TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Denver
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TestAmerica Job ID: 280-25805-1
Client Project/Site: Chesapeake COGCC Table 910-1

For:
ARCADIS U.S. Inc
189 N. Cedar St.
Buffalo, Wyoming 82834

Attn: Mr. Ben Shoup

Donna Rydberg

Authorized for release by:
3/5/2012 12:15:07 PM

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Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is 4 times greater than the matrix spike concentration; therefore, control limits are not applicable.

GC VOA

Qualifier	Qualifier Description
F	Duplicate RPD exceeds the control limit
4	MS, MSD: The analyte present in the original sample is 4 times greater than the matrix spike concentration; therefore, control limits are not applicable.

General Chemistry

Qualifier	Qualifier Description
HF	Field parameter with a holding time of 15 minutes
F	MS or MSD exceeds the control limits
E	Result exceeded calibration range.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
☼	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DL, RA, RE, IN	Indicates a Dilution, Reanalysis, Re-extraction, or additional Initial metals/anion analysis of the sample
EDL	Estimated Detection Limit
EPA	United States Environmental Protection Agency
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RL	Reporting Limit
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Job ID: 280-25805-1

Laboratory: TestAmerica Denver

Narrative

CASE NARRATIVE

Client: ARCADIS U.S. Inc.

Project: Chesapeake COGCC Table 910-1

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

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

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

RECEIPT

One sample was received at the TestAmerica Denver laboratory on February 20, 2012. The sample arrived in good condition, properly preserved and on ice. The temperature of the cooler at receipt was 2.1°C.

A trip blank was received with the samples but was not listed on the chain of custody. As directed by the client the trip blank was not analyzed.

VOLATILE ORGANIC COMPOUNDS (GC-MS)

Sample BURKHART 1 (280-25805-1) was analyzed for volatile organic compounds (GC-MS) in accordance with EPA SW-846 Method 8260B.

The spike recovery for Benzene in the matrix spike associated with batch 109239 exceeded upper control limits. The presence of the '4' qualifier in the report indicates analytes where the concentration in the unspiked sample exceeded four times the spiking amount. All other spike recoveries were in control. The associated LCS was in control and demonstrates that operating procedures were in control. No further action was required.

No other difficulties were encountered during the volatiles analysis.

All other quality control parameters were within the acceptance limits.

GAS RANGE ORGANICS

Sample BURKHART 1 (280-25805-1) was analyzed for gas range organics in accordance with EPA SW-846 Method 8015B - GRO.

No difficulties were encountered during the GRO analysis.

All quality control parameters were within the acceptance limits.

DISSOLVED GASES

Sample BURKHART 1 (280-25805-1) was analyzed for dissolved gases in accordance with RSK_175.

The MS and MSD spike recoveries and RPD value for Methane exceeded upper control limits in batch 108752. A large amount of CO2 gas

Job ID: 280-25805-1 (Continued)

Laboratory: TestAmerica Denver (Continued)

was noted during canulla transfer. The associated LCS and LCSD were in control and demonstrate that operating procedures were in control. No further action was required.

No other difficulties were encountered during the dissolved gases analysis.

All other quality control parameters were within the acceptance limits.

DIESEL RANGE ORGANICS

Sample BURKHART 1 (280-25805-1) was analyzed for Diesel Range Organics in accordance with EPA SW-846 Method 8015B - DRO.

Matrix spike samples were not requested and they were not performed due to insufficient sample volume. The associated LCS and LCSD were in control and provide evidence of batch precision and accuracy.

No other anomalies were observed.

DISSOLVED METALS

Sample BURKHART 1 (280-25805-1) was analyzed for dissolved metals in accordance with EPA SW-846 Method 6010B.

No difficulties were encountered during the dissolved metals analysis.

All quality control parameters were within the acceptance limits.

GENERAL CHEMISTRY - VARIOUS METHODS

The sample for pH and Temperature was received at the laboratory outside the recommended hold time. It recommended that pH and Temperature be performed in the field immediately after collection. Data was flagged.

Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples the reporting limits and have been raised accordingly.

The MS and MSD spike recoveries for Orthophosphate as P failed the recovery criteria high in batch 108649. The associated LCS and LCSD were in control. No further action was required.

No other anomalies were observed.

Detection Summary

Client: ARCADIS U.S. Inc
Project/Site: Chesapeake COGCC Table 910-1 Soils

TestAmerica Job ID: 280-25805-1

Client Sample ID: BURKHART 1

Lab Sample ID: 280-25805-1

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Barium	26		10		ug/L	1		6010B	Dissolved
Calcium	71000		200		ug/L	1		6010B	Dissolved
Magnesium	22000		200		ug/L	1		6010B	Dissolved
Sodium	67000		1000		ug/L	1		6010B	Dissolved
Total Dissolved Solids	490		10		mg/L	1		160.1	Total/NA
Bromide	0.20		0.20		mg/L	1		300.0	Total/NA
Chloride	11		3.0		mg/L	1		300.0	Total/NA
Fluoride	0.78		0.50		mg/L	1		300.0	Total/NA
Sulfate	150		25		mg/L	5		300.0	Total/NA
Specific Conductance	810		2.0		umhos/cm	1		SM 2510B	Total/NA
pH adj. to 25 deg C	7.15	HF	0.100		SU	1		SM 4500 H+ B	Total/NA
Temperature	21.9	HF	1.00		Degrees C	1		SM 4500 H+ B	Total/NA

