

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Canton

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North Canton, OH 44720

Tel: (330)497-9396

TestAmerica Job ID: 240-70235-1

Client Project/Site: Satralloy - Industrail SWPPP

For:

Golder Associates Inc.

1335 Dublin Road

Suite 126-D

Columbus, Ohio 43215

Attn: Mr. Bob Ireson



Authorized for release by:

10/13/2016 9:34:40 PM

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

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

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Definitions/Glossary

Client: Golder Associates Inc.
Project/Site: Satralloy - Industrail SWPPP

TestAmerica Job ID: 240-70235-1

Qualifiers

Metals

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.

General Chemistry

Qualifier	Qualifier Description
HF	Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.
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.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Case Narrative

Client: Golder Associates Inc.
Project/Site: Satralloy - Industrail SWPPP

TestAmerica Job ID: 240-70235-1

Job ID: 240-70235-1

Laboratory: TestAmerica Canton

Narrative

CASE NARRATIVE

Client: Golder Associates Inc.

Project: Satralloy - Industrail SWPPP

Report Number: 240-70235-1

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.

TestAmerica Canton attests to the validity of the laboratory data generated by TestAmerica facilities reported herein. All analyses performed by TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to 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.

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.

All solid sample results are reported on an "as received" basis unless otherwise indicated by the presence of a % solids value in the method header.

This laboratory report is confidential and is intended for the sole use of TestAmerica and its client.

RECEIPT

The samples were received on 9/30/2016 9:30 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.6° C.

TOTAL RECOVERABLE METALS (ICPMS)

Samples FD (240-70235-1), SC01D (240-70235-2), SC02D (240-70235-3), GC05D (240-70235-4), GC09D (240-70235-5), US01 (240-70235-6) and DS01 (240-70235-7) were analyzed for total recoverable metals (ICPMS) in accordance with EPA Method 200.8. The samples were prepared on 10/03/2016 and analyzed on 10/13/2016.

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

TOTAL DISSOLVED SOLIDS

Samples FD (240-70235-1), SC01D (240-70235-2), SC02D (240-70235-3), GC05D (240-70235-4), GC09D (240-70235-5), US01 (240-70235-6) and DS01 (240-70235-7) were analyzed for total dissolved solids in accordance with SM 2540C. The samples were analyzed on 10/05/2016.

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

Case Narrative

Client: Golder Associates Inc.
Project/Site: Satralloy - Industrail SWPPP

TestAmerica Job ID: 240-70235-1

Job ID: 240-70235-1 (Continued)

Laboratory: TestAmerica Canton (Continued)

TOTAL SUSPENDED SOLIDS

Samples FD (240-70235-1), SC01D (240-70235-2), SC02D (240-70235-3), GC05D (240-70235-4), GC09D (240-70235-5), US01 (240-70235-6) and DS01 (240-70235-7) were analyzed for total suspended solids in accordance with SM 2540D. The samples were analyzed on 10/05/2016.

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

HEXAVALENT CHROMIUM

Samples FD (240-70235-1), SC01D (240-70235-2), SC02D (240-70235-3), GC05D (240-70235-4), GC09D (240-70235-5), US01 (240-70235-6) and DS01 (240-70235-7) were analyzed for hexavalent chromium in accordance with SM 3500 CR B. The samples were analyzed on 09/30/2016.

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

PH

Samples FD (240-70235-1), SC01D (240-70235-2), SC02D (240-70235-3), GC05D (240-70235-4), GC09D (240-70235-5), US01 (240-70235-6) and DS01 (240-70235-7) were analyzed for pH in accordance with SM 4500 H+ B. The samples were analyzed on 09/30/2016.

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

Method Summary

Client: Golder Associates Inc.
Project/Site: Satralloy - Industrail SWPPP

TestAmerica Job ID: 240-70235-1

Method	Method Description	Protocol	Laboratory
200.8	Metals (ICP/MS)	EPA	TAL CAN
3500-Cr B-2009	Chromium, Hexavalent	SM	TAL CAN
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL CAN
SM 2540D	Solids, Total Suspended (TSS)	SM	TAL CAN
SM 4500 H+ B	pH	SM	TAL CAN

Protocol References:

EPA = US Environmental Protection Agency

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

Laboratory References:

