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TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

ANALYTICAL REPORT

Erie Coke - Cyanide

Lot #: H6I280405

William Cowell

Montrose Air Quality Services
1050 William Pitt Way
Pittsburgh, PA 15238

TESTAMERICA LABORATORIES, INC.

Courtney M. Adkins
Project Manager

October 7, 2016

PROJECT NARRATIVE
H6I280405

The results reported herein are applicable to the samples submitted for analysis only. If you have any questions about this report, please call (865) 291-3000 to speak with the TestAmerica project manager listed on the cover page.

This report shall not be reproduced except in full, without the written approval of the laboratory.

The original chain of custody documentation is included with this report.

Sample Receipt

There were no problems with the condition of the samples received.

Subcontract

The following analyses were performed by the TestAmerica Pittsburgh Laboratory (NELAP Accrediting Authority: PADEP; Lab ID 02-00416), 301 Alpha Drive, Pittsburgh, PA 15238, (412)963-7058, Debbie Lowe, Laboratory Director: Cyanide (SW846 9014)..

Quality Control and Data Interpretation

Unless otherwise noted, all holding times and QC criteria were met and the test results shown in this report meet all applicable NELAC requirements.

Sample Receipt Documentation

Request for Analysis/Chain-of-Custody – RFA/COC #003
Montrose Air Quality Services LLC
Coke ICR Testing on Dust and Water Samples

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

HbI 280405

Project Identification:	Montrose Air Quality Services Coke ICR
Client Contact:	Mr. Matthew Dallesasse (Montrose) (412) 826-3636
TestAmerica Contact:	Ms. Courtney Adkins (865) 291-3019
TestAmerica Project Manager:	Mr. Kevin Woodcock (865) 291-3082

Analytical Testing QC Requirements:
The Legend for Project-Specific Quality Control Testing is designated in the "QC" column as follows: "MS" = Matrix Spike, "MSD" = Matrix Spike Duplicate, "DUP" = Duplicate, "PDS" = Post Digestion Spike and "PDSD" = Post Digestion Spike Duplicate

Laboratory Deliverable Turnaround Requirements:	
Analytical Due Date: (Review-Released Data)	21 Days from Lab Receipt
Data Package Due Date:	28 Days from Lab Receipt
Media Request Form No.:	083016-8
Laboratory Destination:	TestAmerica Knoxville 5815 Middlebrook Pike Knoxville, Tennessee 37921 (865) 291-3000
Courier:	TestAmerica Courier Service

Project Deliverables:
Report analytical results on Quantims R-02 and TALS Reports and in data packages. Include "Field Sample Number", "Sample Type", and "Run Number" on all Reports.

Analytical Parameter:	Holding Time Requirements:	Preservation Requirements:
Cyanide	14 Days to Analysis	NaOH to pH > 12, Cool, 4°C

Field Sample No./Sample Coding ID	Loc. No.	Sample Collection Date	Project QC Require-ments	Sample Bottle/ Container	Sample Type	Analytical Specifications
R-1605 Loc #3 Water QT-R1A	3	9/22/16	MS/MSD	500 mL Narrow Mouth Nalgene/HDPE	**Water Sample** **Location #3** Cyanide Analysis	Analyze this sample for Cyanide by SW-846 Compendium Method 9014. PH>12
R-1613 Loc #4 Water QT-R1B	4	9/22/16		500 mL Narrow Mouth Nalgene/HDPE	**Water Sample** **Location #4** Cyanide Analysis	Analyze this sample for Cyanide by SW-846 Compendium Method 9014. PH>12
R-1621 Loc #5 Water QT-R1C	5	9/22/16		500 mL Narrow Mouth Nalgene/HDPE	**Water Sample** **Location #5** Cyanide Analysis	Analyze this sample for Cyanide by SW-846 Compendium Method 9014. PH>12
R-1629 Loc #6 Water QT-R2A	6	9/23/16		500 mL Narrow Mouth Nalgene/HDPE	**Water Sample** **Location #6** Cyanide Analysis	Analyze this sample for Cyanide by SW-846 Compendium Method 9014. PH>12
R-1637 Loc #7 Water QT-R2B	7	9/23/16		500 mL Narrow Mouth Nalgene/HDPE	**Water Sample** **Location #7** Cyanide Analysis	Analyze this sample for Cyanide by SW-846 Compendium Method 9014. PH>12

Request for Analysis/Chain-of-Custody – RFA/COC #003
Montrose Air Quality Services LLC
Coke ICR Testing on Dust and Water Samples

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Field Sample No./Sample Coding ID	Loc. No.	Sample Collection Date	Project QC Require-ments	Sample Bottle/ Container	Sample Type	Analytical Specifications
R-1645 Loc #8 Water QT-R2C	8	9/23/16		500 mL Narrow Mouth Nalgene/HDPE	**Water Sample** **Location #8** Cyanide Analysis	Analyze this sample for Cyanide by SW-846 Compendium Method 9014. pH>12
R-1653 Loc #9 Water QT-R3A	9	9/26/16		500 mL Narrow Mouth Nalgene/HDPE	**Water Sample** **Location #9** Cyanide Analysis	Analyze this sample for Cyanide by SW-846 Compendium Method 9014. pH>12
R-1661 Loc #10 Water QT-R3B	10	9/26/16		500 mL Narrow Mouth Nalgene/HDPE	**Water Sample** **Location #10** Cyanide Analysis	Analyze this sample for Cyanide by SW-846 Compendium Method 9014. pH>12
R-1669 Loc #11 Water QT-R3C	11	9/26/16		500 mL Narrow Mouth Nalgene/HDPE	**Water Sample** **Location #11** Cyanide Analysis	Analyze this sample for Cyanide by SW-846 Compendium Method 9014. pH>12

Request for Analysis/Chain-of-Custody – RFA/COC #003
Montrose Air Quality Services LLC
Coke ICR Testing on Dust and Water Samples

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Sample Receipt Log and Condition of the Samples Upon Receipt:

Please fill in the following information:	Comments (Please write "NONE" if no comment applicable)
(1) Record the identities of any samples that were listed on the RFA but were not found in the sample shipment.	NONE
(2) Record the sample shipping cooler temperature of all coolers transporting samples listed on this RFA:	RT 3.7, 4.8, 3.3, 4.4 / CT 3.7, 4.8, 3.3, 4.4
(3) Record any apparent sample loss/breakage.	NONE
(4) Record any unidentified samples transported with this shipment of samples:	NONE
(5) Indicate if all samples were received according to the project's required specifications (i.e. no nonconformances):	HAND DELIVERED, CUSTODY SEALS INTACT

Custody Transfer:

	Name	Company	Date/Time
Relinquished By:	[signature]	Montrose	9/26/16 11:00
Accepted By:	[signature]	TestAmerica	9/26/16 11:00
Relinquished By:	[signature]	TestAmerica	9/26/16 21:57
Accepted By:	[signature]	TAKNX	9/26/16 21:57
Relinquished By:			
Accepted By:			
Relinquished By:			
Accepted By:			

TESTAMERICA KNOXVILLE SAMPLE RECEIPT/CONDITION UPON RECEIPT ANOMALY CHECKLIST

Log In Number: HL128040S

Review Items	Yes	No	NA	If No, what was the problem?
1. Are the shipping containers intact?	✓			☐ **Containers, Broken**
2. Were ambient air containers received intact?			✓	☐ Checked in lab
3. The coolers/containers custody seal if present, is it intact?	✓			☐ Yes ☐ NA
4. Is the cooler temperature within limits? (> freezing temp. of water to 6 °C, VOST: 10°C) Thermometer ID : 8661 Correction factor: 0.0	✓			☐ **Cooler Out of Temp, Client Contacted, Proceed/Cancel** ☐ **Cooler Out of Temp, Same Day Receipt**
5. Were all of the sample containers received intact?	✓			☐ **Containers, Broken**
6. Were samples received in appropriate containers?	✓			☐ **Containers, Improper; Client Contacted; Proceed/Cancel**
7. Do sample container labels match COC? (IDs, Dates, Times)	✓			☐ **COC & Samples Do Not Match** ☐ **COC Incorrect/Incomplete** ☐ **COC Not Received**
8. Were all of the samples listed on the COC received?	✓			☐ **Sample Received, Not on COC** ☐ **Sample on COC, Not Received**
9. Is the date/time of sample collection noted?	✓			☐ **COC; No Date/Time; Client Contacted**
10. Was the sampler identified on the COC?			✓	☐ **Sampler Not Listed on COC**
11. Is the client and project name/# identified?	✓			☐ **COC Incorrect/Incomplete**
12. Are tests/parameters listed for each sample?	✓			☐ **COC No tests on COC**
13. Is the matrix of the samples noted?	✓			☐ **COC Incorrect/Incomplete**
14. Was COC relinquished? (Signed/Dated/Timed)	✓			☐ **COC Incorrect/Incomplete**
15. Were samples received within holding time?	✓			☐ **Holding Time - Receipt**
16. Were samples received with correct chemical preservative (excluding Encore)?	✓			☐ **pH Adjusted, pH Included (See box 16A)** ☐ **Incorrect Preservative**
17. Were VOA samples received without headspace?			✓	☐ **Headspace (VOA only)**
18. Did you check for residual chlorine, if necessary? (e.g. 1613B, 1668) Chlorine test strip lot number:			✓	☐ **Residual Chlorine**
19. For 1613B water samples is pH<9?			✓	☐ If no, lab will adjust
20. For rad samples was sample activity info. Provided?			✓	☐ Project missing info

Comments/Actions Taken

Labeling Verified by: **Date:**

pH test strip lot number: AC574756

	Box 16A: pH Preservation	Box 18A: Residual Chlorine
Preservative:		
Lot Number:		
Exp Date:		
Analyst:		
Date:		
Time:		

Project #: _____ PM Instructions: _____

Sample Receiving Associate: [signature] Date: 9-28-16

QA026R30.doc, 080916

TestAmerica
Pittsburgh

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

Job Number: 180-59138-1

Job Description: Knoxville, Montrose, Erie Coke

For:
TestAmerica Laboratories, Inc.
5815 Middlebrook Pike
Knoxville, TN 37921

Attention: Mr. Kevin S Woodcock

Approved for release.
David A Dunlap
Senior Project Manager
10/5/2016 9:21 AM

David A Dunlap, Senior Project Manager
301 Alpha Drive, Pittsburgh, PA, 15238
(412)963-2432
dave.dunlap@testamericainc.com
10/05/2016

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to the NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory. This report is confidential and is intended for the sole use of TestAmerica and its client. All questions regarding this report should be directed to the TestAmerica Project Manager or designee who has signed this report.

