

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: 490-91492-1
Client Project/Site: TVA Widows Creek

For:
Tennessee Valley Authority
PO BOX 15500
Knoxville, Tennessee 37901

Attn: Anna Fisher

Gail Lage

Authorized for release by:
11/20/2015 11:16:25 AM

Gail Lage, Senior Project Manager
(615)301-5741
gail.lage@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: Tennessee Valley Authority
Project/Site: TVA Widows Creek

TestAmerica Job ID: 490-91492-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
490-91492-1	WCF-W10-1115	Water	11/04/15 16:05	11/06/15 10:10
490-91492-2	WCF-31-1115	Water	11/04/15 09:38	11/06/15 10:10
490-91492-3	WCF-10-51-1115	Water	11/04/15 11:05	11/06/15 10:10
490-91492-4	WCF-10-52-1115	Water	11/04/15 13:35	11/06/15 10:10
490-91492-5	WCF-10-52-1115- Duplicate	Water	11/04/15 13:35	11/06/15 10:10
490-91492-6	WCF-GYP-EQ	Water	11/04/15 14:35	11/06/15 10:10

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Case Narrative

Client: Tennessee Valley Authority
Project/Site: TVA Widows Creek

TestAmerica Job ID: 490-91492-1

Job ID: 490-91492-1

Laboratory: TestAmerica Nashville

Narrative

**Job Narrative
490-91492-1**

Comments

No additional comments.

Receipt

The samples were received on 11/6/2015 10:10 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 0.1° C and 0.2° C.

Metals

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

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Definitions/Glossary

Client: Tennessee Valley Authority
Project/Site: TVA Widows Creek

TestAmerica Job ID: 490-91492-1

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
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: Tennessee Valley Authority
Project/Site: TVA Widows Creek

TestAmerica Job ID: 490-91492-1

Client Sample ID: WCF-W10-1115

Lab Sample ID: 490-91492-1

Date Collected: 11/04/15 16:05

Matrix: Water

Date Received: 11/06/15 10:10

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.0104		0.0100		mg/L		11/10/15 08:26	11/14/15 03:40	1
Chromium	ND		0.00500		mg/L		11/10/15 08:26	11/14/15 03:40	1
Cobalt	ND		0.0100		mg/L		11/10/15 08:26	11/14/15 03:40	1
Copper	0.0100		0.0100		mg/L		11/10/15 08:26	11/14/15 03:40	1
Nickel	ND		0.0100		mg/L		11/10/15 08:26	11/14/15 03:40	1
Selenium	ND		0.0100		mg/L		11/10/15 08:26	11/14/15 03:40	1
Silver	ND		0.00500		mg/L		11/10/15 08:26	11/14/15 03:40	1

Method: 6020 - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.00200		mg/L		11/11/15 08:50	11/11/15 18:24	1
Arsenic	ND		0.00200		mg/L		11/11/15 08:50	11/11/15 18:24	1
Beryllium	ND		0.00200		mg/L		11/11/15 08:50	11/11/15 18:24	1
Cadmium	ND		0.00100		mg/L		11/11/15 08:50	11/11/15 18:24	1
Lead	ND		0.00200		mg/L		11/11/15 08:50	11/11/15 18:24	1
Thallium	ND		0.00200		mg/L		11/11/15 08:50	11/11/15 18:24	1
Vanadium	ND		0.00200		mg/L		11/11/15 08:50	11/11/15 18:24	1
Zinc	ND		0.0250		mg/L		11/11/15 08:50	11/12/15 14:17	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200		mg/L		11/16/15 11:03	11/16/15 18:41	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		1.03		mg/L			11/10/15 13:31	1

Client Sample Results

Client: Tennessee Valley Authority
Project/Site: TVA Widows Creek

TestAmerica Job ID: 490-91492-1

Client Sample ID: WCF-31-1115

Lab Sample ID: 490-91492-2

Date Collected: 11/04/15 09:38

Matrix: Water

Date Received: 11/06/15 10:10

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.0316		0.0100		mg/L		11/10/15 08:26	11/14/15 03:44	1
Chromium	ND		0.00500		mg/L		11/10/15 08:26	11/14/15 03:44	1
Cobalt	ND		0.0100		mg/L		11/10/15 08:26	11/14/15 03:44	1
Copper	ND		0.0100		mg/L		11/10/15 08:26	11/14/15 03:44	1
Nickel	ND		0.0100		mg/L		11/10/15 08:26	11/14/15 03:44	1
Selenium	ND		0.0100		mg/L		11/10/15 08:26	11/14/15 03:44	1
Silver	ND		0.00500		mg/L		11/10/15 08:26	11/14/15 03:44	1

Method: 6020 - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.00200		mg/L		11/11/15 08:50	11/11/15 18:30	1
Arsenic	ND		0.00200		mg/L		11/11/15 08:50	11/11/15 18:30	1
Beryllium	ND		0.00200		mg/L		11/11/15 08:50	11/11/15 18:30	1
Cadmium	ND		0.00100		mg/L		11/11/15 08:50	11/11/15 18:30	1
Lead	ND		0.00200		mg/L		11/11/15 08:50	11/11/15 18:30	1
Thallium	ND		0.00200		mg/L		11/11/15 08:50	11/11/15 18:30	1
Vanadium	ND		0.00200		mg/L		11/11/15 08:50	11/11/15 18:30	1
Zinc	ND		0.0250		mg/L		11/11/15 08:50	11/12/15 14:23	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200		mg/L		11/16/15 11:03	11/16/15 18:43	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	3.59		1.03		mg/L			11/10/15 13:31	1

