APPENDIX E

First Quarter 2018 Analytical Laboratory Reports and Validation Reports

APPENDIX E

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DATA VALIDATION REPORT

Boeing SSFL NPDES

SAMPLE DELIVERY GROUP: 440-206832-3, 440-206741-3

Prepared for

Haley & Aldrich, Inc. 600 South Meyer Avenue, Suite 100 Tucson, Arizona 85701

May 1, 2018

MEC^x, Inc. 8864 Interchange Drive Houston, Texas 77054

www.mecx.net





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I. INTRODUCTION

Task Order Title: Boeing SSFL NPDES

Contract: 40458-078 and 40458-083

MEC^x Project No.: 1272.003H.01

Sample Delivery Group: 440-206832-3, 440-206741-3

Project Manager: Katherine Miller

Matrix: Water

QC Level: IV

No. of Samples: 2

No. of Reanalyses/Dilutions: 0

Laboratory: TestAmerica-Irvine

TABLE 1 - SAMPLE IDENTIFICATION

Sample Name	Lab Sample Name	Sub Lab Sample ID	Matrix	Collection	Method
Outfall002_20180323_Comp	440-206832-3	N/A	Water	3/23/2018 10:00:00 AM	Radium
Outfall009_20180322_Comp	440-206741-3	N/A	Water	3/22/2018 03:30:00 PM	Radium



II. SAMPLE MANAGEMENT

According to the case narrative, sample condition upon receipt forms and the chains-of-custody (COCs) provided by the laboratory for multiple sample delivery groups (SDGs):

- The laboratories received the samples in these SDGs on ice and within the temperature limits of ≤6 degrees Celsius (°C) and >0°C.
- The laboratory received the sample containers intact and properly preserved, as applicable.
- Field and laboratory personnel signed and dated the COCs.

The following issues were noted:

- Some corrections to the original COCs were not initialed or dated.
- The client issued a list of sample collection times which affected samples in several SDGs; therefore, the sample collection dates and times on the COCs do not always match the revised collection dates and times used in the laboratory's raw data package and in this report.



TABLE 2 - DATA QUALIFIER REFERENCE

Qualifier	Organics	Inorganics
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit. For dioxins or PCB congeners, the associated value is the quantitation limit or the estimated detection limit.	The analyte was analyzed for, but was not detected above the reported sample quantitation limit. For perchlorate, the associated value is the sample detection limit or the quantitation limit.
J	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
J+	The result is an estimated quantity, but the result may be biased high.	The result is an estimated quantity, but the result may be biased high.
J-	The result is an estimated quantity, but the result may be biased low.	The result is an estimated quantity, but the result may be biased low.
UJ	The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate and may inaccurate or imprecise.	The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate and may inaccurate or imprecise.
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."	Not applicable.
NJ	The analyte has been "tentatively identified" or "presumptively" as present and the associated numerical value is the estimated concentration in the sample.	Not applicable.
R	The data are unusable. The sample results are rejected due to serious deficiencies in meeting quality control criteria. The analyte may or may not be present in the sample.	The data are unusable. The sample results are rejected due to serious deficiencies in meeting quality control criteria. The analyte may or may not be present in the sample.



TABLE 3 - REASON CODE REFERENCE

Reason Code	Organic	Inorganic
Н	Holding time was exceeded.	Holding time was exceeded.
S	Surrogate recovery was outside control limits.	The sequence or number of standards used for the calibration was incorrect.
С	Calibration percent relative standard deviation (%RSD) or percent deviation (%D) were noncompliant, or coefficient of determination (r ²) was <0.990.	Correlation coefficient (r) was <0.995.
R	Calibration relative response factor (RRF) was <0.05.	Percent recovery (%R) for calibration was outside control limits.
В	The analyte was detected in an associated blank as well as in the sample.	The analyte was detected in an associated blank as well as in the sample.
L	Laboratory control sample (LCS) or /LCS duplicate (LCSD) %R was outside the control limits.	LCS or LCSD %R was outside the control limits.
L1	LCS/LCSD relative percent difference (RPD) was outside the control limit.	LCS/LCSD RPD was outside the control limit.
Q	Matrix spike/matrix spike duplicate (MS/MSD) %R was outside control limits.	MS or MSD %R was outside the control limit.
Q1	MS/MSD RPD was outside the control limit.	MS/MSD RPD was outside the control limit.
E	Result was reported as an estimated maximum possible concentration (EMPC).	Laboratory duplicate RPD was outside the control limit.
I	Internal standard recovery was outside control limits.	Inductively coupled plasma (ICP) interference check standard (ICSA/ICSAB) result was outside control limits.
11	Not applicable.	ICP mass spectrometer (ICPMS) internal standard recovery was outside control limits.
A	Not applicable.	Serial dilution %D was outside control limits.
М	Tuning (BFB or DFTPP) was not compliant.	ICPMS tune was not compliant.
Т	The analyte was detected in an associated trip blank as well as in the sample.	Not applicable.



Reason Code	Organic	Inorganic
+	False positive – reported compound was not present.	False positive – reported compound was not present.
-	False negative – compound was present but not reported.	False negative – compound was present but not reported.
F	The analyte was detected in an associated field blank (FB) or equipment blank (EB) as well as in the sample.	The analyte was detected in an associated field blank (FB) or equipment blank (EB) as well as in the sample.
F1	Field duplicate RPD was outside the control limit.	Field duplicate RPD was outside the control limit.
\$	The reviewer corrected the reported result and/or other information.	The reviewer corrected the reported result and/or other information.
?	TIC identity or reported retention time has been changed.	Not applicable.
D	The analysis was not used because another more technically sound analysis was available.	The analysis was not used because another more technically sound analysis was available.
Р	Instrument performance not compliant.	Post digestion spike recovery was outside of control limits.
DNQ	The reported result is above the method detection limit but is less than the reporting limit.	The reported result is above the method detection limit but is less than the reporting limit.
*11, *111	Other problems identified in the data are described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found.	Other problems identified in the data are described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found.



III. VARIOUS EPA METHODS — RADIONUCLIDES; RADIUM 226 AND RADIUM 228

Elizabeth Wessling of MEC^x reviewed the SDGs on May 1, 2018

The samples listed in Table 1 for these analyses were validated based on the guidelines outlined in the *EPA Methods 903.0 and 904.0,* and the *National Functional Guidelines for Inorganic Data Review* (2014).

III.1. HOLDING TIMES:

The samples were received unpreserved. The samples were acidified and allowed to equilibrate. The samples were prepared within five days of preservation and analyzed following in-growth.

III.2. CALIBRATION:

The radium-226 detector efficiencies were less than 20%; therefore, the nondetected results for radium-226 were qualified as estimated (UJ) in both site samples. Carrier/tracer recoveries were within the laboratory control limits of 40-110%. All calibration checks were acceptable.

III.3. QUALITY CONTROL SAMPLES

III.3.1. METHOD BLANKS

Qualifications for activity in method blanks were not required as all sample results were nondetect.

III.3.2. LABORATORY CONTROL SAMPLES:

The recoveries and RPDs were within laboratory-established control limits.

III.3.3. LABORATORY DUPLICATES:

Laboratory duplicates were performed for radium-226 and radium-228 for sample Outfall009_20180322. Both the sample and duplicate results were nondetect.

III.3.4. MATRIX SPIKE/MATRIX SPIKE DUPLICATE:

Matrix spike (MS)/MSD analyses were performed for radium-226 and radium-228 for sample Outfall009_20180322. Recoveries and RPDs were within the laboratory control limits.

III.4. SAMPLE RESULT VERIFICATION:

An EPA Level IV review was performed on a representative number of samples in this data package. The sample results and MDCs reported on the sample result form were verified against the raw data and no calculation or transcription errors were noted. Reported nondetects are valid to the MDC.

III.5. FIELD QC SAMPLES:

Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. The following are findings associated with field QC samples:

III.5.1. FIELD BLANKS AND EQUIPMENT BLANKS:

This SDG had no identified field blank or equipment blank samples.

III.5.2. FIELD DUPLICATES:

There were no field duplicate samples identified for this SDG.

Validated Sample Result Forms: 4402067413

Analysis Method RADIUM

Sample Name	Outfall009_201803	322_Com	p Ma	trix Type:	WM	Res	ult Type: T	RG	
Sample Date: 3/22/20	18 3:30:00 PM	Validati	on Level: ⁸	3					
Lab Sample Name:	440-206741-3								
Analyte	CAS No	Result Value	Total Uncert.	RL	MDC	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Radium-226 & 228	RADIUM226228	3 0.412	0.238				U, U	UJ	C, \$

Validated Sample Result Forms: 4402068323

Analysis Method RADIUM

Sample Name	Outfall002_20180	323_Com	p Mat	rix Type:	WM	Res	ult Type: T	RG	
Sample Date: 3/23/20	18 10:00:00 AM	Validati	on Level: 8						
Lab Sample Name:	440-206832-3								
Analyte	CAS No	Result Value	Total Uncert.	RL	MDC	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Radium-226 & 228	RADIUM22622	8 0.558	0.302				U, U	UJ	C, \$



THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Irvine 17461 Derian Ave Suite 100 Irvine, CA 92614-5817 Tel: (949)261-1022

TestAmerica Job ID: 440-206832-3 Client Project/Site: Annual Outfall 002 Comp

For:

Haley & Aldrich, Inc. 400 E Van Buren St. Suite 545 Phoenix, Arizona 85004

Attn: Katherine Miller

Ilshi fatel

Authorized for release by: 4/23/2018 5:42:28 PM

Urvashi Patel, Manager of Project Management (949)261-1022 urvashi.patel@testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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.