TAL CAN = TestAmerica Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396

Sample Summary

Client: Golder Associates Inc.
Project/Site: Satralloy - Industrail SWPPP

TestAmerica Job ID: 240-70235-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-70235-1	FD	Water	09/29/16 15:27	09/30/16 09:30
240-70235-2	SC01D	Water	09/29/16 15:20	09/30/16 09:30
240-70235-3	SC02D	Water	09/29/16 15:34	09/30/16 09:30
240-70235-4	GC05D	Water	09/29/16 13:56	09/30/16 09:30
240-70235-5	GC09D	Water	09/29/16 14:08	09/30/16 09:30
240-70235-6	US01	Water	09/29/16 15:44	09/30/16 09:30
240-70235-7	DS01	Water	09/29/16 13:31	09/30/16 09:30

Detection Summary

Client: Golder Associates Inc.
Project/Site: Satralloy - Industrail SWPPP

TestAmerica Job ID: 240-70235-1

Client Sample ID: FD

Lab Sample ID: 240-70235-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chromium	42		2.0	0.26	ug/L	1		200.8	Total Recoverable
Cr (VI)	0.043		0.020	0.0021	mg/L	1		3500-Cr B-2009	Total/NA
Total Dissolved Solids	550		20	15	mg/L	1		SM 2540C	Total/NA
pH	12.2		0.1	0.1	SU	1		SM 4500 H+ B	Total/NA

Client Sample ID: SC01D

Lab Sample ID: 240-70235-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chromium	42		2.0	0.26	ug/L	1		200.8	Total Recoverable
Cr (VI)	0.042		0.020	0.0021	mg/L	1		3500-Cr B-2009	Total/NA
Total Dissolved Solids	560		20	15	mg/L	1		SM 2540C	Total/NA
pH	12.2		0.1	0.1	SU	1		SM 4500 H+ B	Total/NA

Client Sample ID: SC02D

Lab Sample ID: 240-70235-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chromium	37		2.0	0.26	ug/L	1		200.8	Total Recoverable
Cr (VI)	0.036		0.020	0.0021	mg/L	1		3500-Cr B-2009	Total/NA
Total Dissolved Solids	160		10	7.4	mg/L	1		SM 2540C	Total/NA
pH	9.5		0.1	0.1	SU	1		SM 4500 H+ B	Total/NA

Client Sample ID: GC05D

Lab Sample ID: 240-70235-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chromium	420		2.0	0.26	ug/L	1		200.8	Total Recoverable
Cr (VI)	0.26		0.020	0.0021	mg/L	1		3500-Cr B-2009	Total/NA
Total Dissolved Solids	910		10	7.4	mg/L	1		SM 2540C	Total/NA
pH	8.6		0.1	0.1	SU	1		SM 4500 H+ B	Total/NA

Client Sample ID: GC09D

Lab Sample ID: 240-70235-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chromium	42		2.0	0.26	ug/L	1		200.8	Total Recoverable
Cr (VI)	0.036		0.020	0.0021	mg/L	1		3500-Cr B-2009	Total/NA
Total Dissolved Solids	300		10	7.4	mg/L	1		SM 2540C	Total/NA
pH	8.4		0.1	0.1	SU	1		SM 4500 H+ B	Total/NA

Client Sample ID: US01

Lab Sample ID: 240-70235-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chromium	0.84	J	2.0	0.26	ug/L	1		200.8	Total Recoverable
Total Dissolved Solids	630		10	7.4	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	7.0		4.0	1.8	mg/L	1		SM 2540D	Total/NA
pH	8.4		0.1	0.1	SU	1		SM 4500 H+ B	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Canton

Detection Summary

Client: Golder Associates Inc.
Project/Site: Satralloy - Industrail SWPPP

TestAmerica Job ID: 240-70235-1

Client Sample ID: DS01

Lab Sample ID: 240-70235-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chromium	0.80	J	2.0	0.26	ug/L	1		200.8	Total
Total Dissolved Solids	1100		10	7.4	mg/L	1		SM 2540C	Recoverable Total/NA
Total Suspended Solids	2.0	J	4.0	1.8	mg/L	1		SM 2540D	Total/NA
pH	8.5	HF	0.1	0.1	SU	1		SM 4500 H+ B	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Canton

Client Sample Results

Client: Golder Associates Inc.
Project/Site: Satralloy - Industrail SWPPP

TestAmerica Job ID: 240-70235-1

Client Sample ID: FD

Date Collected: 09/29/16 15:27

Date Received: 09/30/16 09:30

Lab Sample ID: 240-70235-1

Matrix: Water

Method: 200.8 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	42		2.0	0.26	ug/L		10/03/16 14:00	10/13/16 04:30	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	0.043		0.020	0.0021	mg/L			09/30/16 13:12	1
Total Dissolved Solids	550		20	15	mg/L			10/05/16 15:53	1
Total Suspended Solids	<1.8		4.0	1.8	mg/L			10/05/16 09:21	1
pH	12.2		0.1	0.1	SU			09/30/16 11:44	1

