

ANALYTICAL REPORT

Job Number: 280-127214-2

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
8/19/2019 7:45 AM

Donna R Rydberg, Senior Project Manager
4955 Yarrow Street, Arvada, CO, 80002
(303)736-0192
donna.rydberg@testamericainc.com
08/19/2019

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.

Eurofins TestAmerica, Denver

4955 Yarrow Street, Arvada, CO 80002

Tel (303) 736-0100 Fax (303) 431-7171 www.testamericainc.com

Table of Contents

Cover Title Page	1
Data Summaries	4
Definitions	4
Case Narrative	5
Detection Summary	6
Client Sample Results	7
Default Detection Limits	8
QC Sample Results	9
QC Association	10
Chronicle	11
Certification Summary	12
Method Summary	13
Sample Summary	14
Reagent Traceability	15
COAs	16
Inorganic Sample Data	18
General Chemistry Data	18
Gen Chem Cover Page	19
Gen Chem Sample Data	20
Gen Chem QC Data	23
Gen Chem ICV/CCV	23
Gen Chem Blanks	25
Gen Chem LCS/LCSD	26
Gen Chem MDL	27
Gen Chem Analysis Run Log	29
Gen Chem Prep Data	31

Table of Contents

Gen Chem Raw Data	33
Subcontracted Data	34
Shipping and Receiving Documents	35
Client Chain of Custody	36
Sample Receipt Checklist	38

Definitions/Glossary

Client: Leidos, Inc.

Job ID: 280-127214-2

Project/Site: Leidos RFP# 001088 - Ravenna AAP-66

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
▫	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	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: 280-127214-2

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 8/14/2019 at 9:15 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 3 coolers at receipt time were 0.9° C, 1.6° C and 5.5° C.

This report contains the Hexavalent chromium results only as they were performed at the Eurofins TestAmerica North Canton laboratory and they do not have DOD certification. All other tests on the COC will be reported under job 280-127214-1.

HEXAVALENT CHROMIUM

Samples SCLmw-001-190801-GW (280-127214-1), SCLmw-002-190801-GW (280-127214-2) and SCLmw-003-190801-GW (280-127214-3) were analyzed for hexavalent chromium in accordance with EPA SW-846 Method 7196A. The samples were analyzed on 08/13/2019.

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

Job ID: 280-127214-2

Client Sample ID: SCLmw-001-190801-GW

Lab Sample ID: 280-127214-1

No Detections.

Client Sample ID: SCLmw-002-190801-GW

Lab Sample ID: 280-127214-2

No Detections.

Client Sample ID: SCLmw-003-190801-GW

Lab Sample ID: 280-127214-3

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Denver

Client Sample Results

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

Job ID: 280-127214-2

General Chemistry

Client Sample ID: SCLmw-001-190801-GW

Date Collected: 08/13/19 10:10

Date Received: 08/14/19 09:15

Lab Sample ID: 280-127214-1

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Analyzed	Dil Fac
Hexavalent chromium	ND		0.020	0.0070	mg/L		08/13/19 17:12	1

Client Sample ID: SCLmw-002-190801-GW

Date Collected: 08/13/19 10:00

Date Received: 08/14/19 09:15

Lab Sample ID: 280-127214-2

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Analyzed	Dil Fac
Hexavalent chromium	ND		0.020	0.0070	mg/L		08/13/19 17:13	1

Client Sample ID: SCLmw-003-190801-GW

Date Collected: 08/13/19 09:50

Date Received: 08/14/19 09:15

Lab Sample ID: 280-127214-3

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Analyzed	Dil Fac
Hexavalent chromium	ND		0.020	0.0070	mg/L		08/13/19 17:14	1

Default Detection Limits

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

Job ID: 280-127214-2

General Chemistry

Analyte	RL	MDL	Units
Hexavalent chromium	0.020	0.0070	mg/L

QC Sample Results

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

Job ID: 280-127214-2

Method: 7196A - Chromium, Hexavalent

Lab Sample ID: MB 240-395866/3
Matrix: Water
Analysis Batch: 395866

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Analyzed	Dil Fac
Hexavalent chromium	ND		0.020	0.0070	mg/L		08/13/19 17:11	1