Client Sample Results

Client: Tennessee Valley Authority
Project/Site: TVA Widows Creek

TestAmerica Job ID: 490-91492-1

Client Sample ID: WCF-10-51-1115

Lab Sample ID: 490-91492-3

Date Collected: 11/04/15 11:05

Matrix: Water

Date Received: 11/06/15 10:10

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.0420		0.0100		mg/L		11/10/15 08:26	11/14/15 03:49	1
Chromium	ND		0.00500		mg/L		11/10/15 08:26	11/14/15 03:49	1
Cobalt	ND		0.0100		mg/L		11/10/15 08:26	11/14/15 03:49	1
Copper	ND		0.0100		mg/L		11/10/15 08:26	11/14/15 03:49	1
Nickel	ND		0.0100		mg/L		11/10/15 08:26	11/14/15 03:49	1
Selenium	ND		0.0100		mg/L		11/10/15 08:26	11/14/15 03:49	1
Silver	ND		0.00500		mg/L		11/10/15 08:26	11/14/15 03:49	1

Method: 6020 - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.00200		mg/L		11/11/15 08:50	11/11/15 18:46	1
Arsenic	0.00373		0.00200		mg/L		11/11/15 08:50	11/11/15 18:46	1
Beryllium	ND		0.00200		mg/L		11/11/15 08:50	11/11/15 18:46	1
Cadmium	ND		0.00100		mg/L		11/11/15 08:50	11/11/15 18:46	1
Lead	ND		0.00200		mg/L		11/11/15 08:50	11/11/15 18:46	1
Thallium	ND		0.00200		mg/L		11/11/15 08:50	11/11/15 18:46	1
Vanadium	ND		0.00200		mg/L		11/11/15 08:50	11/11/15 18:46	1
Zinc	ND		0.0250		mg/L		11/11/15 08:50	11/12/15 14:28	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200		mg/L		11/16/15 11:03	11/16/15 18:46	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	5.76		1.18		mg/L			11/10/15 13:31	1

Client Sample Results

Client: Tennessee Valley Authority
Project/Site: TVA Widows Creek

TestAmerica Job ID: 490-91492-1

Client Sample ID: WCF-10-52-1115

Lab Sample ID: 490-91492-4

Date Collected: 11/04/15 13:35

Matrix: Water

Date Received: 11/06/15 10:10

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.0430		0.0100		mg/L		11/10/15 08:26	11/14/15 03:53	1
Chromium	ND		0.00500		mg/L		11/10/15 08:26	11/14/15 03:53	1
Cobalt	ND		0.0100		mg/L		11/10/15 08:26	11/14/15 03:53	1
Copper	ND		0.0100		mg/L		11/10/15 08:26	11/14/15 03:53	1
Nickel	ND		0.0100		mg/L		11/10/15 08:26	11/14/15 03:53	1
Selenium	ND		0.0100		mg/L		11/10/15 08:26	11/14/15 03:53	1
Silver	ND		0.00500		mg/L		11/10/15 08:26	11/14/15 03:53	1

Method: 6020 - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.00200		mg/L		11/11/15 08:50	11/11/15 18:51	1
Arsenic	ND		0.00200		mg/L		11/11/15 08:50	11/11/15 18:51	1
Beryllium	ND		0.00200		mg/L		11/11/15 08:50	11/11/15 18:51	1
Cadmium	ND		0.00100		mg/L		11/11/15 08:50	11/11/15 18:51	1
Lead	ND		0.00200		mg/L		11/11/15 08:50	11/11/15 18:51	1
Thallium	ND		0.00200		mg/L		11/11/15 08:50	11/11/15 18:51	1
Vanadium	0.00200		0.00200		mg/L		11/11/15 08:50	11/11/15 18:51	1
Zinc	ND		0.0250		mg/L		11/11/15 08:50	11/12/15 14:33	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200		mg/L		11/16/15 11:03	11/16/15 18:48	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	9.95		1.03		mg/L			11/10/15 13:31	1

Client Sample Results

Client: Tennessee Valley Authority
Project/Site: TVA Widows Creek

TestAmerica Job ID: 490-91492-1

Client Sample ID: WCF-10-52-1115- Duplicate

Lab Sample ID: 490-91492-5

Date Collected: 11/04/15 13:35

Matrix: Water

Date Received: 11/06/15 10:10

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.0450		0.0100		mg/L		11/10/15 08:26	11/14/15 03:58	1
Chromium	ND		0.00500		mg/L		11/10/15 08:26	11/14/15 03:58	1
Cobalt	ND		0.0100		mg/L		11/10/15 08:26	11/14/15 03:58	1
Copper	ND		0.0100		mg/L		11/10/15 08:26	11/14/15 03:58	1
Nickel	ND		0.0100		mg/L		11/10/15 08:26	11/14/15 03:58	1
Selenium	ND		0.0100		mg/L		11/10/15 08:26	11/14/15 03:58	1
Silver	ND		0.00500		mg/L		11/10/15 08:26	11/14/15 03:58	1