I certify under penalty of perjury that the information contained in this report and all attachments was produced in accordance with the indicated methods and laboratory standard operating procedures, except as noted, and are complete and accurate to the best of my knowledge and belief. Subcontract laboratory reports that are attached have been evaluated for completeness and quality control acceptability.

Ushi fatel

Urvashi Patel Manager of Project Management 4/23/2018 5:42:28 PM

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Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
440-206832-2	Outfall002_20180323_Comp	Water	03/23/18 10:00	03/23/18 18:10

TestAmerica Irvine

Job ID: 440-206832-3

Laboratory: TestAmerica Irvine

Narrative

Job Narrative 440-206832-3

Comments

Sample time was changed to 10:00am per client request..

Receipt

The samples were received on 3/23/2018 6:10 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 3 coolers at receipt time were 1.8° C, 2.3° C and 3.9° C.

Receipt Exceptions

The Field Sampler was not listed on the Chain of Custody.

The following samples were received at the laboratory without a sample collection time documented on the chain of custody: Outfall002_20180323_Comp_F (440-206832-1), Outfall002_20180323_Comp (440-206832-2) and Outfall002_20180323_Comp_Extra (440-206832-3). Logged in with 0001.

Please re-calculate all methods as client changed sample time to 10:00am. Please re-run the level IV as well.

Outfall002_20180323_Comp_F (440-206832-1), Outfall002_20180323_Comp (440-206832-2) and Outfall002_20180323_Comp_Extra (440-206832-3)

RAD

Method(s) 900.0: Gross Alpha/Beta Prep Batch 160-359958

The gross alpha detection goal was not met for the following samples due to a reduction of the sample size attributed to high residual mass: (240-93696-D-5-A) and (240-93696-D-5-D DU). Analytical results are reported with the detection limit achieved.

Method(s) A-01-R: Uranium prep batch 160-358015

The detection goal was not met for the following sample due to a reduced aliquot attributed to the presence of matrix interferences: (440-206741-M-1-O). See prep NCM 135817. Analytical results are reported with the MDC achieved.

Method(s) ExtChrom: Uranium prep batch 160-358015: The following samples were yellow in color and had a strong odor. The sample was weighed at a reduced aliquot to prevent possible matrix interference.

Outfall002_20180323_Comp (440-206832-2)

Method(s) PrecSep_0: Radium 228 Prep Batch 160-358165: Insufficient sample volume was available to perform a sample duplicate (DUP,MS, MSD) for the following samples: Outfall002_20180323_Comp (440-206832-2). A laboratory control sample/ laboratory control sample duplicate (LCS/ LCSD) were prepared instead to demonstrate batch precision.

Method(s) PrecSep_0: Radium 228 Prep Batch 160-358165: Sample aliquots reduced due to potential matrix interference. Sample was brown, cloudy and contained undissolved particulates.

Outfall002_20180323_Comp (440-206832-2)

Method(s) PrecSep-21: Radium 226 Prep Batch 160-358155: Insufficient sample volume was available to perform a sample duplicate (DUP,MS, MSD) for the following samples: Outfall002_20180323_Comp (440-206832-2). A laboratory control sample/ laboratory control sample duplicate (LCS/ LCSD) were prepared instead to demonstrate batch precision.

Method(s) PrecSep-21: Radium 226 Prep batch 160-358155:

Job ID: 440-206832-3 (Continued)

Laboratory: TestAmerica Irvine (Continued)

Sample aliquots reduced due to potential matrix interference. Sample was brown, cloudy, and contained undissolved particulates.

Outfall002_20180323_Comp (440-206832-2)

Method(s) PrecSep-7: Strontium 90 Prep Batch 160-358324:

Insufficient sample volume was available to perform a sample duplicate (DUP) for the following samples: Outfall002_20180323_Comp (440-206832-2). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead to demonstrate batch precision.

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

Metals

There is only one sample in batch no. 468327 and it's volume was not enough for source and MS and MSD, so sample (LCS) was performed in duplicate to provide precision data for the batch.

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

Client Sample Date Collected: 0 Date Received: 0	3/23/18 10:00) –	80323_Co	omp				Lab Sample		5832-2 : Water
Method: 900.0 -	Gross Alpha	and Gros	s Beta Rad Count Uncert.	<mark>ioactivity</mark> Total Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	3.73		1.59	1.64	3.00	1.99	pCi/L	04/10/18 08:43	04/15/18 14:17	1
Gross Beta	2.67		0.777	0.822	4.00	0.934	pCi/L	04/10/18 08:43	04/15/18 14:17	1
Method: 901.1 -	Cesium 137	& Other G	amma Emi							
			Count	Total						
			Uncert.	Uncert.						
Analyte		Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC		Prepared	Analyzed	Dil Fac
Cesium-137	-2.93		10.7	10.7	20.0	12.4	•	03/28/18 16:18		1
Potassium-40	-53.3	U	158	158		211	pCi/L	03/28/18 16:18	04/01/18 17:31	1
 Method: 903.0 -	Radium-226	(GFPC)								
			Count	Total						
			Uncert.	Uncert.						
Analyte		Qualifier	(2σ+/-)	(2σ+/-)	RL		Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.129	U	0.102	0.103	1.00	0.148	pCi/L	03/29/18 11:10	04/20/18 06:17	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	82.9		40 - 110					03/29/18 11:10	04/20/18 06:17	1
 Method: 904.0 -	Radium-228	(GFPC)								
		(- /	Count	Total						
			Uncert.	Uncert.						
Analyte	Result	Qualifier	(2 σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.282	U	0.282	0.284	1.00	0.558	pCi/L	03/29/18 12:02	04/06/18 14:38	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	82.9		40 - 110					03/29/18 12:02	04/06/18 14:38	1
Y Carrier	92.3		40 - 110					03/29/18 12:02	04/06/18 14:38	1
	trontium-90 (GFPC)								
			Count	Total						
			Uncert.	Uncert.						
Analyte		Qualifier	(2σ+/-)	(2σ+/-)	RL		Unit	Prepared	Analyzed	Dil Fac
Strontium-90	0.214	U	0.199	0.200	3.00	0.322	pCi/L	03/30/18 10:31	04/10/18 09:31	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Sr Carrier	73.8		40 - 110					03/30/18 10:31	04/10/18 09:31	1
Y Carrier	90.8		40 - 110					03/30/18 10:31	04/10/18 09:31	1
 Method: 906.0 -	Tritium, Tota	I (LSC)								
			Count	Total						
			Uncert.	Uncert.						
Analyte		Qualifier	(2σ+/-)	(2σ+/-)	RL		Unit	Prepared	Analyzed	Dil Fac
Tritium	-210	U	180	181	500	358	pCi/L	04/17/18 15:33	04/18/18 15:49	1

TestAmerica Irvine

Client Sample ID: Outfall002_20180323_Comp Date Collected: 03/23/18 10:00 Date Received: 03/23/18 18:10

Lab Sample ID: 440-206832-2 Matrix: Water

5

Method: A-01-R - Is	sotopic Ur	anium (Alj	pha Spectr	ometry)						
			Count	Total						
			Uncert.	Uncert.						
Analyte	Result	Qualifier	(2 σ+ /-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Total Uranium	1.38		0.845	0.849	1.00	0.736	pCi/L	03/28/18 13:56	03/31/18 19:25	1
Tracer	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Uranium-232	85.2		30 - 110					03/28/18 13:56	03/31/18 19:25	1

TestAmerica Irvine

Method Summary

Client: Haley & Aldrich, Inc. Project/Site: Annual Outfall 002 Comp

lethod	Method Description	Protocol	Laboratory
00.0	Gross Alpha and Gross Beta Radioactivity	EPA	TAL SL
01.1	Cesium 137 & Other Gamma Emitters (GS)	EPA	TAL SL
03.0	Radium-226 (GFPC)	EPA	TAL SL
04.0	Radium-228 (GFPC)	EPA	TAL SL
05	Strontium-90 (GFPC)	EPA	TAL SL
06.0	Tritium, Total (LSC)	EPA	TAL SL
-01-R	Isotopic Uranium (Alpha Spectrometry)	DOE	TAL SL
vaporation	Preparation, Evaporation	None	TAL SL
xtChrom	Preparation, Extraction Chromatography Resin Actinide Separation	None	TAL SL
ill_Geo-0	Fill Geometry, No In-Growth	None	TAL SL
SC_Dist_Susp	Distillation and Suspension (LSC)	None	TAL SL
PrecSep_0	Preparation, Precipitate Separation	None	TAL SL
PrecSep-21	Preparation, Precipitate Separation (21-Day In-Growth)	None	TAL SL
PrecSep-7	Preparation, Precipitate Separation (7-Day In-Growth)	None	TAL SL

Protocol References:

DOE = U.S. Department of Energy EPA = US Environmental Protection Agency None = None

Laboratory References:

TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Client Sample ID: Outfall002_20180323_Comp Date Collected: 03/23/18 10:00 Date Received: 03/23/18 18:10