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Qualifiers

General Chemistry

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

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
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)

Job Narrative
180-59138-1

Receipt
The samples were received on 9/29/2016 9:00 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.4º C.

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

Detection Summary

Client: TestAmerica Laboratories, Inc.
Project/Site: Knoxville, Montrose, Erie Coke

TestAmerica Job ID: 180-59138-1

Client Sample ID: R-1605 LOC#3 WATER QT-R1A — Lab Sample ID: 180-59138-1

No Detections.

Client Sample ID: R-1613 LOC#4 WATER QT-R1B — Lab Sample ID: 180-59138-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cyanide, Total	4.0	J	10	3.8	ug/L	1		9014	Total/NA

Client Sample ID: R-1621 LOC#5 WATER QT-R1C — Lab Sample ID: 180-59138-3

No Detections.

Client Sample ID: R-1629 LOC#6 WATER QT-R2A — Lab Sample ID: 180-59138-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cyanide, Total	8.9	J	10	3.8	ug/L	1		9014	Total/NA

Client Sample ID: R-1637 LOC#7 WATER QT-R2B — Lab Sample ID: 180-59138-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cyanide, Total	9.5	J	10	3.8	ug/L	1		9014	Total/NA

Client Sample ID: R-1645 LOC#8 WATER QT-R2C — Lab Sample ID: 180-59138-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cyanide, Total	9.1	J	10	3.8	ug/L	1		9014	Total/NA

Client Sample ID: R-1653 LOC#9 WATER QT-R3A — Lab Sample ID: 180-59138-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cyanide, Total	11		10	3.8	ug/L	1		9014	Total/NA

Client Sample ID: R-1661 LOC#10 WATER QT-R3B — Lab Sample ID: 180-59138-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cyanide, Total	8.7	J	10	3.8	ug/L	1		9014	Total/NA

Client Sample ID: R-1669 LOC#11 WATER QT-R3C — Lab Sample ID: 180-59138-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cyanide, Total	7.9	J	10	3.8	ug/L	1		9014	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: TestAmerica Laboratories, Inc.
Project/Site: Knoxville, Montrose, Erie Coke

TestAmerica Job ID: 180-59138-1

General Chemistry

Client Sample ID: R-1605 LOC#3 WATER QT-R1A
Date Collected: 09/22/16 00:00
Date Received: 09/29/16 09:00

Lab Sample ID: 180-59138-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	ND		10	3.8	ug/L		10/04/16 10:59	10/04/16 15:47	1

Client Sample Results

Client: TestAmerica Laboratories, Inc.
Project/Site: Knoxville, Montrose, Erie Coke

TestAmerica Job ID: 180-59138-1

General Chemistry

Client Sample ID: R-1613 LOC#4 WATER QT-R1B
Date Collected: 09/22/16 00:00
Date Received: 09/29/16 09:00

Lab Sample ID: 180-59138-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	4.0	J	10	3.8	ug/L		10/04/16 10:59	10/04/16 15:56	1

Client Sample Results

Client: TestAmerica Laboratories, Inc.
Project/Site: Knoxville, Montrose, Erie Coke

TestAmerica Job ID: 180-59138-1

General Chemistry

Client Sample ID: R-1621 LOC#5 WATER QT-R1C
Date Collected: 09/22/16 00:00
Date Received: 09/29/16 09:00

Lab Sample ID: 180-59138-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	ND		10	3.8	ug/L		10/04/16 10:59	10/04/16 15:58	1

Client Sample Results

Client: TestAmerica Laboratories, Inc.
Project/Site: Knoxville, Montrose, Erie Coke

TestAmerica Job ID: 180-59138-1

General Chemistry

Client Sample ID: R-1629 LOC#6 WATER QT-R2A
Date Collected: 09/23/16 00:00
Date Received: 09/29/16 09:00

Lab Sample ID: 180-59138-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	8.9	J	10	3.8	ug/L		10/04/16 10:59	10/04/16 16:00	1

Client Sample Results

Client: TestAmerica Laboratories, Inc.
Project/Site: Knoxville, Montrose, Erie Coke

TestAmerica Job ID: 180-59138-1

General Chemistry

Client Sample ID: R-1637 LOC#7 WATER QT-R2B
Date Collected: 09/23/16 00:00
Date Received: 09/29/16 09:00

Lab Sample ID: 180-59138-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	9.5	J	10	3.8	ug/L		10/04/16 10:59	10/04/16 16:01	1

Client Sample Results

Client: TestAmerica Laboratories, Inc.
Project/Site: Knoxville, Montrose, Erie Coke

TestAmerica Job ID: 180-59138-1

General Chemistry

Client Sample ID: R-1645 LOC#8 WATER QT-R2C
Date Collected: 09/23/16 00:00
Date Received: 09/29/16 09:00

Lab Sample ID: 180-59138-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	9.1	J	10	3.8	ug/L		10/04/16 10:59	10/04/16 16:03	1

Client Sample Results

Client: TestAmerica Laboratories, Inc.
Project/Site: Knoxville, Montrose, Erie Coke

TestAmerica Job ID: 180-59138-1

General Chemistry

Client Sample ID: R-1653 LOC#9 WATER QT-R3A
Date Collected: 09/26/16 00:00
Date Received: 09/29/16 09:00

Lab Sample ID: 180-59138-7
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	11		10	3.8	ug/L		10/04/16 10:59	10/04/16 16:05	1

Client Sample Results

Client: TestAmerica Laboratories, Inc.
Project/Site: Knoxville, Montrose, Erie Coke

TestAmerica Job ID: 180-59138-1

General Chemistry

Client Sample ID: R-1661 LOC#10 WATER QT-R3B
Date Collected: 09/26/16 00:00
Date Received: 09/29/16 09:00

Lab Sample ID: 180-59138-8
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	8.7	J	10	3.8	ug/L		10/04/16 10:59	10/04/16 16:07	1

Client Sample Results

Client: TestAmerica Laboratories, Inc.
Project/Site: Knoxville, Montrose, Erie Coke

TestAmerica Job ID: 180-59138-1

General Chemistry

Client Sample ID: R-1669 LOC#11 WATER QT-R3C
Date Collected: 09/26/16 00:00
Date Received: 09/29/16 09:00

Lab Sample ID: 180-59138-9
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	7.9	J	10	3.8	ug/L		10/04/16 10:59	10/04/16 16:08	1

Default Detection Limits

Client: TestAmerica Laboratories, Inc.
Project/Site: Knoxville, Montrose, Erie Coke

TestAmerica Job ID: 180-59138-1

General Chemistry

Prep: 9010C

Analyte	RL	MDL	Units	Method
Cyanide, Total	10	3.8	ug/L	9014

QC Sample Results

Client: TestAmerica Laboratories, Inc.
Project/Site: Knoxville, Montrose, Erie Coke

TestAmerica Job ID: 180-59138-1

Method: 9014 - Cyanide

Lab Sample ID: MB 180-190065/4-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 190111 — **Prep Batch: 190065**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	ND		10	3.8	ug/L		10/04/16 10:59	10/04/16 15:46	1

Lab Sample ID: HLCS 180-190065/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 190111 — **Prep Batch: 190065**

Analyte	Spike Added	HLCS Result	HLCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	250	258		ug/L		103	90 - 110

Lab Sample ID: LCS 180-190065/3-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 190111 — **Prep Batch: 190065**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	200	212		ug/L		106	85 - 115

Lab Sample ID: LLCS 180-190065/1-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 190111 — **Prep Batch: 190065**

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	50.0	49.6		ug/L		99	90 - 110

Lab Sample ID: 180-59138-1 MS — **Client Sample ID: R-1605 LOC#3 WATER QT-R1A**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 190111 — **Prep Batch: 190065**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	ND		100	102		ug/L		102	75 - 125

Lab Sample ID: 180-59138-1 MSD — **Client Sample ID: R-1605 LOC#3 WATER QT-R1A**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 190111 — **Prep Batch: 190065**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Cyanide, Total	ND		100	98.2		ug/L		98	75 - 125	4	20

QC Association Summary

Client: TestAmerica Laboratories, Inc.
Project/Site: Knoxville, Montrose, Erie Coke

TestAmerica Job ID: 180-59138-1

General Chemistry

Prep Batch: 190065

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-59138-1	R-1605 LOC#3 WATER QT-R1A	Total/NA	Water	9010C	
180-59138-2	R-1613 LOC#4 WATER QT-R1B	Total/NA	Water	9010C	
180-59138-3	R-1621 LOC#5 WATER QT-R1C	Total/NA	Water	9010C	
180-59138-4	R-1629 LOC#6 WATER QT-R2A	Total/NA	Water	9010C	
180-59138-5	R-1637 LOC#7 WATER QT-R2B	Total/NA	Water	9010C	
180-59138-6	R-1645 LOC#8 WATER QT-R2C	Total/NA	Water	9010C	
180-59138-7	R-1653 LOC#9 WATER QT-R3A	Total/NA	Water	9010C	
180-59138-8	R-1661 LOC#10 WATER QT-R3B	Total/NA	Water	9010C	
180-59138-9	R-1669 LOC#11 WATER QT-R3C	Total/NA	Water	9010C	
MB 180-190065/4-A	Method Blank	Total/NA	Water	9010C	
HLCS 180-190065/2-A	Lab Control Sample	Total/NA	Water	9010C	
LCS 180-190065/3-A	Lab Control Sample	Total/NA	Water	9010C	
LLCS 180-190065/1-A	Lab Control Sample	Total/NA	Water	9010C	
180-59138-1 MS	R-1605 LOC#3 WATER QT-R1A	Total/NA	Water	9010C	
180-59138-1 MSD	R-1605 LOC#3 WATER QT-R1A	Total/NA	Water	9010C	