Lab Sample ID: LCS 240-395866/4
Matrix: Water
Analysis Batch: 395866

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

Job ID: 280-127214-2

General Chemistry

Analysis Batch: 395866

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-127214-1	SCLmw-001-190801-GW	Total/NA	Water	7196A	
280-127214-2	SCLmw-002-190801-GW	Total/NA	Water	7196A	
280-127214-3	SCLmw-003-190801-GW	Total/NA	Water	7196A	
MB 240-395866/3	Method Blank	Total/NA	Water	7196A	
LCS 240-395866/4	Lab Control Sample	Total/NA	Water	7196A	

Lab Chronicle

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

Job ID: 280-127214-2

Client Sample ID: SCLmw-001-190801-GW

Lab Sample ID: 280-127214-1

Date Collected: 08/13/19 10:10

Matrix: Water

Date Received: 08/14/19 09:15

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	395866	08/13/19 17:12	BLW	TAL CAN

Client Sample ID: SCLmw-002-190801-GW

Lab Sample ID: 280-127214-2

Date Collected: 08/13/19 10:00

Matrix: Water

Date Received: 08/14/19 09:15

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	395866	08/13/19 17:13	BLW	TAL CAN

Client Sample ID: SCLmw-003-190801-GW

Lab Sample ID: 280-127214-3

Date Collected: 08/13/19 09:50

Matrix: Water

Date Received: 08/14/19 09:15

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	395866	08/13/19 17:14	BLW	TAL CAN

Laboratory References:

TAL CAN = Eurofins 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

Job ID: 280-127214-2

Laboratory: Eurofins TestAmerica, Denver

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

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

Laboratory: Eurofins 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		2927	02-23-20
California	State Program	9	2927	02-23-20
Connecticut	State		PH-0590	12-31-19
Connecticut	State Program	1	PH-0590	12-31-19
Florida	NELAP	4	E87225	06-30-20
Florida	NELAP		E87225	06-30-20
Georgia	State		4062	02-23-20
Georgia	State Program	4	N/A	02-23-20
Illinois	NELAP	5	200004	07-31-20
Iowa	State Program	7	421	06-01-21
Kansas	NELAP	7	E-10336	04-30-20
Kansas	NELAP		E-10336	04-30-20
Kentucky (UST)	State Program	4	58	02-23-20
Kentucky (WW)	State		KY98016	12-31-19
Kentucky (WW)	State Program	4	98016	12-31-19
Minnesota	NELAP	5	039-999-348	12-31-19 *
Minnesota	NELAP		OH00048	12-31-19
Minnesota (Petrofund)	State Program	1	3506	07-31-21
New Jersey	NELAP	2	OH001	06-30-20
New Jersey	NELAP		OH001	06-30-20
New York	NELAP	2	10975	03-31-20
New York	NELAP		10975	03-31-20
Ohio VAP	State		CL0024	06-05-21
Ohio VAP	State Program	5	CL0024	06-05-21
Oregon	NELAP	10	4062	02-23-20
Oregon	NELAP		4062	02-23-20
Pennsylvania	NELAP	3	68-00340	08-31-19 *
Pennsylvania	NELAP		68-00340	08-31-19
Texas	NELAP	6	T104704517-19-11	08-31-20
Texas	NELAP		T104704517-18-10	08-31-19
USDA	Federal		P330-16-00404	12-28-19
Virginia	NELAP	3	460175	09-14-19 *
Virginia	NELAP		010101	09-14-19
Washington	State		C971	01-12-20
Washington	State Program	10	C971	01-12-20 *
West Virginia DEP	State		210	12-31-19
West Virginia DEP	State Program	3	210	12-31-19

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

Method Summary

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

Job ID: 280-127214-2

Method	Method Description	Protocol	Laboratory
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 = Eurofins TestAmerica, Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396

Sample Summary

Client: Leidos, Inc.