TestAmerica Canton

Client Sample Results

Client: Golder Associates Inc.
Project/Site: Satralloy - Industrail SWPPP

TestAmerica Job ID: 240-70235-1

Client Sample ID: SC01D

Date Collected: 09/29/16 15:20

Date Received: 09/30/16 09:30

Lab Sample ID: 240-70235-2

Matrix: Water

Method: 200.8 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	42		2.0	0.26	ug/L		10/03/16 14:00	10/13/16 04:34	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	0.042		0.020	0.0021	mg/L			09/30/16 13:11	1
Total Dissolved Solids	560		20	15	mg/L			10/05/16 15:53	1
Total Suspended Solids	<1.8		4.0	1.8	mg/L			10/05/16 09:21	1
pH	12.2		0.1	0.1	SU			09/30/16 11:36	1

TestAmerica Canton

Client Sample Results

Client: Golder Associates Inc.
Project/Site: Satralloy - Industrail SWPPP

TestAmerica Job ID: 240-70235-1

Client Sample ID: SC02D

Date Collected: 09/29/16 15:34

Date Received: 09/30/16 09:30

Lab Sample ID: 240-70235-3

Matrix: Water

Method: 200.8 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	37		2.0	0.26	ug/L		10/03/16 14:00	10/13/16 04:38	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	0.036		0.020	0.0021	mg/L			09/30/16 13:13	1
Total Dissolved Solids	160		10	7.4	mg/L			10/05/16 15:53	1
Total Suspended Solids	<1.8		4.0	1.8	mg/L			10/05/16 09:21	1
pH	9.5		0.1	0.1	SU			09/30/16 11:52	1

TestAmerica Canton

Client Sample Results

Client: Golder Associates Inc.
Project/Site: Satralloy - Industrail SWPPP

TestAmerica Job ID: 240-70235-1

Client Sample ID: GC05D

Date Collected: 09/29/16 13:56

Date Received: 09/30/16 09:30

Lab Sample ID: 240-70235-4

Matrix: Water

Method: 200.8 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	420		2.0	0.26	ug/L		10/03/16 14:00	10/13/16 04:43	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	0.26		0.020	0.0021	mg/L			09/30/16 13:10	1
Total Dissolved Solids	910		10	7.4	mg/L			10/05/16 15:53	1
Total Suspended Solids	<1.8		4.0	1.8	mg/L			10/05/16 09:21	1
pH	8.6		0.1	0.1	SU			09/30/16 11:20	1

TestAmerica Canton

Client Sample Results

Client: Golder Associates Inc.
Project/Site: Satralloy - Industrail SWPPP

TestAmerica Job ID: 240-70235-1

Client Sample ID: GC09D

Date Collected: 09/29/16 14:08

Date Received: 09/30/16 09:30

Lab Sample ID: 240-70235-5

Matrix: Water

Method: 200.8 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	42		2.0	0.26	ug/L		10/03/16 14:00	10/13/16 04:47	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	0.036		0.020	0.0021	mg/L			09/30/16 13:05	1
Total Dissolved Solids	300		10	7.4	mg/L			10/05/16 15:53	1
Total Suspended Solids	<1.8		4.0	1.8	mg/L			10/05/16 09:21	1
pH	8.4		0.1	0.1	SU			09/30/16 11:28	1

TestAmerica Canton

Client Sample Results

Client: Golder Associates Inc.
Project/Site: Satralloy - Industrail SWPPP

TestAmerica Job ID: 240-70235-1

Client Sample ID: US01
Date Collected: 09/29/16 15:44
Date Received: 09/30/16 09:30

Lab Sample ID: 240-70235-6
Matrix: Water

Method: 200.8 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	0.84	J	2.0	0.26	ug/L		10/03/16 14:00	10/13/16 02:56	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	<0.0021		0.020	0.0021	mg/L			09/30/16 13:16	1
Total Dissolved Solids	630		10	7.4	mg/L			10/05/16 15:53	1
Total Suspended Solids	7.0		4.0	1.8	mg/L			10/05/16 09:21	1
pH	8.4		0.1	0.1	SU			09/30/16 11:13	1