Method: 6020 - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.00200		mg/L		11/11/15 08:50	11/11/15 18:56	1
Arsenic	0.00242		0.00200		mg/L		11/11/15 08:50	11/11/15 18:56	1
Beryllium	ND		0.00200		mg/L		11/11/15 08:50	11/11/15 18:56	1
Cadmium	ND		0.00100		mg/L		11/11/15 08:50	11/11/15 18:56	1
Lead	ND		0.00200		mg/L		11/11/15 08:50	11/11/15 18:56	1
Thallium	ND		0.00200		mg/L		11/11/15 08:50	11/11/15 18:56	1
Vanadium	0.00200		0.00200		mg/L		11/11/15 08:50	11/11/15 18:56	1
Zinc	ND		0.0250		mg/L		11/11/15 08:50	11/12/15 14:38	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200		mg/L		11/16/15 11:03	11/16/15 18:51	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	9.50		1.00		mg/L			11/10/15 13:31	1

Client Sample Results

Client: Tennessee Valley Authority
Project/Site: TVA Widows Creek

TestAmerica Job ID: 490-91492-1

Client Sample ID: WCF-GYP-EQ

Lab Sample ID: 490-91492-6

Date Collected: 11/04/15 14:35

Matrix: Water

Date Received: 11/06/15 10:10

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	ND		0.0100		mg/L		11/10/15 08:26	11/14/15 04:02	1
Chromium	ND		0.00500		mg/L		11/10/15 08:26	11/14/15 04:02	1
Cobalt	ND		0.0100		mg/L		11/10/15 08:26	11/14/15 04:02	1
Copper	ND		0.0100		mg/L		11/10/15 08:26	11/14/15 04:02	1
Nickel	ND		0.0100		mg/L		11/10/15 08:26	11/14/15 04:02	1
Selenium	ND		0.0100		mg/L		11/10/15 08:26	11/14/15 04:02	1
Silver	ND		0.00500		mg/L		11/10/15 08:26	11/14/15 04:02	1

Method: 6020 - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.00200		mg/L		11/11/15 08:50	11/11/15 19:01	1
Arsenic	ND		0.00200		mg/L		11/11/15 08:50	11/11/15 19:01	1
Beryllium	ND		0.00200		mg/L		11/11/15 08:50	11/11/15 19:01	1
Cadmium	ND		0.00100		mg/L		11/11/15 08:50	11/11/15 19:01	1
Lead	ND		0.00200		mg/L		11/11/15 08:50	11/11/15 19:01	1
Thallium	ND		0.00200		mg/L		11/11/15 08:50	11/11/15 19:01	1
Vanadium	ND		0.00200		mg/L		11/11/15 08:50	11/11/15 19:01	1
Zinc	ND		0.0250		mg/L		11/11/15 08:50	11/12/15 14:43	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200		mg/L		11/16/15 11:03	11/16/15 18:53	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		1.00		mg/L			11/10/15 13:31	1

QC Sample Results

Client: Tennessee Valley Authority
Project/Site: TVA Widows Creek

TestAmerica Job ID: 490-91492-1

Method: 6010B - Metals (ICP)

Lab Sample ID: MB 490-297029/1-A
Matrix: Water
Analysis Batch: 298541

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 297029

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	ND		0.0100		mg/L		11/10/15 08:26	11/14/15 02:40	1
Chromium	ND		0.00500		mg/L		11/10/15 08:26	11/14/15 02:40	1
Cobalt	ND		0.0100		mg/L		11/10/15 08:26	11/14/15 02:40	1
Copper	ND		0.0100		mg/L		11/10/15 08:26	11/14/15 02:40	1
Nickel	ND		0.0100		mg/L		11/10/15 08:26	11/14/15 02:40	1
Selenium	ND		0.0100		mg/L		11/10/15 08:26	11/14/15 02:40	1
Silver	ND		0.00500		mg/L		11/10/15 08:26	11/14/15 02:40	1

Lab Sample ID: LCS 490-297029/2-A
Matrix: Water
Analysis Batch: 298541

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 297029

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Barium	2.00	2.094		mg/L		105	80 - 120
Chromium	0.200	0.1872		mg/L		94	80 - 120
Cobalt	0.500	0.5059		mg/L		101	80 - 120
Copper	0.250	0.2386		mg/L		95	80 - 120
Nickel	0.500	0.5017		mg/L		100	80 - 120
Selenium	0.0500	0.05020		mg/L		100	80 - 120
Silver	0.0500	0.05000		mg/L		100	80 - 120

Method: 6020 - Metals (ICP/MS)

Lab Sample ID: MB 490-297426/1-A
Matrix: Water
Analysis Batch: 297779

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 297426

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.00200		mg/L		11/11/15 08:50	11/11/15 17:43	1
Arsenic	ND		0.00200		mg/L		11/11/15 08:50	11/11/15 17:43	1
Beryllium	ND		0.00200		mg/L		11/11/15 08:50	11/11/15 17:43	1
Cadmium	ND		0.00100		mg/L		11/11/15 08:50	11/11/15 17:43	1
Lead	ND		0.00200		mg/L		11/11/15 08:50	11/11/15 17:43	1
Thallium	ND		0.00200		mg/L		11/11/15 08:50	11/11/15 17:43	1
Vanadium	ND		0.00200		mg/L		11/11/15 08:50	11/11/15 17:43	1

Lab Sample ID: MB 490-297426/1-A
Matrix: Water
Analysis Batch: 297952

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 297426

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Zinc	ND		0.0250		mg/L		11/11/15 08:50	11/12/15 12:46	1