Job ID: 280-127214-2

Project/Site: Leidos RFP# 001088 - Ravenna AAP-66

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
280-127214-1	SCLmw-001-190801-GW	Water	08/13/19 10:10	08/14/19 09:15	
280-127214-2	SCLmw-002-190801-GW	Water	08/13/19 10:00	08/14/19 09:15	
280-127214-3	SCLmw-003-190801-GW	Water	08/13/19 09:50	08/14/19 09:15	

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Canton Job No.: 280-127214-2

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
WCCHROME50PM2 00025	09/07/19	06/07/19	DIWATER, Lot 052014	1000 mL	WCKDICHROME62_00008	0.1414 g	Hexavalent chromium	49.9764 mg/L
.WCKDICHROME62_00008	03/26/24		Fisher, Lot 166724		(Purchased Reagent)		Hexavalent chromium	0.35344 g/g
WCCHROME50PPM 00029	09/11/19	03/12/19	DIWATER, Lot 052014	1000 mL	WCKDICHROME62_00006	0.1414 g	Hexavalent chromium	49.9764 mg/L
.WCKDICHROME62_00006	09/19/22		Fisher, Lot 172080		(Purchased Reagent)		Hexavalent chromium	0.35344 g/g

Reagent

WCKDICHROME62_00006



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 - 0090918

This is to certify that units of the lot number below 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:

Catalog Number	P188	Quality Test / Release Date 3/6/2017	
Lot Number	172080		
Description	POTASSIUM DICHROMATE, A.C.S.		
Country of Origin	United States	* Suggested Retest Date	Mar-2022
Chemical Origin	Inorganic-non animal		
BSE/TSE Comment	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	101.4
CALCIUM	%	<= 0.003	0.0010
CHLORIDE	%	<= 0.001	0.0010
IDENTIFICATION	PASS/FAIL	= PASS TEST	PASS TEST
INSOLUBLE MATTER	%	<= 0.005	0.001
IRON (Fe)	%	<= 0.001	0.0010
LOSS ON DRYING @ 105 C	%	<= 0.05	0.01
SODIUM (Na)	%	<= 0.02	0.001
SULFATE (SO4)	%	<= 0.005	0.003



Jerusa Bailey-Wyche

Quality Assurance Specialist - Certificate of Analysis 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.

GENERAL CHEMISTRY

COVER PAGE
GENERAL CHEMISTRY

Lab Name: Eurofins TestAmerica, Canton Job Number: 280-127214-2

SDG No.: _____

Project: Leidos RFP# 001088 - Ravenna AAP-66

Client Sample ID	Lab Sample ID
<u>SCLmw-001-190801-GW</u>	<u>280-127214-1</u>
<u>SCLmw-002-190801-GW</u>	<u>280-127214-2</u>
<u>SCLmw-003-190801-GW</u>	<u>280-127214-3</u>

Comments:

1B-IN
 INORGANIC ANALYSIS DATA SHEET
 GENERAL CHEMISTRY

Client Sample ID: SCLmw-001-190801-GW

Lab Sample ID: 280-127214-1

Lab Name: Eurofins TestAmerica, Canton

Job No.: 280-127214-2

SDG ID.: _____

Matrix: Water

Date Sampled: 08/13/2019 10:10

Reporting Basis: WET

Date Received: 08/14/2019 09:15

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
18540-29-9	Hexavalent chromium	ND	0.020	0.0070	mg/L			1	7196A

1B-IN
 INORGANIC ANALYSIS DATA SHEET
 GENERAL CHEMISTRY

Client Sample ID: SCLmw-002-190801-GW

Lab Sample ID: 280-127214-2

Lab Name: Eurofins TestAmerica, Canton

Job No.: 280-127214-2

SDG ID.: _____

Matrix: Water

Date Sampled: 08/13/2019 10:00

Reporting Basis: WET

Date Received: 08/14/2019 09:15

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
18540-29-9	Hexavalent chromium	ND	0.020	0.0070	mg/L			1	7196A

1B-IN
 INORGANIC ANALYSIS DATA SHEET
 GENERAL CHEMISTRY

Client Sample ID: SCLmw-003-190801-GW

Lab Sample ID: 280-127214-3

Lab Name: Eurofins TestAmerica, Canton

Job No.: 280-127214-2

SDG ID.: _____

Matrix: Water

Date Sampled: 08/13/2019 09:50

Reporting Basis: WET

Date Received: 08/14/2019 09:15

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
18540-29-9	Hexavalent chromium	ND	0.020	0.0070	mg/L			1	7196A

