 0.700	0.0500 1.00	0.100 2.50	0.250	0.400
2-Amino-4,6-dinitrotoluene	Lin2	3363 197559	14137 278264	28780 694562	71433	113808	0.0100 0.700	0.0500 1.00	0.100 2.50	0.250	0.400
2,6-Dinitrotoluene	Lin2	2797 148759	10930 216824	21861 528632	53684	86230	0.0100 0.700	0.0500 1.00	0.100 2.50	0.250	0.400
2,4-Dinitrotoluene	Lin2	4841 292008	21156 411896	41730 1041880	105347	167752	0.0100 0.700	0.0500 1.00	0.100 2.50	0.250	0.400
2-Nitrotoluene	Lin2	2232 129688	9474 185000	18815 463027	46964	74683	0.0100 0.700	0.0500 1.00	0.100 2.50	0.250	0.400

FORM VI
HPLC/IC INITIAL CALIBRATION DATA
EXTERNAL STANDARD RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Denver Job No.: 280-3087-1 Analy Batch No.: 17891

SDG No.:

Instrument ID: HPLC_X3 GC Column: UltraCarb5u ID: 4.6(mm) Heated Purge: (Y/N) N

Calibration Start Date: 05/26/2010 21:02 Calibration End Date: 05/26/2010 21:02 Calibration ID: 1747

ANALYTE	CURVE TYPE	RESPONSE					CONCENTRATION (UG/ML)				
		LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5
4-Nitrotoluene	Ave	1676 115071	8410 163242	16715 412743	41216	65888	0.0100 0.700	0.0500 1.00	0.100 2.50	0.250	0.400
3-Nitrotoluene	Lin2	2724 156388	11295 219249	22936 557755	57018	89549	0.0100 0.700	0.0500 1.00	0.100 2.50	0.250	0.400
1,2-Dinitrobenzene	Lin2	2362 143763	9881 203195	20327 502507	52477	83611	0.0100 0.700	0.0500 1.00	0.100 2.50	0.250	0.400

Curve Type Legend:

Ave = Average
Lin2 = Linear 1/conc^2
Qua = Quadratic

FORM VI
HPLC/IC INITIAL CALIBRATION DATA
EXTERNAL STANDARD RETENTION TIME SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-3087-1 Analy Batch No.: 17472

SDG No.:

Instrument ID: HPLC_X3 GC Column: UltraCarb5u ID: 4.6(mm) Heated Purge: (Y/N) N

Calibration Start Date: 05/26/2010 21:02 Calibration End Date: 05/26/2010 23:46 Calibration ID: 1708

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 280-17472/8	009-0901.D
Level 2	IC 280-17472/7	008-0801.D
Level 3	IC 280-17472/6	007-0701.D
Level 4	IC 280-17472/5	006-0601.D
Level 5	IC 280-17472/4	005-0501.D
Level 6	IC 280-17472/3	004-0401.D
Level 7	IC 280-17472/2	003-0301.D
Level 8	IC 280-17472/1	002-0201.D

ANALYTE	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 6	LVL 7	LVL 8			RT WINDOW	AVG RT
Nitroglycerin	13.605	13.609	13.607	13.610	13.611	13.612	13.607	13.598			13.460 - 13.760	13.607
PETN	17.459	17.463	17.453	17.430	17.458	17.446	17.434	17.424			17.280 - 17.580	17.446

FORM VI
HPLC/IC INITIAL CALIBRATION DATA
EXTERNAL STANDARD CURVE EVALUTION

Lab Name: TestAmerica Denver Job No.: 280-3087-1 Analy Batch No.: 17472

SDG No.:

Instrument ID: HPLC_X3 GC Column: UltraCarb5u ID: 4.6(mm) Heated Purge: (Y/N) N

Calibration Start Date: 05/26/2010 21:02 Calibration End Date: 05/26/2010 23:46 Calibration ID: 1708

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 280-17472/8	009-0901.D
Level 2	IC 280-17472/7	008-0801.D
Level 3	IC 280-17472/6	007-0701.D
Level 4	IC 280-17472/5	006-0601.D
Level 5	IC 280-17472/4	005-0501.D
Level 6	IC 280-17472/3	004-0401.D
Level 7	IC 280-17472/2	003-0301.D
Level 8	IC 280-17472/1	002-0201.D

ANALYTE	RRF				CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 5	LVL 2 LVL 6	LVL 3 LVL 7	LVL 4 LVL 8		B	M1	M2								
Nitroglycerin	133620 145977	136628 149451	146350 147962	145954 145240	Ave		143898				3.9					
PETN	151360 143125	151426 142668	145826 142280	144570 142420	Ave		145459				2.6					

Note: The m1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
HPLC/IC INITIAL CALIBRATION DATA
EXTERNAL STANDARD RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Denver Job No.: 280-3087-1 Analy Batch No.: 17472

SDG No.:

Instrument ID: HPLC_X3 GC Column: UltraCarb5u ID: 4.6(mm) Heated Purge: (Y/N) N

Calibration Start Date: 05/26/2010 21:02 Calibration End Date: 05/26/2010 23:46 Calibration ID: 1708

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 280-17472/8	009-0901.D
Level 2	IC 280-17472/7	008-0801.D
Level 3	IC 280-17472/6	007-0701.D
Level 4	IC 280-17472/5	006-0601.D
Level 5	IC 280-17472/4	005-0501.D
Level 6	IC 280-17472/3	004-0401.D
Level 7	IC 280-17472/2	003-0301.D
Level 8	IC 280-17472/1	002-0201.D

ANALYTE	CURVE TYPE	RESPONSE					CONCENTRATION (UG/ML)				
		LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5
Nitroglycerin	Ave	13362 1046159	68314 1479615	146350 3630993	364886	583907	0.100 7.00	0.500 10.0	1.00 25.0	2.50	4.00
PETN	Ave	15136 998676	75713 1422798	145826 3560500	361426	572501	0.100 7.00	0.500 10.0	1.00 25.0	2.50	4.00

Curve Type Legend:

Ave = Average

FORM VII
HPLC/IC CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Denver Job No.: 280-3087-1

SDG No.:

Lab Sample ID: ICV 280-8112/9 Calibration Date: 03/17/2010 19:06

Instrument ID: HPLC_Q Calib Start Date: 03/17/2010 14:50

GC Column: Luna-phenylhex ID: 4.60(mm) Calib End Date: 03/17/2010 18:34

Lab File ID: 010-1001.D Conc. Units: ug/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Picric acid	Ave	163556	170705		0.417	0.400	4.4	20.0
HMX	Ave	152510	147470		0.387	0.400	-3.3	20.0
RDX	Ave	189760	196408		0.414	0.400	3.5	20.0
Nitrobenzene	Ave	366327	369720		0.404	0.400	0.9	20.0
3,5-Dinitroaniline	Ave	445604	445895		0.400	0.400	0.1	20.0
1,3-Dinitrobenzene	Ave	581585	593163		0.408	0.400	2.0	20.0
2-Nitrotoluene	Ave	230811	227313		0.394	0.400	-1.5	20.0
4-Nitrotoluene	Ave	206766	201743		0.390	0.400	-2.4	20.0
4-Amino-2,6-dinitrotoluene	Ave	264331	278490		0.421	0.400	5.4	20.0
3-Nitrotoluene	Ave	248252	249798		0.402	0.400	0.6	20.0
2-Amino-4,6-dinitrotoluene	Ave	355220	392215		0.442	0.400	10.4	20.0
1,3,5-Trinitrobenzene	Ave	415923	419213		0.403	0.400	0.8	20.0
2,6-Dinitrotoluene	Ave	262457	267648		0.408	0.400	2.0	20.0
2,4-Dinitrotoluene	Ave	502994	519533		0.413	0.400	3.3	20.0
Tetryl	Ave	311390	325705		0.418	0.400	4.6	20.0
2,4,6-Trinitrotoluene	Ave	383390	390048		0.407	0.400	1.7	20.0
1,2-Dinitrobenzene	Ave	247827	256835		0.415	0.400	3.6	20.0

FORM VII
HPLC/IC CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-3087-1

SDG No.:

Lab Sample ID: ICV 280-8112/9 Calibration Date: 03/17/2010 19:06

Instrument ID: HPLC_Q Calib Start Date: 03/17/2010 14:50

GC Column: Luna-phenylhex ID: 4.60(mm) Calib End Date: 03/17/2010 18:34

Lab File ID: 010-1001.D

Analyte	RT	RT WINDOW	
		TO	FROM
Picric acid	5.24	5.12	5.42
HMX	6.05	5.90	6.20
RDX	7.87	7.72	8.02
Nitrobenzene	10.49	10.34	10.64
3,5-Dinitroaniline	13.01	12.86	13.16
1,3-Dinitrobenzene	13.58	13.42	13.72
2-Nitrotoluene	14.44	14.28	14.58
4-Nitrotoluene	14.74	14.58	14.88
4-Amino-2,6-dinitrotoluene	15.03	14.86	15.16
3-Nitrotoluene	15.59	15.43	15.73
2-Amino-4,6-dinitrotoluene	15.92	15.75	16.05
1,3,5-Trinitrobenzene	16.60	16.44	16.74
2,6-Dinitrotoluene	17.48	17.32	17.62
2,4-Dinitrotoluene	17.99	17.82	18.12
Tetryl	21.19	21.01	21.31
2,4,6-Trinitrotoluene	22.20	22.02	22.32
1,2-Dinitrobenzene	11.26	11.11	11.41

FORM VII
HPLC/IC CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Denver Job No.: 280-3087-1

SDG No.:

Lab Sample ID: ICV 280-8112/9 Calibration Date: 03/17/2010 19:06

Instrument ID: HPLC_Q Calib Start Date: 03/17/2010 14:50

GC Column: Luna-phenylhex ID: 4.60(mm) Calib End Date: 03/17/2010 18:34

Lab File ID: 010-1001.D Conc. Units: ug/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Nitroglycerin	Lin2	177466	171839		3.95	4.00	-1.3	20.0
PETN	Ave	139018	136529		3.93	4.00	-1.8	20.0

FORM VII
HPLC/IC CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-3087-1

SDG No.:

Lab Sample ID: ICV 280-8112/9 Calibration Date: 03/17/2010 19:06

Instrument ID: HPLC_Q Calib Start Date: 03/17/2010 14:50

GC Column: Luna-phenylhex ID: 4.60(mm) Calib End Date: 03/17/2010 18:34

Lab File ID: 010-1001.D

Analyte	RT	RT WINDOW	
		TO	FROM
Nitroglycerin	13.59	13.44	13.74
PETN	22.90	22.73	23.03

FORM VII
HPLC/IC CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Denver Job No.: 280-3087-1

SDG No.:

Lab Sample ID: CCV 280-18232/2 Calibration Date: 06/05/2010 00:15

Instrument ID: HPLC_Q Calib Start Date: 03/17/2010 14:50

GC Column: UltraCarb5uODS ID: 4.60(mm) Calib End Date: 03/17/2010 18:34

Lab File ID: 002-1001.D Conc. Units: ug/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Picric acid	Ave	163556	164548		0.252	0.250	0.6	20.0
HMX	Ave	152510	154724		0.254	0.250	1.5	20.0
RDX	Ave	189760	191512		0.252	0.250	0.9	20.0
Nitrobenzene	Ave	366327	342240		0.234	0.250	-6.6	20.0
1,3-Dinitrobenzene	Ave	581585	588560		0.253	0.250	1.2	20.0
2-Nitrotoluene	Ave	230811	219428		0.238	0.250	-4.9	20.0
4-Nitrotoluene	Ave	206766	210884		0.255	0.250	2.0	20.0
4-Amino-2,6-dinitrotoluene	Ave	264331	274920		0.260	0.250	4.0	20.0
3-Nitrotoluene	Ave	248252	235548		0.237	0.250	-5.1	20.0
2-Amino-4,6-dinitrotoluene	Ave	355220	336144		0.237	0.250	-5.4	20.0
1,3,5-Trinitrobenzene	Ave	415923	422832		0.254	0.250	1.7	20.0
2,6-Dinitrotoluene	Ave	262457	261872		0.249	0.250	-0.2	20.0
2,4-Dinitrotoluene	Ave	502994	519192		0.258	0.250	3.2	20.0
Tetryl	Ave	311390	289280		0.232	0.250	-7.1	20.0
2,4,6-Trinitrotoluene	Ave	383390	373296		0.243	0.250	-2.6	20.0
1,2-Dinitrobenzene	Ave	247827	266908		0.269	0.250	7.7	20.0

FORM VII
HPLC/IC CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-3087-1

SDG No.:

Lab Sample ID: CCV 280-18232/2 Calibration Date: 06/05/2010 00:15

Instrument ID: HPLC_Q Calib Start Date: 03/17/2010 14:50

GC Column: UltraCarb5uODS ID: 4.60(mm) Calib End Date: 03/17/2010 18:34

Lab File ID: 002-1001.D

Analyte	RT	RT WINDOW	
		TO	FROM
Picric acid	5.55	5.41	5.71
HMX	6.17	6.03	6.33
RDX	8.01	7.85	8.15
Nitrobenzene	10.69	10.53	10.83
3,5-Dinitroaniline	13.25	13.10	13.40
1,3-Dinitrobenzene	13.79	13.63	13.93
2-Nitrotoluene	14.70	14.53	14.83
4-Nitrotoluene	14.99	14.83	15.13
4-Amino-2,6-dinitrotoluene	15.32	15.17	15.47
3-Nitrotoluene	15.85	15.68	15.98
2-Amino-4,6-dinitrotoluene	16.20	16.04	16.34
1,3,5-Trinitrobenzene	16.81	16.65	16.95
2,6-Dinitrotoluene	17.75	17.59	17.89
2,4-Dinitrotoluene	18.25	18.08	18.38
Tetryl	21.45	21.29	21.59
2,4,6-Trinitrotoluene	22.43	22.27	22.57
1,2-Dinitrobenzene	11.50	11.34	11.64

FORM VII
HPLC/IC CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Denver Job No.: 280-3087-1

SDG No.:

Lab Sample ID: CCV 280-18232/2 Calibration Date: 06/05/2010 00:15

Instrument ID: HPLC_Q Calib Start Date: 03/17/2010 14:50

GC Column: UltraCarb5uODS ID: 4.60(mm) Calib End Date: 03/17/2010 18:34

Lab File ID: 002-1001.D Conc. Units: ug/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Nitroglycerin	Lin2	177466	169271		2.43	2.50	-3.0	20.0
PETN	Ave	139018	143385		2.58	2.50	3.1	20.0

FORM VII
HPLC/IC CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-3087-1

SDG No.:

Lab Sample ID: CCV 280-18232/2 Calibration Date: 06/05/2010 00:15

Instrument ID: HPLC_Q Calib Start Date: 03/17/2010 14:50

GC Column: UltraCarb5uODS ID: 4.60(mm) Calib End Date: 03/17/2010 18:34

Lab File ID: 002-1001.D

Analyte	RT	RT WINDOW	
		TO	FROM
Nitroglycerin	13.79	13.64	13.94
PETN	23.12	22.97	23.27

FORM VII
HPLC/IC CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Denver Job No.: 280-3087-1

SDG No.:

Lab Sample ID: CCV 280-18232/3 Calibration Date: 06/05/2010 05:03

Instrument ID: HPLC_Q Calib Start Date: 03/17/2010 14:50

GC Column: UltraCarb5uODS ID: 4.60(mm) Calib End Date: 03/17/2010 18:34

Lab File ID: 002-1901.D Conc. Units: ug/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Picric acid	Ave	163556	164248		0.251	0.250	0.4	20.0
HMX	Ave	152510	155636		0.255	0.250	2.0	20.0
RDX	Ave	189760	191544		0.252	0.250	0.9	20.0
Nitrobenzene	Ave	366327	364340		0.249	0.250	-0.5	20.0
1,3-Dinitrobenzene	Ave	581585	576484		0.248	0.250	-0.9	20.0
2-Nitrotoluene	Ave	230811	213832		0.232	0.250	-7.4	20.0
4-Nitrotoluene	Ave	206766	202688		0.245	0.250	-2.0	20.0
4-Amino-2,6-dinitrotoluene	Ave	264331	259348		0.245	0.250	-1.9	20.0
3-Nitrotoluene	Ave	248252	235448		0.237	0.250	-5.2	20.0
2-Amino-4,6-dinitrotoluene	Ave	355220	354176		0.249	0.250	-0.3	20.0
1,3,5-Trinitrobenzene	Ave	415923	439724		0.264	0.250	5.7	20.0
2,6-Dinitrotoluene	Ave	262457	263004		0.251	0.250	0.2	20.0
2,4-Dinitrotoluene	Ave	502994	504424		0.251	0.250	0.3	20.0
Tetryl	Ave	311390	292328		0.235	0.250	-6.1	20.0
2,4,6-Trinitrotoluene	Ave	383390	369240		0.241	0.250	-3.7	20.0
1,2-Dinitrobenzene	Ave	247827	247720		0.250	0.250	0.0	20.0

FORM VII
HPLC/IC CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-3087-1

SDG No.:

Lab Sample ID: CCV 280-18232/3 Calibration Date: 06/05/2010 05:03

Instrument ID: HPLC_Q Calib Start Date: 03/17/2010 14:50

GC Column: UltraCarb5uODS ID: 4.60(mm) Calib End Date: 03/17/2010 18:34

Lab File ID: 002-1901.D

Analyte	RT	RT WINDOW	
		TO	FROM
Picric acid	5.56	5.41	5.71
HMX	6.18	6.03	6.33
RDX	8.00	7.85	8.15
Nitrobenzene	10.68	10.53	10.83
3,5-Dinitroaniline	13.25	13.10	13.40
1,3-Dinitrobenzene	13.78	13.63	13.93
2-Nitrotoluene	14.68	14.53	14.83
4-Nitrotoluene	14.98	14.83	15.13
4-Amino-2,6-dinitrotoluene	15.32	15.17	15.47
3-Nitrotoluene	15.83	15.68	15.98
2-Amino-4,6-dinitrotoluene	16.19	16.04	16.34
1,3,5-Trinitrobenzene	16.80	16.65	16.95
2,6-Dinitrotoluene	17.74	17.59	17.89
2,4-Dinitrotoluene	18.23	18.08	18.38
Tetryl	21.44	21.29	21.59
2,4,6-Trinitrotoluene	22.42	22.27	22.57
1,2-Dinitrobenzene	11.49	11.34	11.64

FORM VII
HPLC/IC CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Denver Job No.: 280-3087-1

SDG No.:

Lab Sample ID: CCV 280-18232/3 Calibration Date: 06/05/2010 05:03

Instrument ID: HPLC_Q Calib Start Date: 03/17/2010 14:50

GC Column: UltraCarb5uODS ID: 4.60(mm) Calib End Date: 03/17/2010 18:34

Lab File ID: 002-1901.D Conc. Units: ug/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Nitroglycerin	Lin2	177466	169748		2.43	2.50	-2.7	20.0
PETN	Ave	139018	143087		2.57	2.50	2.9	20.0

FORM VII
HPLC/IC CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-3087-1

SDG No.:

Lab Sample ID: CCV 280-18232/3 Calibration Date: 06/05/2010 05:03

Instrument ID: HPLC_Q Calib Start Date: 03/17/2010 14:50

GC Column: UltraCarb5uODS ID: 4.60(mm) Calib End Date: 03/17/2010 18:34

Lab File ID: 002-1901.D

Analyte	RT	RT WINDOW	
		TO	FROM
Nitroglycerin	13.77	13.64	13.94
PETN	23.08	22.97	23.27

FORM VII
HPLC/IC CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Denver Job No.: 280-3087-1

SDG No.:

Lab Sample ID: CCV 280-18009/4 Calibration Date: 06/04/2010 01:50

Instrument ID: HPLC_X3 Calib Start Date: 05/26/2010 21:02

GC Column: UltraCarb5uODS ID: 4.60(mm) Calib End Date: 05/26/2010 21:02

Lab File ID: 002-4101.D Conc. Units: ug/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Picric acid	Qua	120692	0.0000		0.000150	0.250	-100.0*	20.0
HMX	Qua	131885	127652		0.261	0.250	4.4	20.0
RDX	Lin2	156192	286760		0.470	0.250	88.1*	20.0
1,3,5-Trinitrobenzene	Ave	346255	346912		0.250	0.250	0.2	20.0
1,3-Dinitrobenzene	Ave	455903	472220		0.259	0.250	3.6	20.0
Nitrobenzene	Ave	298215	275276		0.231	0.250	-7.7	20.0
Tetryl	Ave	273714	275576		0.252	0.250	0.7	20.0
2,4,6-Trinitrotoluene	Lin2	326656	315664		0.246	0.250	-1.4	20.0
4-Amino-2,6-dinitrotoluene	Lin2	224849	224864		0.255	0.250	2.1	20.0
2-Amino-4,6-dinitrotoluene	Lin2	289426	302512		0.268	0.250	7.3	20.0
2,6-Dinitrotoluene	Lin2	223501	220864		0.257	0.250	2.9	20.0
2,4-Dinitrotoluene	Lin2	426386	406596		0.244	0.250	-2.6	20.0
2-Nitrotoluene	Lin2	191359	172800		0.232	0.250	-7.3	20.0
4-Nitrotoluene	Ave	165658	160756		0.243	0.250	-3.0	20.0
3-Nitrotoluene	Lin2	230671	209744		0.234	0.250	-6.5	20.0
1,2-Dinitrobenzene	Lin2	208200	212912		0.261	0.250	4.3	20.0

FORM VII
HPLC/IC CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-3087-1

SDG No.:

Lab Sample ID: CCV 280-18009/4 Calibration Date: 06/04/2010 01:50

Instrument ID: HPLC_X3 Calib Start Date: 05/26/2010 21:02

GC Column: UltraCarb5uODS ID: 4.60(mm) Calib End Date: 05/26/2010 21:02

Lab File ID: 002-4101.D

Analyte	RT	RT WINDOW	
		TO	FROM
Picric acid	0.00	9.93	10.23
HMX	7.66	7.49	7.79
RDX	9.92	9.75	10.05
1,3,5-Trinitrobenzene	11.44	11.28	11.58
1,3-Dinitrobenzene	12.50	12.33	12.63
Nitrobenzene	13.10	12.94	13.24
Tetryl	13.32	13.15	13.45
2,4,6-Trinitrotoluene	13.96	13.79	14.09
4-Amino-2,6-dinitrotoluene	14.29	14.13	14.43
2-Amino-4,6-dinitrotoluene	14.56	14.39	14.69
2,6-Dinitrotoluene	14.80	14.63	14.93
2,4-Dinitrotoluene	14.99	14.82	15.12
2-Nitrotoluene	15.96	15.79	16.09
4-Nitrotoluene	16.44	16.27	16.57
3-Nitrotoluene	17.00	16.83	17.13
1,2-Dinitrobenzene	12.02	11.85	12.15

FORM VII
HPLC/IC CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Denver Job No.: 280-3087-1

SDG No.:

Lab Sample ID: CCV 280-18009/4 Calibration Date: 06/04/2010 01:50

Instrument ID: HPLC_X3 Calib Start Date: 05/26/2010 21:02

GC Column: UltraCarb5uODS ID: 4.60(mm) Calib End Date: 05/26/2010 23:46

Lab File ID: 002-4101.D Conc. Units: ug/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Nitroglycerin	Ave	143898	156645		2.72	2.50	8.9	20.0
PETN	Ave	145459	140462		2.41	2.50	-3.4	20.0

FORM VII
HPLC/IC CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-3087-1

SDG No.:

Lab Sample ID: CCV 280-18009/4 Calibration Date: 06/04/2010 01:50

Instrument ID: HPLC_X3 Calib Start Date: 05/26/2010 21:02

GC Column: UltraCarb5uODS ID: 4.60(mm) Calib End Date: 05/26/2010 23:46

Lab File ID: 002-4101.D

Analyte	RT	RT WINDOW	
		TO	FROM
Nitroglycerin	13.42	13.25	13.55
PETN	17.03	16.86	17.16

FORM VII
HPLC/IC CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Denver Job No.: 280-3087-1

SDG No.:

Lab Sample ID: CCV 280-18009/38 Calibration Date: 06/04/2010 07:20

Instrument ID: HPLC_X3 Calib Start Date: 05/26/2010 21:02

GC Column: UltraCarb5uODS ID: 4.60(mm) Calib End Date: 05/26/2010 23:46

Lab File ID: 002-5501.D Conc. Units: ug/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Nitroglycerin	Ave	143898	155650		2.70	2.50	8.2	20.0
PETN	Ave	145459	139431		2.40	2.50	-4.1	20.0

FORM VII
HPLC/IC CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-3087-1

SDG No.:

Lab Sample ID: CCV 280-18009/38 Calibration Date: 06/04/2010 07:20

Instrument ID: HPLC_X3 Calib Start Date: 05/26/2010 21:02

GC Column: UltraCarb5uODS ID: 4.60(mm) Calib End Date: 05/26/2010 23:46

Lab File ID: 002-5501.D

Analyte	RT	RT WINDOW	
		TO	FROM
Nitroglycerin	13.40	13.25	13.55
PETN	17.01	16.86	17.16

FORM I
HPLC/IC ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver
Job No.: 280-3087-1
SDG No.:
Client Sample ID:
Lab Sample ID: MB 280-14909/10-A
Matrix: Solid
Lab File ID: 044-4401.D
Analysis Method: 8330B
Date Collected:
Extraction Method: 8330B
Date Extracted: 05/11/2010 18:20
Sample wt/vol: 10.37(g)
Date Analyzed: 06/04/2010 03:01
Con. Extract Vol.: 40000(uL)
Dilution Factor: 1
Injection Volume: 100(uL)
GC Column: UltraCarb5uODS ID: 4.6(mm)
% Moisture:
GPC Cleanup:(Y/N) N
Analysis Batch No.: 18009
Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	DL
35572-78-2	2-Amino-4,6-dinitrotoluene	0.039	U	0.096	0.032
19406-51-0	4-Amino-2,6-dinitrotoluene	0.039	U	0.096	0.029
121-14-2	2,4-Dinitrotoluene	0.039	U	0.096	0.014
606-20-2	2,6-Dinitrotoluene	0.039	U	0.096	0.018
88-72-2	2-Nitrotoluene	0.077	U	0.19	0.046
99-08-1	3-Nitrotoluene	0.077	U	0.19	0.062
98-95-3	Nitrobenzene	0.077	U	1.9	0.082
99-99-0	4-Nitrotoluene	0.096	U	0.19	0.035
99-35-4	1,3,5-Trinitrobenzene	0.039	U	0.096	0.013
99-65-0	1,3-Dinitrobenzene	0.039	U	0.096	0.016
2691-41-0	HMX	0.039	U	0.096	0.022
121-82-4	RDX	0.077	U	0.19	0.041
479-45-8	Tetryl	0.077	U	0.19	0.042
118-96-7	2,4,6-Trinitrotoluene	0.039	U	0.096	0.030

CAS NO.	SURROGATE	%REC	LIMITS	Q
528-29-0	1,2-Dinitrobenzene	98	83-122	

FORM I
HPLC/IC ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver
Job No.: 280-3087-1
SDG No.:
Client Sample ID:
Lab Sample ID: MB 280-14909/10-A
Matrix: Solid
Lab File ID: 044-4401.D
Analysis Method: 8330B
Date Collected:
Extraction Method: 8330B
Date Extracted: 05/11/2010 18:20
Sample wt/vol: 10.37(g)
Date Analyzed: 06/04/2010 03:01
Con. Extract Vol.: 40000(uL)
Dilution Factor: 1
Injection Volume: 100(uL)
GC Column: UltraCarb5uODS ID: 4.6(mm)
% Moisture:
GPC Cleanup:(Y/N) N
Analysis Batch No.: 18009
Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	DL
55-63-0	Nitroglycerin	0.39	U	1.9	0.21
78-11-5	PETN	0.39	U	1.9	0.48