Lab Sample ID: LCS 490-297426/2-A
Matrix: Water
Analysis Batch: 297779

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 297426

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Antimony	0.100	0.09729		mg/L		97	80 - 120

TestAmerica Nashville

QC Sample Results

Client: Tennessee Valley Authority
Project/Site: TVA Widows Creek

TestAmerica Job ID: 490-91492-1

Method: 6020 - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 490-297426/2-A
Matrix: Water
Analysis Batch: 297779

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 297426

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Arsenic	0.100	0.09027		mg/L		90	80 - 120
Beryllium	0.100	0.08493		mg/L		85	80 - 120
Cadmium	0.100	0.09716		mg/L		97	80 - 120
Lead	0.100	0.09279		mg/L		93	80 - 120
Thallium	0.100	0.09070		mg/L		91	80 - 120
Vanadium	0.100	0.09478		mg/L		95	80 - 120

Lab Sample ID: LCS 490-297426/2-A
Matrix: Water
Analysis Batch: 297952

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 297426

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Zinc	0.100	0.09044		mg/L		90	80 - 120

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 490-298815/1-A
Matrix: Water
Analysis Batch: 299046

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 298815

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200		mg/L		11/16/15 11:03	11/16/15 18:22	1

Lab Sample ID: LCS 490-298815/2-A
Matrix: Water
Analysis Batch: 299046

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 298815

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Mercury	0.00100	0.0009459		mg/L		95	80 - 120

Lab Sample ID: LCSD 490-298815/3-A
Matrix: Water
Analysis Batch: 299046

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 298815

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	RPD Limit
Mercury	0.00100	0.0008918		mg/L		89	80 - 120	6	20

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 490-297147/1
Matrix: Water
Analysis Batch: 297147

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		1.00		mg/L			11/10/15 13:31	1

TestAmerica Nashville

QC Sample Results

Client: Tennessee Valley Authority
 Project/Site: TVA Widows Creek

TestAmerica Job ID: 490-91492-1

Method: SM 2540D - Solids, Total Suspended (TSS) (Continued)

Lab Sample ID: LCS 490-297147/2
 Matrix: Water
 Analysis Batch: 297147

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Suspended Solids	100	98.70		mg/L		99	90 - 110

Lab Sample ID: LCSD 490-297147/3
 Matrix: Water
 Analysis Batch: 297147

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
Total Suspended Solids	100	97.90		mg/L		98	90 - 110	1	20

Lab Sample ID: 490-91492-6 DU
 Matrix: Water
 Analysis Batch: 297147

Client Sample ID: WCF-GYP-EQ
 Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Suspended Solids	ND		ND		mg/L		NC	20

QC Association Summary

Client: Tennessee Valley Authority
 Project/Site: TVA Widows Creek

TestAmerica Job ID: 490-91492-1

Metals

Prep Batch: 297029

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-91492-1	WCF-W10-1115	Total/NA	Water	3010A	
490-91492-2	WCF-31-1115	Total/NA	Water	3010A	
490-91492-3	WCF-10-51-1115	Total/NA	Water	3010A	
490-91492-4	WCF-10-52-1115	Total/NA	Water	3010A	
490-91492-5	WCF-10-52-1115- Duplicate	Total/NA	Water	3010A	
490-91492-6	WCF-GYP-EQ	Total/NA	Water	3010A	
LCS 490-297029/2-A	Lab Control Sample	Total/NA	Water	3010A	
MB 490-297029/1-A	Method Blank	Total/NA	Water	3010A	

Prep Batch: 297426

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-91492-1	WCF-W10-1115	Total/NA	Water	3010A	
490-91492-2	WCF-31-1115	Total/NA	Water	3010A	
490-91492-3	WCF-10-51-1115	Total/NA	Water	3010A	
490-91492-4	WCF-10-52-1115	Total/NA	Water	3010A	
490-91492-5	WCF-10-52-1115- Duplicate	Total/NA	Water	3010A	
490-91492-6	WCF-GYP-EQ	Total/NA	Water	3010A	
LCS 490-297426/2-A	Lab Control Sample	Total/NA	Water	3010A	
MB 490-297426/1-A	Method Blank	Total/NA	Water	3010A	

Analysis Batch: 297779

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-91492-1	WCF-W10-1115	Total/NA	Water	6020	297426
490-91492-2	WCF-31-1115	Total/NA	Water	6020	297426
490-91492-3	WCF-10-51-1115	Total/NA	Water	6020	297426
490-91492-4	WCF-10-52-1115	Total/NA	Water	6020	297426
490-91492-5	WCF-10-52-1115- Duplicate	Total/NA	Water	6020	297426
490-91492-6	WCF-GYP-EQ	Total/NA	Water	6020	297426
LCS 490-297426/2-A	Lab Control Sample	Total/NA	Water	6020	297426
MB 490-297426/1-A	Method Blank	Total/NA	Water	6020	297426

Analysis Batch: 297952

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 490-297426/2-A	Lab Control Sample	Total/NA	Water	6020	297426
MB 490-297426/1-A	Method Blank	Total/NA	Water	6020	297426