Analysis Batch: 190111

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-59138-1	R-1605 LOC#3 WATER QT-R1A	Total/NA	Water	9014	190065
180-59138-2	R-1613 LOC#4 WATER QT-R1B	Total/NA	Water	9014	190065
180-59138-3	R-1621 LOC#5 WATER QT-R1C	Total/NA	Water	9014	190065
180-59138-4	R-1629 LOC#6 WATER QT-R2A	Total/NA	Water	9014	190065
180-59138-5	R-1637 LOC#7 WATER QT-R2B	Total/NA	Water	9014	190065
180-59138-6	R-1645 LOC#8 WATER QT-R2C	Total/NA	Water	9014	190065
180-59138-7	R-1653 LOC#9 WATER QT-R3A	Total/NA	Water	9014	190065
180-59138-8	R-1661 LOC#10 WATER QT-R3B	Total/NA	Water	9014	190065
180-59138-9	R-1669 LOC#11 WATER QT-R3C	Total/NA	Water	9014	190065
MB 180-190065/4-A	Method Blank	Total/NA	Water	9014	190065
HLCS 180-190065/2-A	Lab Control Sample	Total/NA	Water	9014	190065
LCS 180-190065/3-A	Lab Control Sample	Total/NA	Water	9014	190065
LLCS 180-190065/1-A	Lab Control Sample	Total/NA	Water	9014	190065
180-59138-1 MS	R-1605 LOC#3 WATER QT-R1A	Total/NA	Water	9014	190065
180-59138-1 MSD	R-1605 LOC#3 WATER QT-R1A	Total/NA	Water	9014	190065

Lab Chronicle

Client: TestAmerica Laboratories, Inc.
Project/Site: Knoxville, Montrose, Erie Coke

TestAmerica Job ID: 180-59138-1

Client Sample ID: R-1605 LOC#3 WATER QT-R1A — Lab Sample ID: 180-59138-1

Date Collected: 09/22/16 00:00 — **Matrix: Water**
Date Received: 09/29/16 09:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	9010C			50 mL	50 mL	190065	10/04/16 10:59	JAS	TAL PIT
Total/NA	Analysis	9014		1			190111	10/04/16 15:47	JAS	TAL PIT
	Instrument ID: SEAL2									

Client Sample ID: R-1613 LOC#4 WATER QT-R1B — Lab Sample ID: 180-59138-2

Date Collected: 09/22/16 00:00 — **Matrix: Water**
Date Received: 09/29/16 09:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	9010C			50 mL	50 mL	190065	10/04/16 10:59	JAS	TAL PIT
Total/NA	Analysis	9014		1			190111	10/04/16 15:56	JAS	TAL PIT
	Instrument ID: SEAL2									

Client Sample ID: R-1621 LOC#5 WATER QT-R1C — Lab Sample ID: 180-59138-3

Date Collected: 09/22/16 00:00 — **Matrix: Water**
Date Received: 09/29/16 09:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	9010C			50 mL	50 mL	190065	10/04/16 10:59	JAS	TAL PIT
Total/NA	Analysis	9014		1			190111	10/04/16 15:58	JAS	TAL PIT
	Instrument ID: SEAL2									

Client Sample ID: R-1629 LOC#6 WATER QT-R2A — Lab Sample ID: 180-59138-4

Date Collected: 09/23/16 00:00 — **Matrix: Water**
Date Received: 09/29/16 09:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	9010C			50 mL	50 mL	190065	10/04/16 10:59	JAS	TAL PIT
Total/NA	Analysis	9014		1			190111	10/04/16 16:00	JAS	TAL PIT
	Instrument ID: SEAL2									

Client Sample ID: R-1637 LOC#7 WATER QT-R2B — Lab Sample ID: 180-59138-5

Date Collected: 09/23/16 00:00 — **Matrix: Water**
Date Received: 09/29/16 09:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	9010C			50 mL	50 mL	190065	10/04/16 10:59	JAS	TAL PIT
Total/NA	Analysis	9014		1			190111	10/04/16 16:01	JAS	TAL PIT
	Instrument ID: SEAL2									

Lab Chronicle

Client: TestAmerica Laboratories, Inc.
Project/Site: Knoxville, Montrose, Erie Coke

TestAmerica Job ID: 180-59138-1

Client Sample ID: R-1645 LOC#8 WATER QT-R2C — Lab Sample ID: 180-59138-6

Date Collected: 09/23/16 00:00 — **Matrix: Water**
Date Received: 09/29/16 09:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	9010C			50 mL	50 mL	190065	10/04/16 10:59	JAS	TAL PIT
Total/NA	Analysis	9014		1			190111	10/04/16 16:03	JAS	TAL PIT
	Instrument ID: SEAL2									

Client Sample ID: R-1653 LOC#9 WATER QT-R3A — Lab Sample ID: 180-59138-7

Date Collected: 09/26/16 00:00 — **Matrix: Water**
Date Received: 09/29/16 09:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	9010C			50 mL	50 mL	190065	10/04/16 10:59	JAS	TAL PIT
Total/NA	Analysis	9014		1			190111	10/04/16 16:05	JAS	TAL PIT
	Instrument ID: SEAL2									

Client Sample ID: R-1661 LOC#10 WATER QT-R3B — Lab Sample ID: 180-59138-8

Date Collected: 09/26/16 00:00 — **Matrix: Water**
Date Received: 09/29/16 09:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	9010C			50 mL	50 mL	190065	10/04/16 10:59	JAS	TAL PIT
Total/NA	Analysis	9014		1			190111	10/04/16 16:07	JAS	TAL PIT
	Instrument ID: SEAL2									

Client Sample ID: R-1669 LOC#11 WATER QT-R3C — Lab Sample ID: 180-59138-9

Date Collected: 09/26/16 00:00 — **Matrix: Water**
Date Received: 09/29/16 09:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	9010C			50 mL	50 mL	190065	10/04/16 10:59	JAS	TAL PIT
Total/NA	Analysis	9014		1			190111	10/04/16 16:08	JAS	TAL PIT
	Instrument ID: SEAL2									

Laboratory References:
TAL PIT = TestAmerica Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

Analyst References:
Lab: TAL PIT
Batch Type: Prep
JAS = Joshua Schmidt

Batch Type: Analysis
JAS = Joshua Schmidt

Certification Summary

Client: TestAmerica Laboratories, Inc.
Project/Site: Knoxville, Montrose, Erie Coke

TestAmerica Job ID: 180-59138-1

Laboratory: TestAmerica Pittsburgh

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Arkansas DEQ	State Program	6	88-0690	06-27-17
California	State Program	9	2891	03-31-18
Connecticut	State Program	1	PH-0688	09-30-18
Florida	NELAP	4	E871008	06-30-17
Illinois	NELAP	5	200005	06-30-17
Kansas	NELAP	7	E-10350	01-31-17
Louisiana	NELAP	6	04041	06-30-17
New Hampshire	NELAP	1	2030	04-04-17
New Jersey	NELAP	2	PA005	06-30-17
New York	NELAP	2	11182	03-31-17
North Carolina (WW/SW)	State Program	4	434	12-31-16
Pennsylvania	NELAP	3	02-00416	04-30-17
South Carolina	State Program	4	89014	04-30-17
Texas	NELAP	6	T104704528-15-2	03-31-17
US Fish & Wildlife	Federal		LE94312A-1	10-31-16
USDA	Federal		P330-16-00211	06-26-19
Utah	NELAP	8	PA001462015-4	05-31-17
Virginia	NELAP	3	460189	09-14-17
West Virginia DEP	State Program	3	142	01-31-17
Wisconsin	State Program	5	998027800	08-31-17

Method Summary

Client: TestAmerica Laboratories, Inc.
Project/Site: Knoxville, Montrose, Erie Coke

TestAmerica Job ID: 180-59138-1

Method	Method Description	Protocol	Laboratory
9014	Cyanide	SW846	TAL PIT

Protocol References:

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

Laboratory References:

TAL PIT = TestAmerica Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

Sample Summary

Client: TestAmerica Laboratories, Inc.
Project/Site: Knoxville, Montrose, Erie Coke

TestAmerica Job ID: 180-59138-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
180-59138-1	R-1605 LOC#3 WATER QT-R1A	Water	09/22/16 00:00	09/29/16 09:00
180-59138-2	R-1613 LOC#4 WATER QT-R1B	Water	09/22/16 00:00	09/29/16 09:00
180-59138-3	R-1621 LOC#5 WATER QT-R1C	Water	09/22/16 00:00	09/29/16 09:00
180-59138-4	R-1629 LOC#6 WATER QT-R2A	Water	09/23/16 00:00	09/29/16 09:00
180-59138-5	R-1637 LOC#7 WATER QT-R2B	Water	09/23/16 00:00	09/29/16 09:00
180-59138-6	R-1645 LOC#8 WATER QT-R2C	Water	09/23/16 00:00	09/29/16 09:00
180-59138-7	R-1653 LOC#9 WATER QT-R3A	Water	09/26/16 00:00	09/29/16 09:00
180-59138-8	R-1661 LOC#10 WATER QT-R3B	Water	09/26/16 00:00	09/29/16 09:00
180-59138-9	R-1669 LOC#11 WATER QT-R3C	Water	09/26/16 00:00	09/29/16 09:00

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Pittsburgh Job No.: 180-59138-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
WCN0.1L3_00220	10/06/16	10/04/16	Sodium Hyroxide, Lot 4512400	100 mL	WCN10Pi_00558	1 mL	Cyanide, Total	0.1 mg/L
.WCN10Pi_00558	10/06/16	09/29/16	Sodium Hyroxide, Lot 4512400	100 mL	WCN1000P_00031	1 mL	Cyanide, Total	10 mg/L
..WCN1000P_00031	01/27/17	LabChem Inc., Lot F208-27			(Purchased Reagent)		Cyanide, Total	1000 mg/L
WCN0.2ICV_00507	10/06/16	10/04/16	Sodium Hyroxide, Lot 4512400	100 mL	WCN10Si_00560	2 mL	Cyanide, Total	0.2 mg/L
.WCN10Si_00560	10/06/16	09/29/16	Sodium Hyroxide, Lot 4512400	100 mL	WCN1000S_00023	1 mL	Cyanide, Total	10 mg/L
..WCN1000S_00023	12/31/16	Ricca Chemical Co., Lot 1606K07			(Purchased Reagent)		Cyanide, Total	1000 mg/L
WCN0.5L1_00669	10/06/16	10/04/16	Sodium Hyroxide, Lot 4512400	100 mL	WCN10Pi_00558	5 mL	Cyanide, Total	0.5 mg/L
.WCN10Pi_00558	10/06/16	09/29/16	Sodium Hyroxide, Lot 4512400	100 mL	WCN1000P_00031	1 mL	Cyanide, Total	10 mg/L
..WCN1000P_00031	01/27/17	LabChem Inc., Lot F208-27			(Purchased Reagent)		Cyanide, Total	1000 mg/L
WCN10Pi_00558	10/06/16	09/29/16	Sodium Hyroxide, Lot 4512400	100 mL	WCN1000P_00031	1 mL	Cyanide, Total	10 mg/L
.WCN1000P_00031	01/27/17	LabChem Inc., Lot F208-27			(Purchased Reagent)		Cyanide, Total	1000 mg/L
WCNLCS_00090	10/06/16	09/29/16	Sodium Hyroxide, Lot 4512400	100 mL	WCNWSTOCK_00002	1 mL	Cyanide, Total	10 mg/L
.WCNWSTOCK_00002	01/31/17	ERA, Lot 080115			(Purchased Reagent)		Cyanide, Total	1000 mg/L