2-IN
 CALIBRATION QUALITY CONTROL
 GENERAL CHEMISTRY

Lab Name: Eurofins TestAmerica, Canton Job No.: 280-127214-2
 SDG No.: _____
 Analyst: BLW Batch Start Date: 08/10/2019
 Reporting Units: mg/L Analytical Batch No.: 395387

Sample Number	QC Type	Time	Analyte	Result	Spike Amount	(%) Recovery	Limits	Qual	Reagent
7	ICV	11:06	Hexavalent chromium	0.250	0.250	100	90-110		WCCHROME50PM2_0002
8	ICB	11:06	Hexavalent chromium	ND					5

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

2-IN
 CALIBRATION QUALITY CONTROL
 GENERAL CHEMISTRY

Lab Name: Eurofins TestAmerica, Canton Job No.: 280-127214-2
 SDG No.: _____
 Analyst: BLW Batch Start Date: 08/13/2019
 Reporting Units: mg/L Analytical Batch No.: 395866

Sample Number	QC Type	Time	Analyte	Result	Spike Amount	(%) Recovery	Limits	Qual	Reagent
1	CCV	17:10	Hexavalent chromium	0.236	0.250	95	90-110		WCCHROME50PPM_00029
2	CCB	17:10	Hexavalent chromium	ND					
8	CCV	17:14	Hexavalent chromium	0.236	0.250	95	90-110		WCCHROME50PPM_00029
9	CCB	17:15	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: Eurofins TestAmerica, Canton

Job No.: 280-127214-2

SDG No.: _____

Method	Lab Sample ID	Analyte	Result	Qual	Units	RL	Dil
Batch ID: 395866 Date: 08/13/2019 17:11							
7196A	MB 240-395866/3	Hexavalent chromium	ND		mg/L	0.020	1

7A-IN
 LAB CONTROL SAMPLE
 GENERAL CHEMISTRY

Lab Name: Eurofins TestAmerica, Canton Job No.: 280-127214-2

SDG No.: _____

Matrix: Water

Method	Lab Sample ID	Analyte	Result	C	Unit	Spike Amount	Pct. Rec.	Limits	RPD	RPD Limit	Q
Batch ID: 395866			Date: 08/13/2019 17:11			LCS Source: WCCHROME50PM2_00025					
7196A	LCS 240-395866/4	Hexavalent chromium	0.249		mg/L	0.250	100	80-123			

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

9-IN
DETECTION LIMITS
GENERAL CHEMISTRY

Lab Name: Eurofins TestAmerica, Canton Job Number: 280-127214-2
SDG Number: _____
Matrix: Water Instrument ID: OSCAR
Method: 7196A MDL Date: 06/21/2019 09:09

Analyte	Wavelength/ Mass	RL (mg/L)	MDL (mg/L)
Hexavalent chromium		0.02	0.007

9-IN
CALIBRATION BLANK DETECTION LIMITS
GENERAL CHEMISTRY

Lab Name: Eurofins TestAmerica, Canton Job Number: 280-127214-2
SDG Number: _____
Matrix: Water Instrument ID: OSCAR
Method: 7196A XMDL Date: 06/21/2019 09:09

Analyte	Wavelength/ Mass	XRL (mg/L)	XMDL (mg/L)
Hexavalent chromium		0.02	0.007

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: Eurofins TestAmerica, Canton Job No.: 280-127214-2

SDG No.: _____

Instrument ID: OSCAR Analysis Method: 7196A

Start Date: 08/10/2019 11:06 End Date: 08/10/2019 11:06

Lab Sample Id	D/F	Type	Time	Analytes																											
				C	r	6																									
IC 240-395387/1	1		11:06	X																											
IC 240-395387/2	1		11:06	X																											
IC 240-395387/3	1		11:06	X																											
IC 240-395387/4	1		11:06	X																											
IC 240-395387/5	1		11:06	X																											
IC 240-395387/6	1		11:06	X																											
ICV 240-395387/7	1		11:06	X																											
ICB 240-395387/8	1		11:06	X																											
ZZZZZZ			11:06																												
ZZZZZZ			11:06																												
ZZZZZZ			11:06																												
ZZZZZZ			11:06																												
ZZZZZZ			11:06																												
ZZZZZZ			11:06																												
ZZZZZZ			11:06																												
ZZZZZZ			11:06																												
ZZZZZZ			11:06																												
ZZZZZZ			11:06																												
ZZZZZZ			11:06																												
ZZZZZZ			11:06																												
ZZZZZZ			11:06																												
ZZZZZZ			11:06																												

