FEDERAL ON-SCENE COORDINATOR'S REPORT
COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION, AND LIABILITY ACT
REMOVAL ACTION AT THE SPRINGFIELD IRON SITE
SPRINGFIELD, SANGAMON COUNTY, ILLINOIS
SITE ID: C5D8

Prepared for:

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region V Emergency Response Branch
77 W. Jackson Boulevard
Chicago, IL 60604

Prepared by:

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Date Prepared:	February 7, 2014
TDD Number:	S05-0001-1307-013
Document Control Number:	2228-2A-BKMR
Contract Number:	EP-S5-06-04
WESTON START Project Manager:	Tonya Balla
Telephone Number:	(847) 918-4094
EPA On-Scene Coordinator:	Jaime Brown

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION V

DATE: February 7, 2014

SUBJECT: ON-SCENE COORDINATOR'S REPORT, REV. 1 – CERCLA Removal Action at the Springfield Iron Site, Springfield, Sangamon County, IL, Site ID C5D8

FROM: Jaime Brown, On Scene Coordinator
Emergency Response Branch, SE-5J

TO: Sam Borries, Chief
Emergency Response Branch 2

THROUGH: Michael Ribordy, Chief
Emergency Response Branch Section 3

Please find attached the United States Environmental Protection Agency Federal On-Scene Coordinator's (OSC) Report for the removal action conducted at the Springfield Iron Site (Site), Springfield, Sangamon County, IL. This report follows the format outlined in the National Oil and Hazardous Substances Pollution Contingency Plan, Title 40 of the *Code of Federal Regulations* (40 CFR), Part 300.165. The removal was initiated on September 9, 2013, and was completed on December 2, 2013. The OSC for this Site was Mr. Jaime Brown.

EPA took this action to mitigate the threats posed by the presence of hazardous substances in soil and surficial coal tar that posed an immediate threat to public health, welfare, and the environment. Total project costs under the control of the OSC are estimated at $848,300, of which $776,800 was for the Emergency and Rapid Response Services contractor.

In this report, any indications of specific costs incurred at the Site are only an approximation subject to audit and final definitization by EPA. The OSC report is not a final reconciliation of costs.

Portions of this report's appendices may contain confidential business or enforcement-sensitive information and must be reviewed by the Office of Regional Counsel prior to release to the public. The Site is not on the National Priorities List.

Attachment

FEDERAL ON-SCENE COORDINATOR'S REPORT
COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION, AND LIABILITY ACT
REMOVAL ACTION AT THE SPRINGFIELD IRON SITE
SPRINGFIELD, SANGAMON COUNTY, ILLINOIS

SITE ID: C5D8
NPL STATUS: NON-NPL

Removal Dates: September 9 through December 2, 2013

UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY
Region V
Division of Superfund
Emergency Response Branch

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Emergency and Enforcement Response Branch
Office of Superfund, EPA, Region V

OSC REPORT STANDARD APPENDICES LIST *

Site Name: Springfield Iron Site, Springfield, Sangamon County, Illinois
Site ID No.: C5D8
Task Order No.: 2228

1. Operational Files	ID#
- Action Memos/Additional Funding	1-A
- POLREPs	1-B
- Site Safety Plan	1-C
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2. Financial Files	ID#
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3. Technical Files	ID#
- Analytical Results/QA/QC	3-A
- Disposal Information	3-B
- Chains of Custody	3-C
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* All files are arranged in chronological order.

* Portions of these OSC Report Appendices may contain confidential business information or enforcement-sensitive information and must be reviewed by the Office of Regional Counsel prior to release to the public.

* Note that certain files for this Site are maintained elsewhere by ERB; these appendices are those files maintained by the OSC during the removal action.

EXECUTIVE SUMMARY OF THE REMOVAL ACTIVITY

SITE: Springfield Iron Site

LOCATION: Springfield, Sangamon County, Illinois

PROJECT DATES: September 9 through December 2, 2013

INCIDENT DESCRIPTION: The Springfield Iron Site (Site) includes a mix of commercial and residential properties at the former Springfield Iron facility in Springfield, Sangamon County, IL. The Site currently is occupied by properties that include warehouse space, wholesale merchandise storage, a plumbing service company, a taxi company, an electrical substation, a large city water storage tank, and a city backup electrical generator. Residential properties occupy the southernmost part of the Site property and border the Site to the east, north, and south. The Chicago and Illinois Railroad is located west of Site. The removal action targeted coal tar and impacted soil at the former facility location in Springfield, IL.

The likely source of the coal tar is the Springfield Iron facility; its plant primarily manufactured iron and steel for the railroad industry. The iron and steel manufacturing processes used four "gas houses" that produced gas using coal, which was then either used for production or sold to the city to fuel street lights. The Springfield Iron Company operated from 1872 until 1905, when the plant structures were demolished and the Site was leveled.

In 2010, the Illinois Environmental Protection Agency (IEPA) Office of Site Evaluation conducted a pre-Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) screening assessment at the Site. The assessment was prompted by the observation of coal tar seeping onto a public sidewalk and city right-of-way in the northwest region of the Site. IEPA referred the Springfield Iron facility to EPA for cleanup.

In 2012, the United Stated Environmental Protection Agency and WESTON Solutions Inc. (WESTON®),) Superfund Technical Assessment and Response Team (START) conducted soil boring and sampling activities as part of a time-critical removal site assessment. Based on the analytical results, the coal tar contains semi-volatile organic compounds (SVOC) and metals at concentrations exceeding EPA Removal Action Levels (RAL).

ACTIONS: Based on EPA and IEPA investigations, the coal tar and impacted soil at the site contained SVOCs, benzene, and metals that exceeded EPA RALs. The main contaminants of concern were determined to be benzene, lead, and vanadium. Present in the residential community, these benzene, lead, and vanadium levels represent imminent and substantial endangerment of public health, welfare, and the environment. Therefore, EPA approved an Action Memorandum for the Site on June 13, 2013. The Action Memorandum requests a Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) time-critical removal action at the Site.

On September 9, 2013, EPA; WESTON START; and Environmental Restoration (ER), the Emergency and Rapid Response Services (ERRS) contractor, mobilized to the Site to begin the removal of coal tar and impacted soil from the site which included excavation and disposal.

Removal activities were completed on December 2, 2013. The ERRS contractor arranged for the transportation and disposal of 4,276 tons of coal tar and impacted soil at the Milam Landfill in East St. Louis, IL. Clean backfill for the Removal Action totaled 3,184 tons.

_____

Jaime Brown, On-Scene Coordinator
EPA, Region V
Chicago, IL

I. SUMMARY OF EVENTS

A. SITE CONDITIONS AND BACKGROUND

1. Initial Situation

The Springfield Iron Site (Site) is located at 1900 Factory Street in Springfield, Sangamon County, IL (**Figure 1**). The Springfield Iron Company originally occupied approximately 50 acres on the north side of Springfield, east of Factory Street and south of Griffiths Avenue. The Springfield Iron Company was north of what is now Ridgely Avenue and mostly west of what is now 14th Street. A portion of the Springfield Iron Company extended east to the present location of the Chicago and Illinois Railroad. The Site currently is occupied by a mix of commercial and residential properties that include warehouse space, wholesale merchandise storage, a plumbing service company, a taxi company, an electrical substation, a large city water storage tank, and a city backup electrical generator. Residential properties occupy the southernmost part of the Site property and border the Site to the east, north, and south. The Chicago and Illinois Railroad is located west of Site. A mix of industrial, commercial, and residential properties exists west of the Chicago and Illinois Railroad. The Meridian coordinates for the Site are 39°49'36.68" North and 89°38'13.01" West. **Figure 2** depicts the site layout for the area of concern for the removal action.

The Springfield Iron Company operated from 1872 until 1905, when the plant structures were demolished and the Site was leveled. The plant primarily manufactured iron and steel for the railroad industry. A puddle mill was established at the Site in June 1872, and the first iron rail was completed in September 1872. Later operations expanded to include production of both iron and steel rails, bar iron, fish plates, and track bolts. The iron and steel manufacturing processes used four "gas houses" that produced gas using coal, which was then either used for production or sold to the city to fuel street lights.

2. Location of Hazardous Substance(s)

On March 11, 2010, the IEPA Office of Site Evaluation conducted a pre-CERCLIS screening assessment at the Site. The assessment was prompted by the observation of coal tar seeping onto a public sidewalk and city right-of-way in the northwest region of the Site. The sidewalk links a nearby high school, baseball/softball fields, a community park, and several residential areas. The screening assessment focused on four coal gas houses and a potential coal-tar disposal area.

In October 2010, as part of the pre-CERCLIS screening assessment, IEPA mobilized a Geoprobe to drill 20 borings at the Site in the four gas house areas and the potential coal-tar disposal area. The borings' depths ranged from 4 to 12 feet below ground surface (bgs). According to the pre-CERCLIS screening assessment report, the following compounds exceeded EPA Removal Action Levels (RAL):

- 2,4-Dimethylphenol at sampling location X107 at 3,800,000 micrograms per kilograms (µg/kg).
- 3- and 4-Methylphenol at sampling location X107 at 6,400,000 µg/kg.
- Benzo(a)anthracene at sampling locations X106 and X108 at 110,000 and 220,000 µg/kg, respectively.

- Benzo(a)pyrene at sampling location X108 at 130,000 µg/kg.
- Benzene at sampling locations X107 and X108 at 18,000 and 45,000 µg/kg, respectively.

On October 10, 2011, the City of Springfield conducted an initial Site investigation to supplement the IEPA pre-CERCLIS screening assessment and to delineate the areal extent and depth of any coal-tar contamination at the Site. Nine borings were installed. Temporary piezometers were installed in four of the borings to determine groundwater elevations.

On February 9, 2012, EPA received a request from the IEPA to conduct a time-critical removal assessment at the Site to document the need for EPA involvement to address imminent and substantial threats to the public health or welfare of the United States or the environment posed by Site-related conditions.

On August 28 and 29, 2012, EPA and WESTON START conducted soil boring and sampling activities as part of a time-critical removal site assessment. The EPA Field Environmental Decision Support Team (FIELDS) used a direct-push, Geoprobe track-mounted rig to advance 10 soil borings, from which samples were collected. In addition, two coal tar samples were collected from coal tar seeping onto grass at the ground surface in the northeast region of the Site. Based on site assessment analytical results, the coal tar contained the following SVOCs and metals at concentrations exceeding EPA RALs: 2-methylnaphthalene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, dibenz(a,h)anthracene, dibenzofuran, indeno(1,2,3-cd)pyrene, naphthalene, lead, and vanadium

The contaminants and conditions at the Site met criteria established in the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) for a removal action and EPA approved an Action Memorandum for the Site on June 13, 2013. The Action Memorandum requests a CERCLA time-critical removal action.

In summary, the IEPA and EPA sampling events indicated that contaminated soil and coal tar were evident in the northwest corner of the Site and west of the water tower near Factory Road. The area in the northwest corner of the site included an approximately 140-foot section of Factory Road and the associated sidewalk on the eastern side of the street; an approximately 100-square-foot section of alleyway leading away from Factory Road to the east; and the side yard between the sidewalk and a commercial business, Tony's Electric, located at 1304 East Griffiths Avenue. EPA site assessment results showed the contamination as going down to 6 feet bgs.

3. Cause of Release or Discharge

It is believed that a portion of the Site was once a ravine and that coal tar material was used in conjunction with soil to backfill and level the area. During the Site assessment, coal tar was observed seeping up to the ground surface, including onto sidewalks, in two areas in the northeast region of the Site.

4. Efforts to Obtain Response by Responsible Party

The IEPA requested assistance from the EPA in addressing contamination at the Site.

B. ORGANIZATION OF RESPONSE

On September 9, 2013, EPA, WESTON START, and ERRS mobilized to the Site. Consistent with the EPA Action Memorandum, the EPA team began removing coal tar and impacted soil from the Site. **Table 1** summarizes the organization of the response.

C. INJURY/POSSIBLE INJURY TO NATURAL RESOURCES

1. Content and Time of Notice to Natural Resource Trustees

(Not Applicable)

2. Trustee Damage Assessment and Restoration Activities

(Not Applicable)

D. CHRONOLOGICAL NARRATIVE OF RESPONSE ACTIONS

1. Threat Abatement Actions Taken

On September 9, 2013, EPA, the ERRS contractor, and WESTON START mobilized to the Site to begin removal activities. Before mobilization, the following activities were completed:

- The ERRS contractor completed a health and safety plan (HASP) for the Site. WESTON START reviewed and provided input.
- The 811 Common Ground Alliance (CGA) service JULIE (Joint Utility Locating Information for Excavators) located and marked all utilities at the Site. In addition, ERRS subcontracted Lucky Locators Inc. to confirm all utility markings at the Site.
- Waste characterization was performed, and a waste profile was established for disposal purposes. A representative waste sample was collected and analyzed for Toxicity Characteristic Leaching Procedure (TCLP) metals, TCLP volatile organic compounds (VOC), TCLP SVOCs, ignitibility, and pH. Waste Management granted non-hazardous, general waste approval for disposal of Site-impacted soil and coal tar.

On September 16, 2013, ERRS began excavation of coal tar and impacted soil in Area 1, which was located in the field on the south side of the Site (**Figure 3**). The ERRS contractor used an excavator to load trucks with lined beds for off-site disposal. Approximately 36 loads or 955 tons of coal tar and impacted soil were removed from Area 1 (**Table 2**). On September 25, 2013, excavation was completed. On September 26 and 27, 2013, Area 1 was backfilled up to approximately 6 inches below original grade. Approximately 65 loads or 1,040 tons of backfill were placed in Area 1 and compacted. On December 2, 2013, clean top soil was added to Area 1 and compacted to complete the restoration.

On September 30, 2013, ERRS began excavation of coal tar and impacted soil in Areas 2 through 4, which were located on the northwestern side of the Site (**Figure 3**). Area 2 consisted of an approximately 140-foot section of Factory Road and the associated sidewalk on the eastern side of the street. Area 3 consisted of an approximately 100-square-foot section of alleyway leading away from Factory Road to the east. Area 4 encompassed the side yard between the sidewalk and a commercial business, Tony's Electric, located at 1304 East Griffiths Avenue.

ERRS used a jackhammer attachment to break apart sections of the roadway and sidewalk prior to excavation. Approximately 46 loads or 1,173 tons of coal tar and impacted soil were removed from Area 2 and approximately 22 loads or 362 tons of concrete were recycled from Area 2. Approximately 15 loads or 398 tons of coal tar and impacted soil were removed from Area 3 and approximately 26 loads or 1,387 tons of coal tar and impacted soil were removed from Area 4 (**Table 2**). On October 2, 2013, excavation in Areas 2 through 4 was completed. Between October 28 and November 22, 2013, Areas 2 through 4 were backfilled. Area 2 was backfilled and compacted to approximately 2 feet below the original grade. To comply with City of Springfield requirements, the roadway replacement was completed by Sangamo Construction Co. This included the curbs and sidewalk on the eastern side of Factory Road. To restore Area 3 and reconnect the alleyway to Factory Road, asphalt surface was installed with crushed stone along the southern fence line. Area 4 was backfilled and compacted back to the original grade. At the request of the property owner, a tree that was removed at the beginning of the field work was not replaced, and the space was seeded with straw matting to promote grass growth. The concrete parking pad was also replaced adjacent to the alleyway. On December 2, 2013, all site work was completed.

During the excavation activities, WESTON START conducted air monitoring within the work zone and at the site perimeter. AreaRAE monitors with VOC sensors and a portable benzene-specific UltraRAE were used. No detections above background levels were recorded along the site perimeter. WESTON START also sampled the soil in excavated areas prior to backfilling. All sample results indicated values under the removal action cleanup goals of 800 milligrams per kilogram (mg/kg) for total lead, 1,300 mg/kg for benzene, and 15,000 mg/kg for vanadium.

Attachment A contains photographic documentation from the response activities. **Attachment B** contains analytical results generated by the ERRS subcontractor laboratories.

2. Treatment/Disposal/Alternative Technology Approaches Pursued

All impacted soil and coal tar (4,276 tons total) was transported to the Waste Management Milam Landfill, located at 601 Madison Road in East St. Louis, IL (**Table 3**). Waste Management arranged for dump trucks to transport the impacted soil and coal tar.

3. Public Information and Community Relations Activity

(Not Applicable)

E. RESOURCES COMMITTED

Extramural Costs:

Total ERRS Contractor Costs:	$723,743
Total WESTON START Costs:	$70,000
Extramural Subtotal:	$793,743
Estimated Total Project Costs:	$793,743
Project Ceiling:	$848,300

II. EFFECTIVENESS OF REMOVAL ACTIVITIES

A. ACTIONS TAKEN BY PRPs

(Not Applicable)

B. ACTIONS TAKEN BY STATE AND LOCAL FORCES

(Not Applicable)

C. ACTIONS TAKEN BY FEDERAL AGENCIES AND SPECIAL TEAMS

EPA was responsible for the removal action that occurred. They coordinated and provided overall management of the contractors that conducted the removal.

D. ACTIONS TAKEN BY CONTRACTORS, PRIVATE GROUPS, AND VOLUNTEERS

The ERRS contractor excavated the coal tar and impacted soil from the Site. The ERRS contractor coordinated the transportation and disposal of the associated waste stream and arranged for Site security, utilities, and the use of equipment necessary to perform the removal action (e.g., excavator, track hoe, bulldozer, compaction roller). The ERRS contractor also procured all subcontractors.

WESTON START provided technical support to EPA while on Site. In addition, WESTON START performed general and health and safety oversight, documentation of all Site activities, air monitoring, multi-media sampling support, and START-related cost tracking.

All impacted soil was transported to the Milam Landfill, located at 601 Madison Road in East St. Louis, IL. Waste Management arranged for dump trucks to transport the impacted soil and coal tar. The ERRS contractor contracted Darren Burris Inc. of Springfield, IL, to provide clean backfill, crushed stone, and top soil for the project. Backfill and top soil were delivered to work areas by dump truck. Compaction field testing of the roadway bed was completed by Professional Service Industries, Inc. The ERRS contractor contracted Sangamo Construction Co. of Springfield, IL, to perform roadway replacement, which included concrete roadway, curbs, sidewalk, and a parking pad on Area 4 (Tony's Electric property). Finally, P. H. Broughton and Sons of Springfield, IL, was contracted by ERRS to restore the alleyway with asphalt surface.

Three contracted laboratories performed the analytical testing required during the removal activities. Test America, Inc., located at 2960 Foster Creighton Drive in Nashville, TN, analyzed confirmation soil samples. EMSL Analytical, Inc., located at 200 Route 130 North in Cinnaminson, NJ, analyzed all worker exposure air samples. Microbac Laboratories, located at 250 West 84th Drive in Merrillville, IN, performed analytical work on the coal tar and soil disposal sample.

III. DIFFICULTIES ENCOUNTERED

A. ITEMS THAT AFFECTED THE RESPONSE

(Not Applicable)

B. ISSUES OF INTERGOVERNMENTAL COORDINATION

(Not Applicable)

C. DIFFICULTIES INTERPRETING, COMPLYING WITH, OR IMPLEMENTING POLICIES AND REGULATIONS

(Not Applicable)

IV. RECOMMENDATIONS

A. MEANS TO PREVENT RECURRENCE OF THE DISCHARGE OR RELEASE

All source material has been removed from the Site.

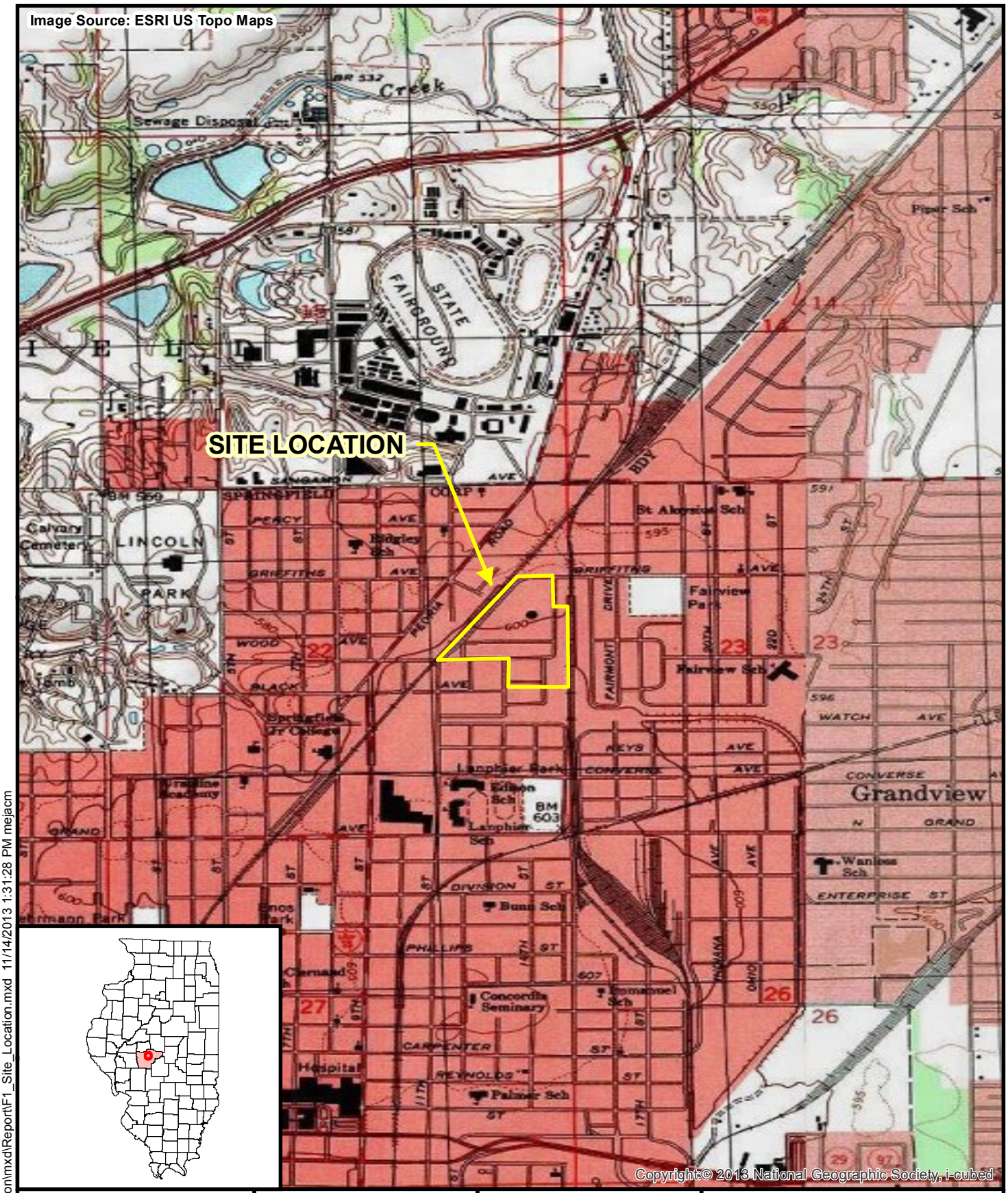
B. MEANS TO IMPROVE RESPONSE ACTIONS

(Not Applicable)

C. PROPOSALS FOR CHANGES IN REGULATIONS AND RESPONSE PLANS

(Not Applicable)

FIGURES



Legend

Site Boundary

0 2,000 Feet

N

Prepared for:
U.S. EPA REGION V

Contract No.: EP-S5-06-04
TDD: S05-0001-1207-006
DCN: 2228-2A-BKMR

Prepared By:
WESTON SOLUTIONS, INC

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Figure 1
Site Location Map
Springfield Iron
Springfield, Sangamon County, Illinois

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FILE: D:\Springfield_Iron\mxd\Report\F2_Site_Features.mxd 11/14/2013 1:31:05 PM mejacm

Legend

0 100 Feet

N

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Prepared By:
WESTON SOLUTIONS, INC

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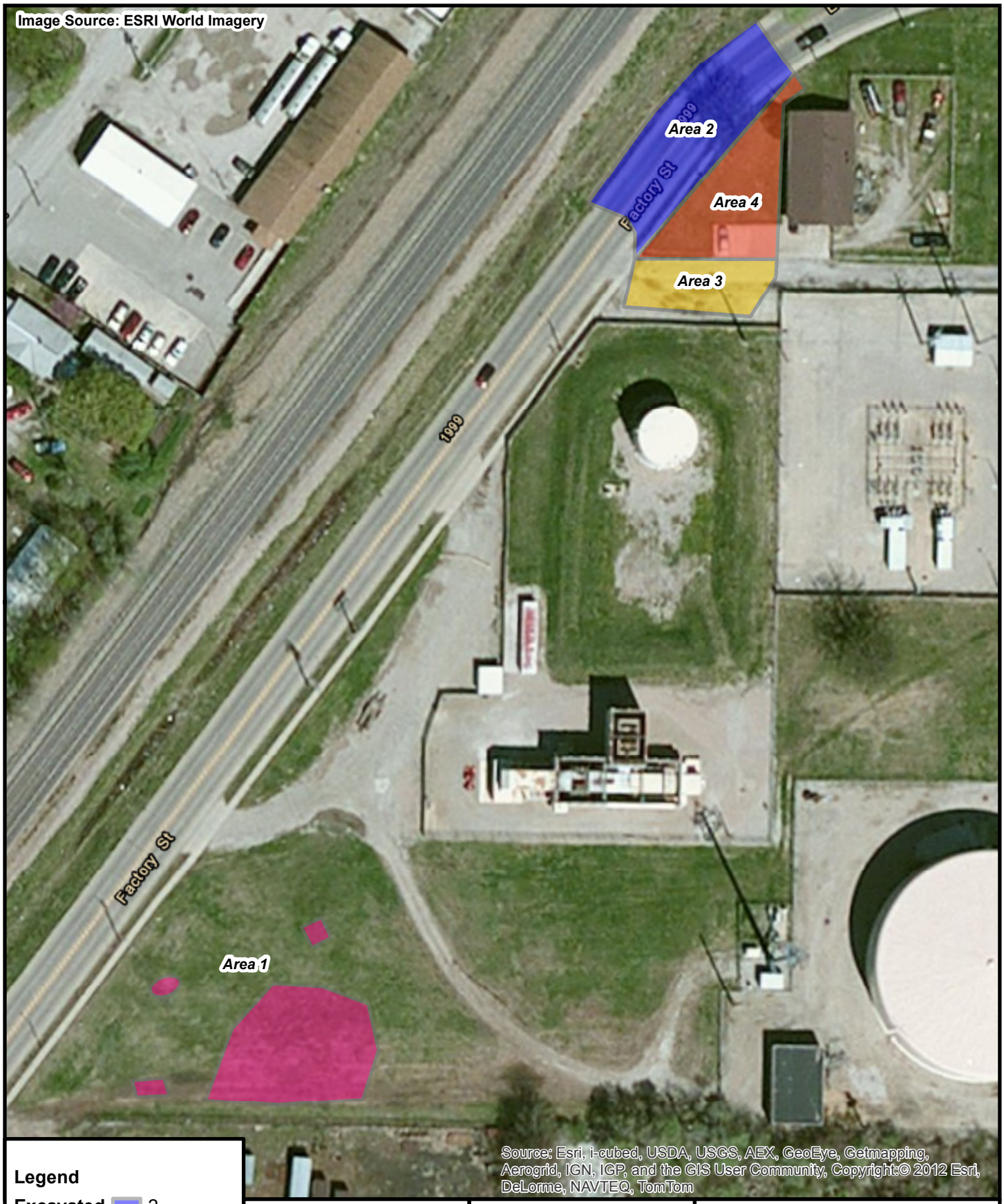
Figure 2
Site Features Map
Springfield Iron
Springfield, Sangamon County, Illinois



Legend

Excavated Areas

1
2
3
4

0 80 Feet

N

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Contract No.: EP-S5-06-04
TDD: S05-0001-1307-013
DCN: 2228-2A-BKMR

Prepared By:
WESTON SOLUTIONS, INC

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Figure 3
Site Excavation Map
Springfield Iron
Springfield, Sangamon County, Illinois

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TABLES

Table 1 Organization of the Response Springfield Iron Site Springfield, Sangamon County, Illinois		
Agencies or Parties Involved	**Contact**	**Description of Participation**
EPA – Region V Division of Superfund Emergency Response Branch 77 West Jackson Blvd. Chicago, IL 60604 Telephone No.: (312) 886-2256	Jaime Brown	Federal OSC responsible for overall project oversight and success
Weston Solutions, Inc. 750 E. Bunker Ct. Suite 500 Vernon Hills, IL 60061 Telephone No.: (847) 918-4094	Tonya Balla	WESTON START project manager responsible for removal oversight support and resources, HASP review, and START-related cost-tracking
Environmental Restoration, LLC 16660 Canal Street South Holland, IL 60473 (708) 333-9915	Toben Viehweg	Response manager responsible for directing daily ERRS activity, providing personnel and equipment necessary for removal, coordinated transportation and disposal of waste streams, and tracked ERRS-related costs

Notes:
ERRS – Emergency and Rapid Response Services.
OSC – On-Scene Coordinator.
START – Superfund Technical Assessment and Response Team.
WESTON - Weston Solutions, Inc.

