

## ANALYTICAL REPORT

Job Number: 280-116538-3

Job Description: Leidos RFP# 001088 - Ravenna AAP-66

For:

Leidos, Inc.  
Picatinny Arsenal  
356 Ninth Avenue  
Suite 106  
Dover, NJ 07801

Attention: Rita Schmon-Stasik



Approved for release.  
Donna R Rydberg  
Senior Project Manager  
11/11/2018 12:11 PM

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Donna R Rydberg, Senior Project Manager  
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(303)736-0192  
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11/11/2018

The test results in this report relate only to the samples in this report and meet all requirements of NELAC, with any exceptions noted. Pursuant to NELAP, this report shall not be reproduced except in full, without the written approval of the laboratory. All questions regarding this report should be directed to the TestAmerica Denver Project Manager.

The Lab Certification ID# is 4025.

Reporting limits are adjusted for sample size used, dilutions and moisture content if applicable.

**TestAmerica Laboratories, Inc.**

TestAmerica Denver 4955 Yarrow Street, Arvada, CO 80002  
Tel (303) 736-0100 Fax (303) 431-7171 [www.testamericainc.com](http://www.testamericainc.com)

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# Definitions/Glossary

Client: Leidos, Inc.  
Project/Site: Leidos RFP# 001088 - Ravenna AAP-66

TestAmerica Job ID: 280-116538-3

## Glossary

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<b>Abbreviation</b>	<b>These commonly used abbreviations may or may not be present in this report.</b>
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	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
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 (Radiochemistry)
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: Leidos, Inc.**

**Project: Leidos RFP# 001088 - Ravenna AAP-66**

**Report Number: 280-116538-3**

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**

The samples were received on 11/3/2018 at 9:00 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 5 coolers at receipt time were 0.5° C, 2.1° C, 2.6° C, 3.6° C and 4.8° C.

This report only contains the results for the Hexavalent Chromium samples performed at the TestAmerica North Canton Laboratory. All other data will be found under SDG 280-116538-1 and 280-116538-2.

### **HEXAVALENT CHROMIUM**

Samples SCLmw-001-181001-GW (280-116538-1) and SCLmw-003-181001-GW (280-116538-2) were analyzed for hexavalent chromium in accordance with EPA SW-846 Method 7196A. The samples were analyzed on 11/02/2018.

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

## Detection Summary

Client: Leidos, Inc.  
Project/Site: Leidos RFP# 001088 - Ravenna AAP-66

TestAmerica Job ID: 280-116538-3

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**Client Sample ID: SCLmw-001-181001-GW**

**Lab Sample ID: 280-116538-1**

No Detections.

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**Client Sample ID: SCLmw-003-181001-GW**

**Lab Sample ID: 280-116538-2**

No Detections.

This Detection Summary does not include radiochemical test results.

TestAmerica Denver

# Client Sample Results

Client: Leidos, Inc.  
Project/Site: Leidos RFP# 001088 - Ravenna AAP-66

TestAmerica Job ID: 280-116538-3

**Client Sample ID: SCLmw-001-181001-GW**

**Lab Sample ID: 280-116538-1**

**Date Collected: 11/02/18 10:45**

**Matrix: Water**

**Date Received: 11/03/18 09:00**

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexavalent chromium	ND		0.020	0.0030	mg/L			11/02/18 18:00	1

**Client Sample ID: SCLmw-003-181001-GW**

**Lab Sample ID: 280-116538-2**

**Date Collected: 11/02/18 11:10**

**Matrix: Water**

**Date Received: 11/03/18 09:00**

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexavalent chromium	ND		0.020	0.0030	mg/L			11/02/18 18:01	1