Method Summary

Client: ARCADIS U.S. Inc
Project/Site: Chesapeake COGCC Table 910-1 Soils

TestAmerica Job ID: 280-25805-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL DEN
8015B	Gasoline Range Organics - (GC)	SW846	TAL DEN
RSK-175	Dissolved Gases (GC)	RSK	TAL DEN
8015B	Diesel Range Organics (DRO) (GC)	SW846	TAL DEN
6010B	Metals (ICP)	SW846	TAL DEN
160.1	Total Dissolved Solids	EPA	TAL DEN
300.0	Anions, Ion Chromatography	MCAWW	TAL DEN
SM 2510B	Conductivity, Specific Conductance	SM	TAL DEN
SM 4500 H+ B	pH	SM	TAL DEN

Protocol References:

EPA = US Environmental Protection Agency

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

RSK = Sample Prep And Calculations For Dissolved Gas Analysis In Water Samples Using A GC Headspace Equilibration Technique , RSKSOP-175, Rev. 0, 8/11/94, USEPA Research Lab

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 DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

Sample Summary

Client: ARCADIS U.S. Inc
Project/Site: Chesapeake COGCC Table 910-1 Soils

TestAmerica Job ID: 280-25805-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
280-25805-1	BURKHART 1	Water	02/20/12 12:00	02/20/12 14:16

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

Client Sample ID: BURKHART 1 — **Lab Sample ID: 280-25805-1**
Date Collected: 02/20/12 12:00 — **Matrix: Water**
Date Received: 02/20/12 14:16

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0	ug/L			02/25/12 17:31	1
Ethylbenzene	ND		1.0	ug/L			02/25/12 17:31	1
Toluene	ND		1.0	ug/L			02/25/12 17:31	1
m-Xylene & p-Xylene	ND		2.0	ug/L			02/25/12 17:31	1
o-Xylene	ND		1.0	ug/L			02/25/12 17:31	1
Xylenes, Total	ND		2.0	ug/L			02/25/12 17:31	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*104*		*70 - 127*		*02/25/12 17:31*	*1*
Toluene-d8 (Surr)	*95*		*80 - 125*		*02/25/12 17:31*	*1*
4-Bromofluorobenzene (Surr)	*96*		*78 - 120*		*02/25/12 17:31*	*1*
Dibromofluoromethane (Surr)	*97*		*77 - 120*		*02/25/12 17:31*	*1*

Method: 8015B - Gasoline Range Organics - (GC)

Client Sample ID: BURKHART 1 — **Lab Sample ID: 280-25805-1**
Date Collected: 02/20/12 12:00 — **Matrix: Water**
Date Received: 02/20/12 14:16

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	ND		25	ug/L			02/22/12 20:02	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene	*84*		*82 - 110*		*02/22/12 20:02*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Client Sample ID: BURKHART 1 — **Lab Sample ID: 280-25805-1**
Date Collected: 02/20/12 12:00 — **Matrix: Water**
Date Received: 02/20/12 14:16

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Methane	ND		5.0	ug/L			02/22/12 11:41	1

Method: 8015B - Diesel Range Organics (DRO) (GC)

Client Sample ID: BURKHART 1 — **Lab Sample ID: 280-25805-1**
Date Collected: 02/20/12 12:00 — **Matrix: Water**
Date Received: 02/20/12 14:16

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		0.24	mg/L		02/20/12 20:13	02/24/12 23:51	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*85*		*50 - 115*	*02/20/12 20:13*	*02/24/12 23:51*	*1*
n-Octacosane	*95*		*26 - 152*	*02/20/12 20:13*	*02/24/12 23:51*	*1*

Method: 6010B - Metals (ICP) - Dissolved

Client Sample ID: BURKHART 1 — **Lab Sample ID: 280-25805-1**
Date Collected: 02/20/12 12:00 — **Matrix: Water**
Date Received: 02/20/12 14:16

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		15	ug/L		02/24/12 14:00	02/24/12 22:16	1
Barium	**26**		10	ug/L		02/24/12 14:00	02/24/12 22:16	1

Client: ARCADIS U.S. Inc
Project/Site: Chesapeake COGCC Table 910-1 Soils

TestAmerica Job ID: 280-25805-1

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

Client Sample ID: BURKHART 1
Date Collected: 02/20/12 12:00
Date Received: 02/20/12 14:16

Lab Sample ID: 280-25805-1
Matrix: Water

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**71000**		200		ug/L		02/24/12 14:00	02/24/12 22:16	1
Chromium	ND		10		ug/L		02/24/12 14:00	02/24/12 22:16	1
Iron	ND		100		ug/L		02/24/12 14:00	02/24/12 22:16	1
Lead	ND		9.0		ug/L		02/24/12 14:00	02/24/12 22:16	1
Magnesium	**22000**		200		ug/L		02/24/12 14:00	02/24/12 22:16	1
Selenium	ND		15		ug/L		02/24/12 14:00	02/24/12 22:16	1
Sodium	**67000**		1000		ug/L		02/24/12 14:00	02/24/12 22:16	1