Table 2
Waste Soil Excavation and Backfill Summary
Springfield Iron Site
Springfield, Sangamon County, Illinois

Area	Dates Excavated	Quantity		Dates Restored	Backfill	
		Loads	Tons		Loads	Tons
1	9/16/13 - 9/25/13	36	954.60	9/26/13 - 9/27/13	65	1,039.96
2 (concrete)	9/30/13 - 10/25/13	22	362.33	11/4/13 - 11/6/13	--[1]	--[1]
2 (soil)	9/30/13 - 10/25/13	46	1,173.03	10/28/13 - 11/22/13	125	2,144.17
3		15	398.31			
4		26	1,387.25			
	Totals	145	4,275.51	--	190	3,184.13

Notes:
Area 1 = Springfield Light and Power
Area 2 = Factory Road and Sidewalk
Area 3 = Alleyway
Area 4 = Tony's Electric Property

[1] Concrete roadway replacement was subcontracted to Sangamon Construction Co.

Table 3
Disposal Summary
Springfield Iron Site
Springfield, Sangamon County, Illinois

Waste Stream	Dates Disposed	Quantity	Treatment	Disposal Facility
Impacted soil and coal tar	9/16/13 - 10/23/13	4275.51 tons	Landfilled	Waste Management Milam Landfill, 601 Madison Road, East St. Louis, IL

ATTACHMENT A
PHOTOGRAPHIC DOCUMENTATION

Site: Springfield Iron Site
Photograph No.: 1 **Date:** 9/12/13
Direction: West **Photographer:** Jeff Bryniarski
Subject: Coal tar seep found on the Site - 1900 Factory Street, Springfield, Sangamon County, IL

Site: Springfield Iron Site
Photograph No.: 2 **Date:** 9/12/13
Direction: Overhead **Photographer:** Jeff Bryniarski
Subject: Coal tar seep found on public sidewalk

Site: Springfield Iron Site
Photograph No.: 3 **Date:** 9/12/13
Direction: Northeast **Photographer:** Jeff Bryniarski
Subject: Northwest corner of site, prior to excavation

Site: Springfield Iron Site
Photograph No.: 4 **Date:** 9/17/13
Direction: South **Photographer:** Jeff Bryniarski
Subject: ERRS excavating coal tar and impacted soil

Site: Springfield Iron Site
Photograph No.: 5 **Date:** 9/17/13
Direction: West **Photographer:** Jeff Bryniarski
Subject: Patch of coal tar found in Area 1 excavation

Site: Springfield Iron Site
Photograph No.: 6 **Date:** 9/17/13
Direction: West **Photographer:** Jeff Bryniarski
Subject: ERRS excavating coal tar and impacted soil in Area 1

Site: Springfield Iron Site
Photograph No.: 7 **Date:** 9/17/13
Direction: Overhead **Photographer:** Jeff Bryniarski
Subject: START screening coal tar with Benzene UltraRAE air monitor

Site: Springfield Iron Site
Photograph No.: 8 **Date:** 9/23/13
Direction: Northeast **Photographer:** Jeff Bryniarski
Subject: Area 1 excavation completed, prior to backfilling

Site: Springfield Iron Site
Photograph No.: 9 **Date:** 9/30/13
Direction: Northeast **Photographer:** Jay Rauh
Subject: Factory Street road closure to allow for excavation in Areas 2-4

Site: Springfield Iron Site
Photograph No.: 10 **Date:** 10/2/13
Direction: East **Photographer:** Jay Rauh
Subject: ERRS' removing sidewalk and a portion of Factory Street to access coal tar

Site: Springfield Iron Site
Photograph No.: 11 **Date:** 10/11/13
Direction: West **Photographer:** Jay Rauh
Subject: ERRS breaking apart additional portion of Factory Street to access coal tar

Site: Springfield Iron Site
Photograph No.: 12 **Date:** 10/16/13
Direction: Southwest **Photographer:** Jeff Bryniarski
Subject: ERRS loading coal tar and impacted soil for off-site disposal

Site: Springfield Iron Site
Photograph No.: 13 **Date:** 10/29/13
Direction: East **Photographer:** Jay Rauh
Subject: ERRS ~~begin~~ backfilling excavation in Areas 2-4

Site: Springfield Iron Site
Photograph No.: 14 **Date:** 11/8/13
Direction: North **Photographer:** Jay Rauh
Subject: ERRS compacting crushed stone for roadway base

Site: Springfield Iron Site
Photograph No.: 15 **Date:** 11/15/13
Direction: Northeast **Photographer:** Jeff Bryniarski
Subject: ERRS reinstalling telephone line junction box during backfill placement

Site: Springfield Iron Site
Photograph No.: 16 **Date:** 11/15/13
Direction: Southeast **Photographer:** Jeff Bryniarski
Subject: ERRS subcontractor conducting field compaction test of roadway base

Site: Springfield Iron Site
Photograph No.: 17 **Date:** 11/19/13
Direction: Northwest **Photographer:** Jeff Bryniarski
Subject: ERRS subcontractor leveling concrete for roadway curb replacement

Site: Springfield Iron Site
Photograph No.: 18 **Date:** 11/20/13
Direction: West **Photographer:** Jeff Bryniarski
Subject: ERRS subcontractor pouring concrete for roadway replacement

Site: Springfield Iron Site
Photograph No.: 19 **Date:** 12/2/13
Direction: North **Photographer:** Toben Viehweg
Subject: Roadway replacement complete

Site: Springfield Iron Site
Photograph No.: 20 **Date:** 12/2/13
Direction: East **Photographer:** Toben Viehweg
Subject: Alleyway and parking pad replacement complete

ATTACHMENT B
ANALYTICAL RESULTS

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Nashville
2960 Foster Creighton Drive
Nashville, TN 37204
Tel: (615)726-0177

TestAmerica Job ID: 490-36027-1
Client Project/Site: Springfield Iron

For:
Environmental Restoration LLC
1666 Fabick Dr.
Fenton, Missouri 63026

Attn: Toby Viehweg

Authorized for release by:
9/25/2013 3:59:29 PM

Ryan Fitzwater, Senior Project Manager
ryan.fitzwater@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Sample Summary

Client: Environmental Restoration LLC
Project/Site: Springfield Iron

TestAmerica Job ID: 490-36027-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
490-36027-1	Source01-092313	Solid	09/23/13 10:30	09/24/13 07:45
490-36027-2	SIR-SS01-092313	Solid	09/23/13 14:45	09/24/13 07:45
490-36027-3	SIR-SS02-092313	Solid	09/23/13 14:50	09/24/13 07:45
490-36027-4	SIR-SS03-092313	Solid	09/23/13 14:55	09/24/13 07:45
490-36027-5	SIR-SS04-092313	Solid	09/23/13 15:00	09/24/13 07:45
490-36027-6	SIR-SS05-092313	Solid	09/23/13 15:05	09/24/13 07:45

Job ID: 490-36027-1

Laboratory: TestAmerica Nashville

Narrative

Job Narrative
490-36027-1

Comments
No additional comments.

Receipt
The samples were received on 9/24/2013 7:45 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 13.9º C.

Except:

The following samples were received at the laboratory outside the required temperature criteria: SIR-SS01-092313 (490-36027-2), SIR-SS02-092313 (490-36027-3), SIR-SS03-092313 (490-36027-4), SIR-SS04-092313 (490-36027-5), SIR-SS05-092313 (490-36027-6), Source01-092313 (490-36027-1).

GC/MS VOA
Method(s) 8260B: Internal standard responses were outside of acceptance limits for the following sample(s): SIR-SS02-092313 (490-36027-3), SIR-SS03-092313 (490-36027-4), SIR-SS04-092313 (490-36027-5). The sample(s) shows evidence of matrix interference.

Method(s) 8260B: Surrogate recovery for the following sample(s) was outside control limits: SIR-SS04-092313 (490-36027-5). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method(s) 8260B: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with batch 109256. See LCS/LCSD

Method(s) 8260B: Internal standard responses were outside of acceptance limits for the following sample(s): SIR-SS05-092313 (490-36027-6). The sample(s) shows evidence of matrix interference.

Method(s) 8260B: Surrogate recovery for the following sample(s) was outside control limits: SIR-SS05-092313 (490-36027-6). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method(s) 8260B: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with batch 109610. See LCS/LCSD

No other analytical or quality issues were noted.

GC/MS Semi VOA
No analytical or quality issues were noted.

Metals
No analytical or quality issues were noted.

Organic Prep
No analytical or quality issues were noted.

VOA Prep
8260B Benzene samples prepared from glass jars provided by client.

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
X	Surrogate is outside control limits

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Client Sample Results

Client: Environmental Restoration LLC
Project/Site: Springfield Iron

TestAmerica Job ID: 490-36027-1

Client Sample ID: Source01-092313

Lab Sample ID: 490-36027-1

Date Collected: 09/23/13 10:30

Matrix: Solid

Date Received: 09/24/13 07:45

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**0.00371**		0.00170		mg/Kg		09/24/13 11:25	09/24/13 14:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*105*		*70 - 130*	*09/24/13 11:25*	*09/24/13 14:06*	*1*
1,2-Dichloroethane-d4 (Surr)	*102*		*70 - 130*	*09/24/13 11:25*	*09/24/13 14:06*	*1*
Toluene-d8 (Surr)	*100*		*70 - 130*	*09/24/13 11:25*	*09/24/13 14:06*	*1*
Dibromofluoromethane (Surr)	*102*		*70 - 130*	*09/24/13 11:25*	*09/24/13 14:06*	*1*

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		0.0661		mg/Kg		09/24/13 11:35	09/25/13 00:09	1
Acenaphthylene	ND		0.0661		mg/Kg		09/24/13 11:35	09/25/13 00:09	1
Anthracene	ND		0.0661		mg/Kg		09/24/13 11:35	09/25/13 00:09	1
Benzo[a]anthracene	ND		0.0661		mg/Kg		09/24/13 11:35	09/25/13 00:09	1
Benzo[a]pyrene	ND		0.0661		mg/Kg		09/24/13 11:35	09/25/13 00:09	1
Benzo[b]fluoranthene	ND		0.0661		mg/Kg		09/24/13 11:35	09/25/13 00:09	1
Benzo[g,h,i]perylene	ND		0.0661		mg/Kg		09/24/13 11:35	09/25/13 00:09	1
Benzo[k]fluoranthene	ND		0.0661		mg/Kg		09/24/13 11:35	09/25/13 00:09	1
Chrysene	ND		0.0661		mg/Kg		09/24/13 11:35	09/25/13 00:09	1
Dibenz(a,h)anthracene	ND		0.0661		mg/Kg		09/24/13 11:35	09/25/13 00:09	1
Fluoranthene	ND		0.0661		mg/Kg		09/24/13 11:35	09/25/13 00:09	1
Fluorene	ND		0.0661		mg/Kg		09/24/13 11:35	09/25/13 00:09	1
Indeno[1,2,3-cd]pyrene	ND		0.0661		mg/Kg		09/24/13 11:35	09/25/13 00:09	1
Naphthalene	ND		0.0661		mg/Kg		09/24/13 11:35	09/25/13 00:09	1
Phenanthrene	ND		0.0661		mg/Kg		09/24/13 11:35	09/25/13 00:09	1
Pyrene	ND		0.0661		mg/Kg		09/24/13 11:35	09/25/13 00:09	1
1-Methylnaphthalene	ND		0.0661		mg/Kg		09/24/13 11:35	09/25/13 00:09	1
2-Methylnaphthalene	ND		0.0661		mg/Kg		09/24/13 11:35	09/25/13 00:09	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*61*		*27 - 120*	*09/24/13 11:35*	*09/25/13 00:09*	*1*
Terphenyl-d14 (Surr)	*88*		*13 - 120*	*09/24/13 11:35*	*09/25/13 00:09*	*1*
2-Fluorobiphenyl (Surr)	*66*		*29 - 120*	*09/24/13 11:35*	*09/25/13 00:09*	*1*

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**6.82**		1.94		mg/Kg		09/24/13 12:08	09/24/13 20:45	1
Barium	**103**		1.94		mg/Kg		09/24/13 12:08	09/24/13 20:45	1
Cadmium	ND		0.969		mg/Kg		09/24/13 12:08	09/24/13 20:45	1
Chromium	**12.6**		0.969		mg/Kg		09/24/13 12:08	09/24/13 20:45	1
Lead	**26.7**		0.969		mg/Kg		09/24/13 12:08	09/24/13 20:45	1
Selenium	ND		1.94		mg/Kg		09/24/13 12:08	09/24/13 20:45	1
Silver	ND		0.969		mg/Kg		09/24/13 12:08	09/24/13 20:45	1
Vanadium	**18.5**		9.69		mg/Kg		09/24/13 12:08	09/24/13 20:45	1

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0987		mg/Kg		09/24/13 14:01	09/25/13 11:39	1

Client Sample Results

Client: Environmental Restoration LLC
Project/Site: Springfield Iron

TestAmerica Job ID: 490-36027-1

Client Sample ID: SIR-SS01-092313

Lab Sample ID: 490-36027-2

Date Collected: 09/23/13 14:45

Matrix: Solid

Date Received: 09/24/13 07:45

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.00176		mg/Kg		09/24/13 11:25	09/24/13 14:37	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*108*		*70 - 130*	*09/24/13 11:25*	*09/24/13 14:37*	*1*
1,2-Dichloroethane-d4 (Surr)	*104*		*70 - 130*	*09/24/13 11:25*	*09/24/13 14:37*	*1*
Toluene-d8 (Surr)	*99*		*70 - 130*	*09/24/13 11:25*	*09/24/13 14:37*	*1*
Dibromofluoromethane (Surr)	*103*		*70 - 130*	*09/24/13 11:25*	*09/24/13 14:37*	*1*

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		0.0656		mg/Kg		09/24/13 11:35	09/25/13 00:31	1
Acenaphthylene	ND		0.0656		mg/Kg		09/24/13 11:35	09/25/13 00:31	1
Anthracene	ND		0.0656		mg/Kg		09/24/13 11:35	09/25/13 00:31	1
Benzo[a]anthracene	ND		0.0656		mg/Kg		09/24/13 11:35	09/25/13 00:31	1
Benzo[a]pyrene	ND		0.0656		mg/Kg		09/24/13 11:35	09/25/13 00:31	1
Benzo[b]fluoranthene	ND		0.0656		mg/Kg		09/24/13 11:35	09/25/13 00:31	1
Benzo[g,h,i]perylene	ND		0.0656		mg/Kg		09/24/13 11:35	09/25/13 00:31	1
Benzo[k]fluoranthene	ND		0.0656		mg/Kg		09/24/13 11:35	09/25/13 00:31	1
Chrysene	ND		0.0656		mg/Kg		09/24/13 11:35	09/25/13 00:31	1
Dibenz(a,h)anthracene	ND		0.0656		mg/Kg		09/24/13 11:35	09/25/13 00:31	1
Fluoranthene	**0.0925**		0.0656		mg/Kg		09/24/13 11:35	09/25/13 00:31	1
Fluorene	ND		0.0656		mg/Kg		09/24/13 11:35	09/25/13 00:31	1
Indeno[1,2,3-cd]pyrene	ND		0.0656		mg/Kg		09/24/13 11:35	09/25/13 00:31	1
Naphthalene	ND		0.0656		mg/Kg		09/24/13 11:35	09/25/13 00:31	1
Phenanthrene	**0.106**		0.0656		mg/Kg		09/24/13 11:35	09/25/13 00:31	1
Pyrene	**0.0848**		0.0656		mg/Kg		09/24/13 11:35	09/25/13 00:31	1
1-Methylnaphthalene	ND		0.0656		mg/Kg		09/24/13 11:35	09/25/13 00:31	1
2-Methylnaphthalene	ND		0.0656		mg/Kg		09/24/13 11:35	09/25/13 00:31	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*54*		*27 - 120*	*09/24/13 11:35*	*09/25/13 00:31*	*1*
Terphenyl-d14 (Surr)	*76*		*13 - 120*	*09/24/13 11:35*	*09/25/13 00:31*	*1*
2-Fluorobiphenyl (Surr)	*56*		*29 - 120*	*09/24/13 11:35*	*09/25/13 00:31*	*1*

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**4.89**		2.00		mg/Kg		09/24/13 12:08	09/24/13 20:59	1
Barium	**63.0**		2.00		mg/Kg		09/24/13 12:08	09/24/13 20:59	1
Cadmium	ND		1.00		mg/Kg		09/24/13 12:08	09/24/13 20:59	1
Chromium	**7.52**		1.00		mg/Kg		09/24/13 12:08	09/24/13 20:59	1
Lead	**8.68**		1.00		mg/Kg		09/24/13 12:08	09/24/13 20:59	1
Selenium	ND		2.00		mg/Kg		09/24/13 12:08	09/24/13 20:59	1
Silver	ND		1.00		mg/Kg		09/24/13 12:08	09/24/13 20:59	1
Vanadium	**12.6**		10.0		mg/Kg		09/24/13 12:08	09/24/13 20:59	1

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0972		mg/Kg		09/24/13 14:01	09/25/13 11:45	1

Client Sample Results

Client: Environmental Restoration LLC
Project/Site: Springfield Iron

TestAmerica Job ID: 490-36027-1

Client Sample ID: SIR-SS02-092313

Lab Sample ID: 490-36027-3

Date Collected: 09/23/13 14:50

Matrix: Solid

Date Received: 09/24/13 07:45

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.00179		mg/Kg		09/24/13 11:25	09/24/13 15:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*119*		*70 - 130*	*09/24/13 11:25*	*09/24/13 15:06*	*1*
1,2-Dichloroethane-d4 (Surr)	*108*		*70 - 130*	*09/24/13 11:25*	*09/24/13 15:06*	*1*
Toluene-d8 (Surr)	*114*		*70 - 130*	*09/24/13 11:25*	*09/24/13 15:06*	*1*
Dibromofluoromethane (Surr)	*110*		*70 - 130*	*09/24/13 11:25*	*09/24/13 15:06*	*1*

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	**0.104**		0.0669		mg/Kg		09/24/13 11:35	09/25/13 00:54	1
Acenaphthylene	**0.537**		0.0669		mg/Kg		09/24/13 11:35	09/25/13 00:54	1
Anthracene	**0.467**		0.0669		mg/Kg		09/24/13 11:35	09/25/13 00:54	1
Benzo[a]anthracene	**0.777**		0.0669		mg/Kg		09/24/13 11:35	09/25/13 00:54	1
Benzo[a]pyrene	**0.520**		0.0669		mg/Kg		09/24/13 11:35	09/25/13 00:54	1
Benzo[b]fluoranthene	**0.743**		0.0669		mg/Kg		09/24/13 11:35	09/25/13 00:54	1
Benzo[g,h,i]perylene	**0.262**		0.0669		mg/Kg		09/24/13 11:35	09/25/13 00:54	1
Benzo[k]fluoranthene	**0.280**		0.0669		mg/Kg		09/24/13 11:35	09/25/13 00:54	1
Chrysene	**0.736**		0.0669		mg/Kg		09/24/13 11:35	09/25/13 00:54	1
Dibenz(a,h)anthracene	**0.0767**		0.0669		mg/Kg		09/24/13 11:35	09/25/13 00:54	1
Fluoranthene	**1.49**		0.0669		mg/Kg		09/24/13 11:35	09/25/13 00:54	1
Fluorene	**0.286**		0.0669		mg/Kg		09/24/13 11:35	09/25/13 00:54	1
Indeno[1,2,3-cd]pyrene	**0.268**		0.0669		mg/Kg		09/24/13 11:35	09/25/13 00:54	1
Naphthalene	**0.0792**		0.0669		mg/Kg		09/24/13 11:35	09/25/13 00:54	1
Phenanthrene	**1.73**		0.0669		mg/Kg		09/24/13 11:35	09/25/13 00:54	1
Pyrene	**1.39**		0.0669		mg/Kg		09/24/13 11:35	09/25/13 00:54	1
1-Methylnaphthalene	**0.142**		0.0669		mg/Kg		09/24/13 11:35	09/25/13 00:54	1
2-Methylnaphthalene	**0.125**		0.0669		mg/Kg		09/24/13 11:35	09/25/13 00:54	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*60*		*27 - 120*	*09/24/13 11:35*	*09/25/13 00:54*	*1*
Terphenyl-d14 (Surr)	*77*		*13 - 120*	*09/24/13 11:35*	*09/25/13 00:54*	*1*
2-Fluorobiphenyl (Surr)	*63*		*29 - 120*	*09/24/13 11:35*	*09/25/13 00:54*	*1*

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**9.68**		2.01		mg/Kg		09/24/13 12:08	09/24/13 21:04	1
Barium	**262**		2.01		mg/Kg		09/24/13 12:08	09/24/13 21:04	1
Cadmium	ND		1.01		mg/Kg		09/24/13 12:08	09/24/13 21:04	1
Chromium	**14.7**		1.01		mg/Kg		09/24/13 12:08	09/24/13 21:04	1
Lead	**54.7**		1.01		mg/Kg		09/24/13 12:08	09/24/13 21:04	1
Selenium	ND		2.01		mg/Kg		09/24/13 12:08	09/24/13 21:04	1
Silver	ND		1.01		mg/Kg		09/24/13 12:08	09/24/13 21:04	1
Vanadium	**23.9**		10.1		mg/Kg		09/24/13 12:08	09/24/13 21:04	1

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0976		mg/Kg		09/24/13 14:01	09/25/13 11:48	1

Client Sample Results

Client: Environmental Restoration LLC
Project/Site: Springfield Iron

TestAmerica Job ID: 490-36027-1

Client Sample ID: SIR-SS03-092313

Lab Sample ID: 490-36027-4

Date Collected: 09/23/13 14:55

Matrix: Solid

Date Received: 09/24/13 07:45

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.00185		mg/Kg		09/24/13 11:25	09/24/13 15:35	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*114*		*70 - 130*	*09/24/13 11:25*	*09/24/13 15:35*	*1*
1,2-Dichloroethane-d4 (Surr)	*111*		*70 - 130*	*09/24/13 11:25*	*09/24/13 15:35*	*1*
Toluene-d8 (Surr)	*105*		*70 - 130*	*09/24/13 11:25*	*09/24/13 15:35*	*1*
Dibromofluoromethane (Surr)	*110*		*70 - 130*	*09/24/13 11:25*	*09/24/13 15:35*	*1*

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	**0.309**		0.0660		mg/Kg		09/24/13 11:35	09/25/13 01:17	1
Acenaphthylene	**0.870**		0.0660		mg/Kg		09/24/13 11:35	09/25/13 01:17	1
Anthracene	**1.15**		0.0660		mg/Kg		09/24/13 11:35	09/25/13 01:17	1
Benzo[a]anthracene	**1.91**		0.0660		mg/Kg		09/24/13 11:35	09/25/13 01:17	1
Benzo[a]pyrene	**1.48**		0.0660		mg/Kg		09/24/13 11:35	09/25/13 01:17	1
Benzo[b]fluoranthene	**1.81**		0.0660		mg/Kg		09/24/13 11:35	09/25/13 01:17	1
Benzo[g,h,i]perylene	**0.609**		0.0660		mg/Kg		09/24/13 11:35	09/25/13 01:17	1
Benzo[k]fluoranthene	**0.967**		0.0660		mg/Kg		09/24/13 11:35	09/25/13 01:17	1
Chrysene	**1.83**		0.0660		mg/Kg		09/24/13 11:35	09/25/13 01:17	1
Dibenz(a,h)anthracene	**0.257**		0.0660		mg/Kg		09/24/13 11:35	09/25/13 01:17	1
Fluoranthene	**3.11**		0.0660		mg/Kg		09/24/13 11:35	09/25/13 01:17	1
Fluorene	**0.607**		0.0660		mg/Kg		09/24/13 11:35	09/25/13 01:17	1
Indeno[1,2,3-cd]pyrene	**0.687**		0.0660		mg/Kg		09/24/13 11:35	09/25/13 01:17	1
Naphthalene	**0.304**		0.0660		mg/Kg		09/24/13 11:35	09/25/13 01:17	1
Phenanthrene	**3.19**		0.132		mg/Kg		09/24/13 11:35	09/25/13 13:00	2
Pyrene	**2.90**		0.0660		mg/Kg		09/24/13 11:35	09/25/13 01:17	1
1-Methylnaphthalene	**0.419**		0.0660		mg/Kg		09/24/13 11:35	09/25/13 01:17	1
2-Methylnaphthalene	**0.419**		0.0660		mg/Kg		09/24/13 11:35	09/25/13 01:17	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*58*		*27 - 120*	*09/24/13 11:35*	*09/25/13 01:17*	*1*
Terphenyl-d14 (Surr)	*70*		*13 - 120*	*09/24/13 11:35*	*09/25/13 01:17*	*1*
2-Fluorobiphenyl (Surr)	*62*		*29 - 120*	*09/24/13 11:35*	*09/25/13 01:17*	*1*

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**10.8**		1.93		mg/Kg		09/24/13 12:08	09/24/13 21:08	1
Barium	**115**		1.93		mg/Kg		09/24/13 12:08	09/24/13 21:08	1
Cadmium	**1.49**		0.967		mg/Kg		09/24/13 12:08	09/24/13 21:08	1
Chromium	**13.2**		0.967		mg/Kg		09/24/13 12:08	09/24/13 21:08	1
Lead	**27.0**		0.967		mg/Kg		09/24/13 12:08	09/24/13 21:08	1
Selenium	ND		1.93		mg/Kg		09/24/13 12:08	09/24/13 21:08	1
Silver	ND		0.967		mg/Kg		09/24/13 12:08	09/24/13 21:08	1
Vanadium	**24.7**		9.67		mg/Kg		09/24/13 12:08	09/24/13 21:08	1

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0969		mg/Kg		09/24/13 14:01	09/25/13 11:50	1

Client Sample Results

Client: Environmental Restoration LLC
Project/Site: Springfield Iron

TestAmerica Job ID: 490-36027-1

Client Sample ID: SIR-SS04-092313

Lab Sample ID: 490-36027-5

Date Collected: 09/23/13 15:00
Date Received: 09/24/13 07:45

Matrix: Solid

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.00358		0.00198		mg/Kg		09/24/13 11:25	09/24/13 16:05	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*132*	*X*	*70 - 130*	*09/24/13 11:25*	*09/24/13 16:05*	*1*
1,2-Dichloroethane-d4 (Surr)	*121*		*70 - 130*	*09/24/13 11:25*	*09/24/13 16:05*	*1*
Toluene-d8 (Surr)	*139*	*X*	*70 - 130*	*09/24/13 11:25*	*09/24/13 16:05*	*1*
Dibromofluoromethane (Surr)	*125*		*70 - 130*	*09/24/13 11:25*	*09/24/13 16:05*	*1*

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	0.413		0.0654		mg/Kg		09/24/13 11:35	09/25/13 01:39	1
Acenaphthylene	1.95		0.0654		mg/Kg		09/24/13 11:35	09/25/13 01:39	1
Anthracene	2.14		0.0654		mg/Kg		09/24/13 11:35	09/25/13 01:39	1
Benzo[a]anthracene	2.76		0.0654		mg/Kg		09/24/13 11:35	09/25/13 01:39	1
Benzo[a]pyrene	2.23		0.0654		mg/Kg		09/24/13 11:35	09/25/13 01:39	1
Benzo[b]fluoranthene	3.29		0.327		mg/Kg		09/24/13 11:35	09/25/13 13:23	5
Benzo[g,h,i]perylene	0.957		0.0654		mg/Kg		09/24/13 11:35	09/25/13 01:39	1
Benzo[k]fluoranthene	1.17		0.0654		mg/Kg		09/24/13 11:35	09/25/13 01:39	1
Chrysene	2.71		0.0654		mg/Kg		09/24/13 11:35	09/25/13 01:39	1
Dibenz(a,h)anthracene	0.375		0.0654		mg/Kg		09/24/13 11:35	09/25/13 01:39	1
Fluoranthene	6.65		0.327		mg/Kg		09/24/13 11:35	09/25/13 13:23	5
Fluorene	1.31		0.0654		mg/Kg		09/24/13 11:35	09/25/13 01:39	1
Indeno[1,2,3-cd]pyrene	1.12		0.0654		mg/Kg		09/24/13 11:35	09/25/13 01:39	1
Naphthalene	0.478		0.0654		mg/Kg		09/24/13 11:35	09/25/13 01:39	1
Phenanthrene	8.43		0.327		mg/Kg		09/24/13 11:35	09/25/13 13:23	5
Pyrene	5.68		0.327		mg/Kg		09/24/13 11:35	09/25/13 13:23	5
1-Methylnaphthalene	0.688		0.0654		mg/Kg		09/24/13 11:35	09/25/13 01:39	1
2-Methylnaphthalene	0.699		0.0654		mg/Kg		09/24/13 11:35	09/25/13 01:39	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*62*		*27 - 120*	*09/24/13 11:35*	*09/25/13 01:39*	*1*
Terphenyl-d14 (Surr)	*68*		*13 - 120*	*09/24/13 11:35*	*09/25/13 01:39*	*1*
2-Fluorobiphenyl (Surr)	*63*		*29 - 120*	*09/24/13 11:35*	*09/25/13 01:39*	*1*