Reagent

WCN1000P_00031

LabChem
performance through chemistry
Jackson's Pointe Commerce Park - Building 1000
1010 Jackson's Pointe Court, Zelienople, PA 16063
Ph: 412-826-5230 | Fax: 724-473-0647 | www.labchem.com

2087514
ID: WCN1000P_00031
Exp:01/27/17 Prpd:JAS Opn:09/28/16
Cyanide 1000 ppm Primary

2087515
ID: WAvCN1000P_00022
Exp:01/27/17 Prpd:JAS Opn:09/28/16
Available Cyanide 1000 pp

CERTIFICATE OF ANALYSIS

Description: CYANIDE STANDARD, 1000ppm (1ml = 1mg CN)

Catalog Number: LC13545
Lot Number: F208-27

Mfg Date: 07/27/2016
Expiration Date: 01/27/2017

ANALYTICAL SECTION

Test	Specification	Test Result
Appearance	clear, colorless solution	Pass Test
Concentration ppm CN	1000ppm +/- 10ppm	1007ppm
Concentration mg CN/mL	1.000mg/mL +/- 0.010 mg CN/mL	1.007 mg CN/mL
Traceable to NIST	Potassium Chloride	999b

Intended Use - Product is intended for use in manufacturing procedures and laboratory procedures and protocols.

Storage Information - Unless otherwise noted on the product label, store the product under normal lab conditions in its tightly closed, original container. Do not pipet directly from the container or return unused portions to the container.

Instructions for Handling and Use - Please refer to the associated product label and Safety Data Sheet (SDS) for information regarding safety and handling of this product.

Preparation - All products are manufactured and tested according to established, documented procedures and methodology. Production documentation records manufacturing data, raw material traceability and testing history on a per lot basis. Balances, thermometers, and glassware are calibrated before first use and on a regular schedule with references traceable to NIST standards.

Submitted By: Greg Albright, Chemist Supervisor

An ISO9001:2008 certified company. Registration # 0306-01

09/27/2016 2:59:21 PM

Form #17.13 07/28/2016

Page 1 of 1

Reagent

WCN1000S_00023

RICCA CHEMICAL COMPANY®
Arlington, TX 76012
Pocomoke City, MD 21851
Batesville, IN 47006
http://www.riccachemical.com
1-888-GO-RICCA
customerservice@riccachemical.com

Certificate of Analysis

Cyanide Standard, 1000 ppm CN⁻

Lot Number: 1606K07 **Product Number:** 2543

Manufacture Date: JUN 27, 2016
Expiration Date: DEC 2016

This standard is prepared using accurate volumetric techniques from material that has been assayed against Silver Nitrate solution certified traceable to NIST Standard Reference Material 999. The certified value reported is the prepared value based upon the method of preparation of the material. The uncertainty in the prepared value is the combined uncertainty based on the stability of the assayed Potassium Cyanide, and the uncertainty in the mass and volume measurements.
Use 0.16% (w/v) (0.04 N) Sodium Hydroxide or 0.225 % (w/v) (0.04 N) Potassium Hydroxide to make dilutions of this standard. Restandardize weekly if extreme accuracy is required.

Name	CAS#	Grade
Water	7732-18-5	ACS/ASTM/USP/EP
Potassium Cyanide	151-50-8	ACS
Sodium Hydroxide	1310-73-2	Reagent

Test	Specification	Result
Appearance	Colorless liquid	Passed
Cyanide (CN)	995-1005 ppm	1002 ppm

Specification	Reference
Stock Standard Cyanide Solution	APHA (4500-CN- F)
Stock Cyanide Solution	APHA (4500-CN- E)
Stock Cyanide Solution	APHA (4500-CN- K)
Stock Cyanide Solution	APHA (4500-CN- H)
Cyanide Reference Solution (1000 mg/L)	EPA (SW-846) (7.3.3.2)
Cyanide Calibration Stock Solution (1,000 mg/L CN-)	EPA (SW-846) (9213)
Stock Cyanide Solution	EPA (335.3)
Stock Cyanide Solution	EPA (335.2)
Cyanide Solution Stock	ASTM (D 4282)
Simple Cyanide Solution, Stock (1.0 g/L CN)	ASTM (D 4374)

Volumetric glassware complies with Class A tolerance requirements of ASTM E 288 and NIST Circular 434; it is calibrated before first use and recalibrated regularly in accordance with ASTM E 542 and NIST Procedure NBSIR 74-461. Balances are calibrated regularly with weights certified traceable to the NIST national mass standard. Thermometers and temperature probes are calibrated before first use and recalibrated regularly with a thermometer traceable to NIST standards. All products are prepared according to master documents that assure manufacture according to validated methods. Batch records document raw material traceability and production and testing history for each lot manufactured.

Part Number	Size / Package Type	Shelf Life (Unopened Container)
2543-4	120 mL amber poly	6 months
2543-32	1 L amber poly	6 months
2543-16	500 mL amber poly	6 months

Recommended Storage: 2°C - 8°C (36°F - 46°F)

2047700
ID: WCN1000S_00023
Exp: 12/31/16 Prpd: JAS
Cyanide 1000 ppm Secondar

2047701
ID: WCN1000S_00023
Exp: 12/31/16 Prpd: JAS
Cyanide 1000 ppm Secondar

Katie Schnur

Katie Schnur
Quality Control Manager

This Certificate of Analysis is designed to comply with ISO Guide 31 "Reference Materials -- Contents of Certificates and Labels."

Reagent

WCNWSTOCK_00002

ERA
A Waters Company

1789079
ID: WCNWSTOCK_00002
Exp:01/31/17 Prpd:PGJ Opn:11/13/15
Total Cyanide Water LCS 1

Certificate of Analysis

PRODUCT:	1000 mg/L Complex Cyanide
CATALOG NUMBER:	049 – 125 mL; 998 – 500 mL
LOT NUMBER:	080115
ISSUE DATE:	March 23, 2015
REVISION DATE:	Original
STARTING MATERIAL:	Potassium Ferrocyanide 3-Hydrate ($K_4Fe(CN)_6$-$3H_2O$)
CERTIFIED CONCENTRATION[1]:	1000 mg/L
UNCERTAINTY[2]:	0.5%
MATRIX:	18 megohm deionized water and 0.25% (v/v) NaOH
DENSITY:	1.0030 ± 0.0008 g/mL at 20.5°C and 767 mm Hg
TRACEABILITY[3]:	NA
NIST/SRM:	NA
VERIFICATION METHOD:	Spectrophotometry
STORAGE:	Store at 20-25°C

1. The **Certified Concentration** is the actual made-to concentration confirmed by ERA analytical verification.

2. The stated **Uncertainty** is the total propagated uncertainty at the 95% confidence interval. The uncertainty is based on the preparation of the product and includes uncertainty related to the starting material used and the volumetric and gravimetric measurements made. The method of calculating uncertainty is taken from the ISO Guide to the Expression of Uncertainty in Measurement (current version). The uncertainty applies to the product as supplied and does not take into account any required or optional dilutions and/or preparations the laboratory may perform while using this product.

3. Traceability Recovery = ((% Recovery certified standard)/(% Recovery NIST SRM))*100.

   The traceability data shown were compiled by analyzing the ERA standards or their associated stock solutions against the applicable NIST SRMs.

This standard **expires 1/2017**. The certified values are monitored and purchasers will be notified of any significant changes resulting in recertification or withdrawal of this certified reference material during the period of validity of this certificate.

This product is intended to be used as either a calibration standard or a quality control check of the entire analytical process for the analytes/matrix included in the standard.

If you have any questions or need technical assistance, please call ERA technical assistance at 1-800-372-0122 or email to info@eraqc.com

Certifying Officer: Tom Widera

ISO/IEC GUIDE 34:2009
ACCREDITED
REFERENCE MATERIAL PRODUCER
CERTIFICATE NO. 1539.03

ISO/IEC 17025:2005
ACCREDITED
CHEMICAL TESTING LABORATORY
CERTIFICATE NO. 1539.02

16341 Table Mtn Pkwy, Golden, CO 80403 800-372-0122 fax: 303-421-0159 www.eraqc.com

GENERAL CHEMISTRY

COVER PAGE
GENERAL CHEMISTRY

Lab Name: TestAmerica Pittsburgh Job Number: 180-59138-1

SDG No.:

Project: Knoxville, Montrose, Erie Coke

Client Sample ID	Lab Sample ID
R-1605 LOC#3 WATER QT-R1A	180-59138-1
R-1613 LOC#4 WATER QT-R1B	180-59138-2
R-1621 LOC#5 WATER QT-R1C	180-59138-3
R-1629 LOC#6 WATER QT-R2A	180-59138-4
R-1637 LOC#7 WATER QT-R2B	180-59138-5
R-1645 LOC#8 WATER QT-R2C	180-59138-6
R-1653 LOC#9 WATER QT-R3A	180-59138-7
R-1661 LOC#10 WATER QT-R3B	180-59138-8
R-1669 LOC#11 WATER QT-R3C	180-59138-9

Comments:

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: R-1605 LOC#3 WATER QT-R1A
Lab Sample ID: 180-59138-1
Lab Name: TestAmerica Pittsburgh
Job No.: 180-59138-1
SDG ID.:
Matrix: Water
Date Sampled: 09/22/2016 00:00
Reporting Basis: WET
Date Received: 09/29/2016 09:00

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
57-12-5	Cyanide, Total	ND	10	3.8	ug/L			1	9014

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: R-1613 LOC#4 WATER QT-R1B
Lab Sample ID: 180-59138-2
Lab Name: TestAmerica Pittsburgh
Job No.: 180-59138-1
SDG ID.:
Matrix: Water
Date Sampled: 09/22/2016 00:00
Reporting Basis: WET
Date Received: 09/29/2016 09:00

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
57-12-5	Cyanide, Total	4.0	10	3.8	ug/L	J		1	9014