Lab Sample ID: 440-206832-2 Matrix: Water

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	Evaporation			200 mL	1.0 g	359958	04/10/18 08:43	MRB	TAL SL
Total/NA	Analysis	900.0		1			360899	04/15/18 14:17	CDR	TAL SL
Total/NA	Prep	Fill_Geo-0			1000 mL	1.0 g	358034	03/28/18 16:18	SJS	TAL SL
Total/NA	Analysis	901.1		1			358382	04/01/18 17:31	CDR	TAL SL
Total/NA	Prep	PrecSep-21			750.14 mL	1.0 g	358155	03/29/18 11:10	TJT	TAL SL
Total/NA	Analysis	903.0		1			362022	04/20/18 06:17	RTM	TAL SL
Total/NA	Prep	PrecSep_0			750.14 mL	1.0 g	358165	03/29/18 12:02	TJT	TAL SL
Total/NA	Analysis	904.0		1			359142	04/06/18 14:38	ALD	TAL SL
Total/NA	Prep	PrecSep-7			999.56 mL	1.0 g	358324	03/30/18 10:31	TJT	TAL SL
Total/NA	Analysis	905		1			359778	04/10/18 09:31	RTM	TAL SL
Total/NA	Prep	LSC_Dist_Susp			100.2 mL	1.0 g	361491	04/17/18 15:33	JDL	TAL SL
Total/NA	Analysis	906.0		1			361708	04/18/18 15:49	SMR	TAL SL
Total/NA	Prep	ExtChrom			100.38 mL	1.0 mL	358015	03/28/18 13:56	CMM	TAL SL
Total/NA	Analysis	A-01-R		1			358416	03/31/18 19:25	ALD	TAL SL

Laboratory References:

TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

2.22 U

Gross Beta

Method: 900.0 - Gross Alpha and Gross Beta Radioactivity

Lab Sample ID Matrix: Water): MB 16	0-3599	58/1-A						Cli		ole ID: Method Prep Type: To	
Analysis Batc	h. 36080	7									Prep Batch:	
Analysis Date	11. 30003			Count	Total						riep Daten.	555550
		MB	МВ	Uncert.	Uncert.							
Analyte			Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit		Prepared	Analyzed	Dil Fa
Gross Alpha		-0.2333		0.412	0.413	3.00		pCi/L		•	04/15/18 14:08	
Gross Beta		-0.3822		0.539	0.541	4.00		pCi/L			04/15/18 14:08	
Lab Sample ID		60-350	958/2-1					Cli	ont Sa	mole ID:	Lab Control S	Sample
Matrix: Water	. 200 1	00-000	500/2-A					011			Prep Type: To	
Analysis Batc	h: 36089	7									Prep Batch:	
analysis bate						Total					Trop Baton.	00000
			Spike	LCS	LCS	Uncert.					%Rec.	
Analyte			Added	Result	Qual	(2σ+/-)	RL	MDC	Unit	%Rec	Limits	
Gross Alpha			49.8	46.09		6.62	3.00		pCi/L	93	73 - 133	
_ab Sample ID		160-35	9958/3_A					Cli	ont Sa	mole ID:	Lab Control S	Sample
Matrix: Water	. 2000	100-00	5500/0-A					011			Prep Type: To	
Analysis Batc	h. 36080	7									Prep Batch:	
						Total					Thep Bateri.	00000
			Spike	LCSB	LCSB	Uncert.					%Rec.	
Analyte			Added	Result		(2σ+/-)	RL	MDC	Unit	%Rec	Limits	
Gross Beta			88.6	83.02		8.84	4.00		pCi/L	94	75 - 125	
Lab Sample ID): <mark>240-9</mark> 3	8696-D	-5-B MS						C	lient San	nple ID: Matrix	c Spike
Matrix: Water											Prep Type: To	otal/N/
Analysis Batc	h: <mark>360</mark> 89	7									Prep Batch:	35995
						Total						
	Sample	Sample	e Spike	MS	MS	Uncert.					%Rec.	
Analyte	Result		Added	Result	Qual	(2σ+/-)	RL		Unit	%Rec	Limits	
Gross Alpha	-0.747	UG	112	91.64		14.5	3.00	3.95	pCi/L	82	60 - 140	
Lab Sample ID): 240-93	3696-D	-5-C MSBT						С	lient Sam	nple ID: Matrix	c Spik
Matrix: Water											Prep Type: To	otal/N/
Analysis Batc	h: <mark>360</mark> 89	9									Prep Batch:	35995
						Total						
	Sample	•	e Spike		MSBT	Uncert.					%Rec.	
Analyte	Result		Added	Result	Qual	(2σ+/-)	RL		Unit	%Rec	Limits	
Gross Beta	2.22	U	199	203.5		21.6	4.00	2.24	pCi/L	101	60 - 140	
Lab Sample ID): 240-93	3696-D	-5-D DU							Client S	Sample ID: Du	plicate
Matrix: Water											Prep Type: To	otal/NA
Analysis Batc	h: <mark>360</mark> 89	9									Prep Batch:	35995
	_	-				Total						
	Sample)		DU	Uncert.						RE
Analyte	Result			Result		(2σ+/-)	RL		Unit		REF	
Gross Alpha	-0.747	UG		0.8557	UG	2.37	3.00	4.34	pCi/L		0.34	4

1

0.18

1.27

4.00

1.93 pCi/L

1.725 U

8

Method: 901.1 - Cesium 137 & Other Gamma Emitters (GS)

Analysis Bat	ch: 35838	80		Count	Total						Prep Batch: 3	85803
		MB		Uncert.	Uncert.							
Analyte			Qualifier	(2σ+/-)	(2 σ+/-)	RL	MDC			Prepared	Analyzed	Dil Fa
Cesium-137		3.946	U	7.81	7.82	20.0		pCi/L	03/2	28/18 16:18	04/01/18 17:34	
Potassium-40		12.47	U	76.1	76.1		138	pCi/L	03/2	28/18 16:18	04/01/18 17:34	
Lab Sample I	D: LCS 1	60-358	034/2-A					Cli	ent Sa		Lab Control S	
Matrix: Wate	r										Prep Type: To	tal/N
Analysis Bat	ch: 35838	81									Prep Batch: 3	35803
						Total						
			Spike	LCS	LCS	Uncert.					%Rec.	
Analyte			Added	Result	Qual	(2σ+/-)	RL	MDC	Unit	%Rec	Limits	
Americium-241			136000	132900		15400			pCi/L	98	90 - 111	
Cesium-137			45800	44350		4450	20.0	166	pCi/L	97	90 - 111	
Cobalt-60			34300	32950		3270		107	pCi/L	96	89 - 110	
Lab Sample I	D: 440-20	6832-2	2 DU				Clie	ent Sam	ple ID:	Outfall0	02_20180323_	Com
Matrix: Wate	r										Prep Type: To	tal/N
Analysis Bat	ch: 35838	30									Prep Batch: 3	35803
						Total						
	Sample	Sample	•	DU	DU	Uncert.						RE
Analyte	Result			Result		(2σ+/-)	RL	MDC			RER	
Cesium-137	-2.93			1.793		9.04	20.0		pCi/L		0.24	
Potassium-40	-53.3	U		-46.78	U	159		210	pCi/L		0.02	
		tium_'	226 (GFPC	2)								

Prep Type: Total/NA Prep Batch: 358155

Client Sample ID: Lab Control Sample

Analysis Batch: 36	2022								Prep Batch:	
			Count	Total						
	MB		Uncert.	Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.008176	U	0.0450	0.0450	1.00	0.0902	pCi/L	03/29/18 11:10	04/20/18 08:11	1
	МВ	МВ								
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	104		40 - 110					03/29/18 11:10	04/20/18 08:11	1

Lab Sample ID: LCS 160-358155/1-A Matrix: Water Analysis Batch: 361927

Analysis B	atch: 361927									Prep Batch:	
					Total						
		Spike	LCS	LCS	Uncert.					%Rec.	
Analyte		Added	Result	Qual	(2σ+/-)	RL	MDC	Unit	%Rec	Limits	
Radium-226		11.8	9.556		0.988	1.00	0.0675	pCi/L	81	68 - 137	
	LCS LCS										
Carrier	%Yield Qualifier	Limits									
Ba Carrier	101	40 - 110									

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Prep Type: Total/NA

Method: 903.0 - Radium-226 (GFPC) (Continued)

Lab Sample	D: LCSI	D 160-35	68155/2-A					Client S	ample		Control S		
Matrix: Wat	er										Prep Typ	e: Tot	al/N/
Analysis Ba	atch: 3619	927									Prep Bat	tch: 3	5815
						Total							
			Spike	LCSD	LCSD	Uncert.					%Rec.		RE
Analyte			Added	Result	Qual	(2σ+/-)	RL	MDC	Unit	%Rec	Limits	RER	Lim
Radium-226	_		11.8	9.474		0.976	1.00	0.0632	pCi/L	80	68 - 137	0.04	
	LCSD	LCSD											
Carrier		Qualifier	. Limits										
Ba Carrier	103		40 - 110	-									
lethod: 90	04.0 - Ra	adium-:	228 (GFPC	;)									
Lab Sample) ID: MB 1	60-3581	65/23-A						Clie	ent Samp	ole ID: Me	thod	Blan
Matrix: Wat	er										Prep Typ	e: Tot	al/N
Analysis Ba	atch: 3591	42									Prep Bat		
				Count	Total								
		MB	МВ	Uncert.	Uncert.								
Analyte		Result	Qualifier	(2 σ+/-)	(2σ+/-)	RL	MDC	Unit	P	repared	Analyze	əd	Dil Fa
Radium-228		0.2223	U	0.192	0.193	1.00	0.307	pCi/L	03/2	9/18 12:02	04/06/18 1	4:38	
		МВ	МВ										
Carrier		%Yield	Qualifier	Limits					P	repared	Analyz	ed	Dil Fa
Ba Carrier		104		40 - 110					03/2	9/18 12:02	04/06/18 1	4:38	
Y Carrier		93.5		40 - 110					03/2	9/18 12:02	04/06/18 1	4:38	
Loh Comula		400.050	40514 4					01					
Lab Sample		160-358	165/1-A					CII	ent Sar		Lab Cont		
Matrix: Wat		142									Prep Typ Prep Bat		
Analysis Ba	alcii. 559	142				Total					Ртер Ба	icn. s	5010
			Spike	LCS	LCS	Uncert.					%Rec.		
Analyte			Added	Result		(2σ+/-)	RL	MDC	Unit	%Rec	Limits		
Radium-228			8.42	8.106		0.943	1.00		pCi/L	96	56 - 140		
		1.00											
Corrior		LCS	1 : :4										
Carrier Ba Corrier		Qualifier		-									
Ba Carrier	101		40 - 110										
Y Carrier	92.3		40 - 110										
Lab Sample	D: LCSI	D 160-35	68165/2-A					Client S	ample	ID: Lab	Control S	ampl	e Du
Matrix: Wat									•		Prep Typ		
Analysis Ba	atch: 3591	142				Total					Prep Ba		
			Spike		LCSD	Uncert.					%Rec.		RE
Analyte			Added	Result		0ncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec.	RER	Lim
Radium-228			Added 8.42	7.914	<u></u>	0.934	1.00	0.392		94	56 - 140	0.10	
			0.72	7.014		0.007		0.002	P0"L	τŪ	00 - 140	0.10	
0		LCSD											
Carrier	%Yield	Qualifier	· Limits										