Analysis Batch: 298121

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-91492-1	WCF-W10-1115	Total/NA	Water	6020	297426
490-91492-2	WCF-31-1115	Total/NA	Water	6020	297426
490-91492-3	WCF-10-51-1115	Total/NA	Water	6020	297426
490-91492-4	WCF-10-52-1115	Total/NA	Water	6020	297426
490-91492-5	WCF-10-52-1115- Duplicate	Total/NA	Water	6020	297426
490-91492-6	WCF-GYP-EQ	Total/NA	Water	6020	297426

Analysis Batch: 298541

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-91492-1	WCF-W10-1115	Total/NA	Water	6010B	297029
490-91492-2	WCF-31-1115	Total/NA	Water	6010B	297029
490-91492-3	WCF-10-51-1115	Total/NA	Water	6010B	297029
490-91492-4	WCF-10-52-1115	Total/NA	Water	6010B	297029

TestAmerica Nashville

QC Association Summary

Client: Tennessee Valley Authority
Project/Site: TVA Widows Creek

TestAmerica Job ID: 490-91492-1

Metals (Continued)

Analysis Batch: 298541 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-91492-5	WCF-10-52-1115- Duplicate	Total/NA	Water	6010B	297029
490-91492-6	WCF-GYP-EQ	Total/NA	Water	6010B	297029
LCS 490-297029/2-A	Lab Control Sample	Total/NA	Water	6010B	297029
MB 490-297029/1-A	Method Blank	Total/NA	Water	6010B	297029

Prep Batch: 298815

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-91492-1	WCF-W10-1115	Total/NA	Water	7470A	
490-91492-2	WCF-31-1115	Total/NA	Water	7470A	
490-91492-3	WCF-10-51-1115	Total/NA	Water	7470A	
490-91492-4	WCF-10-52-1115	Total/NA	Water	7470A	
490-91492-5	WCF-10-52-1115- Duplicate	Total/NA	Water	7470A	
490-91492-6	WCF-GYP-EQ	Total/NA	Water	7470A	
LCS 490-298815/2-A	Lab Control Sample	Total/NA	Water	7470A	
LCSD 490-298815/3-A	Lab Control Sample Dup	Total/NA	Water	7470A	
MB 490-298815/1-A	Method Blank	Total/NA	Water	7470A	

Analysis Batch: 299046

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-91492-1	WCF-W10-1115	Total/NA	Water	7470A	298815
490-91492-2	WCF-31-1115	Total/NA	Water	7470A	298815
490-91492-3	WCF-10-51-1115	Total/NA	Water	7470A	298815
490-91492-4	WCF-10-52-1115	Total/NA	Water	7470A	298815
490-91492-5	WCF-10-52-1115- Duplicate	Total/NA	Water	7470A	298815
490-91492-6	WCF-GYP-EQ	Total/NA	Water	7470A	298815
LCS 490-298815/2-A	Lab Control Sample	Total/NA	Water	7470A	298815
LCSD 490-298815/3-A	Lab Control Sample Dup	Total/NA	Water	7470A	298815
MB 490-298815/1-A	Method Blank	Total/NA	Water	7470A	298815

General Chemistry

Analysis Batch: 297147

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-91492-1	WCF-W10-1115	Total/NA	Water	SM 2540D	
490-91492-2	WCF-31-1115	Total/NA	Water	SM 2540D	
490-91492-3	WCF-10-51-1115	Total/NA	Water	SM 2540D	
490-91492-4	WCF-10-52-1115	Total/NA	Water	SM 2540D	
490-91492-5	WCF-10-52-1115- Duplicate	Total/NA	Water	SM 2540D	
490-91492-6	WCF-GYP-EQ	Total/NA	Water	SM 2540D	
490-91492-6 DU	WCF-GYP-EQ	Total/NA	Water	SM 2540D	
LCS 490-297147/2	Lab Control Sample	Total/NA	Water	SM 2540D	
LCSD 490-297147/3	Lab Control Sample Dup	Total/NA	Water	SM 2540D	
MB 490-297147/1	Method Blank	Total/NA	Water	SM 2540D	

TestAmerica Nashville

Lab Chronicle

Client: Tennessee Valley Authority
Project/Site: TVA Widows Creek

TestAmerica Job ID: 490-91492-1

Client Sample ID: WCF-W10-1115

Date Collected: 11/04/15 16:05

Date Received: 11/06/15 10:10

Lab Sample ID: 490-91492-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	297029	11/10/15 08:26	ZLN	TAL NSH
Total/NA	Analysis	6010B		1	50 mL	50 mL	298541	11/14/15 03:40	BLG	TAL NSH
Total/NA	Prep	3010A			50 mL	50 mL	297426	11/11/15 08:50	ZLN	TAL NSH
Total/NA	Analysis	6020		1	50 mL	50 mL	297779	11/11/15 18:24	KKK	TAL NSH
Total/NA	Prep	3010A			50 mL	50 mL	297426	11/11/15 08:50	ZLN	TAL NSH
Total/NA	Analysis	6020		1	50 mL	50 mL	298121	11/12/15 14:17	KKK	TAL NSH
Total/NA	Prep	7470A			30 mL	30 mL	298815	11/16/15 11:03	TSC	TAL NSH
Total/NA	Analysis	7470A		1	30 mL	30 mL	299046	11/16/15 18:41	TSC	TAL NSH
Total/NA	Analysis	SM 2540D		1	975 mL	1000 mL	297147	11/10/15 13:31	EF1	TAL NSH