Client Sample Results

Client: Golder Associates Inc.
Project/Site: Satralloy - Industrail SWPPP

TestAmerica Job ID: 240-70235-1

Client Sample ID: DS01

Date Collected: 09/29/16 13:31

Date Received: 09/30/16 09:30

Lab Sample ID: 240-70235-7

Matrix: Water

Method: 200.8 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	0.80	J	2.0	0.26	ug/L		10/03/16 14:00	10/13/16 04:51	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	<0.0021		0.020	0.0021	mg/L			09/30/16 13:09	1
Total Dissolved Solids	1100		10	7.4	mg/L			10/05/16 15:53	1
Total Suspended Solids	2.0	J	4.0	1.8	mg/L			10/05/16 09:21	1
pH	8.5	HF	0.1	0.1	SU			09/30/16 11:59	1

TestAmerica Canton

QC Sample Results

Client: Golder Associates Inc.
Project/Site: Satralloy - Industrail SWPPP

TestAmerica Job ID: 240-70235-1

Method: 200.8 - Metals (ICP/MS)

Lab Sample ID: MB 240-249511/1-A

Matrix: Water

Analysis Batch: 251153

Client Sample ID: Method Blank

Prep Type: Total Recoverable

Prep Batch: 249511

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	<0.26		2.0	0.26	ug/L		10/03/16 14:00	10/13/16 02:48	1

Lab Sample ID: LCS 240-249511/2-A

Matrix: Water

Analysis Batch: 251153

Client Sample ID: Lab Control Sample

Prep Type: Total Recoverable

Prep Batch: 249511

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chromium	1000	972		ug/L		97	85 - 115

Lab Sample ID: 240-70235-6 MS

Matrix: Water

Analysis Batch: 251153

Client Sample ID: US01

Prep Type: Total Recoverable

Prep Batch: 249511

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chromium	0.84	J	1000	951		ug/L		95	70 - 130

Lab Sample ID: 240-70235-6 MSD

Matrix: Water

Analysis Batch: 251153

Client Sample ID: US01

Prep Type: Total Recoverable

Prep Batch: 249511

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chromium	0.84	J	1000	999		ug/L		100	70 - 130	5	20

Method: 3500-Cr B-2009 - Chromium, Hexavalent

Lab Sample ID: MB 240-249254/3

Matrix: Water

Analysis Batch: 249254

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	<0.0021		0.020	0.0021	mg/L			09/30/16 13:07	1

Lab Sample ID: LCS 240-249254/4

Matrix: Water

Analysis Batch: 249254

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cr (VI)	0.250	0.253		mg/L		101	80 - 123

Lab Sample ID: 240-70235-6 MS

Matrix: Water

Analysis Batch: 249254

Client Sample ID: US01

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Cr (VI)	<0.0021		0.250	0.252		mg/L		101	31 - 151

TestAmerica Canton

QC Sample Results

Client: Golder Associates Inc.
Project/Site: Satralloy - Industrail SWPPP

TestAmerica Job ID: 240-70235-1

Method: 3500-Cr B-2009 - Chromium, Hexavalent (Continued)

Lab Sample ID: 240-70235-6 MSD

Matrix: Water

Analysis Batch: 249254

Client Sample ID: US01

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Cr (VI)	<0.0021		0.250	0.246		mg/L		99	31 - 151	2	20

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 240-250013/1

Matrix: Water

Analysis Batch: 250013

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<7.4		10	7.4	mg/L			10/05/16 15:53	1

Lab Sample ID: LCS 240-250013/2

Matrix: Water

Analysis Batch: 250013

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	216	188		mg/L		87	80 - 120

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

Lab Sample ID: MB 240-249899/1

Matrix: Water

Analysis Batch: 249899

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<1.8		4.0	1.8	mg/L			10/05/16 09:21	1

Lab Sample ID: LCS 240-249899/2

Matrix: Water

Analysis Batch: 249899

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Suspended Solids	78.0	79.0		mg/L		101	64 - 120

Lab Sample ID: 240-70235-1 DU

Matrix: Water

Analysis Batch: 249899

Client Sample ID: FD

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Suspended Solids	<1.8		<1.8		mg/L		NC	10

TestAmerica Canton

QC Sample Results

Client: Golder Associates Inc.
Project/Site: Satralloy - Industrail SWPPP

TestAmerica Job ID: 240-70235-1

Method: SM 4500 H+ B - pH

Lab Sample ID: LCS 240-249177/2

Matrix: Water

Analysis Batch: 249177

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
pH	9.14	9.2		SU	-	101	97 - 103