Carrier	%Yield	Qualifier	Limits
Ba Carrier	103		40 - 110
Y Carrier	91.2		40 - 110

-	
	3

ole ID: Lab Control Sample Dup	
Prep Type: Total/NA	

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QC Sample Results

Method: 905 - Strontium-90 (GFPC)

		00-0000	24/10-A						Clie		ole ID: Me Prep Typ		tal/NL
Matrix: Wate Analysis Bat		78									Prep Type Prep Bat		
Analysis Dat		10		Count	Total						пер Ба	UII. U	0002
		МВ	МВ	Uncert.	Uncert.								
Analyte		Result	Qualifier	(2 σ+/-)	(2σ+/-)	RL	MDC	Unit	Pi	epared	Analyze	d	Dil Fa
Strontium-90		0.06403		0.181	0.181	3.00	0.313			0/18 10:31	-		
		MB	МВ										
Carrier			Qualifier	Limits					P	repared	Analyze	ed	Dil F
Sr Carrier		82.3		40 - 110						0/18 10:31	04/10/18 0		
Y Carrier		88.2		40 - 110							04/10/18 0		
													
Lab Sample		160-358	324/1-A					Cli	ent Sar		Lab Cont		
Matrix: Wate		70									Prep Type		
Analysis Bat	cn: 3597	/8				Total					Prep Bat	cn: 3	583
			Spike	1.09	LCS	Uncert.					%Rec.		
Analyta			Added	Result		(2σ+/-)	RL	MDC	Unit	%Rec	Limits		
Analyte Strontium-90	·			8.755		0.895	3.00	0.249		106	75 - 125		
5000000			0.20	0.755		0.095	3.00	0.249	pci/L	100	75-125		
	LCS	LCS											
Carrier		Qualifier											
Sr Carrier	85.4		40 - 110										
	92.3		40 - 110										
Y Carrier	92.3	0 160-35	40 - 110					Client S	ample	ID: Lab	Control S	ampl	e Di
Y Carrier Lab Sample	92.3 ID: LCSI	0 160-35	40 - 110					Client S	ample		Control S Prep Type		
Y Carrier Lab Sample Matrix: Wate	92.3 ID: LCSE r		40 - 110					Client S	ample		Prep Typ	e: To	tal/N
Y Carrier Lab Sample Matrix: Wate	92.3 ID: LCSE r		40 - 110			Total		Client S	ample			e: To	tal/N
Y Carrier Lab Sample Matrix: Wate	92.3 ID: LCSE r		40 - 110		LCSD	Total Uncert.		Client S	ample		Prep Typ	e: To	tal/N 583
Y Carrier Lab Sample Matrix: Wate Analysis Bat	92.3 ID: LCSE r		40 - 110 8 324/2-A				RL	Client S			Prep Type Prep Bat	e: To	tal/N 583 R
Y Carrier Lab Sample Matrix: Wate Analysis Bat Analyte	92.3 ID: LCSE r		40 - 110 58324/2-A Spike	LCSD		Uncert.			Unit		Prep Type Prep Bat %Rec.	e: To ch: 3	tal/N 583 R
Y Carrier Lab Sample Matrix: Wate Analysis Bat Analyte	92.3 ID: LCSE r	78	40 - 110 58324/2-A Spike Added	LCSD Result		Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	Prep Type Prep Bat %Rec. Limits	e: To ch: 3 RER	tal/N 583: R
Y Carrier Lab Sample Matrix: Wate Analysis Bat Analyte Strontium-90	92.3 ID: LCSE r sch: 3597 LCSD	78	40 - 110 58324/2-A Spike Added 8.28	LCSD Result		Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	Prep Type Prep Bat %Rec. Limits	e: To ch: 3 RER	tal/N 583: RI
Y Carrier Lab Sample Matrix: Wate Analysis Bat Analyte Strontium-90 Carrier Sr Carrier	92.3 ID: LCSE r sch: 3597 LCSD		40 - 110 58324/2-A Spike Added 8.28	LCSD Result 9.026		Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	Prep Type Prep Bat %Rec. Limits	e: To ch: 3 RER	tal/N 583: RI
Y Carrier Lab Sample Matrix: Wate Analysis Bat Analyte Strontium-90 Carrier Sr Carrier	92.3 ID: LCSE r sch: 3597 LCSD %Yield		40 - 110 58324/2-A 	LCSD Result 9.026		Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	Prep Type Prep Bat %Rec. Limits	e: To ch: 3 RER	tal/N 583 R
Y Carrier Lab Sample Matrix: Wate Analysis Bat Analyte Strontium-90 Carrier Sr Carrier	92.3 ID: LCSE r sch: 3597 LCSD %Yield 83.4		40 - 110 58324/2-A Spike Added 8.28 Limits 40 - 110	LCSD Result 9.026		Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	Prep Type Prep Bat %Rec. Limits	e: To ch: 3 RER	tal/N 583 R
Y Carrier Lab Sample Matrix: Wate Analysis Bat Analyte Strontium-90 Carrier Sr Carrier Y Carrier	92.3 ID: LCSE r sch: 3597 <i>LCSD</i> %Yield 83.4 92.7	LCSD Qualifier	40 - 110 58324/2-A Spike Added 8.28 <u>Limits</u> 40 - 110 40 - 110	LCSD Result 9.026		Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	Prep Type Prep Bat %Rec. Limits	e: To ch: 3 RER	tal/N 583 R
Y Carrier Lab Sample Matrix: Wate Analysis Bat Analyte Strontium-90 Carrier Sr Carrier Y Carrier Y Carrier	92.3 ID: LCSE r sch: 3597 <u>LCSD</u> %Yield 83.4 92.7 6.0 - Tri	LCSD Qualifier	40 - 110 58324/2-A Spike Added 8.28 <u>Limits</u> 40 - 110 40 - 110 Total (LSC	LCSD Result 9.026		Uncert. (2σ+/-)	RL	MDC	Unit pCi/L	- %Rec 109	Prep Type Prep Bat %Rec. Limits	e: Tor ch: 3 <u>RER</u> 0.15	tal// 583 R Lii
Y Carrier Lab Sample Matrix: Wate Analysis Bat Analyte Strontium-90 Carrier Sr Carrier Y Carrier Y Carrier Iethod: 900 Lab Sample	92.3 ID: LCSE r sch: 3597 <u>LCSD</u> <u>%Yield</u> 83.4 92.7 6.0 - Tri ID: MB 1	LCSD Qualifier	40 - 110 58324/2-A Spike Added 8.28 <u>Limits</u> 40 - 110 40 - 110 Total (LSC	LCSD Result 9.026		Uncert. (2σ+/-)	RL	MDC	Unit pCi/L	109	Prep Type Prep Bat %Rec. Limits 75 - 125	e: Tor ch: 3 RER 0.15	tal/N 583 R Liii
Y Carrier Lab Sample Matrix: Wate Analysis Bat Analyte Strontium-90 Carrier Sr Carrier Y Carrier Y Carrier Method: 900 Lab Sample Matrix: Wate	92.3 ID: LCSE r tch: 3597 <i>LCSD</i> %Yield 83.4 92.7 6.0 - Tri ID: MB 1 r	78 <i>LCSD</i> <i>Qualifier</i> tium, ⁻ 60-3614	40 - 110 58324/2-A Spike Added 8.28 <u>Limits</u> 40 - 110 40 - 110 Total (LSC	LCSD Result 9.026	Qual	Uncert. (2σ+/-)	RL	MDC	Unit pCi/L	109	Prep Type Prep Bat %Rec. Limits 75 - 125	e: Tor ch: 3 RER 0.15 thod e: Tor	tal/N 583 R Lin Blan tal/N
Y Carrier Lab Sample Matrix: Wate Analysis Bat Analyte Strontium-90 Carrier Sr Carrier Y Carrier Y Carrier Method: 900 Lab Sample Matrix: Wate	92.3 ID: LCSE r tch: 3597 <i>LCSD</i> %Yield 83.4 92.7 6.0 - Tri ID: MB 1 r	278 <i>LCSD</i> <i>Qualifier</i> dtium, ⁻¹ 60-3614 208	40 - 110 58324/2-A Spike Added 8.28 <u>Limits</u> 40 - 110 40 - 110 40 - 110 Total (LSC 91/1-A	LCSD Result 9.026	Qual	Uncert. (2σ+/-)	RL	MDC	Unit pCi/L	109	Prep Type Prep Bat %Rec. Limits 75 - 125	e: Tor ch: 3 RER 0.15 thod e: Tor	tal/N 583: Lir Blai tal/N
Y Carrier Lab Sample Matrix: Wate Analysis Bat Analyte Strontium-90 Carrier	92.3 ID: LCSE r tch: 3597 <i>LCSD</i> %Yield 83.4 92.7 6.0 - Tri ID: MB 1 r	278 <i>LCSD</i> <i>Qualifier</i> 1tium, ⁻¹ 60-3614 08 MB	40 - 110 58324/2-A Spike Added 8.28 <u>Limits</u> 40 - 110 40 - 110 40 - 110 Total (LSC 91/1-A	LCSD Result 9.026	Qual	Uncert. (2σ+/-)	RL	MDC 0.323	Unit pCi/L	109	Prep Type Prep Bat %Rec. Limits 75 - 125	e: Tor ch: 3 RER 0.15 thod e: Tor ch: 3	tal/N 5832 RE Lin Blar tal/N