# Default Detection Limits

Client: Leidos, Inc.  
Project/Site: Leidos RFP# 001088 - Ravenna AAP-66

TestAmerica Job ID: 280-116538-3

## General Chemistry

Analyte	RL	MDL	Units	Method
Hexavalent chromium	0.020	0.0030	mg/L	7196A



# QC Sample Results

Client: Leidos, Inc.  
 Project/Site: Leidos RFP# 001088 - Ravenna AAP-66

TestAmerica Job ID: 280-116538-3

## Method: 7196A - Chromium, Hexavalent

**Lab Sample ID: MB 240-353342/3**  
**Matrix: Water**  
**Analysis Batch: 353342**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexavalent chromium	ND		0.020	0.0030	mg/L			11/02/18 10:44	1

**Lab Sample ID: LCS 240-353342/4**  
**Matrix: Water**  
**Analysis Batch: 353342**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Hexavalent chromium	0.250	0.249		mg/L		100	80 - 123

# QC Association Summary

Client: Leidos, Inc.  
Project/Site: Leidos RFP# 001088 - Ravenna AAP-66

TestAmerica Job ID: 280-116538-3

## General Chemistry

### Analysis Batch: 353342

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-116538-1	SCLmw-001-181001-GW	Total/NA	Water	7196A	
280-116538-2	SCLmw-003-181001-GW	Total/NA	Water	7196A	
MB 240-353342/3	Method Blank	Total/NA	Water	7196A	
LCS 240-353342/4	Lab Control Sample	Total/NA	Water	7196A	

# Lab Chronicle

Client: Leidos, Inc.  
Project/Site: Leidos RFP# 001088 - Ravenna AAP-66

TestAmerica Job ID: 280-116538-3

**Client Sample ID: SCLmw-001-181001-GW**

**Lab Sample ID: 280-116538-1**

**Date Collected: 11/02/18 10:45**

**Matrix: Water**

**Date Received: 11/03/18 09:00**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	7196A		1	50 mL	50 mL	353342	11/02/18 18:00	ACR	TAL CAN

**Client Sample ID: SCLmw-003-181001-GW**

**Lab Sample ID: 280-116538-2**

**Date Collected: 11/02/18 11:10**

**Matrix: Water**

**Date Received: 11/03/18 09:00**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	7196A		1	50 mL	50 mL	353342	11/02/18 18:01	ACR	TAL CAN

**Laboratory References:**

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

# Accreditation/Certification Summary

Client: Leidos, Inc.  
 Project/Site: Leidos RFP# 001088 - Ravenna AAP-66

TestAmerica Job ID: 280-116538-3

## Laboratory: TestAmerica Denver

The accreditations/certifications listed below are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
A2LA	DoD ELAP		2907.01	10-31-19

## Laboratory: TestAmerica Canton

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

Authority	Program	EPA Region	Identification Number	Expiration Date
California	State Program	9	2927	02-23-19
Connecticut	State Program	1	PH-0590	12-31-19
Florida	NELAP	4	E87225	06-30-19
Illinois	NELAP	5	200004	07-31-19
Kansas	NELAP	7	E-10336	01-31-19
Kentucky (UST)	State Program	4	58	02-23-19
Kentucky (WW)	State Program	4	98016	12-31-18 *
Minnesota	NELAP	5	039-999-348	12-31-18 *
Minnesota (Petrofund)	State Program	1	3506	07-31-19
Nevada	State Program	9	OH00048	07-31-19
New Jersey	NELAP	2	OH001	06-30-19
New York	NELAP	2	10975	03-31-19
Ohio VAP	State Program	5	CL0024	09-06-19
Oregon	NELAP	10	4062	02-23-19
Pennsylvania	NELAP	3	68-00340	08-31-19 *
Texas	NELAP	6	T104704517-17-9	08-31-19
USDA	Federal		P330-16-00404	12-28-19
Virginia	NELAP	3	460175	09-14-19
Washington	State Program	10	C971	01-12-19
West Virginia DEP	State Program	3	210	12-31-18 *

\* Accreditation/Certification renewal pending - accreditation/certification considered valid.