General Chemistry

Client Sample ID: BURKHART 1
Date Collected: 02/20/12 12:00
Date Received: 02/20/12 14:16

Lab Sample ID: 280-25805-1
Matrix: Water

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**490**		10		mg/L			02/27/12 09:35	1
Bromide	**0.20**		0.20		mg/L			02/20/12 19:13	1
Nitrate as N	ND		0.50		mg/L			02/20/12 19:13	1
Chloride	**11**		3.0		mg/L			02/20/12 19:13	1
Nitrite as N	ND		0.50		mg/L			02/20/12 19:13	1
Fluoride	**0.78**		0.50		mg/L			02/20/12 19:13	1
Orthophosphate as P	ND		0.50		mg/L			02/20/12 19:13	1
Sulfate	**150**		25		mg/L			02/21/12 03:35	5
Specific Conductance	**810**		2.0		umhos/cm			02/28/12 09:42	1
pH adj. to 25 deg C	**7.15**	**HF**	0.100		SU			02/22/12 15:01	1
Temperature	**21.9**	**HF**	1.00		Degrees C			02/22/12 15:01	1

Surrogate Summary

Client: ARCADIS U.S. Inc
Project/Site: Chesapeake COGCC Table 910-1 Soils

TestAmerica Job ID: 280-25805-1

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

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		12DCE	TOL	BFB	DBFM
Lab Sample ID	Client Sample ID	(70-127)	(80-125)	(78-120)	(77-120)
280-25805-1	BURKHART 1	104	95	96	97
280-25970-D-9 MS	Matrix Spike	112	101	103	105
280-25970-D-9 MSD	Matrix Spike Duplicate	99	92	94	96
LCS 280-109239/4	Lab Control Sample	109	97	98	100
MB 280-109239/5	Method Blank	103	92	102	94

Surrogate Legend

12DCE = 1,2-Dichloroethane-d4 (Surr)
TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)

Method: 8015B - Gasoline Range Organics - (GC)

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
		TFT1
Lab Sample ID	Client Sample ID	(82-110)
280-25805-1	BURKHART 1	84
280-25832-A-1 MS	Matrix Spike	104
280-25832-A-1 MSD	Matrix Spike Duplicate	102
LCS 280-108886/3	Lab Control Sample	95
LCSD 280-108886/4	Lab Control Sample Dup	91
MB 280-108886/5	Method Blank	100

Surrogate Legend

TFT = a,a,a-Trifluorotoluene

Method: 8015B - Diesel Range Organics (DRO) (GC)

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
		OTPH1	OTC1
Lab Sample ID	Client Sample ID	(50-115)	(26-152)
280-25805-1	BURKHART 1	85	95
LCS 280-108457/2-A	Lab Control Sample	96	97
LCSD 280-108457/3-A	Lab Control Sample Dup	93	102
MB 280-108457/1-A	Method Blank	85	95

Surrogate Legend

OTPH = o-Terphenyl
OTC = n-Octacosane

GC/MS VOA

Analysis Batch: 109239

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-25805-1	BURKHART 1	Total/NA	Water	8260B	
280-25970-D-9 MS	Matrix Spike	Total/NA	Water	8260B	
280-25970-D-9 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	
LCS 280-109239/4	Lab Control Sample	Total/NA	Water	8260B	
MB 280-109239/5	Method Blank	Total/NA	Water	8260B	

GC VOA

Analysis Batch: 108752

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-25805-1	BURKHART 1	Total/NA	Water	RSK-175	
280-25816-A-2 DU	Duplicate	Total/NA	Water	RSK-175	
280-25816-B-2 MS	Matrix Spike	Total/NA	Water	RSK-175	
280-25816-B-2 MSD	Matrix Spike Duplicate	Total/NA	Water	RSK-175	
LCS 280-108752/2	Lab Control Sample	Total/NA	Water	RSK-175	
LCSD 280-108752/3	Lab Control Sample Dup	Total/NA	Water	RSK-175	
MB 280-108752/4	Method Blank	Total/NA	Water	RSK-175	

Analysis Batch: 108886

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-25805-1	BURKHART 1	Total/NA	Water	8015B	
280-25832-A-1 MS	Matrix Spike	Total/NA	Water	8015B	
280-25832-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	8015B	
LCS 280-108886/3	Lab Control Sample	Total/NA	Water	8015B	
LCSD 280-108886/4	Lab Control Sample Dup	Total/NA	Water	8015B	
MB 280-108886/5	Method Blank	Total/NA	Water	8015B	

GC Semi VOA

Prep Batch: 108457

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-25805-1	BURKHART 1	Total/NA	Water	3510C	
LCS 280-108457/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 280-108457/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	
MB 280-108457/1-A	Method Blank	Total/NA	Water	3510C	

Analysis Batch: 109335

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-25805-1	BURKHART 1	Total/NA	Water	8015B	108457
LCS 280-108457/2-A	Lab Control Sample	Total/NA	Water	8015B	108457
LCSD 280-108457/3-A	Lab Control Sample Dup	Total/NA	Water	8015B	108457
MB 280-108457/1-A	Method Blank	Total/NA	Water	8015B	108457