FORM I
HPLC/IC ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver
Job No.: 280-3087-1
SDG No.:
Client Sample ID:
Lab Sample ID: PB 280-13801/8-B
Matrix: Solid
Lab File ID: 046-4601.D
Analysis Method: 8330B
Date Collected:
Extraction Method: 8330B
Date Extracted: 05/11/2010 18:20
Sample wt/vol: 10.38(g)
Date Analyzed: 06/04/2010 03:48
Con. Extract Vol.: 40000(uL)
Dilution Factor: 1
Injection Volume: 100(uL)
GC Column: UltraCarb5uODS ID: 4.6(mm)
% Moisture:
GPC Cleanup:(Y/N) N
Analysis Batch No.: 18009
Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	DL
35572-78-2	2-Amino-4,6-dinitrotoluene	0.039	U	0.096	0.032
19406-51-0	4-Amino-2,6-dinitrotoluene	0.039	U	0.096	0.029
121-14-2	2,4-Dinitrotoluene	0.039	U	0.096	0.014
606-20-2	2,6-Dinitrotoluene	0.039	U	0.096	0.018
88-72-2	2-Nitrotoluene	0.077	U	0.19	0.045
99-08-1	3-Nitrotoluene	0.077	U	0.19	0.062
98-95-3	Nitrobenzene	0.077	U	1.9	0.082
99-99-0	4-Nitrotoluene	0.096	U	0.19	0.035
99-35-4	1,3,5-Trinitrobenzene	0.039	U	0.096	0.013
99-65-0	1,3-Dinitrobenzene	0.039	U	0.096	0.016
2691-41-0	HMX	0.039	U	0.096	0.022
121-82-4	RDX	0.077	U	0.19	0.041
479-45-8	Tetryl	0.077	U	0.19	0.042
118-96-7	2,4,6-Trinitrotoluene	0.039	U	0.096	0.030

CAS NO.	SURROGATE	%REC	LIMITS	Q
528-29-0	1,2-Dinitrobenzene	99	83-122	

FORM I
HPLC/IC ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver
Job No.: 280-3087-1
SDG No.:
Client Sample ID:
Lab Sample ID: PB 280-13801/8-B
Matrix: Solid
Lab File ID: 046-4601.D
Analysis Method: 8330B
Date Collected:
Extraction Method: 8330B
Date Extracted: 05/11/2010 18:20
Sample wt/vol: 10.38(g)
Date Analyzed: 06/04/2010 03:48
Con. Extract Vol.: 40000(uL)
Dilution Factor: 1
Injection Volume: 100(uL)
GC Column: UltraCarb5uODS ID: 4.6(mm)
% Moisture:
GPC Cleanup:(Y/N) N
Analysis Batch No.: 18009
Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	DL
55-63-0	Nitroglycerin	0.39	U	1.9	0.21
78-11-5	PETN	0.39	U	1.9	0.47

FORM I
HPLC/IC ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver
Job No.: 280-3087-1
SDG No.:
Client Sample ID:
Lab Sample ID: LCS 280-14909/11-A
Matrix: Solid
Lab File ID: 045-4501.D
Analysis Method: 8330B
Date Collected:
Extraction Method: 8330B
Date Extracted: 05/11/2010 18:20
Sample wt/vol: 10.03(g)
Date Analyzed: 06/04/2010 03:24
Con. Extract Vol.: 40000(uL)
Dilution Factor: 1
Injection Volume: 100(uL)
GC Column: UltraCarb5uODS ID: 4.6(mm)
% Moisture:
GPC Cleanup:(Y/N) N
Analysis Batch No.: 18009
Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	DL
35572-78-2	2-Amino-4,6-dinitrotoluene	1.14	M	0.10	0.033
19406-51-0	4-Amino-2,6-dinitrotoluene	1.01	M	0.10	0.030
121-14-2	2,4-Dinitrotoluene	1.09	M	0.10	0.015
606-20-2	2,6-Dinitrotoluene	0.945	M	0.10	0.019
88-72-2	2-Nitrotoluene	1.06		0.20	0.047
99-08-1	3-Nitrotoluene	1.10	M	0.20	0.064
98-95-3	Nitrobenzene	1.17	J M	2.0	0.085
99-99-0	4-Nitrotoluene	1.10	M	0.20	0.036
99-35-4	1,3,5-Trinitrobenzene	1.03	M	0.10	0.014
99-65-0	1,3-Dinitrobenzene	1.08	M	0.10	0.017
2691-41-0	HMX	1.01	M	0.10	0.023
479-45-8	Tetryl	1.01	M	0.20	0.044
118-96-7	2,4,6-Trinitrotoluene	0.970	M	0.10	0.031

CAS NO.	SURROGATE	%REC	LIMITS	Q
528-29-0	1,2-Dinitrobenzene	108	83-122	M

FORM I
HPLC/IC ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver
Job No.: 280-3087-1
SDG No.:
Client Sample ID:
Lab Sample ID: LCS 280-14909/11-A
Matrix: Solid
Lab File ID: 045-4501.D
Analysis Method: 8330B
Date Collected:
Extraction Method: 8330B
Date Extracted: 05/11/2010 18:20
Sample wt/vol: 10.03(g)
Date Analyzed: 06/04/2010 03:24
Con. Extract Vol.: 40000(uL)
Dilution Factor: 1
Injection Volume: 100(uL)
GC Column: UltraCarb5uODS ID: 4.6(mm)
% Moisture:
GPC Cleanup:(Y/N) N
Analysis Batch No.: 18009
Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	DL
55-63-0	Nitroglycerin	11.2		2.0	0.21
78-11-5	PETN	9.97		2.0	0.49

FORM I
HPLC/IC ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver
Job No.: 280-3087-1
SDG No.:
Client Sample ID:
Lab Sample ID: LCS 280-14909/11-A
Matrix: Solid
Lab File ID: 012-1201.D
Analysis Method: 8330B
Date Collected:
Extraction Method: 8330B
Date Extracted: 05/11/2010 18:20
Sample wt/vol: 10.03(g)
Date Analyzed: 06/05/2010 01:19
Con. Extract Vol.: 40000(uL)
Dilution Factor: 1
Injection Volume: 100(uL)
GC Column: Luna-phenylhex ID: 4.6(mm)
% Moisture:
GPC Cleanup:(Y/N) N
Analysis Batch No.: 18232
Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	DL
121-82-4	RDX	1.08		0.20	0.043

CAS NO.	SURROGATE	%REC	LIMITS	Q
528-29-0	1,2-Dinitrobenzene	105	83-122	

FORM I
HPLC/IC ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver
Job No.: 280-3087-1
SDG No.:
Client Sample ID:
Lab Sample ID: LCSSRM 280-13801/9-B
Matrix: Solid
Lab File ID: 047-4701.D
Analysis Method: 8330B
Date Collected:
Extraction Method: 8330B
Date Extracted: 05/11/2010 18:20
Sample wt/vol: 10.65(g)
Date Analyzed: 06/04/2010 04:11
Con. Extract Vol.: 40000(uL)
Dilution Factor: 1
Injection Volume: 100(uL)
GC Column: UltraCarb5uODS ID: 4.6(mm)
% Moisture:
GPC Cleanup:(Y/N) N
Analysis Batch No.: 18009
Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	DL
35572-78-2	2-Amino-4,6-dinitrotoluene	0.700		0.094	0.031
19406-51-0	4-Amino-2,6-dinitrotoluene	0.883		0.094	0.028
121-14-2	2,4-Dinitrotoluene	0.602		0.094	0.014
606-20-2	2,6-Dinitrotoluene	1.46		0.094	0.018
88-72-2	2-Nitrotoluene	1.35		0.19	0.044
99-08-1	3-Nitrotoluene	1.20		0.19	0.060
98-95-3	Nitrobenzene	1.18	J M	1.9	0.080
99-99-0	4-Nitrotoluene	1.74		0.19	0.034
99-35-4	1,3,5-Trinitrobenzene	0.698		0.094	0.013
99-65-0	1,3-Dinitrobenzene	1.02		0.094	0.016
2691-41-0	HMX	0.630	M	0.094	0.021
121-82-4	RDX	0.579		0.19	0.040
479-45-8	Tetryl	0.075	U	0.19	0.041
118-96-7	2,4,6-Trinitrotoluene	0.764		0.094	0.029

CAS NO.	SURROGATE	%REC	LIMITS	Q
528-29-0	1,2-Dinitrobenzene	101	83-122	

FORM I
HPLC/IC ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver
Job No.: 280-3087-1
SDG No.:
Client Sample ID:
Lab Sample ID: LCSSRM 280-13801/9-B
Matrix: Solid
Lab File ID: 047-4701.D
Analysis Method: 8330B
Date Collected:
Extraction Method: 8330B
Date Extracted: 05/11/2010 18:20
Sample wt/vol: 10.65(g)
Date Analyzed: 06/04/2010 04:11
Con. Extract Vol.: 40000(uL)
Dilution Factor: 1
Injection Volume: 100(uL)
GC Column: UltraCarb5uODS ID: 4.6(mm)
% Moisture:
GPC Cleanup:(Y/N) N
Analysis Batch No.: 18009
Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	DL
55-63-0	Nitroglycerin	1.02	J	1.9	0.20

FORM I
HPLC/IC ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver
Job No.: 280-3087-1
SDG No.:
Client Sample ID:
Lab Sample ID: LCSSRM 280-13801/9-B
Matrix: Solid
Lab File ID: 014-1401.D
Analysis Method: 8330B
Date Collected:
Extraction Method: 8330B
Date Extracted: 05/11/2010 18:20
Sample wt/vol: 10.65(g)
Date Analyzed: 06/05/2010 02:23
Con. Extract Vol.: 40000(uL)
Dilution Factor: 1
Injection Volume: 100(uL)
GC Column: Luna-phenylhex ID: 4.6(mm)
% Moisture:
GPC Cleanup:(Y/N) N
Analysis Batch No.: 18232
Units: mg/Kg

CAS NO.	SURROGATE	%REC	LIMITS	Q
528-29-0	1,2-Dinitrobenzene	105	83-122	

FORM I
HPLC/IC ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver
Job No.: 280-3087-1
SDG No.:
Client Sample ID:
Lab Sample ID: LCSSRM 280-13801/9-B
Matrix: Solid
Lab File ID: 014-1401.D
Analysis Method: 8330B
Date Collected:
Extraction Method: 8330B
Date Extracted: 05/11/2010 18:20
Sample wt/vol: 10.65(g)
Date Analyzed: 06/05/2010 02:23
Con. Extract Vol.: 40000(uL)
Dilution Factor: 1
Injection Volume: 100(uL)
GC Column: Luna-phenylhex ID: 4.6(mm)
% Moisture:
GPC Cleanup:(Y/N) N
Analysis Batch No.: 18232
Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	DL
78-11-5	PETN	0.814	J M	1.9	0.46

FORM I
HPLC/IC ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver
Job No.: 280-3087-1
SDG No.:
Client Sample ID: MRDU5-S0200-(2-4)-0409 MS
Lab Sample ID: 280-3087-12 MS
Matrix: Solid
Lab File ID: 053-5301.D
Analysis Method: 8330B
Date Collected: 04/29/2010 16:29
Extraction Method: 8330B
Date Extracted: 05/11/2010 18:20
Sample wt/vol: 10.58(g)
Date Analyzed: 06/04/2010 06:32
Con. Extract Vol.: 40000(uL)
Dilution Factor: 1
Injection Volume: 100(uL)
GC Column: UltraCarb5uODS ID: 4.6(mm)
% Moisture:
GPC Cleanup:(Y/N) N
Analysis Batch No.: 18009
Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	DL
35572-78-2	2-Amino-4,6-dinitrotoluene	1.11	M	0.095	0.031
19406-51-0	4-Amino-2,6-dinitrotoluene	1.00	M	0.095	0.028
121-14-2	2,4-Dinitrotoluene	1.01	M	0.095	0.014
606-20-2	2,6-Dinitrotoluene	0.891	M	0.095	0.018
88-72-2	2-Nitrotoluene	1.02	M	0.19	0.045
99-08-1	3-Nitrotoluene	0.979		0.19	0.060
98-95-3	Nitrobenzene	1.11	J M	1.9	0.080
99-99-0	4-Nitrotoluene	0.985		0.19	0.034
99-35-4	1,3,5-Trinitrobenzene	0.993	M	0.095	0.013
99-65-0	1,3-Dinitrobenzene	0.980	M	0.095	0.016
2691-41-0	HMX	0.924	M	0.095	0.021
121-82-4	RDX	1.11		0.19	0.041
479-45-8	Tetryl	0.872	M	0.19	0.041
118-96-7	2,4,6-Trinitrotoluene	1.12	M	0.095	0.029

CAS NO.	SURROGATE	%REC	LIMITS	Q
528-29-0	1,2-Dinitrobenzene	102	83-122	M

FORM I
HPLC/IC ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver
Job No.: 280-3087-1
SDG No.:
Client Sample ID: MRDU5-S0200-(2-4)-0409 MS
Lab Sample ID: 280-3087-12 MS
Matrix: Solid
Lab File ID: 053-5301.D
Analysis Method: 8330B
Date Collected: 04/29/2010 16:29
Extraction Method: 8330B
Date Extracted: 05/11/2010 18:20
Sample wt/vol: 10.58(g)
Date Analyzed: 06/04/2010 06:32
Con. Extract Vol.: 40000(uL)
Dilution Factor: 1
Injection Volume: 100(uL)
GC Column: UltraCarb5uODS ID: 4.6(mm)
% Moisture:
GPC Cleanup:(Y/N) N
Analysis Batch No.: 18009
Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	DL
55-63-0	Nitroglycerin	10.5		1.9	0.20
78-11-5	PETN	9.41		1.9	0.47

FORM I
HPLC/IC ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver | Job No.: 280-3087-1

SDG No.:

Client Sample ID: MRDU5-S0200-(2-4)-0409 | Lab Sample ID: 280-3087-12 MSD

Matrix: Solid | Lab File ID: 054-5401.D

Analysis Method: 8330B | Date Collected: 04/29/2010 16:29

Extraction Method: 8330B | Date Extracted: 05/11/2010 18:20

Sample wt/vol: 10.03(g) | Date Analyzed: 06/04/2010 06:56

Con. Extract Vol.: 40000(uL) | Dilution Factor: 1

Injection Volume: 100(uL) | GC Column: UltraCarb5uODS ID: 4.6(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 18009 | Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	DL
35572-78-2	2-Amino-4,6-dinitrotoluene	1.25	M J	0.10	0.033
19406-51-0	4-Amino-2,6-dinitrotoluene	1.16	M	0.10	0.030
121-14-2	2,4-Dinitrotoluene	1.13	M	0.10	0.015
606-20-2	2,6-Dinitrotoluene	1.01	M	0.10	0.019
88-72-2	2-Nitrotoluene	1.06	M	0.20	0.047
99-08-1	3-Nitrotoluene	1.11	M	0.20	0.064
98-95-3	Nitrobenzene	1.25	M J	2.0	0.085
99-99-0	4-Nitrotoluene	1.07	M	0.20	0.036
99-35-4	1,3,5-Trinitrobenzene	1.11	M	0.10	0.014
99-65-0	1,3-Dinitrobenzene	1.10	M	0.10	0.017
2691-41-0	HMX	0.995	M	0.10	0.023
121-82-4	RDX	1.22		0.20	0.043
479-45-8	Tetryl	1.01	M	0.20	0.044
118-96-7	2,4,6-Trinitrotoluene	1.39	M	0.10	0.031

CAS NO.	SURROGATE	%REC	LIMITS	Q
528-29-0	1,2-Dinitrobenzene	108	83-122	M

FORM I
HPLC/IC ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver
Job No.: 280-3087-1
SDG No.:
Client Sample ID: MRDU5-S0200-(2-4)-0409
Lab Sample ID: 280-3087-12 MSD
Matrix: Solid
Lab File ID: 054-5401.D
Analysis Method: 8330B
Date Collected: 04/29/2010 16:29
Extraction Method: 8330B
Date Extracted: 05/11/2010 18:20
Sample wt/vol: 10.03(g)
Date Analyzed: 06/04/2010 06:56
Con. Extract Vol.: 40000(uL)
Dilution Factor: 1
Injection Volume: 100(uL)
GC Column: UltraCarb5uODS ID: 4.6(mm)
% Moisture:
GPC Cleanup:(Y/N) N
Analysis Batch No.: 18009
Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	DL
55-63-0	Nitroglycerin	11.7		2.0	0.21
78-11-5	PETN	10.4		2.0	0.49

HPLC/IC ANALYSIS RUN LOG

Lab Name: TestAmerica Denver Job No.: 280-3087-1

SDG No.:

Instrument ID: HPLC_Q Start Date: 03/17/2010 14:50

Analysis Batch Number: 8112 End Date: 03/17/2010 23:22

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
IC 280-8112/1		03/17/2010 14:50	1	002-0201.D	Luna-phenylhex 4.6(mm)
IC 280-8112/1		03/17/2010 14:50	1	002-0201.D	Luna-phenylhex 4.6(mm)
IC 280-8112/2		03/17/2010 15:22	1	003-0301.D	Luna-phenylhex 4.6(mm)
IC 280-8112/2		03/17/2010 15:22	1	003-0301.D	Luna-phenylhex 4.6(mm)
IC 280-8112/3		03/17/2010 15:54	1	004-0401.D	Luna-phenylhex 4.6(mm)
IC 280-8112/3		03/17/2010 15:54	1	004-0401.D	Luna-phenylhex 4.6(mm)
IC 280-8112/4		03/17/2010 16:26	1	005-0501.D	Luna-phenylhex 4.6(mm)
IC 280-8112/4		03/17/2010 16:26	1	005-0501.D	Luna-phenylhex 4.6(mm)
IC 280-8112/5		03/17/2010 16:58	1	006-0601.D	Luna-phenylhex 4.6(mm)
IC 280-8112/5		03/17/2010 16:58	1	006-0601.D	Luna-phenylhex 4.6(mm)
IC 280-8112/6		03/17/2010 17:30	1	007-0701.D	Luna-phenylhex 4.6(mm)
IC 280-8112/6		03/17/2010 17:30	1	007-0701.D	Luna-phenylhex 4.6(mm)
IC 280-8112/7		03/17/2010 18:02	1	008-0801.D	Luna-phenylhex 4.6(mm)
IC 280-8112/7		03/17/2010 18:02	1	008-0801.D	Luna-phenylhex 4.6(mm)
IC 280-8112/8		03/17/2010 18:34	1	009-0901.D	Luna-phenylhex 4.6(mm)
IC 280-8112/8		03/17/2010 18:34	1	009-0901.D	Luna-phenylhex 4.6(mm)
ICV 280-8112/9		03/17/2010 19:06	1	010-1001.D	Luna-phenylhex 4.6(mm)
ICV 280-8112/9		03/17/2010 19:06	1	010-1001.D	Luna-phenylhex 4.6(mm)
ZZZZZ		03/17/2010 19:38	1		Luna-phenylhex 4.6(mm)
ZZZZZ		03/17/2010 20:10	1		Luna-phenylhex 4.6(mm)
ZZZZZ		03/17/2010 20:42	1		Luna-phenylhex 4.6(mm)
ZZZZZ		03/17/2010 21:14	1		Luna-phenylhex 4.6(mm)
ZZZZZ		03/17/2010 21:46	1		Luna-phenylhex 4.6(mm)
ZZZZZ		03/17/2010 22:18	1		Luna-phenylhex 4.6(mm)
ZZZZZ		03/17/2010 22:50	1		Luna-phenylhex 4.6(mm)
CCV 280-8112/17		03/17/2010 23:22	1		Luna-phenylhex 4.6(mm)

HPLC/IC ANALYSIS RUN LOG

Lab Name: TestAmerica Denver Job No.: 280-3087-1

SDG No.:

Instrument ID: HPLC_Q Start Date: 06/04/2010 19:59

Analysis Batch Number: 18232 End Date: 06/05/2010 05:03

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 280-18232/1		06/04/2010 19:59	1		Luna-phenylhex 4.6(mm)
CCV 280-18232/1		06/04/2010 19:59	1		Luna-phenylhex 4.6(mm)
ZZZZZ		06/04/2010 20:31	1		Luna-phenylhex 4.6(mm)
ZZZZZ		06/04/2010 20:31	1		Luna-phenylhex 4.6(mm)
ZZZZZ		06/04/2010 21:03	1		Luna-phenylhex 4.6(mm)
ZZZZZ		06/04/2010 21:03	1		Luna-phenylhex 4.6(mm)
ZZZZZ		06/04/2010 21:35	1		Luna-phenylhex 4.6(mm)
ZZZZZ		06/04/2010 22:07	1		Luna-phenylhex 4.6(mm)
ZZZZZ		06/04/2010 22:39	1		Luna-phenylhex 4.6(mm)
ZZZZZ		06/04/2010 23:11	1		Luna-phenylhex 4.6(mm)
ZZZZZ		06/04/2010 23:43	1		Luna-phenylhex 4.6(mm)
CCV 280-18232/2		06/05/2010 00:15	1	002-1001.D	Luna-phenylhex 4.6(mm)
CCV 280-18232/2		06/05/2010 00:15	1	002-1001.D	Luna-phenylhex 4.6(mm)
MB 280-14909/10-A		06/05/2010 00:47	1	011-1101.D	Luna-phenylhex 4.6(mm)
MB 280-14909/10-A		06/05/2010 00:47	1	011-1101.D	Luna-phenylhex 4.6(mm)
LCS 280-14909/11-A		06/05/2010 01:19	1	012-1201.D	Luna-phenylhex 4.6(mm)
LCS 280-14909/11-A		06/05/2010 01:19	1	012-1201.D	Luna-phenylhex 4.6(mm)
PB 280-13801/8-B		06/05/2010 01:51	1	013-1301.D	Luna-phenylhex 4.6(mm)
PB 280-13801/8-B		06/05/2010 01:51	1	013-1301.D	Luna-phenylhex 4.6(mm)
LCSSRM 280-13801/9-B		06/05/2010 02:23	1	014-1401.D	Luna-phenylhex 4.6(mm)
LCSSRM 280-13801/9-B		06/05/2010 02:23	1	014-1401.D	Luna-phenylhex 4.6(mm)
280-3087-6	MRFLDU3-S0200-(2-4)-0409	06/05/2010 02:55	1	015-1501.D	Luna-phenylhex 4.6(mm)
280-3087-6	MRFLDU3-S0200-(2-4)-0409	06/05/2010 02:55	1	015-1501.D	Luna-phenylhex 4.6(mm)
280-3087-8	MRFLDU4-S0200-(2-4)-0409	06/05/2010 03:27	1	016-1601.D	Luna-phenylhex 4.6(mm)
280-3087-8	MRFLDU4-S0200-(2-4)-0409	06/05/2010 03:27	1	016-1601.D	Luna-phenylhex 4.6(mm)
280-3087-10	MRREP2-S0102-0409	06/05/2010 03:59	1	017-1701.D	Luna-phenylhex 4.6(mm)
280-3087-10	MRREP2-S0102-0409	06/05/2010 03:59	1	017-1701.D	Luna-phenylhex 4.6(mm)
280-3087-12	MRDU5-S0200-(2-4)-0409	06/05/2010 04:31	1	018-1801.D	Luna-phenylhex 4.6(mm)
280-3087-12	MRDU5-S0200-(2-4)-0409	06/05/2010 04:31	1	018-1801.D	Luna-phenylhex 4.6(mm)
CCV 280-18232/3		06/05/2010 05:03	1	002-1901.D	Luna-phenylhex 4.6(mm)
CCV 280-18232/3		06/05/2010 05:03	1	002-1901.D	Luna-phenylhex 4.6(mm)

HPLC/IC ANALYSIS RUN LOG

Lab Name: TestAmerica Denver Job No.: 280-3087-1

SDG No.:

Instrument ID: HPLC_X3 Start Date: 05/26/2010 21:02

Analysis Batch Number: 17472 End Date: 05/27/2010 03:42

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
IC 280-17472/1		05/26/2010 21:02	1		UltraCarb5uODS 4.6(mm)
IC 280-17472/1		05/26/2010 21:02	1	002-0201.D	UltraCarb5uODS 4.6(mm)
IC 280-17472/2		05/26/2010 21:25	1		UltraCarb5uODS 4.6(mm)
IC 280-17472/2		05/26/2010 21:25	1	003-0301.D	UltraCarb5uODS 4.6(mm)
IC 280-17472/3		05/26/2010 21:49	1		UltraCarb5uODS 4.6(mm)
IC 280-17472/3		05/26/2010 21:49	1	004-0401.D	UltraCarb5uODS 4.6(mm)
IC 280-17472/4		05/26/2010 22:12	1		UltraCarb5uODS 4.6(mm)
IC 280-17472/4		05/26/2010 22:12	1	005-0501.D	UltraCarb5uODS 4.6(mm)
IC 280-17472/5		05/26/2010 22:36	1		UltraCarb5uODS 4.6(mm)
IC 280-17472/5		05/26/2010 22:36	1	006-0601.D	UltraCarb5uODS 4.6(mm)
IC 280-17472/6		05/26/2010 22:59	1		UltraCarb5uODS 4.6(mm)
IC 280-17472/6		05/26/2010 22:59	1	007-0701.D	UltraCarb5uODS 4.6(mm)
IC 280-17472/7		05/26/2010 23:23	1		UltraCarb5uODS 4.6(mm)
IC 280-17472/7		05/26/2010 23:23	1	008-0801.D	UltraCarb5uODS 4.6(mm)
IC 280-17472/8		05/26/2010 23:46	1		UltraCarb5uODS 4.6(mm)
IC 280-17472/8		05/26/2010 23:46	1	009-0901.D	UltraCarb5uODS 4.6(mm)
ICV 280-17472/9		05/27/2010 00:10	1		UltraCarb5uODS 4.6(mm)
ICV 280-17472/9		05/27/2010 00:10	1		UltraCarb5uODS 4.6(mm)
IC 280-17472/10		05/27/2010 00:34	1		UltraCarb5uODS 4.6(mm)
IC 280-17472/11		05/27/2010 00:57	1		UltraCarb5uODS 4.6(mm)
IC 280-17472/12		05/27/2010 01:21	1		UltraCarb5uODS 4.6(mm)
IC 280-17472/13		05/27/2010 01:44	1		UltraCarb5uODS 4.6(mm)
IC 280-17472/14		05/27/2010 02:08	1		UltraCarb5uODS 4.6(mm)
IC 280-17472/15		05/27/2010 02:31	1		UltraCarb5uODS 4.6(mm)
IC 280-17472/16		05/27/2010 02:55	1		UltraCarb5uODS 4.6(mm)
IC 280-17472/17		05/27/2010 03:18	1		UltraCarb5uODS 4.6(mm)
ICV 280-17472/18		05/27/2010 03:42	1		UltraCarb5uODS 4.6(mm)

HPLC/IC ANALYSIS RUN LOG

Lab Name: TestAmerica Denver Job No.: 280-3087-1

SDG No.:

Instrument ID: HPLC_X3 Start Date: 05/26/2010 21:02

Analysis Batch Number: 17891 End Date: 05/27/2010 00:10

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
IC 280-17891/1		05/26/2010 21:02	1	002-0201.D	UltraCarb5uODS 4.6(mm)
IC 280-17891/2		05/26/2010 21:25	1	003-0301.D	UltraCarb5uODS 4.6(mm)
IC 280-17891/3		05/26/2010 21:49	1	004-0401.D	UltraCarb5uODS 4.6(mm)
IC 280-17891/4		05/26/2010 22:12	1	005-0501.D	UltraCarb5uODS 4.6(mm)
IC 280-17891/5		05/26/2010 22:36	1	006-0601.D	UltraCarb5uODS 4.6(mm)
IC 280-17891/6		05/26/2010 22:59	1	007-0701.D	UltraCarb5uODS 4.6(mm)
IC 280-17891/7		05/26/2010 23:23	1	008-0801.D	UltraCarb5uODS 4.6(mm)
IC 280-17891/8		05/26/2010 23:46	1	009-0901.D	UltraCarb5uODS 4.6(mm)
ICV 280-17891/9		05/27/2010 00:10	1		UltraCarb5uODS 4.6(mm)