Client Sample ID: WCF-31-1115

Date Collected: 11/04/15 09:38

Date Received: 11/06/15 10:10

Lab Sample ID: 490-91492-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	297029	11/10/15 08:26	ZLN	TAL NSH
Total/NA	Analysis	6010B		1	50 mL	50 mL	298541	11/14/15 03:44	BLG	TAL NSH
Total/NA	Prep	3010A			50 mL	50 mL	297426	11/11/15 08:50	ZLN	TAL NSH
Total/NA	Analysis	6020		1	50 mL	50 mL	297779	11/11/15 18:30	KKK	TAL NSH
Total/NA	Prep	3010A			50 mL	50 mL	297426	11/11/15 08:50	ZLN	TAL NSH
Total/NA	Analysis	6020		1	50 mL	50 mL	298121	11/12/15 14:23	KKK	TAL NSH
Total/NA	Prep	7470A			30 mL	30 mL	298815	11/16/15 11:03	TSC	TAL NSH
Total/NA	Analysis	7470A		1	30 mL	30 mL	299046	11/16/15 18:43	TSC	TAL NSH
Total/NA	Analysis	SM 2540D		1	975 mL	1000 mL	297147	11/10/15 13:31	EF1	TAL NSH

Client Sample ID: WCF-10-51-1115

Date Collected: 11/04/15 11:05

Date Received: 11/06/15 10:10

Lab Sample ID: 490-91492-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	297029	11/10/15 08:26	ZLN	TAL NSH
Total/NA	Analysis	6010B		1	50 mL	50 mL	298541	11/14/15 03:49	BLG	TAL NSH
Total/NA	Prep	3010A			50 mL	50 mL	297426	11/11/15 08:50	ZLN	TAL NSH
Total/NA	Analysis	6020		1	50 mL	50 mL	297779	11/11/15 18:46	KKK	TAL NSH
Total/NA	Prep	3010A			50 mL	50 mL	297426	11/11/15 08:50	ZLN	TAL NSH
Total/NA	Analysis	6020		1	50 mL	50 mL	298121	11/12/15 14:28	KKK	TAL NSH
Total/NA	Prep	7470A			30 mL	30 mL	298815	11/16/15 11:03	TSC	TAL NSH
Total/NA	Analysis	7470A		1	30 mL	30 mL	299046	11/16/15 18:46	TSC	TAL NSH
Total/NA	Analysis	SM 2540D		1	850 mL	1000 mL	297147	11/10/15 13:31	EF1	TAL NSH

TestAmerica Nashville

Lab Chronicle

Client: Tennessee Valley Authority
Project/Site: TVA Widows Creek

TestAmerica Job ID: 490-91492-1

Client Sample ID: WCF-10-52-1115

Lab Sample ID: 490-91492-4

Date Collected: 11/04/15 13:35

Matrix: Water

Date Received: 11/06/15 10:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	297029	11/10/15 08:26	ZLN	TAL NSH
Total/NA	Analysis	6010B		1	50 mL	50 mL	298541	11/14/15 03:53	BLG	TAL NSH
Total/NA	Prep	3010A			50 mL	50 mL	297426	11/11/15 08:50	ZLN	TAL NSH
Total/NA	Analysis	6020		1	50 mL	50 mL	297779	11/11/15 18:51	KKK	TAL NSH
Total/NA	Prep	3010A			50 mL	50 mL	297426	11/11/15 08:50	ZLN	TAL NSH
Total/NA	Analysis	6020		1	50 mL	50 mL	298121	11/12/15 14:33	KKK	TAL NSH
Total/NA	Prep	7470A			30 mL	30 mL	298815	11/16/15 11:03	TSC	TAL NSH
Total/NA	Analysis	7470A		1	30 mL	30 mL	299046	11/16/15 18:48	TSC	TAL NSH
Total/NA	Analysis	SM 2540D		1	975 mL	1000 mL	297147	11/10/15 13:31	EF1	TAL NSH

Client Sample ID: WCF-10-52-1115- Duplicate

Lab Sample ID: 490-91492-5

Date Collected: 11/04/15 13:35

Matrix: Water

Date Received: 11/06/15 10:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	297029	11/10/15 08:26	ZLN	TAL NSH
Total/NA	Analysis	6010B		1	50 mL	50 mL	298541	11/14/15 03:58	BLG	TAL NSH
Total/NA	Prep	3010A			50 mL	50 mL	297426	11/11/15 08:50	ZLN	TAL NSH
Total/NA	Analysis	6020		1	50 mL	50 mL	297779	11/11/15 18:56	KKK	TAL NSH
Total/NA	Prep	3010A			50 mL	50 mL	297426	11/11/15 08:50	ZLN	TAL NSH
Total/NA	Analysis	6020		1	50 mL	50 mL	298121	11/12/15 14:38	KKK	TAL NSH
Total/NA	Prep	7470A			30 mL	30 mL	298815	11/16/15 11:03	TSC	TAL NSH
Total/NA	Analysis	7470A		1	30 mL	30 mL	299046	11/16/15 18:51	TSC	TAL NSH
Total/NA	Analysis	SM 2540D		1	1000 mL	1000 mL	297147	11/10/15 13:31	EF1	TAL NSH