Metals

Prep Batch: 108995

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-25805-1	BURKHART 1	Dissolved	Water	3005A	
280-25892-A-1-D MS	Matrix Spike	Dissolved	Water	3005A	
280-25892-A-1-E MSD	Matrix Spike Duplicate	Dissolved	Water	3005A	
LCS 280-108726/2-B	Lab Control Sample	Dissolved	Water	3005A	

Metals (Continued)

Prep Batch: 108995 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 280-108726/1-B	Method Blank	Dissolved	Water	3005A	

Analysis Batch: 109262

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-25805-1	BURKHART 1	Dissolved	Water	6010B	108995
280-25892-A-1-D MS	Matrix Spike	Dissolved	Water	6010B	108995
280-25892-A-1-E MSD	Matrix Spike Duplicate	Dissolved	Water	6010B	108995
LCS 280-108726/2-B	Lab Control Sample	Dissolved	Water	6010B	108995
MB 280-108726/1-B	Method Blank	Dissolved	Water	6010B	108995

General Chemistry

Analysis Batch: 108649

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-25805-1	BURKHART 1	Total/NA	Water	300.0	
280-25805-1 DU	BURKHART 1	Total/NA	Water	300.0	
280-25805-1 MS	BURKHART 1	Total/NA	Water	300.0	
280-25805-1 MSD	BURKHART 1	Total/NA	Water	300.0	
LCS 280-108649/34	Lab Control Sample	Total/NA	Water	300.0	
LCSD 280-108649/35	Lab Control Sample Dup	Total/NA	Water	300.0	
MB 280-108649/36	Method Blank	Total/NA	Water	300.0	
MRL 280-108649/11 MRL	Lab Control Sample	Total/NA	Water	300.0	

Analysis Batch: 108650

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-25805-1	BURKHART 1	Total/NA	Water	300.0	
280-25805-1	BURKHART 1	Total/NA	Water	300.0	
280-25805-1 DU	BURKHART 1	Total/NA	Water	300.0	
280-25805-1 DU	BURKHART 1	Total/NA	Water	300.0	
280-25805-1 MS	BURKHART 1	Total/NA	Water	300.0	
280-25805-1 MS	BURKHART 1	Total/NA	Water	300.0	
280-25805-1 MSD	BURKHART 1	Total/NA	Water	300.0	
280-25805-1 MSD	BURKHART 1	Total/NA	Water	300.0	
LCS 280-108650/34	Lab Control Sample	Total/NA	Water	300.0	
LCSD 280-108650/35	Lab Control Sample Dup	Total/NA	Water	300.0	
MB 280-108650/36	Method Blank	Total/NA	Water	300.0	
MRL 280-108650/11 MRL	Lab Control Sample	Total/NA	Water	300.0	

Analysis Batch: 108742

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-25805-1	BURKHART 1	Total/NA	Water	SM 4500 H+ B	
280-25805-1 DU	BURKHART 1	Total/NA	Water	SM 4500 H+ B	
LCS 280-108742/4	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	
LCSD 280-108742/5	Lab Control Sample Dup	Total/NA	Water	SM 4500 H+ B	

Analysis Batch: 109299

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-25805-1	BURKHART 1	Total/NA	Water	160.1	
280-25805-1 DU	BURKHART 1	Total/NA	Water	160.1	
LCS 280-109299/2	Lab Control Sample	Total/NA	Water	160.1	
LCSD 280-109299/3	Lab Control Sample Dup	Total/NA	Water	160.1	
MB 280-109299/1	Method Blank	Total/NA	Water	160.1	

Client: ARCADIS U.S. Inc
Project/Site: Chesapeake COGCC Table 910-1 Soils

TestAmerica Job ID: 280-25805-1

General Chemistry (Continued)

Analysis Batch: 109443

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-25746-D-1 DU	Duplicate	Total/NA	Water	SM 2510B	
280-25805-1	BURKHART 1	Total/NA	Water	SM 2510B	
LCS 280-109443/3	Lab Control Sample	Total/NA	Water	SM 2510B	
LCSD 280-109443/4	Lab Control Sample Dup	Total/NA	Water	SM 2510B	
MB 280-109443/5	Method Blank	Total/NA	Water	SM 2510B	

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

Lab Sample ID: MB 280-109239/5
Matrix: Water
Analysis Batch: 109239

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0		ug/L			02/25/12 10:14	1
Ethylbenzene	ND		1.0		ug/L			02/25/12 10:14	1
Toluene	ND		1.0		ug/L			02/25/12 10:14	1
m-Xylene & p-Xylene	ND		2.0		ug/L			02/25/12 10:14	1
o-Xylene	ND		1.0		ug/L			02/25/12 10:14	1
Xylenes, Total	ND		2.0		ug/L			02/25/12 10:14	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*103*		*70 - 127*		*02/25/12 10:14*	*1*
Toluene-d8 (Surr)	*92*		*80 - 125*		*02/25/12 10:14*	*1*
4-Bromofluorobenzene (Surr)	*102*		*78 - 120*		*02/25/12 10:14*	*1*
Dibromofluoromethane (Surr)	*94*		*77 - 120*		*02/25/12 10:14*	*1*