8 9

Method: 906.0 - Tritium, Total (LSC) (Continued)

Lab Sample	ID: LCS	160-361 [,]	491/2-A					Cli	ent Sa	mple ID:	Lab Contro	l San	nple
Matrix: Wate	er										Prep Type:	Tota	/N/
Analysis Ba	tch: 3617	'08									Prep Batch	: 361	49 '
						Total							
			Spike	LCS	LCS	Uncert.					%Rec.		
Analyte	_	_	Added	Result	Qual	(2σ+/-)	RL	MDC		%Rec	Limits		
Tritium			2760	2640		432	500	367	pCi/L	96	74 - 114		
Lab Sample	ID: 440-2	06741-8	S-1-D MS						С	lient San	nple ID: Mat	rix S	oik
Matrix: Wate	ər										Prep Type:	Tota	/N/
Analysis Ba	tch: 3617	08									Prep Batch	: 361	49
						Total							
	•	e Sample	e Spike	MS	MS	Uncert.					%Rec.		
Analyte		t Qual	Added	Result	Qual	(2σ+/-)	RL	MDC	Unit	%Rec	Limits		
Tritium	-140	<u></u>	2760	2509		422	500	369	pCi/L	91	67 - 130		
Lab Sample	ID: 440-2	06741-8	S-1-E MSD					Client	t Samp	le ID: Ma	atrix Spike [Dupli	cat
Matrix: Wate	ər										Prep Type:	Tota	/N/
Analysis Ba	tch: 3617	' 08									Prep Batch	: 361	49
						Total							
	Sample	e Sample	e Spike	MSD	MSD	Uncert.					%Rec.		RE
Analyte	Resul	t Qual	Added	Result	Qual	(2σ+/-)	RL	MDC	Unit	%Rec		ER	Lim
-									0.4		67 - 130 0	.20	
Tritium	-140 •01-R - Is	· · ·		2347 I (Alpha	a Spectr	³⁹¹ ometry)	500	335	pCi/L	85 ent Samr			
Tritium Iethod: A- Lab Sample Matrix: Wate	-140 -140 -140 -140 -140 -140 -140 -140	sotopio 60-3580	c Uranium		a Spectr		500	335	·	ent Samp	ole ID: Meth Prep Type:	od B Tota	an /N/
Tritium Iethod: A- Lab Sample Matrix: Wate Analysis Ba	-140 -140 -140 -140 -140 -140 -140 -140	sotopio 60-3580	c Uranium		a Spectr		500	335	·	ent Samp	ole ID: Meth	od B Tota	an /N/
Tritium Iethod: A- Lab Sample Matrix: Wate	-140 -140 -140 -140 -140 -140 -140 -140	sotopio 60-3580	c Uranium 15/1-A	ı (Alpha	•		500	335	·	ent Samp	ole ID: Meth Prep Type:	od B Tota	anl
Tritium Iethod: A- Lab Sample Matrix: Wate Analysis Ba	-140 -140 -140 -140 -140 -140 -140 -140	sotopic 60-3580 07 мв	c Uranium 15/1-A	(Alpha Count	Total			Unit	Clie	ent Samp	ole ID: Meth Prep Type:	od B Tota : 358	an //N/ 801
Tritium Iethod: A- Lab Sample Matrix: Wate	-140 -140 -140 -140 -140 -140 -140 -140	sotopic 60-3580 07 мв	c Uranium 15/1-A MB Qualifier	Count Uncert.	Total Uncert.	ometry)		Unit	Clie	ent Samp	ole ID: Meth Prep Type: Prep Batch Analyzed	od B Tota : 358 Di	ani //N/ 801
Tritium Iethod: A- Lab Sample Matrix: Wate Analysis Ba Analyte	-140 -140 -140 -140 -140 -140 -140 -140	60-3580 60-3580 07 MB Result 0.08637	c Uranium 15/1-A MB Qualifier	Count Uncert. (2σ+/-)	- Total Uncert. (2σ+/-)	ometry) _{RL}	MDC	Unit	Clie	ent Samp	ole ID: Meth Prep Type: Prep Batch Analyzed	od B Tota : 358 Di	anl /N/ 01
Tritium Iethod: A- Lab Sample Matrix: Wate Analysis Ba Analyte	-140 -140 -140 -140 -140 -140 -140 -140	60-3580 60-3580 07 MB Result 0.08637	C Uranium 15/1-A MB Qualifier U MB	Count Uncert. (2σ+/-)	- Total Uncert. (2σ+/-)	ometry) _{RL}	MDC	Unit	Clic P 03/2	ent Samp	ole ID: Meth Prep Type: Prep Batch Analyzed	od B Tota : 358 5	/N/
Tritium Iethod: A- Lab Sample Matrix: Wate Analysis Ba Analyte Total Uranium	-140 -140 -140 -140 -140 -140 -140 -140	60-3580 60-3580 07 MB Result 0.08637 <i>MB</i>	C Uranium 15/1-A MB Qualifier U MB	Count Uncert. (2σ+/-) 0.1188	- Total Uncert. (2σ+/-)	ometry) _{RL}	MDC	Unit	Clie P 03/2 F	repared 28/18 13:56	Die ID: Meth Prep Type: Prep Batch Analyzed 03/31/18 19:2 Analyzed	od B Tota : 358 5 	ani //N/ 01:
Tritium Iethod: A- Lab Sample Matrix: Wate Matrix: Matrix: 	-140 -140 140 	60-3580 60-3580 07 MB Result 0.08637 <i>MB</i> %Yield 96.5	C Uranium 15/1-A MB Qualifier U MB Qualifier	Count Uncert. (2σ+/-) 0.1188	- Total Uncert. (2σ+/-)	ometry) _{RL}	MDC	Unit pCi/L	Clic P 03/2 P 03/2	ent Samp repared 28/18 13:56 Prepared 28/18 13:56	Die ID: Meth Prep Type: Prep Batch Analyzed 03/31/18 19:2 Analyzed	od B Tota : 358 5 5 	an /N/ 01
Tritium Iethod: A- Lab Sample Matrix: Wate Analysis Ba Analyte Total Uranium Tracer Uranium-232 Lab Sample	-140 -140 -140 -140 -140 -140 -140 -140 -140 -140 -140 -140 -140 -140 -140 -140 -140 -140 -150	60-3580 60-3580 07 MB Result 0.08637 <i>MB</i> %Yield 96.5	C Uranium 15/1-A MB Qualifier U MB Qualifier	Count Uncert. (2σ+/-) 0.1188	- Total Uncert. (2σ+/-)	ometry) _{RL}	MDC	Unit pCi/L	Clic P 03/2 P 03/2	repared 28/18 13:56 Prepared 28/18 13:56 mple ID:	Die ID: Meth Prep Type: Prep Batch 03/31/18 19:2 Analyzed 03/31/18 19:2 Lab Contro	od B Tota : 358 5 5 5 I San	an //N/ 01 I Fa
Tritium Iethod: A- Lab Sample Matrix: Wate Analysis Ba Analyte Total Uranium Tracer Uranium-232 Lab Sample Matrix: Wate	-140 -140 	60-3580 07 MB Result 0.08637 MB %Yield 96.5 160-358	C Uranium 15/1-A MB Qualifier U MB Qualifier	Count Uncert. (2σ+/-) 0.1188	- Total Uncert. (2σ+/-)	ometry) _{RL}	MDC	Unit pCi/L	Clic P 03/2 P 03/2	repared 28/18 13:56 Prepared 28/18 13:56 mple ID:	Die ID: Meth Prep Type: Prep Batch 03/31/18 19:2 Analyzed 03/31/18 19:2	od B Tota : 358 <u>5</u> <u>D</u> 5 <u>J</u> I San	an //N/ 01 I Fa // Fa
Tritium Iethod: A- Lab Sample Matrix: Wate Analysis Ba Analyte Total Uranium Tracer Uranium-232 Lab Sample Matrix: Wate	-140 -140 	60-3580 07 MB Result 0.08637 MB %Yield 96.5 160-358	C Uranium 15/1-A MB Qualifier U MB Qualifier	Count Uncert. (2σ+/-) 0.1188	- Total Uncert. (2σ+/-)	ometry) _{RL}	MDC	Unit pCi/L	Clic P 03/2 P 03/2	repared 28/18 13:56 Prepared 28/18 13:56 mple ID:	Die ID: Meth Prep Type: Prep Batch 03/31/18 19:2 Analyzed 03/31/18 19:2 Lab Contro Prep Type:	od B Tota : 358 <u>5</u> <u>D</u> 5 <u>J</u> I San	an //N/ 01 I Fa // Fa
Tritium Iethod: A- Lab Sample Matrix: Wate Analysis Ba Analyte Total Uranium Tracer Uranium-232 Lab Sample Matrix: Wate	-140 -140 	60-3580 07 MB Result 0.08637 MB %Yield 96.5 160-358	C Uranium 15/1-A MB Qualifier U MB Qualifier	Count Uncert. (2σ+/-) 0.1188 <i>Limits</i> 30 - 110	- Total Uncert. (2σ+/-)	ometry)	MDC	Unit pCi/L	Clic P 03/2 P 03/2	repared 28/18 13:56 Prepared 28/18 13:56 mple ID:	Die ID: Meth Prep Type: Prep Batch 03/31/18 19:2 Analyzed 03/31/18 19:2 Lab Contro Prep Type:	od B Tota : 358 <u>5</u> <u>D</u> 5 <u>J</u> I San	ani //N/ 01: I Fa //Fa
Tritium Iethod: A- Lab Sample Matrix: Wate Matrix: Wate Analyte Total Uranium Tracer Uranium-232 Lab Sample Matrix: Wate Analysis Ba	-140 -140 	60-3580 07 MB Result 0.08637 MB %Yield 96.5 160-358	C Uranium 15/1-A MB Qualifier U MB Qualifier 015/2-A	Count Uncert. (2σ+/-) 0.1188 <i>Limits</i> 30 - 110	Total Uncert. (2σ+/-) 0.1188	ometry) RL 1.00	MDC	Unit pCi/L	Clic _	repared 28/18 13:56 Prepared 28/18 13:56 mple ID:	Analyzed O3/31/18 19:2 Analyzed O3/31/18 19:2 Lab Contro Prep Type: Prep Batch	od B Tota : 358 <u>5</u> <u>D</u> 5 <u>J</u> I San	ani //N/ 01: I Fa //Fa
Tritium Iethod: A- Lab Sample Matrix: Wate Matrix: Wate Analyte Total Uranium Tracer Uranium-232 Lab Sample Matrix: Wate Analysis Ba Analyte	-140 -140 	60-3580 07 MB Result 0.08637 MB %Yield 96.5 160-358	C Uranium 15/1-A MB Qualifier U MB Qualifier 015/2-A Spike	Count Uncert. (2σ+/-) 0.1188 <i>Limits</i> 30 - 110	Total Uncert. (2σ+/-) 0.1188	Ometry) RL 1.00 Total Uncert.	MDC 0.159	Unit pCi/L	Clic P 03/2 P 03/2 ent Sau Unit	repared 28/18 13:56 Prepared 28/18 13:56 mple ID:	Die ID: Meth Prep Type: Prep Batch Malyzed 03/31/18 19:2 Analyzed 03/31/18 19:2 Lab Contro Prep Type: Prep Batch %Rec.	od B Tota : 358 <u>5</u> <u>D</u> 5 <u>J</u> I San	ani //N/ 01: I Fa //Fa
Tritium Iethod: A- Lab Sample Matrix: Wate Analysis Ba Analyte Total Uranium Tracer Uranium-232 Lab Sample	-140 -140 	60-3580 07 MB Result 0.08637 MB %Yield 96.5 160-358	C Uranium 15/1-A MB Qualifier U MB Qualifier 015/2-A Spike Added	Count Uncert. (2σ+/-) 0.1188 <i>Limits</i> 30 - 110 LCS Result	Total Uncert. (2σ+/-) 0.1188	Ometry) RL 1.00 - Total Uncert. (2σ+/-)	MDC 0.159	Unit pCi/L Cli MDC 0.156	Clic P 03/2 P 03/2 ent Sau Unit	repared 28/18 13:56 Prepared 28/18 13:56 mple ID:	Die ID: Meth Prep Type: Prep Batch 03/31/18 19:2 Analyzed 03/31/18 19:2 Lab Contro Prep Type: Prep Batch %Rec. Limits	od B Tota : 358 <u>5</u> <u>D</u> 5 <u>J</u> I San	ani //N/ 01: I Fa // Fa
Tritium Aethod: A- Lab Sample Matrix: Wate Analysis Ba Analyte Total Uranium Tracer Uranium-232 Lab Sample Matrix: Wate Analysis Ba Analyte Uranium-234	-140 -140	60-3580 07 MB Result 0.08637 MB %Yield 96.5 160-358	C Uranium 15/1-A MB Qualifier U MB Qualifier 015/2-A Spike Added 12.7	Count Uncert. (2σ+/-) 0.1188 Limits 30 - 110 LCS Result 12.75	Total Uncert. (2σ+/-) 0.1188	Ometry) RL 1.00 Total Uncert. (2σ+/-) 1.52	MDC 0.159 RL 1.00	Unit pCi/L Cli MDC 0.156	Clic P 03/2 P 03/2 ent Sa Unit pCi/L	ent Samp repared 28/18 13:56 Prepared 28/18 13:56 mple ID: 	Die ID: Meth Prep Type: Prep Batch 03/31/18 19:2 Analyzed 03/31/18 19:2 Lab Contro Prep Type: Prep Batch %Rec. Limits 84 - 120	od B Tota : 358 <u>5</u> <u>D</u> 5 <u>J</u> I San	ani V/NA 01! I Fac
Tritium Aethod: A- Lab Sample Matrix: Wate Analysis Ba Analyte Total Uranium Tracer Uranium-232 Lab Sample Matrix: Wate Analysis Ba Analyte Uranium-234	-140 01-R - Is ID: MB 1 er tch: 3584 ID: LCS er tch: 3584	sotopic 60-3580 .07 MB Result 0.08637 <i>MB</i> %Yield 96.5 160-358 .45	C Uranium 15/1-A MB Qualifier U MB Qualifier 015/2-A Spike Added 12.7 13.0	Count Uncert. (2σ+/-) 0.1188 Limits 30 - 110 LCS Result 12.75	Total Uncert. (2σ+/-) 0.1188	Ometry) RL 1.00 Total Uncert. (2σ+/-) 1.52	MDC 0.159 RL 1.00	Unit pCi/L Cli MDC 0.156	Clic P 03/2 P 03/2 ent Sa Unit pCi/L	ent Samp repared 28/18 13:56 Prepared 28/18 13:56 mple ID: 	Die ID: Meth Prep Type: Prep Batch 03/31/18 19:2 Analyzed 03/31/18 19:2 Lab Contro Prep Type: Prep Batch %Rec. Limits 84 - 120	od B Tota : 358 <u>5</u> <u>D</u> 5 <u>J</u> I San	ani //N/ 01! I Fa // Fa