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	10.1		2.01		mg/Kg		09/24/13 12:08	09/24/13 21:13	1
Barium	75.2		2.01		mg/Kg		09/24/13 12:08	09/24/13 21:13	1
Cadmium	1.37		1.00		mg/Kg		09/24/13 12:08	09/24/13 21:13	1
Chromium	7.99		1.00		mg/Kg		09/24/13 12:08	09/24/13 21:13	1
Lead	211		1.00		mg/Kg		09/24/13 12:08	09/24/13 21:13	1
Selenium	ND		2.01		mg/Kg		09/24/13 12:08	09/24/13 21:13	1
Silver	ND		1.00		mg/Kg		09/24/13 12:08	09/24/13 21:13	1
Vanadium	19.2		10.0		mg/Kg		09/24/13 12:08	09/24/13 21:13	1

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.105		0.0997		mg/Kg		09/24/13 14:01	09/25/13 11:52	1

Client Sample Results

Client: Environmental Restoration LLC
Project/Site: Springfield Iron

TestAmerica Job ID: 490-36027-1

Client Sample ID: SIR-SS05-092313

Lab Sample ID: 490-36027-6

Date Collected: 09/23/13 15:05
Matrix: Solid
Date Received: 09/24/13 07:45

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.00188		mg/Kg		09/24/13 11:25	09/25/13 13:56	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*131*	*X*	*70 - 130*	*09/24/13 11:25*	*09/25/13 13:56*	*1*
1,2-Dichloroethane-d4 (Surr)	*113*		*70 - 130*	*09/24/13 11:25*	*09/25/13 13:56*	*1*
Toluene-d8 (Surr)	*144*	*X*	*70 - 130*	*09/24/13 11:25*	*09/25/13 13:56*	*1*
Dibromofluoromethane (Surr)	*125*		*70 - 130*	*09/24/13 11:25*	*09/25/13 13:56*	*1*

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	**0.719**		0.0655		mg/Kg		09/24/13 11:35	09/25/13 02:02	1
Acenaphthylene	**1.51**		0.0655		mg/Kg		09/24/13 11:35	09/25/13 02:02	1
Anthracene	**2.62**		0.0655		mg/Kg		09/24/13 11:35	09/25/13 02:02	1
Benzo[a]anthracene	**5.25**		0.327		mg/Kg		09/24/13 11:35	09/25/13 13:46	5
Benzo[a]pyrene	**4.29**		0.327		mg/Kg		09/24/13 11:35	09/25/13 13:46	5
Benzo[b]fluoranthene	**5.59**		0.327		mg/Kg		09/24/13 11:35	09/25/13 13:46	5
Benzo[g,h,i]perylene	**1.58**		0.0655		mg/Kg		09/24/13 11:35	09/25/13 02:02	1
Benzo[k]fluoranthene	**2.13**		0.0655		mg/Kg		09/24/13 11:35	09/25/13 02:02	1
Chrysene	**5.08**		0.327		mg/Kg		09/24/13 11:35	09/25/13 13:46	5
Dibenz(a,h)anthracene	**0.808**		0.0655		mg/Kg		09/24/13 11:35	09/25/13 02:02	1
Fluoranthene	**8.33**		0.327		mg/Kg		09/24/13 11:35	09/25/13 13:46	5
Fluorene	**0.994**		0.0655		mg/Kg		09/24/13 11:35	09/25/13 02:02	1
Indeno[1,2,3-cd]pyrene	**1.92**		0.0655		mg/Kg		09/24/13 11:35	09/25/13 02:02	1
Naphthalene	**0.607**		0.0655		mg/Kg		09/24/13 11:35	09/25/13 02:02	1
Phenanthrene	**7.72**		0.327		mg/Kg		09/24/13 11:35	09/25/13 13:46	5
Pyrene	**7.71**		0.327		mg/Kg		09/24/13 11:35	09/25/13 13:46	5
1-Methylnaphthalene	**0.682**		0.0655		mg/Kg		09/24/13 11:35	09/25/13 02:02	1
2-Methylnaphthalene	**0.674**		0.0655		mg/Kg		09/24/13 11:35	09/25/13 02:02	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*59*		*27 - 120*	*09/24/13 11:35*	*09/25/13 02:02*	*1*
Terphenyl-d14 (Surr)	*55*		*13 - 120*	*09/24/13 11:35*	*09/25/13 02:02*	*1*
2-Fluorobiphenyl (Surr)	*61*		*29 - 120*	*09/24/13 11:35*	*09/25/13 02:02*	*1*

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**8.75**		1.98		mg/Kg		09/24/13 12:08	09/24/13 21:32	1
Barium	**97.8**		1.98		mg/Kg		09/24/13 12:08	09/24/13 21:32	1
Cadmium	**1.92**		0.990		mg/Kg		09/24/13 12:08	09/24/13 21:32	1
Chromium	**12.4**		0.990		mg/Kg		09/24/13 12:08	09/24/13 21:32	1
Lead	**80.7**		0.990		mg/Kg		09/24/13 12:08	09/24/13 21:32	1
Selenium	ND		1.98		mg/Kg		09/24/13 12:08	09/24/13 21:32	1
Silver	ND		0.990		mg/Kg		09/24/13 12:08	09/24/13 21:32	1
Vanadium	**22.9**		9.90		mg/Kg		09/24/13 12:08	09/24/13 21:32	1

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.100		mg/Kg		09/24/13 14:01	09/25/13 11:58	1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 490-109256/7 — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 109256

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.00200		mg/Kg			09/24/13 12:09	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*103*		*70 - 130*		*09/24/13 12:09*	*1*
1,2-Dichloroethane-d4 (Surr)	*101*		*70 - 130*		*09/24/13 12:09*	*1*
Toluene-d8 (Surr)	*99*		*70 - 130*		*09/24/13 12:09*	*1*
Dibromofluoromethane (Surr)	*102*		*70 - 130*		*09/24/13 12:09*	*1*

Lab Sample ID: LCS 490-109256/3 — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 109256

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Benzene			0.0500	0.05161		mg/Kg		103	75 - 127		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*99*		*70 - 130*
1,2-Dichloroethane-d4 (Surr)	*95*		*70 - 130*
Toluene-d8 (Surr)	*99*		*70 - 130*
Dibromofluoromethane (Surr)	*98*		*70 - 130*

Lab Sample ID: LCSD 490-109256/4 — **Client Sample ID: Lab Control Sample Dup**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 109256

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene			0.0500	0.04994		mg/Kg		100	75 - 127	3	50

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*98*		*70 - 130*
1,2-Dichloroethane-d4 (Surr)	*93*		*70 - 130*
Toluene-d8 (Surr)	*99*		*70 - 130*
Dibromofluoromethane (Surr)	*98*		*70 - 130*

Lab Sample ID: MB 490-109610/8 — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 109610

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.00200		mg/Kg			09/25/13 13:26	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*99*		*70 - 130*		*09/25/13 13:26*	*1*
1,2-Dichloroethane-d4 (Surr)	*105*		*70 - 130*		*09/25/13 13:26*	*1*
Toluene-d8 (Surr)	*95*		*70 - 130*		*09/25/13 13:26*	*1*
Dibromofluoromethane (Surr)	*104*		*70 - 130*		*09/25/13 13:26*	*1*

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 490-109610/4 — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 109610

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	0.0500	0.05393		mg/Kg		108	75 - 127

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*98*		*70 - 130*
1,2-Dichloroethane-d4 (Surr)	*96*		*70 - 130*
Toluene-d8 (Surr)	*99*		*70 - 130*
Dibromofluoromethane (Surr)	*100*		*70 - 130*

Lab Sample ID: LCSD 490-109610/5 — **Client Sample ID: Lab Control Sample Dup**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 109610

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	0.0500	0.05725		mg/Kg		115	75 - 127	6	50

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*98*		*70 - 130*
1,2-Dichloroethane-d4 (Surr)	*97*		*70 - 130*
Toluene-d8 (Surr)	*97*		*70 - 130*
Dibromofluoromethane (Surr)	*99*		*70 - 130*

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 490-109371/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 109547 — **Prep Batch: 109371**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		0.0670		mg/Kg		09/24/13 11:35	09/24/13 22:18	1
Acenaphthylene	ND		0.0670		mg/Kg		09/24/13 11:35	09/24/13 22:18	1
Anthracene	ND		0.0670		mg/Kg		09/24/13 11:35	09/24/13 22:18	1
Benzo[a]anthracene	ND		0.0670		mg/Kg		09/24/13 11:35	09/24/13 22:18	1
Benzo[a]pyrene	ND		0.0670		mg/Kg		09/24/13 11:35	09/24/13 22:18	1
Benzo[b]fluoranthene	ND		0.0670		mg/Kg		09/24/13 11:35	09/24/13 22:18	1
Benzo[g,h,i]perylene	ND		0.0670		mg/Kg		09/24/13 11:35	09/24/13 22:18	1
Benzo[k]fluoranthene	ND		0.0670		mg/Kg		09/24/13 11:35	09/24/13 22:18	1
Chrysene	ND		0.0670		mg/Kg		09/24/13 11:35	09/24/13 22:18	1
Dibenz(a,h)anthracene	ND		0.0670		mg/Kg		09/24/13 11:35	09/24/13 22:18	1
Fluoranthene	ND		0.0670		mg/Kg		09/24/13 11:35	09/24/13 22:18	1
Fluorene	ND		0.0670		mg/Kg		09/24/13 11:35	09/24/13 22:18	1
Indeno[1,2,3-cd]pyrene	ND		0.0670		mg/Kg		09/24/13 11:35	09/24/13 22:18	1
Naphthalene	ND		0.0670		mg/Kg		09/24/13 11:35	09/24/13 22:18	1
Phenanthrene	ND		0.0670		mg/Kg		09/24/13 11:35	09/24/13 22:18	1
Pyrene	ND		0.0670		mg/Kg		09/24/13 11:35	09/24/13 22:18	1
1-Methylnaphthalene	ND		0.0670		mg/Kg		09/24/13 11:35	09/24/13 22:18	1
2-Methylnaphthalene	ND		0.0670		mg/Kg		09/24/13 11:35	09/24/13 22:18	1

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 490-109371/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 109547 — **Prep Batch: 109371**

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	79		27 - 120	09/24/13 11:35	09/24/13 22:18	1
Terphenyl-d14 (Surr)	111		13 - 120	09/24/13 11:35	09/24/13 22:18	1
2-Fluorobiphenyl (Surr)	82		29 - 120	09/24/13 11:35	09/24/13 22:18	1

Lab Sample ID: LCS 490-109371/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 109547 — **Prep Batch: 109371**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acenaphthene	1.67	1.397		mg/Kg		84	36 - 120
Acenaphthylene	1.67	1.419		mg/Kg		85	38 - 120
Anthracene	1.67	1.543		mg/Kg		93	46 - 124
Benzo[a]anthracene	1.67	1.607		mg/Kg		96	45 - 120
Benzo[a]pyrene	1.67	1.401		mg/Kg		84	45 - 120
Benzo[b]fluoranthene	1.67	1.431		mg/Kg		86	42 - 120
Benzo[g,h,i]perylene	1.67	1.427		mg/Kg		86	38 - 120
Benzo[k]fluoranthene	1.67	1.521		mg/Kg		91	42 - 120
Chrysene	1.67	1.621		mg/Kg		97	43 - 120
Dibenz(a,h)anthracene	1.67	1.490		mg/Kg		89	32 - 128
Fluoranthene	1.67	1.513		mg/Kg		91	46 - 120
Fluorene	1.67	1.512		mg/Kg		91	42 - 120
Indeno[1,2,3-cd]pyrene	1.67	1.447		mg/Kg		87	41 - 121
Naphthalene	1.67	1.267		mg/Kg		76	32 - 120
Phenanthrene	1.67	1.532		mg/Kg		92	45 - 120
Pyrene	1.67	1.759		mg/Kg		106	43 - 120
1-Methylnaphthalene	1.67	1.367		mg/Kg		82	32 - 120
2-Methylnaphthalene	1.67	1.381		mg/Kg		83	28 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Nitrobenzene-d5 (Surr)	71		27 - 120
Terphenyl-d14 (Surr)	101		13 - 120
2-Fluorobiphenyl (Surr)	77		29 - 120

Method: 6010B - Metals (ICP)

Lab Sample ID: MB 490-109383/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 109560 — **Prep Batch: 109383**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		1.92		mg/Kg		09/24/13 12:08	09/24/13 20:35	1
Barium	ND		1.92		mg/Kg		09/24/13 12:08	09/24/13 20:35	1
Cadmium	ND		0.960		mg/Kg		09/24/13 12:08	09/24/13 20:35	1
Chromium	ND		0.960		mg/Kg		09/24/13 12:08	09/24/13 20:35	1
Lead	ND		0.960		mg/Kg		09/24/13 12:08	09/24/13 20:35	1
Selenium	ND		1.92		mg/Kg		09/24/13 12:08	09/24/13 20:35	1
Silver	ND		0.960		mg/Kg		09/24/13 12:08	09/24/13 20:35	1

Method: 6010B - Metals (ICP) (Continued)

Lab Sample ID: MB 490-109383/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 109560 — **Prep Batch: 109383**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vanadium	ND		9.60		mg/Kg		09/24/13 12:08	09/24/13 20:35	1

Lab Sample ID: LCS 490-109383/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 109560 — **Prep Batch: 109383**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	19.7	19.11		mg/Kg		97	80 - 120
Barium	789	853.1		mg/Kg		108	80 - 120
Cadmium	19.7	20.81		mg/Kg		105	80 - 120
Chromium	78.9	83.33		mg/Kg		106	80 - 120
Lead	19.7	21.14		mg/Kg		107	80 - 120
Selenium	19.7	20.24		mg/Kg		103	80 - 120
Silver	19.7	19.86		mg/Kg		101	80 - 120
Vanadium	197	206.5		mg/Kg		105	80 - 120

Lab Sample ID: 490-36027-1 MS — **Client Sample ID: Source01-092313**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 109560 — **Prep Batch: 109383**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	6.82		20.1	24.47		mg/Kg		88	75 - 125
Barium	103		805	869.8		mg/Kg		95	75 - 125
Cadmium	ND		20.1	19.54		mg/Kg		95	75 - 125
Chromium	12.6		80.5	90.20		mg/Kg		96	75 - 125
Lead	26.7		20.1	45.25		mg/Kg		92	75 - 125
Selenium	ND		20.1	17.36		mg/Kg		86	75 - 125
Silver	ND		20.1	19.28		mg/Kg		96	75 - 125
Vanadium	18.5		201	211.3		mg/Kg		96	75 - 125

Lab Sample ID: 490-36027-1 MSD — **Client Sample ID: Source01-092313**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 109560 — **Prep Batch: 109383**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	6.82		19.6	24.64		mg/Kg		91	75 - 125	1	20
Barium	103		786	874.5		mg/Kg		98	75 - 125	1	20
Cadmium	ND		19.6	19.49		mg/Kg		97	75 - 125	0	20
Chromium	12.6		78.6	90.37		mg/Kg		99	75 - 125	0	20
Lead	26.7		19.6	45.23		mg/Kg		94	75 - 125	0	20
Selenium	ND		19.6	16.94		mg/Kg		86	75 - 125	3	20
Silver	ND		19.6	18.78		mg/Kg		96	75 - 125	3	20
Vanadium	18.5		196	209.4		mg/Kg		97	75 - 125	1	20

QC Sample Results

Client: Environmental Restoration LLC
Project/Site: Springfield Iron

TestAmerica Job ID: 490-36027-1

Method: 7471A - Mercury (CVAA)

Lab Sample ID: MB 490-109427/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 109754 — **Prep Batch: 109427**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0998		mg/Kg		09/24/13 14:01	09/25/13 11:33	1

Lab Sample ID: LCS 490-109427/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 109754 — **Prep Batch: 109427**

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Mercury			0.164	0.1576		mg/Kg		96	80 - 120		

Lab Sample ID: LCSD 490-109427/3-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 109754 — **Prep Batch: 109427**

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury			0.163	0.1478		mg/Kg		91	80 - 120	6	20

Lab Sample ID: 490-36027-1 MS — **Client Sample ID: Source01-092313**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 109754 — **Prep Batch: 109427**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Mercury	ND		0.167	0.1809		mg/Kg		108	75 - 125		

Lab Sample ID: 490-36027-1 MSD — **Client Sample ID: Source01-092313**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 109754 — **Prep Batch: 109427**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	ND		0.166	0.1725		mg/Kg		104	75 - 125	5	20

QC Association Summary

Client: Environmental Restoration LLC
Project/Site: Springfield Iron

TestAmerica Job ID: 490-36027-1

GC/MS VOA

Analysis Batch: 109256

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-36027-1	Source01-092313	Total/NA	Solid	8260B	109369
490-36027-2	SIR-SS01-092313	Total/NA	Solid	8260B	109369
490-36027-3	SIR-SS02-092313	Total/NA	Solid	8260B	109369
490-36027-4	SIR-SS03-092313	Total/NA	Solid	8260B	109369
490-36027-5	SIR-SS04-092313	Total/NA	Solid	8260B	109369
LCS 490-109256/3	Lab Control Sample	Total/NA	Solid	8260B	
LCSD 490-109256/4	Lab Control Sample Dup	Total/NA	Solid	8260B	
MB 490-109256/7	Method Blank	Total/NA	Solid	8260B	

Prep Batch: 109369

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-36027-1	Source01-092313	Total/NA	Solid	5030B	
490-36027-2	SIR-SS01-092313	Total/NA	Solid	5030B	
490-36027-3	SIR-SS02-092313	Total/NA	Solid	5030B	
490-36027-4	SIR-SS03-092313	Total/NA	Solid	5030B	
490-36027-5	SIR-SS04-092313	Total/NA	Solid	5030B	
490-36027-6	SIR-SS05-092313	Total/NA	Solid	5030B	

Analysis Batch: 109610

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-36027-6	SIR-SS05-092313	Total/NA	Solid	8260B	109369
LCS 490-109610/4	Lab Control Sample	Total/NA	Solid	8260B	
LCSD 490-109610/5	Lab Control Sample Dup	Total/NA	Solid	8260B	
MB 490-109610/8	Method Blank	Total/NA	Solid	8260B	

GC/MS Semi VOA

Prep Batch: 109371

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-36027-1	Source01-092313	Total/NA	Solid	3550B	
490-36027-2	SIR-SS01-092313	Total/NA	Solid	3550B	
490-36027-3	SIR-SS02-092313	Total/NA	Solid	3550B	
490-36027-4	SIR-SS03-092313	Total/NA	Solid	3550B	
490-36027-5	SIR-SS04-092313	Total/NA	Solid	3550B	
490-36027-6	SIR-SS05-092313	Total/NA	Solid	3550B	
LCS 490-109371/2-A	Lab Control Sample	Total/NA	Solid	3550B	
MB 490-109371/1-A	Method Blank	Total/NA	Solid	3550B	

Analysis Batch: 109547

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-36027-1	Source01-092313	Total/NA	Solid	8270C	109371
490-36027-2	SIR-SS01-092313	Total/NA	Solid	8270C	109371
490-36027-3	SIR-SS02-092313	Total/NA	Solid	8270C	109371
490-36027-4	SIR-SS03-092313	Total/NA	Solid	8270C	109371
490-36027-5	SIR-SS04-092313	Total/NA	Solid	8270C	109371
490-36027-6	SIR-SS05-092313	Total/NA	Solid	8270C	109371
LCS 490-109371/2-A	Lab Control Sample	Total/NA	Solid	8270C	109371
MB 490-109371/1-A	Method Blank	Total/NA	Solid	8270C	109371

GC/MS Semi VOA (Continued)

Analysis Batch: 109729

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-36027-4	SIR-SS03-092313	Total/NA	Solid	8270C	109371
490-36027-5	SIR-SS04-092313	Total/NA	Solid	8270C	109371
490-36027-6	SIR-SS05-092313	Total/NA	Solid	8270C	109371

Metals

Prep Batch: 109383

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-36027-1	Source01-092313	Total/NA	Solid	3051A	
490-36027-1 MS	Source01-092313	Total/NA	Solid	3051A	
490-36027-1 MSD	Source01-092313	Total/NA	Solid	3051A	
490-36027-2	SIR-SS01-092313	Total/NA	Solid	3051A	
490-36027-3	SIR-SS02-092313	Total/NA	Solid	3051A	
490-36027-4	SIR-SS03-092313	Total/NA	Solid	3051A	
490-36027-5	SIR-SS04-092313	Total/NA	Solid	3051A	
490-36027-6	SIR-SS05-092313	Total/NA	Solid	3051A	
LCS 490-109383/2-A	Lab Control Sample	Total/NA	Solid	3051A	
MB 490-109383/1-A	Method Blank	Total/NA	Solid	3051A	

Prep Batch: 109427

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-36027-1	Source01-092313	Total/NA	Solid	7471A	
490-36027-1 MS	Source01-092313	Total/NA	Solid	7471A	
490-36027-1 MSD	Source01-092313	Total/NA	Solid	7471A	
490-36027-2	SIR-SS01-092313	Total/NA	Solid	7471A	
490-36027-3	SIR-SS02-092313	Total/NA	Solid	7471A	
490-36027-4	SIR-SS03-092313	Total/NA	Solid	7471A	
490-36027-5	SIR-SS04-092313	Total/NA	Solid	7471A	
490-36027-6	SIR-SS05-092313	Total/NA	Solid	7471A	
LCS 490-109427/2-A	Lab Control Sample	Total/NA	Solid	7471A	
LCSD 490-109427/3-A	Lab Control Sample Dup	Total/NA	Solid	7471A	
MB 490-109427/1-A	Method Blank	Total/NA	Solid	7471A	

Analysis Batch: 109560

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-36027-1	Source01-092313	Total/NA	Solid	6010B	109383
490-36027-1 MS	Source01-092313	Total/NA	Solid	6010B	109383
490-36027-1 MSD	Source01-092313	Total/NA	Solid	6010B	109383
490-36027-2	SIR-SS01-092313	Total/NA	Solid	6010B	109383
490-36027-3	SIR-SS02-092313	Total/NA	Solid	6010B	109383
490-36027-4	SIR-SS03-092313	Total/NA	Solid	6010B	109383
490-36027-5	SIR-SS04-092313	Total/NA	Solid	6010B	109383
490-36027-6	SIR-SS05-092313	Total/NA	Solid	6010B	109383
LCS 490-109383/2-A	Lab Control Sample	Total/NA	Solid	6010B	109383
MB 490-109383/1-A	Method Blank	Total/NA	Solid	6010B	109383

Analysis Batch: 109754

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-36027-1	Source01-092313	Total/NA	Solid	7471A	109427
490-36027-1 MS	Source01-092313	Total/NA	Solid	7471A	109427

Metals (Continued)

Analysis Batch: 109754 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-36027-1 MSD	Source01-092313	Total/NA	Solid	7471A	109427
490-36027-2	SIR-SS01-092313	Total/NA	Solid	7471A	109427
490-36027-3	SIR-SS02-092313	Total/NA	Solid	7471A	109427
490-36027-4	SIR-SS03-092313	Total/NA	Solid	7471A	109427
490-36027-5	SIR-SS04-092313	Total/NA	Solid	7471A	109427
490-36027-6	SIR-SS05-092313	Total/NA	Solid	7471A	109427
LCS 490-109427/2-A	Lab Control Sample	Total/NA	Solid	7471A	109427
LCSD 490-109427/3-A	Lab Control Sample Dup	Total/NA	Solid	7471A	109427
MB 490-109427/1-A	Method Blank	Total/NA	Solid	7471A	109427

Lab Chronicle

Client: Environmental Restoration LLC
Project/Site: Springfield Iron

TestAmerica Job ID: 490-36027-1

Client Sample ID: Source01-092313 — Lab Sample ID: 490-36027-1

Date Collected: 09/23/13 10:30 — **Matrix: Solid**
Date Received: 09/24/13 07:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030B			109369	09/24/13 11:25	JLP	TAL NSH
Total/NA	Analysis	8260B		1	109256	09/24/13 14:06	KKK	TAL NSH
Total/NA	Prep	3550B			109371	09/24/13 11:35	LP	TAL NSH
Total/NA	Analysis	8270C		1	109547	09/25/13 00:09	BES	TAL NSH
Total/NA	Prep	3051A			109383	09/24/13 12:08	JBD	TAL NSH
Total/NA	Analysis	6010B		1	109560	09/24/13 20:45	KDJ	TAL NSH
Total/NA	Prep	7471A			109427	09/24/13 14:01	LTB	TAL NSH
Total/NA	Analysis	7471A		1	109754	09/25/13 11:39	LTB	TAL NSH

Client Sample ID: SIR-SS01-092313 — Lab Sample ID: 490-36027-2

Date Collected: 09/23/13 14:45 — **Matrix: Solid**
Date Received: 09/24/13 07:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030B			109369	09/24/13 11:25	JLP	TAL NSH
Total/NA	Analysis	8260B		1	109256	09/24/13 14:37	KKK	TAL NSH
Total/NA	Prep	3550B			109371	09/24/13 11:35	LP	TAL NSH
Total/NA	Analysis	8270C		1	109547	09/25/13 00:31	BES	TAL NSH
Total/NA	Prep	3051A			109383	09/24/13 12:08	JBD	TAL NSH
Total/NA	Analysis	6010B		1	109560	09/24/13 20:59	KDJ	TAL NSH
Total/NA	Prep	7471A			109427	09/24/13 14:01	LTB	TAL NSH
Total/NA	Analysis	7471A		1	109754	09/25/13 11:45	LTB	TAL NSH

Client Sample ID: SIR-SS02-092313 — Lab Sample ID: 490-36027-3

Date Collected: 09/23/13 14:50 — **Matrix: Solid**
Date Received: 09/24/13 07:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030B			109369	09/24/13 11:25	JLP	TAL NSH
Total/NA	Analysis	8260B		1	109256	09/24/13 15:06	KKK	TAL NSH
Total/NA	Prep	3550B			109371	09/24/13 11:35	LP	TAL NSH
Total/NA	Analysis	8270C		1	109547	09/25/13 00:54	BES	TAL NSH
Total/NA	Prep	3051A			109383	09/24/13 12:08	JBD	TAL NSH
Total/NA	Analysis	6010B		1	109560	09/24/13 21:04	KDJ	TAL NSH
Total/NA	Prep	7471A			109427	09/24/13 14:01	LTB	TAL NSH
Total/NA	Analysis	7471A		1	109754	09/25/13 11:48	LTB	TAL NSH

Client Sample ID: SIR-SS03-092313 — Lab Sample ID: 490-36027-4

Date Collected: 09/23/13 14:55 — **Matrix: Solid**
Date Received: 09/24/13 07:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030B			109369	09/24/13 11:25	JLP	TAL NSH

Lab Chronicle

Client: Environmental Restoration LLC
Project/Site: Springfield Iron

TestAmerica Job ID: 490-36027-1

Client Sample ID: SIR-SS03-092313 — Lab Sample ID: 490-36027-4

Date Collected: 09/23/13 14:55 — **Matrix: Solid**
Date Received: 09/24/13 07:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	109256	09/24/13 15:35	KKK	TAL NSH
Total/NA	Prep	3550B			109371	09/24/13 11:35	LP	TAL NSH
Total/NA	Analysis	8270C		1	109547	09/25/13 01:17	BES	TAL NSH
Total/NA	Analysis	8270C		2	109729	09/25/13 13:00	BES	TAL NSH
Total/NA	Prep	3051A			109383	09/24/13 12:08	JBD	TAL NSH
Total/NA	Analysis	6010B		1	109560	09/24/13 21:08	KDJ	TAL NSH
Total/NA	Prep	7471A			109427	09/24/13 14:01	LTB	TAL NSH
Total/NA	Analysis	7471A		1	109754	09/25/13 11:50	LTB	TAL NSH