Lab Sample ID: LCS 280-109239/4
Matrix: Water
Analysis Batch: 109239

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Benzene			5.00	5.02		ug/L		100	74 - 135		
Ethylbenzene			5.00	5.13		ug/L		103	72 - 120		
Toluene			5.00	5.25		ug/L		105	73 - 120		
m-Xylene & p-Xylene			10.0	10.5		ug/L		105	74 - 135		
o-Xylene			5.00	5.04		ug/L		101	73 - 135		
Xylenes, Total			15.0	15.5		ug/L		103	75 - 135		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*109*		*70 - 127*
Toluene-d8 (Surr)	*97*		*80 - 125*
4-Bromofluorobenzene (Surr)	*98*		*78 - 120*
Dibromofluoromethane (Surr)	*100*		*77 - 120*

Lab Sample ID: 280-25970-D-9 MS
Matrix: Water
Analysis Batch: 109239

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Benzene	9200		1000	10500	4	ug/L		128	74 - 135		
Ethylbenzene	3600		1000	4610		ug/L		101	72 - 120		
Toluene	650		1000	1680		ug/L		103	73 - 120		
m-Xylene & p-Xylene	ND		2000	2070		ug/L		103	74 - 135		
o-Xylene	ND		1000	1090		ug/L		102	73 - 135		
Xylenes, Total	ND		3000	3150		ug/L		103	75 - 135		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*112*		*70 - 127*
Toluene-d8 (Surr)	*101*		*80 - 125*
4-Bromofluorobenzene (Surr)	*103*		*78 - 120*
Dibromofluoromethane (Surr)	*105*		*77 - 120*

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

Lab Sample ID: 280-25970-D-9 MSD
Matrix: Water
Analysis Batch: 109239

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	9200		1000	10600	4	ug/L		141	74 - 135	1	20
Ethylbenzene	3600		1000	4760		ug/L		117	72 - 120	3	26
Toluene	650		1000	1800		ug/L		115	73 - 120	7	20
m-Xylene & p-Xylene	ND		2000	2330		ug/L		117	74 - 135	12	20
o-Xylene	ND		1000	1180		ug/L		111	73 - 135	8	20
Xylenes, Total	ND		3000	3510		ug/L		115	75 - 135	11	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*99*		*70 - 127*
Toluene-d8 (Surr)	*92*		*80 - 125*
4-Bromofluorobenzene (Surr)	*94*		*78 - 120*
Dibromofluoromethane (Surr)	*96*		*77 - 120*

Method: 8015B - Gasoline Range Organics - (GC)

Lab Sample ID: MB 280-108886/5
Matrix: Water
Analysis Batch: 108886

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	ND		25		ug/L			02/22/12 11:02	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene	*100*		*82 - 110*		*02/22/12 11:02*	*1*

Lab Sample ID: LCS 280-108886/3
Matrix: Water
Analysis Batch: 108886

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Gasoline Range Organics (GRO) -C6-C10			101	112		ug/L		111	79 - 149		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
a,a,a-Trifluorotoluene	*95*		*82 - 110*

Lab Sample ID: LCSD 280-108886/4
Matrix: Water
Analysis Batch: 108886

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
Gasoline Range Organics (GRO) -C6-C10			101	114		ug/L		113	79 - 149	2	27

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
a,a,a-Trifluorotoluene	*91*		*82 - 110*

Method: 8015B - Gasoline Range Organics - (GC) (Continued)

Lab Sample ID: 280-25832-A-1 MS
Matrix: Water
Analysis Batch: 108886

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline Range Organics (GRO) -C6-C10	ND		101	106		ug/L		105	79 - 149

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
a,a,a-Trifluorotoluene	*104*		*82 - 110*

Lab Sample ID: 280-25832-A-1 MSD
Matrix: Water
Analysis Batch: 108886

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline Range Organics (GRO) -C6-C10	ND		101	107		ug/L		106	79 - 149	1	27

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
a,a,a-Trifluorotoluene	*102*		*82 - 110*

Method: RSK-175 - Dissolved Gases (GC)

Lab Sample ID: MB 280-108752/4
Matrix: Water
Analysis Batch: 108752

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Methane	ND		5.0		ug/L			02/22/12 11:34	1

Lab Sample ID: LCS 280-108752/2
Matrix: Water
Analysis Batch: 108752

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Methane			73.2	71.3		ug/L		97	75 - 125

Lab Sample ID: LCSD 280-108752/3
Matrix: Water
Analysis Batch: 108752

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
Methane			73.2	76.0		ug/L		104	75 - 125	6	20

Lab Sample ID: 280-25816-B-2 MS
Matrix: Water
Analysis Batch: 108752

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Methane	4100		73.2	9130	4	ug/L		6875	52 - 145

Method: RSK-175 - Dissolved Gases (GC) (Continued)

Lab Sample ID: 280-25816-B-2 MSD
Matrix: Water
Analysis Batch: 108752

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Methane	4100		73.2	9100	4	ug/L		6837	52 - 145	0	20

Lab Sample ID: 280-25816-A-2 DU
Matrix: Water
Analysis Batch: 108752

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Methane	4100		7580	F	ug/L		60	20

Method: 8015B - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 280-108457/1-A
Matrix: Water
Analysis Batch: 109335

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 108457

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		0.25	mg/L		02/20/12 18:25	02/24/12 09:03	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*85*		*50 - 115*	*02/20/12 18:25*	*02/24/12 09:03*	*1*
n-Octacosane	*95*		*26 - 152*	*02/20/12 18:25*	*02/24/12 09:03*	*1*