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry) (Continued)

Matrix: Wate	ID: 440-2 er	06741-A-1	-G MS						C		nple ID: N Prep Typ		
Analysis Ba	tch: 3584	62									Prep Ba	tch: 3	58015
	Commis	0	Online	мо	мо	Total					0/ D = =		
A		Sample	Spike	-	MS	Uncert.			11	0/ D	%Rec.		
Analyte	Result		Added	Result	Qual	(2σ+/-)	RL	MDC		%Rec	Limits		
Uranium-234	-0.144		64.1	61.00		8.10	1.00		pCi/L	95	65 - 146		
Uranium-238	0.338	UG	65.5	68.71		8.80	1.00	1.34	pCi/L	104	68 - 143		
	MS	MS											
Tracer	%Yield	Qualifier	Limits										
nacei	/011010												
Uranium-232	64.3	06741-A-1	30 - 110					Client	t Samp		atrix Spik		
Uranium-232 Lab Sample Matrix: Wate	64.3 ID: 440-2					Total		Client	t Samp		atrix Spik Prep Typ Prep Ba	e: Tot	al/NA
Uranium-232 Lab Sample Matrix: Wate	64.3 ID: 440-20 er tch: 3584			MSD	MSD	Total Uncert.		Client	t Samp		Prep Typ	e: Tot	al/NA
Uranium-232 Lab Sample Matrix: Wate Analysis Ba	64.3 ID: 440-20 er tch: 3584	D8 Sample	-H MSD	MSD Result			RL	Client			Prep Typ Prep Ba	e: Tot	al/NA 58015
Uranium-232 Lab Sample Matrix: Wate Analysis Ba Analyte	64.3 ID: 440-20 er tch: 35840 Sample	D8 Sample Qual	-H MSD Spike			Uncert.	RL 1.00	MDC			Prep Typ Prep Ba %Rec.	e: Tot tch: 3	al/NA 58015 RER
Uranium-232 Lab Sample Matrix: Wate Analysis Ba Analyte Uranium-234	64.3 ID: 440-2 er tch: 3584 Sample Result	D8 Sample Qual U G	-H MSD Spike Added	Result		Uncert. (2σ+/-)		MDC 1.05	Unit	%Rec	Prep Typ Prep Ba %Rec. Limits	e: Tot tch: 3	al/NA 58015 RER Limit
Uranium-232 Lab Sample Matrix: Wate Analysis Ba Analyte Uranium-234	64.3 ID: 440-20 er tch: 35840 Sample Result -0.144	Sample Qual U G U G	-H MSD Spike Added 63.8	Result 59.79		Uncert. (2σ+/-) 8.01	1.00	MDC 1.05	Unit pCi/L	- <u>%Rec</u> 94	Prep Typ Prep Ba %Rec. Limits 65 - 146	e: Tot tch: 3 <u>RER</u> 0.07	RER Limit
Uranium-232 Lab Sample Matrix: Wate Analysis Ba Analyte Uranium-234 Uranium-238	64.3 ID: 440-20 er tch: 35840 Sample Result -0.144 0.338 MSD	Sample Qual U G U G	-H MSD Spike Added 63.8	Result 59.79		Uncert. (2σ+/-) 8.01	1.00	MDC 1.05	Unit pCi/L	- <u>%Rec</u> 94	Prep Typ Prep Ba %Rec. Limits 65 - 146	e: Tot tch: 3 <u>RER</u> 0.07	RER Limit