# Method Summary

Client: Leidos, Inc.  
Project/Site: Leidos RFP# 001088 - Ravenna AAP-66

TestAmerica Job ID: 280-116538-3

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<b>Method</b>	<b>Method Description</b>	<b>Protocol</b>	<b>Laboratory</b>
7196A	Chromium, Hexavalent	SW846	TAL CAN

**Protocol References:**

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

**Laboratory References:**

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

# Sample Summary

Client: Leidos, Inc.  
Project/Site: Leidos RFP# 001088 - Ravenna AAP-66

TestAmerica Job ID: 280-116538-3

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<b>Lab Sample ID</b>	<b>Client Sample ID</b>	<b>Matrix</b>	<b>Collected</b>	<b>Received</b>
280-116538-1	SCLmw-001-181001-GW	Water	11/02/18 10:45	11/03/18 09:00
280-116538-2	SCLmw-003-181001-GW	Water	11/02/18 11:10	11/03/18 09:00

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Canton Job No.: 280-116538-3

SDG No.: \_\_\_\_\_

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
<b>WCCHROME50PM2 00023</b>	03/11/19	09/11/18	DIWATER, Lot 052014	1000 mL	WCKDICHROME62_00003	0.1414 g	Hexavalent chromium	49.9764 mg/L
.WCKDICHROME62_00003	06/06/19		Fisher, Lot 140919		(Purchased Reagent)		Hexavalent chromium	0.35344 g/g
<b>WCCHROME50PPM 00025</b>	03/11/19	09/11/18	DIWATER, Lot 052014	1000 mL	WCKDICHROME62_00004	0.1414 g	Hexavalent chromium	49.9764 mg/L
.WCKDICHROME62_00004	09/07/21		Fisher, Lot 126893		(Purchased Reagent)		Hexavalent chromium	0.35344 g/g

Reagent

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**WCKDICHROME62\_00003**





1 Reagent Lane  
 Fair Lawn, NJ 07410  
 201.796.7100 tel  
 201.796.1329 fax

# Certificate of Analysis

Fisher Scientific's Quality System has been found to conform to Quality Management System Standard ISO9001:2008 standard by SAI Global Certificate Number CERT - 0064970

This is to certify that units of the above mentioned lot number were tested and found to comply with the specifications of the grade listed. Certain data have been supplied by third parties. Fisher Scientific expressly disclaims all warranties, expressed or implied, including the implied warranties of merchantability and fitness for a particular purpose. Certain products (USP/FCC/NF/EP/BP/JP grades) are sold for use in food, drug, or medical device manufacturing. Fisher does not claim regulatory coverage under 21 CFR nor maintain DMF's with the FDA. The following are the actual analytical results obtained:

<b>Catalog Number</b>	<b>P188</b>	<b>Quality Test / Release Date</b> 2/25/2014	
<b>Lot Number</b>	<b>140919</b>		
<b>Description</b>	<b>POTASSIUM DICHROMATE, A.C.S.</b>		
<b>Country of Origin</b>	<b>United States</b>	<b>* Suggested Retest Date</b>	<b>Feb-2019</b>
<b>Chemical Origin</b>	<b>Inorganic-non animal</b>		
<b>BSE/TSE Comment</b>	No animal products are used as starting raw material ingredients, or used in processing, including lubricants, processing aids, or any other material that might migrate to the finished product.		

Result name	Units	Specifications	Test Value
APPEARANCE		REPORT	FINE ORANGE-RED CRYSTALS
ASSAY	%	>= 99	99.9
CALCIUM	%	<= 0.003	0.0010
CHLORIDE	%	<= 0.001	<0.0010
IDENTIFICATION	PASS/FAIL	= PASS TEST	PASS TEST
INSOLUBLE MATTER	%	<= 0.005	0.002
IRON (Fe)	%	<= 0.001	0.0010
LOSS ON DRYING @ 105 C	%	<= 0.05	0.02
SODIUM (Na)	%	<= 0.02	0.001
SULFATE (SO4)	%	<= 0.005	0.002



*Edgar E. Hara*

Lab Manager Fair Lawn

Note: The data listed is valid for all package sizes of this lot of this product, expressed as a extension of this catalog number listed above. If there are any questions with this certificate, please call Chemical Services at (800) 227-6701.  
 \*Based on suggested storage condition.