Lab Sample ID: LCS 280-108457/2-A
Matrix: Water
Analysis Batch: 109335

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 108457

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Diesel Range Organics [C10-C28]	2.00	2.04		mg/L		102	54 - 115

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
o-Terphenyl	*96*		*50 - 115*
n-Octacosane	*97*		*26 - 152*

Lab Sample ID: LCSD 280-108457/3-A
Matrix: Water
Analysis Batch: 109335

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 108457

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Diesel Range Organics [C10-C28]	2.00	2.06		mg/L		103	54 - 115	1	31

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
o-Terphenyl	*93*		*50 - 115*
n-Octacosane	*102*		*26 - 152*

Method: 6010B - Metals (ICP)

Lab Sample ID: MB 280-108726/1-B
Matrix: Water
Analysis Batch: 109262

Client Sample ID: Method Blank
Prep Type: Dissolved
Prep Batch: 108995

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		15		ug/L		02/24/12 14:00	02/24/12 21:55	1
Barium	ND		10		ug/L		02/24/12 14:00	02/24/12 21:55	1
Calcium	ND		200		ug/L		02/24/12 14:00	02/24/12 21:55	1
Chromium	ND		10		ug/L		02/24/12 14:00	02/24/12 21:55	1
Iron	ND		100		ug/L		02/24/12 14:00	02/24/12 21:55	1
Lead	ND		9.0		ug/L		02/24/12 14:00	02/24/12 21:55	1
Magnesium	ND		200		ug/L		02/24/12 14:00	02/24/12 21:55	1
Selenium	ND		15		ug/L		02/24/12 14:00	02/24/12 21:55	1
Sodium	ND		1000		ug/L		02/24/12 14:00	02/24/12 21:55	1

Lab Sample ID: LCS 280-108726/2-B
Matrix: Water
Analysis Batch: 109262

Client Sample ID: Lab Control Sample
Prep Type: Dissolved
Prep Batch: 108995

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Arsenic			1000	1010		ug/L		101	88 - 110		
Barium			2000	2020		ug/L		101	90 - 112		
Calcium			50000	48800		ug/L		98	90 - 111		
Chromium			200	205		ug/L		102	90 - 113		
Iron			1000	1010		ug/L		101	89 - 115		
Lead			500	528		ug/L		106	89 - 110		
Magnesium			50000	51400		ug/L		103	90 - 113		
Selenium			2000	2130		ug/L		106	85 - 112		
Sodium			50000	50700		ug/L		101	90 - 115		

Lab Sample ID: 280-25892-A-1-D MS
Matrix: Water
Analysis Batch: 109262

Client Sample ID: Matrix Spike
Prep Type: Dissolved
Prep Batch: 108995

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Arsenic	ND		1000	1020		ug/L		102	84 - 124		
Barium	ND		2000	2050		ug/L		102	85 - 120		
Calcium	2700		50000	52200		ug/L		99	48 - 153		
Chromium	ND		200	207		ug/L		104	73 - 135		
Iron	ND		1000	1030		ug/L		103	52 - 155		
Lead	ND		500	531		ug/L		106	89 - 121		
Magnesium	ND		50000	52100		ug/L		104	62 - 146		
Selenium	ND		2000	2120		ug/L		106	71 - 140		
Sodium	80000		50000	129000		ug/L		97	70 - 203		

Lab Sample ID: 280-25892-A-1-E MSD
Matrix: Water
Analysis Batch: 109262

Client Sample ID: Matrix Spike Duplicate
Prep Type: Dissolved
Prep Batch: 108995

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	ND		1000	1000		ug/L		100	84 - 124	2	20
Barium	ND		2000	2020		ug/L		101	85 - 120	2	20
Calcium	2700		50000	51300		ug/L		97	48 - 153	2	20
Chromium	ND		200	204		ug/L		102	73 - 135	2	20
Iron	ND		1000	1020		ug/L		102	52 - 155	1	20

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

Lab Sample ID: 280-25892-A-1-E MSD — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Water — **Prep Type: Dissolved**
Analysis Batch: 109262 — **Prep Batch: 108995**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Lead	ND		500	517		ug/L		103	89 - 121	3	20
Magnesium	ND		50000	51300		ug/L		103	62 - 146	1	20
Selenium	ND		2000	2080		ug/L		104	71 - 140	2	20
Sodium	80000		50000	129000		ug/L		97	70 - 203	0	20

Method: 160.1 - Total Dissolved Solids

Lab Sample ID: MB 280-109299/1 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 109299

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10		mg/L			02/27/12 09:35	1

Lab Sample ID: LCS 280-109299/2 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 109299

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Dissolved Solids			500	477		mg/L		95	86 - 110		

Lab Sample ID: LCSD 280-109299/3 — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 109299

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Dissolved Solids			500	478		mg/L		96	86 - 110	0	20

Lab Sample ID: 280-25805-1 DU — **Client Sample ID: BURKHART 1**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 109299

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Dissolved Solids	490			481		mg/L				1	10

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 280-108649/36 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 108649

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	ND		0.50		mg/L			02/20/12 18:56	1
Nitrite as N	ND		0.50		mg/L			02/20/12 18:56	1
Orthophosphate as P	ND		0.50		mg/L			02/20/12 18:56	1