QC Association Summary

TestAmerica Job ID: 440-206832-3

Rad

Prec	Batc	h: 35	8015
I I U P	Buto		

	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-206832-2	Outfall002_20180323_Comp	Total/NA	Water	ExtChrom	
MB 160-358015/1-A	Method Blank	Total/NA	Water	ExtChrom	
LCS 160-358015/2-A	Lab Control Sample	Total/NA	Water	ExtChrom	
440-206741-A-1-G MS	Matrix Spike	Total/NA	Water	ExtChrom	
440-206741-A-1-H MSD	Matrix Spike Duplicate	Total/NA	Water	ExtChrom	
rep Batch: 358034					
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batcl
440-206832-2	Outfall002_20180323_Comp	Total/NA	Water	Fill_Geo-0	••
MB 160-358034/1-A	Method Blank	Total/NA	Water	Fill Geo-0	
LCS 160-358034/2-A	Lab Control Sample	Total/NA	Water	- Fill_Geo-0	
440-206832-2 DU	Outfall002_20180323_Comp	Total/NA	Water	_ Fill_Geo-0	
rep Batch: 358155					
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batcl
440-206832-2	Outfall002_20180323_Comp	Total/NA	Water	PrecSep-21	
MB 160-358155/23-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-358155/1-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
LCSD 160-358155/2-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-21	
rep Batch: 358165					
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Bato
440-206832-2	Outfall002_20180323_Comp	Total/NA	Water	PrecSep_0	
MB 160-358165/23-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-358165/1-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
LCSD 160-358165/2-A	Lab Control Sample Dup	Total/NA	Water	PrecSep_0	
rep Batch: 358324					
e de la construcción de la constru					
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batc
•	Client Sample ID Outfall002_20180323_Comp	Prep Type Total/NA	Matrix Water	Method PrecSep-7	Prep Batc
440-206832-2	•				Prep Batc
440-206832-2 MB 160-358324/10-A	Outfall002_20180323_Comp	Total/NA	Water	PrecSep-7	Prep Batc
Lab Sample ID 440-206832-2 MB 160-358324/10-A LCS 160-358324/1-A LCSD 160-358324/2-A	Outfall002_20180323_Comp Method Blank	Total/NA Total/NA	Water Water	PrecSep-7 PrecSep-7	Prep Batc
440-206832-2 MB 160-358324/10-A LCS 160-358324/1-A LCSD 160-358324/2-A	Outfall002_20180323_Comp Method Blank Lab Control Sample	Total/NA Total/NA Total/NA	Water Water Water	PrecSep-7 PrecSep-7 PrecSep-7	Prep Batc
440-206832-2 MB 160-358324/10-A LCS 160-358324/1-A LCSD 160-358324/2-A rep Batch: 359958	Outfall002_20180323_Comp Method Blank Lab Control Sample Lab Control Sample Dup Client Sample ID	Total/NA Total/NA Total/NA	Water Water Water	PrecSep-7 PrecSep-7 PrecSep-7	
440-206832-2 MB 160-358324/10-A LCS 160-358324/1-A LCSD 160-358324/2-A rep Batch: 359958 Lab Sample ID	Outfall002_20180323_Comp Method Blank Lab Control Sample Lab Control Sample Dup	Total/NA Total/NA Total/NA Total/NA	Water Water Water Water	PrecSep-7 PrecSep-7 PrecSep-7 PrecSep-7	
440-206832-2 MB 160-358324/10-A LCS 160-358324/1-A LCSD 160-358324/2-A rep Batch: 359958 Lab Sample ID 440-206832-2	Outfall002_20180323_Comp Method Blank Lab Control Sample Lab Control Sample Dup Client Sample ID	Total/NA Total/NA Total/NA Total/NA Prep Type	Water Water Water Water Matrix	PrecSep-7 PrecSep-7 PrecSep-7 PrecSep-7 Method	
440-206832-2 MB 160-358324/10-A LCS 160-358324/1-A LCSD 160-358324/2-A rep Batch: 359958 Lab Sample ID 440-206832-2 MB 160-359958/1-A	Outfall002_20180323_Comp Method Blank Lab Control Sample Lab Control Sample Dup Client Sample ID Outfall002_20180323_Comp	Total/NA Total/NA Total/NA Total/NA Prep Type Total/NA	Water Water Water Water Matrix Water	PrecSep-7 PrecSep-7 PrecSep-7 PrecSep-7 Method Evaporation	
440-206832-2 MB 160-358324/10-A LCS 160-358324/1-A LCSD 160-358324/2-A rep Batch: 359958 Lab Sample ID 440-206832-2 MB 160-359958/1-A LCS 160-359958/2-A	Outfall002_20180323_Comp Method Blank Lab Control Sample Lab Control Sample Dup Client Sample ID Outfall002_20180323_Comp Method Blank	Total/NA Total/NA Total/NA Total/NA Prep Type Total/NA Total/NA	Water Water Water Water Matrix Water Water Water	PrecSep-7 PrecSep-7 PrecSep-7 PrecSep-7 Method Evaporation Evaporation	
440-206832-2 MB 160-358324/10-A LCS 160-358324/1-A LCSD 160-358324/2-A rep Batch: 359958 Lab Sample ID 440-206832-2 MB 160-359958/1-A LCS 160-359958/2-A LCSB 160-359958/3-A	Outfall002_20180323_Comp Method Blank Lab Control Sample Lab Control Sample Dup Client Sample ID Outfall002_20180323_Comp Method Blank Lab Control Sample ID	Total/NA Total/NA Total/NA Total/NA Prep Type Total/NA Total/NA Total/NA	Water Water Water Water Matrix Water Water Water Water	PrecSep-7 PrecSep-7 PrecSep-7 PrecSep-7 Method Evaporation Evaporation Evaporation	
440-206832-2 MB 160-358324/10-A LCS 160-358324/1-A LCSD 160-358324/2-A rep Batch: 359958 Lab Sample ID 440-206832-2 MB 160-359958/1-A LCS 160-359958/2-A LCSB 160-359958/3-A 240-93696-D-5-B MS	Outfall002_20180323_Comp Method Blank Lab Control Sample Lab Control Sample Dup Client Sample ID Outfall002_20180323_Comp Method Blank Lab Control Sample ID Outfall002_20180323_Comp Method Blank Lab Control Sample Lab Control Sample Lab Control Sample	Total/NA Total/NA Total/NA Total/NA Prep Type Total/NA Total/NA Total/NA Total/NA	Water Water Water Water Water Water Water Water Water Water	PrecSep-7 PrecSep-7 PrecSep-7 PrecSep-7 PrecSep-7 Method Evaporation Evaporation Evaporation Evaporation	
440-206832-2 MB 160-358324/10-A LCS 160-358324/1-A LCSD 160-358324/2-A rep Batch: 359958 Lab Sample ID 440-206832-2 MB 160-359958/1-A LCS 160-359958/2-A LCSB 160-359958/3-A 240-93696-D-5-B MS 240-93696-D-5-C MSBT	Outfall002_20180323_Comp Method Blank Lab Control Sample Lab Control Sample Dup Client Sample ID Outfall002_20180323_Comp Method Blank Lab Control Sample Dutfall002_20180323_Comp Method Blank Lab Control Sample Lab Control Sample Matrix Spike	Total/NA Total/NA Total/NA Total/NA Prep Type Total/NA Total/NA Total/NA Total/NA Total/NA	Water Water Water Water Water Water Water Water Water Water Water	PrecSep-7 PrecSep-7 PrecSep-7 PrecSep-7 PrecSep-7 Method Evaporation Evaporation Evaporation Evaporation Evaporation	
440-206832-2 MB 160-358324/10-A LCS 160-358324/1-A LCSD 160-358324/2-A rep Batch: 359958 Lab Sample ID 440-206832-2 MB 160-359958/1-A LCS 160-359958/2-A LCSB 160-359958/3-A 240-93696-D-5-B MS 240-93696-D-5-C MSBT 240-93696-D-5-D DU	Outfall002_20180323_Comp Method Blank Lab Control Sample Lab Control Sample Dup Client Sample ID Outfall002_20180323_Comp Method Blank Lab Control Sample Lab Control Sample Method Blank Lab Control Sample Matrix Spike Matrix Spike	Total/NA Total/NA Total/NA Total/NA Prep Type Total/NA Total/NA Total/NA Total/NA Total/NA Total/NA	Water Water Water Water Water Water Water Water Water Water Water Water Water	PrecSep-7 PrecSep-7 PrecSep-7 PrecSep-7 PrecSep-7 Method Evaporation Evaporation Evaporation Evaporation Evaporation Evaporation	
440-206832-2 MB 160-358324/10-A LCS 160-358324/1-A	Outfall002_20180323_Comp Method Blank Lab Control Sample Lab Control Sample Dup Client Sample ID Outfall002_20180323_Comp Method Blank Lab Control Sample Dutfall002_20180323_Comp Method Blank Lab Control Sample Lab Control Sample Duplicate Client Sample ID	Total/NA Total/NA Total/NA Total/NA Prep Type Total/NA Total/NA	Water Water Water Water Water Water Water Water Water Water Water Water Water Water Water	PrecSep-7 PrecSep-7 PrecSep-7 PrecSep-7 PrecSep-7 Method Evaporation Evaporation Evaporation Evaporation Evaporation Evaporation Evaporation	Prep Batc
440-206832-2 MB 160-358324/10-A LCS 160-358324/1-A LCSD 160-358324/2-A rep Batch: 359958 Lab Sample ID 440-206832-2 MB 160-359958/1-A LCSB 160-359958/2-A LCSB 160-359958/3-A 240-93696-D-5-B MS 240-93696-D-5-C MSBT 240-93696-D-5-D DU rep Batch: 361491	Outfall002_20180323_Comp Method Blank Lab Control Sample Lab Control Sample Dup Client Sample ID Outfall002_20180323_Comp Method Blank Lab Control Sample Dutfall002_20180323_Comp Method Blank Lab Control Sample Lab Control Sample Duplicate	Total/NA Total/NA Total/NA Total/NA Prep Type Total/NA Total/NA Total/NA Total/NA Total/NA Total/NA Total/NA	Water Water Water Water Water Water Water Water Water Water Water Water Water Water	PrecSep-7 PrecSep-7 PrecSep-7 PrecSep-7 PrecSep-7 Method Evaporation Evaporation Evaporation Evaporation Evaporation Evaporation	Prep Batc
440-206832-2 MB 160-358324/10-A LCS 160-358324/1-A LCSD 160-358324/2-A rep Batch: 359958 Lab Sample ID 440-206832-2 MB 160-359958/1-A LCSB 160-359958/2-A LCSB 160-359958/3-A 240-93696-D-5-B MS 240-93696-D-5-C MSBT 240-93696-D-5-D DU rep Batch: 361491 Lab Sample ID	Outfall002_20180323_Comp Method Blank Lab Control Sample Lab Control Sample Dup Client Sample ID Outfall002_20180323_Comp Method Blank Lab Control Sample Dutfall002_20180323_Comp Method Blank Lab Control Sample Lab Control Sample Duplicate Client Sample ID	Total/NA Total/NA Total/NA Total/NA Prep Type Total/NA Total/NA	Water Water Water Water Water Water Water Water Water Water Water Water Water Water Water	PrecSep-7 PrecSep-7 PrecSep-7 PrecSep-7 PrecSep-7 Method Evaporation Evaporation Evaporation Evaporation Evaporation Evaporation Evaporation Evaporation Evaporation	Prep Batc
440-206832-2 MB 160-358324/10-A LCS 160-358324/1-A LCSD 160-358324/2-A rep Batch: 359958 Lab Sample ID 440-206832-2 MB 160-359958/1-A LCS 160-359958/2-A LCSB 160-359958/3-A 240-93696-D-5-B MS 240-93696-D-5-C MSBT 240-93696-D-5-D DU rep Batch: 361491 Lab Sample ID 440-206832-2 MB 160-361491/1-A	Outfall002_20180323_Comp Method Blank Lab Control Sample Lab Control Sample Dup Outfall002_20180323_Comp Method Blank Lab Control Sample ID Outfall002_20180323_Comp Method Blank Lab Control Sample Lab Control Sample Matrix Spike Matrix Spike Duplicate Outfall002_20180323_Comp	Total/NA Total/NA Total/NA Total/NA Prep Type Total/NA	Water Water Water Water Water Water Water Water Water Water Water Water Water Water Water Water Water Water	PrecSep-7 PrecSep-7 PrecSep-7 PrecSep-7 PrecSep-7 Method Evaporation Evaporation Evaporation Evaporation Evaporation Evaporation Evaporation Evaporation Evaporation	Prep Batc
440-206832-2 MB 160-358324/10-A LCS 160-358324/1-A LCSD 160-358324/2-A rep Batch: 359958 Lab Sample ID 440-206832-2 MB 160-359958/1-A LCS 160-359958/2-A LCSB 160-359958/3-A 240-93696-D-5-B MS 240-93696-D-5-C MSBT 240-93696-D-5-D DU rep Batch: 361491 Lab Sample ID 440-206832-2	Outfall002_20180323_Comp Method Blank Lab Control Sample Lab Control Sample Dup Outfall002_20180323_Comp Method Blank Lab Control Sample ID Outfall002_20180323_Comp Method Blank Lab Control Sample Lab Control Sample Lab Control Sample Matrix Spike Matrix Spike Duplicate Outfall002_20180323_Comp Method Blank	Total/NA	Water Water Water Water Water Water Water Water Water Water Water Water Water Water Water Water Water Water Water	PrecSep-7 PrecSep-7 PrecSep-7 PrecSep-7 PrecSep-7 Method Evaporation Evaporation Evaporation Evaporation Evaporation Evaporation Evaporation Evaporation Evaporation	Prep Batc