Client Sample ID: SIR-SS04-092313 — Lab Sample ID: 490-36027-5

Date Collected: 09/23/13 15:00 — **Matrix: Solid**
Date Received: 09/24/13 07:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030B			109369	09/24/13 11:25	JLP	TAL NSH
Total/NA	Analysis	8260B		1	109256	09/24/13 16:05	KKK	TAL NSH
Total/NA	Prep	3550B			109371	09/24/13 11:35	LP	TAL NSH
Total/NA	Analysis	8270C		1	109547	09/25/13 01:39	BES	TAL NSH
Total/NA	Analysis	8270C		5	109729	09/25/13 13:23	BES	TAL NSH
Total/NA	Prep	3051A			109383	09/24/13 12:08	JBD	TAL NSH
Total/NA	Analysis	6010B		1	109560	09/24/13 21:13	KDJ	TAL NSH
Total/NA	Prep	7471A			109427	09/24/13 14:01	LTB	TAL NSH
Total/NA	Analysis	7471A		1	109754	09/25/13 11:52	LTB	TAL NSH

Client Sample ID: SIR-SS05-092313 — Lab Sample ID: 490-36027-6

Date Collected: 09/23/13 15:05 — **Matrix: Solid**
Date Received: 09/24/13 07:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030B			109369	09/24/13 11:25	JLP	TAL NSH
Total/NA	Analysis	8260B		1	109610	09/25/13 13:56	KKK	TAL NSH
Total/NA	Prep	3550B			109371	09/24/13 11:35	LP	TAL NSH
Total/NA	Analysis	8270C		1	109547	09/25/13 02:02	BES	TAL NSH
Total/NA	Analysis	8270C		5	109729	09/25/13 13:46	BES	TAL NSH
Total/NA	Prep	3051A			109383	09/24/13 12:08	JBD	TAL NSH
Total/NA	Analysis	6010B		1	109560	09/24/13 21:32	KDJ	TAL NSH
Total/NA	Prep	7471A			109427	09/24/13 14:01	LTB	TAL NSH
Total/NA	Analysis	7471A		1	109754	09/25/13 11:58	LTB	TAL NSH

Laboratory References:

TAL NSH = TestAmerica Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177

Method Summary

Client: Environmental Restoration LLC
Project/Site: Springfield Iron

TestAmerica Job ID: 490-36027-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL NSH
8270C	Semivolatile Organic Compounds (GC/MS)	SW846	TAL NSH
6010B	Metals (ICP)	SW846	TAL NSH
7471A	Mercury (CVAA)	SW846	TAL NSH

Protocol References:

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

Laboratory References:

TAL NSH = TestAmerica Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177

Certification Summary

Client: Environmental Restoration LLC
Project/Site: Springfield Iron

TestAmerica Job ID: 490-36027-1

Laboratory: TestAmerica Nashville

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
A2LA	ISO/IEC 17025		0453.07	12-31-13
Alaska (UST)	State Program	10	UST-087	07-24-14
Arizona	State Program	9	AZ0473	05-05-14
Arizona	State Program	9	AZ0473	05-05-14 *
Arkansas DEQ	State Program	6	88-0737	04-25-14
California	NELAP	9	1168CA	10-31-13
Canadian Assoc Lab Accred (CALA)	Canada		3744	03-08-14
Connecticut	State Program	1	PH-0220	12-31-13
Florida	NELAP	4	E87358	06-30-14
Illinois	NELAP	5	200010	12-09-13
Iowa	State Program	7	131	05-01-14
Kansas	NELAP	7	E-10229	10-31-13
Kentucky (UST)	State Program	4	19	06-30-14
Louisiana	NELAP	6	30613	06-30-14
Maryland	State Program	3	316	03-31-14
Massachusetts	State Program	1	M-TN032	06-30-14
Minnesota	NELAP	5	047-999-345	12-31-13
Mississippi	State Program	4	N/A	06-30-14
Montana (UST)	State Program	8	NA	01-01-20
Nevada	State Program	9	TN00032	07-31-14
New Hampshire	NELAP	1	2963	10-10-13
New Jersey	NELAP	2	TN965	06-30-14
New York	NELAP	2	11342	04-01-14
North Carolina DENR	State Program	4	387	12-31-13
North Dakota	State Program	8	R-146	06-30-14
Ohio VAP	State Program	5	CL0033	01-19-14
Oklahoma	State Program	6	9412	08-31-14
Oregon	NELAP	10	TN200001	04-29-14
Pennsylvania	NELAP	3	68-00585	06-30-14
Rhode Island	State Program	1	LAO00268	12-30-13
South Carolina	State Program	4	84009 (001)	02-28-14
Tennessee	State Program	4	2008	02-23-14
Texas	NELAP	6	T104704077-09-TX	08-31-14
USDA	Federal		S-48469	11-02-13
Utah	NELAP	8	TN00032	07-31-14
Virginia	NELAP	3	460152	06-14-14
Washington	State Program	10	C789	07-19-14
West Virginia DEP	State Program	3	219	02-28-14
Wisconsin	State Program	5	998020430	08-31-14
Wyoming (UST)	A2LA	8	453.07	12-31-13

* Expired certification is currently pending renewal and is considered valid.

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
Nashville, TN

COOLER RECEIPT FORM

490-36027 Chain of Custody

Cooler Received/Opened On 9.24.13 @ 0745

1. Tracking # 8177 (last 4 digits, FedEx)

Courier: FedEx 1st Overnight IR Gun ID 17960357

2. Temperature of rep. sample or temp blank when opened: 13.9 Degrees Celsius

3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES NO...NA

4. Were custody seals on outside of cooler? YES...NO...NA

If yes, how many and where: (2) Front / Back

5. Were the seals intact, signed, and dated correctly? YES...NO...NA

6. Were custody papers inside cooler? YES...NO...NA

I certify that I opened the cooler and answered questions 1-6 (intial) mdm

7. Were custody seals on containers: YES NO and Intact YES...NO...NA

Were these signed and dated correctly? YES...NO...NA

8. Packing mat'l used? Bubblewrap Plastic bag Peanuts Vermiculite Foam Insert Paper Other None

9. Cooling process: Ice Ice-pack Ice (direct contact) Dry ice Other None

Two ice bags underneath the samples. mdm

10. Did all containers arrive in good condition (unbroken)? YES...NO...NA

11. Were all container labels complete (#, date, signed, pres., etc)? YES...NO...NA

12. Did all container labels and tags agree with custody papers? YES...NO...NA

13a. Were VOA vials received? YES...NO...NA

b. Was there any observable headspace present in any VOA vial? YES...NO...NA

14. Was there a Trip Blank in this cooler? YES...NO...NA If multiple coolers, sequence #_____

I certify that I unloaded the cooler and answered questions 7-14 (intial) _____

15a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? YES..NO..NA

b. Did the bottle labels indicate that the correct preservatives were used YES...NO...NA

16. Was residual chlorine present? YES...NO...NA

I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (intial) _____

17. Were custody papers properly filled out (ink, signed, etc)? YES...NO...NA

18. Did you sign the custody papers in the appropriate place? YES...NO...NA

19. Were correct containers used for the analysis requested? YES...NO...NA

20. Was sufficient amount of sample sent in each container? YES...NO...NA

I certify that I entered this project into LIMS and answered questions 17-20 (intial) _____

I certify that I attached a label with the unique LIMS number to each container (intial) _____

21. Were there Non-Conformance issues at login? YES...NO Was a NCM generated? YES...NO...#_____

BIS = Broken in shipment
Cooler Receipt Form.doc

LF-1
End of Form

Revised 11/28/12

9/25/2013

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
Phone (314) 298-8566 Fax (314) 298-8757

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: JEFF BRYNIARSKI	Lab PM: Fitzwater, Ryan	Carrier Tracking No(s):	COC No: 490-15642-6637.2
Client Contact: Toby Viehweg	Phone: 708-284-2490	E-Mail: ryan.fitzwater@testamericainc.com		Page: ~~Page 2 of 2~~ JB 1 of 1
Company: Environmental Restoration LLC				Job #:
Address: 16660 Canal St.	Due Date Requested:			
City: South Holland	TAT Requested (days): 24-HOUR			
State, Zip: IL, 60473				
Phone: 312-446-6325(Tel)	PO #: Purchase Order not required			
Email: T.Viehweg@erllc.com	WO #:			
Project Name: Springfield Iron - Soils I	Project #: 49004794			
Site:	SSOW#:			

Analysis Requested

Loc: 490
36027

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA
M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2SO3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6010B_7471A_8270C_Moisture JB	PAH	TOTAL BENZENE	RCRA (8) METALS + VANADIUM	Total Number of containers	Special Instructions/Note:
			Preservation Code:				N					
SOURCE01-092313	09/23/13	10:30	C	Solid	N	N		X	X	X		-1
SIR-SS01-092313	↓	14:45	C	Solid	N	N		X	X	X		-2
SIR-SS02-092313	↓	14:50	C	Solid	N	N		X	X	X		-3
SIR-SS03-092313	↓	14:55	C	Solid	N	N		X	X	X		-4
SIR-SS04-092313	↓	15:00	C	SOLID	N	N		X	X	X		-5
SIR-SS05-092313	↓	15:05	C	SOLID	N	N		X	X	X		-6
NO ADDITIONAL SAMPLES												

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☒ Archive For 1 Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:		
Relinquished by:	Date/Time: 09/23/13 16:00	Company WESTON SOLUTIONS	Received by:	Date/Time: 9-24-13 / 0745	Company TAN
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No
Custody Seal No.:
Cooler Temperature(s) °C and Other Remarks: 13.9 °C

Login Sample Receipt Checklist

Client: Environmental Restoration LLC

Job Number: 490-36027-1

Login Number: 36027

List Source: TestAmerica Nashville

List Number: 1

Creator: Huckaba, Jimmy

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are 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.	False	
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 containers received 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.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

TestAmerica

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ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Nashville
2960 Foster Creighton Drive
Nashville, TN 37204
Tel: (615)726-0177

TestAmerica Job ID: 490-38032-1
Client Project/Site: Springfiled Iron

For:
Environmental Restoration LLC
1666 Fabick Dr.
Fenton, Missouri 63026

Attn: Toby Viehweg

Authorized for release by:
10/24/2013 4:42:43 PM

Ryan Fitzwater, Senior Project Manager
(615)726-0177
ryan.fitzwater@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Sample Summary

Client: Environmental Restoration LLC
Project/Site: Springfiled Iron

TestAmerica Job ID: 490-38032-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
490-38032-1	SIR-SS06-101613	Solid	10/16/13 15:00	10/17/13 08:20
490-38032-2	SIR-SS06-101613D	Solid	10/16/13 15:00	10/17/13 08:20
490-38032-3	SIR-SS07-101613	Solid	10/16/13 15:05	10/17/13 08:20
490-38032-4	SIR-SS08-101613	Solid	10/16/13 15:10	10/17/13 08:20
490-38032-5	SIR-SS09-101613	Solid	10/16/13 15:15	10/17/13 08:20
490-38032-6	SIR-SS10-101613	Solid	10/16/13 15:20	10/17/13 08:20

Job ID: 490-38032-1

Laboratory: TestAmerica Nashville

Narrative

Job Narrative
490-38032-1

Comments
No additional comments.

Receipt
The samples were received on 10/17/2013 8:20 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 5.9º C.

GC/MS VOA
Method(s) 8260B: Surrogate recovery for the following sample(s) was outside control limits: SIR-SS06-101613D (490-38032-2), SIR-SS10-101613 (490-38032-6). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method(s) 8260B: Internal standard responses were outside of acceptance limits for the following sample(s): SIR-SS06-101613D (490-38032-2), SIR-SS10-101613 (490-38032-6). The sample(s) shows evidence of matrix interference.

No other analytical or quality issues were noted.

GC/MS Semi VOA
Method(s) 8270C: The matrix spike duplicate (MSD) recoveries for batch 115953 were outside control limits. The associated laboratory control sample (LCS) recovery met acceptance criteria.

No other analytical or quality issues were noted.

Metals
Method(s) 6010B, 6010C: The post digestion spike % recovery for Selenium associated with batch 115970 was outside of control limits.

Method(s) 6010B, 6010C: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for batch 115970 were outside control limits for Selenium. The associated laboratory control sample (LCS) recovery met acceptance criteria.

Method(s) 6010B: The following sample(s) was diluted due to the abundance of analytes: FeSIR-SS10-101613 (490-38032-6). Elevated reporting limits (RLs) are provided.

Method(s) 7471A: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for batch 116395 were outside control limits. The associated laboratory control sample (LCS) recovery met acceptance criteria.

No other analytical or quality issues were noted.

Organic Prep
No analytical or quality issues were noted.

VOA Prep
No analytical or quality issues were noted.

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
*	ISTD response or retention time outside acceptable limits
X	Surrogate is outside control limits

GC/MS Semi VOA

Qualifier	Qualifier Description
E	Result exceeded calibration range.
F	MS/MSD Recovery and/or RPD exceeds the control limits

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Client Sample Results

Client: Environmental Restoration LLC
Project/Site: Springfiled Iron

TestAmerica Job ID: 490-38032-1

Client Sample ID: SIR-SS06-101613

Lab Sample ID: 490-38032-1

Date Collected: 10/16/13 15:00
Matrix: Solid
Date Received: 10/17/13 08:20

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.00236		mg/Kg		10/18/13 12:39	10/23/13 16:46	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*116*		*70 - 130*	*10/18/13 12:39*	*10/23/13 16:46*	*1*
1,2-Dichloroethane-d4 (Surr)	*95*		*70 - 130*	*10/18/13 12:39*	*10/23/13 16:46*	*1*
Toluene-d8 (Surr)	*118*		*70 - 130*	*10/18/13 12:39*	*10/23/13 16:46*	*1*
Dibromofluoromethane (Surr)	*101*		*70 - 130*	*10/18/13 12:39*	*10/23/13 16:46*	*1*

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	**0.103**		0.0546		mg/Kg		10/22/13 09:04	10/22/13 17:52	1
Acenaphthylene	**0.498**		0.0546		mg/Kg		10/22/13 09:04	10/22/13 17:52	1
Anthracene	**0.584**		0.0546		mg/Kg		10/22/13 09:04	10/22/13 17:52	1
Benzo[a]anthracene	**0.843**		0.0546		mg/Kg		10/22/13 09:04	10/22/13 17:52	1
Benzo[a]pyrene	**0.574**		0.0546		mg/Kg		10/22/13 09:04	10/22/13 17:52	1
Benzo[b]fluoranthene	**0.677**		0.0546		mg/Kg		10/22/13 09:04	10/22/13 17:52	1
Benzo[g,h,i]perylene	**0.259**		0.0546		mg/Kg		10/22/13 09:04	10/22/13 17:52	1
Benzo[k]fluoranthene	**0.283**		0.0546		mg/Kg		10/22/13 09:04	10/22/13 17:52	1
Chrysene	**0.897**		0.0546		mg/Kg		10/22/13 09:04	10/22/13 17:52	1
Dibenz(a,h)anthracene	**0.0690**		0.0546		mg/Kg		10/22/13 09:04	10/22/13 17:52	1
Fluoranthene	**1.49**		0.0546		mg/Kg		10/22/13 09:04	10/22/13 17:52	1
Fluorene	**0.390**		0.0546		mg/Kg		10/22/13 09:04	10/22/13 17:52	1
Indeno[1,2,3-cd]pyrene	**0.279**		0.0546		mg/Kg		10/22/13 09:04	10/22/13 17:52	1
Naphthalene	**0.208**		0.0546		mg/Kg		10/22/13 09:04	10/22/13 17:52	1
Phenanthrene	**1.75**		0.0546		mg/Kg		10/22/13 09:04	10/22/13 17:52	1
Pyrene	**1.30**		0.0546		mg/Kg		10/22/13 09:04	10/22/13 17:52	1
1-Methylnaphthalene	**0.171**		0.0546		mg/Kg		10/22/13 09:04	10/22/13 17:52	1
2-Methylnaphthalene	**0.171**		0.0546		mg/Kg		10/22/13 09:04	10/22/13 17:52	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*53*		*27 - 120*	*10/22/13 09:04*	*10/22/13 17:52*	*1*
Terphenyl-d14 (Surr)	*67*		*13 - 120*	*10/22/13 09:04*	*10/22/13 17:52*	*1*
2-Fluorobiphenyl (Surr)	*63*		*29 - 120*	*10/22/13 09:04*	*10/22/13 17:52*	*1*

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**8.76**		1.94		mg/Kg		10/22/13 09:38	10/23/13 22:45	1
Barium	**85.5**		1.94		mg/Kg		10/22/13 09:38	10/23/13 22:45	1
Cadmium	**3.57**		0.971		mg/Kg		10/22/13 09:38	10/23/13 22:45	1
Chromium	**11.0**		0.971		mg/Kg		10/22/13 09:38	10/23/13 22:45	1
Lead	**43.0**		0.971		mg/Kg		10/22/13 09:38	10/23/13 22:45	1
Selenium	ND		1.94		mg/Kg		10/22/13 09:38	10/23/13 22:45	1
Silver	ND		0.971		mg/Kg		10/22/13 09:38	10/23/13 22:45	1
Vanadium	**21.0**		9.71		mg/Kg		10/22/13 09:38	10/23/13 22:45	1

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.100**		0.0963		mg/Kg		10/23/13 11:45	10/24/13 08:57	1

Client Sample Results

Client: Environmental Restoration LLC
Project/Site: Springfiled Iron

TestAmerica Job ID: 490-38032-1

Client Sample ID: SIR-SS06-101613

Lab Sample ID: 490-38032-1

Date Collected: 10/16/13 15:00

Matrix: Solid

Date Received: 10/17/13 08:20

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	19		0.10		%			10/18/13 10:16	1
Percent Solids	81		0.10		%			10/18/13 10:16	1

Client Sample Results

Client: Environmental Restoration LLC
Project/Site: Springfiled Iron

TestAmerica Job ID: 490-38032-1

Client Sample ID: SIR-SS06-101613D

Lab Sample ID: 490-38032-2

Date Collected: 10/16/13 15:00

Matrix: Solid

Date Received: 10/17/13 08:20

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.00201		mg/Kg		10/18/13 12:39	10/23/13 17:16	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*121*	*	*70 - 130*	*10/18/13 12:39*	*10/23/13 17:16*	*1*
1,2-Dichloroethane-d4 (Surr)	*95*		*70 - 130*	*10/18/13 12:39*	*10/23/13 17:16*	*1*
Toluene-d8 (Surr)	*135*	*X*	*70 - 130*	*10/18/13 12:39*	*10/23/13 17:16*	*1*
Dibromofluoromethane (Surr)	*94*		*70 - 130*	*10/18/13 12:39*	*10/23/13 17:16*	*1*

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	**0.391**		0.105		mg/Kg		10/22/13 09:04	10/22/13 19:10	2
Acenaphthylene	**0.593**		0.105		mg/Kg		10/22/13 09:04	10/22/13 19:10	2
Anthracene	**0.979**		0.105		mg/Kg		10/22/13 09:04	10/22/13 19:10	2
Benzo[a]anthracene	**1.38**		0.105		mg/Kg		10/22/13 09:04	10/22/13 19:10	2
Benzo[a]pyrene	**0.964**		0.105		mg/Kg		10/22/13 09:04	10/22/13 19:10	2
Benzo[b]fluoranthene	**1.26**		0.105		mg/Kg		10/22/13 09:04	10/22/13 19:10	2
Benzo[g,h,i]perylene	**0.650**		0.105		mg/Kg		10/22/13 09:04	10/22/13 19:10	2
Benzo[k]fluoranthene	**0.474**		0.105		mg/Kg		10/22/13 09:04	10/22/13 19:10	2
Chrysene	**1.59**		0.105		mg/Kg		10/22/13 09:04	10/22/13 19:10	2
Dibenz(a,h)anthracene	**0.225**		0.105		mg/Kg		10/22/13 09:04	10/22/13 19:10	2
Fluoranthene	**2.80**		0.105		mg/Kg		10/22/13 09:04	10/22/13 19:10	2
Fluorene	**0.851**		0.105		mg/Kg		10/22/13 09:04	10/22/13 19:10	2
Indeno[1,2,3-cd]pyrene	**0.611**		0.105		mg/Kg		10/22/13 09:04	10/22/13 19:10	2
Naphthalene	**0.664**		0.105		mg/Kg		10/22/13 09:04	10/22/13 19:10	2
Phenanthrene	**4.32**		0.105		mg/Kg		10/22/13 09:04	10/22/13 19:10	2
Pyrene	**2.90**		0.105		mg/Kg		10/22/13 09:04	10/22/13 19:10	2
1-Methylnaphthalene	**0.423**		0.105		mg/Kg		10/22/13 09:04	10/22/13 19:10	2
2-Methylnaphthalene	**0.532**		0.105		mg/Kg		10/22/13 09:04	10/22/13 19:10	2

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*61*		*27 - 120*	*10/22/13 09:04*	*10/22/13 19:10*	*2*
Terphenyl-d14 (Surr)	*74*		*13 - 120*	*10/22/13 09:04*	*10/22/13 19:10*	*2*
2-Fluorobiphenyl (Surr)	*68*		*29 - 120*	*10/22/13 09:04*	*10/22/13 19:10*	*2*

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**8.64**		1.94		mg/Kg		10/22/13 09:38	10/23/13 22:50	1
Barium	**100**		1.94		mg/Kg		10/22/13 09:38	10/23/13 22:50	1
Cadmium	**3.02**		0.969		mg/Kg		10/22/13 09:38	10/23/13 22:50	1
Chromium	**13.4**		0.969		mg/Kg		10/22/13 09:38	10/23/13 22:50	1
Lead	**28.4**		0.969		mg/Kg		10/22/13 09:38	10/23/13 22:50	1
Selenium	ND		1.94		mg/Kg		10/22/13 09:38	10/23/13 22:50	1
Silver	ND		0.969		mg/Kg		10/22/13 09:38	10/23/13 22:50	1
Vanadium	**25.1**		9.69		mg/Kg		10/22/13 09:38	10/23/13 22:50	1

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.101		mg/Kg		10/23/13 11:45	10/24/13 08:59	1

Client Sample Results

Client: Environmental Restoration LLC
Project/Site: Springfiled Iron

TestAmerica Job ID: 490-38032-1

Client Sample ID: SIR-SS06-101613D

Lab Sample ID: 490-38032-2

Date Collected: 10/16/13 15:00

Matrix: Solid

Date Received: 10/17/13 08:20

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	21		0.10		%			10/18/13 10:16	1
Percent Solids	79		0.10		%			10/18/13 10:16	1

Client Sample Results

Client: Environmental Restoration LLC
Project/Site: Springfiled Iron

TestAmerica Job ID: 490-38032-1

Client Sample ID: SIR-SS07-101613

Lab Sample ID: 490-38032-3

Date Collected: 10/16/13 15:05

Matrix: Solid

Date Received: 10/17/13 08:20

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.00840		0.00208		mg/Kg		10/18/13 12:39	10/23/13 17:46	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*114*		*70 - 130*	*10/18/13 12:39*	*10/23/13 17:46*	*1*
1,2-Dichloroethane-d4 (Surr)	*98*		*70 - 130*	*10/18/13 12:39*	*10/23/13 17:46*	*1*
Toluene-d8 (Surr)	*120*		*70 - 130*	*10/18/13 12:39*	*10/23/13 17:46*	*1*
Dibromofluoromethane (Surr)	*100*		*70 - 130*	*10/18/13 12:39*	*10/23/13 17:46*	*1*

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	0.450		0.107		mg/Kg		10/22/13 09:04	10/22/13 19:36	2
Acenaphthylene	2.16		0.107		mg/Kg		10/22/13 09:04	10/22/13 19:36	2
Anthracene	1.97		0.107		mg/Kg		10/22/13 09:04	10/22/13 19:36	2
Benzo[a]anthracene	2.64		0.107		mg/Kg		10/22/13 09:04	10/22/13 19:36	2
Benzo[a]pyrene	1.81		0.107		mg/Kg		10/22/13 09:04	10/22/13 19:36	2
Benzo[b]fluoranthene	2.04		0.107		mg/Kg		10/22/13 09:04	10/22/13 19:36	2
Benzo[g,h,i]perylene	0.796		0.107		mg/Kg		10/22/13 09:04	10/22/13 19:36	2
Benzo[k]fluoranthene	1.00		0.107		mg/Kg		10/22/13 09:04	10/22/13 19:36	2
Chrysene	2.68		0.107		mg/Kg		10/22/13 09:04	10/22/13 19:36	2
Dibenz(a,h)anthracene	0.172		0.107		mg/Kg		10/22/13 09:04	10/22/13 19:36	2
Fluoranthene	4.07		0.107		mg/Kg		10/22/13 09:04	10/22/13 19:36	2
Fluorene	1.61		0.107		mg/Kg		10/22/13 09:04	10/22/13 19:36	2
Indeno[1,2,3-cd]pyrene	0.807		0.107		mg/Kg		10/22/13 09:04	10/22/13 19:36	2
Naphthalene	1.44		0.107		mg/Kg		10/22/13 09:04	10/22/13 19:36	2
Phenanthrene	6.98		0.267		mg/Kg		10/22/13 09:04	10/24/13 15:57	5
Pyrene	3.99		0.107		mg/Kg		10/22/13 09:04	10/22/13 19:36	2
1-Methylnaphthalene	1.18		0.107		mg/Kg		10/22/13 09:04	10/22/13 19:36	2
2-Methylnaphthalene	1.19		0.107		mg/Kg		10/22/13 09:04	10/22/13 19:36	2

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*44*		*27 - 120*	*10/22/13 09:04*	*10/22/13 19:36*	*2*
Terphenyl-d14 (Surr)	*47*		*13 - 120*	*10/22/13 09:04*	*10/22/13 19:36*	*2*
2-Fluorobiphenyl (Surr)	*46*		*29 - 120*	*10/22/13 09:04*	*10/22/13 19:36*	*2*

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	7.96		1.98		mg/Kg		10/22/13 09:38	10/23/13 22:55	1
Barium	101		1.98		mg/Kg		10/22/13 09:38	10/23/13 22:55	1
Cadmium	3.64		0.990		mg/Kg		10/22/13 09:38	10/23/13 22:55	1
Chromium	16.5		0.990		mg/Kg		10/22/13 09:38	10/23/13 22:55	1
Lead	42.0		0.990		mg/Kg		10/22/13 09:38	10/23/13 22:55	1
Selenium	ND		1.98		mg/Kg		10/22/13 09:38	10/23/13 22:55	1
Silver	ND		0.990		mg/Kg		10/22/13 09:38	10/23/13 22:55	1
Vanadium	24.4		9.90		mg/Kg		10/22/13 09:38	10/23/13 22:55	1

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.144		0.0997		mg/Kg		10/23/13 11:45	10/24/13 09:01	1

Client Sample Results

Client: Environmental Restoration LLC
Project/Site: Springfiled Iron

TestAmerica Job ID: 490-38032-1

Client Sample ID: SIR-SS07-101613

Lab Sample ID: 490-38032-3

Date Collected: 10/16/13 15:05

Matrix: Solid

Date Received: 10/17/13 08:20

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	19		0.10		%			10/18/13 10:16	1
Percent Solids	81		0.10		%			10/18/13 10:16	1

Client Sample Results

Client: Environmental Restoration LLC
Project/Site: Springfiled Iron

TestAmerica Job ID: 490-38032-1

Client Sample ID: SIR-SS08-101613

Lab Sample ID: 490-38032-4

Date Collected: 10/16/13 15:10
Matrix: Solid
Date Received: 10/17/13 08:20

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.00136		mg/Kg		10/18/13 12:39	10/23/13 18:17	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*102*		*70 - 130*	*10/18/13 12:39*	*10/23/13 18:17*	*1*
1,2-Dichloroethane-d4 (Surr)	*97*		*70 - 130*	*10/18/13 12:39*	*10/23/13 18:17*	*1*
Toluene-d8 (Surr)	*110*		*70 - 130*	*10/18/13 12:39*	*10/23/13 18:17*	*1*
Dibromofluoromethane (Surr)	*99*		*70 - 130*	*10/18/13 12:39*	*10/23/13 18:17*	*1*