Reagent

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**WCKDICHROME62\_00004**



1 Reagent Lane  
 Fair Lawn, NJ 07410  
 201.796.7100 tel  
 201.796.1329 fax

## Certificate of Analysis

Fisher Scientific's Quality System has been found to conform to Quality Management System Standard ISO9001:2008 standard by DNV Certificate number CERT-08052-2006-AQ-HOU-ANAB

This is to certify that units of the above mentioned lot number were tested and found to comply with the specifications of the grade listed. Certain data have been supplied by third parties. Fisher Scientific expressly disclaims all warranties, expressed or implied, including the implied warranties of merchantability and fitness for a particular purpose. Certain products (USP/FCC/NF/EP/BP/JP grades) are sold for use in food, drug, or medical device manufacturing. Fisher does not claim regulatory coverage under 21 CFR nor maintain DMF's with the FDA. The following are the actual analytical results obtained:

<b>Catalog Number</b>	P188	<b>Mfg. Date</b>	11/16/2012
<b>Lot Number</b>	126893		
<b>Description</b>	POTASSIUM DICHROMATE, A.C.S.		
<b>Country of Origin</b>	United States	<b>Recommended Retest Date</b>	Nov-2017
<b>Chemical Origin</b>	Inorganic-non animal		
<b>BSE/TSE Comment</b>	No animal products are used as starting raw material ingredients, or used in processing, including lubricants, processing aids, or any other material that might migrate to the finished product.		

Result name	Units	Specifications	Test Value
APPEARANCE		REPORT	Fine, orange-red powder
ASSAY	%	>= 99	99.8
CALCIUM	%	<= 0.003	<0.0010
CHLORIDE	%	<= 0.001	<0.0010
IDENTIFICATION	PASS/FAIL	= PASS TEST	PASS TEST
INSOLUBLE MATTER	%	<= 0.005	0.004
IRON (Fe)	%	<= 0.001	0.0010
LOSS ON DRYING @ 105 C	%	<= 0.05	0.03
SODIUM (Na)	%	<= 0.02	0.005
SULFATE (SO4)	%	<= 0.005	0.003



Edgar E. Hara

**Lab Manager Fair Lawn**

Note: The data listed is valid for all package sizes of this lot of this product, expressed as a extension of this catalog number listed above. If there are any questions with this certificate, please call Chemical Services at (800) 227-6701.

# GENERAL CHEMISTRY

COVER PAGE  
GENERAL CHEMISTRY

Lab Name: TestAmerica Canton Job Number: 280-116538-3

SDG No.: \_\_\_\_\_

Project: Leidos RFP# 001088 - Ravenna AAP-66

Client Sample ID	Lab Sample ID
<u>SCLmw-001-181001-GW</u>	<u>280-116538-1</u>
<u>SCLmw-003-181001-GW</u>	<u>280-116538-2</u>

Comments:

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1B-IN  
 INORGANIC ANALYSIS DATA SHEET  
 GENERAL CHEMISTRY

Client Sample ID: SCLmw-001-181001-GW

Lab Sample ID: 280-116538-1

Lab Name: TestAmerica Canton

Job No.: 280-116538-3

SDG ID.: \_\_\_\_\_

Matrix: Water

Date Sampled: 11/02/2018 10:45

Reporting Basis: WET

Date Received: 11/03/2018 09:00

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
18540-29-9	Hexavalent chromium	ND	0.020	0.0030	mg/L			1	7196A