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: R-1621 LOC#5 WATER QT-R1C
Lab Sample ID: 180-59138-3
Lab Name: TestAmerica Pittsburgh
Job No.: 180-59138-1
SDG ID.:
Matrix: Water
Date Sampled: 09/22/2016 00:00
Reporting Basis: WET
Date Received: 09/29/2016 09:00

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
57-12-5	Cyanide, Total	ND	10	3.8	ug/L			1	9014

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: R-1629 LOC#6 WATER QT-R2A
Lab Sample ID: 180-59138-4
Lab Name: TestAmerica Pittsburgh
Job No.: 180-59138-1
SDG ID.:
Matrix: Water
Date Sampled: 09/23/2016 00:00
Reporting Basis: WET
Date Received: 09/29/2016 09:00

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
57-12-5	Cyanide, Total	8.9	10	3.8	ug/L	J		1	9014

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: R-1637 LOC#7 WATER QT-R2B
Lab Sample ID: 180-59138-5
Lab Name: TestAmerica Pittsburgh
Job No.: 180-59138-1
SDG ID.:
Matrix: Water
Date Sampled: 09/23/2016 00:00
Reporting Basis: WET
Date Received: 09/29/2016 09:00

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
57-12-5	Cyanide, Total	9.5	10	3.8	ug/L	J		1	9014

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: R-1645 LOC#8 WATER QT-R2C
Lab Sample ID: 180-59138-6
Lab Name: TestAmerica Pittsburgh
Job No.: 180-59138-1
SDG ID.:
Matrix: Water
Date Sampled: 09/23/2016 00:00
Reporting Basis: WET
Date Received: 09/29/2016 09:00

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
57-12-5	Cyanide, Total	9.1	10	3.8	ug/L	J		1	9014

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: R-1653 LOC#9 WATER QT-R3A
Lab Sample ID: 180-59138-7
Lab Name: TestAmerica Pittsburgh
Job No.: 180-59138-1
SDG ID.:
Matrix: Water
Date Sampled: 09/26/2016 00:00
Reporting Basis: WET
Date Received: 09/29/2016 09:00

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
57-12-5	Cyanide, Total	11	10	3.8	ug/L			1	9014

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: R-1661 LOC#10 WATER QT-R3B
Lab Sample ID: 180-59138-8
Lab Name: TestAmerica Pittsburgh
Job No.: 180-59138-1
SDG ID.:
Matrix: Water
Date Sampled: 09/26/2016 00:00
Reporting Basis: WET
Date Received: 09/29/2016 09:00

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
57-12-5	Cyanide, Total	8.7	10	3.8	ug/L	J		1	9014

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: R-1669 LOC#11 WATER QT-R3C
Lab Sample ID: 180-59138-9
Lab Name: TestAmerica Pittsburgh
Job No.: 180-59138-1
SDG ID.:
Matrix: Water
Date Sampled: 09/26/2016 00:00
Reporting Basis: WET
Date Received: 09/29/2016 09:00

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
57-12-5	Cyanide, Total	7.9	10	3.8	ug/L	J		1	9014

2-IN
CALIBRATION QUALITY CONTROL
GENERAL CHEMISTRY

Lab Name: TestAmerica Pittsburgh Job No.: 180-59138-1

SDG No.:

Analyst: JAS Batch Start Date: 10/04/2016

Reporting Units: ug/L Analytical Batch No.: 190111

Sample Number	QC Type	Time	Analyte	Result	Spike Amount	(%) Recovery	Limits	Qual	Reagent
9	ICV	15:04	Cyanide, Total	213	200	106	90-110		WCN0.2ICV_00507
10	ICB	15:05	Cyanide, Total	ND					
23	CCV	15:28	Cyanide, Total	102	100	102	90-110		WCN0.1L3_00220
24	CCB	15:30	Cyanide, Total	ND					
35	CCV	15:49	Cyanide, Total	104	100	104	90-110		WCN0.1L3_00220
36	CCB	15:51	Cyanide, Total	ND					
47	CCV	16:10	Cyanide, Total	105	100	105	90-110		WCN0.1L3_00220
48	CCB	16:12	Cyanide, Total	ND					

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

FORM II-IN

3-IN
METHOD BLANK
GENERAL CHEMISTRY

Lab Name: TestAmerica Pittsburgh Job No.: 180-59138-1

SDG No.:

Method	Lab Sample ID	Analyte	Result	Qual	Units	RL	Dil
Batch ID: 190111	Date: 10/04/2016 15:46	Prep Batch: 190065	Date: 10/04/2016 10:59				
9014	MB 180-190065/4-A	Cyanide, Total	ND		ug/L	10	1

FORM III-IN

5-IN
MATRIX SPIKE SAMPLE RECOVERY
GENERAL CHEMISTRY

Lab Name: TestAmerica Pittsburgh Job No.: 180-59138-1

SDG No.:

Matrix: Water

Method	Lab Sample ID	Analyte	Result	C	Unit	Spike Amount	Pct. Rec.	Limits	RPD	RPD Limit	Q
Batch ID: 190111	Date: 10/04/2016 15:53		Prep Batch: 190065			Date: 10/04/2016 10:59					
9014	180-59138-1	Cyanide, Total	ND		ug/L						
9014	180-59138-1 MS	Cyanide, Total	102		ug/L	100	102	75-125			

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

FORM V-IN

5-IN
MATRIX SPIKE DUPLICATE SAMPLE RECOVERY
GENERAL CHEMISTRY

Lab Name: TestAmerica Pittsburgh Job No.: 180-59138-1

SDG No.:

Matrix: Water

Method	Lab Sample ID	Analyte	Result	C	Unit	Spike Amount	Pct. Rec.	Limits	RPD	RPD Limit	Q
Batch ID: 190111	Date: 10/04/2016 15:54		Prep Batch: 190065			Date: 10/04/2016 10:59					
9014	180-59138-1 MSD	Cyanide, Total	98.2		ug/L	100	98	75-125	4	20	

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

FORM V-IN

7A-IN
LAB CONTROL SAMPLE
GENERAL CHEMISTRY

Lab Name: TestAmerica Pittsburgh Job No.: 180-59138-1

SDG No.:

Matrix: Water

Method	Lab Sample ID	Analyte	Result	C	Unit	Spike Amount	Pct. Rec.	Limits	RPD	RPD Limit	Q
Batch ID: 190111		Date: 10/04/2016 15:44	Prep Batch: 190065			Date: 10/04/2016 10:59					
						LCS Source: WCNLCS_00090					
9014	LCS 180-190065/3-A	Cyanide, Total	212		ug/L	200	106	85-115			

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

FORM VIIA-IN

7A-IN
LOW LEVEL CONTROL SAMPLE
GENERAL CHEMISTRY

Lab Name: TestAmerica Pittsburgh Job No.: 180-59138-1

SDG No.:

Matrix: Water

Method	Lab Sample ID	Analyte	Result	C	Unit	Spike Amount	Pct. Rec.	Limits	RPD	RPD Limit	Q
Batch ID: 190111		Date: 10/04/2016 15:41	Prep Batch: 190065			Date: 10/04/2016 10:59					
						LCS Source: WCN0.5L1_00669					
9014	LLCS 180-190065/1-A	Cyanide, Total	49.6		ug/L	50.0	99	90-110			

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

FORM VIIA-IN

7A-IN
HIGH LEVEL CONTROL SAMPLE
GENERAL CHEMISTRY

Lab Name: TestAmerica Pittsburgh Job No.: 180-59138-1

SDG No.:

Matrix: Water

Method	Lab Sample ID	Analyte	Result	C	Unit	Spike Amount	Pct. Rec.	Limits	RPD	RPD Limit	Q
Batch ID: 190111		Date: 10/04/2016 15:42	Prep Batch: 190065			Date: 10/04/2016 10:59					
						LCS Source: WCN10Pi_00558					
9014	HLCS 180-190065/2-A	Cyanide, Total	258		ug/L	250	103	90-110			

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

FORM VIIA-IN

9-IN
DETECTION LIMITS
GENERAL CHEMISTRY

Lab Name: TestAmerica Pittsburgh Job Number: 180-59138-1

SDG Number:

Matrix: Water Instrument ID: SEAL2

Method: 9014 MDL Date: 08/19/2015 11:28

Prep Method: 9010C

Analyte	Wavelength/ Mass	RL (ug/L)	MDL (ug/L)
Cyanide, Total		10	3.8

FORM IX - IN

9-IN
CALIBRATION BLANK DETECTION LIMITS
GENERAL CHEMISTRY

Lab Name: TestAmerica Pittsburgh Job Number: 180-59138-1

SDG Number:

Matrix: Water Instrument ID: SEAL2

Method: 9014 XMDL Date: 08/19/2015 11:28

Analyte	Wavelength/ Mass	XRL (ug/L)	XMDL (ug/L)
Cyanide, Total		10	3.8

FORM IX - IN

12-IN
PREPARATION LOG
GENERAL CHEMISTRY

Lab Name: TestAmerica Pittsburgh Job No.: 180-59138-1

SDG No.:

Prep Method: 9010C

Lab Sample ID	Preparation Date	Prep Batch	Initial Weight	Initial Volume (mL)	Final Volume (mL)
LLCS 180-190065/1-A	10/04/2016 10:59	190065		50	50
HLCS 180-190065/2-A	10/04/2016 10:59	190065		50	50
LCS 180-190065/3-A	10/04/2016 10:59	190065		50	50
MB 180-190065/4-A	10/04/2016 10:59	190065		50	50
180-59138-1	10/04/2016 10:59	190065		50	50
180-59138-1 MS	10/04/2016 10:59	190065		50	50
180-59138-1 MSD	10/04/2016 10:59	190065		50	50
180-59138-2	10/04/2016 10:59	190065		50	50
180-59138-3	10/04/2016 10:59	190065		50	50
180-59138-4	10/04/2016 10:59	190065		50	50
180-59138-5	10/04/2016 10:59	190065		50	50
180-59138-6	10/04/2016 10:59	190065		50	50
180-59138-7	10/04/2016 10:59	190065		50	50
180-59138-8	10/04/2016 10:59	190065		50	50
180-59138-9	10/04/2016 10:59	190065		50	50

FORM XII-IN

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: TestAmerica Pittsburgh Job No.: 180-59138-1

SDG No.:

Instrument ID: SEAL2 Analysis Method: 9014

Start Date: 10/04/2016 14:50 End Date: 10/04/2016 16:37

Lab Sample Id	D/F	Type	Time	Analytes																							
				CN																							
ZZZZZZ			14:50																								
ZZZZZZ			14:51																								
ZZZZZZ			14:53																								
ZZZZZZ			14:55																								
ZZZZZZ			14:57																								
ZZZZZZ			14:58																								
ZZZZZZ			15:00																								
ZZZZZZ			15:02																								
ICV 180-190111/9	1		15:04	X																							
ICB 180-190111/10	1		15:05	X																							
CCV 180-190111/11			15:07																								
CCB 180-190111/12			15:09																								
ZZZZZZ			15:11																								
ZZZZZZ			15:12																								
ZZZZZZ			15:14																								
ZZZZZZ			15:16																								
ZZZZZZ			15:18																								
ZZZZZZ			15:19																								
ZZZZZZ			15:21																								
ZZZZZZ			15:23																								
ZZZZZZ			15:25																								
ZZZZZZ			15:26																								
CCV 180-190111/23	1		15:28	X																							
CCB 180-190111/24	1		15:30	X																							
ZZZZZZ			15:32																								
ZZZZZZ			15:33																								
ZZZZZZ			15:35																								
ZZZZZZ			15:37																								
ZZZZZZ			15:39																								
LLCS 180-190065/1-A	1	T	15:41	X																							
HLCS 180-190065/2-A	1	T	15:42	X																							
LCS 180-190065/3-A	1	T	15:44	X																							
MB 180-190065/4-A	1	T	15:46	X																							
180-59138-1	1	T	15:47	X																							
CCV 180-190111/35	1		15:49	X																							
CCB 180-190111/36	1		15:51	X																							
180-59138-1 MS	1	T	15:53	X																							
180-59138-1 MSD	1	T	15:54	X																							
180-59138-2	1	T	15:56	X																							
180-59138-3	1	T	15:58	X																							
180-59138-4	1	T	16:00	X																							
180-59138-5	1	T	16:01	X																							

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: TestAmerica Pittsburgh Job No.: 180-59138-1

SDG No.:

Instrument ID: SEAL2 Analysis Method: 9014

Start Date: 10/04/2016 14:50 End Date: 10/04/2016 16:37

Lab Sample Id	D/F	Type	Time	Analytes																							
				CN																							
180-59138-6	1	T	16:03	X																							
180-59138-7	1	T	16:05	X																							
180-59138-8	1	T	16:07	X																							
180-59138-9	1	T	16:08	X																							
CCV 180-190111/47	1		16:10	X																							
CCB 180-190111/48	1		16:12	X																							
ZZZZZZ			16:14																								
ZZZZZZ			16:15																								
ZZZZZZ			16:17																								
ZZZZZZ			16:19																								
ZZZZZZ			16:21																								
ZZZZZZ			16:22																								
ZZZZZZ			16:24																								
ZZZZZZ			16:26																								
ZZZZZZ			16:28																								
ZZZZZZ			16:29																								
CCV 180-190111/59			16:31																								
CCB 180-190111/60			16:32																								
ZZZZZZ			16:34																								
CCV 180-190111/62			16:36																								
CCB 180-190111/63			16:37																								

Prep Types:
T = Total/NA

FORM XIII-IN

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: TestAmerica Pittsburgh Job No.: 180-59138-1

SDG No.:

Batch Number: 190065 Batch Start Date: 10/04/16 10:59 Batch Analyst: Schmidt, Joshua A

Batch Method: 9010C Batch End Date: 10/04/16 12:29

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	SulfideCheck	ChlorineCheck	DistillpHCheck	WCN0.5L1 00669
LLCS 180-190065/1		9010C, 9014		50 mL	50 mL				5 mL
HLCS 180-190065/2		9010C, 9014		50 mL	50 mL				
LCS 180-190065/3		9010C, 9014		50 mL	50 mL				
MB 180-190065/4		9010C, 9014		50 mL	50 mL				
180-59138-A-1	R-1605 LOC#3 WATER QT-R1A	9010C, 9014	T	50 mL	50 mL	N	N	>12	
180-59138-A-1 MS	R-1605 LOC#3 WATER QT-R1A	9010C, 9014	T	50 mL	50 mL	N	N	>12	
180-59138-A-1 MSD	R-1605 LOC#3 WATER QT-R1A	9010C, 9014	T	50 mL	50 mL	N	N	>12	
180-59138-A-2	R-1613 LOC#4 WATER QT-R1B	9010C, 9014	T	50 mL	50 mL	N	N	>12	
180-59138-A-3	R-1621 LOC#5 WATER QT-R1C	9010C, 9014	T	50 mL	50 mL	N	N	>12	
180-59138-A-4	R-1629 LOC#6 WATER QT-R2A	9010C, 9014	T	50 mL	50 mL	N	N	>12	
180-59138-A-5	R-1637 LOC#7 WATER QT-R2B	9010C, 9014	T	50 mL	50 mL	N	N	>12	
180-59138-A-6	R-1645 LOC#8 WATER QT-R2C	9010C, 9014	T	50 mL	50 mL	N	N	>12	
180-59138-A-7	R-1653 LOC#9 WATER QT-R3A	9010C, 9014	T	50 mL	50 mL	N	N	>12	
180-59138-A-8	R-1661 LOC#10 WATER QT-R3B	9010C, 9014	T	50 mL	50 mL	N	N	>12	
180-59138-A-9	R-1669 LOC#11 WATER QT-R3C	9010C, 9014	T	50 mL	50 mL	N	N	>12	

Lab Sample ID	Client Sample ID	Method Chain	Basis	WCN10Pi 00558	WCNLCS 00090				
LLCS 180-190065/1		9010C, 9014							
HLCS 180-190065/2		9010C, 9014		1.25 mL					
LCS 180-190065/3		9010C, 9014			1 mL				
MB 180-190065/4		9010C, 9014							
180-59138-A-1	R-1605 LOC#3 WATER QT-R1A	9010C, 9014	T						

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: TestAmerica Pittsburgh Job No.: 180-59138-1

SDG No.:

Batch Number: 190065 Batch Start Date: 10/04/16 10:59 Batch Analyst: Schmidt, Joshua A

Batch Method: 9010C Batch End Date: 10/04/16 12:29

Lab Sample ID	Client Sample ID	Method Chain	Basis	WCN10Pi 00558	WCNLCS 00090				
180-59138-A-1 MS	R-1605 LOC#3 WATER QT-R1A	9010C, 9014	T	0.5 mL					
180-59138-A-1 MSD	R-1605 LOC#3 WATER QT-R1A	9010C, 9014	T	0.5 mL					
180-59138-A-2	R-1613 LOC#4 WATER QT-R1B	9010C, 9014	T						
180-59138-A-3	R-1621 LOC#5 WATER QT-R1C	9010C, 9014	T						
180-59138-A-4	R-1629 LOC#6 WATER QT-R2A	9010C, 9014	T						
180-59138-A-5	R-1637 LOC#7 WATER QT-R2B	9010C, 9014	T						
180-59138-A-6	R-1645 LOC#8 WATER QT-R2C	9010C, 9014	T						
180-59138-A-7	R-1653 LOC#9 WATER QT-R3A	9010C, 9014	T						
180-59138-A-8	R-1661 LOC#10 WATER QT-R3B	9010C, 9014	T						
180-59138-A-9	R-1669 LOC#11 WATER QT-R3C	9010C, 9014	T						

Batch Notes	
Batch Comment	PH STRIPS LOT#564992
Distillation Temperature	150 Degrees C
KI-Starch Paper Lot #	1276531
Lead Acetate Lot #	1276537
Magnesium Chloride Dispenser ID	02N42937
Magnesium Chloride ID	1841925
NaOH Dispenser ID	04F06465
Sodium Hydroxide ID	2076797
Pipette ID	B524057767
Sulfamic Acid ID	2008394
Sulfuric Acid Dispenser ID	21014
Sulfuric Acid Reagent ID Number	2004375

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: TestAmerica Pittsburgh Job No.: 180-59138-1

SDG No.:

Batch Number: 190065 Batch Start Date: 10/04/16 10:59 Batch Analyst: Schmidt, Joshua A

Batch Method: 9010C Batch End Date: 10/04/16 12:29

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: TestAmerica Pittsburgh Job No.: 180-59138-1

SDG No.:

Batch Number: 190111 Batch Start Date: 10/04/16 14:50 Batch Analyst: Schmidt, Joshua A

Batch Method: 9014 Batch End Date:

Lab Sample ID	Client Sample ID	Method Chain	Basis	FinalAmount	WCN0.1L3 00220	WCN0.2ICV 00507			
ICV 180-190111/9		9014		1 mL		1 mL			
CCV 180-190111/23		9014		1 mL	1 mL				
CCV 180-190111/35		9014		1 mL	1 mL				
CCV 180-190111/47		9014		1 mL	1 mL				

Batch Notes	
Buffer Reagent ID Number	1988365
Chloramine-T ID	2089553
Magnesium Chloride Dispenser ID	02N42937
NaOH Dispenser ID	04F06465
NaOH Lot #	2076797
Pipette ID	B524057767
Pyridine-Barbituric Acid ID	2038275
Sulfuric Acid Dispenser ID	21014

Basis	Basis Description

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

AQ2 Report

Software Version:	2.1.4
Report Requested By:	TestAmerica
Date & Time:	2016-10-04 17:02:01
Tray Number:	1
Tray Name:	100416CNA

10.4.16

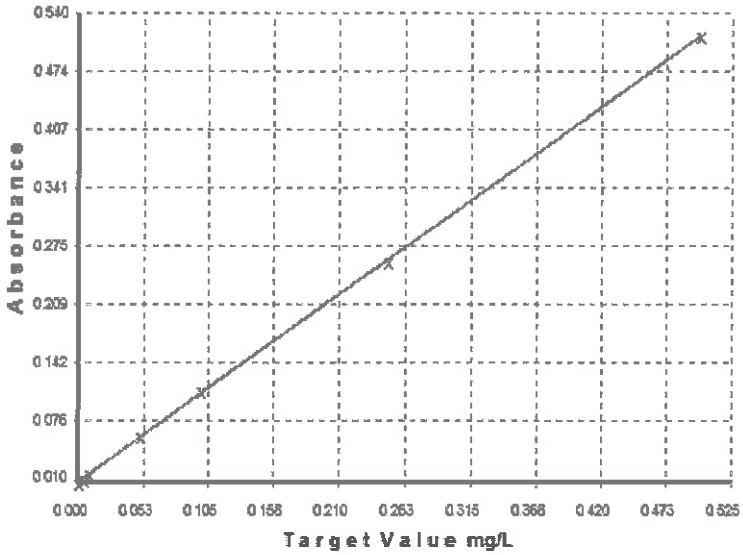
CYANIDE 9014/4500-CN-E/335.4

Calibration Chart

Type	Absorbance	Calc mg/L	Target mg/L	% Error
S1	0.0098	-0.0006	0.0000	
S90	0.0146	0.0042	0.0050	-16.77
S91	0.0195	0.0090	0.0100	-9.69
S92	0.0624	0.0516	0.0500	3.22
S93	0.1135	0.1024	0.1000	2.38
S94	0.2603	0.2481	0.2500	-0.76
S95	0.5143	0.5003	0.5000	0.07
S0	0.0099	-0.0005	0.0000	

