TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Nashville
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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

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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	