HPLC/IC ANALYSIS RUN LOG

Lab Name: TestAmerica Denver Job No.: 280-3087-1

SDG No.:

Instrument ID: HPLC_X3 Start Date: 06/03/2010 10:18

Analysis Batch Number: 18009 End Date: 06/04/2010 07:20

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 280-18009/1		06/03/2010 10:18	1		UltraCarb5uODS 4.6(mm)
CCV 280-18009/1		06/03/2010 10:18	1		UltraCarb5uODS 4.6(mm)
CCV 280-18009/5		06/03/2010 10:42	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		06/03/2010 11:05	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		06/03/2010 11:29	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		06/03/2010 11:52	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		06/03/2010 12:16	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		06/03/2010 12:39	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		06/03/2010 13:03	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		06/03/2010 13:26	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		06/03/2010 13:50	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		06/03/2010 14:13	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		06/03/2010 14:37	1		UltraCarb5uODS 4.6(mm)
CCV 280-18009/2		06/03/2010 15:00	1		UltraCarb5uODS 4.6(mm)
CCV 280-18009/6		06/03/2010 15:24	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		06/03/2010 15:47	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		06/03/2010 16:11	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		06/03/2010 17:45	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		06/03/2010 18:12	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		06/03/2010 18:38	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		06/03/2010 19:04	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		06/03/2010 19:31	1		UltraCarb5uODS 4.6(mm)
CCV 280-18009/3		06/03/2010 19:58	1		UltraCarb5uODS 4.6(mm)
CCV 280-18009/3		06/03/2010 19:58	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		06/03/2010 20:45	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		06/03/2010 21:08	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		06/03/2010 21:08	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		06/03/2010 21:32	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		06/03/2010 21:32	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		06/03/2010 21:55	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		06/03/2010 21:55	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		06/03/2010 21:55	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		06/03/2010 21:55	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		06/03/2010 22:19	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		06/03/2010 22:19	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		06/03/2010 22:42	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		06/03/2010 23:06	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		06/03/2010 23:29	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		06/03/2010 23:53	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		06/04/2010 00:16	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		06/04/2010 00:40	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		06/04/2010 00:40	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		06/04/2010 01:03	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		06/04/2010 01:03	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		06/04/2010 01:27	1		UltraCarb5uODS 4.6(mm)

HPLC/IC ANALYSIS RUN LOG

Lab Name: TestAmerica Denver Job No.: 280-3087-1

SDG No.:

Instrument ID: HPLC_X3 Start Date: 06/03/2010 10:18

Analysis Batch Number: 18009 End Date: 06/04/2010 07:20

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
ZZZZZ		06/04/2010 01:27	1		UltraCarb5uODS 4.6(mm)
CCV 280-18009/4		06/04/2010 01:50	1	002-4101.D	UltraCarb5uODS 4.6(mm)
CCV 280-18009/4		06/04/2010 01:50	1	002-4101.D	UltraCarb5uODS 4.6(mm)
CCV 280-18009/7		06/04/2010 02:14	1		UltraCarb5uODS 4.6(mm)
MB 280-14909/10-A		06/04/2010 03:01	1	044-4401.D	UltraCarb5uODS 4.6(mm)
MB 280-14909/10-A		06/04/2010 03:01	1	044-4401.D	UltraCarb5uODS 4.6(mm)
LCS 280-14909/11-A		06/04/2010 03:24	1	045-4501.D	UltraCarb5uODS 4.6(mm)
LCS 280-14909/11-A		06/04/2010 03:24	1	045-4501.D	UltraCarb5uODS 4.6(mm)
PB 280-13801/8-B		06/04/2010 03:48	1	046-4601.D	UltraCarb5uODS 4.6(mm)
PB 280-13801/8-B		06/04/2010 03:48	1	046-4601.D	UltraCarb5uODS 4.6(mm)
LCSSRM 280-13801/9-B		06/04/2010 04:11	1	047-4701.D	UltraCarb5uODS 4.6(mm)
LCSSRM 280-13801/9-B		06/04/2010 04:11	1	047-4701.D	UltraCarb5uODS 4.6(mm)
280-3087-4	MRREP1-S0101-0409	06/04/2010 04:35	1	048-4801.D	UltraCarb5uODS 4.6(mm)
280-3087-4	MRREP1-S0101-0409	06/04/2010 04:35	1	048-4801.D	UltraCarb5uODS 4.6(mm)
280-3087-6	MRFLDU3-S0200-(2-4)-0409	06/04/2010 04:58	1	049-4901.D	UltraCarb5uODS 4.6(mm)
280-3087-6	MRFLDU3-S0200-(2-4)-0409	06/04/2010 04:58	1	049-4901.D	UltraCarb5uODS 4.6(mm)
280-3087-8	MRFLDU4-S0200-(2-4)-0409	06/04/2010 05:22	1	050-5001.D	UltraCarb5uODS 4.6(mm)
280-3087-8	MRFLDU4-S0200-(2-4)-0409	06/04/2010 05:22	1	050-5001.D	UltraCarb5uODS 4.6(mm)
280-3087-10	MRREP2-S0102-0409	06/04/2010 05:45	1	051-5101.D	UltraCarb5uODS 4.6(mm)
280-3087-10	MRREP2-S0102-0409	06/04/2010 05:45	1	051-5101.D	UltraCarb5uODS 4.6(mm)
280-3087-12	MRDU5-S0200-(2-4)-0409	06/04/2010 06:09	1	052-5201.D	UltraCarb5uODS 4.6(mm)
280-3087-12	MRDU5-S0200-(2-4)-0409	06/04/2010 06:09	1	052-5201.D	UltraCarb5uODS 4.6(mm)
280-3087-12 MS	MRDU5-S0200-(2-4)-0409 MS	06/04/2010 06:32	1	053-5301.D	UltraCarb5uODS 4.6(mm)
280-3087-12 MS	MRDU5-S0200-(2-4)-0409 MS	06/04/2010 06:32	1	053-5301.D	UltraCarb5uODS 4.6(mm)
280-3087-12 MSD	MRDU5-S0200-(2-4)-0409 MSD	06/04/2010 06:56	1	054-5401.D	UltraCarb5uODS 4.6(mm)
280-3087-12 MSD	MRDU5-S0200-(2-4)-0409 MSD	06/04/2010 06:56	1	054-5401.D	UltraCarb5uODS 4.6(mm)
CCV 280-18009/38		06/04/2010 07:20	1	002-5501.D	UltraCarb5uODS 4.6(mm)

Organic Prep Worksheet

Batch Number: 280-13801
Method: 8330
Analyst: Frey, Alan C

Date Open: May 04 2010 10:39AM
Batch End:

Comments

Lab ID	Client ID	Method Chain	Basis	Analysis comment
280-3087-A-4	MRREP1-S0101-0409	8330, 8330B, 8330B	T	
280-3087-A-6	MRFLDU3-S0200-(2-4)-0409	8330, 8330B, 8330B	T	
280-3087-A-8	MRFLDU4-S0200-(2-4)-0409	8330, 8330B, 8330B	T	
280-3087-A-10	MRREP2-S0102-0409	8330, 8330B, 8330B	T	
280-3087-A-12	MRDU5-S0200-(2-4)-0409	8330, 8330B, 8330B	T	
280-3087-A-12~MS	MRDU5-S0200-(2-4)-0409	8330, 8330B, 8330B	T	
280-3087-A-12~MSD	MRDU5-S0200-(2-4)-0409	8330, 8330B, 8330B	T	
PB~280-13801/8		8330, 8330B, 8330B		
LCSSRM~280-13801/9		8330, 8330B, 8330B		lcs_00009

Organic Prep Worksheet

Batch Number: 280-14909
Method: 8330B
Analyst: Frey, Alan C

Date Open: May 11 2010 6:20PM
Batch End: May 12 2010 2:50PM

Lab ID	Client ID	Method Chain	Basis	Initial weight/volume of sample	Final weight/volume of sample	8330 GrindLCS_00009	8330 LCS_00006	8330Surrogate_00013
280-3087-A-4-B	MRREP1-S0101-0409	8330B, 8330B	T	10.76 g	40000 uL			1 mL
280-3087-A-6-B	MRFLDU3-S0200-(2-4)-0409	8330B, 8330B	T	10.70 g	40000 uL			1 mL
280-3087-A-8-B	MRFLDU4-S0200-(2-4)-0409	8330B, 8330B	T	10.36 g	40000 uL			1 mL
280-3087-A-10-B	MRREP2-S0102-0409	8330B, 8330B	T	10.39 g	40000 uL			1 mL
280-3087-A-12-B	MRDU5-S0200-(2-4)-0409	8330B, 8330B	T	10.29 g	40000 uL			1 mL
280-3087-A-12-C~MS	MRDU5-S0200-(2-4)-0409	8330B, 8330B	T	10.58 g	40000 uL		1 mL	1 mL
280-3087-A-12-D~MSD	MRDU5-S0200-(2-4)-0409	8330B, 8330B	T	10.03 g	40000 uL		1 mL	1 mL
PB~280-13801/8-A		8330B, 8330B		10.38 g	40000 uL			1 mL
LCSSRM~280-13801/9-A		8330B, 8330B		10.65 g	40000 uL	10.65 g		1 mL
MB~280-14909/10		8330B, 8330B		10.37 g	40000 uL			1 mL
LCS~280-14909/11		8330B, 8330B		10.03 g	40000 uL		1 mL	1 mL

Acid used for pH adjustment:	NA
Base used for pH adjustment:	NA
Solvent Name:	A.ACN
Solvent Lot #:	1-7-11
Prep Solvent Volume Used:	20 mL
Person's name who witnessed reagent drop:	VAULT.K
Person's name who did the concentration:	FREY.A
Balance ID:	24750836
Blank Sand Lot #:	YW0488
Pipette ID for Solvent:	EXP-1
Pipette ID:	C
Witness:	VAULT.K
Sonication Start Time:	5/11/10@1840
Sonication Stop Time:	5/12/10@1240
Minumum Temperature:	5
Maximum Temperature:	6
Filter Type:	0.2UM
Filter Lot #:	00101637
SOP Number:	DV-OP-0018

Organic Prep Worksheet

Batch Number: 280-14909
Method: 8330B
Analyst: Frey, Alan C

Date Open: May 11 2010 6:20PM
Batch End: May 12 2010 2:50PM

Comments

Lab ID	Client ID	Method Chain	Basis	Analysis comment
280-3087-A-4-B	MRREP1-S0101-0409	8330B, 8330B	T	
280-3087-A-6-B	MRFLDU3-S0200-(2-4)-0409	8330B, 8330B	T	
280-3087-A-8-B	MRFLDU4-S0200-(2-4)-0409	8330B, 8330B	T	
280-3087-A-10-B	MRREP2-S0102-0409	8330B, 8330B	T	
280-3087-A-12-B	MRDU5-S0200-(2-4)-0409	8330B, 8330B	T	
280-3087-A-12-C~MS	MRDU5-S0200-(2-4)-0409	8330B, 8330B	T	
280-3087-A-12-D~MSD	MRDU5-S0200-(2-4)-0409	8330B, 8330B	T	
PB~280-13801/8-A		8330B, 8330B		
LCSSRM~280-13801/9-A		8330B, 8330B		grind lcs_00009
MB~280-14909/10		8330B, 8330B		
LCS~280-14909/11		8330B, 8330B		

Batch Comment: N/A

METALS

COVER PAGE
METALS

Lab Name: TestAmerica Denver Job Number: 280-3087-1

SDG No.:

Project: Markley Range - MIS

Client Sample ID	Lab Sample ID
MRBMDU1-S0200-(2-4)-0409	280-3087-1
MRBMDU1-S0300-(16-18)0409	280-3087-2
MRBMDU2-S0200-(2-4)-0409	280-3087-3
MRREP1-S0101-0409	280-3087-4
MRREP1-S0101-0409	280-3087-5
MRFLDU3-S0200-(2-4)-0409	280-3087-6
MRFLDU3-S0200-(2-4)-0409	280-3087-7
MRFLDU4-S0200-(2-4)-0409	280-3087-8
MRFLDU4-S0200-(2-4)-0409	280-3087-9
MRREP2-S0102-0409	280-3087-10
MRREP2-S0102-0409	280-3087-11
MRDU5-S0200-(2-4)-0409	280-3087-12
MRBMDU6-S0200-(2-4)-0409	280-3087-13

Comments:

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: MRBMDU1-S0200-(2-4)-0409
Lab Sample ID: 280-3087-1
Lab Name: TestAmerica Denver
Job No.: 280-3087-1
SDG ID.:
Matrix: Solid
Date Sampled: 04/30/2010 11:35
Reporting Basis: WET
Date Received: 05/01/2010 10:30

CAS No.	Analyte	Conc.	LOQ	DL	Units	C	Q	DIL	Method
7429-90-5	Aluminum	5600	50	1.5	mg/Kg			1	6010C
7440-70-2	Calcium	420	100	14	mg/Kg			1	6010C
7439-89-6	Iron	7200	80	3.8	mg/Kg			1	6010C
7439-95-4	Magnesium	1900	30	3.7	mg/Kg			1	6010C
7440-09-7	Potassium	440	300	41	mg/Kg			1	6010C
7440-23-5	Sodium	100	500	59	mg/Kg	U		1	6010C
7440-36-0	Antimony	0.83	0.20	0.014	mg/Kg		Q	1	6020A
7440-38-2	Arsenic	11	0.60	0.050	mg/Kg			1	6020A
7440-39-3	Barium	12	0.25	0.070	mg/Kg			1	6020A
7440-41-7	Beryllium	0.23	0.10	0.022	mg/Kg			1	6020A
7440-43-9	Cadmium	0.12	0.10	0.0093	mg/Kg		Q	1	6020A
7440-47-3	Chromium	12	0.60	0.076	mg/Kg			1	6020A
7440-48-4	Cobalt	2.7	0.10	0.0066	mg/Kg		Q	1	6020A
7440-50-8	Copper	44	2.5	0.071	mg/Kg			1	6020A
7439-92-1	Lead	270	0.40	0.018	mg/Kg			1	6020A
7439-96-5	Manganese	110	1.0	0.033	mg/Kg			1	6020A
7440-02-0	Nickel	11	0.35	0.025	mg/Kg		Q	1	6020A
7782-49-2	Selenium	0.37	0.50	0.13	mg/Kg	J		1	6020A
7440-22-4	Silver	0.050	0.10	0.020	mg/Kg	J		1	6020A
7440-28-0	Thallium	0.079	0.10	0.0035	mg/Kg	J		1	6020A
7440-62-2	Vanadium	10	0.50	0.038	mg/Kg			1	6020A
7440-66-6	Zinc	23	2.5	0.31	mg/Kg			1	6020A
7439-97-6	Mercury	0.016	0.016	0.0052	mg/Kg			1	7471B

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: MRBMDU1-S0300-(16-18)0409
Lab Sample ID: 280-3087-2
Lab Name: TestAmerica Denver
Job No.: 280-3087-1
SDG ID.:
Matrix: Solid
Date Sampled: 04/30/2010 13:20
Reporting Basis: WET
Date Received: 05/01/2010 10:30

CAS No.	Analyte	Conc.	LOQ	DL	Units	C	Q	DIL	Method
7429-90-5	Aluminum	4400	49	1.5	mg/Kg			1	6010C
7440-70-2	Calcium	360	98	14	mg/Kg			1	6010C
7439-89-6	Iron	5800	79	3.7	mg/Kg			1	6010C
7439-95-4	Magnesium	1500	29	3.6	mg/Kg			1	6010C
7440-09-7	Potassium	380	290	40	mg/Kg			1	6010C
7440-23-5	Sodium	98	490	58	mg/Kg	U		1	6010C
7440-36-0	Antimony	6.8	0.20	0.014	mg/Kg		Q	1	6020A
7440-38-2	Arsenic	10	0.59	0.050	mg/Kg			1	6020A
7440-39-3	Barium	8.7	0.25	0.070	mg/Kg			1	6020A
7440-41-7	Beryllium	0.20	0.099	0.022	mg/Kg			1	6020A
7440-43-9	Cadmium	0.067	0.099	0.0093	mg/Kg	J	Q	1	6020A
7440-47-3	Chromium	8.6	0.59	0.075	mg/Kg			1	6020A
7440-48-4	Cobalt	2.3	0.099	0.0066	mg/Kg		Q	1	6020A
7440-50-8	Copper	61	2.5	0.070	mg/Kg			1	6020A
7439-92-1	Lead	1100	4.0	0.18	mg/Kg		D	10	6020A
7439-96-5	Manganese	87	0.99	0.033	mg/Kg			1	6020A
7440-02-0	Nickel	10	0.35	0.025	mg/Kg		Q	1	6020A
7782-49-2	Selenium	0.24	0.49	0.13	mg/Kg	J		1	6020A
7440-22-4	Silver	0.053	0.099	0.020	mg/Kg	J		1	6020A
7440-28-0	Thallium	0.052	0.099	0.0035	mg/Kg	J		1	6020A
7440-62-2	Vanadium	6.5	0.49	0.038	mg/Kg			1	6020A
7440-66-6	Zinc	14	2.5	0.31	mg/Kg			1	6020A
7439-97-6	Mercury	0.0080	0.016	0.0053	mg/Kg	U		1	7471B

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: MRBMDU2-S0200-(2-4)-0409
Lab Sample ID: 280-3087-3
Lab Name: TestAmerica Denver
Job No.: 280-3087-1
SDG ID.:
Matrix: Solid
Date Sampled: 04/29/2010 15:12
Reporting Basis: WET
Date Received: 05/01/2010 10:30

CAS No.	Analyte	Conc.	LOQ	DL	Units	C	Q	DIL	Method
7429-90-5	Aluminum	6600	49	1.5	mg/Kg			1	6010C
7440-70-2	Calcium	400	98	14	mg/Kg			1	6010C
7439-89-6	Iron	9300	79	3.7	mg/Kg			1	6010C
7439-95-4	Magnesium	2600	29	3.6	mg/Kg			1	6010C
7440-09-7	Potassium	600	290	40	mg/Kg			1	6010C
7440-23-5	Sodium	98	490	58	mg/Kg	U		1	6010C
7440-36-0	Antimony	0.10	0.20	0.014	mg/Kg	J	Q	1	6020A
7440-38-2	Arsenic	15	0.60	0.050	mg/Kg			1	6020A
7440-39-3	Barium	16	0.25	0.070	mg/Kg			1	6020A
7440-41-7	Beryllium	0.37	0.10	0.022	mg/Kg			1	6020A
7440-43-9	Cadmium	0.12	0.10	0.0094	mg/Kg		Q	1	6020A
7440-47-3	Chromium	15	0.60	0.076	mg/Kg			1	6020A
7440-48-4	Cobalt	3.7	0.10	0.0066	mg/Kg		Q	1	6020A
7440-50-8	Copper	18	2.5	0.071	mg/Kg			1	6020A
7439-92-1	Lead	41	0.40	0.018	mg/Kg			1	6020A
7439-96-5	Manganese	150	1.0	0.033	mg/Kg			1	6020A
7440-02-0	Nickel	14	0.35	0.025	mg/Kg		Q	1	6020A
7782-49-2	Selenium	0.41	0.50	0.13	mg/Kg	J		1	6020A
7440-22-4	Silver	0.028	0.10	0.020	mg/Kg	J		1	6020A
7440-28-0	Thallium	0.072	0.10	0.0035	mg/Kg	J		1	6020A
7440-62-2	Vanadium	11	0.50	0.038	mg/Kg			1	6020A
7440-66-6	Zinc	25	2.5	0.32	mg/Kg			1	6020A
7439-97-6	Mercury	0.012	0.015	0.0049	mg/Kg	J		1	7471B

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: MRREP1-S0101-0409
Lab Sample ID: 280-3087-4
Lab Name: TestAmerica Denver
Job No.: 280-3087-1
SDG ID.:
Matrix: Solid
Date Sampled: 04/30/2010 13:25
Reporting Basis: WET
Date Received: 05/01/2010 10:30

CAS No.	Analyte	Conc.	LOQ	DL	Units	C	Q	DIL	Method
7429-90-5	Aluminum	6200	49	1.5	mg/Kg			1	6010C
7440-70-2	Calcium	550	98	14	mg/Kg			1	6010C
7439-89-6	Iron	8500	79	3.7	mg/Kg			1	6010C
7439-95-4	Magnesium	2200	29	3.6	mg/Kg			1	6010C
7440-09-7	Potassium	530	290	40	mg/Kg			1	6010C
7440-23-5	Sodium	98	490	58	mg/Kg	U		1	6010C
7440-36-0	Antimony	0.11	0.20	0.014	mg/Kg	J	Q	1	6020A
7440-38-2	Arsenic	12	0.60	0.050	mg/Kg			1	6020A
7440-39-3	Barium	15	0.25	0.070	mg/Kg			1	6020A
7440-41-7	Beryllium	0.24	0.10	0.022	mg/Kg			1	6020A
7440-43-9	Cadmium	0.14	0.10	0.0093	mg/Kg		Q	1	6020A
7440-47-3	Chromium	14	0.60	0.076	mg/Kg			1	6020A
7440-48-4	Cobalt	3.1	0.10	0.0066	mg/Kg		Q	1	6020A
7440-50-8	Copper	11	2.5	0.071	mg/Kg			1	6020A
7439-92-1	Lead	65	0.40	0.018	mg/Kg			1	6020A
7439-96-5	Manganese	130	1.0	0.033	mg/Kg			1	6020A
7440-02-0	Nickel	13	0.35	0.025	mg/Kg		Q	1	6020A
7782-49-2	Selenium	0.41	0.50	0.13	mg/Kg	J		1	6020A
7440-22-4	Silver	0.036	0.10	0.020	mg/Kg	J		1	6020A
7440-28-0	Thallium	0.065	0.10	0.0035	mg/Kg	J		1	6020A
7440-62-2	Vanadium	14	0.50	0.038	mg/Kg			1	6020A
7440-66-6	Zinc	27	2.5	0.31	mg/Kg			1	6020A
7439-97-6	Mercury	0.019	0.016	0.0052	mg/Kg			1	7471B

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: MRREP1-S0101-0409
Lab Sample ID: 280-3087-5
Lab Name: TestAmerica Denver
Job No.: 280-3087-1
SDG ID.:
Matrix: Solid
Date Sampled: 04/30/2010 13:25
Reporting Basis: WET
Date Received: 05/01/2010 10:30

CAS No.	Analyte	Conc.	LOQ	DL	Units	C	Q	DIL	Method
7429-90-5	Aluminum	9600	50	1.5	mg/Kg			1	6010C
7440-70-2	Calcium	730	99	14	mg/Kg			1	6010C
7439-89-6	Iron	19000	79	3.8	mg/Kg			1	6010C
7439-95-4	Magnesium	6800	30	3.7	mg/Kg			1	6010C
7440-09-7	Potassium	580	300	41	mg/Kg			1	6010C
7440-23-5	Sodium	99	500	58	mg/Kg	U		1	6010C
7440-36-0	Antimony	0.053	0.20	0.014	mg/Kg	J	Q	1	6020A
7440-38-2	Arsenic	16	0.59	0.050	mg/Kg			1	6020A
7440-39-3	Barium	14	0.25	0.070	mg/Kg			1	6020A
7440-41-7	Beryllium	0.28	0.099	0.022	mg/Kg			1	6020A
7440-43-9	Cadmium	0.13	0.099	0.0093	mg/Kg		Q	1	6020A
7440-47-3	Chromium	27	0.59	0.075	mg/Kg			1	6020A
7440-48-4	Cobalt	5.0	0.099	0.0065	mg/Kg		Q	1	6020A
7440-50-8	Copper	9.2	2.5	0.070	mg/Kg			1	6020A
7439-92-1	Lead	29	0.39	0.018	mg/Kg			1	6020A
7439-96-5	Manganese	240	0.99	0.033	mg/Kg			1	6020A
7440-02-0	Nickel	22	0.35	0.025	mg/Kg		Q	1	6020A
7782-49-2	Selenium	0.26	0.49	0.13	mg/Kg	J		1	6020A
7440-22-4	Silver	0.059	0.099	0.020	mg/Kg	U		1	6020A
7440-28-0	Thallium	0.071	0.099	0.0035	mg/Kg	J		1	6020A
7440-62-2	Vanadium	17	0.49	0.038	mg/Kg			1	6020A
7440-66-6	Zinc	28	2.5	0.31	mg/Kg			1	6020A
7439-97-6	Mercury	0.0072	0.015	0.0048	mg/Kg	U		1	7471B

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: MRFLDU3-S0200-(2-4)-0409
Lab Sample ID: 280-3087-6
Lab Name: TestAmerica Denver
Job No.: 280-3087-1
SDG ID.:
Matrix: Solid
Date Sampled: 04/30/2010 08:15
Reporting Basis: WET
Date Received: 05/01/2010 10:30

CAS No.	Analyte	Conc.	LOQ	DL	Units	C	Q	DIL	Method
7429-90-5	Aluminum	5900	50	1.5	mg/Kg			1	6010C
7440-70-2	Calcium	510	100	14	mg/Kg			1	6010C
7439-89-6	Iron	8100	80	3.8	mg/Kg			1	6010C
7439-95-4	Magnesium	2100	30	3.7	mg/Kg			1	6010C
7440-09-7	Potassium	490	300	41	mg/Kg			1	6010C
7440-23-5	Sodium	100	500	59	mg/Kg	U		1	6010C
7440-36-0	Antimony	0.11	0.20	0.014	mg/Kg	J	Q	1	6020A
7440-38-2	Arsenic	11	0.59	0.050	mg/Kg			1	6020A
7440-39-3	Barium	13	0.25	0.070	mg/Kg			1	6020A
7440-41-7	Beryllium	0.22	0.099	0.022	mg/Kg			1	6020A
7440-43-9	Cadmium	0.12	0.099	0.0093	mg/Kg		Q	1	6020A
7440-47-3	Chromium	13	0.59	0.075	mg/Kg			1	6020A
7440-48-4	Cobalt	3.1	0.099	0.0066	mg/Kg		Q	1	6020A
7440-50-8	Copper	10	2.5	0.070	mg/Kg			1	6020A
7439-92-1	Lead	52	0.40	0.018	mg/Kg			1	6020A
7439-96-5	Manganese	120	0.99	0.033	mg/Kg			1	6020A
7440-02-0	Nickel	12	0.35	0.025	mg/Kg		Q	1	6020A
7782-49-2	Selenium	0.37	0.50	0.13	mg/Kg	J		1	6020A
7440-22-4	Silver	0.027	0.099	0.020	mg/Kg	J		1	6020A
7440-28-0	Thallium	0.060	0.099	0.0035	mg/Kg	J		1	6020A
7440-62-2	Vanadium	12	0.50	0.038	mg/Kg			1	6020A
7440-66-6	Zinc	25	2.5	0.31	mg/Kg			1	6020A
7439-97-6	Mercury	0.011	0.014	0.0047	mg/Kg	J		1	7471B

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: MRFLDU3-S0200-(2-4)-0409
Lab Sample ID: 280-3087-7
Lab Name: TestAmerica Denver
Job No.: 280-3087-1
SDG ID.:
Matrix: Solid
Date Sampled: 04/30/2010 08:15
Reporting Basis: WET
Date Received: 05/01/2010 10:30