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	**0.0967**		0.0536		mg/Kg		10/22/13 09:04	10/22/13 20:01	1
Acenaphthylene	**0.428**		0.0536		mg/Kg		10/22/13 09:04	10/22/13 20:01	1
Anthracene	**0.434**		0.0536		mg/Kg		10/22/13 09:04	10/22/13 20:01	1
Benzo[a]anthracene	**0.299**		0.0536		mg/Kg		10/22/13 09:04	10/22/13 20:01	1
Benzo[a]pyrene	**0.171**		0.0536		mg/Kg		10/22/13 09:04	10/22/13 20:01	1
Benzo[b]fluoranthene	**0.191**		0.0536		mg/Kg		10/22/13 09:04	10/22/13 20:01	1
Benzo[g,h,i]perylene	**0.0765**		0.0536		mg/Kg		10/22/13 09:04	10/22/13 20:01	1
Benzo[k]fluoranthene	**0.0974**		0.0536		mg/Kg		10/22/13 09:04	10/22/13 20:01	1
Chrysene	**0.267**		0.0536		mg/Kg		10/22/13 09:04	10/22/13 20:01	1
Dibenz(a,h)anthracene	ND		0.0536		mg/Kg		10/22/13 09:04	10/22/13 20:01	1
Fluoranthene	**0.732**		0.0536		mg/Kg		10/22/13 09:04	10/22/13 20:01	1
Fluorene	**0.402**		0.0536		mg/Kg		10/22/13 09:04	10/22/13 20:01	1
Indeno[1,2,3-cd]pyrene	**0.0678**		0.0536		mg/Kg		10/22/13 09:04	10/22/13 20:01	1
Naphthalene	**0.347**		0.0536		mg/Kg		10/22/13 09:04	10/22/13 20:01	1
Phenanthrene	**1.36**		0.0536		mg/Kg		10/22/13 09:04	10/22/13 20:01	1
Pyrene	**0.613**		0.0536		mg/Kg		10/22/13 09:04	10/22/13 20:01	1
1-Methylnaphthalene	**0.297**		0.0536		mg/Kg		10/22/13 09:04	10/22/13 20:01	1
2-Methylnaphthalene	**0.308**		0.0536		mg/Kg		10/22/13 09:04	10/22/13 20:01	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*44*		*27 - 120*	*10/22/13 09:04*	*10/22/13 20:01*	*1*
Terphenyl-d14 (Surr)	*58*		*13 - 120*	*10/22/13 09:04*	*10/22/13 20:01*	*1*
2-Fluorobiphenyl (Surr)	*42*		*29 - 120*	*10/22/13 09:04*	*10/22/13 20:01*	*1*

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**8.34**		1.93		mg/Kg		10/22/13 09:38	10/23/13 23:00	1
Barium	**106**		1.93		mg/Kg		10/22/13 09:38	10/23/13 23:00	1
Cadmium	**2.28**		0.965		mg/Kg		10/22/13 09:38	10/23/13 23:00	1
Chromium	**13.6**		0.965		mg/Kg		10/22/13 09:38	10/23/13 23:00	1
Lead	**16.0**		0.965		mg/Kg		10/22/13 09:38	10/23/13 23:00	1
Selenium	ND		1.93		mg/Kg		10/22/13 09:38	10/23/13 23:00	1
Silver	ND		0.965		mg/Kg		10/22/13 09:38	10/23/13 23:00	1
Vanadium	**23.6**		9.65		mg/Kg		10/22/13 09:38	10/23/13 23:00	1

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0965		mg/Kg		10/23/13 11:45	10/24/13 09:10	1

Client Sample Results

Client: Environmental Restoration LLC
Project/Site: Springfiled Iron

TestAmerica Job ID: 490-38032-1

Client Sample ID: SIR-SS08-101613

Lab Sample ID: 490-38032-4

Date Collected: 10/16/13 15:10

Matrix: Solid

Date Received: 10/17/13 08:20

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	20		0.10		%			10/18/13 10:16	1
Percent Solids	80		0.10		%			10/18/13 10:16	1

Client Sample Results

Client: Environmental Restoration LLC
Project/Site: Springfiled Iron

TestAmerica Job ID: 490-38032-1

Client Sample ID: SIR-SS09-101613

Lab Sample ID: 490-38032-5

Date Collected: 10/16/13 15:15
Matrix: Solid
Date Received: 10/17/13 08:20

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.00197		0.00159		mg/Kg		10/18/13 12:39	10/23/13 18:47	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*97*		*70 - 130*	*10/18/13 12:39*	*10/23/13 18:47*	*1*
1,2-Dichloroethane-d4 (Surr)	*103*		*70 - 130*	*10/18/13 12:39*	*10/23/13 18:47*	*1*
Toluene-d8 (Surr)	*107*		*70 - 130*	*10/18/13 12:39*	*10/23/13 18:47*	*1*
Dibromofluoromethane (Surr)	*100*		*70 - 130*	*10/18/13 12:39*	*10/23/13 18:47*	*1*

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	0.204		0.107		mg/Kg		10/22/13 09:04	10/22/13 20:28	2
Acenaphthylene	0.971		0.107		mg/Kg		10/22/13 09:04	10/22/13 20:28	2
Anthracene	1.07		0.107		mg/Kg		10/22/13 09:04	10/22/13 20:28	2
Benzo[a]anthracene	0.918		0.107		mg/Kg		10/22/13 09:04	10/22/13 20:28	2
Benzo[a]pyrene	0.590		0.107		mg/Kg		10/22/13 09:04	10/22/13 20:28	2
Benzo[b]fluoranthene	0.685		0.107		mg/Kg		10/22/13 09:04	10/22/13 20:28	2
Benzo[g,h,i]perylene	0.282		0.107		mg/Kg		10/22/13 09:04	10/22/13 20:28	2
Benzo[k]fluoranthene	0.296		0.107		mg/Kg		10/22/13 09:04	10/22/13 20:28	2
Chrysene	1.01		0.107		mg/Kg		10/22/13 09:04	10/22/13 20:28	2
Dibenz(a,h)anthracene	ND		0.107		mg/Kg		10/22/13 09:04	10/22/13 20:28	2
Fluoranthene	1.80		0.107		mg/Kg		10/22/13 09:04	10/22/13 20:28	2
Fluorene	0.941		0.107		mg/Kg		10/22/13 09:04	10/22/13 20:28	2
Indeno[1,2,3-cd]pyrene	0.318		0.107		mg/Kg		10/22/13 09:04	10/22/13 20:28	2
Naphthalene	0.667		0.107		mg/Kg		10/22/13 09:04	10/22/13 20:28	2
Phenanthrene	3.49		0.107		mg/Kg		10/22/13 09:04	10/22/13 20:28	2
Pyrene	1.89		0.107		mg/Kg		10/22/13 09:04	10/22/13 20:28	2
1-Methylnaphthalene	0.519		0.107		mg/Kg		10/22/13 09:04	10/22/13 20:28	2
2-Methylnaphthalene	0.594		0.107		mg/Kg		10/22/13 09:04	10/22/13 20:28	2

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*58*		*27 - 120*	*10/22/13 09:04*	*10/22/13 20:28*	*2*
Terphenyl-d14 (Surr)	*79*		*13 - 120*	*10/22/13 09:04*	*10/22/13 20:28*	*2*
2-Fluorobiphenyl (Surr)	*62*		*29 - 120*	*10/22/13 09:04*	*10/22/13 20:28*	*2*

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	9.40		2.00		mg/Kg		10/22/13 09:38	10/23/13 23:05	1
Barium	84.7		2.00		mg/Kg		10/22/13 09:38	10/23/13 23:05	1
Cadmium	4.30		1.00		mg/Kg		10/22/13 09:38	10/23/13 23:05	1
Chromium	15.3		1.00		mg/Kg		10/22/13 09:38	10/23/13 23:05	1
Lead	44.0		1.00		mg/Kg		10/22/13 09:38	10/23/13 23:05	1
Selenium	ND		2.00		mg/Kg		10/22/13 09:38	10/23/13 23:05	1
Silver	ND		1.00		mg/Kg		10/22/13 09:38	10/23/13 23:05	1
Vanadium	29.0		10.0		mg/Kg		10/22/13 09:38	10/23/13 23:05	1

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0995		mg/Kg		10/23/13 11:45	10/24/13 09:12	1

Client Sample Results

Client: Environmental Restoration LLC
Project/Site: Springfiled Iron

TestAmerica Job ID: 490-38032-1

Client Sample ID: SIR-SS09-101613

Lab Sample ID: 490-38032-5

Date Collected: 10/16/13 15:15

Matrix: Solid

Date Received: 10/17/13 08:20

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	19		0.10		%			10/18/13 10:16	1
Percent Solids	81		0.10		%			10/18/13 10:16	1

Client Sample Results

Client: Environmental Restoration LLC
Project/Site: Springfiled Iron

TestAmerica Job ID: 490-38032-1

Client Sample ID: SIR-SS10-101613

Lab Sample ID: 490-38032-6

Date Collected: 10/16/13 15:20
Matrix: Solid
Date Received: 10/17/13 08:20

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.00155		mg/Kg		10/18/13 12:39	10/23/13 19:18	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*184*	*X **	*70 - 130*	*10/18/13 12:39*	*10/23/13 19:18*	*1*
1,2-Dichloroethane-d4 (Surr)	*97*		*70 - 130*	*10/18/13 12:39*	*10/23/13 19:18*	*1*
Toluene-d8 (Surr)	*120*		*70 - 130*	*10/18/13 12:39*	*10/23/13 19:18*	*1*
Dibromofluoromethane (Surr)	*95*		*70 - 130*	*10/18/13 12:39*	*10/23/13 19:18*	*1*

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	**0.0792**		0.0506		mg/Kg		10/22/13 09:04	10/22/13 20:54	1
Acenaphthylene	**0.308**		0.0506		mg/Kg		10/22/13 09:04	10/22/13 20:54	1
Anthracene	**0.256**		0.0506		mg/Kg		10/22/13 09:04	10/22/13 20:54	1
Benzo[a]anthracene	**0.316**		0.0506		mg/Kg		10/22/13 09:04	10/22/13 20:54	1
Benzo[a]pyrene	**0.187**		0.0506		mg/Kg		10/22/13 09:04	10/22/13 20:54	1
Benzo[b]fluoranthene	**0.260**		0.0506		mg/Kg		10/22/13 09:04	10/22/13 20:54	1
Benzo[g,h,i]perylene	**0.0908**		0.0506		mg/Kg		10/22/13 09:04	10/22/13 20:54	1
Benzo[k]fluoranthene	**0.102**		0.0506		mg/Kg		10/22/13 09:04	10/22/13 20:54	1
Chrysene	**0.338**		0.0506		mg/Kg		10/22/13 09:04	10/22/13 20:54	1
Dibenz(a,h)anthracene	ND		0.0506		mg/Kg		10/22/13 09:04	10/22/13 20:54	1
Fluoranthene	**0.650**		0.0506		mg/Kg		10/22/13 09:04	10/22/13 20:54	1
Fluorene	**0.255**		0.0506		mg/Kg		10/22/13 09:04	10/22/13 20:54	1
Indeno[1,2,3-cd]pyrene	**0.0973**		0.0506		mg/Kg		10/22/13 09:04	10/22/13 20:54	1
Naphthalene	**0.204**		0.0506		mg/Kg		10/22/13 09:04	10/22/13 20:54	1
Phenanthrene	**1.08**		0.0506		mg/Kg		10/22/13 09:04	10/22/13 20:54	1
Pyrene	**0.567**		0.0506		mg/Kg		10/22/13 09:04	10/22/13 20:54	1
1-Methylnaphthalene	**0.304**		0.0506		mg/Kg		10/22/13 09:04	10/22/13 20:54	1
2-Methylnaphthalene	**0.252**		0.0506		mg/Kg		10/22/13 09:04	10/22/13 20:54	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*49*		*27 - 120*	*10/22/13 09:04*	*10/22/13 20:54*	*1*
Terphenyl-d14 (Surr)	*56*		*13 - 120*	*10/22/13 09:04*	*10/22/13 20:54*	*1*
2-Fluorobiphenyl (Surr)	*47*		*29 - 120*	*10/22/13 09:04*	*10/22/13 20:54*	*1*

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		19.8		mg/Kg		10/22/13 09:38	10/23/13 23:26	10
Barium	**109**		19.8		mg/Kg		10/22/13 09:38	10/23/13 23:26	10
Cadmium	ND		9.88		mg/Kg		10/22/13 09:38	10/23/13 23:26	10
Chromium	**19.4**		9.88		mg/Kg		10/22/13 09:38	10/23/13 23:26	10
Lead	**24.7**		9.88		mg/Kg		10/22/13 09:38	10/23/13 23:26	10
Selenium	ND		19.8		mg/Kg		10/22/13 09:38	10/23/13 23:26	10
Silver	ND		9.88		mg/Kg		10/22/13 09:38	10/23/13 23:26	10
Vanadium	ND		98.8		mg/Kg		10/22/13 09:38	10/23/13 23:26	10

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0974		mg/Kg		10/23/13 11:45	10/24/13 09:14	1

Client Sample Results

Client: Environmental Restoration LLC
Project/Site: Springfiled Iron

TestAmerica Job ID: 490-38032-1

Client Sample ID: SIR-SS10-101613

Lab Sample ID: 490-38032-6

Date Collected: 10/16/13 15:20

Matrix: Solid

Date Received: 10/17/13 08:20

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	23		0.10		%			10/18/13 10:16	1
Percent Solids	77		0.10		%			10/18/13 10:16	1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 490-116331/7
Matrix: Solid
Analysis Batch: 116331

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.00200		mg/Kg			10/23/13 13:16	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*95*		*70 - 130*		*10/23/13 13:16*	*1*
1,2-Dichloroethane-d4 (Surr)	*93*		*70 - 130*		*10/23/13 13:16*	*1*
Toluene-d8 (Surr)	*109*		*70 - 130*		*10/23/13 13:16*	*1*
Dibromofluoromethane (Surr)	*96*		*70 - 130*		*10/23/13 13:16*	*1*

Lab Sample ID: LCS 490-116331/3
Matrix: Solid
Analysis Batch: 116331

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	0.0500	0.05010		mg/Kg		100	75 - 127

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*96*		*70 - 130*
1,2-Dichloroethane-d4 (Surr)	*87*		*70 - 130*
Toluene-d8 (Surr)	*103*		*70 - 130*
Dibromofluoromethane (Surr)	*97*		*70 - 130*

Lab Sample ID: LCSD 490-116331/4
Matrix: Solid
Analysis Batch: 116331

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	0.0500	0.05128		mg/Kg		103	75 - 127	2	50

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*96*		*70 - 130*
1,2-Dichloroethane-d4 (Surr)	*91*		*70 - 130*
Toluene-d8 (Surr)	*108*		*70 - 130*
Dibromofluoromethane (Surr)	*98*		*70 - 130*

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 490-115953/1-A
Matrix: Solid
Analysis Batch: 116125

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 115953

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		0.0670		mg/Kg		10/22/13 09:04	10/22/13 16:58	1
Acenaphthylene	ND		0.0670		mg/Kg		10/22/13 09:04	10/22/13 16:58	1
Anthracene	ND		0.0670		mg/Kg		10/22/13 09:04	10/22/13 16:58	1
Benzo[a]anthracene	ND		0.0670		mg/Kg		10/22/13 09:04	10/22/13 16:58	1
Benzo[a]pyrene	ND		0.0670		mg/Kg		10/22/13 09:04	10/22/13 16:58	1
Benzo[b]fluoranthene	ND		0.0670		mg/Kg		10/22/13 09:04	10/22/13 16:58	1

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 490-115953/1-A
Matrix: Solid
Analysis Batch: 116125

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 115953

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[g,h,i]perylene	ND		0.0670		mg/Kg		10/22/13 09:04	10/22/13 16:58	1
Benzo[k]fluoranthene	ND		0.0670		mg/Kg		10/22/13 09:04	10/22/13 16:58	1
Chrysene	ND		0.0670		mg/Kg		10/22/13 09:04	10/22/13 16:58	1
Dibenz(a,h)anthracene	ND		0.0670		mg/Kg		10/22/13 09:04	10/22/13 16:58	1
Fluoranthene	ND		0.0670		mg/Kg		10/22/13 09:04	10/22/13 16:58	1
Fluorene	ND		0.0670		mg/Kg		10/22/13 09:04	10/22/13 16:58	1
Indeno[1,2,3-cd]pyrene	ND		0.0670		mg/Kg		10/22/13 09:04	10/22/13 16:58	1
Naphthalene	ND		0.0670		mg/Kg		10/22/13 09:04	10/22/13 16:58	1
Phenanthrene	ND		0.0670		mg/Kg		10/22/13 09:04	10/22/13 16:58	1
Pyrene	ND		0.0670		mg/Kg		10/22/13 09:04	10/22/13 16:58	1
1-Methylnaphthalene	ND		0.0670		mg/Kg		10/22/13 09:04	10/22/13 16:58	1
2-Methylnaphthalene	ND		0.0670		mg/Kg		10/22/13 09:04	10/22/13 16:58	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*64*		*27 - 120*	*10/22/13 09:04*	*10/22/13 16:58*	*1*
Terphenyl-d14 (Surr)	*80*		*13 - 120*	*10/22/13 09:04*	*10/22/13 16:58*	*1*
2-Fluorobiphenyl (Surr)	*79*		*29 - 120*	*10/22/13 09:04*	*10/22/13 16:58*	*1*

Lab Sample ID: LCS 490-115953/2-A
Matrix: Solid
Analysis Batch: 116125

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 115953

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acenaphthene	1.67	1.340		mg/Kg		80	36 - 120
Acenaphthylene	1.67	1.357		mg/Kg		81	38 - 120
Anthracene	1.67	1.206		mg/Kg		72	46 - 124
Benzo[a]anthracene	1.67	1.266		mg/Kg		76	45 - 120
Benzo[a]pyrene	1.67	1.210		mg/Kg		73	45 - 120
Benzo[b]fluoranthene	1.67	1.137		mg/Kg		68	42 - 120
Benzo[g,h,i]perylene	1.67	1.341		mg/Kg		80	38 - 120
Benzo[k]fluoranthene	1.67	1.240		mg/Kg		74	42 - 120
Chrysene	1.67	1.336		mg/Kg		80	43 - 120
Dibenz(a,h)anthracene	1.67	1.351		mg/Kg		81	32 - 128
Fluoranthene	1.67	1.166		mg/Kg		70	46 - 120
Fluorene	1.67	1.351		mg/Kg		81	42 - 120
Indeno[1,2,3-cd]pyrene	1.67	1.312		mg/Kg		79	41 - 121
Naphthalene	1.67	1.142		mg/Kg		69	32 - 120
Phenanthrene	1.67	1.196		mg/Kg		72	45 - 120
Pyrene	1.67	1.224		mg/Kg		73	43 - 120
1-Methylnaphthalene	1.67	1.194		mg/Kg		72	32 - 120
2-Methylnaphthalene	1.67	1.122		mg/Kg		67	28 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Nitrobenzene-d5 (Surr)	*63*		*27 - 120*
Terphenyl-d14 (Surr)	*78*		*13 - 120*
2-Fluorobiphenyl (Surr)	*71*		*29 - 120*

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 490-38032-1 MS — **Client Sample ID: SIR-SS06-101613**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 116125 — **Prep Batch: 115953**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Acenaphthene	0.103		1.33	1.223		mg/Kg		84	19 - 120
Acenaphthylene	0.498		1.33	1.814		mg/Kg		99	25 - 120
Anthracene	0.584		1.33	1.907		mg/Kg		100	28 - 125
Benzo[a]anthracene	0.843		1.33	1.890		mg/Kg		79	23 - 120
Benzo[a]pyrene	0.574		1.33	1.519		mg/Kg		71	15 - 128
Benzo[b]fluoranthene	0.677		1.33	1.661		mg/Kg		74	12 - 133
Benzo[g,h,i]perylene	0.259		1.33	1.397		mg/Kg		86	22 - 120
Benzo[k]fluoranthene	0.283		1.33	1.184		mg/Kg		68	28 - 120
Chrysene	0.897		1.33	2.009		mg/Kg		84	20 - 120
Dibenz(a,h)anthracene	0.0690		1.33	1.277		mg/Kg		91	12 - 128
Fluoranthene	1.49		1.33	2.785	E	mg/Kg		97	10 - 143
Fluorene	0.390		1.33	1.666		mg/Kg		96	20 - 120
Indeno[1,2,3-cd]pyrene	0.279		1.33	1.383		mg/Kg		83	22 - 121
Naphthalene	0.208		1.33	1.275		mg/Kg		80	10 - 120
Phenanthrene	1.75		1.33	3.057	E	mg/Kg		99	21 - 122
Pyrene	1.30		1.33	2.412		mg/Kg		84	20 - 123
1-Methylnaphthalene	0.171		1.33	1.264		mg/Kg		82	10 - 120
2-Methylnaphthalene	0.171		1.33	1.306		mg/Kg		86	13 - 120

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Nitrobenzene-d5 (Surr)	*75*		*27 - 120*
Terphenyl-d14 (Surr)	*78*		*13 - 120*
2-Fluorobiphenyl (Surr)	*66*		*29 - 120*

Lab Sample ID: 490-38032-1 MSD — **Client Sample ID: SIR-SS06-101613**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 116125 — **Prep Batch: 115953**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acenaphthene	0.103		1.34	1.253		mg/Kg		86	19 - 120	2	50
Acenaphthylene	0.498		1.34	2.478	F	mg/Kg		148	25 - 120	31	50
Anthracene	0.584		1.34	2.145		mg/Kg		117	28 - 125	12	49
Benzo[a]anthracene	0.843		1.34	1.934		mg/Kg		82	23 - 120	2	50
Benzo[a]pyrene	0.574		1.34	1.496		mg/Kg		69	15 - 128	2	50
Benzo[b]fluoranthene	0.677		1.34	1.859		mg/Kg		89	12 - 133	11	50
Benzo[g,h,i]perylene	0.259		1.34	1.209		mg/Kg		71	22 - 120	14	50
Benzo[k]fluoranthene	0.283		1.34	1.014		mg/Kg		55	28 - 120	15	45
Chrysene	0.897		1.34	2.262		mg/Kg		102	20 - 120	12	49
Dibenz(a,h)anthracene	0.0690		1.34	1.204		mg/Kg		85	12 - 128	6	50
Fluoranthene	1.49		1.34	2.871	E	mg/Kg		103	10 - 143	3	50
Fluorene	0.390		1.34	2.216	F	mg/Kg		137	20 - 120	28	50
Indeno[1,2,3-cd]pyrene	0.279		1.34	1.291		mg/Kg		76	22 - 121	7	50
Naphthalene	0.208		1.34	1.439		mg/Kg		92	10 - 120	12	50
Phenanthrene	1.75		1.34	4.263	E F	mg/Kg		188	21 - 122	33	50
Pyrene	1.30		1.34	2.750	E	mg/Kg		109	20 - 123	13	50
1-Methylnaphthalene	0.171		1.34	1.441		mg/Kg		95	10 - 120	13	50
2-Methylnaphthalene	0.171		1.34	1.339		mg/Kg		88	13 - 120	3	50

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 490-38032-1 MSD — **Client Sample ID: SIR-SS06-101613**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 116125 — **Prep Batch: 115953**

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Nitrobenzene-d5 (Surr)	*56*		*27 - 120*
Terphenyl-d14 (Surr)	*65*		*13 - 120*
2-Fluorobiphenyl (Surr)	*63*		*29 - 120*

Method: 6010B - Metals (ICP)

Lab Sample ID: MB 490-115970/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 116594 — **Prep Batch: 115970**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		2.00		mg/Kg		10/22/13 09:38	10/23/13 20:37	1
Barium	ND		2.00		mg/Kg		10/22/13 09:38	10/23/13 20:37	1
Cadmium	ND		0.998		mg/Kg		10/22/13 09:38	10/23/13 20:37	1
Chromium	ND		0.998		mg/Kg		10/22/13 09:38	10/23/13 20:37	1
Lead	ND		0.998		mg/Kg		10/22/13 09:38	10/23/13 20:37	1
Selenium	ND		2.00		mg/Kg		10/22/13 09:38	10/23/13 20:37	1
Silver	ND		0.998		mg/Kg		10/22/13 09:38	10/23/13 20:37	1
Vanadium	ND		9.98		mg/Kg		10/22/13 09:38	10/23/13 20:37	1

Lab Sample ID: LCS 490-115970/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 116594 — **Prep Batch: 115970**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	19.3	17.98		mg/Kg		93	80 - 120
Barium	771	781.1		mg/Kg		101	80 - 120
Cadmium	19.3	19.15		mg/Kg		99	80 - 120
Chromium	77.1	76.05		mg/Kg		99	80 - 120
Lead	19.3	19.33		mg/Kg		100	80 - 120
Selenium	19.3	18.09		mg/Kg		94	80 - 120
Silver	19.3	19.13		mg/Kg		99	80 - 120
Vanadium	193	190.2		mg/Kg		99	80 - 120

Lab Sample ID: LCSD 490-115970/3-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 116594 — **Prep Batch: 115970**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	20.0	19.02		mg/Kg		95	80 - 120	6	20
Barium	802	848.5		mg/Kg		106	80 - 120	8	20
Cadmium	20.0	20.66		mg/Kg		103	80 - 120	8	20
Chromium	80.2	81.96		mg/Kg		102	80 - 120	7	20
Lead	20.0	21.12		mg/Kg		105	80 - 120	9	20
Selenium	20.0	19.38		mg/Kg		97	80 - 120	7	20
Silver	20.0	20.64		mg/Kg		103	80 - 120	8	20
Vanadium	200	205.4		mg/Kg		103	80 - 120	8	20

QC Sample Results

Client: Environmental Restoration LLC
Project/Site: Springfiled Iron

TestAmerica Job ID: 490-38032-1

Method: 7471A - Mercury (CVAA)

Lab Sample ID: MB 490-116395/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 116677 — **Prep Batch: 116395**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0976		mg/Kg		10/23/13 11:45	10/24/13 08:33	1

Lab Sample ID: LCS 490-116395/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 116677 — **Prep Batch: 116395**

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Mercury			0.168	0.1675		mg/Kg		100	80 - 120		

QC Association Summary

Client: Environmental Restoration LLC
Project/Site: Springfiled Iron

TestAmerica Job ID: 490-38032-1

GC/MS VOA

Prep Batch: 115398

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-38032-1	SIR-SS06-101613	Total/NA	Solid	5035	
490-38032-2	SIR-SS06-101613D	Total/NA	Solid	5035	
490-38032-3	SIR-SS07-101613	Total/NA	Solid	5035	
490-38032-4	SIR-SS08-101613	Total/NA	Solid	5035	
490-38032-5	SIR-SS09-101613	Total/NA	Solid	5035	
490-38032-6	SIR-SS10-101613	Total/NA	Solid	5035	

Analysis Batch: 116331

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-38032-1	SIR-SS06-101613	Total/NA	Solid	8260B	115398
490-38032-2	SIR-SS06-101613D	Total/NA	Solid	8260B	115398
490-38032-3	SIR-SS07-101613	Total/NA	Solid	8260B	115398
490-38032-4	SIR-SS08-101613	Total/NA	Solid	8260B	115398
490-38032-5	SIR-SS09-101613	Total/NA	Solid	8260B	115398
490-38032-6	SIR-SS10-101613	Total/NA	Solid	8260B	115398
LCS 490-116331/3	Lab Control Sample	Total/NA	Solid	8260B	
LCSD 490-116331/4	Lab Control Sample Dup	Total/NA	Solid	8260B	
MB 490-116331/7	Method Blank	Total/NA	Solid	8260B	

GC/MS Semi VOA

Prep Batch: 115953

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-38032-1	SIR-SS06-101613	Total/NA	Solid	3550B	
490-38032-1 MS	SIR-SS06-101613	Total/NA	Solid	3550B	
490-38032-1 MSD	SIR-SS06-101613	Total/NA	Solid	3550B	
490-38032-2	SIR-SS06-101613D	Total/NA	Solid	3550B	
490-38032-3	SIR-SS07-101613	Total/NA	Solid	3550B	
490-38032-4	SIR-SS08-101613	Total/NA	Solid	3550B	
490-38032-5	SIR-SS09-101613	Total/NA	Solid	3550B	
490-38032-6	SIR-SS10-101613	Total/NA	Solid	3550B	
LCS 490-115953/2-A	Lab Control Sample	Total/NA	Solid	3550B	
MB 490-115953/1-A	Method Blank	Total/NA	Solid	3550B	