Client Sample ID: WCF-GYP-EQ

Lab Sample ID: 490-91492-6

Date Collected: 11/04/15 14:35

Matrix: Water

Date Received: 11/06/15 10:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	297029	11/10/15 08:26	ZLN	TAL NSH
Total/NA	Analysis	6010B		1	50 mL	50 mL	298541	11/14/15 04:02	BLG	TAL NSH
Total/NA	Prep	3010A			50 mL	50 mL	297426	11/11/15 08:50	ZLN	TAL NSH
Total/NA	Analysis	6020		1	50 mL	50 mL	297779	11/11/15 19:01	KKK	TAL NSH
Total/NA	Prep	3010A			50 mL	50 mL	297426	11/11/15 08:50	ZLN	TAL NSH
Total/NA	Analysis	6020		1	50 mL	50 mL	298121	11/12/15 14:43	KKK	TAL NSH
Total/NA	Prep	7470A			30 mL	30 mL	298815	11/16/15 11:03	TSC	TAL NSH
Total/NA	Analysis	7470A		1	30 mL	30 mL	299046	11/16/15 18:53	TSC	TAL NSH
Total/NA	Analysis	SM 2540D		1	1000 mL	1000 mL	297147	11/10/15 13:31	EF1	TAL NSH

Laboratory References:

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

Method Summary

Client: Tennessee Valley Authority
Project/Site: TVA Widows Creek

TestAmerica Job ID: 490-91492-1

Method	Method Description	Protocol	Laboratory
6010B	Metals (ICP)	SW846	TAL NSH
6020	Metals (ICP/MS)	SW846	TAL NSH
7470A	Mercury (CVAA)	SW846	TAL NSH
SM 2540D	Solids, Total Suspended (TSS)	SM	TAL NSH

Protocol References:

SM = "Standard Methods For The Examination Of Water And Wastewater",

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: Tennessee Valley Authority
 Project/Site: TVA Widows Creek

TestAmerica Job ID: 490-91492-1

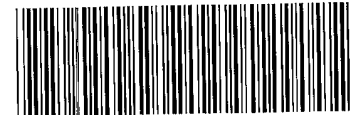
Laboratory: TestAmerica Nashville

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	A2LA		NA: NELAP & A2LA	12-31-15
A2LA	ISO/IEC 17025		0453.07	12-31-15
Alaska (UST)	State Program	10	UST-087	07-24-16
Arizona	State Program	9	AZ0473	05-05-16
Arkansas DEQ	State Program	6	88-0737	04-25-16
California	State Program	9	2938	10-31-16
Connecticut	State Program	1	PH-0220	12-31-15
Florida	NELAP	4	E87358	06-30-16
Georgia	State Program	4	N/A	06-30-16
Illinois	NELAP	5	200010	12-09-15 *
Iowa	State Program	7	131	04-01-16
Kansas	NELAP	7	E-10229	01-31-16
Kentucky (UST)	State Program	4	19	06-30-16
Kentucky (WW)	State Program	4	90038	12-31-15
Louisiana	NELAP	6	30613	06-30-16
Maine	State Program	1	TN00032	11-03-17
Maryland	State Program	3	316	03-31-16
Massachusetts	State Program	1	M-TN032	06-30-16
Minnesota	NELAP	5	047-999-345	12-31-16
Mississippi	State Program	4	N/A	06-30-16
Montana (UST)	State Program	8	NA	02-24-20
Nevada	State Program	9	TN00032	07-31-16
New Hampshire	NELAP	1	2963	10-09-16
New Jersey	NELAP	2	TN965	11-30-15
New York	NELAP	2	11342	03-31-16
North Carolina (WW/SW)	State Program	4	387	12-31-15
North Dakota	State Program	8	R-146	06-30-15 *
Ohio VAP	State Program	5	CL0033	07-10-17
Oklahoma	State Program	6	9412	08-31-16
Oregon	NELAP	10	TN200001	04-27-16
Pennsylvania	NELAP	3	68-00585	06-30-16
Rhode Island	State Program	1	LAO00268	12-30-15
South Carolina	State Program	4	84009 (001)	02-28-16
South Carolina (Do Not Use - DW)	State Program	4	84009 (002)	12-16-17
Tennessee	State Program	4	2008	02-23-17
Texas	NELAP	6	T104704077	08-31-16
USDA	Federal		S-48469	10-30-16
Utah	NELAP	8	TN00032	07-31-16
Virginia	NELAP	3	460152	06-14-16
Washington	State Program	10	C789	07-19-16
West Virginia DEP	State Program	3	219	02-28-16
Wisconsin	State Program	5	998020430	08-31-16
Wyoming (UST)	A2LA	8	453.07	12-31-15

* Certification renewal pending - certification considered valid.