CAS No.	Analyte	Conc.	LOQ	DL	Units	C	Q	DIL	Method
7429-90-5	Aluminum	8300	49	1.5	mg/Kg			1	6010C
7440-70-2	Calcium	1900	98	14	mg/Kg			1	6010C
7439-89-6	Iron	18000	79	3.7	mg/Kg			1	6010C
7439-95-4	Magnesium	5700	30	3.6	mg/Kg			1	6010C
7440-09-7	Potassium	1100	300	40	mg/Kg			1	6010C
7440-23-5	Sodium	98	490	58	mg/Kg	U		1	6010C
7440-36-0	Antimony	0.056	0.20	0.014	mg/Kg	J	Q	1	6020A
7440-38-2	Arsenic	17	0.60	0.050	mg/Kg			1	6020A
7440-39-3	Barium	18	0.25	0.070	mg/Kg			1	6020A
7440-41-7	Beryllium	0.28	0.10	0.022	mg/Kg			1	6020A
7440-43-9	Cadmium	0.18	0.10	0.0093	mg/Kg		Q	1	6020A
7440-47-3	Chromium	30	0.60	0.076	mg/Kg			1	6020A
7440-48-4	Cobalt	5.3	0.10	0.0066	mg/Kg		Q	1	6020A
7440-50-8	Copper	12	2.5	0.071	mg/Kg			1	6020A
7439-92-1	Lead	33	0.40	0.018	mg/Kg			1	6020A
7439-96-5	Manganese	230	1.0	0.033	mg/Kg			1	6020A
7440-02-0	Nickel	25	0.35	0.025	mg/Kg		Q	1	6020A
7782-49-2	Selenium	0.32	0.50	0.13	mg/Kg	J		1	6020A
7440-22-4	Silver	0.026	0.10	0.020	mg/Kg	J		1	6020A
7440-28-0	Thallium	0.082	0.10	0.0035	mg/Kg	J		1	6020A
7440-62-2	Vanadium	19	0.50	0.038	mg/Kg			1	6020A
7440-66-6	Zinc	37	2.5	0.31	mg/Kg			1	6020A
7439-97-6	Mercury	0.0078	0.016	0.0052	mg/Kg	U		1	7471B

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: MRFLDU4-S0200-(2-4)-0409 Lab Sample ID: 280-3087-8

Lab Name: TestAmerica Denver Job No.: 280-3087-1

SDG ID.:

Matrix: Solid Date Sampled: 04/29/2010 16:00

Reporting Basis: WET Date Received: 05/01/2010 10:30

CAS No.	Analyte	Conc.	LOQ	DL	Units	C	Q	DIL	Method
7429-90-5	Aluminum	4900	50	1.5	mg/Kg			1	6010C
7440-70-2	Calcium	350	99	14	mg/Kg			1	6010C
7439-89-6	Iron	6100	80	3.8	mg/Kg			1	6010C
7439-95-4	Magnesium	1400	30	3.7	mg/Kg			1	6010C
7440-09-7	Potassium	350	300	41	mg/Kg			1	6010C
7440-23-5	Sodium	99	500	59	mg/Kg	U		1	6010C
7440-36-0	Antimony	0.23	0.20	0.014	mg/Kg		Q	1	6020A
7440-38-2	Arsenic	8.5	0.59	0.050	mg/Kg			1	6020A
7440-39-3	Barium	11	0.25	0.070	mg/Kg			1	6020A
7440-41-7	Beryllium	0.21	0.099	0.022	mg/Kg			1	6020A
7440-43-9	Cadmium	0.094	0.099	0.0093	mg/Kg	J	Q	1	6020A
7440-47-3	Chromium	8.4	0.59	0.075	mg/Kg			1	6020A
7440-48-4	Cobalt	2.0	0.099	0.0066	mg/Kg		Q	1	6020A
7440-50-8	Copper	20	2.5	0.070	mg/Kg			1	6020A
7439-92-1	Lead	110	0.40	0.018	mg/Kg			1	6020A
7439-96-5	Manganese	90	0.99	0.033	mg/Kg			1	6020A
7440-02-0	Nickel	7.6	0.35	0.025	mg/Kg		Q	1	6020A
7782-49-2	Selenium	0.28	0.49	0.13	mg/Kg	J		1	6020A
7440-22-4	Silver	0.059	0.099	0.020	mg/Kg	U		1	6020A
7440-28-0	Thallium	0.049	0.099	0.0035	mg/Kg	J		1	6020A
7440-62-2	Vanadium	7.1	0.49	0.038	mg/Kg			1	6020A
7440-66-6	Zinc	15	2.5	0.31	mg/Kg			1	6020A
7439-97-6	Mercury	0.011	0.016	0.0052	mg/Kg	J		1	7471B

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: MRFLDU4-S0200-(2-4)-0409 Lab Sample ID: 280-3087-9

Lab Name: TestAmerica Denver Job No.: 280-3087-1

SDG ID.:

Matrix: Solid Date Sampled: 04/29/2010 16:00

Reporting Basis: WET Date Received: 05/01/2010 10:30

CAS No.	Analyte	Conc.	LOQ	DL	Units	C	Q	DIL	Method
7429-90-5	Aluminum	8000	49	1.5	mg/Kg			1	6010C
7440-70-2	Calcium	1300	98	14	mg/Kg			1	6010C
7439-89-6	Iron	15000	79	3.7	mg/Kg			1	6010C
7439-95-4	Magnesium	5400	29	3.6	mg/Kg			1	6010C
7440-09-7	Potassium	810	290	40	mg/Kg			1	6010C
7440-23-5	Sodium	98	490	58	mg/Kg	U		1	6010C
7440-36-0	Antimony	0.36	0.20	0.014	mg/Kg		Q	1	6020A
7440-38-2	Arsenic	20	0.60	0.050	mg/Kg			1	6020A
7440-39-3	Barium	16	0.25	0.070	mg/Kg			1	6020A
7440-41-7	Beryllium	0.33	0.10	0.022	mg/Kg			1	6020A
7440-43-9	Cadmium	0.14	0.10	0.0093	mg/Kg		Q	1	6020A
7440-47-3	Chromium	26	0.60	0.076	mg/Kg			1	6020A
7440-48-4	Cobalt	3.7	0.10	0.0066	mg/Kg		Q	1	6020A
7440-50-8	Copper	18	2.5	0.071	mg/Kg			1	6020A
7439-92-1	Lead	100	0.40	0.018	mg/Kg			1	6020A
7439-96-5	Manganese	200	1.0	0.033	mg/Kg			1	6020A
7440-02-0	Nickel	20	0.35	0.025	mg/Kg		Q	1	6020A
7782-49-2	Selenium	0.33	0.50	0.13	mg/Kg	J		1	6020A
7440-22-4	Silver	0.060	0.10	0.020	mg/Kg	U		1	6020A
7440-28-0	Thallium	0.060	0.10	0.0035	mg/Kg	J		1	6020A
7440-62-2	Vanadium	16	0.50	0.038	mg/Kg			1	6020A
7440-66-6	Zinc	31	2.5	0.31	mg/Kg			1	6020A
7439-97-6	Mercury	0.0081	0.016	0.0054	mg/Kg	U		1	7471B

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: MRREP2-S0102-0409
Lab Sample ID: 280-3087-10
Lab Name: TestAmerica Denver
Job No.: 280-3087-1
SDG ID.:
Matrix: Solid
Date Sampled: 04/30/2010 14:20
Reporting Basis: WET
Date Received: 05/01/2010 10:30

CAS No.	Analyte	Conc.	LOQ	DL	Units	C	Q	DIL	Method
7429-90-5	Aluminum	5800	50	1.5	mg/Kg			1	6010C
7440-70-2	Calcium	500	100	14	mg/Kg			1	6010C
7439-89-6	Iron	8400	80	3.8	mg/Kg			1	6010C
7439-95-4	Magnesium	2200	30	3.7	mg/Kg			1	6010C
7440-09-7	Potassium	480	300	41	mg/Kg			1	6010C
7440-23-5	Sodium	100	500	59	mg/Kg	U		1	6010C
7440-36-0	Antimony	0.091	0.20	0.014	mg/Kg	J	Q	1	6020A
7440-38-2	Arsenic	12	0.60	0.050	mg/Kg			1	6020A
7440-39-3	Barium	15	0.25	0.070	mg/Kg			1	6020A
7440-41-7	Beryllium	0.25	0.099	0.022	mg/Kg			1	6020A
7440-43-9	Cadmium	0.11	0.099	0.0093	mg/Kg		Q	1	6020A
7440-47-3	Chromium	13	0.60	0.075	mg/Kg			1	6020A
7440-48-4	Cobalt	3.1	0.099	0.0066	mg/Kg		Q	1	6020A
7440-50-8	Copper	12	2.5	0.071	mg/Kg			1	6020A
7439-92-1	Lead	60	0.40	0.018	mg/Kg			1	6020A
7439-96-5	Manganese	130	0.99	0.033	mg/Kg			1	6020A
7440-02-0	Nickel	12	0.35	0.025	mg/Kg		Q	1	6020A
7782-49-2	Selenium	0.40	0.50	0.13	mg/Kg	J		1	6020A
7440-22-4	Silver	0.051	0.099	0.020	mg/Kg	J		1	6020A
7440-28-0	Thallium	0.063	0.099	0.0035	mg/Kg	J		1	6020A
7440-62-2	Vanadium	13	0.50	0.038	mg/Kg			1	6020A
7440-66-6	Zinc	26	2.5	0.31	mg/Kg			1	6020A
7439-97-6	Mercury	0.015	0.015	0.0049	mg/Kg			1	7471B

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: MRREP2-S0102-0409
Lab Sample ID: 280-3087-11
Lab Name: TestAmerica Denver
Job No.: 280-3087-1
SDG ID.:
Matrix: Solid
Date Sampled: 04/30/2010 14:20
Reporting Basis: WET
Date Received: 05/01/2010 10:30

CAS No.	Analyte	Conc.	LOQ	DL	Units	C	Q	DIL	Method
7429-90-5	Aluminum	6800	50	1.5	mg/Kg			1	6010C
7440-70-2	Calcium	900	100	14	mg/Kg			1	6010C
7439-89-6	Iron	14000	80	3.8	mg/Kg			1	6010C
7439-95-4	Magnesium	4200	30	3.7	mg/Kg			1	6010C
7440-09-7	Potassium	600	300	41	mg/Kg			1	6010C
7440-23-5	Sodium	100	500	59	mg/Kg	U		1	6010C
7440-36-0	Antimony	0.058	0.20	0.014	mg/Kg	J	Q	1	6020A
7440-38-2	Arsenic	18	0.59	0.050	mg/Kg			1	6020A
7440-39-3	Barium	19	0.25	0.070	mg/Kg			1	6020A
7440-41-7	Beryllium	0.23	0.099	0.022	mg/Kg			1	6020A
7440-43-9	Cadmium	0.15	0.099	0.0093	mg/Kg		Q	1	6020A
7440-47-3	Chromium	23	0.59	0.075	mg/Kg			1	6020A
7440-48-4	Cobalt	5.5	0.099	0.0066	mg/Kg		Q	1	6020A
7440-50-8	Copper	13	2.5	0.070	mg/Kg			1	6020A
7439-92-1	Lead	28	0.40	0.018	mg/Kg			1	6020A
7439-96-5	Manganese	330	0.99	0.033	mg/Kg			1	6020A
7440-02-0	Nickel	24	0.35	0.025	mg/Kg		Q	1	6020A
7782-49-2	Selenium	0.27	0.50	0.13	mg/Kg	J		1	6020A
7440-22-4	Silver	0.55	0.099	0.020	mg/Kg			1	6020A
7440-28-0	Thallium	0.082	0.099	0.0035	mg/Kg	J		1	6020A
7440-62-2	Vanadium	14	0.50	0.038	mg/Kg			1	6020A
7440-66-6	Zinc	28	2.5	0.31	mg/Kg			1	6020A
7439-97-6	Mercury	0.0086	0.014	0.0047	mg/Kg	J		1	7471B

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: MRDU5-S0200-(2-4)-0409
Lab Sample ID: 280-3087-12
Lab Name: TestAmerica Denver
Job No.: 280-3087-1
SDG ID.:
Matrix: Solid
Date Sampled: 04/29/2010 16:29
Reporting Basis: WET
Date Received: 05/01/2010 10:30

CAS No.	Analyte	Conc.	LOQ	DL	Units	C	Q	DIL	Method
7429-90-5	Aluminum	5700	49	1.5	mg/Kg		J	1	6010C
7440-70-2	Calcium	520	99	14	mg/Kg			1	6010C
7439-89-6	Iron	7800	79	3.7	mg/Kg		J	1	6010C
7439-95-4	Magnesium	2100	30	3.6	mg/Kg			1	6010C
7440-09-7	Potassium	520	300	40	mg/Kg			1	6010C
7440-23-5	Sodium	99	490	58	mg/Kg	U		1	6010C
7440-36-0	Antimony	0.17	0.20	0.014	mg/Kg	J	Q J	1	6020A
7440-38-2	Arsenic	11	0.59	0.050	mg/Kg			1	6020A
7440-39-3	Barium	15	0.25	0.070	mg/Kg			1	6020A
7440-41-7	Beryllium	0.28	0.099	0.022	mg/Kg			1	6020A
7440-43-9	Cadmium	0.13	0.099	0.0093	mg/Kg		Q	1	6020A
7440-47-3	Chromium	13	0.59	0.075	mg/Kg			1	6020A
7440-48-4	Cobalt	3.0	0.099	0.0065	mg/Kg		Q	1	6020A
7440-50-8	Copper	28	2.5	0.070	mg/Kg		J	1	6020A
7439-92-1	Lead	120	0.39	0.018	mg/Kg		J	1	6020A
7439-96-5	Manganese	120	0.99	0.033	mg/Kg		J	1	6020A
7440-02-0	Nickel	11	0.35	0.025	mg/Kg		Q	1	6020A
7782-49-2	Selenium	0.38	0.49	0.13	mg/Kg	J		1	6020A
7440-22-4	Silver	0.041	0.099	0.020	mg/Kg	J		1	6020A
7440-28-0	Thallium	0.067	0.099	0.0035	mg/Kg	J		1	6020A
7440-62-2	Vanadium	11	0.49	0.038	mg/Kg			1	6020A
7440-66-6	Zinc	28	2.5	0.31	mg/Kg		J	1	6020A
7439-97-6	Mercury	0.018	0.015	0.0047	mg/Kg			1	7471B

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: MRBMDU6-S0200-(2-4)-0409
Lab Sample ID: 280-3087-13
Lab Name: TestAmerica Denver
Job No.: 280-3087-1
SDG ID.:
Matrix: Solid
Date Sampled: 04/30/2010 10:40
Reporting Basis: WET
Date Received: 05/01/2010 10:30

CAS No.	Analyte	Conc.	LOQ	DL	Units	C	Q	DIL	Method
7429-90-5	Aluminum	5400	49	1.5	mg/Kg			1	6010C
7440-70-2	Calcium	370	99	14	mg/Kg			1	6010C
7439-89-6	Iron	6800	79	3.7	mg/Kg			1	6010C
7439-95-4	Magnesium	1700	30	3.6	mg/Kg			1	6010C
7440-09-7	Potassium	400	300	40	mg/Kg			1	6010C
7440-23-5	Sodium	99	490	58	mg/Kg	U		1	6010C
7440-36-0	Antimony	0.36	0.20	0.014	mg/Kg		Q	1	6020A
7440-38-2	Arsenic	10	0.59	0.050	mg/Kg			1	6020A
7440-39-3	Barium	11	0.25	0.069	mg/Kg			1	6020A
7440-41-7	Beryllium	0.23	0.098	0.022	mg/Kg			1	6020A
7440-43-9	Cadmium	0.089	0.098	0.0092	mg/Kg	J	Q	1	6020A
7440-47-3	Chromium	11	0.59	0.075	mg/Kg			1	6020A
7440-48-4	Cobalt	2.5	0.098	0.0065	mg/Kg		Q	1	6020A
7440-50-8	Copper	21	2.5	0.070	mg/Kg			1	6020A
7439-92-1	Lead	160	0.39	0.018	mg/Kg			1	6020A
7439-96-5	Manganese	89	0.98	0.032	mg/Kg			1	6020A
7440-02-0	Nickel	10	0.34	0.025	mg/Kg		Q	1	6020A
7782-49-2	Selenium	0.34	0.49	0.13	mg/Kg	J		1	6020A
7440-22-4	Silver	0.035	0.098	0.020	mg/Kg	J		1	6020A
7440-28-0	Thallium	0.062	0.098	0.0035	mg/Kg	J		1	6020A
7440-62-2	Vanadium	9.2	0.49	0.038	mg/Kg			1	6020A
7440-66-6	Zinc	20	2.5	0.31	mg/Kg			1	6020A
7439-97-6	Mercury	0.012	0.015	0.0048	mg/Kg	J		1	7471B

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Denver Job No.: 280-3087-1

SDG No.:

ICV Source: ICP ICVH_00024 Concentration Units: ug/L

CCV Source: ICP CCVH_00065

Analyte	ICVH 280-18117/6 06/03/2010 11:45				CCVH 280-18117/34 06/03/2010 23:29				CCVH 280-18117/48 06/04/2010 00:20			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Aluminum	39400		40000	98	49700		50000	99	48800		50000	98
Iron	78800		80000	99	51000		50000	102	50000		50000	100
Sodium	40500		40000	101	249000		250000	100	247000		250000	99

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Denver Job No.: 280-3087-1

SDG No.:

ICV Source: ICP ICVH_00024 Concentration Units: ug/L

CCV Source: ICP CCVH_00065

Analyte	CCVH 280-18117/61 06/04/2010 00:49											
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Aluminum	48600		50000	97								
Iron	50200		50000	100								
Sodium	243000		250000	97								

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Denver Job No.: 280-3087-1

SDG No.:

ICV Source: ICP LLCCV_00098 Concentration Units: ug/L

CCV Source: ICP LLCCV_00098

Analyte	ICVL 280-18117/8 06/03/2010 11:49				CCVL 280-18117/37 06/03/2010 23:36				CCVL 280-18117/51 06/04/2010 00:27			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Aluminum	102		100	102	97.3	J	100	97	98.5	J	100	99
Calcium	199	J	200	100	204		200	102	197	J	200	99
Iron	102		100	102	98.8	J	100	99	101		100	101
Magnesium	208		200	104	213		200	107	213		200	106
Potassium	3080		3000	103	3250		3000	108	3090		3000	103
Sodium	1150		1000	115	1030		1000	103	982	J	1000	98

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Denver Job No.: 280-3087-1

SDG No.:

ICV Source: ICP LLCCV_00098 Concentration Units: ug/L

CCV Source: ICP LLCCV_00098

Analyte	CCVL 280-18117/64 06/04/2010 00:56											
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Aluminum	96.9	J	100	97								
Calcium	194	J	200	97								
Iron	96.9	J	100	97								
Magnesium	210		200	105								
Potassium	3140		3000	105								
Sodium	995	J	1000	100								

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Denver Job No.: 280-3087-1

SDG No.:

ICV Source: ICP ICVL_00023 Concentration Units: ug/L

CCV Source: ICP CCVL_00062

Analyte	ICV 280-18117/9 06/03/2010 11:58				ICV 280-18117/10 06/03/2010 12:03				CCV 280-18117/35 06/03/2010 23:31			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Aluminum	254		250	102	253		250	101	513		500	103
Calcium	2000		2000	100	1980		2000	99	5140		5000	103
Iron	251		250	101	250		250	100	2560		2500	102
Magnesium	10000		10000	100	9910		10000	99	20500		20000	102
Potassium	19800		20000	99	19600		20000	98	51800		50000	104
Sodium	2030		2000	102	2020		2000	101	5200		5000	104

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Denver Job No.: 280-3087-1

SDG No.:

ICV Source: ICP ICVL_00023 Concentration Units: ug/L

CCV Source: ICP CCVL_00062

Analyte	CCV 280-18117/49 06/04/2010 00:22				CCV 280-18117/62 06/04/2010 00:52							
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Aluminum	525		500	105	531		500	106				
Calcium	5040		5000	101	5080		5000	102				
Iron	2500		2500	100	2500		2500	100				
Magnesium	20300		20000	102	20600		20000	103				
Potassium	50400		50000	101	50900		50000	102				
Sodium	5000		5000	100	5040		5000	101				

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Denver Job No.: 280-3087-1

SDG No.:

ICV Source: ICP ICVL_00023 Concentration Units: ug/L

CCV Source: ICP CCVL_00063

Analyte	ICV 280-18373/7 06/07/2010 10:14				ICV 280-18373/8 06/07/2010 10:17				CCV 280-18373/46 06/07/2010 12:32			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Sodium	2090		2000	104	2080		2000	104	4950		5000	99
Aluminum	259		250	104	257		250	103	499		500	100
Calcium	2040		2000	102	2040		2000	102	4910		5000	98
Iron	262		250	105	261		250	104	2340		2500	94
Magnesium	10000		10000	100	10000		10000	100	20300		20000	102
Potassium	20400		20000	102	20300		20000	102	48600		50000	97

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Denver Job No.: 280-3087-1

SDG No.:

ICV Source: ICP ICVL_00023 Concentration Units: ug/L

CCV Source: ICP CCVL_00063

Analyte	CCV 280-18373/60 06/07/2010 13:04				CCV 280-18373/73 06/07/2010 13:33							
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Sodium	4850		5000	97	4770		5000	95				
Aluminum	500		500	100	529		500	106				
Calcium	4950		5000	99	4920		5000	98				
Iron	2340		2500	94	2340		2500	93				
Magnesium	20600		20000	103	20600		20000	103				
Potassium	49100		50000	98	48400		50000	97				

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Denver Job No.: 280-3087-1

SDG No.:

ICV Source: ICP ICVH_00024 Concentration Units: ug/L

CCV Source: ICP CCVH_00067

Analyte	ICVH 280-18373/9 06/07/2010 10:21				CCVH 280-18373/45 06/07/2010 12:30				CCVH 280-18373/59 06/07/2010 13:02			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Sodium	42100		40000	105	237000		250000	95	237000		250000	95
Aluminum	39800		40000	99	48800		50000	98	48900		50000	98
Iron	78100		80000	98	48000		50000	96	47800		50000	96

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Denver Job No.: 280-3087-1

SDG No.:

ICV Source: ICP ICVH_00024 Concentration Units: ug/L

CCV Source: ICP CCVH_00067

Analyte	CCVH 280-18373/72 06/07/2010 13:31											
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Sodium												
Aluminum	48900		50000	98								
Iron	47500		50000	95								

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Denver Job No.: 280-3087-1

SDG No.:

ICV Source: ICP LLCCV_00099 Concentration Units: ug/L

CCV Source: ICP LLCCV_00099

Analyte	ICVL 280-18373/10 06/07/2010 10:29				CCVL 280-18373/48 06/07/2010 12:37				CCVL 280-18373/62 06/07/2010 13:09			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Sodium	1050		1000	105	1040		1000	104	970	J	1000	97
Aluminum	99.1	J	100	99	97.2	J	100	97	98.1	J	100	98
Calcium	199	J	200	99	195	J	200	98	196	J	200	98
Iron	102		100	102	95.2	J	100	95	98.2	J	100	98
Magnesium	203		200	101	214		200	107	219		200	110
Potassium	2980	J	3000	99	2850	J	3000	95	2800	J	3000	93

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Denver Job No.: 280-3087-1

SDG No.:

ICV Source: ICP LLCCV_00099 Concentration Units: ug/L

CCV Source: ICP LLCCV_00099

Analyte	CCVL 280-18373/75 06/07/2010 13:38											
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Sodium	958	J	1000	96								
Aluminum	101		100	101								
Calcium	213		200	107								
Iron	96.8	J	100	97								
Magnesium	218		200	109								
Potassium	2760	J	3000	92								

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Denver Job No.: 280-3087-1

SDG No.:

ICV Source: ICP ICVL_00024 Concentration Units: ug/L

CCV Source: ICP CCVL_00064

Analyte	ICV 280-18884/7 06/10/2010 09:19				CCV 280-18884/12 06/10/2010 09:59				CCV 280-18884/20 06/10/2010 10:22			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Aluminum	254		250	102	518		500	104	520		500	104
Calcium	2030		2000	102	4990		5000	100	4960		5000	99
Iron	253		250	101	2470		2500	99	2460		2500	98
Magnesium	9920		10000	99	20200		20000	101	20200		20000	101
Potassium	20300		20000	101	50300		50000	101	50300		50000	101
Sodium	2080		2000	104	5130		5000	103	5090		5000	102

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Denver Job No.: 280-3087-1

SDG No.:

ICV Source: ICP ICVL_00024 Concentration Units: ug/L

CCV Source: ICP CCVL_00064

Analyte	CCV 280-18884/45 06/10/2010 11:20				CCV 280-18884/58 06/10/2010 11:50							
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Aluminum	521		500	104	519		500	104				
Calcium	4960		5000	99	4920		5000	98				
Iron	2440		2500	97	2390		2500	96				
Magnesium	20200		20000	101	20200		20000	101				
Potassium	50900		50000	102	50400		50000	101				
Sodium	5080		5000	102	5050		5000	101				

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Denver Job No.: 280-3087-1

SDG No.:

ICV Source: ICP LLCCV_00103 Concentration Units: ug/L

CCV Source: ICP LLCCV_00103

Analyte	ICVL 280-18884/8 06/10/2010 09:42				CCVL 280-18884/22 06/10/2010 10:26				CCVL 280-18884/47 06/10/2010 11:25			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Aluminum	105		100	105	106		100	106	106		100	106
Calcium	215		200	108	214		200	107	207		200	103
Iron	107		100	107	98.0	J	100	98	94.4	J	100	94
Magnesium	214		200	107	218		200	109	217		200	109
Potassium	3060		3000	102	3100		3000	103	3020		3000	101
Sodium	1080		1000	108	1090		1000	109	1060		1000	106

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Denver Job No.: 280-3087-1

SDG No.:

ICV Source: ICP LLCCV_00103 Concentration Units: ug/L

CCV Source: ICP LLCCV_00103

Analyte	CCVL 280-18884/60 06/10/2010 11:54											
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Aluminum	104		100	104								
Calcium	202		200	101								
Iron	91.9	J	100	92								
Magnesium	216		200	108								
Potassium	2990	J	3000	100								
Sodium	1040		1000	104								

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Denver Job No.: 280-3087-1

SDG No.:

ICV Source: ICP ICVH_00025 Concentration Units: ug/L

CCV Source: ICP CCVH_00068

Analyte	ICVH 280-18884/9 06/10/2010 09:50				ICVH 280-18884/10 06/10/2010 09:53				CCVH 280-18884/11 06/10/2010 09:56			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Aluminum	39100		40000	98	40400		40000	101	45800		50000	92
Iron	77000		80000	96	79400		80000	99	45300		50000	91
Sodium	40900		40000	102	42000		40000	105	228000		250000	91

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Denver Job No.: 280-3087-1

SDG No.:

ICV Source: ICP ICVH_00025 Concentration Units: ug/L

CCV Source: ICP CCVH_00068

Analyte	CCVH 280-18884/19 06/10/2010 10:19				CCVH 280-18884/44 06/10/2010 11:18				CCVH 280-18884/57 06/10/2010 11:47			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Aluminum	50100		50000	100	50400		50000	101	50300		50000	101
Iron	49700		50000	99	49700		50000	99	49200		50000	98
Sodium	245000		250000	98	246000		250000	99	248000		250000	99

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Denver Job No.: 280-3087-1

SDG No.:

ICV Source: MS ICV_00094 Concentration Units: ug/L

CCV Source: MS CCV_00095

Analyte	ICV 280-18454/4 06/05/2010 17:27				CCV 280-18454/16 06/05/2010 18:00				CCV 280-18454/30 06/05/2010 18:38			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Antimony	41.2		40.0	103	51.9		50.0	104	50.3		50.0	101
Arsenic	40.0		40.0	100	49.7		50.0	99	50.0		50.0	100
Barium	40.9		40.0	102	51.6		50.0	103	51.6		50.0	103
Beryllium	39.5		40.0	99	52.0		50.0	104	48.5		50.0	97
Cadmium	41.1		40.0	103	50.8		50.0	102	50.9		50.0	102
Chromium	40.6		40.0	101	50.4		50.0	101	51.6		50.0	103
Cobalt	41.4		40.0	103	51.1		50.0	102	52.0		50.0	104
Copper	39.8		40.0	100	49.8		50.0	100	50.2		50.0	100
Lead	41.1		40.0	103	50.7		50.0	101	50.7		50.0	101
Manganese	40.6		40.0	101	50.4		50.0	101	51.4		50.0	103
Nickel	40.4		40.0	101	49.8		50.0	100	50.8		50.0	102
Selenium	40.2		40.0	101	51.0		50.0	102	52.2		50.0	104
Silver	41.2		40.0	103	51.8		50.0	104	52.1		50.0	104
Thallium	41.1		40.0	103	52.8		50.0	106	52.1		50.0	104
Vanadium	40.3		40.0	101	51.5		50.0	103	52.0		50.0	104
Zinc	39.7		40.0	99	49.7		50.0	99	50.0		50.0	100

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Denver Job No.: 280-3087-1

SDG No.:

ICV Source: MS ICV_00094 Concentration Units: ug/L

CCV Source: MS CCV_00095

Analyte	CCV 280-18454/44 06/05/2010 19:16				CCV 280-18454/58 06/05/2010 19:54							
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Antimony	50.4		50.0	101	50.5		50.0	101				
Arsenic	50.1		50.0	100	50.2		50.0	100				
Barium	51.6		50.0	103	51.2		50.0	102				
Beryllium	53.7		50.0	107	53.3		50.0	107				
Cadmium	50.6		50.0	101	49.7		50.0	99				
Chromium	50.4		50.0	101	50.4		50.0	101				
Cobalt	51.3		50.0	103	50.8		50.0	102				
Copper	49.7		50.0	99	49.5		50.0	99				
Lead	51.2		50.0	102	52.5		50.0	105				
Manganese	51.0		50.0	102	50.8		50.0	102				
Nickel	50.0		50.0	100	49.5		50.0	99				
Selenium	51.1		50.0	102	50.4		50.0	101				
Silver	52.3		50.0	105	50.5		50.0	101				
Thallium	53.3		50.0	107	55.2		50.0	110				
Vanadium	51.5		50.0	103	50.5		50.0	101				
Zinc	49.3		50.0	99	49.5		50.0	99				

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Denver Job No.: 280-3087-1

SDG No.:

ICV Source: MS LCCV dly_00093 Concentration Units: ug/L

CCV Source: MS LCCV dly_00093

Analyte	ICVL 280-18454/6 06/05/2010 17:33				CCVL 280-18454/19 06/05/2010 18:08				CCVL 280-18454/33 06/05/2010 18:47			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Antimony	2.17		2.00	108	2.24		2.00	112	2.15		2.00	107
Arsenic	5.14		5.00	103	5.22		5.00	104	5.09		5.00	102
Barium	1.04		1.00	104	1.06		1.00	106	1.08		1.00	108
Beryllium	0.947	J	1.00	95	1.08		1.00	108	0.968	J	1.00	97
Cadmium	1.07		1.00	107	1.05		1.00	105	1.06		1.00	106
Chromium	2.07		2.00	104	2.08		2.00	104	2.06		2.00	103
Cobalt	1.02		1.00	102	1.03		1.00	103	1.05		1.00	105
Copper	1.99	J	2.00	100	2.04		2.00	102	1.99	J	2.00	99
Lead	1.03		1.00	103	1.03		1.00	103	1.06		1.00	106
Manganese	1.04		1.00	104	1.03		1.00	103	1.03		1.00	103
Nickel	2.06		2.00	103	2.12		2.00	106	2.08		2.00	104
Selenium	4.83	J	5.00	97	5.11		5.00	102	4.87	J	5.00	97
Silver	5.27		5.00	105	5.20		5.00	104	5.17		5.00	103
Thallium	1.10		1.00	110	1.08		1.00	108	1.11		1.00	111
Vanadium	5.07		5.00	101	5.05		5.00	101	5.07		5.00	101
Zinc	10.1		10.0	101	9.98	J	10.0	100	10.0		10.0	100

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Denver Job No.: 280-3087-1

SDG No.:

ICV Source: MS LCCV dly_00093 Concentration Units: ug/L

CCV Source: MS LCCV dly_00093

Analyte	CCVL 280-18454/47 06/05/2010 19:25				CCVL 280-18454/61 06/05/2010 20:02							
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Antimony	2.15		2.00	108	2.11		2.00	106				
Arsenic	5.11		5.00	102	5.20		5.00	104				
Barium	1.07		1.00	107	1.06		1.00	106				
Beryllium	1.10		1.00	110	1.00		1.00	100				
Cadmium	1.06		1.00	106	1.05		1.00	105				
Chromium	2.05		2.00	103	2.03		2.00	101				
Cobalt	1.02		1.00	102	1.02		1.00	102				
Copper	1.99	J	2.00	100	1.99	J	2.00	99				
Lead	1.07		1.00	107	1.10		1.00	110				
Manganese	1.07		1.00	107	1.04		1.00	104				
Nickel	1.92	J	2.00	96	1.92	J	2.00	96				
Selenium	5.18		5.00	104	4.94	J	5.00	99				
Silver	5.18		5.00	104	5.12		5.00	102				
Thallium	1.10		1.00	110	1.13		1.00	113				
Vanadium	5.02		5.00	100	4.97	J	5.00	99				
Zinc	10.0		10.0	100	9.84	J	10.0	98				

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Denver Job No.: 280-3087-1

SDG No.:

ICV Source: Hg SoilICV_00027 Concentration Units: ug/L

CCV Source: Hg Soil CCV_00031

Analyte	ICV 280-15007/9 05/11/2010 20:11				CCV 280-15007/49 05/11/2010 21:46				CCV 280-15007/60 05/11/2010 22:11			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Mercury	6.78		7.00	97	5.08		5.00	102	5.24		5.00	105

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Denver Job No.: 280-3087-1

SDG No.:

ICV Source: Hg SoilICV_00027 Concentration Units: ug/L

CCV Source: Hg Soil CCV_00031

Analyte	CCV 280-15007/71 05/11/2010 22:36				CCV 280-15007/82 05/11/2010 23:02							
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Mercury	5.00		5.00	100	4.89		5.00	98				

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2B-IN
CRQL CHECK STANDARD
METALS

Lab Name: TestAmerica Denver Job No.: 280-3087-1

SDG No.:

Analysis Method: 6010C Instrument ID: MT_026

Lab Sample ID: CRI 280-18117/14 Concentration Units: ug/L

CRQL Check Standard Source: ICP RL STD_00108

Analyte	CRQL Check Standard				
	True	Found	Qualifiers	%R(1)	Limits
Aluminum	100	100		100	80-120
Calcium	200	198	J	99	80-120
Iron	30.0	32.1	J	107	80-120
Magnesium	200	206		103	80-120
Potassium	1000	1100	J	110	80-120
Sodium	1000	1060		106	80-120

Lab Sample ID: CRI 280-18373/14 Concentration Units: ug/L

CRQL Check Standard Source: ICP RL STD_00110

Analyte	CRQL Check Standard				
	True	Found	Qualifiers	%R(1)	Limits
Sodium	1000	1090		109	80-120

Lab Sample ID: CRI 280-18884/14 Concentration Units: ug/L

CRQL Check Standard Source: ICP RL STD_00113

Analyte	CRQL Check Standard				
	True	Found	Qualifiers	%R(1)	Limits
Aluminum	100	110		110	80-120

Lab Sample ID: CRI 280-18884/15 Concentration Units: ug/L

CRQL Check Standard Source: ICP ALT CRI_00116

Analyte	CRQL Check Standard				
	True	Found	Qualifiers	%R(1)	Limits
Aluminum	200	218		109	80-120
Calcium	400	416		104	80-120
Iron	60.0	61.7	J	103	80-120
Magnesium	400	434		109	80-120
Potassium	2000	2050	J	103	80-120
Sodium	2000	2190		109	80-120

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

FORM IIB-IN

2B-IN
CRQL CHECK STANDARD
METALS

Lab Name: TestAmerica Denver Job No.: 280-3087-1

SDG No.:

Analysis Method: 6020A Instrument ID: MT_024

Lab Sample ID: CRI 280-18454/9 Concentration Units: ug/L

CRQL Check Standard Source: MS RL STD_00099

Analyte	CRQL Check Standard				
	True	Found	Qualifiers	%R(1)	Limits
Antimony	1.00	1.04	J	104	80-120
Arsenic	1.00	1.01	J	101	80-120
Barium	1.00	1.01		101	80-120
Beryllium	1.00	1.04		104	80-120
Cadmium	1.00	1.04		104	80-120
Chromium	1.00	1.00	J	100	80-120
Cobalt	1.00	1.01		101	80-120
Copper	1.00	1.03	J	103	80-120
Lead	1.00	1.02		102	80-120
Manganese	1.00	1.02		102	80-120
Nickel	1.00	1.07	J	107	80-120
Selenium	1.00	0.921	J	92	80-120
Silver	1.00	1.03	J	103	80-120
Thallium	1.00	1.08		108	80-120
Vanadium	1.00	1.02	J	102	80-120
Zinc	10.0	10.9		109	80-120

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

FORM IIB-IN

2B-IN
CRQL CHECK STANDARD
METALS

Lab Name: TestAmerica Denver Job No.: 280-3087-1

SDG No.:

Analysis Method: 7471B Instrument ID: MT_033

Lab Sample ID: CRA 280-15007/11 Concentration Units: ug/L

CRQL Check Standard Source: Hg Soil RL_00027

Analyte	CRQL Check Standard				
	True	Found	Qualifiers	%R(1)	Limits
Mercury	0.200	0.189	J	94	50-150

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

FORM IIB-IN

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: TestAmerica Denver Job No.: 280-3087-1

SDG No.:

Concentration Units: ug/L

Analyte	RL	ICB 280-18117/13 06/03/2010 12:12		CCB 280-18117/36 06/03/2010 23:34		CCB 280-18117/50 06/04/2010 00:24		CCB 280-18117/63 06/04/2010 00:54	
		Found	C	Found	C	Found	C	Found	C
Aluminum	100	20	U	20	U	20	U	20	U
Calcium	200	35	U	35	U	35	U	35	U
Iron	100	40	U	40	U	31.8	J	40	U
Magnesium	200	20	U	20	U	20	U	20	U
Potassium	3000	400	U	357	J	251	J	363	J
Sodium	1000	101	J	250	U	250	U	250	U

Italicized analytes were not requested for this sequence.

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: TestAmerica Denver Job No.: 280-3087-1

SDG No.:

Concentration Units: ug/L

Analyte	RL	ICB 280-18373/13 06/07/2010 10:38		CCB 280-18373/47 06/07/2010 12:35		CCB 280-18373/61 06/07/2010 13:06		CCB 280-18373/74 06/07/2010 13:36	
		Found	C	Found	C	Found	C	Found	C
Sodium	1000	250	U	250	U	250	U	250	U
Aluminum	100	20	U	20	U	20	U	20	U
Calcium	200	35	U	35	U	35	U	35	U
Iron	100	40	U	40	U	40	U	40	U
Magnesium	200	20	U	20	U	20	U	20	U
Potassium	3000	400	U	400	U	400	U	400	U

Italicized analytes were not requested for this sequence.

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: TestAmerica Denver Job No.: 280-3087-1

SDG No.:

Concentration Units: ug/L

Analyte	RL	ICB 280-18884/13 06/10/2010 10:01		CCB 280-18884/21 06/10/2010 10:24		CCB 280-18884/46 06/10/2010 11:22		CCB 280-18884/59 06/10/2010 11:52	
		Found	C	Found	C	Found	C	Found	C
Aluminum	100	20	U	20	U	20	U	20	U
Calcium	200	4.02	J	35	U	35	U	3.88	J
Iron	100	40	U	40	U	40	U	40	U
Magnesium	200	20	U	20	U	20	U	20	U
Potassium	3000	400	U	400	U	400	U	400	U
Sodium	1000	250	U	250	U	250	U	250	U

Italicized analytes were not requested for this sequence.

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: TestAmerica Denver Job No.: 280-3087-1

SDG No.:

Concentration Units: ug/L

Analyte	RL	ICB 280-18454/8 06/05/2010 17:39		CCB 280-18454/32 06/05/2010 18:44		CCB 280-18454/46 06/05/2010 19:22		CCB 280-18454/60 06/05/2010 19:59	
		Found	C	Found	C	Found	C	Found	C
Antimony	2.0	0.20	U	0.106	J	0.0839	J	0.107	J
Arsenic	5.0	0.60	U	0.60	U	0.60	U	0.60	U
Barium	1.0	0.85	U	0.85	U	0.85	U	0.85	U
Beryllium	1.0	0.24	U	0.24	U	0.24	U	0.24	U
Cadmium	1.0	0.12	U	0.12	U	0.12	U	0.12	U
Chromium	2.0	1.5	U	1.5	U	1.5	U	1.5	U
Cobalt	1.0	0.030	U	0.030	U	0.030	U	0.030	U
Copper	2.0	1.5	U	1.5	U	1.5	U	1.5	U
Lead	1.0	0.50	U	0.50	U	0.50	U	0.50	U
Manganese	1.0	0.90	U	0.90	U	0.90	U	0.90	U
Nickel	2.0	0.90	U	0.90	U	0.90	U	0.90	U
Selenium	5.0	2.0	U	2.0	U	2.0	U	2.0	U
Silver	5.0	0.45	U	0.45	U	0.45	U	0.45	U
Thallium	1.0	0.060	U	0.060	U	0.060	U	0.060	U
Vanadium	5.0	0.40	U	0.40	U	0.40	U	0.40	U
Zinc	10	6.0	U	6.0	U	6.0	U	6.0	U

Italicized analytes were not requested for this sequence.

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: TestAmerica Denver Job No.: 280-3087-1

SDG No.:

Concentration Units: ug/L

Analyte	RL	ICB 280-15007/10 05/11/2010 20:14		CCB 280-15007/50 05/11/2010 21:48		CCB 280-15007/61 05/11/2010 22:13		CCB 280-15007/72 05/11/2010 22:39	
		Found	C	Found	C	Found	C	Found	C
Mercury	0.20	0.10	U	0.10	U	0.10	U	0.10	U

Italicized analytes were not requested for this sequence.

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: TestAmerica Denver Job No.: 280-3087-1

SDG No.:

Concentration Units: ug/L

Analyte	RL	CCB 280-15007/83 05/11/2010 23:04							
		Found	C	Found	C	Found	C	Found	C
Mercury	0.20	0.10	U						

Italicized analytes were not requested for this sequence.

3-IN
METHOD BLANK
METALS

Lab Name: TestAmerica Denver Job No.: 280-3087-1

SDG No.:

Concentration Units: mg/Kg Lab Sample ID: MB 280-17869/1-A

Instrument Code: MT_026 Batch No.: 18117

CAS No.	Analyte	Concentration	C	Q	Method
7440-70-2	Calcium	20	U		6010C
7439-89-6	Iron	5.0	U		6010C
7439-95-4	Magnesium	5.0	U		6010C
7440-09-7	Potassium	50	U		6010C

3-IN
METHOD BLANK
METALS

Lab Name: TestAmerica Denver Job No.: 280-3087-1

SDG No.:

Concentration Units: mg/Kg Lab Sample ID: MB 280-17869/1-A

Instrument Code: MT_026 Batch No.: 18373

CAS No.	Analyte	Concentration	C	Q	Method
7440-23-5	Sodium	100	U		6010C

3-IN
METHOD BLANK
METALS

Lab Name: TestAmerica Denver Job No.: 280-3087-1

SDG No.:

Concentration Units: mg/Kg Lab Sample ID: MB 280-17869/1-A

Instrument Code: MT_026 Batch No.: 18884

CAS No.	Analyte	Concentration	C	Q	Method
7429-90-5	Aluminum	3.0	U		6010C

3-IN
METHOD BLANK
METALS

Lab Name: TestAmerica Denver Job No.: 280-3087-1

SDG No.:

Concentration Units: mg/Kg Lab Sample ID: MB 280-17867/1-A

Instrument Code: MT_024 Batch No.: 18454

CAS No.	Analyte	Concentration	C	Q	Method
7440-36-0	Antimony	0.0151	J	Q	6020A
7440-38-2	Arsenic	0.15	U		6020A
7440-39-3	Barium	0.20	U		6020A
7440-41-7	Beryllium	0.065	U		6020A
7440-43-9	Cadmium	0.025	U	Q	6020A
7440-47-3	Chromium	0.237	J		6020A
7440-48-4	Cobalt	0.018	U	Q	6020A
7440-50-8	Copper	0.20	U		6020A
7439-92-1	Lead	0.050	U		6020A
7439-96-5	Manganese	0.0384	J		6020A
7440-02-0	Nickel	0.0661	J	Q	6020A
7782-49-2	Selenium	0.25	U		6020A
7440-22-4	Silver	0.060	U		6020A
7440-28-0	Thallium	0.010	U		6020A
7440-62-2	Vanadium	0.10	U		6020A
7440-66-6	Zinc	0.90	U		6020A

3-IN
METHOD BLANK
METALS

Lab Name: TestAmerica Denver Job No.: 280-3087-1

SDG No.:

Concentration Units: mg/Kg Lab Sample ID: MB 280-14758/1-A

Instrument Code: MT_033 Batch No.: 15007

CAS No.	Analyte	Concentration	C	Q	Method
7439-97-6	Mercury	0.0083	U		7471B

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: TestAmerica Denver Job No.: 280-3087-1

SDG No.:

Lab Sample ID: ICSA 280-18117/16 Instrument ID: MT_026

Lab File ID: 26b060310.txt ICS Source: ICP ICSA_00017

Concentration Units: ug/L

Analyte	True Solution A	Found Solution A	Percent Recovery
Aluminum	**500000**	**511370**	**102**
Calcium	**500000**	**468560**	**94**
Iron	**200000**	**191110**	**96**
Magnesium	**500000**	**503270**	**101**
Potassium		**231**	
Antimony		*-3.42*	
Arsenic		*4.42*	
Barium		*0.0600*	
Beryllium		*-0.550*	
Boron		*-0.590*	
Cadmium		*-0.520*	
Chromium		*-0.390*	
Cobalt		*1.74*	
Copper		*6.23*	
Lead		*2.95*	
Lithium		*-7.02*	
Manganese		*4.22*	
Molybdenum		*-1.12*	
Nickel		*1.63*	
Phosphorus		*14.6*	
Selenium		*-4.55*	
Silicon		*1.68*	
Silver		*-0.0300*	
Sodium		*261*	
Strontium		*-0.0100*	
Thallium		*-2.21*	
Tin		*0.950*	
Titanium		*-1.44*	
Vanadium		*2.77*	
Zinc		*12.1*	

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

FORM IVA-IN

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: TestAmerica Denver Job No.: 280-3087-1

SDG No.:

Lab Sample ID: ICSAB 280-18117/17 Instrument ID: MT_026

Lab File ID: 26b060310.txt ICS Source: ICP ICSAB_00011

Concentration Units: ug/L

Analyte	True Solution AB	Found Solution AB	Percent Recovery
Aluminum	**500000**	**496250**	**99**
Calcium	**500000**	**464300**	**93**
Iron	**200000**	**185300**	**93**
Magnesium	**500000**	**488120**	**98**
Potassium	**50000**	**51643**	**103**
Antimony	*1000*	*951*	*95*
Arsenic	*2000*	*1960*	*98*
Barium	*500*	*491*	*98*
Beryllium	*500*	*464*	*93*
Boron	*2000*	*1795*	*90*
Cadmium	*1000*	*993*	*99*
Chromium	*500*	*479*	*96*
Cobalt	*500*	*452*	*90*
Copper	*500*	*513*	*103*
Lead	*1000*	*916*	*92*
Lithium	*1000*	*1006*	*101*
Manganese	*500*	*491*	*98*
Molybdenum	*1000*	*911*	*91*
Nickel	*1000*	*914*	*91*
Phosphorus	*2000*	*1921*	*96*
Selenium	*5000*	*4685*	*94*
Silicon	*10000*	*9336*	*93*
Silver	*1000*	*1072*	*107*
Sodium	*50000*	*53164*	*106*
Strontium	*1000*	*968*	*97*
Thallium	*10000*	*8316*	*83*
Tin	*10000*	*8748*	*87*
Titanium	*1000*	*985*	*99*
Vanadium	*500*	*501*	*100*
Zinc	*1000*	*965*	*96*

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

FORM IVA-IN

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: TestAmerica Denver Job No.: 280-3087-1

SDG No.:

Lab Sample ID: ICSA 280-18373/18 Instrument ID: MT_026

Lab File ID: 26a060710.txt ICS Source: ICP ICSA_00017

Concentration Units: ug/L

Analyte	True Solution A	Found Solution A	Percent Recovery
Sodium		**60.0**	
Aluminum	*500000*	*507150*	*101*
Antimony		*4.92*	
Arsenic		*2.63*	
Barium		*1.09*	
Beryllium		*-0.480*	
Boron		*-0.0700*	
Cadmium		*-0.620*	
Calcium	*500000*	*469940*	*94*
Chromium		*-0.430*	
Cobalt		*1.58*	
Copper		*5.25*	
Iron	*200000*	*186130*	*93*
Lead		*0.400*	
Lithium		*5.29*	
Magnesium	*500000*	*519310*	*104*
Manganese		*4.21*	
Molybdenum		*-0.870*	
Nickel		*2.38*	
Phosphorus		*16.9*	
Potassium		*-5.70*	
Selenium		*0.100*	
Silicon		*-35.4*	
Silver		*0.140*	
Strontium		*0.0100*	
Thallium		*-1.30*	
Tin		*0.200*	
Titanium		*-0.320*	
Vanadium		*3.03*	
Zinc		*13.4*	

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

FORM IVA-IN

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: TestAmerica Denver Job No.: 280-3087-1

SDG No.:

Lab Sample ID: ICSAB 280-18373/19 Instrument ID: MT_026

Lab File ID: 26a060710.txt ICS Source: ICP ICSAB_00011

Concentration Units: ug/L

Analyte	True Solution AB	Found Solution AB	Percent Recovery
Sodium	**50000**	**53253**	**107**
Aluminum	*500000*	*498790*	*100*
Antimony	*1000*	*997*	*100*
Arsenic	*2000*	*2001*	*100*
Barium	*500*	*487*	*97*
Beryllium	*500*	*468*	*94*
Boron	*2000*	*1887*	*94*
Cadmium	*1000*	*1008*	*101*
Calcium	*500000*	*463310*	*93*
Chromium	*500*	*489*	*98*
Cobalt	*500*	*460*	*92*
Copper	*500*	*530*	*106*
Iron	*200000*	*182350*	*91*
Lead	*1000*	*935*	*94*
Lithium	*1000*	*1000*	*100*
Magnesium	*500000*	*506150*	*101*
Manganese	*500*	*497*	*99*
Molybdenum	*1000*	*933*	*93*
Nickel	*1000*	*936*	*94*
Phosphorus	*2000*	*1986*	*99*
Potassium	*50000*	*49392*	*99*
Selenium	*5000*	*4834*	*97*
Silicon	*10000*	*9100*	*91*
Silver	*1000*	*1105*	*110*
Strontium	*1000*	*969*	*97*
Thallium	*10000*	*8867*	*89*
Tin	*10000*	*8951*	*90*
Titanium	*1000*	*1009*	*101*
Vanadium	*500*	*508*	*102*
Zinc	*1000*	*967*	*97*

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

FORM IVA-IN

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: TestAmerica Denver Job No.: 280-3087-1

SDG No.:

Lab Sample ID: ICSA 280-18884/16 Instrument ID: MT_026

Lab File ID: 26A061010.txt ICS Source: ICP ICSA_00018

Concentration Units: ug/L

Analyte	True Solution A	Found Solution A	Percent Recovery
Aluminum	**500000**	**514520**	**103**
Antimony		*1.64*	
Arsenic		*-1.06*	
Barium		*0.110*	
Beryllium		*-0.640*	
Boron		*2.12*	
Cadmium		*-0.220*	
Calcium	*500000*	*481230*	*96*
Chromium		*-0.340*	
Cobalt		*1.94*	
Copper		*4.68*	
Iron	*200000*	*191410*	*96*
Lead		*2.26*	
Lithium		*-0.280*	
Magnesium	*500000*	*523250*	*105*
Manganese		*4.25*	
Molybdenum		*-1.27*	
Nickel		*1.95*	
Phosphorus		*14.5*	
Potassium		*-21.6*	
Selenium		*-1.76*	
Silicon		*6.25*	
Silver		*0.440*	
Sodium		*155*	
Strontium		*0.0200*	
Thallium		*-0.880*	
Tin		*1.15*	
Titanium		*-0.340*	
Vanadium		*4.47*	
Zinc		*7.18*	

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

FORM IVA-IN

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: TestAmerica Denver Job No.: 280-3087-1

SDG No.:

Lab Sample ID: ICSAB 280-18884/17 Instrument ID: MT_026

Lab File ID: 26A061010.txt ICS Source: ICP ICSAB_00012

Concentration Units: ug/L

Analyte	True Solution AB	Found Solution AB	Percent Recovery
Aluminum	**500000**	**509180**	**102**
Antimony	*1000*	*984*	*98*
Arsenic	*2000*	*2000*	*100*
Barium	*500*	*497*	*99*
Beryllium	*500*	*461*	*92*
Boron	*2000*	*1859*	*93*
Cadmium	*1000*	*1014*	*101*
Calcium	*500000*	*471340*	*94*
Chromium	*500*	*486*	*97*
Cobalt	*500*	*459*	*92*
Copper	*500*	*519*	*104*
Iron	*200000*	*189290*	*95*
Lead	*1000*	*942*	*94*
Lithium	*1000*	*983*	*98*
Magnesium	*500000*	*512480*	*102*
Manganese	*500*	*498*	*100*
Molybdenum	*1000*	*938*	*94*
Nickel	*1000*	*928*	*93*
Phosphorus	*2000*	*1972*	*99*
Potassium	*50000*	*50572*	*101*
Selenium	*5000*	*4840*	*97*
Silicon	*10000*	*9194*	*92*
Silver	*1000*	*1104*	*110*
Sodium	*50000*	*52573*	*105*
Strontium	*1000*	*990*	*99*
Thallium	*10000*	*8713*	*87*
Tin	*10000*	*8989*	*90*
Titanium	*1000*	*1009*	*101*
Vanadium	*500*	*516*	*103*
Zinc	*1000*	*986*	*99*

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

FORM IVA-IN

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: TestAmerica Denver Job No.: 280-3087-1

SDG No.:

Lab Sample ID: ICSA 280-18454/11 Instrument ID: MT_024

Lab File ID: 012ICSA.D ICS Source: MS ICSA_00093

Concentration Units: ug/L

Analyte	True Solution A	Found Solution A	Percent Recovery
Antimony		**0.300**	
Arsenic		**0.278**	
Barium		**0.165**	
Beryllium		**0.0048**	
Cadmium		**0.373**	
Chromium		**1.34**	
Cobalt		**0.122**	
Copper		**0.406**	
Lead		**0.236**	
Manganese		**0.540**	
Nickel		**1.03**	
Selenium		**-0.130**	
Silver		**0.113**	
Thallium		**0.0273**	
Vanadium		**0.120**	
Zinc		**3.21**	
Molybdenum	*2000*	*2069*	*103*
Tin		*0.198*	
Uranium		*0.0107*	

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

FORM IVA-IN

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: TestAmerica Denver Job No.: 280-3087-1

SDG No.:

Lab Sample ID: ICSAB 280-18454/12 Instrument ID: MT_024

Lab File ID: 013ICSB.D ICS Source: MS ICSAB_00095

Concentration Units: ug/L

Analyte	True Solution AB	Found Solution AB	Percent Recovery
Antimony	**100**	**107**	**107**
Arsenic	**100**	**101**	**101**
Barium	**100**	**107**	**107**
Beryllium	**100**	**104**	**104**
Cadmium	**100**	**99.0**	**99**
Chromium	**100**	**106**	**106**
Cobalt	**100**	**99.7**	**100**
Copper	**100**	**89.8**	**90**
Lead	**100**	**97.6**	**98**
Manganese	**100**	**100**	**100**
Nickel	**100**	**94.5**	**94**
Selenium	**100**	**105**	**105**
Silver	**100**	**87.1**	**87**
Thallium	**100**	**101**	**101**
Vanadium	**100**	**108**	**108**
Zinc	**100**	**99.5**	**100**
Molybdenum	*2100*	*2205*	*105*
Tin	*100*	*106*	*106*
Uranium	*100*	*108*	*108*

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

FORM IVA-IN

5A-IN
MATRIX SPIKE SAMPLE RECOVERY
METALS

Client ID: MRDU5-S0200-(2-4)-0409 MS Lab ID: 280-3087-12 MS

Lab Name: TestAmerica Denver Job No.: 280-3087-1

SDG No.:

Matrix: Solid Concentration Units: mg/Kg

% Solids:

Analyte	SSR	C	Sample Result (SR)	C	Spike Added (SA)	%R	Control Limit %R	Q	Method
Aluminum	6100		5700		99.7	397	80-120	4	6010C
Calcium	2770		520		2490	90	80-120		6010C
Iron	7660		7800		49.9	-326	80-120	4	6010C
Magnesium	4420		2100		2490	91	80-120		6010C
Potassium	2810		520		2490	92	80-120		6010C
Sodium	2430		99	U	2490	97	80-120		6010C
Antimony	1.91		0.17	J	9.98	17	80-120	Q J	6020A
Arsenic	20.1		11		9.98	94	80-120		6020A
Barium	24.5		15		9.98	97	80-120		6020A
Beryllium	10.9		0.28		9.98	106	80-120		6020A
Cadmium	9.91		0.13		9.98	98	80-120	Q	6020A
Chromium	22.4		13		9.98	94	80-120		6020A
Cobalt	12.7		3.0		9.98	97	80-120	Q	6020A
Copper	27.0		28		9.98	-7	80-120	J	6020A
Lead	122		120		9.98	44	80-120	4	6020A
Manganese	127		120		9.98	110	80-120	4	6020A
Nickel	20.3		11		9.98	91	80-120	Q	6020A
Selenium	9.51		0.38	J	9.98	91	80-120		6020A
Silver	9.25		0.041	J	9.98	92	80-120		6020A
Thallium	10.5		0.067	J	9.98	104	80-120		6020A
Vanadium	20.6		11		9.98	99	80-120		6020A
Zinc	34.4		28		9.98	68	80-120	J	6020A
Mercury	0.361		0.018		0.350	98	80-120		7471B

SSR = Spiked Sample Result

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

FORM VA - IN

5A-IN
MATRIX SPIKE DUPLICATE SAMPLE RECOVERY
METALS

Client ID: MRDU5-S0200-(2-4)-0409 MSD Lab ID: 280-3087-12 MSD

Lab Name: TestAmerica Denver Job No.: 280-3087-1

SDG No.:

Matrix: Solid Concentration Units: mg/Kg

% Solids:

Analyte	(SDR)	C	Spike Added (SA)	%R	Control Limit %R	RPD	RPD Limit	Q	Method
Aluminum	6440		99.8	742	80-120	5	20	4	6010C
Calcium	2810		2500	92	80-120	2	20		6010C
Iron	7850		49.9	69	80-120	3	20	4	6010C
Magnesium	4440		2500	92	80-120	0	20		6010C
Potassium	2860		2500	94	80-120	2	20		6010C
Sodium	2440		2500	98	80-120	1	20		6010C
Antimony	1.94		9.94	18	80-120	2	20	Q J	6020A
Arsenic	20.1		9.94	95	80-120	0	20		6020A
Barium	24.6		9.94	100	80-120	1	20		6020A
Beryllium	10.3		9.94	101	80-120	5	20		6020A
Cadmium	9.83		9.94	98	80-120	1	20	Q	6020A
Chromium	22.3		9.94	94	80-120	0	20		6020A
Cobalt	12.5		9.94	96	80-120	2	20	Q	6020A
Copper	26.0		9.94	-17	80-120	4	20	J	6020A
Lead	139		9.94	215	80-120	13	20	4	6020A
Manganese	124		9.94	79	80-120	2	20	4	6020A
Nickel	20.2		9.94	90	80-120	1	20	Q	6020A
Selenium	9.27		9.94	89	80-120	3	20		6020A
Silver	9.17		9.94	92	80-120	1	20		6020A
Thallium	10.5		9.94	105	80-120	0	20		6020A
Vanadium	20.4		9.94	98	80-120	1	20		6020A
Zinc	34.6		9.94	70	80-120	1	20	J	6020A
Mercury	0.362		0.385	89	80-120	0.4	20		7471B

SDR = Sample Duplicate Result

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

FORM VD - IN

5B-IN
POST DIGESTION SPIKE SAMPLE RECOVERY
METALS

Client ID: MRDU5-S0200-(2-4)-0409 PDS Lab ID: 280-3087-12 PDS

Lab Name: TestAmerica Denver Job No.: 280-3087-1

SDG No.:

Matrix: Solid Concentration Units: mg/Kg

Analyte	SSR	C	Sample Result (SR)	C	Spike Added (SA)	%R	Control Limit %R	Q	Method
Aluminum	5610		5700		48.3	-179	75-125	J	6010C
Calcium	1410		520		966	92	75-125		6010C
Iron	7680		7800		48.3	-291	75-125	J	6010C
Magnesium	3030		2100		966	92	75-125		6010C
Potassium	1420		520		966	93	75-125		6010C
Sodium	1100		99	U	985	111	75-125		6010C
Antimony	49.8		0.17	J	49.4	100	75-125	Q	6020A
Arsenic	57.2		11		49.4	94	75-125		6020A
Barium	66.4		15		49.4	105	75-125		6020A
Beryllium	50.8		0.28		49.4	102	75-125		6020A
Cadmium	47.5		0.13		49.4	96	75-125	Q	6020A
Chromium	58.5		13		49.4	92	75-125		6020A
Cobalt	49.2		3.0		49.4	94	75-125	Q	6020A
Copper	70.5		28		49.4	87	75-125		6020A
Lead	162		120		49.4	91	75-125		6020A
Manganese	161		120		49.4	91	75-125		6020A
Nickel	58.4		11		49.4	96	75-125	Q	6020A
Selenium	47.3		0.38	J	49.4	95	75-125		6020A
Silver	11.8		0.041	J	12.3	95	75-125		6020A
Thallium	49.8		0.067	J	49.4	101	75-125		6020A
Vanadium	56.7		11		49.4	93	75-125		6020A
Zinc	72.0		28		49.4	90	75-125		6020A

SSR = Spiked Sample Result

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

FORM VB - IN

7A-IN
LAB CONTROL SAMPLE
METALS

Lab ID: LCS 280-17869/2-A

Lab Name: TestAmerica Denver Job No.: 280-3087-1

Sample Matrix: Solid LCS Source: ICP SPK 3A_00009

Analyte	Solid(mg/Kg)							
	True	Found	C	%R	Limits		Q	Method
Calcium	2500	2400		96	80	120		6010C
Iron	50.0	50.7	J	101	80	120		6010C
Magnesium	2500	2380		95	80	120		6010C
Potassium	2500	2430		97	80	120		6010C

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

FORM VIIA - IN

7A-IN
LAB CONTROL SAMPLE
METALS

Lab ID: LCS 280-17869/2-A

Lab Name: TestAmerica Denver Job No.: 280-3087-1

Sample Matrix: Solid LCS Source: ICP SPK 3A_00009

Analyte	Solid(mg/Kg)							
	True	Found	C	%R	Limits		Q	Method
Sodium	2500	2520		101	80	120		6010C

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

FORM VIIA - IN

7A-IN
LAB CONTROL SAMPLE
METALS

Lab ID: LCS 280-17869/2-A

Lab Name: TestAmerica Denver Job No.: 280-3087-1

Sample Matrix: Solid LCS Source: ICP SPK 3A_00009

Analyte	Solid(mg/Kg)							
	True	Found	C	%R	Limits		Q	Method
Aluminum	100	97.4		97	80	120		6010C

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

FORM VIIA - IN

7A-IN
LAB CONTROL SAMPLE
METALS

Lab ID: LCS 280-17867/2-A

Lab Name: TestAmerica Denver Job No.: 280-3087-1

Sample Matrix: Solid LCS Source: MS CALSTD-2_00013

Analyte	Solid(mg/Kg)							
	True	Found	C	%R	Limits		Q	Method
Antimony	10.0	9.55		95	80	120	Q	6020A
Arsenic	10.0	9.23		92	80	120		6020A
Barium	10.0	9.80		98	80	120		6020A
Beryllium	10.0	9.20		92	80	120		6020A
Cadmium	10.0	9.33		93	80	120	Q	6020A
Chromium	10.0	9.94		99	80	120		6020A
Cobalt	10.0	9.84		98	80	120	Q	6020A
Copper	10.0	9.50		95	80	120		6020A
Lead	10.0	9.86		99	80	120		6020A
Manganese	10.0	9.69		97	80	120		6020A
Nickel	10.0	9.63		96	80	120	Q	6020A
Selenium	10.0	9.16		92	80	120		6020A
Silver	10.0	9.50		95	80	120		6020A
Thallium	10.0	10.1		101	80	120		6020A
Vanadium	10.0	9.77		98	80	120		6020A
Zinc	10.0	9.20		92	80	120		6020A

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

FORM VIIA - IN

7A-IN
LAB CONTROL SAMPLE
METALS

Lab ID: LCS 280-14758/2-A

Lab Name: TestAmerica Denver Job No.: 280-3087-1

Sample Matrix: Solid LCS Source: Hg Daily Spk_00071

Analyte	Solid(mg/Kg)							
	True	Found	C	%R	Limits		Q	Method
Mercury	0.417	0.408		98	80	120		7471B

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

FORM VIIA - IN

8-IN
ICP-AES AND ICP-MS SERIAL DILUTIONS
METALS

Lab ID: 280-3087-12

SDG No:

Lab Name: TestAmerica Denver Job No: 280-3087-1

Matrix: Solid Concentration Units: mg/Kg

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	Method
Aluminum	5700		6190		8.5	D	6010C
Calcium	520		565		NC	D	6010C
Iron	7800		8100		3.6	D	6010C
Magnesium	2100		2310		7.7	D	6010C
Potassium	520		565	J	NC	D	6010C
Sodium	99	U	490	U	NC		6010C

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

FORM VIII-IN

8-IN
ICP-AES AND ICP-MS SERIAL DILUTIONS
METALS

Lab ID: 280-3087-12

SDG No:

Lab Name: TestAmerica Denver Job No: 280-3087-1

Matrix: Solid Concentration Units: mg/Kg

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	Method
Antimony	0.17	J	0.204	J	NC	D Q	6020A
Arsenic	11		11.1		3.9	D	6020A
Barium	15		15.0		1.6	D	6020A
Beryllium	0.28		0.312	J	NC	D	6020A
Cadmium	0.13		0.136	J	NC	D Q	6020A
Chromium	13		14.0		8.1	D	6020A
Cobalt	3.0		3.06		3.4	D Q	6020A
Copper	28		29.0		4.5	D	6020A
Lead	120		124		5.3	D	6020A
Manganese	120		123		5.8	D	6020A
Nickel	11		11.8		5.4	D Q	6020A
Selenium	0.38	J	1.2	U	NC		6020A
Silver	0.041	J	0.30	U	NC		6020A
Thallium	0.067	J	0.0644	J	NC	D	6020A
Vanadium	11		10.7		0.50	D	6020A
Zinc	28		28.4		2.7	D	6020A

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

FORM VIII-IN

8-IN
ICP-AES AND ICP-MS SERIAL DILUTIONS
METALS

Lab ID: 280-3087-12

SDG No:

Lab Name: TestAmerica Denver Job No: 280-3087-1

Matrix: Solid Concentration Units: mg/Kg

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	Method
Mercury	0.018		0.036	U	NC		7471B

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

FORM VIII-IN

9-IN
DETECTION LIMITS
METALS

Lab Name: TestAmerica Denver Job Number: 280-3087-1

SDG Number:

Matrix: Solid Instrument ID: MT_026

Analysis Method: 6010C DL Date: 02/27/2010 08:16

Prep Method: 3050B

Leach Method: Increm, Prep

Analyte	Wavelength/ Mass	LOQ (mg/Kg)	DL (mg/Kg)
Aluminum	167	50	1.55
Calcium	317.9	100	14.1
Iron	259.9	80	3.8
Magnesium	279	30	3.7
Potassium	766.4	300	41
Sodium	589.5	500	59

9-IN
CALIBRATION BLANK DETECTION LIMITS
METALS

Lab Name: TestAmerica Denver Job Number: 280-3087-1

SDG Number:

Matrix: Solid Instrument ID: MT_026

Analysis Method: 6010C XMDL Date: 02/27/2010 08:31

Analyte	Wavelength/ Mass	XRL (ug/L)	XMDL (ug/L)
Aluminum		100	18
Calcium		200	3.45
Iron		100	22
Magnesium		200	10.7
Potassium		3000	237
Sodium		1000	91.6

9-IN
DETECTION LIMITS
METALS

Lab Name: TestAmerica Denver Job Number: 280-3087-1

SDG Number:

Matrix: Solid Instrument ID: MT_024

Analysis Method: 6020A DL Date: 11/14/2009 11:28

Prep Method: 3050B

Leach Method: Increm, Prep

Analyte	Wavelength/ Mass	LOQ (mg/Kg)	DL (ug/Kg)
Antimony	121	0.2	14
Arsenic	75	0.6	50.6
Barium	137	0.25	70.5
Beryllium	9	0.1	22.5
Cadmium	111	0.1	9.38
Chromium	52	0.6	76
Cobalt	59	0.1	6.63
Copper	63	2.5	71.1
Lead	208	0.4	18.2
Manganese	55	1	33
Nickel	60	0.35	25.3
Selenium	78	0.5	133
Silver	107	0.1	20.3
Thallium	205	0.1	3.51
Vanadium	51	0.5	38.5
Zinc	66	2.5	316

9-IN
CALIBRATION BLANK DETECTION LIMITS
METALS

Lab Name: TestAmerica Denver Job Number: 280-3087-1

SDG Number:

Matrix: Solid Instrument ID: MT_024

Analysis Method: 6020A XMDL Date: 12/23/2009 12:14

Analyte	Wavelength/ Mass	XRL (ug/L)	XMDL (ug/L)
Antimony		2	0.07
Arsenic		5	0.21
Barium		1	0.29
Beryllium		1	0.08
Cadmium		1	0.04
Chromium		2	0.5
Cobalt		1	0.01
Copper		2	0.56
Lead		1	0.18
Manganese		1	0.31
Nickel		2	0.3
Selenium		5	0.7
Silver		5	0.015
Thallium		1	0.02
Vanadium		5	0.14
Zinc		10	2

9-IN
DETECTION LIMITS
METALS

Lab Name: TestAmerica Denver Job Number: 280-3087-1

SDG Number:

Matrix: Solid Instrument ID: MT_033

Analysis Method: 7471B DL Date: 11/01/2009 00:00

Prep Method: 7471B

Leach Method: Increm, Prep

Analyte	Wavelength/ Mass	LOQ (ug/Kg)	DL (ug/Kg)
Mercury	253.7	17	5.53

9-IN
CALIBRATION BLANK DETECTION LIMITS
METALS

Lab Name: TestAmerica Denver Job Number: 280-3087-1

SDG Number:

Matrix: Solid Instrument ID: MT_033

Analysis Method: 7471B XMDL Date: 11/01/2009 00:00

Analyte	Wavelength/ Mass	XRL (ug/L)	XMDL (ug/L)
Mercury		0.204	0.0664

10-IN
ICP-AES INTERELEMENT CORRECTION FACTORS
METALS

Lab Name: TestAmerica Denver Job Number: 280-3087-1

SDG No.:

ICP-AES Instrument ID: MT_026 Date: 04/30/2010

Analyte	Wave Length	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd	Co	Cr	Cu	Fe	K
Aluminum	167.079													0.000714	
Aluminum	309.271														
Antimony	206.833		0.000012						0.000001			0.006920		0.000012	
Arsenic	189.042		-0.000027									-0.001070			
Barium	455.403														
Beryllium	313.042														
Bismuth	223.061											0.000652		-0.000021	
Boron	208.959														
Cadmium	228.802			0.003384							-0.004035				
Calcium	317.933														
Chromium	205.552						-0.002110								
Cobalt	228.616					-0.000135									
Copper	324.754														
Iron	259.940														
Iron	271.441										0.109000				
Lead	220.353		-0.000061										0.000046	0.000036	
Lithium	670.784								0.000010						
Magnesium	279.079														
Manganese	257.610														
Molybdenum	202.030														
Nickel	231.604														
Phosphorus	178.284														
Potassium	766.490														
Selenium	196.090								-0.000009					0.000004	
Silicon	288.158											0.000027			
Silver	328.068														
Sodium	589.592														
Sodium	818.326														
Strontium	407.771								0.000010						
Sulfur	182.034														

X-IN

10-IN
ICP-AES INTERELEMENT CORRECTION FACTORS
METALS

Lab Name: TestAmerica Denver Job Number: 280-3087-1

SDG No.:

ICP-AES Instrument ID: MT_026 Date: 04/30/2010

Analyte	Wave Length	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd	Co	Cr	Cu	Fe	K
Thallium	190.856										0.005895	0.000241			
Thorium	283.730									-0.000171		-0.000233		0.000731	
Tin	189.989														
Titanium	334.904											0.000169			
Uranium	370.152				0.001355							-0.002090		0.000260	
Vanadium	292.402											-0.0006627			
Zinc	206.200											-0.001730			
Zirconium	339.198													-0.000026	

10-IN
ICP-AES INTERELEMENT CORRECTION FACTORS
METALS

Lab Name: TestAmerica Denver Job Number: 280-3087-1

SDG No.:

ICP-AES Instrument ID: MT_026 Date: 04/30/2010

Analyte	Wave Length	Li	Mg	Mn	Mo	Na	Ni	P	Pb	S	Sb	Se	Si	SiO2	Sn
Aluminum	309.271		0.004310												
Aluminum	167.079														
Antimony	206.833				-0.002268										
Arsenic	189.042				-0.000564										
Barium	455.403														
Beryllium	313.042														
Bismuth	223.061														
Boron	208.959				0.045450										
Cadmium	228.802														
Calcium	317.933														
Chromium	205.552				0.000100		0.000046								
Cobalt	228.616				-0.001154		0.000049								
Copper	324.754														
Iron	259.940														
Iron	271.441														
Lead	220.353		0.000001		-0.001630		0.000200					0.000013	0.000124		
Lithium	670.784		0.000005												
Magnesium	279.079														
Manganese	257.610														
Molybdenum	202.030														
Nickel	231.604														
Phosphorus	178.284														
Potassium	766.490														
Selenium	196.090			0.000468											
Silicon	288.158				-0.005890										0.001650
Silver	328.068				-0.000308										
Sodium	818.326														
Sodium	589.592														
Strontium	407.771														
Sulfur	182.034			0.005840	0.000664										

X-IN

10-IN
ICP-AES INTERELEMENT CORRECTION FACTORS
METALS

Lab Name: TestAmerica Denver Job Number: 280-3087-1

SDG No.:

ICP-AES Instrument ID: MT_026 Date: 04/30/2010

Analyte	Wave Length	Li	Mg	Mn	Mo	Na	Ni	P	Pb	S	Sb	Se	Si	SiO2	Sn
Thallium	190.856			0.001981	-0.000286										
Thorium	283.730		-0.000007		0.000415		0.000139								
Tin	189.989														
Titanium	334.904		0.000010		0.000999										
Uranium	370.152				0.001220										
Vanadium	292.402			-0.004423											
Zinc	206.200														
Zirconium	339.198				0.000494								0.000018		

X-IN

10-IN
ICP-AES INTERELEMENT CORRECTION FACTORS
METALS

Lab Name: TestAmerica Denver Job Number: 280-3087-1

SDG No.:

ICP-AES Instrument ID: MT_026 Date: 04/30/2010

Analyte	Wave Length	Sr	Th	Ti	Tl	U	V	Zn	Zr						
Aluminum	167.079														
Aluminum	309.271														
Antimony	206.833					-0.00200			-0.001150						
Arsenic	189.042														
Barium	455.403								0.001060						
Beryllium	313.042			-0.000233											
Bismuth	223.061		-0.001680	-0.004040		-0.000669									
Boron	208.959														
Cadmium	228.802														
Calcium	317.933		-0.007489												
Chromium	205.552					0.000035									
Cobalt	228.616			0.001960											
Copper	324.754		0.003303						-0.009634						
Iron	259.940														
Iron	271.441						-0.45600		-0.128890						
Lead	220.353			-0.000765		0.000568									
Lithium	670.784														
Magnesium	279.079		-0.023880			-0.016250									
Manganese	257.610														
Molybdenum	202.030														
Nickel	231.604														
Phosphorus	178.284														
Potassium	766.490														
Selenium	196.090		-0.000475			-0.001609									
Silicon	288.158														
Silver	328.068		0.000391			0.000955			0.003886						
Sodium	589.592														
Sodium	818.326														
Strontium	407.771														
Sulfur	182.034														

X-IN

10-IN
ICP-AES INTERELEMENT CORRECTION FACTORS
METALS

Lab Name: TestAmerica Denver Job Number: 280-3087-1

SDG No.:

ICP-AES Instrument ID: MT_026 Date: 04/30/2010

Analyte	Wave Length	Sr	Th	Ti	Tl	U	V	Zn	Zr						
Thallium	190.856			-0.001473		-0.000656	0.000536								
Thorium	283.730					0.022555			0.012600						
Tin	189.989			-0.001430											
Titanium	334.904		0.006797			0.000660									
Uranium	370.152		-0.011281	0.003590											
Vanadium	292.402		0.001818	0.000957		-0.000553									
Zinc	206.200														
Zirconium	339.198		0.015360												

11-IN
ICP-AES AND ICP-MS LINEAR RANGES
METALS

Lab Name: TestAmerica Denver Job No: 280-3087-1

SDG No.:

Instrument ID: MT_026 Date: 04/27/2010 00:00

Analyte	Integ. Time (Sec.)	Concentration (mg/L)	Method
Aluminum		1000	6010C
Calcium		2000	6010C
Iron		2000	6010C
Magnesium		2000	6010C
Potassium		500	6010C
Sodium		10000	6010C

11-IN
ICP-AES AND ICP-MS LINEAR RANGES
METALS

Lab Name: TestAmerica Denver Job No: 280-3087-1

SDG No.:

Instrument ID: MT_024 Date: 04/04/2010 00:00

Analyte	Integ. Time (Sec.)	Concentration (ug/L)	Method
Antimony		4000	6020A
Arsenic		4000	6020A
Barium		4000	6020A
Beryllium		4000	6020A
Cadmium		4000	6020A
Chromium		4000	6020A
Cobalt		4000	6020A
Copper		4000	6020A
Lead		4000	6020A
Manganese		20000	6020A
Nickel		4000	6020A
Selenium		4000	6020A
Silver		4000	6020A
Thallium		4000	6020A
Vanadium		4000	6020A
Zinc		4000	6020A

12-IN
PREPARATION LOG
METALS

Lab Name: TestAmerica Denver Job No.: 280-3087-1

SDG No.:

Preparation Method: 3050B

Lab Sample ID	Preparation Date	Prep Batch	Initial Weight (g)	Initial Volume	Final Volume (mL)
MB 280-17869/1-A	06/03/2010 08:30	17869	10.00		500
LCS 280-17869/2-A	06/03/2010 08:30	17869	10.00		500
280-3087-1	06/03/2010 08:30	17869	10.01		500
280-3087-2	06/03/2010 08:30	17869	10.17		500
280-3087-3	06/03/2010 08:30	17869	10.19		500
280-3087-4	06/03/2010 08:30	17869	10.18		500
280-3087-5	06/03/2010 08:30	17869	10.09		500
280-3087-6	06/03/2010 08:30	17869	10.05		500
280-3087-7	06/03/2010 08:30	17869	10.16		500
280-3087-8	06/03/2010 08:30	17869	10.06		500
280-3087-9	06/03/2010 08:30	17869	10.17		500
280-3087-10	06/03/2010 08:30	17869	10.03		500
280-3087-11	06/03/2010 08:30	17869	10.02		500
280-3087-12	06/03/2010 08:30	17869	10.15		500
280-3087-12 MS	06/03/2010 08:30	17869	10.03		500
280-3087-12 MSD	06/03/2010 08:30	17869	10.02		500
280-3087-13	06/03/2010 08:30	17869	10.14		500

12-IN
PREPARATION LOG
METALS

Lab Name: TestAmerica Denver Job No.: 280-3087-1

SDG No.:

Preparation Method: 3050B

Lab Sample ID	Preparation Date	Prep Batch	Initial Weight (g)	Initial Volume	Final Volume (mL)
MB 280-17867/1-A	06/03/2010 08:30	17867	10.00		500
LCS 280-17867/2-A	06/03/2010 08:30	17867	10.00		500
280-3087-1	06/03/2010 08:30	17867	10.04		500
280-3087-2	06/03/2010 08:30	17867	10.12		500
280-3087-2 DL	06/03/2010 08:30	17867	10.12		500
280-3087-3	06/03/2010 08:30	17867	10.03		500
280-3087-4	06/03/2010 08:30	17867	10.04		500
280-3087-5	06/03/2010 08:30	17867	10.13		500
280-3087-6	06/03/2010 08:30	17867	10.10		500
280-3087-7	06/03/2010 08:30	17867	10.05		500
280-3087-8	06/03/2010 08:30	17867	10.12		500
280-3087-9	06/03/2010 08:30	17867	10.05		500
280-3087-10	06/03/2010 08:30	17867	10.07		500
280-3087-11	06/03/2010 08:30	17867	10.10		500
280-3087-12	06/03/2010 08:30	17867	10.13		500
280-3087-12 MS	06/03/2010 08:30	17867	10.02		500
280-3087-12 MSD	06/03/2010 08:30	17867	10.06		500
280-3087-13	06/03/2010 08:30	17867	10.17		500

12-IN
PREPARATION LOG
METALS

Lab Name: TestAmerica Denver Job No.: 280-3087-1

SDG No.:

Preparation Method: 7471B

Lab Sample ID	Preparation Date	Prep Batch	Initial Weight (g)	Initial Volume	Final Volume (mL)
MB 280-14758/1-A	05/11/2010 15:00	14758	3.00		250
LCS 280-14758/2-A	05/11/2010 15:00	14758	3.00		250
280-3087-1	05/11/2010 15:00	14758	3.22		250
280-3087-2	05/11/2010 15:00	14758	3.13		250
280-3087-3	05/11/2010 15:00	14758	3.38		250
280-3087-4	05/11/2010 15:00	14758	3.17		250
280-3087-5	05/11/2010 15:00	14758	3.47		250
280-3087-6	05/11/2010 15:00	14758	3.55		250
280-3087-7	05/11/2010 15:00	14758	3.22		250
280-3087-8	05/11/2010 15:00	14758	3.18		250
280-3087-9	05/11/2010 15:00	14758	3.10		250
280-3087-10	05/11/2010 15:00	14758	3.40		250
280-3087-11	05/11/2010 15:00	14758	3.53		250
280-3087-12	05/11/2010 15:00	14758	3.51		250
280-3087-12 MS	05/11/2010 15:00	14758	3.57		250
280-3087-12 MSD	05/11/2010 15:00	14758	3.25		250
280-3087-13	05/11/2010 15:00	14758	3.43		250