Polynomial Order:	1
Correlation Coefficient:	1.0000
Carryover(%):	0.0
Calibration equation:	y = bx + a
y =:	Concentration mg/L
x =:	Measured absorbance
a =:	-1.038329E-002
b =:	9.931095E-001
Date & Time:	2016-10-04 15:02:22

Calibration Graph



Reagents

Name	Batch	Prepared By	Expiry Date
CN-PHOS BUFFER	1988365	TestAmerica	2017-06-29 00:00:00
CN-CHLORAMINE T	2089553	TestAmerica	2016-10-06 00:00:00
CN-PYRIDINE_BAR	2038275	TestAmerica	2017-02-16 00:00:00

Cup	Type	ID	Result	Units	QC Pro	Raw Data	Auto Dil.	Man Dil.	User	Time/Date
	S1	Standard 1	0.0098			0.009822			TA	2016-10-04 14:50:03
	S90	Standard 1	0.0146			0.014646			TA	2016-10-04 14:51:50
	S91	Standard 2	0.0195			0.019549			TA	2016-10-04 14:53:34
	S92	Standard 3	0.0624			0.062422			TA	2016-10-04 14:55:18
	S93	Standard 4	0.1135			0.113549			TA	2016-10-04 14:57:06
	S94	Standard 5	0.2603			0.260285			TA	2016-10-04 14:58:54
	S95	Standard 6	0.5143			0.514263			TA	2016-10-04 15:00:38
	S0	Standard 0	0.0099			0.009914			TA	2016-10-04 15:02:22
1	ICV	ICV	0.2128	mg/L		0.224711			TA	2016-10-04 15:04:09
2	ICB	ICB	-0.0021	mg/L		0.008312			TA	2016-10-04 15:05:53
	CCV	CCV	0.1009	mg/L		0.112063			TA	2016-10-04 15:07:38
	CCB	CCB	-0.0016	mg/L		0.008843			TA	2016-10-04 15:09:22
3	U1	LLCS 180-1900621-A	0.0493	mg/L		0.060110			TA	2016-10-04 15:11:07
4	U2	HLCS 180-1900622-A	0.2491	mg/L		0.261293			TA	2016-10-04 15:12:52
5	U3	LCS 180-1900623-A	2.5017	mg/L		0.262362	x 10.000		TA	2016-10-04 15:14:37
6	U4	MB 180-1900624-A	-0.0016	mg/L		0.008809			TA	2016-10-04 15:16:21
7	U5	180-59118-B-5-D	-0.0014	mg/L		0.009025			TA	2016-10-04 15:18:09
8	U6	180-59118-B-5-E MS	0.1639	mg/L		0.175470			TA	2016-10-04 15:19:56
9	U7	180-59118-B-5-F MSD	0.1675	mg/L		0.179162			TA	2016-10-04 15:21:44
10	U8	180-59118-B-2-B	-0.0012	mg/L		0.009282			TA	2016-10-04 15:23:29

11	U9	LLCS 180-1900631-A	0.0492	mg/L	0.060045		TA	2016-10-04 15:25:14
12	U10	HLCS 180-1900632-A	0.2472	mg/L	0.259324		TA	2016-10-04 15:26:59
	CCV	CCV	0.1023	mg/L	0.113464		TA	2016-10-04 15:28:43
	CCB	CCB	-0.0002	mg/L	0.010288		TA	2016-10-04 15:30:29
13	U11	LCS 180-1900633-A	2.6009	mg/L	0.272350	x 10.000	TA	2016-10-04 15:32:14
14	U12	MB 180-1900634-A	-0.0004	mg/L	0.010055		TA	2016-10-04 15:33:58
15	U13	180-58078-A-9-A	0.0335	mg/L	0.044202		TA	2016-10-04 15:35:42
16	U14	180-58078-A-10-A	0.0350	mg/L	0.045680		TA	2016-10-04 15:37:26
17	U15	180-58078-A-11-A	0.0360	mg/L	0.046737		TA	2016-10-04 15:39:13
18	U16	LLCS 180-1900651-A	0.0496	mg/L	0.060372		TA	2016-10-04 15:41:00
19	U17	HLCS 180-1900652-A	0.2579	mg/L	0.270164		TA	2016-10-04 15:42:44
20	U18	LCS 180-1900653-A	0.2122	mg/L	0.224166		TA	2016-10-04 15:44:28
21	U19	MB 180-1900654-A	-0.0004	mg/L	0.010072		TA	2016-10-04 15:46:12
22	U20	180-59138-A-1-A	0.0016	mg/L	0.012098		TA	2016-10-04 15:47:56
	CCV	CCV	0.1036	mg/L	0.114807		TA	2016-10-04 15:49:39
	CCB	CCB	-0.0010	mg/L	0.009473		TA	2016-10-04 15:51:24
23	U21	180-59138-A-1-B MS	0.1018	mg/L	0.112926		TA	2016-10-04 15:53:09
24	U22	180-59138-A-1-C MSD	0.0982	mg/L	0.109336		TA	2016-10-04 15:54:52
25	U23	180-59138-A-2-A	0.0040	mg/L	0.014528		TA	2016-10-04 15:56:36
26	U24	180-59138-A-3-A	0.0023	mg/L	0.012750		TA	2016-10-04 15:58:20
27	U25	180-59138-A-4-A	0.0089	mg/L	0.019388		TA	2016-10-04 16:00:07
28	U26	180-59138-A-5-A	0.0095	mg/L	0.020059		TA	2016-10-04 16:01:54
29	U27	180-59138-A-6-A	0.0091	mg/L	0.019668		TA	2016-10-04 16:03:38
30	U28	180-59138-A-7-A	0.0112	mg/L	0.021774		TA	2016-10-04 16:05:22
31	U29	180-59138-A-8-A	0.0087	mg/L	0.019243		TA	2016-10-04 16:07:06
32	U30	180-59138-A-9-A	0.0079	mg/L	0.018377		TA	2016-10-04 16:08:49
	CCV	CCV	0.1047	mg/L	0.115920		TA	2016-10-04 16:10:33
	CCB	CCB	-0.0003	mg/L	0.010114		TA	2016-10-04 16:12:19
33	U31	180-59127-A-2-A	0.0038	mg/L	0.014276		TA	2016-10-04 16:14:04
34	U32	480-106774-C-1-A	0.0010	mg/L	0.011497		TA	2016-10-04 16:15:48
35	U33	480-106774-C-2-A	0.0011	mg/L	0.011588		TA	2016-10-04 16:17:32
36	U34	180-59143-A-5-A	0.0111	mg/L	0.021628		TA	2016-10-04 16:19:16
37	U35	180-59256-H-1-A	0.0131	mg/L	0.023598		TA	2016-10-04 16:21:03
38	U36	180-59256-H-2-A	0.0102	mg/L	0.020741		TA	2016-10-04 16:22:51
39	U37	180-59256-H-3-A	0.0121	mg/L	0.022689		TA	2016-10-04 16:24:35
40	U38	180-59283-C-1-A	0.0032	mg/L	0.013630		TA	2016-10-04 16:26:22
41	U39	180-58078-A-1-A	0.0026	mg/L	0.013085		TA	2016-10-04 16:28:09
42	U40	180-58078-A-2-A	0.0026	mg/L	0.013110		TA	2016-10-04 16:29:28
	CCV	CCV	0.1035	mg/L	0.114680		TA	2016-10-04 16:31:11
	CCB	CCB	-0.0009	mg/L	0.009515		TA	2016-10-04 16:32:50
43	U41	180-58078-A-3-A	0.0030	mg/L	0.013454		TA	2016-10-04 16:34:29
	CCV	CCV	0.1066	mg/L	0.117781		TA	2016-10-04 16:36:07
	CCB	CCB	-0.0012	mg/L	0.009216		TA	2016-10-04 16:37:46

Shipping and Receiving Documents

TestAmerica Laboratories, Inc.
Knoxville Laboratory

SAMPLE ANALYSIS REQUISITION

Lab Request: SR128734

Laboratory: TestAmerica Pittsburgh

301 Alpha Drive RIDC Park
Pittsburgh, PA 15238

Report Package: Expanded Deliverables

Need Analytical Report: 10/14/16

Knoxville Project Manager: KEVIN WOODCOCK

Client Code: 1470919

Client Sample ID	Lab Work Order #	Lab Internal ID	Sampling Date/Time	Analysis Required
R-1605 LOC#3 WATER QT-R1A	M8947	H6I280405-1	09/22/16 00:00	CYANIDE
R-1605 LOC#3 WATER QT-R1A	M8947	H6I280405-1D	09/22/16 00:00	MSD
R-1605 LOC#3 WATER QT-R1A	M8947	H6I280405-1S	09/22/16 00:00	MS
R-1613 LOC#4 WATER QT-R1B	M8948	H6I280405-2	09/22/16 00:00	
R-1621 LOC#5 WATER QT-R1C	M8949	H6I280405-3	09/22/16 00:00	
R-1629 LOC#6 WATER QT-R2A	M895A	H6I280405-4	09/23/16 00:00	
R-1637 LOC#7 WATER QT-R2B	M895C	H6I280405-5	09/23/16 00:00	
R-1645 LOC#8 WATER QT-R2C	M895D	H6I280405-6	09/23/16 00:00	
R-1653 LOC#9 WATER QT-R3A	M895E	H6I280405-7	09/26/16 00:00	
R-1661 LOC#10 WATER QT-R3B	M895F	H6I280405-8	09/26/16 00:00	
R-1669 LOC#11 WATER QT-R3C	M895G	H6I280405-9	09/26/16 00:00	

Copy of Client chain-of-custody is maintained by TestAmerica Knoxville
Need detection limit and analysis date included in report
Please send a signed copy of this form with the report at completion of analysis

Relinquished by: _____ Date/Time: 9-28-16 13:00

Relinquished by: _____ Date/Time: 9/29/16 0900

Received for lab by: _____ Date/Time: _____

Shipping Method: FEDEX

180-59138 Chain of Custody

KNXPM_SampleAnalysisRequest.rdl - v2.0

Do Not Lift Using This Tag

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Part # 159469-434 RIT2 EXP 05/17

ORIGIN ID:RKWA (865) 291-3000
SAMPLE CONTROL
TESTAMERICA
5815 MIDDLEBROOK PIKE

KNOXVILLE, TN 37921
UNITED STATES US

SHIP DATE: 28SEP16
ACTWGT: 49.2 LB
CAD: 440898/CAFE2912
DIMS: 25x14x17 IN

BILL SENDER

538C1/A053/3298

TO **RECEIVING**
TESTAMERICA
301 ALPHA DRIVE
RIDC PARK
PITTSBURGH PA 15238
(412) 963 – 7058

REF: H61280405 H61280404

180-59138 Waybill

FedEx Express

J151315081301uv

TRK# 0201 **6628 8181 2863**

THU – 29 SEP 10:30A
PRIORITY OVERNIGHT

NA AGCA

15238
PA – US **PIT**

Uncorrected temp 2.4 °C
Thermometer ID 1

CF 0 Initials TS

PT-WI-SR-001 effective 7/26/13

Login Sample Receipt Checklist

Client: TestAmerica Laboratories, Inc.