Prep Types: _____
=

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: Eurofins TestAmerica, Canton Job No.: 280-127214-2

SDG No.: _____

Instrument ID: OSCAR Analysis Method: 7196A

Start Date: 08/13/2019 17:10 End Date: 08/13/2019 17:16

Lab Sample Id	D/F	Type	Time	Analytes																											
				C	r	6																									
CCV 240-395866/1	1		17:10	X																											
CCB 240-395866/2	1		17:10	X																											
ZZZZZZ			17:10																												
ZZZZZZ			17:10																												
MB 240-395866/3	1	T	17:11	X																											
LCS 240-395866/4	1	T	17:11	X																											
280-127214-1	1	T	17:12	X																											
280-127214-2	1	T	17:13	X																											
280-127214-3	1	T	17:14	X																											
CCV 240-395866/8	1		17:14	X																											
CCB 240-395866/9	1		17:15	X																											
ZZZZZZ			17:16																												

Prep Types: _____
T = Total/NA

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Canton Job No.: 280-127214-2

SDG No.: _____

Batch Number: 395387 Batch Start Date: 08/10/19 11:06 Batch Analyst: Woodward, Bruce

Batch Method: 7196A Batch End Date: _____

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	UnCorResp	WCCHROME50PM2 00025	WCCHROME50PPM 00029	
IC 240-395387/1		7196A		50 mL	50 mL	0 Absorbance			
IC 240-395387/2		7196A		50 mL	50 mL	0.007 Absorbance		0.005 mL	
IC 240-395387/3		7196A		50 mL	50 mL	0.010 Absorbance		0.01 mL	
IC 240-395387/4		7196A		50 mL	50 mL	0.092 Absorbance		0.1 mL	
IC 240-395387/5		7196A		50 mL	50 mL	0.188 Absorbance		0.25 mL	
IC 240-395387/6		7196A		50 mL	50 mL	0.355 Absorbance		0.5 mL	
ICV 240-395387/7		7196A		50 mL	50 mL	0.184 Absorbance	0.25 mL		
ICB 240-395387/8		7196A		50 mL	50 mL	0 Absorbance			

Batch Notes	
Acid Used for pH Adjustment ID	4276663
Spectrophotometer Cell Path Length	1 cm
Color Reagent ID	4327302

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: Eurofins TestAmerica, Canton Job No.: 280-127214-2

SDG No.: _____

Batch Number: 395866 Batch Start Date: 08/13/19 17:10 Batch Analyst: Woodward, Bruce

Batch Method: 7196A Batch End Date: 08/13/19 17:30

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	ColorBlk	UnCorResp	WCCHROME50PM2 00025	WCCHROME50PPM 00029
CCV 240-395866/1		7196A		50 mL	50 mL		0.174 Absorbance		0.25 mL
CCB 240-395866/2		7196A		50 mL	50 mL		0 Absorbance		
MB 240-395866/3		7196A		50 mL	50 mL		0 Absorbance		
LCS 240-395866/4		7196A		50 mL	50 mL		0.183 Absorbance	0.25 mL	
280-127214-A-1	SCLmw-001-190801 -GW	7196A	T	50 mL	50 mL	0 Absorbance	0 Absorbance		
280-127214-A-2	SCLmw-002-190801 -GW	7196A	T	50 mL	50 mL	0.006 Absorbance	0 Absorbance		
280-127214-A-3	SCLmw-003-190801 -GW	7196A	T	50 mL	50 mL	0 Absorbance	0 Absorbance		
CCV 240-395866/8		7196A		50 mL	50 mL		0.174 Absorbance		0.25 mL
CCB 240-395866/9		7196A		50 mL	50 mL		0 Absorbance		

Batch Notes	
Acid Used for pH Adjustment ID	4276663
Spectrophotometer Cell Path Length	1 cm
Color Reagent ID	4327302

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.