1B-IN  
 INORGANIC ANALYSIS DATA SHEET  
 GENERAL CHEMISTRY

Client Sample ID: SCLmw-003-181001-GW

Lab Sample ID: 280-116538-2

Lab Name: TestAmerica Canton

Job No.: 280-116538-3

SDG ID.: \_\_\_\_\_

Matrix: Water

Date Sampled: 11/02/2018 11:10

Reporting Basis: WET

Date Received: 11/03/2018 09:00

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
18540-29-9	Hexavalent chromium	ND	0.020	0.0030	mg/L			1	7196A

2-IN  
CALIBRATION QUALITY CONTROL  
GENERAL CHEMISTRY

Lab Name: TestAmerica Canton Job No.: 280-116538-3  
SDG No.: \_\_\_\_\_  
Analyst: MMM Batch Start Date: 10/11/2018  
Reporting Units: mg/L Analytical Batch No.: 349697

Sample Number	QC Type	Time	Analyte	Result	Spike Amount	(%) Recovery	Limits	Qual	Reagent
7	ICV	17:26	Hexavalent chromium	0.269	0.250	108	90-110		WCCHROME50PM2_0002
8	ICB	17:27	Hexavalent chromium	ND					3

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



2-IN  
 CALIBRATION QUALITY CONTROL  
 GENERAL CHEMISTRY

Lab Name: TestAmerica Canton Job No.: 280-116538-3  
 SDG No.: \_\_\_\_\_  
 Analyst: ACR Batch Start Date: 11/02/2018  
 Reporting Units: mg/L Analytical Batch No.: 353342

Sample Number	QC Type	Time	Analyte	Result	Spike Amount	(%) Recovery	Limits	Qual	Reagent
1	CCV	10:42	Hexavalent chromium	0.256	0.250	102	90-110		WCCHROME50PPM_00025
2	CCB	10:43	Hexavalent chromium	ND					
10	CCV	10:51	Hexavalent chromium	0.257	0.250	103	90-110		WCCHROME50PPM_00025
11	CCB	10:52	Hexavalent chromium	ND					
14	CCV	18:02	Hexavalent chromium	0.246	0.250	99	90-110		WCCHROME50PPM_00025
15	CCB	18:03	Hexavalent chromium	ND					

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

3-IN  
METHOD BLANK  
GENERAL CHEMISTRY

Lab Name: TestAmerica Canton

Job No.: 280-116538-3

SDG No.: \_\_\_\_\_

Method	Lab Sample ID	Analyte	Result	Qual	Units	RL	Dil
Batch ID: 353342 Date: 11/02/2018 10:44							
7196A	MB 240-353342/3	Hexavalent chromium	ND		mg/L	0.020	1

7A-IN  
LAB CONTROL SAMPLE  
GENERAL CHEMISTRY

Lab Name: TestAmerica Canton Job No.: 280-116538-3

SDG No.: \_\_\_\_\_

Matrix: Water

Method	Lab Sample ID	Analyte	Result	C	Unit	Spike Amount	Pct. Rec.	Limits	RPD	RPD Limit	Q
Batch ID: 353342 Date: 11/02/2018 10:45			LCS Source: WCCHROME50PM2_00023								
7196A	LCS 240-353342/4	Hexavalent chromium	0.249		mg/L	0.250	100	80-123			

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 Canton

Job Number: 280-116538-3

SDG Number: \_\_\_\_\_

Matrix: Water

Instrument ID: OSCAR

Method: 7196A

MDL Date: 04/25/2017 11:21

Analyte	Wavelength/ Mass	RL (mg/L)	MDL (mg/L)
Hexavalent chromium		0.02	0.003

9-IN  
CALIBRATION BLANK DETECTION LIMITS  
GENERAL CHEMISTRY

Lab Name: TestAmerica Canton Job Number: 280-116538-3  
SDG Number: \_\_\_\_\_  
Matrix: Water Instrument ID: OSCAR  
Method: 7196A XMDL Date: 04/25/2017 11:21