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCS 280-108649/34
Matrix: Water
Analysis Batch: 108649

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	5.00	5.01		mg/L		100	90 - 110
Nitrite as N	5.00	5.14		mg/L		103	90 - 110
Orthophosphate as P	5.00	5.01		mg/L		100	90 - 110

Lab Sample ID: LCSD 280-108649/35
Matrix: Water
Analysis Batch: 108649

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
Nitrate as N	5.00	5.00		mg/L		100	90 - 110	0	10
Nitrite as N	5.00	5.13		mg/L		103	90 - 110	0	10
Orthophosphate as P	5.00	5.11		mg/L		102	90 - 110	2	10

Lab Sample ID: MRL 280-108649/11 MRL
Matrix: Water
Analysis Batch: 108649

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

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	0.200	ND		mg/L		94	50 - 150
Nitrite as N	0.200	ND		mg/L		97	50 - 150
Orthophosphate as P	0.200	ND		mg/L		102	50 - 150

Lab Sample ID: 280-25805-1 MS
Matrix: Water
Analysis Batch: 108649

Client Sample ID: BURKHART 1
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	ND		5.00	5.56		mg/L		111	80 - 120
Nitrite as N	ND		5.00	5.42		mg/L		108	80 - 120
Orthophosphate as P	ND		5.00	6.14	F	mg/L		123	80 - 120

Lab Sample ID: 280-25805-1 MSD
Matrix: Water
Analysis Batch: 108649

Client Sample ID: BURKHART 1
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Nitrate as N	ND		5.00	5.64		mg/L		113	80 - 120	1	20
Nitrite as N	ND		5.00	5.48		mg/L		110	80 - 120	1	20
Orthophosphate as P	ND		5.00	6.11	F	mg/L		122	80 - 120	0	20

Lab Sample ID: 280-25805-1 DU
Matrix: Water
Analysis Batch: 108649

Client Sample ID: BURKHART 1
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Nitrate as N	ND		ND		mg/L		NC	15
Nitrite as N	ND		ND		mg/L		NC	15
Orthophosphate as P	ND		ND		mg/L		NC	15

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: MB 280-108650/36
Matrix: Water
Analysis Batch: 108650

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Bromide	ND		0.20		mg/L			02/20/12 18:56	1
Chloride	ND		3.0		mg/L			02/20/12 18:56	1
Fluoride	ND		0.50		mg/L			02/20/12 18:56	1
Sulfate	ND		5.0		mg/L			02/20/12 18:56	1

Lab Sample ID: LCS 280-108650/34
Matrix: Water
Analysis Batch: 108650

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Bromide			5.00	4.98		mg/L		100	90 - 110		
Chloride			25.0	25.3		mg/L		101	90 - 110		
Fluoride			5.00	5.15		mg/L		103	90 - 110		
Sulfate			25.0	25.1		mg/L		100	90 - 110		

Lab Sample ID: LCSD 280-108650/35
Matrix: Water
Analysis Batch: 108650

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
Bromide			5.00	4.98		mg/L		100	90 - 110	0	10
Chloride			25.0	25.4		mg/L		101	90 - 110	0	10
Fluoride			5.00	5.16		mg/L		103	90 - 110	0	10
Sulfate			25.0	25.1		mg/L		100	90 - 110	0	10

Lab Sample ID: MRL 280-108650/11 MRL
Matrix: Water
Analysis Batch: 108650

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

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits		
Bromide			0.200	0.204		mg/L		102	50 - 150		
Chloride			1.00	ND		mg/L		101	50 - 150		
Fluoride			0.200	ND		mg/L		97	50 - 150		
Sulfate			1.00	ND		mg/L		101	50 - 150		

Lab Sample ID: 280-25805-1 MS
Matrix: Water
Analysis Batch: 108650

Client Sample ID: BURKHART 1
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Bromide	0.20		5.00	5.70		mg/L		110	80 - 120		
Chloride	11		25.0	39.1		mg/L		111	80 - 120		
Fluoride	0.78		5.00	6.25		mg/L		109	80 - 120		

Lab Sample ID: 280-25805-1 MS
Matrix: Water
Analysis Batch: 108650

Client Sample ID: BURKHART 1
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Sulfate	150		125	280	E	mg/L		104	80 - 120		

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 280-25805-1 MSD — **Client Sample ID: BURKHART 1**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 108650

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Bromide	0.20		5.00	5.78		mg/L		112	80 - 120	1	20
Chloride	11		25.0	39.5		mg/L		113	80 - 120	1	20
Fluoride	0.78		5.00	6.33		mg/L		111	80 - 120	1	20

Lab Sample ID: 280-25805-1 MSD — **Client Sample ID: BURKHART 1**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 108650

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	150		125	279	E	mg/L		104	80 - 120	0	20

Lab Sample ID: 280-25805-1 DU — **Client Sample ID: BURKHART 1**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 108650

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Bromide	0.20			ND		mg/L				NC	15
Chloride	11			11.3		mg/L				0.2	15
Fluoride	0.78			0.777		mg/L				0.3	15

Lab Sample ID: 280-25805-1 DU — **Client Sample ID: BURKHART 1**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 108650

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Sulfate	150			149		mg/L				0.4	15