COOLER RECEIPT FORM



490-91492 Chain of Custody

Cooler Received/Opened On 11/6/2015 @ 1010

1. Tracking # 6143 (last 4 digits, FedEx)

Courier: FedEx IR Gun ID 18290455

2. Temperature of rep. sample or temp blank when opened: 0.2 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

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 (initial) 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

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 (initial) DA

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 (initial) DA

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 (initial) DA

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

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

COOLER RECEIPT FORM

Cooler Received/Opened On 11/6/2015 @ 1010

1. Tracking # 6154 (last 4 digits, FedEx)

Courier: FedEx IR Gun ID 18290455

2. Temperature of rep. sample or temp blank when opened: 0.1 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: _____

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 (initial) 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

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 (initial) DA

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 (initial) DA

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 (initial) DA

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

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

TestAmerica Nashville
 2960 Foster Creighton Drive
 Nashville, TN 37204
 Phone (615) 726-0177 Fax (615) 726-0954

Chain of Custody Record

Loc: 490
 91492

TestAmerica
 1487 LEADER DR, SUITE 1000, NASHVILLE, TN 37204

Client Information		Sampler	Lab Pk.	Car	COC No.	Page:			
Client Contact: Anna Fisher		Phone: 256-349-0733	Lage, Gail						
Address: 490 West Summit Hill Dr		E-Mail: gallage@testamerica.com							
City: Knoxville		Analysis Requested							
State Zip: TN, 37902		Due Date Requested: Standard Turnaround	TAT Requested (days):		Job #:				
Phone: 423-251-3351		PO #: 604595			Preservation Codes:				
Email: TVA GW Analytical@tva.gov		WQC #:			A - HCL	M - Hexane			
Project Name: TVA Widows Creek		Project #:			B - NaOH	N - None			
Site:		SSCWA#:			C - Zn Acetate	O - AsHCl2			
					D - Nitric Acid	P - Na2O4S			
					E - NaHSO4	Q - Na2SO3			
					F - MeOH	R - Na2S2O3			
					G - Ammonia	S - H2SO4			
					H - Ascorbic Acid	T - TSP Dodecahydrate			
					I - Ice	U - Acetone			
					J - DI Water	V - HCl/A			
					K - EDTA	W - pH 4.5			
					L - EDTA	Z - other (specify)			
					Other:				
Sample Identification		Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=organic, A=Add)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	Total Number of Containers	Special Instructions/Note:
1	WCF-N10-1115	11-4-15	1605	G	GM			3	6010=As,Co,Cu,Ag, V, Zn
2	WCF-31-1115	11-4-15	0938	G	GM			3	6020=As, Be, Cd, Pb, Ni, Se, Ti
3	WCF-10-51-1115	11-4-15	1105	G	GM			3	
4	WCF-10-52-1115	11-4-15	1335	G	GM			3	
5	WCF-10-52-1115-Duplicate	11-4-15	1335	G	GM			3	
6	WCF-GYP-E0-	11-4-15	1435	G	DI W			3	
Possible Hazard Identification		Date:		Time:		Method of Shipment:			
<input checked="" type="checkbox"/> Non-Hazard									
<input type="checkbox"/> Flammable									
<input type="checkbox"/> Skin Irritant									
<input type="checkbox"/> Poison B									
<input type="checkbox"/> Unknown									
<input type="checkbox"/> Radiological									
Deliverable Requested: I, II, III, IV, Other (specify)									
Empty Kit Relinquished by:									
Relinquished by: Sam Synch		Date/Time: 11-5-15 0945		Company: TVA		Received by: Janice		Date/Time: 11-6-15 1010	
Relinquished by:		Date/Time:		Company:		Received by:		Date/Time:	
Relinquished by:		Date/Time:		Company:		Received by:		Date/Time:	
Custody Seals Intact: <input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> No		Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks: 0, 2, 0.1					

Lage, Gail

From: TVA Groundwater Analytical Inbox <TVA_GW_Analytical@tva.gov>
Sent: Tuesday, November 10, 2015 7:16 AM
To: Lage, Gail; Fisher, Anna Brodie; Lynch, Timmy; TVA Groundwater Analytical Inbox
Subject: RE: PLEASE READ: TestAmerica Sample Login Confirmation files from 490-91492 TVA Widows Creek

Follow Up Flag: Follow up
Flag Status: Flagged

Gail, please analyze for the list that you have below.
Thank you,

Maggie Gilliland
Geologist – AECOM
mggilliland@tva.gov
Maggie.gilliland@aecom.com
423-751-2808 – TVA
423-648-8058 – Office
423-394-9916 - Cell

From: Lage, Gail [mailto:gail.lage@testamericainc.com]
Sent: Monday, November 09, 2015 11:56 AM
To: Fisher, Anna Brodie; Lynch, Timmy; TVA Groundwater Analytical Inbox
Subject: PLEASE READ: TestAmerica Sample Login Confirmation files from 490-91492 TVA Widows Creek

TVA External Message. Please use caution when opening.

I have a slight different list of metals/methods for Widows Creek. Last time we reported the following:

6010 = Ba, Cr, Co, Cu, Ni, Se, Ag
6020 = Sb, As, Be, Cd, Pb, Tl, V, Zn

Please let me know if the list above is not correct.

Attached, please find the Sample Confirmation files for job 490-91492; TVA Widows Creek

Please feel free to contact me if you have any questions.

Thank you.

Please let us know if we met your expectations by rating the service you received from TestAmerica on this project by visiting our website at: [Project Feedback](#)

GAIL LAGE
Senior Project Manager

TestAmerica Nashville
THE LEADER IN ENVIRONMENTAL TESTING

Tel: 615.301.5741

Reference: [256557]
Attachments: 3

- 1
- 2
- 3
- 4
- 5
- 6
- 7
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- 9
- 10
- 11
- 12
- 13

Login Sample Receipt Checklist

Client: Tennessee Valley Authority

Job Number: 490-91492-1

Login Number: 91492

List Source: TestAmerica Nashville

List Number: 1

Creator: Armstrong, Daniel

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.	N/A	
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	0.2C, 0.1C
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").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	