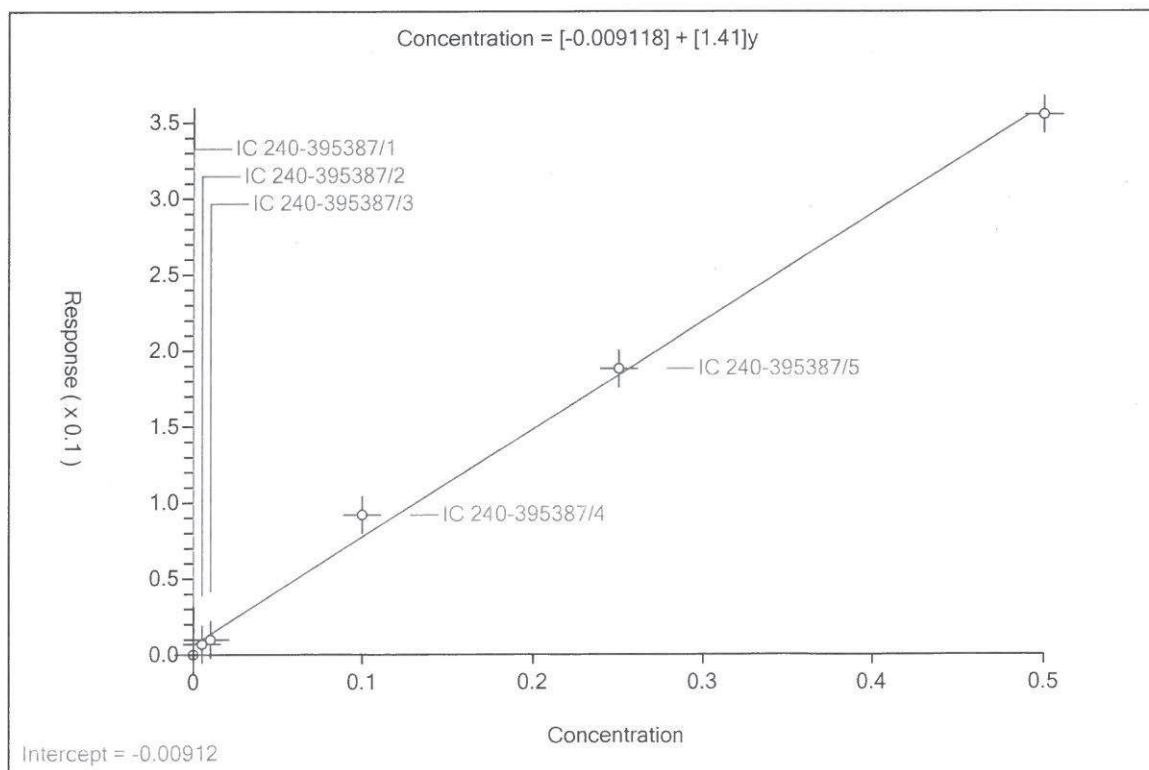
Calibration

Calib 395387-0 / Cr (VI)

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

Curve Coefficients	
Intercept:	-0.009118
Slope:	1.41
Error Coefficients	
Standard Error:	0.0128
Relative Standard Error:	58.2
Correlation Coefficient:	0.998
Coefficient of Determination (Adjusted):	0.997 (0.997)

ID	Level	Concentration	Response	IS Amount	IS Response	RF	Used
1	IC 240-395387/1	0.0	0.0			NaN	Y
2	IC 240-395387/2	0.004998	0.007			1.400661	Y
3	IC 240-395387/3	0.009995	0.01			1.000472	Y
4	IC 240-395387/4	0.099953	0.092			0.920435	Y
5	IC 240-395387/5	0.249882	0.188			0.752355	Y
6	IC 240-395387/6	0.499764	0.355			0.710335	Y



Subcontract Data

Shipping and Receiving Documents

Chain of Custody Record

COC No.: **RVAAP-086-TA**
Page 1 of 1 Date: 8/13/2019



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)

Laboratory No.	Sample ID	Site Type	Date	Depth	Time	Matrix
	SCLmw-001-190801-GW	GW	8/13/2019	NA	10:10	W
	SCLmw-002-190801-GW	GW	8/13/2019	NA	10:00	W
	SCLmw-003-190801-GW	GW	8/13/2019	NA	9:50	W
	FWGTB-190801-TB	TB	8/13/2019	NA	9:50	W