Analyte	Wavelength/ Mass	XRL (mg/L)	XMDL (mg/L)
Hexavalent chromium		0.02	0.003

13-IN  
ANALYSIS RUN LOG  
GENERAL CHEMISTRY

Lab Name: TestAmerica Canton Job No.: 280-116538-3

SDG No.: \_\_\_\_\_

Instrument ID: OSCAR Analysis Method: 7196A

Start Date: 10/11/2018 17:20 End Date: 10/11/2018 17:34

Lab Sample Id	D/F	T y p e	Time	Analytes																											
				C r 6																											
IC 240-349697/1	1		17:20	X																											
IC 240-349697/2	1		17:21	X																											
IC 240-349697/3	1		17:22	X																											
IC 240-349697/4	1		17:23	X																											
IC 240-349697/5	1		17:24	X																											
IC 240-349697/6	1		17:25	X																											
ICV 240-349697/7	1		17:26	X																											
ICB 240-349697/8	1		17:27	X																											
ZZZZZZ			17:28																												
ZZZZZZ			17:29																												
ZZZZZZ			17:30																												
ZZZZZZ			17:31																												
ZZZZZZ			17:32																												
CCV 240-349697/14			17:33																												
CCB 240-349697/15			17:34																												

Prep Types: \_\_\_\_\_  
=



GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: TestAmerica Canton Job No.: 280-116538-3

SDG No.: \_\_\_\_\_

Batch Number: 349697 Batch Start Date: 10/11/18 17:20 Batch Analyst: Moser, Morgan

Batch Method: 7196A Batch End Date: 10/11/18 17:35

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	UnCorResp	WCCHROME50PM2 00023	WCCHROME50PPM 00025	
IC 240-349697/1		7196A		50 mL	50 mL	0 Absorbance			
IC 240-349697/2		7196A		50 mL	50 mL	0.004 Absorbance		0.005 mL	
IC 240-349697/3		7196A		50 mL	50 mL	0.008 Absorbance		0.01 mL	
IC 240-349697/4		7196A		50 mL	50 mL	0.084 Absorbance		0.1 mL	
IC 240-349697/5		7196A		50 mL	50 mL	0.191 Absorbance		0.25 mL	
IC 240-349697/6		7196A		50 mL	50 mL	0.369 Absorbance		0.5 mL	
ICV 240-349697/7		7196A		50 mL	50 mL	0.202 Absorbance	0.25 mL		
ICB 240-349697/8		7196A		50 mL	50 mL	0 Absorbance			

Batch Notes	
Acid Used for pH Adjustment ID	3715210
Spectrophotometer Cell Path Length	1 cm
Color Reagent ID	3830583
Phosphoric Acid ID	3521890
Pipette/Syringe/Dispenser ID	E5

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.



GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: TestAmerica Canton Job No.: 280-116538-3

SDG No.: \_\_\_\_\_

Batch Number: 353342 Batch Start Date: 11/02/18 10:42 Batch Analyst: Raymond, Anthony C

Batch Method: 7196A Batch End Date: \_\_\_\_\_

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	ColorBlk	UnCorResp	WCCHROME50PM2 00023	WCCHROME50PPM 00025
CCV 240-353342/1		7196A		50 mL	50 mL		0.192 Absorbance		0.25 mL
CCB 240-353342/2		7196A		50 mL	50 mL		0 Absorbance		
MB 240-353342/3		7196A		50 mL	50 mL		0 Absorbance		
LCS 240-353342/4		7196A		50 mL	50 mL		0.187 Absorbance	0.25 mL	
CCV 240-353342/10		7196A		50 mL	50 mL		0.193 Absorbance		0.25 mL
CCB 240-353342/11		7196A		50 mL	50 mL		0 Absorbance		
280-116538-S-1	SCLmw-001-181001 -GW	7196A	T	50 mL	50 mL	0 Absorbance	0 Absorbance		
280-116538-S-2	SCLmw-003-181001 -GW	7196A	T	50 mL	50 mL	0 Absorbance	0 Absorbance		
CCV 240-353342/14		7196A		50 mL	50 mL		0.185 Absorbance		0.25 mL
CCB 240-353342/15		7196A		50 mL	50 mL		0 Absorbance		

Batch Notes	
Acid Used for pH Adjustment ID	3715210
Spectrophotometer Cell Path Length	1 cm
Color Reagent ID	3882821
Phosphoric Acid ID	3521890
Pipette/Syringe/Dispenser ID	E1

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.