Job Number: 180-59138-1

Login Number: 59138
List Number: 1
Creator: Neri, Tom

List Source: TestAmerica Pittsburgh

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 (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
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	

Sample Receipt Documentation

Request for Analysis/Chain-of-Custody – RFA/COC #003
Montrose Air Quality Services LLC
Coke ICR Testing on Dust and Water Samples

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

HGI 280405

Project Identification:	Montrose Air Quality Services Coke ICR
Client Contact:	Mr. Matthew Dallesasse (Montrose) (412) 826-3636
TestAmerica Contact:	Ms. Courtney Adkins (865) 291-3019
TestAmerica Project Manager:	Mr. Kevin Woodcock (865) 291-3082

Laboratory Deliverable Turnaround Requirements:	
Analytical Due Date: (Review-Released Data)	21 Days from Lab Receipt
Data Package Due Date:	28 Days from Lab Receipt
Media Request Form No.:	083016-8
Laboratory Destination:	TestAmerica Knoxville 5815 Middlebrook Pike Knoxville, Tennessee 37921 (865) 291-3000
Courier:	TestAmerica Courier Service

Analytical Testing QC Requirements:
The Legend for Project-Specific Quality Control Testing is designated in the "QC" column as follows: "MS" = Matrix Spike, "MSD" = Matrix Spike Duplicate, "DUP" = Duplicate, "PDS" = Post Digestion Spike and "PDSD" = Post Digestion Spike Duplicate

Project Deliverables:
Report analytical results on Quantims R-02 and TALS Reports and in data packages. Include "Field Sample Number", "Sample Type", and "Run Number" on all Reports.

Analytical Parameter:	Holding Time Requirements:	Preservation Requirements:
Cyanide	14 Days to Analysis	NaOH to pH > 12, Cool, 4°C

Field Sample No./Sample Coding ID	Loc. No.	Sample Collection Date	Project QC Require-ments	Sample Bottle/ Container	Sample Type	Analytical Specifications
R-1605 Loc #3 Water QT-R1A	3	9/22/16	MS/MSD	500 mL Narrow Mouth Nalgene/HDPE	**Water Sample** **Location #3** Cyanide Analysis	Analyze this sample for Cyanide by SW-846 Compendium Method 9014. PH>12
R-1613 Loc #4 Water QT-R1B	4	9/22/16		500 mL Narrow Mouth Nalgene/HDPE	**Water Sample** **Location #4** Cyanide Analysis	Analyze this sample for Cyanide by SW-846 Compendium Method 9014. PH>12
R-1621 Loc #5 Water QT-R1C	5	9/22/16		500 mL Narrow Mouth Nalgene/HDPE	**Water Sample** **Location #5** Cyanide Analysis	Analyze this sample for Cyanide by SW-846 Compendium Method 9014. PH>12
R-1629 Loc #6 Water QT-R2A	6	9/23/16		500 mL Narrow Mouth Nalgene/HDPE	**Water Sample** **Location #6** Cyanide Analysis	Analyze this sample for Cyanide by SW-846 Compendium Method 9014. PH>12
R-1637 Loc #7 Water QT-R2B	7	9/23/16		500 mL Narrow Mouth Nalgene/HDPE	**Water Sample** **Location #7** Cyanide Analysis	Analyze this sample for Cyanide by SW-846 Compendium Method 9014. PH>12

Request for Analysis/Chain-of-Custody – RFA/COC #003
Montrose Air Quality Services LLC
Coke ICR Testing on Dust and Water Samples

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Field Sample No./Sample Coding ID	Loc. No.	Sample Collection Date	Project QC Require-ments	Sample Bottle/ Container	Sample Type	Analytical Specifications
R-1645 Loc #8 Water QT-R2C	8	9/23/16		500 mL Narrow Mouth Nalgene/HDPE	**Water Sample** **Location #8** Cyanide Analysis	Analyze this sample for Cyanide by SW-846 Compendium Method 9014. pH>12
R-1653 Loc #9 Water QT-R3A	9	9/26/16		500 mL Narrow Mouth Nalgene/HDPE	**Water Sample** **Location #9** Cyanide Analysis	Analyze this sample for Cyanide by SW-846 Compendium Method 9014. pH>12
R-1661 Loc #10 Water QT-R3B	10	9/26/16		500 mL Narrow Mouth Nalgene/HDPE	**Water Sample** **Location #10** Cyanide Analysis	Analyze this sample for Cyanide by SW-846 Compendium Method 9014. pH>12
R-1669 Loc #11 Water QT-R3C	11	9/26/16		500 mL Narrow Mouth Nalgene/HDPE	**Water Sample** **Location #11** Cyanide Analysis	Analyze this sample for Cyanide by SW-846 Compendium Method 9014. pH>12

Request for Analysis/Chain-of-Custody – RFA/COC #003
Montrose Air Quality Services LLC
Coke ICR Testing on Dust and Water Samples

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Sample Receipt Log and Condition of the Samples Upon Receipt:

Please fill in the following information:	Comments (Please write "NONE" if no comment applicable)
(1) Record the identities of any samples that were listed on the RFA but were not found in the sample shipment.	NONE
(2) Record the sample shipping cooler temperature of all coolers transporting samples listed on this RFA:	RT 3.7, 4.8, 3.3, 4.4 / CT 3.7, 4.8, 3.3, 4.4
(3) Record any apparent sample loss/breakage.	NONE
(4) Record any unidentified samples transported with this shipment of samples:	NONE
(5) Indicate if all samples were received according to the project's required specifications (i.e. no nonconformances):	HAND DELIVERED, CUSTODY SEALS INTACT

Custody Transfer:

	Name	Company	Date/Time
Relinquished By:	[illegible]	Montrose	9/26/16 11:00
Accepted By:	[illegible]	TestAmerica	9/26/16 11:00
Relinquished By:	[illegible]	TestAmerica	9/26/16 21:57
Accepted By:	[illegible]	TAKNX	9/26/16 21:57
Relinquished By:			
Accepted By:			
Relinquished By:			
Accepted By:			

TESTAMERICA KNOXVILLE SAMPLE RECEIPT/CONDITION UPON RECEIPT ANOMALY CHECKLIST

Log In Number: HL128040S

Review Items	Yes	No	NA	If No, what was the problem?
1. Are the shipping containers intact?	✓			☐ **Containers, Broken**
2. Were ambient air containers received intact?			✓	☐ Checked in lab
3. The coolers/containers custody seal if present, is it intact?	✓			☐ Yes ☐ NA
4. Is the cooler temperature within limits? (> freezing temp. of water to 6 °C, VOST: 10°C) Thermometer ID : 8661 Correction factor: 0.0	✓			☐ **Cooler Out of Temp, Client Contacted, Proceed/Cancel** ☐ **Cooler Out of Temp, Same Day Receipt**
5. Were all of the sample containers received intact?	✓			☐ **Containers, Broken**
6. Were samples received in appropriate containers?	✓			☐ **Containers, Improper; Client Contacted; Proceed/Cancel**
7. Do sample container labels match COC? (IDs, Dates, Times)	✓			☐ **COC & Samples Do Not Match** ☐ **COC Incorrect/Incomplete** ☐ **COC Not Received**
8. Were all of the samples listed on the COC received?	✓			☐ **Sample Received, Not on COC** ☐ **Sample on COC, Not Received**
9. Is the date/time of sample collection noted?	✓			☐ **COC; No Date/Time; Client Contacted**
10. Was the sampler identified on the COC?			✓	☐ **Sampler Not Listed on COC**
11. Is the client and project name/# identified?	✓			☐ **COC Incorrect/Incomplete**
12. Are tests/parameters listed for each sample?	✓			☐ **COC No tests on COC**
13. Is the matrix of the samples noted?	✓			☐ **COC Incorrect/Incomplete**
14. Was COC relinquished? (Signed/Dated/Timed)	✓			☐ **COC Incorrect/Incomplete**
15. Were samples received within holding time?	✓			☐ **Holding Time - Receipt**
16. Were samples received with correct chemical preservative (excluding Encore)?	✓			☐ **pH Adjusted, pH Included (See box 16A)** ☐ **Incorrect Preservative**
17. Were VOA samples received without headspace?			✓	☐ **Headspace (VOA only)**
18. Did you check for residual chlorine, if necessary? (e.g. 1613B, 1668) Chlorine test strip lot number:			✓	☐ **Residual Chlorine**
19. For 1613B water samples is pH<9?			✓	☐ If no, lab will adjust
20. For rad samples was sample activity info. Provided?			✓	☐ Project missing info

Comments/Actions Taken

Labeling Verified by: **Date:**

pH test strip lot number: HC574756

Box 16A: pH Preservation	Box 18A: Residual Chlorine
Preservative:	
Lot Number:	
Exp Date:	
Analyst:	
Date:	
Time:	

Project #: _____ PM Instructions: _____

Sample Receiving Associate: [signature] Date: 9-28-16

QA026R30.doc, 080916