Method: SM 2510B - Conductivity, Specific Conductance

Lab Sample ID: MB 280-109443/5 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 109443

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Specific Conductance	ND		2.0		umhos/cm			02/28/12 09:42	1

Lab Sample ID: LCS 280-109443/3 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 109443

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Specific Conductance			1410	1440		umhos/cm		102	90 - 110		

Lab Sample ID: LCSD 280-109443/4 — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 109443

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Specific Conductance			1410	1440		umhos/cm		102	90 - 110	0	10

Method: SM 2510B - Conductivity, Specific Conductance (Continued)

Lab Sample ID: 280-25746-D-1 DU
Matrix: Water
Analysis Batch: 109443

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Specific Conductance	75			75.5		umhos/cm				0.8	10

Method: SM 4500 H+ B - pH

Lab Sample ID: LCS 280-108742/4
Matrix: Water
Analysis Batch: 108742

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
pH adj. to 25 deg C			7.00	6.980		SU		100	99 - 101		

Lab Sample ID: LCSD 280-108742/5
Matrix: Water
Analysis Batch: 108742

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
pH adj. to 25 deg C			7.00	7.030		SU		100	99 - 101	1	5

Lab Sample ID: 280-25805-1 DU
Matrix: Water
Analysis Batch: 108742

Client Sample ID: BURKHART 1
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
pH adj. to 25 deg C	7.15	HF		7.160		SU				0.1	5
Temperature	21.9	HF		21.90		Degrees C				0	10

Lab Chronicle

Client: ARCADIS U.S. Inc
Project/Site: Chesapeake COGCC Table 910-1 Soils

TestAmerica Job ID: 280-25805-1

Client Sample ID: BURKHART 1
Date Collected: 02/20/12 12:00
Date Received: 02/20/12 14:16

Lab Sample ID: 280-25805-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	20 mL	20 mL	109239	02/25/12 17:31	KAJ	TAL DEN
Total/NA	Analysis	RSK-175		1	18 mL	18 mL	108752	02/22/12 11:41	BMG	TAL DEN
Total/NA	Analysis	8015B		1	5 mL	5 mL	108886	02/22/12 20:02	AMB	TAL DEN
Total/NA	Prep	3510C			1052.9 mL	1000 uL	108457	02/20/12 20:13	AA	TAL DEN
Total/NA	Analysis	8015B		1			109335	02/24/12 23:51	MRB	TAL DEN
Dissolved	Prep	3005A			50 mL	50 mL	108995	02/24/12 14:00	JM	TAL DEN
Dissolved	Analysis	6010B		1			109262	02/24/12 22:16	JKH	TAL DEN
Total/NA	Analysis	300.0		1	1.0 mL	1.0 mL	108649	02/20/12 19:13	TLP	TAL DEN
Total/NA	Analysis	300.0		1	1.0 mL	1.0 mL	108650	02/20/12 19:13	TLP	TAL DEN
Total/NA	Analysis	300.0		5	1.0 mL	1.0 mL	108650	02/21/12 03:35	TLP	TAL DEN
Total/NA	Analysis	SM 4500 H+ B		1			108742	02/22/12 15:01	DA	TAL DEN
Total/NA	Analysis	160.1		1	100 mL	100 mL	109299	02/27/12 09:35	BJD	TAL DEN
Total/NA	Analysis	SM 2510B		1			109443	02/28/12 09:42	PMP	TAL DEN

Laboratory References:

TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

Chain of Custody Record

Sampler ID _____

Temperature on Receipt 21° IR 2/20/12

Drinking Water? Yes ☐ No ☐

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TAL-4124-280 (0508)

Client	Project Manager	Date	Chain of Custody Number
ARCADIS-US	BEN SHOUP	2/20/12	158066
Address	**Telephone Number (Area Code)/Fax Number**	**Lab Number**	**Page 1 of 1**
189 N. CEDAR ST.	(307) 299-5950 OR (970) 314-5292		
City / **State** / **Zip Code**	**Site Contact**	**Lab Contact**	**Analysis (Attach list if more space is needed)**
BUFFALO / WY / 82834	DJ RYDER	DONNA RYDBERG	
Project Name and Location (State)	**Carrier/Waybill Number**		
CHESAPEAKE COGCC TABLE 910-1			
Contract/Purchase Order/Quote No.			
WY 002430.0001.00003			

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAcl/NaOH	BTEX	TPH-GRO	TPH-DRO	METHANE	DISSOLVED METHANE	ANIONS/CATIONS	TDS/EC/pH
BURKHART 1	2/20/12	12:00		X			5			9			3	3	2	3	1	1	1

DJ Ryder 2/20/12

Special Instructions/ Conditions of Receipt

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

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

Turn Around Time Required
☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☒ Other STANDARD

QC Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished By: DJ Ryder	2/20/12	14:16	1. Received By: Joseph Bissell	2/20/12	1416
2. Relinquished By:	Date	Time	2. Received By:	Date	Time
3. Relinquished By:	Date	Time	3. Received By:	Date	Time

Comments

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

Login Sample Receipt Checklist

Client: ARCADIS U.S. Inc

Job Number: 280-25805-1

Login Number: 25805

List Source: TestAmerica Denver

List Number: 1

Creator: Bindel, Aaron M

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	False	Received Trip Blank(s) not listed on COC.
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	