Lab Sample ID: 240-70235-6 DU

Matrix: Water

Analysis Batch: 249177

Client Sample ID: US01

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH	8.4		8.3		SU	-	1	20

QC Association Summary

Client: Golder Associates Inc.
Project/Site: Satralloy - Industrail SWPPP

TestAmerica Job ID: 240-70235-1

Metals

Prep Batch: 249511

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-70235-1	FD	Total Recoverable	Water	200.8	
240-70235-2	SC01D	Total Recoverable	Water	200.8	
240-70235-3	SC02D	Total Recoverable	Water	200.8	
240-70235-4	GC05D	Total Recoverable	Water	200.8	
240-70235-5	GC09D	Total Recoverable	Water	200.8	
240-70235-6	US01	Total Recoverable	Water	200.8	
240-70235-7	DS01	Total Recoverable	Water	200.8	
MB 240-249511/1-A	Method Blank	Total Recoverable	Water	200.8	
LCS 240-249511/2-A	Lab Control Sample	Total Recoverable	Water	200.8	
240-70235-6 MS	US01	Total Recoverable	Water	200.8	
240-70235-6 MSD	US01	Total Recoverable	Water	200.8	

Analysis Batch: 251153

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-70235-1	FD	Total Recoverable	Water	200.8	249511
240-70235-2	SC01D	Total Recoverable	Water	200.8	249511
240-70235-3	SC02D	Total Recoverable	Water	200.8	249511
240-70235-4	GC05D	Total Recoverable	Water	200.8	249511
240-70235-5	GC09D	Total Recoverable	Water	200.8	249511
240-70235-6	US01	Total Recoverable	Water	200.8	249511
240-70235-7	DS01	Total Recoverable	Water	200.8	249511
MB 240-249511/1-A	Method Blank	Total Recoverable	Water	200.8	249511
LCS 240-249511/2-A	Lab Control Sample	Total Recoverable	Water	200.8	249511
240-70235-6 MS	US01	Total Recoverable	Water	200.8	249511
240-70235-6 MSD	US01	Total Recoverable	Water	200.8	249511

General Chemistry

Analysis Batch: 249177

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-70235-1	FD	Total/NA	Water	SM 4500 H+ B	
240-70235-2	SC01D	Total/NA	Water	SM 4500 H+ B	
240-70235-3	SC02D	Total/NA	Water	SM 4500 H+ B	
240-70235-4	GC05D	Total/NA	Water	SM 4500 H+ B	
240-70235-5	GC09D	Total/NA	Water	SM 4500 H+ B	
240-70235-6	US01	Total/NA	Water	SM 4500 H+ B	
240-70235-7	DS01	Total/NA	Water	SM 4500 H+ B	
LCS 240-249177/2	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	
240-70235-6 DU	US01	Total/NA	Water	SM 4500 H+ B	

Analysis Batch: 249254

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-70235-1	FD	Total/NA	Water	3500-Cr B-2009	
240-70235-2	SC01D	Total/NA	Water	3500-Cr B-2009	
240-70235-3	SC02D	Total/NA	Water	3500-Cr B-2009	
240-70235-4	GC05D	Total/NA	Water	3500-Cr B-2009	
240-70235-5	GC09D	Total/NA	Water	3500-Cr B-2009	
240-70235-6	US01	Total/NA	Water	3500-Cr B-2009	
240-70235-7	DS01	Total/NA	Water	3500-Cr B-2009	
MB 240-249254/3	Method Blank	Total/NA	Water	3500-Cr B-2009	

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QC Association Summary

Client: Golder Associates Inc.
Project/Site: Satralloy - Industrail SWPPP

TestAmerica Job ID: 240-70235-1

General Chemistry (Continued)

Analysis Batch: 249254 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 240-249254/4	Lab Control Sample	Total/NA	Water	3500-Cr B-2009	
240-70235-6 MS	US01	Total/NA	Water	3500-Cr B-2009	
240-70235-6 MSD	US01	Total/NA	Water	3500-Cr B-2009	

Analysis Batch: 249899

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-70235-1	FD	Total/NA	Water	SM 2540D	
240-70235-2	SC01D	Total/NA	Water	SM 2540D	
240-70235-3	SC02D	Total/NA	Water	SM 2540D	
240-70235-4	GC05D	Total/NA	Water	SM 2540D	
240-70235-5	GC09D	Total/NA	Water	SM 2540D	
240-70235-6	US01	Total/NA	Water	SM 2540D	
240-70235-7	DS01	Total/NA	Water	SM 2540D	
MB 240-249899/1	Method Blank	Total/NA	Water	SM 2540D	
LCS 240-249899/2	Lab Control Sample	Total/NA	Water	SM 2540D	
240-70235-1 DU	FD	Total/NA	Water	SM 2540D	