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Denver Job No.: 280-3087-1

SDG No.:

Instrument ID: MT_026 Method: 6010C

Start Date: 06/03/2010 11:33 End Date: 06/04/2010 02:00

Lab Sample ID	D/F	Type	Time	Analytes																			
				Al	Ca	Fe	K	Mg															
ICIS 280-18117/1	1		11:33	X	X	X	X	X															
IC 280-18117/2			11:36	X	X	X	X	X															
IC 280-18117/3			11:38	X	X	X	X	X															
ZZZZZZ			11:40																				
ZZZZZZ			11:42																				
ICVH 280-18117/6	1		11:45	X	X	X	X	X															
ZZZZZZ			11:47																				
ICVL 280-18117/8	1		11:49	X	X	X	X	X															
ICV 280-18117/9	1		11:58	X	X	X	X	X															
ICV 280-18117/10	1		12:03	X	X	X	X	X															
CCVH 280-18117/11			12:07																				
CCV 280-18117/12			12:10																				
ICB 280-18117/13	1		12:12	X	X	X	X	X															
CRI 280-18117/14	1		12:14	X	X	X	X	X															
CRI 280-18117/15			12:23																				
ICSA 280-18117/16	1		12:27	X	X	X	X	X															
ICSAB 280-18117/17	1		12:30	X	X	X	X	X															
LRA 280-18117/18			12:33																				
CCVH 280-18117/19			12:35																				
CCV 280-18117/20			12:38																				
CCB 280-18117/21			12:40																				
CCVL 280-18117/22			12:42																				
CCVH 280-18117/23			18:20																				
CCV 280-18117/24			18:22																				
CCB 280-18117/25			18:24																				
CCVL 280-18117/26			18:27																				
ZZZZZZ			23:14																				
ZZZZZZ			23:16																				
ZZZZZZ			23:18																				
ZZZZZZ			23:20																				
ZZZZZZ			23:23																				
ZZZZZZ			23:25																				
ZZZZZZ			23:27																				
CCVH 280-18117/34	1		23:29	X	X	X	X	X															
CCV 280-18117/35	1		23:31	X	X	X	X	X															
CCB 280-18117/36	1		23:34	X	X	X	X	X															
CCVL 280-18117/37	1		23:36	X	X	X	X	X															
MB 280-17869/1-A	1	T	23:57		X	X	X	X															
LCS 280-17869/2-A	1	T	23:59		X	X	X	X															
280-3087-1	1	T	00:01	X	X	X	X	X															
280-3087-2	1	T	00:03	X	X	X	X	X															
280-3087-3	1	T	00:06	X	X	X	X	X															

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Denver Job No.: 280-3087-1

SDG No.:

Instrument ID: MT_026 Method: 6010C

Start Date: 06/03/2010 11:33 End Date: 06/04/2010 02:00

Lab Sample ID	D/F	Type	Time	Analytes																			
				Al	Ca	Fe	K	Mg															
280-3087-4	1	T	00:08	X	X	X	X	X															
280-3087-5	1	T	00:10	X	X	X	X	X															
280-3087-6	1	T	00:13	X	X	X	X	X															
280-3087-7	1	T	00:15	X	X	X	X	X															
280-3087-8	1	T	00:17	X	X	X	X	X															
CCVH 280-18117/48	1		00:20	X	X	X	X	X															
CCV 280-18117/49	1		00:22	X	X	X	X	X															
CCB 280-18117/50	1		00:24	X	X	X	X	X															
CCVL 280-18117/51	1		00:27	X	X	X	X	X															
280-3087-9	1	T	00:29	X	X	X	X	X															
280-3087-10	1	T	00:31	X	X	X	X	X															
280-3087-11	1	T	00:34	X	X	X	X	X															
280-3087-12	1	T	00:36	X	X	X	X	X															
280-3087-12 SD	5	T	00:38	X	X	X	X	X															
280-3087-12 MS	1	T	00:40	X	X	X	X	X															
280-3087-12 MSD	1	T	00:43	X	X	X	X	X															
280-3087-12 PDS	1	T	00:45	X	X	X	X	X															
280-3087-13	1	T	00:47	X	X	X	X	X															
CCVH 280-18117/61	1		00:49	X	X	X	X	X															
CCV 280-18117/62	1		00:52	X	X	X	X	X															
CCB 280-18117/63	1		00:54	X	X	X	X	X															
CCVL 280-18117/64	1		00:56	X	X	X	X	X															
ZZZZZZ			00:58																				
ZZZZZZ			01:01																				
ZZZZZZ			01:03																				
ZZZZZZ			01:06																				
ZZZZZZ			01:09																				
ZZZZZZ			01:12																				
ZZZZZZ			01:14																				
ZZZZZZ			01:17																				
ZZZZZZ			01:20																				
CCVH 280-18117/74			01:23																				
CCV 280-18117/75			01:26																				
CCB 280-18117/76			01:28																				
CCVL 280-18117/77			01:31																				
ZZZZZZ			01:33																				
ZZZZZZ			01:36																				
ZZZZZZ			01:39																				
ZZZZZZ			01:42																				
ZZZZZZ			01:45																				
ZZZZZZ			01:48																				
CCVH 280-18117/84			01:51																				

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Denver Job No.: 280-3087-1

SDG No.:

Instrument ID: MT_026 Method: 6010C

Start Date: 06/03/2010 11:33 End Date: 06/04/2010 02:00

Lab Sample ID	D/F	Type	Time	Analytes																			
				Al	Ca	Fe	K	Mg															
CCV 280-18117/85			01:54																				
CCB 280-18117/86			01:57																				
CCVL 280-18117/87			02:00																				

Prep Types

T = Total/NA

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Denver Job No.: 280-3087-1

SDG No.:

Instrument ID: MT_026 Method: 6010C

Start Date: 06/07/2010 09:52 End Date: 06/07/2010 14:21

Lab Sample ID	D/F	Type	Time	Analytes																			
				Na																			
ICIS 280-18373/1	1		09:52	X																			
IC 280-18373/2			09:55	X																			
IC 280-18373/3			09:57	X																			
ZZZZZZ			09:59																				
ZZZZZZ			10:01																				
ICV 280-18373/6			10:04																				
ICV 280-18373/7	1		10:14	X																			
ICV 280-18373/8	1		10:17	X																			
ICVH 280-18373/9	1		10:21	X																			
ICVL 280-18373/10	1		10:29	X																			
CCVH 280-18373/11			10:33																				
CCV 280-18373/12			10:35																				
ICB 280-18373/13	1		10:38	X																			
CRI 280-18373/14	1		10:40	X																			
CRI 280-18373/15			10:50																				
CRI 280-18373/16			10:59																				
CRI 280-18373/17			11:11																				
ICSA 280-18373/18	1		11:14	X																			
ICSAB 280-18373/19	1		11:17	X																			
LRA 280-18373/20			11:20																				
LRA 280-18373/21			11:23																				
CCVH 280-18373/22			11:25																				
CCV 280-18373/23			11:27																				
CCB 280-18373/24			11:29																				
CCVL 280-18373/25			11:32																				
ZZZZZZ			11:34																				
ZZZZZZ			11:37																				
ZZZZZZ			11:39																				
ZZZZZZ			11:42																				
CCV 280-18373/30			11:49																				
CCV 280-18373/31			11:51																				
CCVH 280-18373/32			11:56																				
CCVH 280-18373/33			11:58																				
CCB 280-18373/34			12:03																				
CCVL 280-18373/35			12:08																				
ZZZZZZ			12:10																				
ZZZZZZ			12:12																				
ZZZZZZ			12:14																				
ZZZZZZ			12:17																				
ZZZZZZ			12:19																				
ZZZZZZ			12:21																				
ZZZZZZ			12:23																				

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Denver Job No.: 280-3087-1

SDG No.:

Instrument ID: MT_026 Method: 6010C

Start Date: 06/07/2010 09:52 End Date: 06/07/2010 14:21

Lab Sample ID	D/F	Type	Time	Analytes																			
				Na																			
ZZZZZZ			12:25																				
ZZZZZZ			12:28																				
CCVH 280-18373/45	1		12:30	X																			
CCV 280-18373/46	1		12:32	X																			
CCB 280-18373/47	1		12:35	X																			
CCVL 280-18373/48	1		12:37	X																			
MB 280-17869/1-A	1	T	12:39	X																			
LCS 280-17869/2-A	1	T	12:42	X																			
280-3087-1	1	T	12:44	X																			
280-3087-2	1	T	12:46	X																			
280-3087-3	1	T	12:48	X																			
280-3087-4	1	T	12:50	X																			
280-3087-5	1	T	12:53	X																			
280-3087-6	1	T	12:55	X																			
280-3087-7	1	T	12:57	X																			
280-3087-8	1	T	13:00	X																			
CCVH 280-18373/59	1		13:02	X																			
CCV 280-18373/60	1		13:04	X																			
CCB 280-18373/61	1		13:06	X																			
CCVL 280-18373/62	1		13:09	X																			
280-3087-9	1	T	13:11	X																			
280-3087-10	1	T	13:14	X																			
280-3087-11	1	T	13:16	X																			
280-3087-12	1	T	13:18	X																			
280-3087-12 SD	5	T	13:20	X																			
280-3087-12 MS	1	T	13:23	X																			
280-3087-12 MSD	1	T	13:25	X																			
280-3087-12 PDS	1	T	13:27	X																			
280-3087-13	1	T	13:29	X																			
CCVH 280-18373/72	1		13:31																				
CCV 280-18373/73	1		13:33	X																			
CCB 280-18373/74	1		13:36	X																			
CCVL 280-18373/75	1		13:38	X																			
ZZZZZZ			13:40																				
ZZZZZZ			13:43																				
ZZZZZZ			13:45																				
ZZZZZZ			13:47																				
ZZZZZZ			13:50																				
ZZZZZZ			13:52																				
ZZZZZZ			13:54																				
CCVH 280-18373/83			13:56																				
CCV 280-18373/84			13:59																				

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Denver Job No.: 280-3087-1

SDG No.:

Instrument ID: MT_026 Method: 6010C

Start Date: 06/07/2010 09:52 End Date: 06/07/2010 14:21

Lab Sample ID	D/F	Type	Time	Analytes																			
				Na																			
CCB 280-18373/85			14:01																				
CCVL 280-18373/86			14:03																				
ZZZZZZ			14:06																				
ZZZZZZ			14:09																				
ZZZZZZ			14:12																				
CCVH 280-18373/90			14:14																				
CCV 280-18373/91			14:17																				
CCB 280-18373/92			14:19																				
CCVL 280-18373/93			14:21																				

Prep Types
T = Total/NA

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Denver Job No.: 280-3087-1

SDG No.:

Instrument ID: MT_026 Method: 6010C

Start Date: 06/10/2010 09:01 End Date: 06/10/2010 16:09

Lab Sample ID	D/F	Type	Time	Analytes																			
				Al																			
ICIS 280-18884/1	1		09:01	X																			
IC 280-18884/2			09:04	X																			
IC 280-18884/3			09:06	X																			
ZZZZZZ			09:08																				
ZZZZZZ			09:10																				
ZZZZZZ			09:13																				
ICV 280-18884/7	1		09:19	X																			
ICVL 280-18884/8	1		09:42	X																			
ICVH 280-18884/9	1		09:50	X																			
ICVH 280-18884/10	1		09:53	X																			
CCVH 280-18884/11	1		09:56	X																			
CCV 280-18884/12	1		09:59	X																			
ICB 280-18884/13	1		10:01	X																			
CRI 280-18884/14	1		10:03	X																			
CRI 280-18884/15	1		10:09	X																			
ICSA 280-18884/16	1		10:11	X																			
ICSAB 280-18884/17	1		10:14	X																			
LRA 280-18884/18			10:17																				
CCVH 280-18884/19	1		10:19	X																			
CCV 280-18884/20	1		10:22	X																			
CCB 280-18884/21	1		10:24	X																			
CCVL 280-18884/22	1		10:26	X																			
ZZZZZZ			10:28																				
ZZZZZZ			10:31																				
ZZZZZZ			10:33																				
ZZZZZZ			10:35																				
ZZZZZZ			10:38																				
ZZZZZZ			10:40																				
ZZZZZZ			10:42																				
ZZZZZZ			10:45																				
ZZZZZZ			10:47																				
ZZZZZZ			10:50																				
CCVH 280-18884/33			10:52																				
CCV 280-18884/34			10:54																				
CCB 280-18884/35			10:56																				
CCVL 280-18884/36			10:59																				
ZZZZZZ			11:01																				
ZZZZZZ			11:03																				
ZZZZZZ			11:06																				
ZZZZZZ			11:08																				
ZZZZZZ			11:11																				
ZZZZZZ			11:13																				

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Denver Job No.: 280-3087-1

SDG No.:

Instrument ID: MT_026 Method: 6010C

Start Date: 06/10/2010 09:01 End Date: 06/10/2010 16:09

Lab Sample ID	D/F	Type	Time	Analytes																			
				Al																			
ZZZZZZ			11:16																				
CCVH 280-18884/44	1		11:18	X																			
CCV 280-18884/45	1		11:20	X																			
CCB 280-18884/46	1		11:22	X																			
CCVL 280-18884/47	1		11:25	X																			
MB 280-17869/1-A	1	T	11:27	X																			
LCS 280-17869/2-A	1	T	11:29	X																			
ZZZZZZ			11:32																				
ZZZZZZ			11:34																				
ZZZZZZ			11:36																				
ZZZZZZ			11:38																				
ZZZZZZ			11:41																				
ZZZZZZ			11:43																				
ZZZZZZ			11:45																				
CCVH 280-18884/57	1		11:47	X																			
CCV 280-18884/58	1		11:50	X																			
CCB 280-18884/59	1		11:52	X																			
CCVL 280-18884/60	1		11:54	X																			
ZZZZZZ			11:56																				
ZZZZZZ			11:59																				
ZZZZZZ			12:01																				
ZZZZZZ			12:03																				
ZZZZZZ			12:05																				
ZZZZZZ			12:08																				
ZZZZZZ			12:10																				
ZZZZZZ			12:13																				
ZZZZZZ			12:15																				
ZZZZZZ			12:17																				
CCVH 280-18884/71			12:19																				
CCV 280-18884/72			12:22																				
CCB 280-18884/73			12:24																				
CCVL 280-18884/74			12:26																				
ZZZZZZ			12:28																				
ZZZZZZ			12:31																				
ZZZZZZ			12:33																				
ZZZZZZ			12:35																				
ZZZZZZ			12:38																				
ZZZZZZ			12:40																				
ZZZZZZ			12:42																				
ZZZZZZ			12:45																				
ZZZZZZ			12:47																				
ZZZZZZ			12:49																				

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Denver Job No.: 280-3087-1

SDG No.:

Instrument ID: MT_026 Method: 6010C

Start Date: 06/10/2010 09:01 End Date: 06/10/2010 16:09

Lab Sample ID	D/F	Type	Time	Analytes																			
				Al																			
CCVH 280-18884/85			12:52																				
CCV 280-18884/86			12:54																				
CCB 280-18884/87			12:56																				
CCVL 280-18884/88			12:58																				
ZZZZZZ			13:01																				
ZZZZZZ			13:03																				
ZZZZZZ			13:05																				
ZZZZZZ			13:08																				
CCVH 280-18884/93			13:10																				
CCV 280-18884/94			13:12																				
CCB 280-18884/95			13:14																				
CCVL 280-18884/96			13:17																				
ZZZZZZ			13:19																				
ZZZZZZ			13:21																				
ZZZZZZ			13:24																				
ZZZZZZ			13:26																				
ZZZZZZ			13:28																				
ZZZZZZ			13:30																				
ZZZZZZ			13:33																				
CCVH 280-18884/104			13:35																				
CCV 280-18884/105			13:37																				
CCB 280-18884/106			13:39																				
CCVL 280-18884/107			13:42																				
ZZZZZZ			13:44																				
ZZZZZZ			13:46																				
ZZZZZZ			13:49																				
ZZZZZZ			13:51																				
ZZZZZZ			13:53																				
ZZZZZZ			13:55																				
ZZZZZZ			13:58																				
CCVH 280-18884/115			14:00																				
CCV 280-18884/116			14:02																				
CCB 280-18884/117			14:04																				
CCVL 280-18884/118			14:07																				
ZZZZZZ			14:09																				
ZZZZZZ			14:12																				
ZZZZZZ			14:14																				
ZZZZZZ			14:17																				
ZZZZZZ			14:19																				
ZZZZZZ			14:22																				
ZZZZZZ			14:25																				
ZZZZZZ			14:29																				

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Denver Job No.: 280-3087-1

SDG No.:

Instrument ID: MT_026 Method: 6010C

Start Date: 06/10/2010 09:01 End Date: 06/10/2010 16:09

Lab Sample ID	D/F	Type	Time	Analytes																			
				Al																			
ZZZZZZ			14:32																				
CCVH 280-18884/128			14:35																				
CCV 280-18884/129			14:37																				
CCB 280-18884/130			14:39																				
CCVL 280-18884/131			14:41																				
ZZZZZZ			14:44																				
ZZZZZZ			14:46																				
ZZZZZZ			14:48																				
ZZZZZZ			14:50																				
ZZZZZZ			14:53																				
ZZZZZZ			14:55																				
ZZZZZZ			14:57																				
ZZZZZZ			15:00																				
ZZZZZZ			15:02																				
ZZZZZZ			15:04																				
CCVH 280-18884/142			15:06																				
CCV 280-18884/143			15:09																				
CCB 280-18884/144			15:11																				
CCVL 280-18884/145			15:13																				
ZZZZZZ			15:16																				
ZZZZZZ			15:18																				
ZZZZZZ			15:20																				
ZZZZZZ			15:23																				
ZZZZZZ			15:25																				
ZZZZZZ			15:27																				
ZZZZZZ			15:29																				
ZZZZZZ			15:32																				
ZZZZZZ			15:34																				
ZZZZZZ			15:36																				
CCVH 280-18884/156			15:39																				
CCV 280-18884/157			15:42																				
CCB 280-18884/158			15:44																				
CCVL 280-18884/159			15:46																				
ZZZZZZ			15:48																				
ZZZZZZ			15:51																				
ZZZZZZ			15:53																				
ZZZZZZ			15:55																				
ZZZZZZ			15:57																				
ZZZZZZ			16:00																				
CCVH 280-18884/166			16:02																				
CCV 280-18884/167			16:04																				
CCB 280-18884/168			16:06																				

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Denver Job No.: 280-3087-1

SDG No.:

Instrument ID: MT_026 Method: 6010C

Start Date: 06/10/2010 09:01 End Date: 06/10/2010 16:09

Lab Sample ID	D/F	Type	Time	Analytes																			
				Al																			
CCVL 280-18884/169			16:09																				

Prep Types

T = Total/NA

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Denver Job No.: 280-3087-1

SDG No.:

Instrument ID: MT_024 Method: 6020A

Start Date: 06/05/2010 17:16 End Date: 06/06/2010 05:08

Lab Sample ID	D/F	Type	Time	Analytes																			
				Ag	As	Ba	Be	Cd	Co	Cr	Cu	Mn	Ni	Pb	Sb	Se	Tl	V	Zn				
ITUNE 280-18454/1			17:16																				
IC 280-18454/2			17:21	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				
IC 280-18454/3	1		17:24	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				
ICV 280-18454/4	1		17:27	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				
ZZZZZZ			17:30																				
ICVL 280-18454/6	1		17:33	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				
ICB 280-18454/7			17:36																				
ICB 280-18454/8	1		17:39	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				
CRI 280-18454/9	1		17:41	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				
ZZZZZZ			17:44																				
ICSA 280-18454/11	1		17:47	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				
ICSAB 280-18454/12	1		17:50	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				
RINSE 280-18454/13			17:52																				
LRA 280-18454/14			17:55																				
RINSE 280-18454/15			17:57																				
CCV 280-18454/16	1		18:00	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				
CCB 280-18454/17			18:03																				
CCB 280-18454/18			18:06																				
CCVL 280-18454/19	1		18:08	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				
ZZZZZZ			18:11																				
ZZZZZZ			18:14																				
ZZZZZZ			18:17																				
ZZZZZZ			18:19																				
ZZZZZZ			18:22																				
ZZZZZZ			18:25																				
ZZZZZZ			18:28																				
ZZZZZZ			18:30																				
ZZZZZZ			18:33																				
ZZZZZZ			18:36																				
CCV 280-18454/30	1		18:38	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				
CCB 280-18454/31			18:41																				
CCB 280-18454/32	1		18:44	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				
CCVL 280-18454/33	1		18:47	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				
MB 280-17867/1-A	1	T	18:49	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				
LCS 280-17867/2-A	1	T	18:52	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				
280-3087-1	1	T	18:55	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				
280-3087-2	1	T	18:58	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X				
280-3087-2 DL	10	T	19:00											X									
280-3087-3	1	T	19:03	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				
280-3087-4	1	T	19:06	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				
280-3087-5	1	T	19:08	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				
280-3087-6	1	T	19:11	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Denver Job No.: 280-3087-1

SDG No.:

Instrument ID: MT_024 Method: 6020A

Start Date: 06/05/2010 17:16 End Date: 06/06/2010 05:08

Lab Sample ID	D/F	Type	Time	Analytes																			
				Ag	As	Ba	Be	Cd	Co	Cr	Cu	Mn	Ni	Pb	Sb	Se	Tl	V	Zn				
280-3087-7	1	T	19:14	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				
CCV 280-18454/44	1		19:16	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				
CCB 280-18454/45			19:19																				
CCB 280-18454/46	1		19:22	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				
CCVL 280-18454/47	1		19:25	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				
280-3087-8	1	T	19:27	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				
280-3087-9	1	T	19:30	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				
280-3087-10	1	T	19:33	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				
280-3087-11	1	T	19:35	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				
280-3087-12	1	T	19:38	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				
280-3087-12 SD	5	T	19:41	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				
280-3087-12 PDS	1	T	19:43	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				
280-3087-12 MS	1	T	19:46	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				
280-3087-12 MSD	1	T	19:49	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				
280-3087-13	1	T	19:51	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				
CCV 280-18454/58	1		19:54	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				
CCB 280-18454/59			19:57																				
CCB 280-18454/60	1		19:59	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				
CCVL 280-18454/61	1		20:02	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				
RINSE 280-18454/62			20:05																				
RINSE 280-18454/63			20:08																				
RINSE 280-18454/64			20:11																				
ZZZZZZ			20:13																				
IC 280-18454/66			20:16	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				
IC 280-18454/67			20:19	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				
CCV 280-18454/68			20:21																				
CCB 280-18454/69			20:24																				
ZZZZZZ			20:27																				
ZZZZZZ			20:30																				
ZZZZZZ			20:32																				
ZZZZZZ			20:35																				
ZZZZZZ			20:38																				
ZZZZZZ			20:41																				
ZZZZZZ			20:43																				
ZZZZZZ			20:46																				
ZZZZZZ			20:49																				
ZZZZZZ			20:52																				
CCV 280-18454/80			20:54																				
CCB 280-18454/81			20:57																				
RINSE 280-18454/82			21:00																				
RINSE 280-18454/83			21:03																				
RINSE 280-18454/84			21:05																				

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Denver Job No.: 280-3087-1

SDG No.:

Instrument ID: MT_024 Method: 6020A

Start Date: 06/05/2010 17:16 End Date: 06/06/2010 05:08

Lab Sample ID	D/F	Type	Time	Analytes																			
				Ag	As	Ba	Be	Cd	Co	Cr	Cu	Mn	Ni	Pb	Sb	Se	Tl	V	Zn				
ZZZZZZ			21:08																				
IC 280-18454/86			21:11	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				
IC 280-18454/87			21:13	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				
CCV 280-18454/88			21:16																				
CCB 280-18454/89			21:19																				
ZZZZZZ			21:22																				
ZZZZZZ			21:24																				
ZZZZZZ			21:27																				
ZZZZZZ			21:30																				
ZZZZZZ			21:32																				
ZZZZZZ			21:35																				
ZZZZZZ			21:38																				
ZZZZZZ			21:41																				
ZZZZZZ			21:43																				
CCV 280-18454/99			21:46																				
CCB 280-18454/100			21:49																				
ZZZZZZ			21:51																				
ZZZZZZ			21:54																				
ZZZZZZ			21:57																				
ZZZZZZ			22:00																				
ZZZZZZ			22:02																				
ZZZZZZ			22:05																				
ZZZZZZ			22:08																				
ZZZZZZ			22:11																				
ZZZZZZ			22:14																				
CCV 280-18454/110			22:16																				
CCB 280-18454/111			22:19																				
ZZZZZZ			22:22																				
ZZZZZZ			22:25																				
ZZZZZZ			22:27																				
ZZZZZZ			22:30																				
ZZZZZZ			22:33																				
ZZZZZZ			22:36																				
ZZZZZZ			22:38																				
ZZZZZZ			22:41																				
ZZZZZZ			22:44																				
CCV 280-18454/121			22:47																				
CCB 280-18454/122			22:50																				
RINSE 280-18454/123			22:52																				
RINSE 280-18454/124			22:55																				
RINSE 280-18454/125			22:58																				
ZZZZZZ			23:01																				

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Denver Job No.: 280-3087-1

SDG No.:

Instrument ID: MT_024 Method: 6020A

Start Date: 06/05/2010 17:16 End Date: 06/06/2010 05:08

Lab Sample ID	D/F	Type	Time	Analytes																			
				Ag	As	Ba	Be	Cd	Co	Cr	Cu	Mn	Ni	Pb	Sb	Se	Tl	V	Zn				
IC 280-18454/127			23:03	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				
IC 280-18454/128			23:06	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				
CCV 280-18454/129			23:09																				
CCB 280-18454/130			23:12																				
ZZZZZZ			23:14																				
ZZZZZZ			23:17																				
ZZZZZZ			23:20																				
ZZZZZZ			23:23																				
ZZZZZZ			23:25																				
ZZZZZZ			23:28																				
ZZZZZZ			23:31																				
ZZZZZZ			23:34																				
ZZZZZZ			23:36																				
CCV 280-18454/140			23:39																				
CCB 280-18454/141			23:42																				
ZZZZZZ			23:45																				
ZZZZZZ			23:47																				
ZZZZZZ			23:50																				
ZZZZZZ			23:53																				
ZZZZZZ			23:56																				
ZZZZZZ			23:59																				
ZZZZZZ			00:01																				
CCV 280-18454/149			00:04																				
CCB 280-18454/150			00:07																				
ZZZZZZ			00:10																				
ZZZZZZ			00:12																				
ZZZZZZ			00:15																				
ZZZZZZ			00:18																				
ZZZZZZ			00:21																				
ZZZZZZ			00:23																				
ZZZZZZ			00:26																				
CCV 280-18454/158			00:29																				
CCB 280-18454/159			00:32																				
RINSE 280-18454/160			00:34																				
RINSE 280-18454/161			00:37																				
RINSE 280-18454/162			00:40																				
ZZZZZZ			00:43																				
IC 280-18454/164			00:45	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				
IC 280-18454/165			00:48	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				
CCV 280-18454/166			00:51																				
CCB 280-18454/167			00:54																				
ZZZZZZ			00:56																				

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Denver Job No.: 280-3087-1

SDG No.:

Instrument ID: MT_024 Method: 6020A

Start Date: 06/05/2010 17:16 End Date: 06/06/2010 05:08

Lab Sample ID	D/F	Type	Time	Analytes																			
				Ag	As	Ba	Be	Cd	Co	Cr	Cu	Mn	Ni	Pb	Sb	Se	Tl	V	Zn				
ZZZZZZ			00:59																				
ZZZZZZ			01:02																				
ZZZZZZ			01:05																				
ZZZZZZ			01:08																				
ZZZZZZ			01:10																				
ZZZZZZ			01:13																				
ZZZZZZ			01:16																				
CCV 280-18454/176			01:19																				
CCB 280-18454/177			01:21																				
ZZZZZZ			01:24																				
ZZZZZZ			01:27																				
ZZZZZZ			01:30																				
ZZZZZZ			01:32																				
ZZZZZZ			01:35																				
ZZZZZZ			01:38																				
ZZZZZZ			01:41																				
CCV 280-18454/185			01:44																				
CCB 280-18454/186			01:46																				
ZZZZZZ			01:49																				
ZZZZZZ			01:52																				
ZZZZZZ			01:55																				
ZZZZZZ			01:57																				
ZZZZZZ			02:00																				
ZZZZZZ			02:03																				
ZZZZZZ			02:06																				
CCV 280-18454/194			02:08																				
CCB 280-18454/195			02:11																				
RINSE 280-18454/196			02:14																				
RINSE 280-18454/197			02:17																				
RINSE 280-18454/198			02:19																				
ZZZZZZ			02:22																				
IC 280-18454/200			02:25	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				
IC 280-18454/201			02:28	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				
CCV 280-18454/202			02:30																				
CCB 280-18454/203			02:33																				
ZZZZZZ			02:36																				
ZZZZZZ			02:39																				
ZZZZZZ			02:41																				
ZZZZZZ			02:44																				
ZZZZZZ			02:47																				
CCV 280-18454/209			02:50																				
CCB 280-18454/210			02:52																				

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Denver Job No.: 280-3087-1

SDG No.:

Instrument ID: MT_024 Method: 6020A

Start Date: 06/05/2010 17:16 End Date: 06/06/2010 05:08

Lab Sample ID	D/F	Type	Time	Analytes																			
				Ag	As	Ba	Be	Cd	Co	Cr	Cu	Mn	Ni	Pb	Sb	Se	Tl	V	Zn				
ZZZZZZ			02:55																				
ZZZZZZ			02:58																				
ZZZZZZ			03:01																				
ZZZZZZ			03:03																				
ZZZZZZ			03:06																				
ZZZZZZ			03:09																				
CCV 280-18454/217			03:12																				
CCB 280-18454/218			03:14																				
RINSE 280-18454/219			03:17																				
RINSE 280-18454/220			03:20																				
RINSE 280-18454/221			03:23																				
ZZZZZZ			03:25																				
IC 280-18454/223			03:28	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				
IC 280-18454/224			03:31	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				
CCV 280-18454/225			03:34																				
CCB 280-18454/226			03:36																				
ZZZZZZ			03:39																				
ZZZZZZ			03:42																				
ZZZZZZ			03:45																				
ZZZZZZ			03:48																				
ZZZZZZ			03:50																				
ZZZZZZ			03:53																				
ZZZZZZ			03:56																				
ZZZZZZ			03:59																				
CCV 280-18454/235			04:02																				
CCB 280-18454/236			04:04																				
ZZZZZZ			04:07																				
ZZZZZZ			04:10																				
ZZZZZZ			04:13																				
ZZZZZZ			04:15																				
ZZZZZZ			04:18																				
ZZZZZZ			04:21																				
CCV 280-18454/243			04:24																				
CCB 280-18454/244			04:26																				
ZZZZZZ			04:29																				
ZZZZZZ			04:32																				
ZZZZZZ			04:35																				
ZZZZZZ			04:38																				
ZZZZZZ			04:41																				
ZZZZZZ			04:43																				
ZZZZZZ			04:46																				
ZZZZZZ			04:49																				

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Denver Job No.: 280-3087-1

SDG No.:

Instrument ID: MT_024 Method: 6020A

Start Date: 06/05/2010 17:16 End Date: 06/06/2010 05:08

Lab Sample ID	D/F	Type	Time	Analytes																			
				Ag	As	Ba	Be	Cd	Co	Cr	Cu	Mn	Ni	Pb	Sb	Se	Tl	V	Zn				
CCV 280-18454/253			04:52																				
CCB 280-18454/254			04:54																				
ZZZZZZ			04:57																				
ZZZZZZ			05:00																				
ZZZZZZ			05:03																				
CCV 280-18454/258			05:06																				
CCB 280-18454/259			05:08																				

Prep Types
T = Total/NA

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Denver Job No.: 280-3087-1

SDG No.:

Instrument ID: MT_033 Method: 7471B

Start Date: 05/11/2010 19:49 End Date: 05/12/2010 08:05

Lab Sample ID	D/F	Type	Time	Analytes																			
				Hg																			
STD0 280-15007/1 IC			19:49	X																			
STD1 280-15007/2 IC			19:51	X																			
STD2 280-15007/3 IC			19:54	X																			
STD3 280-15007/4 IC			19:56	X																			
STD4 280-15007/5 IC			19:58	X																			
STD5 280-15007/6 IC			20:01	X																			
STD6 280-15007/7 IC			20:03	X																			
ICB 280-15007/8			20:09																				
ICV 280-15007/9	1		20:11	X																			
ICB 280-15007/10	1		20:14	X																			
CRA 280-15007/11	1		20:16	X																			
CCV 280-15007/12			20:18																				
CCB 280-15007/13			20:21																				
ZZZZZZ			20:23																				
ZZZZZZ			20:25																				
ZZZZZZ			20:27																				
ZZZZZZ			20:30																				
ZZZZZZ			20:32																				
ZZZZZZ			20:34																				
ZZZZZZ			20:37																				
ZZZZZZ			20:41																				
CCV 280-15007/22			20:43																				
CCB 280-15007/23			20:45																				
ZZZZZZ			20:48																				
ZZZZZZ			20:50																				
ZZZZZZ			20:52																				
ZZZZZZ			20:55																				
ZZZZZZ			20:57																				
ZZZZZZ			20:59																				
ZZZZZZ			21:02																				
ZZZZZZ			21:04																				
ZZZZZZ			21:06																				
CCV 280-15007/33			21:09																				
CCB 280-15007/34			21:11																				
ZZZZZZ			21:13																				
ZZZZZZ			21:16																				
ZZZZZZ			21:18																				
CCV 280-15007/38			21:20																				
CCB 280-15007/39			21:23																				
ZZZZZZ			21:25																				
ZZZZZZ			21:27																				
ZZZZZZ			21:30																				

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Denver Job No.: 280-3087-1

SDG No.:

Instrument ID: MT_033 Method: 7471B

Start Date: 05/11/2010 19:49 End Date: 05/12/2010 08:05

Lab Sample ID	D/F	Type	Time	Analytes																			
				Hg																			
ZZZZZZ			21:32																				
ZZZZZZ			21:34																				
ZZZZZZ			21:36																				
ZZZZZZ			21:39																				
ZZZZZZ			21:41																				
ZZZZZZ			21:43																				
CCV 280-15007/49	1		21:46	X																			
CCB 280-15007/50	1		21:48	X																			
ZZZZZZ			21:50																				
ZZZZZZ			21:53																				
ZZZZZZ			21:55																				
ZZZZZZ			21:57																				
ZZZZZZ			21:59																				
ZZZZZZ			22:02																				
ZZZZZZ			22:04																				
ZZZZZZ			22:06																				
MB 280-14758/1-A	1	T	22:09	X																			
CCV 280-15007/60	1		22:11	X																			
CCB 280-15007/61	1		22:13	X																			
LCS 280-14758/2-A	1	T	22:16	X																			
280-3087-1	1	T	22:18	X																			
280-3087-2	1	T	22:20	X																			
280-3087-3	1	T	22:22	X																			
280-3087-4	1	T	22:25	X																			
280-3087-5	1	T	22:27	X																			
280-3087-6	1	T	22:29	X																			
280-3087-7	1	T	22:32	X																			
280-3087-8	1	T	22:34	X																			
CCV 280-15007/71	1		22:36	X																			
CCB 280-15007/72	1		22:39	X																			
280-3087-9	1	T	22:41	X																			
280-3087-10	1	T	22:43	X																			
280-3087-11	1	T	22:46	X																			
280-3087-12	1	T	22:48	X																			
280-3087-12 SD	5	T	22:50	X																			
280-3087-12 MS	1	T	22:52	X																			
280-3087-12 MSD	1	T	22:55	X																			
280-3087-13	1	T	22:57	X																			
ZZZZZZ			22:59																				
CCV 280-15007/82	1		23:02	X																			
CCB 280-15007/83	1		23:04	X																			
ZZZZZZ			23:06																				

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Denver Job No.: 280-3087-1

SDG No.:

Instrument ID: MT_033 Method: 7471B

Start Date: 05/11/2010 19:49 End Date: 05/12/2010 08:05

Lab Sample ID	D/F	Type	Time	Analytes																			
				Hg																			
ZZZZZZ			23:09																				
ZZZZZZ			23:11																				
ZZZZZZ			23:13																				
ZZZZZZ			23:16																				
ZZZZZZ			23:18																				
ZZZZZZ			23:20																				
ZZZZZZ			23:22																				
ZZZZZZ			23:25																				
CCV 280-15007/93			23:27																				
CCB 280-15007/94			23:29																				
ZZZZZZ			23:32																				
ZZZZZZ			23:34																				
ZZZZZZ			23:36																				
ZZZZZZ			23:39																				
ZZZZZZ			23:41																				
ZZZZZZ			23:43																				
ZZZZZZ			23:46																				
ZZZZZZ			23:48																				
ZZZZZZ			23:50																				
CCV 280-15007/104			23:53																				
CCB 280-15007/105			23:55																				
ZZZZZZ			23:57																				
ZZZZZZ			23:59																				
ZZZZZZ			00:02																				
ZZZZZZ			00:04																				
ZZZZZZ			00:06																				
ZZZZZZ			00:09																				
ZZZZZZ			00:11																				
ZZZZZZ			00:13																				
ZZZZZZ			00:16																				
CCV 280-15007/115			00:18																				
CCB 280-15007/116			00:20																				
ZZZZZZ			00:23																				
ZZZZZZ			00:25																				
ZZZZZZ			00:27																				
ZZZZZZ			00:29																				
ZZZZZZ			00:32																				
ZZZZZZ			00:34																				
ZZZZZZ			00:36																				
ZZZZZZ			00:39																				
ZZZZZZ			00:41																				
CCV 280-15007/126			00:43																				

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Denver Job No.: 280-3087-1

SDG No.:

Instrument ID: MT_033 Method: 7471B

Start Date: 05/11/2010 19:49 End Date: 05/12/2010 08:05

Lab Sample ID	D/F	Type	Time	Analytes																			
				Hg																			
CCB 280-15007/127			00:46																				
ZZZZZZ			00:48																				
ZZZZZZ			00:50																				
ZZZZZZ			00:53																				
ZZZZZZ			00:55																				
ZZZZZZ			00:57																				
ZZZZZZ			01:00																				
ZZZZZZ			01:02																				
ZZZZZZ			01:04																				
ZZZZZZ			01:06																				
ZZZZZZ			01:09																				
CCV 280-15007/138			01:11																				
CCB 280-15007/139			01:13																				
ZZZZZZ			01:16																				
ZZZZZZ			01:18																				
ZZZZZZ			01:20																				
ZZZZZZ			01:23																				
ZZZZZZ			01:25																				
ZZZZZZ			01:27																				
ZZZZZZ			01:30																				
ZZZZZZ			01:32																				
ZZZZZZ			01:34																				
ZZZZZZ			01:37																				
CCV 280-15007/150			01:39																				
CCB 280-15007/151			01:41																				
ZZZZZZ			01:43																				
ZZZZZZ			01:46																				
ZZZZZZ			01:48																				
ZZZZZZ			01:50																				
ZZZZZZ			01:53																				
ZZZZZZ			01:55																				
ZZZZZZ			01:57																				
ZZZZZZ			02:00																				
ZZZZZZ			02:02																				
ZZZZZZ			02:04																				
CCV 280-15007/162			02:07																				
CCB 280-15007/163			02:09																				
ZZZZZZ			02:11																				
ZZZZZZ			02:14																				
ZZZZZZ			02:16																				
ZZZZZZ			02:18																				
CCV 280-15007/168			02:21																				

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Denver Job No.: 280-3087-1

SDG No.:

Instrument ID: MT_033 Method: 7471B

Start Date: 05/11/2010 19:49 End Date: 05/12/2010 08:05

Lab Sample ID	D/F	Type	Time	Analytes																			
				Hg																			
CCB 280-15007/169			02:23																				
ZZZZZZ			02:25																				
ZZZZZZ			02:27																				
ZZZZZZ			02:30																				
ZZZZZZ			02:32																				
ZZZZZZ			02:34																				
ZZZZZZ			02:37																				
ZZZZZZ			02:39																				
ZZZZZZ			02:41																				
ZZZZZZ			07:53																				
ZZZZZZ			07:57																				
ZZZZZZ			08:01																				
ZZZZZZ			08:05																				

Prep Types
T = Total/NA

14-IN
ICP-MS TUNE
METALS

Lab Name: TestAmerica Denver Job No.: 280-3087-1

SDG No.:

ICP-MS Instrument ID: MT_024 Analysis Date: 06/05/10

Lab ID: ITUNE 280-18454/1

Element - Mass	Avg. Measured Mass (amu)	Avg. Peak Width at Peak Height (amu)	% RSD	Q
Li-7	7.00	0.60	1.61	
Be-9	9.00	0.60	2.04	
Mg-24	24.00	0.60	1.30	
Co-59	59.00	0.60	1.05	
In-115	115.05	0.55	1.67	
Pb-208	208.00	0.50	1.29	
U-238	238.00	0.45	1.27	

FORM XIV - IN

Metals Worksheet

Batch Number: 280-14758
Method: 7471B
Analyst: Stoltz, Katie

Date Open: May 11 2010 3:00PM
Batch End: May 11 2010 3:50PM

Lab ID	Client ID	Method Chain	Basis	Initial weight/volume of sample	Final weight/volume of sample	Hg Daily Spk_00071
MB~280-14758/1		7471B, 7471B		3.00 g	250 mL	
LCS~280-14758/2		7471B, 7471B		3.00 g	250 mL	12.5 mL
280-3087-A-1-A	MRBMDU1-S0200-(2-4)-0409	7471B, 7471B	T	3.22 g	250 mL	
280-3087-A-2-A	MRBMDU1-S0300-(16-18)0409	7471B, 7471B	T	3.13 g	250 mL	
280-3087-A-3-A	MRBMDU2-S0200-(2-4)-0409	7471B, 7471B	T	3.38 g	250 mL	
280-3087-A-4-A	MRREP1-S0101-0409	7471B, 7471B	T	3.17 g	250 mL	
280-3087-A-5-A	MRREP1-S0101-0409	7471B, 7471B	T	3.47 g	250 mL	
280-3087-A-6-A	MRFLDU3-S0200-(2-4)-0409	7471B, 7471B	T	3.55 g	250 mL	
280-3087-A-7-A	MRFLDU3-S0200-(2-4)-0409	7471B, 7471B	T	3.22 g	250 mL	
280-3087-A-8-A	MRFLDU4-S0200-(2-4)-0409	7471B, 7471B	T	3.18 g	250 mL	
280-3087-A-9-A	MRFLDU4-S0200-(2-4)-0409	7471B, 7471B	T	3.10 g	250 mL	
280-3087-A-10-A	MRREP2-S0102-0409	7471B, 7471B	T	3.40 g	250 mL	
280-3087-A-11-A	MRREP2-S0102-0409	7471B, 7471B	T	3.53 g	250 mL	
280-3087-A-12-A	MRDU5-S0200-(2-4)-0409	7471B, 7471B	T	3.51 g	250 mL	
280-3087-A-12-E~MS	MRDU5-S0200-(2-4)-0409	7471B, 7471B	T	3.57 g	250 mL	12.5 mL
280-3087-A-12-F~MSD	MRDU5-S0200-(2-4)-0409	7471B, 7471B	T	3.25 g	250 mL	12.5 mL
280-3087-A-13-B	MRBMDU6-S0200-(2-4)-0409	7471B, 7471B	T	3.43 g	250 mL	

SOP Number:	DVMT0015	Stannous Chloride Lot Number:	H45642
Digestion Tube/Cup Lot #:	NA	Oven, Bath or Block Temperature 1:	94 Celsius
Hot Block ID number:	NA	Oven, Bath or Block Temperature 2:	94 Celsius
Hood ID or number:	HOOD-3	NaCL Lot #:	G47617
Balance ID:	24750837	Repittetor Volume Check:	YES
Blank Soil Lot Number:	NA	Aqua Regia Lot Number:	NA
Lot # of Nitric Acid:	J08035	Hydroxylamine Hydrochloride Lot:	H48608
ID number of the thermometer:	96-206		
Lot # of hydrochloric acid:	J07033		
Potassium Permanganate Lot Number:	H16581		
Sulfuric Acid Lot Number:	H35F03		
Hydroxylamine Sulfate Lot Number:	NA		
Potassium Persulfate Lot Number:	C17143		

Metals Worksheet

Batch Number: 280-14758
Method: 7471B
Analyst: Stoltz, Katie

Date Open: May 11 2010 3:00PM
Batch End: May 11 2010 3:50PM

Comments

Lab ID	Client ID	Method Chain	Basis	Analysis comment
MB~280-14758/1		7471B, 7471B		
LCS~280-14758/2		7471B, 7471B		
280-3087-A-1-A	MRBMDU1-S0200-(2-4)-0409	7471B, 7471B	T	
280-3087-A-2-A	MRBMDU1-S0300-(16-18)0409	7471B, 7471B	T	
280-3087-A-3-A	MRBMDU2-S0200-(2-4)-0409	7471B, 7471B	T	
280-3087-A-4-A	MRREP1-S0101-0409	7471B, 7471B	T	
280-3087-A-5-A	MRREP1-S0101-0409	7471B, 7471B	T	
280-3087-A-6-A	MRFLDU3-S0200-(2-4)-0409	7471B, 7471B	T	
280-3087-A-7-A	MRFLDU3-S0200-(2-4)-0409	7471B, 7471B	T	
280-3087-A-8-A	MRFLDU4-S0200-(2-4)-0409	7471B, 7471B	T	
280-3087-A-9-A	MRFLDU4-S0200-(2-4)-0409	7471B, 7471B	T	
280-3087-A-10-A	MRREP2-S0102-0409	7471B, 7471B	T	
280-3087-A-11-A	MRREP2-S0102-0409	7471B, 7471B	T	
280-3087-A-12-A	MRDU5-S0200-(2-4)-0409	7471B, 7471B	T	
280-3087-A-12-E~MS	MRDU5-S0200-(2-4)-0409	7471B, 7471B	T	
280-3087-A-12-F~MSD	MRDU5-S0200-(2-4)-0409	7471B, 7471B	T	
280-3087-A-13-B	MRBMDU6-S0200-(2-4)-0409	7471B, 7471B	T	

Batch Comment: NA

Metals Worksheet

Batch Number: 280-17867
Method: 3050B
Analyst: Willms, Jay

Date Open: Jun 03 2010 8:30AM
Batch End: Jun 03 2010 12:30PM

Lab ID	Client ID	Method Chain	Basis	Initial weight/volume of sample	Final weight/volume of sample	MS CALSTD-1_00012	MS CALSTD-2_00013
MB~280-17867/1		3050B, 6020A		10.00 g	500 mL		
LCS~280-17867/2		3050B, 6020A		10.00 g	500 mL	5.0 mL	5.0 mL
280-3087-A-1-A	MRBMDU1-S0200-(2-4)-0409	3050B, 6020A	T	10.04 g	500 mL		
280-3087-A-2-A	MRBMDU1-S0300-(16-18)0409	3050B, 6020A	T	10.12 g	500 mL		
280-3087-A-3-A	MRBMDU2-S0200-(2-4)-0409	3050B, 6020A	T	10.03 g	500 mL		
280-3087-A-4-A	MRREP1-S0101-0409	3050B, 6020A	T	10.04 g	500 mL		
280-3087-A-5-A	MRREP1-S0101-0409	3050B, 6020A	T	10.13 g	500 mL		
280-3087-A-6-A	MRFLDU3-S0200-(2-4)-0409	3050B, 6020A	T	10.10 g	500 mL		
280-3087-A-7-A	MRFLDU3-S0200-(2-4)-0409	3050B, 6020A	T	10.05 g	500 mL		
280-3087-A-8-A	MRFLDU4-S0200-(2-4)-0409	3050B, 6020A	T	10.12 g	500 mL		
280-3087-A-9-A	MRFLDU4-S0200-(2-4)-0409	3050B, 6020A	T	10.05 g	500 mL		
280-3087-A-10-A	MRREP2-S0102-0409	3050B, 6020A	T	10.07 g	500 mL		
280-3087-A-11-A	MRREP2-S0102-0409	3050B, 6020A	T	10.10 g	500 mL		
280-3087-A-12-A	MRDU5-S0200-(2-4)-0409	3050B, 6020A	T	10.13 g	500 mL		
280-3087-A-12-E~MS	MRDU5-S0200-(2-4)-0409	3050B, 6020A	T	10.02 g	500 mL	5.0 mL	5.0 mL
280-3087-A-12-F~MSD	MRDU5-S0200-(2-4)-0409	3050B, 6020A	T	10.06 g	500 mL	5.0 mL	5.0 mL
280-3087-A-13-B	MRBMDU6-S0200-(2-4)-0409	3050B, 6020A	T	10.17 g	500 mL		

Digestion Tube/Cup Lot #:	A909LS288
Balance ID:	M28318
Hood ID or number:	08
Hot Block ID number:	05, 06,08
Lot # of Nitric Acid:	J10038
Hydrogen peroxide lot number:	H38J10
ID number of the thermometer:	14859, 7038, 4082
Temperature:	95, 95, 91 Degrees C
Pipette ID:	MET-007
Analyst:	JRW
Oven, Bath or Block Temperature 1:	95, 95, 91 Degrees C
Oven, Bath or Block Temperature 2:	95, 95, 94 Degrees C

Metals Worksheet

Batch Number: 280-17869
Method: 3050B
Analyst: Willms, Jay

Date Open: Jun 03 2010 8:30AM
Batch End: Jun 03 2010 1:00PM

Lab ID	Client ID	Method Chain	Basis	Initial weight/volume of sample	Final weight/volume of sample	ICP SPK 2A_00009	ICP SPK 3A_00009
MB~280-17869/1		3050B, 6010C		10.00 g	500 mL		
LCS~280-17869/2		3050B, 6010C		10.00 g	500 mL	5.0 mL	5.0 mL
280-3087-A-1-A	MRBMDU1-S0200-(2-4)-0409	3050B, 6010C	T	10.01 g	500 mL		
280-3087-A-2-A	MRBMDU1-S0300-(16-18)0409	3050B, 6010C	T	10.17 g	500 mL		
280-3087-A-3-A	MRBMDU2-S0200-(2-4)-0409	3050B, 6010C	T	10.19 g	500 mL		
280-3087-A-4-A	MRREP1-S0101-0409	3050B, 6010C	T	10.18 g	500 mL		
280-3087-A-5-A	MRREP1-S0101-0409	3050B, 6010C	T	10.09 g	500 mL		
280-3087-A-6-A	MRFLDU3-S0200-(2-4)-0409	3050B, 6010C	T	10.05 g	500 mL		
280-3087-A-7-A	MRFLDU3-S0200-(2-4)-0409	3050B, 6010C	T	10.16 g	500 mL		
280-3087-A-8-A	MRFLDU4-S0200-(2-4)-0409	3050B, 6010C	T	10.06 g	500 mL		
280-3087-A-9-A	MRFLDU4-S0200-(2-4)-0409	3050B, 6010C	T	10.17 g	500 mL		
280-3087-A-10-A	MRREP2-S0102-0409	3050B, 6010C	T	10.03 g	500 mL		
280-3087-A-11-A	MRREP2-S0102-0409	3050B, 6010C	T	10.02 g	500 mL		
280-3087-A-12-A	MRDU5-S0200-(2-4)-0409	3050B, 6010C	T	10.15 g	500 mL		
280-3087-A-12-E~MS	MRDU5-S0200-(2-4)-0409	3050B, 6010C	T	10.03 g	500 mL	5.0 mL	5.0 mL
280-3087-A-12-F~MSD	MRDU5-S0200-(2-4)-0409	3050B, 6010C	T	10.02 g	500 mL	5.0 mL	5.0 mL
280-3087-A-13-B	MRBMDU6-S0200-(2-4)-0409	3050B, 6010C	T	10.14 g	500 mL		

Digestion Tube/Cup Lot #:	A909LS288
Balance ID:	M28318
Hood ID or number:	09
Hot Block ID number:	01, 02, 03
Lot # of hydrochloric acid:	J07033
Lot # of Nitric Acid:	J10038
Hydrogen peroxide lot number:	G51A04
ID number of the thermometer:	908001800, 908001593, 908002400
Temperature:	95, 95, 95 Degrees C
Pipette ID:	MET-007
Analyst:	JRW
Oven, Bath or Block Temperature 1:	95, 95, 95 Degrees C
Oven, Bath or Block Temperature 2:	95, 95, 95 Degrees C

[redacted]

Chain of Custody Record

Sampler ID _____

Temperature on Receipt 1.9 [illegible] fm 5/1/10

Drinking Water? Yes ☐ No ☐

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

TAL-4124-280 (0508)

Client: HydroGeologic (HGL)	Project Manager: PETER DACIK	Date: 4-30-10	Chain of Custody Number: 130125
Address: 313 USHERS ROAD	Telephone Number (Area Code)/Fax Number: 518-877-0390 / 518-877-0414	Lab Number:	Page 1 of 1
City: BALLSTON LAKE; State: NY; Zip Code: 12019	Site Contact: MIKE JACKSON; Lab Contact: ELAINE WALKER		
Project Name and Location (State): MARKLEY RANGE DEVENS, MA	Carrier/Waybill Number:		
Contract/Purchase Order/Quote No.: AE1002			

Matrix: Air, Aqueous, Sed., Soil

Containers & Preservatives: Unpres., H2SO4, HNO3, HCl, NaOH, ZnAc/NaOH

Analysis (Attach list if more space is needed)

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Air	Aqueous	Sed.	Soil	Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	TAL METALS MIS	Explosives MIS	>2mm TAL METALS MIS	Explosives	TAL METALS	Special Instructions/ Conditions of Receipt
MRBMDU1-S0200-(2-4)-0409	4-30-10	1135				X							X					Cnlon Bag
MRBMDU1-S0300-(16-18)-0409	↓	1320				↓							↓					↓
MRBMDU2-S0200-(2-4)-0409	4-29-10	1512				↓							↓	X				(No explosives)
MRREP1-S0101-0409	4-30-10	1325				↓							↓	X	X			↓
MRFLDU3-S0200-(2-4)-0409	↓	0815				↓							↓	X	X			↓
MRFLDU4-S0200-(2-4)-0409	4-29-10	1600				↓							↓	X	X			↓
MRREP2-S0102-0409	4-30-10	1420				↓							↓	X	X			↓
MRDU5-S0200-(2-4)-0409	4-29-10	1629				↓							↓	X				↓
MRBMDU6-S0200-(2-4)-0409	4-30-10	1040				↓							↓					↓
MR-SD200-0409	↓	1335			X											X	X	2 → 8oz soil jars
MR-SD200MSD-0409	↓	↓			↓											↓	↓	↓
MR-SD200MS-0409	↓	↓			↓											↓	↓	↓

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal: ☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required: ☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☒ 21 Days ☐ Other _____

QC Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished By: [signature]	4-30-2010	1510	1. Received By: [signature]	4/30/10	1510
2. Relinquished By: [signature]	4/30/10	1630	2. Received By: [signature]	5/1/10	1030
3. Relinquished By:			3. Received By:		

Comments

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

Shipping and Receiving Documents

Login Sample Receipt Check List

Client: HydroGeoLogic Inc

Job Number: 280-3087-1

Login Number: 3087

List Source: TestAmerica Denver

Creator: Bindel, Aaron M

List Number: 1

Question	T / F/ NA	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	N/A	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	