Analysis Batch: 116125

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-38032-1	SIR-SS06-101613	Total/NA	Solid	8270C	115953
490-38032-1 MS	SIR-SS06-101613	Total/NA	Solid	8270C	115953
490-38032-1 MSD	SIR-SS06-101613	Total/NA	Solid	8270C	115953
490-38032-2	SIR-SS06-101613D	Total/NA	Solid	8270C	115953
490-38032-3	SIR-SS07-101613	Total/NA	Solid	8270C	115953
490-38032-4	SIR-SS08-101613	Total/NA	Solid	8270C	115953
490-38032-5	SIR-SS09-101613	Total/NA	Solid	8270C	115953
490-38032-6	SIR-SS10-101613	Total/NA	Solid	8270C	115953
LCS 490-115953/2-A	Lab Control Sample	Total/NA	Solid	8270C	115953
MB 490-115953/1-A	Method Blank	Total/NA	Solid	8270C	115953

Analysis Batch: 116744

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-38032-3	SIR-SS07-101613	Total/NA	Solid	8270C	115953

QC Association Summary

Client: Environmental Restoration LLC
Project/Site: Springfiled Iron

TestAmerica Job ID: 490-38032-1

Metals

Prep Batch: 115970

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-38032-1	SIR-SS06-101613	Total/NA	Solid	3051A	
490-38032-2	SIR-SS06-101613D	Total/NA	Solid	3051A	
490-38032-3	SIR-SS07-101613	Total/NA	Solid	3051A	
490-38032-4	SIR-SS08-101613	Total/NA	Solid	3051A	
490-38032-5	SIR-SS09-101613	Total/NA	Solid	3051A	
490-38032-6	SIR-SS10-101613	Total/NA	Solid	3051A	
LCS 490-115970/2-A	Lab Control Sample	Total/NA	Solid	3051A	
LCSD 490-115970/3-A	Lab Control Sample Dup	Total/NA	Solid	3051A	
MB 490-115970/1-A	Method Blank	Total/NA	Solid	3051A	

Prep Batch: 116395

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-38032-1	SIR-SS06-101613	Total/NA	Solid	7471A	
490-38032-2	SIR-SS06-101613D	Total/NA	Solid	7471A	
490-38032-3	SIR-SS07-101613	Total/NA	Solid	7471A	
490-38032-4	SIR-SS08-101613	Total/NA	Solid	7471A	
490-38032-5	SIR-SS09-101613	Total/NA	Solid	7471A	
490-38032-6	SIR-SS10-101613	Total/NA	Solid	7471A	
LCS 490-116395/2-A	Lab Control Sample	Total/NA	Solid	7471A	
MB 490-116395/1-A	Method Blank	Total/NA	Solid	7471A	

Analysis Batch: 116594

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-38032-1	SIR-SS06-101613	Total/NA	Solid	6010B	115970
490-38032-2	SIR-SS06-101613D	Total/NA	Solid	6010B	115970
490-38032-3	SIR-SS07-101613	Total/NA	Solid	6010B	115970
490-38032-4	SIR-SS08-101613	Total/NA	Solid	6010B	115970
490-38032-5	SIR-SS09-101613	Total/NA	Solid	6010B	115970
490-38032-6	SIR-SS10-101613	Total/NA	Solid	6010B	115970
LCS 490-115970/2-A	Lab Control Sample	Total/NA	Solid	6010B	115970
LCSD 490-115970/3-A	Lab Control Sample Dup	Total/NA	Solid	6010B	115970
MB 490-115970/1-A	Method Blank	Total/NA	Solid	6010B	115970

Analysis Batch: 116677

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-38032-1	SIR-SS06-101613	Total/NA	Solid	7471A	116395
490-38032-2	SIR-SS06-101613D	Total/NA	Solid	7471A	116395
490-38032-3	SIR-SS07-101613	Total/NA	Solid	7471A	116395
490-38032-4	SIR-SS08-101613	Total/NA	Solid	7471A	116395
490-38032-5	SIR-SS09-101613	Total/NA	Solid	7471A	116395
490-38032-6	SIR-SS10-101613	Total/NA	Solid	7471A	116395
LCS 490-116395/2-A	Lab Control Sample	Total/NA	Solid	7471A	116395
MB 490-116395/1-A	Method Blank	Total/NA	Solid	7471A	116395

General Chemistry

Analysis Batch: 115324

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-38032-1	SIR-SS06-101613	Total/NA	Solid	Moisture	
490-38032-2	SIR-SS06-101613D	Total/NA	Solid	Moisture	

General Chemistry (Continued)

Analysis Batch: 115324 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-38032-3	SIR-SS07-101613	Total/NA	Solid	Moisture	
490-38032-4	SIR-SS08-101613	Total/NA	Solid	Moisture	
490-38032-5	SIR-SS09-101613	Total/NA	Solid	Moisture	
490-38032-6	SIR-SS10-101613	Total/NA	Solid	Moisture	

Lab Chronicle

Client: Environmental Restoration LLC
Project/Site: Springfiled Iron

TestAmerica Job ID: 490-38032-1

Client Sample ID: SIR-SS06-101613

Lab Sample ID: 490-38032-1

Date Collected: 10/16/13 15:00

Matrix: Solid

Date Received: 10/17/13 08:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			115398	10/18/13 12:39	JLP	TAL NSH
Total/NA	Analysis	8260B		1	116331	10/23/13 16:46	SNR	TAL NSH
Total/NA	Prep	3550B			115953	10/22/13 09:04	LP	TAL NSH
Total/NA	Analysis	8270C		1	116125	10/22/13 17:52	BES	TAL NSH
Total/NA	Prep	3051A			115970	10/22/13 09:38	NLI	TAL NSH
Total/NA	Analysis	6010B		1	116594	10/23/13 22:45	KDJ	TAL NSH
Total/NA	Prep	7471A			116395	10/23/13 11:45	LTB	TAL NSH
Total/NA	Analysis	7471A		1	116677	10/24/13 08:57	LTB	TAL NSH
Total/NA	Analysis	Moisture		1	115324	10/18/13 10:16	RRS	TAL NSH

Client Sample ID: SIR-SS06-101613D

Lab Sample ID: 490-38032-2

Date Collected: 10/16/13 15:00

Matrix: Solid

Date Received: 10/17/13 08:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			115398	10/18/13 12:39	JLP	TAL NSH
Total/NA	Analysis	8260B		1	116331	10/23/13 17:16	SNR	TAL NSH
Total/NA	Prep	3550B			115953	10/22/13 09:04	LP	TAL NSH
Total/NA	Analysis	8270C		2	116125	10/22/13 19:10	BES	TAL NSH
Total/NA	Prep	3051A			115970	10/22/13 09:38	NLI	TAL NSH
Total/NA	Analysis	6010B		1	116594	10/23/13 22:50	KDJ	TAL NSH
Total/NA	Prep	7471A			116395	10/23/13 11:45	LTB	TAL NSH
Total/NA	Analysis	7471A		1	116677	10/24/13 08:59	LTB	TAL NSH
Total/NA	Analysis	Moisture		1	115324	10/18/13 10:16	RRS	TAL NSH

Client Sample ID: SIR-SS07-101613

Lab Sample ID: 490-38032-3

Date Collected: 10/16/13 15:05

Matrix: Solid

Date Received: 10/17/13 08:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			115398	10/18/13 12:39	JLP	TAL NSH
Total/NA	Analysis	8260B		1	116331	10/23/13 17:46	SNR	TAL NSH
Total/NA	Analysis	8270C		2	116125	10/22/13 19:36	BES	TAL NSH
Total/NA	Prep	3550B			115953	10/22/13 09:04	LP	TAL NSH
Total/NA	Analysis	8270C		5	116744	10/24/13 15:57	BES	TAL NSH
Total/NA	Prep	3051A			115970	10/22/13 09:38	NLI	TAL NSH
Total/NA	Analysis	6010B		1	116594	10/23/13 22:55	KDJ	TAL NSH
Total/NA	Prep	7471A			116395	10/23/13 11:45	LTB	TAL NSH
Total/NA	Analysis	7471A		1	116677	10/24/13 09:01	LTB	TAL NSH
Total/NA	Analysis	Moisture		1	115324	10/18/13 10:16	RRS	TAL NSH

Lab Chronicle

Client: Environmental Restoration LLC
Project/Site: Springfiled Iron

TestAmerica Job ID: 490-38032-1

Client Sample ID: SIR-SS08-101613 — Lab Sample ID: 490-38032-4

Date Collected: 10/16/13 15:10 — **Matrix: Solid**
Date Received: 10/17/13 08:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			115398	10/18/13 12:39	JLP	TAL NSH
Total/NA	Analysis	8260B		1	116331	10/23/13 18:17	SNR	TAL NSH
Total/NA	Prep	3550B			115953	10/22/13 09:04	LP	TAL NSH
Total/NA	Analysis	8270C		1	116125	10/22/13 20:01	BES	TAL NSH
Total/NA	Prep	3051A			115970	10/22/13 09:38	NLI	TAL NSH
Total/NA	Analysis	6010B		1	116594	10/23/13 23:00	KDJ	TAL NSH
Total/NA	Prep	7471A			116395	10/23/13 11:45	LTB	TAL NSH
Total/NA	Analysis	7471A		1	116677	10/24/13 09:10	LTB	TAL NSH
Total/NA	Analysis	Moisture		1	115324	10/18/13 10:16	RRS	TAL NSH

Client Sample ID: SIR-SS09-101613 — Lab Sample ID: 490-38032-5

Date Collected: 10/16/13 15:15 — **Matrix: Solid**
Date Received: 10/17/13 08:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			115398	10/18/13 12:39	JLP	TAL NSH
Total/NA	Analysis	8260B		1	116331	10/23/13 18:47	SNR	TAL NSH
Total/NA	Prep	3550B			115953	10/22/13 09:04	LP	TAL NSH
Total/NA	Analysis	8270C		2	116125	10/22/13 20:28	BES	TAL NSH
Total/NA	Prep	3051A			115970	10/22/13 09:38	NLI	TAL NSH
Total/NA	Analysis	6010B		1	116594	10/23/13 23:05	KDJ	TAL NSH
Total/NA	Prep	7471A			116395	10/23/13 11:45	LTB	TAL NSH
Total/NA	Analysis	7471A		1	116677	10/24/13 09:12	LTB	TAL NSH
Total/NA	Analysis	Moisture		1	115324	10/18/13 10:16	RRS	TAL NSH

Client Sample ID: SIR-SS10-101613 — Lab Sample ID: 490-38032-6

Date Collected: 10/16/13 15:20 — **Matrix: Solid**
Date Received: 10/17/13 08:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			115398	10/18/13 12:39	JLP	TAL NSH
Total/NA	Analysis	8260B		1	116331	10/23/13 19:18	SNR	TAL NSH
Total/NA	Prep	3550B			115953	10/22/13 09:04	LP	TAL NSH
Total/NA	Analysis	8270C		1	116125	10/22/13 20:54	BES	TAL NSH
Total/NA	Prep	3051A			115970	10/22/13 09:38	NLI	TAL NSH
Total/NA	Analysis	6010B		10	116594	10/23/13 23:26	KDJ	TAL NSH
Total/NA	Prep	7471A			116395	10/23/13 11:45	LTB	TAL NSH
Total/NA	Analysis	7471A		1	116677	10/24/13 09:14	LTB	TAL NSH
Total/NA	Analysis	Moisture		1	115324	10/18/13 10:16	RRS	TAL NSH

Laboratory References:

TAL NSH = TestAmerica Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177

Method Summary

Client: Environmental Restoration LLC
Project/Site: Springfiled Iron

TestAmerica Job ID: 490-38032-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL NSH
8270C	Semivolatile Organic Compounds (GC/MS)	SW846	TAL NSH
6010B	Metals (ICP)	SW846	TAL NSH
7471A	Mercury (CVAA)	SW846	TAL NSH
Moisture	Percent Moisture	EPA	TAL NSH

Protocol References:

EPA = US Environmental Protection Agency

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

Laboratory References:

TAL NSH = TestAmerica Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177

Certification Summary

Client: Environmental Restoration LLC
Project/Site: Springfiled Iron

TestAmerica Job ID: 490-38032-1

Laboratory: TestAmerica Nashville

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
A2LA	ISO/IEC 17025		0453.07	12-31-13
Alaska (UST)	State Program	10	UST-087	07-24-14
Arizona	State Program	9	AZ0473	05-05-14
Arizona	State Program	9	AZ0473	05-05-14 *
Arkansas DEQ	State Program	6	88-0737	04-25-14
California	NELAP	9	1168CA	10-31-13
Canadian Assoc Lab Accred (CALA)	Canada		3744	03-08-14
Connecticut	State Program	1	PH-0220	12-31-13
Florida	NELAP	4	E87358	06-30-14
Illinois	NELAP	5	200010	12-09-13
Iowa	State Program	7	131	05-01-14
Kansas	NELAP	7	E-10229	10-31-13
Kentucky (UST)	State Program	4	19	06-30-14
Louisiana	NELAP	6	30613	06-30-14
Maryland	State Program	3	316	03-31-14
Massachusetts	State Program	1	M-TN032	06-30-14
Minnesota	NELAP	5	047-999-345	12-31-13
Mississippi	State Program	4	N/A	06-30-14
Montana (UST)	State Program	8	NA	01-01-20
Nevada	State Program	9	TN00032	07-31-14
New Hampshire	NELAP	1	2963	10-10-14
New Jersey	NELAP	2	TN965	06-30-14
New York	NELAP	2	11342	04-01-14
North Carolina DENR	State Program	4	387	12-31-13
North Dakota	State Program	8	R-146	06-30-14
Ohio VAP	State Program	5	CL0033	10-16-15
Oklahoma	State Program	6	9412	08-31-14
Oregon	NELAP	10	TN200001	04-29-14
Pennsylvania	NELAP	3	68-00585	06-30-14
Rhode Island	State Program	1	LAO00268	12-30-13
South Carolina	State Program	4	84009 (001)	02-28-14
Tennessee	State Program	4	2008	02-23-14
Texas	NELAP	6	T104704077-09-TX	08-31-14
USDA	Federal		S-48469	11-02-13
Utah	NELAP	8	TN00032	07-31-14
Virginia	NELAP	3	460152	06-14-14
Washington	State Program	10	C789	07-19-14
West Virginia DEP	State Program	3	219	02-28-14
Wisconsin	State Program	5	998020430	08-31-14
Wyoming (UST)	A2LA	8	453.07	12-31-13

* Expired certification is currently pending renewal and is considered valid.

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
Nashville, TN

COOLER RECEIPT F

490-38032 Chain of Custody

Cooler Received/Opened On: 10/17/2013 @0820

1. Tracking # 8188 (last 4 digits, FedEx)

Courier: Fed-Ex IR Gun ID: 14740456

2. Temperature of rep. sample or temp blank when opened: 5.9 *Degrees Celsius*

3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES NO NA

4. Were custody seals on outside of cooler? YES..NO...NA

If yes, how many and where: 2 Front/Back

5. Were the seals intact, signed, and dated correctly? YES..NO...NA

6. Were custody papers inside cooler? YES..NO..NA 10-17-13

I certify that I opened the cooler and answered questions 1-6 (intial)

7. Were custody seals on containers: YES NO and Intact YES...NO...NA

Were these signed and dated correctly? YES...NO...NA

8. Packing mat'l used? Bubblewrap Plastic bag Peanuts Vermiculite Foam Insert Paper Other None

9. Cooling process: Ice Ice-pack Ice (direct contact) Dry ice Other None

10. Did all containers arrive in good condition (unbroken)? YES..NO...NA

11. Were all container labels complete (#, date, signed, pres., etc)? YES..NO...NA

12. Did all container labels and tags agree with custody papers? YES..NO...NA

13a. Were VOA vials received? YES..NO...NA

b. Was there any observable headspace present in any VOA vial? YES..NO..NA – Soils

14. Was there a Trip Blank in this cooler? YES...NO..NA If multiple coolers, sequence # NA

I certify that I unloaded the cooler and answered questions 7-14 (intial)

15a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? YES..NO..NA

b. Did the bottle labels indicate that the correct preservatives were used YES..NO...NA

16. Was residual chlorine present? YES...NO..NA

I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (intial)

17. Were custody papers properly filled out (ink, signed, etc)? YES..NO...NA

18. Did you sign the custody papers in the appropriate place? YES..NO...NA

19. Were correct containers used for the analysis requested? YES..NO...NA

20. Was sufficient amount of sample sent in each container? YES..NO...NA

I certify that I entered this project into LIMS and answered questions 17-20 (intial)

I certify that I attached a label with the unique LIMS number to each container (intial)

21. Were there Non-Conformance issues at login? YES..NO Was a NCM generated? YES..NO..#

BIS = Broken in shipment
Cooler Receipt Form.doc

LF-1
End of Form

Revised 11/28/12

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
Phone (314) 298-8566 Fax (314) 298-8757

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

10/24/2013

Client Information	Sampler: JEFF BRYNIARSKI	Lab PM: Fitzwater, Ryan	Carrier Tracking No(s):	COC No: 490-15642-6637.1
Client Contact: Toby Viehweg	Phone: 708-284-2490	E-Mail: ryan.fitzwater@testamericainc.com		Page: JB ~~Page 1 of 2~~ 1 of 1
Company: Environmental Restoration LLC				Job #:
Address: 16660 Canal St.	Due Date Requested:			
City: South Holland	TAT Requested (days): STANDARD (5-DAY)			
State, Zip: IL, 60473				
Phone: 312-446-6325(Tel)	PO #: Purchase Order not required			
Email: T.Viehweg@erllc.com	WO #:			
Project Name: Springfield Iron - Soils I	Project #: 49004794			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA
M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2SO3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)

Other:

	Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8010B, 7471A, 8270G, Moisture — JB	PAH	TOTAL BENZENE	RCRA (8) METALS + VANADIUM	Total Number of containers	Special Instructions/Note:
				Preservation Code:				N					
1	SIR-SS06-101613	10/16/13	15:00	C	Solid	N	N		X	X	X		
2	SIR-SS06-101613D		15:00	C	Solid	N	N		X	X	X		
3	SIR-SS07-101613		15:05	C	Solid	N	N		X	X	X		
4	SIR-SS08-101613		15:10	C	Solid	N	N		X	X	X		
5	SIR-SS09-101613		15:15	C	Solid	N	N		X	X	X		
6	SIR-SS10-101613		15:20	C	Solid	N	N		X	X	X		
	NO ADDITIONAL SAMPLES				Solid								
					Solid								
					Solid								
					Solid								
					Solid								

Loc: 490
38032

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☒ Archive For 1 Months

Deliverable Requested: I, (II), III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:			
Relinquished by:	Date/Time: 10/16/13 16:00	Company: WESTON SOLUTIONS	Received by: 5.9	Date/Time: 10-17-13 08:20	Company: TAN	
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company	
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company	

Custody Seals Intact: Δ Yes Δ No
Custody Seal No.:
Cooler Temperature(s) °C and Other Remarks:

Login Sample Receipt Checklist

Client: Environmental Restoration LLC

Job Number: 490-38032-1

Login Number: 38032

List Source: TestAmerica Nashville

List Number: 1

Creator: Ford, Easton

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are 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 containers received 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.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Nashville
2960 Foster Creighton Drive
Nashville, TN 37204
Tel: (615)726-0177

TestAmerica Job ID: 490-38575-1
Client Project/Site: Springfield Iron - Soils II

For:
Environmental Restoration LLC
1666 Fabick Dr.
Fenton, Missouri 63026

Attn: Toby Viehweg

Authorized for release by:
10/29/2013 3:45:03 PM

Ryan Fitzwater, Senior Project Manager
(615)726-0177
ryan.fitzwater@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

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The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Sample Summary

Client: Environmental Restoration LLC
Project/Site: Springfield Iron - Soils II

TestAmerica Job ID: 490-38575-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
490-38575-1	SIR-SS11-102313	Solid	10/23/13 13:10	10/24/13 08:40
490-38575-2	SIR-SS12-102313	Solid	10/23/13 13:20	10/24/13 08:40
490-38575-3	SIR-SS13-102313	Solid	10/23/13 13:30	10/24/13 08:40

Job ID: 490-38575-1

Laboratory: TestAmerica Nashville

Narrative

Job Narrative
490-38575-1

Comments
No additional comments.

Receipt
The samples were received on 10/24/2013 8:40 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.7º C.

GC/MS VOA
No analytical or quality issues were noted.

GC/MS Semi VOA
Method(s) 8270C: The matrix spike / matrix spike duplicate (MS/MSD) percent recoveries and %RPD for batch 117068 were outside control limits. This is attributed to non-homogeneity of the sample matrix and matrix interferences.

No other analytical or quality issues were noted.

Metals
Method(s) 6010B, 6010C: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for batch 117432 were outside control limits for Arsenic and Lead. The associated laboratory control sample (LCS) recovery met acceptance criteria.

Method(s) 6010B: The following sample(s) was diluted due to the abundance of analytes: FeSIR-SS11-102313 (490-38575-1). Elevated reporting limits (RLs) are provided.

Method(s) 7471A, 7471B: The matrix spike duplicate (MSD) recoveries for batch 117673 was outside control limits. The associated laboratory control sample (LCS) recovery met acceptance criteria.

No other analytical or quality issues were noted.

Organic Prep
No analytical or quality issues were noted.

VOA Prep
No analytical or quality issues were noted.

Qualifiers

GC/MS Semi VOA

Qualifier	Qualifier Description
E	Result exceeded calibration range.
F	MS/MSD Recovery and/or RPD exceeds the control limits

Metals

Qualifier	Qualifier Description
F	MS/MSD Recovery and/or RPD exceeds the control limits

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Client Sample Results

Client: Environmental Restoration LLC
Project/Site: Springfield Iron - Soils II

TestAmerica Job ID: 490-38575-1

Client Sample ID: SIR-SS11-102313

Lab Sample ID: 490-38575-1

Date Collected: 10/23/13 13:10
Date Received: 10/24/13 08:40

Matrix: Solid

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.00258		mg/Kg		10/25/13 09:20	10/25/13 21:03	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*93*		*70 - 130*	*10/25/13 09:20*	*10/25/13 21:03*	*1*
1,2-Dichloroethane-d4 (Surr)	*96*		*70 - 130*	*10/25/13 09:20*	*10/25/13 21:03*	*1*
Toluene-d8 (Surr)	*108*		*70 - 130*	*10/25/13 09:20*	*10/25/13 21:03*	*1*
Dibromofluoromethane (Surr)	*95*		*70 - 130*	*10/25/13 09:20*	*10/25/13 21:03*	*1*

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	**0.587**		0.0666		mg/Kg		10/25/13 12:03	10/26/13 18:58	1
Acenaphthylene	**0.971**		0.0666		mg/Kg		10/25/13 12:03	10/26/13 18:58	1
Anthracene	**1.14**		0.0666		mg/Kg		10/25/13 12:03	10/26/13 18:58	1
Benzo[a]anthracene	**0.852**		0.0666		mg/Kg		10/25/13 12:03	10/26/13 18:58	1
Benzo[a]pyrene	**0.547**		0.0666		mg/Kg		10/25/13 12:03	10/26/13 18:58	1
Benzo[b]fluoranthene	**0.721**		0.0666		mg/Kg		10/25/13 12:03	10/26/13 18:58	1
Benzo[g,h,i]perylene	**0.305**		0.0666		mg/Kg		10/25/13 12:03	10/26/13 18:58	1
Benzo[k]fluoranthene	**0.278**		0.0666		mg/Kg		10/25/13 12:03	10/26/13 18:58	1
Chrysene	**1.04**		0.0666		mg/Kg		10/25/13 12:03	10/26/13 18:58	1
Dibenz(a,h)anthracene	**0.296**		0.0666		mg/Kg		10/25/13 12:03	10/26/13 18:58	1
Fluoranthene	**1.83**		0.0666		mg/Kg		10/25/13 12:03	10/26/13 18:58	1
Fluorene	**0.972**		0.0666		mg/Kg		10/25/13 12:03	10/26/13 18:58	1
Indeno[1,2,3-cd]pyrene	**0.298**		0.0666		mg/Kg		10/25/13 12:03	10/26/13 18:58	1
Naphthalene	**1.07**		0.0666		mg/Kg		10/25/13 12:03	10/26/13 18:58	1
Phenanthrene	**3.19**		0.0666		mg/Kg		10/25/13 12:03	10/26/13 18:58	1
Pyrene	**1.56**		0.0666		mg/Kg		10/25/13 12:03	10/26/13 18:58	1
1-Methylnaphthalene	**0.738**		0.0666		mg/Kg		10/25/13 12:03	10/26/13 18:58	1
2-Methylnaphthalene	**0.812**		0.0666		mg/Kg		10/25/13 12:03	10/26/13 18:58	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*79*		*27 - 120*	*10/25/13 12:03*	*10/26/13 18:58*	*1*
Terphenyl-d14 (Surr)	*91*		*13 - 120*	*10/25/13 12:03*	*10/26/13 18:58*	*1*
2-Fluorobiphenyl (Surr)	*83*		*29 - 120*	*10/25/13 12:03*	*10/26/13 18:58*	*1*

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		19.3		mg/Kg		10/28/13 09:34	10/29/13 10:25	10
Barium	**53.5**		19.3		mg/Kg		10/28/13 09:34	10/29/13 10:25	10
Cadmium	ND		9.65		mg/Kg		10/28/13 09:34	10/29/13 10:25	10
Chromium	**13.9**		9.65		mg/Kg		10/28/13 09:34	10/29/13 10:25	10
Lead	**34.4**		9.65		mg/Kg		10/28/13 09:34	10/29/13 10:25	10
Selenium	ND		19.3		mg/Kg		10/28/13 09:34	10/29/13 10:25	10
Silver	ND		9.65		mg/Kg		10/28/13 09:34	10/29/13 10:25	10
Vanadium	ND		96.5		mg/Kg		10/28/13 09:34	10/29/13 10:25	10

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.101		mg/Kg		10/29/13 09:35	10/29/13 12:17	1

Client Sample Results

Client: Environmental Restoration LLC
Project/Site: Springfield Iron - Soils II

TestAmerica Job ID: 490-38575-1

Client Sample ID: SIR-SS11-102313

Lab Sample ID: 490-38575-1

Date Collected: 10/23/13 13:10

Matrix: Solid

Date Received: 10/24/13 08:40

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	23		0.10		%			10/25/13 10:04	1
Percent Solids	77		0.10		%			10/25/13 10:04	1

Client Sample Results

Client: Environmental Restoration LLC
Project/Site: Springfield Iron - Soils II

TestAmerica Job ID: 490-38575-1

Client Sample ID: SIR-SS12-102313

Lab Sample ID: 490-38575-2

Date Collected: 10/23/13 13:20
Matrix: Solid
Date Received: 10/24/13 08:40

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.00260		mg/Kg		10/25/13 09:20	10/25/13 21:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*110*		*70 - 130*	*10/25/13 09:20*	*10/25/13 21:33*	*1*
1,2-Dichloroethane-d4 (Surr)	*97*		*70 - 130*	*10/25/13 09:20*	*10/25/13 21:33*	*1*
Toluene-d8 (Surr)	*106*		*70 - 130*	*10/25/13 09:20*	*10/25/13 21:33*	*1*
Dibromofluoromethane (Surr)	*94*		*70 - 130*	*10/25/13 09:20*	*10/25/13 21:33*	*1*

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	**0.122**		0.0657		mg/Kg		10/25/13 12:03	10/26/13 19:24	1
Acenaphthylene	**0.481**		0.0657		mg/Kg		10/25/13 12:03	10/26/13 19:24	1
Anthracene	**0.623**		0.0657		mg/Kg		10/25/13 12:03	10/26/13 19:24	1
Benzo[a]anthracene	**0.455**		0.0657		mg/Kg		10/25/13 12:03	10/26/13 19:24	1
Benzo[a]pyrene	**0.256**		0.0657		mg/Kg		10/25/13 12:03	10/26/13 19:24	1
Benzo[b]fluoranthene	**0.312**		0.0657		mg/Kg		10/25/13 12:03	10/26/13 19:24	1
Benzo[g,h,i]perylene	**0.126**		0.0657		mg/Kg		10/25/13 12:03	10/26/13 19:24	1
Benzo[k]fluoranthene	**0.171**		0.0657		mg/Kg		10/25/13 12:03	10/26/13 19:24	1
Chrysene	**0.491**		0.0657		mg/Kg		10/25/13 12:03	10/26/13 19:24	1
Dibenz(a,h)anthracene	ND		0.0657		mg/Kg		10/25/13 12:03	10/26/13 19:24	1
Fluoranthene	**1.04**		0.0657		mg/Kg		10/25/13 12:03	10/26/13 19:24	1
Fluorene	**0.504**		0.0657		mg/Kg		10/25/13 12:03	10/26/13 19:24	1
Indeno[1,2,3-cd]pyrene	**0.141**		0.0657		mg/Kg		10/25/13 12:03	10/26/13 19:24	1
Naphthalene	**0.558**		0.0657		mg/Kg		10/25/13 12:03	10/26/13 19:24	1
Phenanthrene	**1.74**		0.0657		mg/Kg		10/25/13 12:03	10/26/13 19:24	1
Pyrene	**0.894**		0.0657		mg/Kg		10/25/13 12:03	10/26/13 19:24	1
1-Methylnaphthalene	**0.365**		0.0657		mg/Kg		10/25/13 12:03	10/26/13 19:24	1
2-Methylnaphthalene	**0.372**		0.0657		mg/Kg		10/25/13 12:03	10/26/13 19:24	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*59*		*27 - 120*	*10/25/13 12:03*	*10/26/13 19:24*	*1*
Terphenyl-d14 (Surr)	*73*		*13 - 120*	*10/25/13 12:03*	*10/26/13 19:24*	*1*
2-Fluorobiphenyl (Surr)	*61*		*29 - 120*	*10/25/13 12:03*	*10/26/13 19:24*	*1*