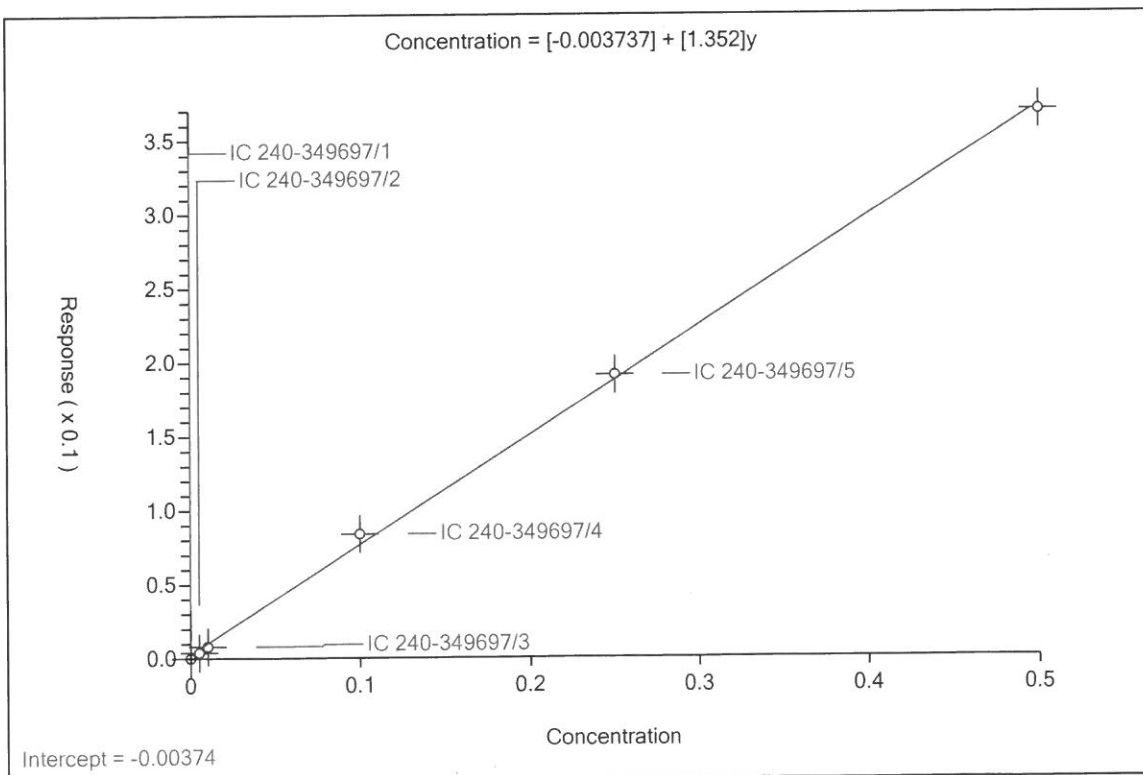
Calibration

Calib 349697-0 / Cr (VI)

Curve Type: Linear  
 Weighting: None  
 Origin: None  
 Dependency: Concentration  
 Calib Mode: ESTD  
 Response Base: AREA  
 RF Rounding: 0

Curve Coefficients	
Intercept:	-0.003737
Slope:	1.352
Error Coefficients	
Standard Error:	0.00659
Relative Standard Error:	42.4
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.999 (0.999)

ID	Level	Concentration	Response	IS Amount	IS Response	RF	Used
1	IC 240-349697/1	0.0	0.0			NaN	Y
2	IC 240-349697/2	0.004998	0.004			0.800378	Y
3	IC 240-349697/3	0.009995	0.008			0.800378	Y
4	IC 240-349697/4	0.099953	0.084			0.840397	Y
5	IC 240-349697/5	0.249882	0.191			0.764361	Y
6	IC 240-349697/6	0.499764	0.369			0.738349	Y