Analysis Batch: 250013

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-70235-1	FD	Total/NA	Water	SM 2540C	
240-70235-2	SC01D	Total/NA	Water	SM 2540C	
240-70235-3	SC02D	Total/NA	Water	SM 2540C	
240-70235-4	GC05D	Total/NA	Water	SM 2540C	
240-70235-5	GC09D	Total/NA	Water	SM 2540C	
240-70235-6	US01	Total/NA	Water	SM 2540C	
240-70235-7	DS01	Total/NA	Water	SM 2540C	
MB 240-250013/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 240-250013/2	Lab Control Sample	Total/NA	Water	SM 2540C	

TestAmerica Canton

Lab Chronicle

Client: Golder Associates Inc.
Project/Site: Satralloy - Industrail SWPPP

TestAmerica Job ID: 240-70235-1

Client Sample ID: FD

Date Collected: 09/29/16 15:27

Date Received: 09/30/16 09:30

Lab Sample ID: 240-70235-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	200.8			249511	10/03/16 14:00	AJC	TAL CAN
Total Recoverable	Analysis	200.8		1	251153	10/13/16 04:30	AS1	TAL CAN
Total/NA	Analysis	3500-Cr B-2009		1	249254	09/30/16 13:12	LCN	TAL CAN
Total/NA	Analysis	SM 2540C		1	250013	10/05/16 15:53	JW	TAL CAN
Total/NA	Analysis	SM 2540D		1	249899	10/05/16 09:21	JW	TAL CAN
Total/NA	Analysis	SM 4500 H+ B		1	249177	09/30/16 11:44	BLW	TAL CAN

Client Sample ID: SC01D

Date Collected: 09/29/16 15:20

Date Received: 09/30/16 09:30

Lab Sample ID: 240-70235-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	200.8			249511	10/03/16 14:00	AJC	TAL CAN
Total Recoverable	Analysis	200.8		1	251153	10/13/16 04:34	AS1	TAL CAN
Total/NA	Analysis	3500-Cr B-2009		1	249254	09/30/16 13:11	LCN	TAL CAN
Total/NA	Analysis	SM 2540C		1	250013	10/05/16 15:53	JW	TAL CAN
Total/NA	Analysis	SM 2540D		1	249899	10/05/16 09:21	JW	TAL CAN
Total/NA	Analysis	SM 4500 H+ B		1	249177	09/30/16 11:36	BLW	TAL CAN

Client Sample ID: SC02D

Date Collected: 09/29/16 15:34

Date Received: 09/30/16 09:30

Lab Sample ID: 240-70235-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	200.8			249511	10/03/16 14:00	AJC	TAL CAN
Total Recoverable	Analysis	200.8		1	251153	10/13/16 04:38	AS1	TAL CAN
Total/NA	Analysis	3500-Cr B-2009		1	249254	09/30/16 13:13	LCN	TAL CAN
Total/NA	Analysis	SM 2540C		1	250013	10/05/16 15:53	JW	TAL CAN
Total/NA	Analysis	SM 2540D		1	249899	10/05/16 09:21	JW	TAL CAN
Total/NA	Analysis	SM 4500 H+ B		1	249177	09/30/16 11:52	BLW	TAL CAN

Client Sample ID: GC05D

Date Collected: 09/29/16 13:56

Date Received: 09/30/16 09:30

Lab Sample ID: 240-70235-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	200.8			249511	10/03/16 14:00	AJC	TAL CAN
Total Recoverable	Analysis	200.8		1	251153	10/13/16 04:43	AS1	TAL CAN
Total/NA	Analysis	3500-Cr B-2009		1	249254	09/30/16 13:10	LCN	TAL CAN
Total/NA	Analysis	SM 2540C		1	250013	10/05/16 15:53	JW	TAL CAN
Total/NA	Analysis	SM 2540D		1	249899	10/05/16 09:21	JW	TAL CAN

TestAmerica Canton

Lab Chronicle

Client: Golder Associates Inc.
Project/Site: Satralloy - Industrail SWPPP

TestAmerica Job ID: 240-70235-1

Client Sample ID: GC05D

Date Collected: 09/29/16 13:56

Date Received: 09/30/16 09:30

Lab Sample ID: 240-70235-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 H+ B		1	249177	09/30/16 11:20	BLW	TAL CAN