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**7.33**		1.96		mg/Kg		10/28/13 09:34	10/28/13 23:21	1
Barium	**108**		1.96		mg/Kg		10/28/13 09:34	10/28/13 23:21	1
Cadmium	ND		0.982		mg/Kg		10/28/13 09:34	10/28/13 23:21	1
Chromium	**19.1**		0.982		mg/Kg		10/28/13 09:34	10/28/13 23:21	1
Lead	**22.6**		0.982		mg/Kg		10/28/13 09:34	10/28/13 23:21	1
Selenium	ND		1.96		mg/Kg		10/28/13 09:34	10/28/13 23:21	1
Silver	ND		0.982		mg/Kg		10/28/13 09:34	10/28/13 23:21	1
Vanadium	**33.9**		9.82		mg/Kg		10/28/13 09:34	10/28/13 23:21	1

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0988		mg/Kg		10/29/13 09:35	10/29/13 12:19	1

Client Sample Results

Client: Environmental Restoration LLC
Project/Site: Springfield Iron - Soils II

TestAmerica Job ID: 490-38575-1

Client Sample ID: SIR-SS12-102313

Lab Sample ID: 490-38575-2

Date Collected: 10/23/13 13:20

Matrix: Solid

Date Received: 10/24/13 08:40

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	22		0.10		%			10/25/13 10:04	1
Percent Solids	78		0.10		%			10/25/13 10:04	1

Client Sample Results

Client: Environmental Restoration LLC
Project/Site: Springfield Iron - Soils II

TestAmerica Job ID: 490-38575-1

Client Sample ID: SIR-SS13-102313

Lab Sample ID: 490-38575-3

Date Collected: 10/23/13 13:30

Matrix: Solid

Date Received: 10/24/13 08:40

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.00190		mg/Kg		10/25/13 09:20	10/25/13 22:03	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*99*		*70 - 130*	*10/25/13 09:20*	*10/25/13 22:03*	*1*
1,2-Dichloroethane-d4 (Surr)	*101*		*70 - 130*	*10/25/13 09:20*	*10/25/13 22:03*	*1*
Toluene-d8 (Surr)	*106*		*70 - 130*	*10/25/13 09:20*	*10/25/13 22:03*	*1*
Dibromofluoromethane (Surr)	*95*		*70 - 130*	*10/25/13 09:20*	*10/25/13 22:03*	*1*

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	**0.391**		0.0669		mg/Kg		10/25/13 12:03	10/26/13 20:42	1
Acenaphthylene	**2.26**		0.0669		mg/Kg		10/25/13 12:03	10/26/13 20:42	1
Anthracene	**1.54**		0.0669		mg/Kg		10/25/13 12:03	10/26/13 20:42	1
Benzo[a]anthracene	**1.24**		0.0669		mg/Kg		10/25/13 12:03	10/26/13 20:42	1
Benzo[a]pyrene	**0.761**		0.0669		mg/Kg		10/25/13 12:03	10/26/13 20:42	1
Benzo[b]fluoranthene	**0.907**		0.0669		mg/Kg		10/25/13 12:03	10/26/13 20:42	1
Benzo[g,h,i]perylene	**0.423**		0.0669		mg/Kg		10/25/13 12:03	10/26/13 20:42	1
Benzo[k]fluoranthene	**0.433**		0.0669		mg/Kg		10/25/13 12:03	10/26/13 20:42	1
Chrysene	**1.54**		0.0669		mg/Kg		10/25/13 12:03	10/26/13 20:42	1
Dibenz(a,h)anthracene	**0.131**		0.0669		mg/Kg		10/25/13 12:03	10/26/13 20:42	1
Fluoranthene	**2.68**		0.0669		mg/Kg		10/25/13 12:03	10/26/13 20:42	1
Fluorene	**1.82**		0.0669		mg/Kg		10/25/13 12:03	10/26/13 20:42	1
Indeno[1,2,3-cd]pyrene	**0.367**		0.0669		mg/Kg		10/25/13 12:03	10/26/13 20:42	1
Naphthalene	**1.54**		0.0669		mg/Kg		10/25/13 12:03	10/26/13 20:42	1
Phenanthrene	**6.67**		0.335		mg/Kg		10/25/13 12:03	10/28/13 19:33	5
Pyrene	**2.36**		0.0669		mg/Kg		10/25/13 12:03	10/26/13 20:42	1
1-Methylnaphthalene	**1.38**		0.0669		mg/Kg		10/25/13 12:03	10/26/13 20:42	1
2-Methylnaphthalene	**1.50**		0.0669		mg/Kg		10/25/13 12:03	10/26/13 20:42	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*60*		*27 - 120*	*10/25/13 12:03*	*10/26/13 20:42*	*1*
Terphenyl-d14 (Surr)	*67*		*13 - 120*	*10/25/13 12:03*	*10/26/13 20:42*	*1*
2-Fluorobiphenyl (Surr)	*65*		*29 - 120*	*10/25/13 12:03*	*10/26/13 20:42*	*1*

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**21.0**		1.98		mg/Kg		10/28/13 09:34	10/28/13 23:50	1
Barium	**95.8**		1.98		mg/Kg		10/28/13 09:34	10/28/13 23:50	1
Cadmium	**1.23**		0.992		mg/Kg		10/28/13 09:34	10/28/13 23:50	1
Chromium	**13.3**		0.992		mg/Kg		10/28/13 09:34	10/28/13 23:50	1
Lead	**49.3**		0.992		mg/Kg		10/28/13 09:34	10/28/13 23:50	1
Selenium	ND		1.98		mg/Kg		10/28/13 09:34	10/28/13 23:50	1
Silver	ND		0.992		mg/Kg		10/28/13 09:34	10/28/13 23:50	1
Vanadium	**35.7**		9.92		mg/Kg		10/28/13 09:34	10/28/13 23:50	1

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0979		mg/Kg		10/29/13 09:35	10/29/13 12:29	1

Client Sample Results

Client: Environmental Restoration LLC
Project/Site: Springfield Iron - Soils II

TestAmerica Job ID: 490-38575-1

Client Sample ID: SIR-SS13-102313

Lab Sample ID: 490-38575-3

Date Collected: 10/23/13 13:30

Matrix: Solid

Date Received: 10/24/13 08:40

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	20		0.10		%			10/25/13 10:04	1
Percent Solids	80		0.10		%			10/25/13 10:04	1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: 490-38575-2 MS — **Client Sample ID: SIR-SS12-102313**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 116990 — **Prep Batch: 116971**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	ND		0.0407	0.02517		mg/Kg		62	31 - 143

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*88*		*70 - 130*
1,2-Dichloroethane-d4 (Surr)	*96*		*70 - 130*
Toluene-d8 (Surr)	*102*		*70 - 130*
Dibromofluoromethane (Surr)	*99*		*70 - 130*

Lab Sample ID: 490-38575-2 MSD — **Client Sample ID: SIR-SS12-102313**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 116990 — **Prep Batch: 116971**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	ND		0.0407	0.02687		mg/Kg		66	31 - 143	7	50

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*93*		*70 - 130*
1,2-Dichloroethane-d4 (Surr)	*90*		*70 - 130*
Toluene-d8 (Surr)	*106*		*70 - 130*
Dibromofluoromethane (Surr)	*97*		*70 - 130*

Lab Sample ID: MB 490-116990/11 — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 116990

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.00200		mg/Kg			10/25/13 17:32	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*108*		*70 - 130*		*10/25/13 17:32*	*1*
1,2-Dichloroethane-d4 (Surr)	*100*		*70 - 130*		*10/25/13 17:32*	*1*
Toluene-d8 (Surr)	*105*		*70 - 130*		*10/25/13 17:32*	*1*
Dibromofluoromethane (Surr)	*95*		*70 - 130*		*10/25/13 17:32*	*1*

Lab Sample ID: LCS 490-116990/7 — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 116990

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	0.0500	0.05006		mg/Kg		100	75 - 127

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*101*		*70 - 130*
1,2-Dichloroethane-d4 (Surr)	*93*		*70 - 130*
Toluene-d8 (Surr)	*103*		*70 - 130*
Dibromofluoromethane (Surr)	*96*		*70 - 130*

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 490-116990/8
Matrix: Solid
Analysis Batch: 116990

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	0.0500	0.03951		mg/Kg		79	75 - 127	24	50

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*105*		*70 - 130*
1,2-Dichloroethane-d4 (Surr)	*94*		*70 - 130*
Toluene-d8 (Surr)	*103*		*70 - 130*
Dibromofluoromethane (Surr)	*97*		*70 - 130*

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 490-117068/1-A
Matrix: Solid
Analysis Batch: 117205

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 117068

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		0.0670		mg/Kg		10/25/13 12:03	10/26/13 18:32	1
Acenaphthylene	ND		0.0670		mg/Kg		10/25/13 12:03	10/26/13 18:32	1
Anthracene	ND		0.0670		mg/Kg		10/25/13 12:03	10/26/13 18:32	1
Benzo[a]anthracene	ND		0.0670		mg/Kg		10/25/13 12:03	10/26/13 18:32	1
Benzo[a]pyrene	ND		0.0670		mg/Kg		10/25/13 12:03	10/26/13 18:32	1
Benzo[b]fluoranthene	ND		0.0670		mg/Kg		10/25/13 12:03	10/26/13 18:32	1
Benzo[g,h,i]perylene	ND		0.0670		mg/Kg		10/25/13 12:03	10/26/13 18:32	1
Benzo[k]fluoranthene	ND		0.0670		mg/Kg		10/25/13 12:03	10/26/13 18:32	1
Chrysene	ND		0.0670		mg/Kg		10/25/13 12:03	10/26/13 18:32	1
Dibenz(a,h)anthracene	ND		0.0670		mg/Kg		10/25/13 12:03	10/26/13 18:32	1
Fluoranthene	ND		0.0670		mg/Kg		10/25/13 12:03	10/26/13 18:32	1
Fluorene	ND		0.0670		mg/Kg		10/25/13 12:03	10/26/13 18:32	1
Indeno[1,2,3-cd]pyrene	ND		0.0670		mg/Kg		10/25/13 12:03	10/26/13 18:32	1
Naphthalene	ND		0.0670		mg/Kg		10/25/13 12:03	10/26/13 18:32	1
Phenanthrene	ND		0.0670		mg/Kg		10/25/13 12:03	10/26/13 18:32	1
Pyrene	ND		0.0670		mg/Kg		10/25/13 12:03	10/26/13 18:32	1
1-Methylnaphthalene	ND		0.0670		mg/Kg		10/25/13 12:03	10/26/13 18:32	1
2-Methylnaphthalene	ND		0.0670		mg/Kg		10/25/13 12:03	10/26/13 18:32	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*76*		*27 - 120*	*10/25/13 12:03*	*10/26/13 18:32*	*1*
Terphenyl-d14 (Surr)	*86*		*13 - 120*	*10/25/13 12:03*	*10/26/13 18:32*	*1*
2-Fluorobiphenyl (Surr)	*87*		*29 - 120*	*10/25/13 12:03*	*10/26/13 18:32*	*1*

Lab Sample ID: LCS 490-117068/2-A
Matrix: Solid
Analysis Batch: 117205

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 117068

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acenaphthene	1.67	1.380		mg/Kg		83	36 - 120
Acenaphthylene	1.67	1.665		mg/Kg		100	38 - 120
Anthracene	1.67	1.425		mg/Kg		85	46 - 124

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 490-117068/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 117205 — **Prep Batch: 117068**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzo[a]anthracene	1.67	1.416		mg/Kg		85	45 - 120
Benzo[a]pyrene	1.67	1.335		mg/Kg		80	45 - 120
Benzo[b]fluoranthene	1.67	1.304		mg/Kg		78	42 - 120
Benzo[g,h,i]perylene	1.67	1.448		mg/Kg		87	38 - 120
Benzo[k]fluoranthene	1.67	1.421		mg/Kg		85	42 - 120
Chrysene	1.67	1.546		mg/Kg		93	43 - 120
Dibenz(a,h)anthracene	1.67	1.491		mg/Kg		89	32 - 128
Fluoranthene	1.67	1.483		mg/Kg		89	46 - 120
Fluorene	1.67	1.635		mg/Kg		98	42 - 120
Indeno[1,2,3-cd]pyrene	1.67	1.505		mg/Kg		90	41 - 121
Naphthalene	1.67	1.179		mg/Kg		71	32 - 120
Phenanthrene	1.67	1.557		mg/Kg		93	45 - 120
Pyrene	1.67	1.382		mg/Kg		83	43 - 120
1-Methylnaphthalene	1.67	1.487		mg/Kg		89	32 - 120
2-Methylnaphthalene	1.67	1.454		mg/Kg		87	28 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Nitrobenzene-d5 (Surr)	*81*		*27 - 120*
Terphenyl-d14 (Surr)	*89*		*13 - 120*
2-Fluorobiphenyl (Surr)	*87*		*29 - 120*

Lab Sample ID: 490-38575-2 MS — **Client Sample ID: SIR-SS12-102313**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 117205 — **Prep Batch: 117068**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Acenaphthene	0.122		1.66	1.535		mg/Kg		85	19 - 120
Acenaphthylene	0.481		1.66	1.604		mg/Kg		68	25 - 120
Anthracene	0.623		1.66	1.917		mg/Kg		78	28 - 125
Benzo[a]anthracene	0.455		1.66	1.747		mg/Kg		78	23 - 120
Benzo[a]pyrene	0.256		1.66	1.455		mg/Kg		72	15 - 128
Benzo[b]fluoranthene	0.312		1.66	1.546		mg/Kg		74	12 - 133
Benzo[g,h,i]perylene	0.126		1.66	1.571		mg/Kg		87	22 - 120
Benzo[k]fluoranthene	0.171		1.66	1.376		mg/Kg		73	28 - 120
Chrysene	0.491		1.66	1.874		mg/Kg		83	20 - 120
Dibenz(a,h)anthracene	ND		1.66	1.535		mg/Kg		92	12 - 128
Fluoranthene	1.04		1.66	2.093		mg/Kg		63	10 - 143
Fluorene	0.504		1.66	1.559		mg/Kg		64	20 - 120
Indeno[1,2,3-cd]pyrene	0.141		1.66	1.563		mg/Kg		86	22 - 121
Naphthalene	0.558		1.66	1.553		mg/Kg		60	10 - 120
Phenanthrene	1.74		1.66	2.892		mg/Kg		69	21 - 122
Pyrene	0.894		1.66	1.968		mg/Kg		65	20 - 123
1-Methylnaphthalene	0.365		1.66	1.495		mg/Kg		68	10 - 120
2-Methylnaphthalene	0.372		1.66	1.619		mg/Kg		75	13 - 120

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Nitrobenzene-d5 (Surr)	*66*		*27 - 120*

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 490-38575-2 MS
Matrix: Solid
Analysis Batch: 117205

Client Sample ID: SIR-SS12-102313
Prep Type: Total/NA
Prep Batch: 117068

Surrogate	MS %Recovery	MS Qualifier	Limits
Terphenyl-d14 (Surr)	*79*		*13 - 120*
2-Fluorobiphenyl (Surr)	*71*		*29 - 120*

Lab Sample ID: 490-38575-2 MSD
Matrix: Solid
Analysis Batch: 117205

Client Sample ID: SIR-SS12-102313
Prep Type: Total/NA
Prep Batch: 117068

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acenaphthene	0.122		1.66	1.335		mg/Kg		73	19 - 120	14	50
Acenaphthylene	0.481		1.66	2.371		mg/Kg		114	25 - 120	39	50
Anthracene	0.623		1.66	2.394		mg/Kg		107	28 - 125	22	49
Benzo[a]anthracene	0.455		1.66	2.066		mg/Kg		97	23 - 120	17	50
Benzo[a]pyrene	0.256		1.66	1.596		mg/Kg		81	15 - 128	9	50
Benzo[b]fluoranthene	0.312		1.66	1.608		mg/Kg		78	12 - 133	4	50
Benzo[g,h,i]perylene	0.126		1.66	1.445		mg/Kg		80	22 - 120	8	50
Benzo[k]fluoranthene	0.171		1.66	1.389		mg/Kg		73	28 - 120	1	45
Chrysene	0.491		1.66	2.226		mg/Kg		105	20 - 120	17	49
Dibenz(a,h)anthracene	ND		1.66	1.386		mg/Kg		84	12 - 128	10	50
Fluoranthene	1.04		1.66	3.016		mg/Kg		119	10 - 143	36	50
Fluorene	0.504		1.66	2.379		mg/Kg		113	20 - 120	42	50
Indeno[1,2,3-cd]pyrene	0.141		1.66	1.397		mg/Kg		76	22 - 121	11	50
Naphthalene	0.558		1.66	1.957		mg/Kg		84	10 - 120	23	50
Phenanthrene	1.74		1.66	4.707	E F	mg/Kg		179	21 - 122	48	50
Pyrene	0.894		1.66	2.762		mg/Kg		113	20 - 123	34	50
1-Methylnaphthalene	0.365		1.66	1.811		mg/Kg		87	10 - 120	19	50
2-Methylnaphthalene	0.372		1.66	1.789		mg/Kg		85	13 - 120	10	50

Surrogate	MSD %Recovery	MSD Qualifier	Limits
Nitrobenzene-d5 (Surr)	*65*		*27 - 120*
Terphenyl-d14 (Surr)	*73*		*13 - 120*
2-Fluorobiphenyl (Surr)	*65*		*29 - 120*

Method: 6010B - Metals (ICP)

Lab Sample ID: MB 490-117432/1-A
Matrix: Solid
Analysis Batch: 117611

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 117432

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		2.00		mg/Kg		10/28/13 09:34	10/28/13 22:26	1
Barium	ND		2.00		mg/Kg		10/28/13 09:34	10/28/13 22:26	1
Cadmium	ND		0.998		mg/Kg		10/28/13 09:34	10/28/13 22:26	1
Chromium	ND		0.998		mg/Kg		10/28/13 09:34	10/28/13 22:26	1
Lead	ND		0.998		mg/Kg		10/28/13 09:34	10/28/13 22:26	1
Selenium	ND		2.00		mg/Kg		10/28/13 09:34	10/28/13 22:26	1
Silver	ND		0.998		mg/Kg		10/28/13 09:34	10/28/13 22:26	1
Vanadium	ND		9.98		mg/Kg		10/28/13 09:34	10/28/13 22:26	1

Method: 6010B - Metals (ICP) (Continued)

Lab Sample ID: LCS 490-117432/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 117611 — **Prep Batch: 117432**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	19.7	17.72		mg/Kg		90	80 - 120
Barium	787	797.6		mg/Kg		101	80 - 120
Cadmium	19.7	20.28		mg/Kg		103	80 - 120
Chromium	78.7	80.75		mg/Kg		103	80 - 120
Lead	19.7	19.90		mg/Kg		101	80 - 120
Selenium	19.7	20.02		mg/Kg		102	80 - 120
Silver	19.7	19.17		mg/Kg		97	80 - 120
Vanadium	197	198.2		mg/Kg		101	80 - 120

Lab Sample ID: 490-38575-2 MS — **Client Sample ID: SIR-SS12-102313**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 117611 — **Prep Batch: 117432**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	7.33		19.2	21.48	F	mg/Kg		74	75 - 125
Barium	108		768	816.1		mg/Kg		92	75 - 125
Cadmium	ND		19.2	18.37		mg/Kg		92	75 - 125
Chromium	19.1		76.8	90.77		mg/Kg		93	75 - 125
Lead	22.6		19.2	36.26	F	mg/Kg		71	75 - 125
Selenium	ND		19.2	15.83		mg/Kg		82	75 - 125
Silver	ND		19.2	17.37		mg/Kg		90	75 - 125
Vanadium	33.9		192	207.3		mg/Kg		90	75 - 125

Lab Sample ID: 490-38575-2 MSD — **Client Sample ID: SIR-SS12-102313**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 117611 — **Prep Batch: 117432**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	7.33		19.8	25.18		mg/Kg		90	75 - 125	16	20
Barium	108		791	912.5		mg/Kg		102	75 - 125	11	20
Cadmium	ND		19.8	20.73		mg/Kg		102	75 - 125	12	20
Chromium	19.1		79.1	94.78		mg/Kg		96	75 - 125	4	20
Lead	22.6		19.8	41.60		mg/Kg		96	75 - 125	14	20
Selenium	ND		19.8	18.48		mg/Kg		93	75 - 125	15	20
Silver	ND		19.8	19.47		mg/Kg		98	75 - 125	11	20
Vanadium	33.9		198	221.1		mg/Kg		95	75 - 125	6	20

Method: 7471A - Mercury (CVAA)

Lab Sample ID: MB 490-117673/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 117782 — **Prep Batch: 117673**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.100		mg/Kg		10/29/13 09:35	10/29/13 12:08	1

Method: 7471A - Mercury (CVAA) (Continued)

Lab Sample ID: LCS 490-117673/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 117782 — **Prep Batch: 117673**

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Mercury			0.161	0.1648		mg/Kg		102	80 - 120		

Lab Sample ID: 490-38575-2 MS — **Client Sample ID: SIR-SS12-102313**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 117782 — **Prep Batch: 117673**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Mercury	ND		0.162	0.1878		mg/Kg		116	75 - 125		

Lab Sample ID: 490-38575-2 MSD — **Client Sample ID: SIR-SS12-102313**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 117782 — **Prep Batch: 117673**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	ND		0.164	0.2026		mg/Kg		124	75 - 125	8	20

QC Association Summary

Client: Environmental Restoration LLC
Project/Site: Springfield Iron - Soils II

TestAmerica Job ID: 490-38575-1

GC/MS VOA

Prep Batch: 116971

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-38575-1	SIR-SS11-102313	Total/NA	Solid	5035	
490-38575-2	SIR-SS12-102313	Total/NA	Solid	5035	
490-38575-2 MS	SIR-SS12-102313	Total/NA	Solid	5035	
490-38575-2 MSD	SIR-SS12-102313	Total/NA	Solid	5035	
490-38575-3	SIR-SS13-102313	Total/NA	Solid	5035	

Analysis Batch: 116990

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-38575-1	SIR-SS11-102313	Total/NA	Solid	8260B	116971
490-38575-2	SIR-SS12-102313	Total/NA	Solid	8260B	116971
490-38575-2 MS	SIR-SS12-102313	Total/NA	Solid	8260B	116971
490-38575-2 MSD	SIR-SS12-102313	Total/NA	Solid	8260B	116971
490-38575-3	SIR-SS13-102313	Total/NA	Solid	8260B	116971
LCS 490-116990/7	Lab Control Sample	Total/NA	Solid	8260B	
LCSD 490-116990/8	Lab Control Sample Dup	Total/NA	Solid	8260B	
MB 490-116990/11	Method Blank	Total/NA	Solid	8260B	

GC/MS Semi VOA

Prep Batch: 117068

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-38575-1	SIR-SS11-102313	Total/NA	Solid	3550B	
490-38575-2	SIR-SS12-102313	Total/NA	Solid	3550B	
490-38575-2 MS	SIR-SS12-102313	Total/NA	Solid	3550B	
490-38575-2 MSD	SIR-SS12-102313	Total/NA	Solid	3550B	
490-38575-3	SIR-SS13-102313	Total/NA	Solid	3550B	
LCS 490-117068/2-A	Lab Control Sample	Total/NA	Solid	3550B	
MB 490-117068/1-A	Method Blank	Total/NA	Solid	3550B	

Analysis Batch: 117205

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-38575-1	SIR-SS11-102313	Total/NA	Solid	8270C	117068
490-38575-2	SIR-SS12-102313	Total/NA	Solid	8270C	117068
490-38575-2 MS	SIR-SS12-102313	Total/NA	Solid	8270C	117068
490-38575-2 MSD	SIR-SS12-102313	Total/NA	Solid	8270C	117068
490-38575-3	SIR-SS13-102313	Total/NA	Solid	8270C	117068
LCS 490-117068/2-A	Lab Control Sample	Total/NA	Solid	8270C	117068
MB 490-117068/1-A	Method Blank	Total/NA	Solid	8270C	117068

Analysis Batch: 117408

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-38575-3	SIR-SS13-102313	Total/NA	Solid	8270C	117068

Metals

Prep Batch: 117432

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-38575-1	SIR-SS11-102313	Total/NA	Solid	3051A	
490-38575-2	SIR-SS12-102313	Total/NA	Solid	3051A	
490-38575-2 MS	SIR-SS12-102313	Total/NA	Solid	3051A	

Metals (Continued)

Prep Batch: 117432 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-38575-2 MSD	SIR-SS12-102313	Total/NA	Solid	3051A	
490-38575-3	SIR-SS13-102313	Total/NA	Solid	3051A	
LCS 490-117432/2-A	Lab Control Sample	Total/NA	Solid	3051A	
MB 490-117432/1-A	Method Blank	Total/NA	Solid	3051A	

Analysis Batch: 117611

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-38575-2	SIR-SS12-102313	Total/NA	Solid	6010B	117432
490-38575-2 MS	SIR-SS12-102313	Total/NA	Solid	6010B	117432
490-38575-2 MSD	SIR-SS12-102313	Total/NA	Solid	6010B	117432
490-38575-3	SIR-SS13-102313	Total/NA	Solid	6010B	117432
LCS 490-117432/2-A	Lab Control Sample	Total/NA	Solid	6010B	117432
MB 490-117432/1-A	Method Blank	Total/NA	Solid	6010B	117432

Prep Batch: 117673

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-38575-1	SIR-SS11-102313	Total/NA	Solid	7471A	
490-38575-2	SIR-SS12-102313	Total/NA	Solid	7471A	
490-38575-2 MS	SIR-SS12-102313	Total/NA	Solid	7471A	
490-38575-2 MSD	SIR-SS12-102313	Total/NA	Solid	7471A	
490-38575-3	SIR-SS13-102313	Total/NA	Solid	7471A	
LCS 490-117673/2-A	Lab Control Sample	Total/NA	Solid	7471A	
MB 490-117673/1-A	Method Blank	Total/NA	Solid	7471A	

Analysis Batch: 117782

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-38575-1	SIR-SS11-102313	Total/NA	Solid	7471A	117673
490-38575-2	SIR-SS12-102313	Total/NA	Solid	7471A	117673
490-38575-2 MS	SIR-SS12-102313	Total/NA	Solid	7471A	117673
490-38575-2 MSD	SIR-SS12-102313	Total/NA	Solid	7471A	117673
490-38575-3	SIR-SS13-102313	Total/NA	Solid	7471A	117673
LCS 490-117673/2-A	Lab Control Sample	Total/NA	Solid	7471A	117673
MB 490-117673/1-A	Method Blank	Total/NA	Solid	7471A	117673

Analysis Batch: 117790

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-38575-1	SIR-SS11-102313	Total/NA	Solid	6010B	117432

General Chemistry

Analysis Batch: 117001

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-38575-1	SIR-SS11-102313	Total/NA	Solid	Moisture	
490-38575-2	SIR-SS12-102313	Total/NA	Solid	Moisture	
490-38575-2 MS	SIR-SS12-102313	Total/NA	Solid	Moisture	
490-38575-2 MSD	SIR-SS12-102313	Total/NA	Solid	Moisture	
490-38575-3	SIR-SS13-102313	Total/NA	Solid	Moisture	