# Subcontract Data

# Shipping and Receiving Documents





Leidos Proprietary

# Chain of Custody Record

COC No.: **RVAAP-080-TA**

Page 1 of 1 Date: 11/2/2018

**Name Leidos**  
**Address:** 8866 Commons Blvd, Suite 201, Twinsburg, OH 44087  
**Phone Number:** (330) 405-5802  
**Project Manager:** Jed Thomas  
**Project:** RVAAP FWGW Sampling Event  
**Job/P.O. No.:** P010216426  
**Sampler (Signature):** *[Signature]* **(Printed Name):** **NEATHE ADAMS**

**Laboratory Name:** Test America - Canton  
**Address:** 4101 Shuffel St NW  
**North Canton, OH 44720**  
**Phone:** (330) 497-9396  
**Fax:**  
**Contact:**

**OBSERVATIONS, COMMENTS, SPECIAL INSTRUCTIONS**

**Requested Parameters**

Requested Parameter	Matrix	Time	Date	Site Type	Depth	Sample ID
VOCs (18)	W	10:45	11/2/2018	GW	NA	SCLMW-001-181001-GW
PAHs (13)	W	11:10	11/2/2018	GW	NA	SCLMW-003-181001-GW
TL Metals (7) incl Phosphorus	W	10:45	11/2/2018	TB	NA	FWGTB-181014-TB
Perchlorate (1)(A)						
Alkalinity/sulfate/nitrate/nitrite (10)(A)						
Cyanide (B)(C)						
Sulfide (E)(F)						
Perchlorate (1)(A)						
Hexavalent Chromium (13)(A1)						
Temperature Blank						
Total Number of Containers						

**Notes:**  
 A. Cool 4C  
 B. HCl, pH=2, Cool 4C  
 C. HNO3, pH=2, Cool 4C  
 D. NaOH, pH=12, Cool 4C  
 E. NaOH/CN Available, pH=9, Cool 4C

**Received by:** *[Signature]* **Test America**  
**Signature:** *[Signature]* **RC Robison**  
**Printed Name:** **RICK ROBISON**  
**Company:**

**Received by:** *[Signature]*  
**Signature:** *[Signature]* **KEISTA DUNLAP**  
**Printed Name:** **KEISTA DUNLAP**  
**Company:**

**Received by:** *[Signature]*  
**Signature:** *[Signature]* **TADEN**  
**Printed Name:** **TADEN**  
**Company:**

**Date:** 11/2/18  
**Time:** 1600

**Date:** 11-03-18  
**Time:** 0900

**Relinquished by:** *[Signature]*  
**Signature:** *[Signature]* **NEATHE ADAMS**  
**Printed Name:** **NEATHE ADAMS**  
**Company:**

**Relinquished by:** *[Signature]*  
**Signature:** *[Signature]* **KEISTA DUNLAP**  
**Printed Name:** **KEISTA DUNLAP**  
**Company:**

**Relinquished by:** *[Signature]*  
**Signature:** *[Signature]* **RICK ROBISON**  
**Printed Name:** **RICK ROBISON**  
**Company:**

**Shipment Method:** Counter

**Temperature Blank**  
**Lab:**  
**Leidos**  
**8866 Commons Drive**  
**Twinsburg, OH 44087**  
**(330) 405-5802**

White: Laboratory; Pink: Project Manager; Yellow: Project QAO; Gold: Field Project Manager

# Login Sample Receipt Checklist

Client: Leidos, Inc.

Job Number: 280-116538-3

**Login Number: 116538**  
**List Number: 1**  
**Creator: Dunlap, Krista M**

**List Source: TestAmerica Denver**

<b>Question</b>	<b>Answer</b>	<b>Comment</b>
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	N/A	
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.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	