Client Sample ID: GC09D

Date Collected: 09/29/16 14:08

Date Received: 09/30/16 09:30

Lab Sample ID: 240-70235-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	200.8			249511	10/03/16 14:00	AJC	TAL CAN
Total Recoverable	Analysis	200.8		1	251153	10/13/16 04:47	AS1	TAL CAN
Total/NA	Analysis	3500-Cr B-2009		1	249254	09/30/16 13:05	LCN	TAL CAN
Total/NA	Analysis	SM 2540C		1	250013	10/05/16 15:53	JW	TAL CAN
Total/NA	Analysis	SM 2540D		1	249899	10/05/16 09:21	JW	TAL CAN
Total/NA	Analysis	SM 4500 H+ B		1	249177	09/30/16 11:28	BLW	TAL CAN

Client Sample ID: US01

Date Collected: 09/29/16 15:44

Date Received: 09/30/16 09:30

Lab Sample ID: 240-70235-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	200.8			249511	10/03/16 14:00	AJC	TAL CAN
Total Recoverable	Analysis	200.8		1	251153	10/13/16 02:56	AS1	TAL CAN
Total/NA	Analysis	3500-Cr B-2009		1	249254	09/30/16 13:16	LCN	TAL CAN
Total/NA	Analysis	SM 2540C		1	250013	10/05/16 15:53	JW	TAL CAN
Total/NA	Analysis	SM 2540D		1	249899	10/05/16 09:21	JW	TAL CAN
Total/NA	Analysis	SM 4500 H+ B		1	249177	09/30/16 11:13	BLW	TAL CAN

Client Sample ID: DS01

Date Collected: 09/29/16 13:31

Date Received: 09/30/16 09:30

Lab Sample ID: 240-70235-7

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	200.8			249511	10/03/16 14:00	AJC	TAL CAN
Total Recoverable	Analysis	200.8		1	251153	10/13/16 04:51	AS1	TAL CAN
Total/NA	Analysis	3500-Cr B-2009		1	249254	09/30/16 13:09	LCN	TAL CAN
Total/NA	Analysis	SM 2540C		1	250013	10/05/16 15:53	JW	TAL CAN
Total/NA	Analysis	SM 2540D		1	249899	10/05/16 09:21	JW	TAL CAN
Total/NA	Analysis	SM 4500 H+ B		1	249177	09/30/16 11:59	BLW	TAL CAN

Laboratory References:

TAL CAN = TestAmerica Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396

TestAmerica Canton

Certification Summary

Client: Golder Associates Inc.
Project/Site: Satralloy - Industrail SWPPP

TestAmerica Job ID: 240-70235-1

Laboratory: TestAmerica Canton

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

Authority	Program	EPA Region	Certification ID	Expiration Date
California	NELAP	9	01144CA	06-30-14 *
California	State Program	9	2927	04-30-17
Connecticut	State Program	1	PH-0590	12-31-17
Florida	NELAP	4	E87225	06-30-17
Illinois	NELAP	5	200004	07-31-17
Kansas	NELAP	7	E-10336	01-31-17
Kentucky (UST)	State Program	4	58	02-23-17
Kentucky (VW)	State Program	4	98016	12-31-16 *
Minnesota	NELAP	5	039-999-348	12-31-16 *
Minnesota (Petrofund)	State Program	1	3506	07-31-17
Nevada	State Program	9	OH-000482008A	07-31-17
New Jersey	NELAP	2	OH001	06-30-17
New York	NELAP	2	10975	03-31-17
Ohio VAP	State Program	5	CL0024	09-14-17
Oregon	NELAP	10	4062	02-23-17
Pennsylvania	NELAP	3	68-00340	08-31-17
Texas	NELAP	6	T104704517-15-5	08-31-17
USDA	Federal		P330-13-00319	11-26-16 *
Virginia	NELAP	3	460175	09-14-17
Washington	State Program	10	C971	01-12-17
West Virginia DEP	State Program	3	210	12-31-16 *
Wisconsin	State Program	5	999518190	08-31-17

* Certification renewal pending - certification considered valid.