Requested Parameters	Total Number of Containers	Notes
VOCs (1)(B) SVOCs (2)(A) LL PAHs (3)(A) Explosives (6)(A) Pesticides/PCB (5)(A) Nitrogen (4)(A) TAL Metals (7)(C) and Phosphorus Cyanide (8)(D) Alkalinity/Sulfate/Nitrate/Nitrite (10)(A) Sulfide (9)(E) Perchlorate (11)(A) Nitrocellulose (12)(A) Hexavalent Chromium (13)(A1)	3 3 3 3 2	A. Cool, 4C A1. Field filtered, Cool, 4C B. HCl, pH<2, Cool, 4C C. HNO3, pH<2, Cool, 4C D. NaOH, pH>12, Cool 4C E. NaOH/Zn Acetate, pH>9, Cool 4C

Relinquished by: *[Signature]* Date: 8/13/19 Time: 1545
 Received by: *[Signature]* Date: 8/13/19 Time: 1545
 Relinquished by: *[Signature]* Date: 8/14/19 Time: 0915
 Received by: *[Signature]* Date: 8/14/19 Time: 0915

Temp: 1.0°C CFØ IR#8
 5.5°C CFØ IR#8



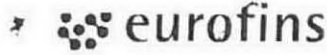
280-127214 Chain of Custody



280-127214 Waybill



Environment Testing
TestAmerica



Environment Testing
TestAmerica

ORIGIN ID:PHDA (330) 312-0176
EUROFINS TESTAMERICA CANTON
4101 SHUFFEL STREET NW

SHIP DATE: 13AUG19
ACTWGT: 39.85 LB
CAD: 0562057/CAFE3211

NORTH CANTON, OH 447206900
UNITED STATES US

BILL RECIPIENT

ORIGIN ID:PHDA (330) 312-0176
EUROFINS TESTAMERICA CANTON
4101 SHUFFEL STREET NW

SHIP DATE: 13AUG19
ACTWGT: 39.85 LB
CAD: 0562057/CAFE3211

NORTH CANTON, OH 447206900
UNITED STATES US

BILL RECIPIENT

ENVIRONMENTAL SAMPLE RECEIPT
TESTAMERICA DENVER
4955 YARROW STREET

TO ENVIRONMENTAL SAMPLE RECEIPT
TESTAMERICA DENVER
4955 YARROW STREET

ARVADA CO 80002

ARVADA CO 80002

(330) 421-6611
DEPT: AL HAIDET

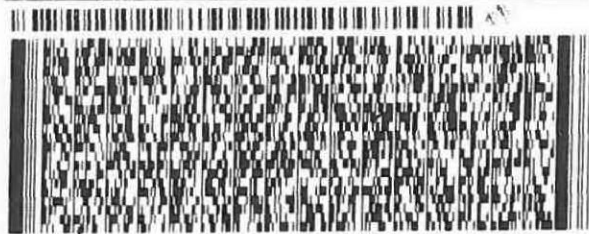
REF: S480-133678

(330) 421-6611
DEPT: AL HAIDET

REF: S480-133678



FedEx
Express



FedEx
Express



1 of 2

WED - 14 AUG 10:30A
PRIORITY OVERNIGHT

1103 6123 3939

MASTER ##

IA WHHA

80002

CO-US DEN

2 of 2

WED - 14 AUG 10:30A
PRIORITY OVERNIGHT

MPS# 1103 6123 3940

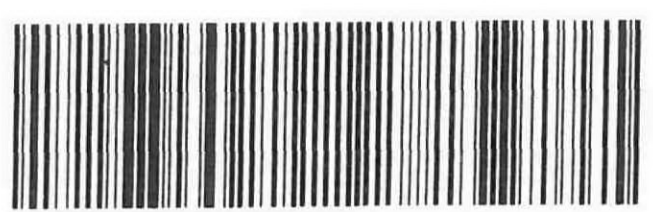
Mstr# 1103 6123 3939

0201

NA WHHA

80002

CO-US DEN



Login Sample Receipt Checklist

Client: Leidos, Inc.

Job Number: 280-127214-2

Login Number: 127214
List Number: 1
Creator: Rydberg, Donna R

List Source: Eurofins TestAmerica, Denver

Question	Answer	Comment
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.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	