Lab Chronicle

Client: Environmental Restoration LLC
Project/Site: Springfield Iron - Soils II

TestAmerica Job ID: 490-38575-1

Client Sample ID: SIR-SS11-102313 — Lab Sample ID: 490-38575-1

Date Collected: 10/23/13 13:10 — **Matrix: Solid**
Date Received: 10/24/13 08:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			116971	10/25/13 09:20	JLP	TAL NSH
Total/NA	Analysis	8260B		1	116990	10/25/13 21:03	KKK	TAL NSH
Total/NA	Prep	3550B			117068	10/25/13 12:03	LP	TAL NSH
Total/NA	Analysis	8270C		1	117205	10/26/13 18:58	BES	TAL NSH
Total/NA	Prep	7471A			117673	10/29/13 09:35	LTB	TAL NSH
Total/NA	Analysis	7471A		1	117782	10/29/13 12:17	LTB	TAL NSH
Total/NA	Prep	3051A			117432	10/28/13 09:34	NLI	TAL NSH
Total/NA	Analysis	6010B		10	117790	10/29/13 10:25	KDJ	TAL NSH
Total/NA	Analysis	Moisture		1	117001	10/25/13 10:04	RRS	TAL NSH

Client Sample ID: SIR-SS12-102313 — Lab Sample ID: 490-38575-2

Date Collected: 10/23/13 13:20 — **Matrix: Solid**
Date Received: 10/24/13 08:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			116971	10/25/13 09:20	JLP	TAL NSH
Total/NA	Analysis	8260B		1	116990	10/25/13 21:33	KKK	TAL NSH
Total/NA	Prep	3550B			117068	10/25/13 12:03	LP	TAL NSH
Total/NA	Analysis	8270C		1	117205	10/26/13 19:24	BES	TAL NSH
Total/NA	Prep	3051A			117432	10/28/13 09:34	NLI	TAL NSH
Total/NA	Analysis	6010B		1	117611	10/28/13 23:21	KDJ	TAL NSH
Total/NA	Prep	7471A			117673	10/29/13 09:35	LTB	TAL NSH
Total/NA	Analysis	7471A		1	117782	10/29/13 12:19	LTB	TAL NSH
Total/NA	Analysis	Moisture		1	117001	10/25/13 10:04	RRS	TAL NSH

Client Sample ID: SIR-SS13-102313 — Lab Sample ID: 490-38575-3

Date Collected: 10/23/13 13:30 — **Matrix: Solid**
Date Received: 10/24/13 08:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			116971	10/25/13 09:20	JLP	TAL NSH
Total/NA	Analysis	8260B		1	116990	10/25/13 22:03	KKK	TAL NSH
Total/NA	Prep	3550B			117068	10/25/13 12:03	LP	TAL NSH
Total/NA	Analysis	8270C		1	117205	10/26/13 20:42	BES	TAL NSH
Total/NA	Prep	3550B			117068	10/25/13 12:03	LP	TAL NSH
Total/NA	Analysis	8270C		5	117408	10/28/13 19:33	BES	TAL NSH
Total/NA	Prep	3051A			117432	10/28/13 09:34	NLI	TAL NSH
Total/NA	Analysis	6010B		1	117611	10/28/13 23:50	KDJ	TAL NSH
Total/NA	Prep	7471A			117673	10/29/13 09:35	LTB	TAL NSH
Total/NA	Analysis	7471A		1	117782	10/29/13 12:29	LTB	TAL NSH
Total/NA	Analysis	Moisture		1	117001	10/25/13 10:04	RRS	TAL NSH

Lab Chronicle

Client: Environmental Restoration LLC
Project/Site: Springfield Iron - Soils II

TestAmerica Job ID: 490-38575-1

Laboratory References:

TAL NSH = TestAmerica Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177

Method Summary

Client: Environmental Restoration LLC
Project/Site: Springfield Iron - Soils II

TestAmerica Job ID: 490-38575-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL NSH
8270C	Semivolatile Organic Compounds (GC/MS)	SW846	TAL NSH
6010B	Metals (ICP)	SW846	TAL NSH
7471A	Mercury (CVAA)	SW846	TAL NSH
Moisture	Percent Moisture	EPA	TAL NSH

Protocol References:

EPA = US Environmental Protection Agency

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

Laboratory References:

TAL NSH = TestAmerica Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177

Certification Summary

Client: Environmental Restoration LLC
Project/Site: Springfield Iron - Soils II

TestAmerica Job ID: 490-38575-1

Laboratory: TestAmerica Nashville

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
A2LA	ISO/IEC 17025		0453.07	12-31-13
Alaska (UST)	State Program	10	UST-087	07-24-14
Arizona	State Program	9	AZ0473	05-05-14
Arizona	State Program	9	AZ0473	05-05-14 *
Arkansas DEQ	State Program	6	88-0737	04-25-14
California	NELAP	9	1168CA	10-31-13
Canadian Assoc Lab Accred (CALA)	Canada		3744	03-08-14
Connecticut	State Program	1	PH-0220	12-31-13
Florida	NELAP	4	E87358	06-30-14
Illinois	NELAP	5	200010	12-09-13
Iowa	State Program	7	131	05-01-14
Kansas	NELAP	7	E-10229	10-31-13
Kentucky (UST)	State Program	4	19	06-30-14
Louisiana	NELAP	6	30613	06-30-14
Maryland	State Program	3	316	03-31-14
Massachusetts	State Program	1	M-TN032	06-30-14
Minnesota	NELAP	5	047-999-345	12-31-13
Mississippi	State Program	4	N/A	06-30-14
Montana (UST)	State Program	8	NA	01-01-20
Nevada	State Program	9	TN00032	07-31-14
New Hampshire	NELAP	1	2963	10-10-14
New Jersey	NELAP	2	TN965	06-30-14
New York	NELAP	2	11342	04-01-14
North Carolina DENR	State Program	4	387	12-31-13
North Dakota	State Program	8	R-146	06-30-14
Ohio VAP	State Program	5	CL0033	10-16-15
Oklahoma	State Program	6	9412	08-31-14
Oregon	NELAP	10	TN200001	04-29-14
Pennsylvania	NELAP	3	68-00585	06-30-14
Rhode Island	State Program	1	LAO00268	12-30-13
South Carolina	State Program	4	84009 (001)	02-28-14
Tennessee	State Program	4	2008	02-23-14
Texas	NELAP	6	T104704077-09-TX	08-31-14
USDA	Federal		S-48469	11-02-13
Utah	NELAP	8	TN00032	07-31-14
Virginia	NELAP	3	460152	06-14-14
Washington	State Program	10	C789	07-19-14
West Virginia DEP	State Program	3	219	02-28-14
Wisconsin	State Program	5	998020430	08-31-14
Wyoming (UST)	A2LA	8	453.07	12-31-13

* Expired certification is currently pending renewal and is considered valid.

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
Nashville, TN

COOLER RECEIPT FORM

490-38575 Chain of Custody

Cooler Received/Opened On: 10/24/2013 @0840

1. Tracking # 0736 (last 4 digits, FedEx)

Courier: Fed-Ex IR Gun ID: 14740456

2. Temperature of rep. sample or temp blank when opened: 3.7 *Degrees Celsius*

3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES NO...NA

4. Were custody seals on outside of cooler? YES...NO...NA

   If yes, how many and where: 2 Front/Back

5. Were the seals intact, signed, and dated correctly? YES...NO...NA

6. Were custody papers inside cooler? YES...NO...NA

I certify that I opened the cooler and answered questions 1-6 (intial) _____

7. Were custody seals on containers: YES NO and Intact YES...NO...NA

   Were these signed and dated correctly? YES...NO...NA

8. Packing mat'l used? Bubblewrap Plastic bag Peanuts Vermiculite Foam Insert Paper Other None

9. Cooling process: Ice Ice-pack Ice (direct contact) Dry ice Other None

10. Did all containers arrive in good condition (unbroken)? YES...NO...NA

11. Were all container labels complete (#, date, signed, pres., etc)? YES...NO...NA

12. Did all container labels and tags agree with custody papers? YES...NO...NA

13a. Were VOA vials received? YES...NO...NA

   b. Was there any observable headspace present in any VOA vial? YES...NO...NA Soil

14. Was there a Trip Blank in this cooler? YES...NO...NA If multiple coolers, sequence #_____

I certify that I unloaded the cooler and answered questions 7-14 (intial) _____

15a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? YES..NO..NA

   b. Did the bottle labels indicate that the correct preservatives were used YES...NO...NA

16. Was residual chlorine present? YES...NO...NA

I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (intial) _____

17. Were custody papers properly filled out (ink, signed, etc)? YES...NO...NA

18. Did you sign the custody papers in the appropriate place? YES...NO...NA

19. Were correct containers used for the analysis requested? YES...NO...NA

20. Was sufficient amount of sample sent in each container? YES...NO...NA

I certify that I entered this project into LIMS and answered questions 17-20 (intial) _____

I certify that I attached a label with the unique LIMS number to each container (intial) _____

21. Were there Non-Conformance issues at login? YES...NO Was a NCM generated? YES...NO...#_____

BIS = Broken in shipment

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
Phone (314) 298-8566 Fax (314) 298-8757

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: JEFF BRYNIARSKI	Lab PM: Fitzwater, Ryan	Carrier Tracking No(s):	COC No: 490-15644-6638.1
Client Contact: Toby Viehweg	Phone: 708-284-2490	E-Mail: ryan.fitzwater@testamericainc.com		Page: Page 1 ~~of 3~~ 1
Company: Environmental Restoration LLC				Job #:
Address: 16660 Canal St.	Due Date Requested:			
City: South Holland	TAT Requested (days): 3 - DAY			
State, Zip: IL, 60473				
Phone: 312-446-6325(Tel)	PO #: Purchase Order not required			
Email: T.Viehweg@erllc.com	WO #:			
Project Name: Springfield Iron - Soils II	Project #: 49004794			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA
M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2SO3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8010B, 7471A, 8270C, Moisture, TS	PAH	TOTAL BENZENE	RCRA (8) METALS + VANADIUM	Total Number of containers	Special Instructions/Note:
			Preservation Code:				N					
SIR-SS11-102313	10/23/13	13:10	C	Solid	N	N		X	X	X	5	-1
SIR-SS12-102313	↓	13:20	C	Solid	N	Y		X	X	X	15	-2
SIR-SS13-102313	↓	13:30	C	Solid	N	N		X	X	X	5	-3
NO ADDITIONAL SAMPLES				Solid								
				Solid								
				Solid								
				Solid								
				Solid								
				Solid								
				Solid								
				Solid								

Loc: 490
38575

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☒ Archive For 1 Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	10/23/13 13:50	WESTON SOLUTIONS		10-24-13 / 0840	TAW
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No
Custody Seal No.:
Cooler Temperature(s) °C and Other Remarks: 3.7°c

Login Sample Receipt Checklist

Client: Environmental Restoration LLC

Job Number: 490-38575-1

Login Number: 38575

List Source: TestAmerica Nashville

List Number: 1

Creator: Huckaba, Jimmy

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are 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 containers received 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.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

September 9, 2013

Environmental Restoration
16660 South Canal Street
South Holland, IL 60437-

Work Order No.: 13H1481

Re: Springfield Iron Springfield, IL

Dear Toby Viehweg:

Microbac Laboratories, Inc. - Chicagoland Division received 1 sample(s) on 8/27/2013 4:30:00PM for the analyses presented in the following report as Work Order 13H1481.

The enclosed results were obtained from and are applicable to the sample(s) as received at the laboratory. All sample results are reported on an "as received" basis unless otherwise noted.

All data included in this report have been reviewed and meet the applicable project specific and certification specific requirements, unless otherwise noted. A qualifications page is included in this report and lists the programs under which Microbac maintains certification.

This report has been paginated in its entirety and shall not be reproduced except in full, without the written approval of Microbac Laboratories.

We appreciate the opportunity to service your analytical needs. If you have any questions, please contact your project manager. For any feedback, please contact Robert Crookston, Interim Managing Director, at robert.crookston@microbac.com. You may also contact Sean Hyde, Chief Operating Officer, at sean.hyde@microbac.com or James Nokes, President, at james.nokes@microbac.com.

Sincerely,
Microbac Laboratories, Inc.

Kevin Falvey
Account Manager

WORK ORDER SAMPLE SUMMARY

Date: *Monday, September 9, 2013*

Client: Environmental Restoration
Project: Springfield Iron Springfield, IL
Lab Order: 13H1481

Lab Sample ID	Client Sample ID	Tag Number	Collection Date	Date Received
13H1481-01	S5-128		08/27/2013 11:00	8/27/2013 4:30:00PM

CASE NARRATIVE

Date: *Monday, September 9, 2013*

Client: Environmental Restoration
Project: Springfield Iron Springfield, IL
Lab Order: 13H1481

The Matrix Spike and Matrix Spike Duplicate performed on the sample failed the accuracy criteria for 2-Methylphenol, 3/4-Methylphenol and Total Cresol with a low bias. The precision criteria were met. This data is indicative of a bias related to sample matrix.

Analytical Results

Date: *Monday, September 9, 2013*

Client: Environmental Restoration
Client Project: Springfield Iron Springfield, IL
Client Sample ID: S5-128
Sample Description:
Matrix: Solid

Work Order/ID: 13H1481-01
Sampled: 08/27/2013 11:00
Received: 08/27/2013 16:30

Analyses	Certs	AT	Result	RL	Qual	Units	DF	Analyzed
TCLP Semivolatile Organic Compounds			Method: **1311/8270C** Prep Method: **SW-846 1311/SW846 3510**				Analyst: **mil** Prep Date/Time: **09/06/2013 09:14**	
1,4-Dichlorobenzene	**cgj**	A	***ND***	0.050		mg/L	1	09/06/2013 18:31
2,4,5-Trichlorophenol	**cgj**	A	***ND***	0.050		mg/L	1	09/06/2013 18:31
2,4,6-Trichlorophenol	**cgj**	A	***ND***	0.050		mg/L	1	09/06/2013 18:31
2,4-Dinitrotoluene	**cgj**	A	***ND***	0.050		mg/L	1	09/06/2013 18:31
2-Methylphenol	**cgj**	A	***1.3***	0.50		mg/L	10	09/06/2013 18:50
3/4-Methylphenol	**cgj**	A	***5.2***	0.50		mg/L	10	09/06/2013 18:50
Hexachlorobenzene	**cgj**	A	***ND***	0.050		mg/L	1	09/06/2013 18:31
Hexachlorobutadiene	**cgj**	A	***ND***	0.050		mg/L	1	09/06/2013 18:31
Hexachloroethane	**cgj**	A	***ND***	0.050		mg/L	1	09/06/2013 18:31
Nitrobenzene	**cgj**	A	***ND***	0.050		mg/L	1	09/06/2013 18:31
Pentachlorophenol	**cgj**	A	***ND***	0.25		mg/L	1	09/06/2013 18:31
Pyridine	**cgj**	A	***ND***	0.050		mg/L	1	09/06/2013 18:31
Total Cresol	**cgj**	M	***6.5***	0.50		mg/L	10	09/06/2013 18:50
Surr: 2,4,6-Tribromophenol		S	81.1	47.8-138		%REC	1	09/06/2013 18:31
Surr: 2-Fluorobiphenyl		S	47.7	10-110		%REC	1	09/06/2013 18:31
Surr: 2-Fluorophenol		S	49.0	10-110		%REC	1	09/06/2013 18:31
Surr: Nitrobenzene-d5		S	45.1	10-110		%REC	1	09/06/2013 18:31
Surr: Phenol-d5		S	54.4	43.7-126		%REC	1	09/06/2013 18:31
Surr: Terphenyl-d14		S	64.9	33.7-136		%REC	1	09/06/2013 18:31
TCLP VOA Zero Head Extraction			Method: **1311/8260B** Prep Method: **SW-846 1311/<noprep>**				Analyst: **jln** Prep Date/Time: **09/03/2013 13:51**	
1,1-Dichloroethene	**cgjm**	A	***ND***	0.050		mg/L	10	09/03/2013 17:02
1,2-Dichloroethane	**cgjm**	A	***ND***	0.050		mg/L	10	09/03/2013 17:02
2-Butanone	**cgjm**	A	***ND***	0.10		mg/L	10	09/03/2013 17:02
Benzene	**cgjm**	A	***ND***	0.050		mg/L	10	09/03/2013 17:02
Carbon tetrachloride	**cgjm**	A	***ND***	0.050		mg/L	10	09/03/2013 17:02
Chlorobenzene	**cgjm**	A	***ND***	0.050		mg/L	10	09/03/2013 17:02
Chloroform	**cgjm**	A	***ND***	0.050		mg/L	10	09/03/2013 17:02
Tetrachloroethene	**cgjm**	A	***ND***	0.050		mg/L	10	09/03/2013 17:02
Trichloroethene	**cgjm**	A	***ND***	0.050		mg/L	10	09/03/2013 17:02
Vinyl chloride	**cgjm**	A	***ND***	0.020		mg/L	10	09/03/2013 17:02
1,4-Dichlorobenzene	**cgjm**	B	***ND***	0.10		mg/L	10	09/03/2013 17:02
Surr: 1,2-Dichloroethane-d4		S	113	74.5-132		%REC	10	09/03/2013 17:02
Surr: 4-Bromofluorobenzene		S	87.0	80-120		%REC	10	09/03/2013 17:02
Surr: Dibromofluoromethane		S	106	80-120		%REC	10	09/03/2013 17:02
Surr: Toluene-d8		S	98.6	80-120		%REC	10	09/03/2013 17:02
TCLP Mercury by CVAA			Method: **1311/7470A** Prep Method: **SW-846 1311/SW-846 7470**				Analyst: **SA** Prep Date/Time: **08/29/2013 09:03**	
Mercury	**cgj**	A	***ND***	0.0010		mg/L	1	08/29/2013 14:22

Analytical Results

Date: *Monday, September 9, 2013*

Client: Environmental Restoration
Client Project: Springfield Iron Springfield, IL
Client Sample ID: S5-128
Sample Description:
Matrix: Solid

Work Order/ID: 13H1481-01
Sampled: 08/27/2013 11:00
Received: 08/27/2013 16:30

Analyses	Certs	AT	Result	RL	Qual	Units	DF	Analyzed
TCLP Metals by ICP — Method: **1311/6010B** — Prep Method: **SW-846 1311/SW846 3005A** — Analyst: **SA** — Prep Date/Time: **08/29/2013 08:40**								
Arsenic	cgjm	A	ND	0.0500		mg/L	1	08/29/2013 13:35
Barium	cgj	A	0.602	0.500		mg/L	1	08/29/2013 13:35
Cadmium	cgjm	A	ND	0.00200		mg/L	1	08/29/2013 13:35
Chromium	cgjm	A	ND	0.00300		mg/L	1	08/29/2013 13:35
Lead	cgjm	A	0.0101	0.00750		mg/L	1	08/29/2013 13:35
Selenium	cgjm	A	ND	0.0300		mg/L	1	08/29/2013 13:35
Silver	cgjm	A	ND	0.0100		mg/L	1	08/29/2013 13:35
Ignitability (Open Cup) — Method: **ASTM D92-90 MOD** — Analyst: **EB** — Prep Date/Time: **09/04/2013 08:00**								
Ignitability		A	> 170	30		°F	1	09/04/2013 8:00
Paint Filter — Method: **SW-846 9095B** — Analyst: **EB** — Prep Date/Time: **09/04/2013 10:12**								
Paint Filter	cg	A	Pass	0.0		Pass/Fail	1	09/04/2013 10:12
pH — Method: **SW-846 9045C** — Analyst: **ABG** — Prep Date/Time: **08/29/2013 11:48**								
pH	cgj	A	7.46	2.00		pH Units	1	08/29/2013 12:46
Total Phenolics — Method: **SW-846 9066** — Prep Method: **Solid Phenolics Distillation** — Analyst: **AGRIE** — Prep Date/Time: **09/04/2013 12:58**								
Phenolics, Total Recoverable	cgm	A	430	25		mg/Kg	50	09/04/2013 13:55
Reactive Cyanide — Method: **Chapter 7/9014** — Prep Method: **Solid Reactive CN Distillation** — Analyst: **TMG** — Prep Date/Time: **09/03/2013 09:00**								
Reactive Cyanide	cg	A	ND	2.0		mg/Kg	1	09/03/2013 15:03
Reactive Sulfide — Method: **Chapter 7/9034** — Prep Method: **Solid Reactive Sulfide Distillation** — Analyst: **ABG** — Prep Date/Time: **09/03/2013 09:00**								
Reactive Sulfide	cg	A	ND	2.0		mg/Kg	1	09/03/2013 14:05

FLAGS, FOOTNOTES AND ABBREVIATIONS (as needed)

B = Detected in the associated method Blank at a concentration above the routine RL
b- = Detected in the associated method Blank at a concentration greater than 2.2 times the MDL
b* = Detected in the associated method Blank at a concentration greater than half the RL
CFU = Colony forming units
D = Dilution performed on sample
DF = Dilution Factor
g = Gram
E = Value above quantitation range
H = Analyte was prepared and/or analyzed outside of the analytical method holding time
I = Matrix Interference
J = Analyte concentration detected between RL and MDL (Metals / Organics)
LOD = Limit of Detection
m3 = Meters cubed
MDL = Method Detection Limit
mg/Kg = Milligrams per Kilogram (ppm)
mg/L = Milligrams per Liter (ppm)
NA = Not Analyzed
ND = Not Detected at the Reporting Limit (or the Method Detection Limit, if used)
NR = Not Recovered
R = RPD outside accepted recovery limits
RL = Reporting Limit
S = Spike recovery outside recovery limits
Surr = Surrogate
U = Undetected
> = Greater than
< = Less than
% = Percent

ANALYTE TYPES: (AT)

A,B = Target Analyte
I = Internal Standard
M = Summation Analyte
S = Surrogate
T = Tentatively Identified Compound (TIC, concentration estimated)

QC SAMPLE IDENTIFICATIONS

BLK = Method Blank
DUP = Method Duplicate
BS = Method Blank Spike
MS = Matrix Spike
ICB = Initial Calibration Blank
CCB = Continuing Calibration Blank
CRL = Client Required Reporting Limit
PDS = Post Digestion Spike
QCS = Quality Control Standard
ICSA = Interference Check Standard "A"
ICSAB = Interference Check Standard "AB"
BSD = Method Blank Spike Duplicate
MSD = Matrix Spike Duplicate
ICV = Initial Calibration Verification
CCV = Continuing Calibration Verification
OPR = Ongoing Precision and Recovery Standard
SD = Serial Dilution

CERTIFICATIONS (Certs)

Below is a list of certifications maintained by the Microbac Merrillville Laboratory. All data included in this report has been reviewed for and meets all project specific and quality control requirements of the applicable accreditation, unless otherwise noted. Complete lists of individual analytes pursuant to each certification below are available upon request.

[a] The American Association for Laboratory Accreditation [A2LA] for Biological Testing, ISO/IEC 17025 (Certificate# 3045.01)
[b] The American Association for Laboratory Accreditation [A2LA] for Environmental Department of Defense Testing, ISO/IEC 17025 (Certificate# 3045.02)
[c] Illinois EPA for the analysis wastewater and solid waste in accordance with the requirements of the National Environmental Laboratory Accreditation Program [NELAP] (accreditation #200064)
[d] Illinois Department of Public Health for the microbiological analysis of drinking water (registry #1755266)
[-] Indiana DEM approved support laboratory for solid waste and wastewater analyses
[e] Indiana SDH for the chemical analysis of drinking water (lab #C-45-03)
[f] Indiana SDH for the microbiological analysis of drinking water (lab #M-45-8)
[g] Kansas Department of Health and Environment for the analysis of drinking water, wastewater, and solid hazardous waste in accordance with the requirements of the National Environmental Laboratory Accreditation Program [NELAP] (Certificate No. E-10397)
[h] Kentucky EPPC for the analysis of samples applicable to the Underground Storage Tank program (lab #75)
[i] New York SDH in accordance with the requirements of the National Environmental Laboratory Accreditation Program [NELAP] (accreditation #49179)
[j] North Carolina DENR for the environmental analysis for NPDES effluent, surface water, groundwater, and pretreatment regulations(certificate #597)
[k] Pennsylvania Department of Environmental Protection [NELAP] (Lab# 68-04863)
[l] Washington State Department of Ecology in accordance to Ch. 173-50 WAC (lab #C992)
[m] Wisconsin DNR for the chemical analysis of wastewater and solid waste (lab #998036710)

COOLER INSPECTION

Date: Monday, September 9, 2013

Client Name: Environmental Restoration

Date/Time Received: 08/27/2013 16:30

Work Order Number: 13H1481

Received by: Dave Bryant

Checklist completed by: 8/27/2013 6:51:00PM | Dave Bryant

Reviewed by: 8/29/2013 | KGF

Carrier Name: Client Delivered

Cooler ID: Default Cooler

Container/Temp Blank Temperature: 4.0° C

After-Hour Arrival?	Yes	☐	No	☑		
Shipping container/cooler in good condition?	Yes	☑	No	☐	Not Present	☐
Custody seals intact on shipping container/cooler?	Yes	☐	No	☐	Not Present	☑
Custody seals intact on sample containers?	Yes	☐	No	☐	Not Present	☑
COC present?	Yes	☑	No	☐		
COC included sufficient client identification?	Yes	☑	No	☐		
COC included sufficient sample collector information?	Yes	☑	No	☐		
COC included a sample description?	Yes	☑	No	☐		
COC agrees with sample labels?	Yes	☑	No	☐		
COC identified the appropriate matrix?	Yes	☑	No	☐		
COC included date of collection?	Yes	☑	No	☐		
COC included time of collection?	Yes	☑	No	☐		
COC identified the appropriate number of containers?	Yes	☑	No	☐		
Samples in proper container/bottle?	Yes	☑	No	☐		
Sample containers intact?	Yes	☑	No	☐		
Sufficient sample volume for indicated test?	Yes	☑	No	☐		
All samples received within holding time?	Yes	☑	No	☐		
If the samples are preserved, are the preservatives identified?	Yes	☑	No	☐		

If No, adjusted by? _____

COC included the requested analyses?	Yes	☑	No	☐		
COC signed when relinquished and received?	Yes	☑	No	☐		
Samples received on ice?	Yes	☑	No	☐		
Samples properly preserved?	Yes	☑	No	☐		
Voa vials for aqueous samples have zero headspace?	Yes	☐	No	☐	No VOA vials submitted	☑

Cooler Comments:

ANY "NO" EVALUATION (excluding After-Hour Receipt) REQUIRES CLIENT NOTIFICATION.

Sample ID	Client Sample ID	Comments
13H1481-01	S5-128	

Microbac®

LABORATORY SERVICES

Samples Submitted to:
[ ] 250 West 84th Drive, Merrillville, IN 46410, Tel: 219-769-8378, Fax: 219-769-1664
[ ] 5713 West 85th Street, Indianapolis, IN 46278, Tel: 317-872-1375, Fax: 317-872-1379

Chain of Custody Record

Number 115208

Instructions on back

13H1481 Kevin Falvey
ER - South Holland
General Project
08/27/2013

Client Name: Environmental Restoration	Project: Springfield Iron	Turnaround Time	Report Type
Address:	Location: Springfield IL	[X] Routine (5 working days)	[ ] Results Only [ ] Level II
City, State, Zip:	PO #:	[ ] RUSH* (notify lab)	[ ] Level III [ ] Level III CLP-like
Contact:	Compliance Monitoring? [ ] Yes(1) [ ] No	(needed by)	[ ] Level IV [ ] Level IV CLP-like
Telephone #:	(1)Agency/Program		[ ] EDD

Sampled by (PRINT): Tobin Viehweg Sampler Signature: [signature] Sampler Phone #: 312-446-6325

Send Report via [ ] Mail [ ] Telephone [ ] Fax (fax #) [ ] e-mail (address)

* Matrix Types: Soil/Solid (S), Sludge, Oil, Wipe, Drinking Water (DW), Groundwater (GW), Surface Water (SW), Waste Water (WW), Other (specify)

** Preservative Types: (1) HNO3, (2) H2SO4, (3) HCl, (4) NaOH, (5) Zinc Acetate, (6) Methanol, (7) Sodium Bisulfate, (8) Sodium Thiosulfate, (9) Hexane, (U) Unpreserved

Client Sample ID	Matrix*	Grab	Composite	Filtered	Date Collected	Time Collected	No. of Containers	Requested Analyses → Preservative Types ** ↓	Cooler								For Lab Use Only
SS-123	S				827-B	1100A	1	Ice	X								13H1481 -01

Possible Hazard Identification [ ] Hazardous [ ] Non-Hazardous [ ] Radioactive

Sample Disposition [X] Dispose as appropriate [ ] Return [ ] Archive

Comments	Relinquished By (signature)	Date/Time	Received By (signature)	Date/Time
	[signature]	8-27-13 1630		
	Relinquished By (signature)	Date/Time	Received By (signature)	Date/Time
Sample temperature upon receipt in degrees C = 4°C	Relinquished By (signature)	Date/Time	Received for Lab By (signature) [signature]	Date/Time 8/27/13 1630

rev. 11/04/04

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