TestAmerica Canton

2.2/026

Chain of Custody Record

[illegible]

TestAmerica Canton Sample Receipt Form/Narrative				Login # : <u>70235</u>	
Canton Facility					
Client <u>Colder Associates</u>		Site Name _____		Cooler unpacked by: <u>BMarl</u>	
Cooler Received on <u>5/30/16</u>		Opened on <u>9/30/16</u>			
FedEx: 1 st Grd Exp ☒ UPS ☐ FAS ☐ Stetson ☐ Client Drop Off ☐ TestAmerica Courier ☐ Other ☐					
Receipt After-hours: Drop-off Date/Time _____				Storage Location _____	
TestAmerica Cooler # _____		Foam Box ☐ Client Cooler ☒ Box ☐ Other _____			
Packing material used: <u>Bubble Wrap</u>		Foam ☐ Plastic Bag ☐ None ☐ Other _____			
COOLANT: <u>Wet Ice</u>		Blue Ice ☐ Dry Ice ☐ Water ☐ None ☒ <u>See Multiple Cooler Form</u>			
1. Cooler temperature upon receipt					
IR GUN# IR-8 (CF +0.4 °C)		Observed Cooler Temp. <u>2.2</u> °C		Corrected Cooler Temp. <u>2.6</u> °C	
IR GUN #36 (CF +1.3 °C)		Observed Cooler Temp. _____ °C		Corrected Cooler Temp. _____ °C	
2. Were custody seals on the outside of the cooler(s)? If Yes Quantity <u>1</u> ☒ Yes ☐ No					
-Were custody seals on the outside of the cooler(s) signed & dated? ☒ Yes ☐ No ☐ NA					
-Were custody seals on the bottle(s) or bottle kits (LLHg/MeHg)? ☒ Yes ☐ No					
3. Shippers' packing slip attached to the cooler(s)? ☒ Yes ☐ No					
4. Did custody papers accompany the sample(s)? ☒ Yes ☐ No					
5. Were the custody papers relinquished & signed in the appropriate place? ☒ Yes ☐ No					
6. Was/were the person(s) who collected the samples clearly identified on the COC? ☒ Yes ☐ No					
7. Did all bottles arrive in good condition (Unbroken)? ☒ Yes ☐ No					
8. Could all bottle labels be reconciled with the COC? ☒ Yes ☐ No					
9. Were correct bottle(s) used for the test(s) indicated? ☒ Yes ☐ No					
10. Sufficient quantity received to perform indicated analyses? ☒ Yes ☐ No					
11. Are these work share samples? ☒ Yes ☐ No					
If yes, Questions 11-15 have been checked at the originating laboratory.					
11. Were sample(s) at the correct pH upon receipt? ☒ Yes ☐ No ☐ NA pH Strip Lot# <u>HC574756</u>					
12. Were VOAs on the COC? ☒ Yes ☐ No					
13. Were air bubbles >6 mm in any VOA vials? ☒ Yes ☐ No ☐ NA					
14. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # _____ ☒ Yes ☐ No					
15. Was a LL Hg or Me Hg trip blank present? ☒ Yes ☐ No					
Contacted PM _____ Date _____ by _____ via Verbal ☐ Voice Mail ☐ Other ☐					
Concerning _____					

14. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES 	Samples processed by: _____
15. SAMPLE CONDITION Sample(s) _____ were received after the recommended holding time had expired. Sample(s) _____ were received in a broken container. Sample(s) _____ were received with bubble >6 mm in diameter. (Notify PM)	
16. SAMPLE PRESERVATION Sample(s) _____ were further preserved in the laboratory. Time preserved: _____ Preservative(s) added/Lot number(s): _____	

Temperature readings: _____

<u>Client Sample ID</u>	<u>Lab ID</u>	<u>Container Type</u>	<u>Container</u> <u>pH</u>	<u>Preservative</u> <u>Added (mls)</u>	<u>Lot #</u>
FD	240-70235-A-1	Plastic 250ml - with Nitric Acid	<2	_____	_____
SC01D	240-70235-A-2	Plastic 250ml - with Nitric Acid	<2	_____	_____
SC02D	240-70235-A-3	Plastic 250ml - with Nitric Acid	<2	_____	_____
GC05D	240-70235-A-4	Plastic 250ml - with Nitric Acid	<2	_____	_____
GC09D	240-70235-A-5	Plastic 250ml - with Nitric Acid	<2	_____	_____
US01	240-70235-A-6	Plastic 250ml - with Nitric Acid	<2	_____	_____
US01	240-70235-B-6	Plastic 250ml - with Nitric Acid	<2	_____	_____
US01	240-70235-C-6	Plastic 250ml - with Nitric Acid	<2	_____	_____
DS01	240-70235-A-7	Plastic 250ml - with Nitric Acid	<2	_____	_____