TestAmerica Irvine

Qualifiers

Rad

Rad		
Qualifier	Qualifier Description	
G	The Sample MDC is greater than the requested RL.	
U	Result is less than the sample detection limit.	J
		6
Glossary		
Abbreviation	These commonly used abbreviations may or may not be present in this report.	7

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	8
CFL	Contains Free Liquid	
CNF	Contains No Free Liquid	9
DER	Duplicate Error Ratio (normalized absolute difference)	
Dil Fac	Dilution Factor	10
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)	13
MDA	Minimum Detectable Activity (Radiochemistry)	15
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)	

CICILY EQ uivalent Factor (Dioxin) TEQ Toxicity Equivalent Quotient (Dioxin)

Laboratory: TestAmerica Irvine

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

Authority	Program	EPA Region	Identification Number	Expiration Date
California	State Program	9	CA ELAP 2706	06-30-18

Laboratory: TestAmerica St. Louis

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
Alaska	State Program	10	MO00054	06-30-18 *
Arizona	State Program	9	AZ0813	12-08-18
California	State Program	9	2886	06-30-18 *
Connecticut	State Program	1	PH-0241	03-31-19
Florida	NELAP	4	E87689	06-30-18 *
Illinois	NELAP	5	200023	11-30-18
Iowa	State Program	7	373	12-01-18
Kansas	NELAP	7	E-10236	10-31-18
Kentucky (DW)	State Program	4	90125	12-31-18
L-A-B	DoD ELAP		L2305	04-06-19
Louisiana	NELAP	6	04080	06-30-18
Louisiana (DW)	NELAP	6	LA180017	12-31-18
Maryland	State Program	3	310	09-30-18
Michigan	State Program	5	9005	06-30-18
Missouri	State Program	7	780	06-30-18
Nevada	State Program	9	MO000542018-1	07-31-18
New Jersey	NELAP	2	MO002	06-30-18 *
New York	NELAP	2	11616	03-31-19
North Dakota	State Program	8	R207	06-30-18
NRC	NRC		24-24817-01	12-31-22
Oklahoma	State Program	6	9997	08-31-18
Pennsylvania	NELAP	3	68-00540	02-28-19
South Carolina	State Program	4	85002001	06-30-18
Texas	NELAP	6	T104704193-17-11	07-31-18
US Fish & Wildlife	Federal		058448	08-31-18
USDA	Federal		P330-17-0028	02-02-20
Utah	NELAP	8	MO000542016-8	07-31-18
Virginia	NELAP	3	460230	06-14-18 *
Washington	State Program	10	C592	08-30-18
West Virginia DEP	State Program	3	381	08-31-18 *

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

Patel, Urvashi

From: Sent: To: Subject: Miller, Katherine <KMiller@haleyaldrich.com> Wednesday, April 18, 2018 10:36 AM Patel, Urvashi; Marshall, Leandra RE: March rain event sample times

-External Email-

Yes please make the change to 10AM.

Katherine Miller HALEY & ALDRICH Tel: 520.289.8606

From: Patel, Urvashi <<u>Urvashi.Patel@testamericainc.com</u>> Sent: Wednesday, April 18, 2018 10:34 AM To: Marshall, Leandra <<u>LMarshall@haleyaldrich.com</u>> Cc: Miller, Katherine <<u>KMiller@haleyaldrich.com</u>> Subject: RE: March rain event sample times

Hi Leandra

Per the email below, I need to revise SDG 440-206832 to change the sample time from 4:31 to 10:00am? We have to revise all the deliverables for job-1 so there will be a charge for the revision. I will see if we can complete this today.

Thank you,

URVASHI PATEL Manager of Project Management

Test America THE LEADER IN ENVIRONMENTAL TESTING

17461 Derian Ave, Suite #100 Irvine, CA 92614 TEL 949-261-1022 | FAX 949-260-3297 DIRECT 949-260-3269 CELL 949-333-9055

www.testamericainc.com

From: Marshall, Leandra [mailto:LMarshall@haleyaldrich.com]
Sent: Tuesday, April 17, 2018 10:46 AM
To: Patel, Urvashi
Subject: RE: March rain event sample times

-External Email-

Hi Urvashi,

One of our sampling times was revised, so please revise associated lab reports and resend to us:

OF002 Composite on 3/23/18 (SDG 440-206832) was sampled at 10:00.

Thanks! Leandra



CHAIN OF CUSTODY FORM

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CHAIN OF CUSTODY FORM

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Chain of Custody Record



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Custody Seals Intact: Custody Seal No.	Cooler Temperature(s) °C and Other Remarks.	

Ver: 09/20/2016

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Client: Haley & Aldrich, Inc.

Login Number: 206832 List Number: 1 Creator: Soderblom, Tim

Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	True	
The cooler's custody seal, if present, is intact.	N/A	Not present
Sample custody seals, if present, are intact.	N/A	Not Present
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.	False	No sample date and/or time on COC, logged in per container labels.
Is the Field Sampler's name present on COC?	False	The Field Sampler was not listed on the Chain of Custody.
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 <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Job Number: 440-206832-3

List Source: TestAmerica Irvine

Client: Haley & Aldrich, Inc.

Login Number: 206832 List Number: 2 Creator: Taylor Kristene N

List Source: TestAmerica St. Louis

List Creation: 03/27/18 01:56 PM

Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
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	0.1
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?	False	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Prep Type: Total/NA

Prep Type: Total/NA

5

Method: 903.0 - Radium-226 (GFPC)

Matrix: Water

			Percent Yield (Acceptance Limits)
		Ba Carrier	
Lab Sample ID	Client Sample ID	(40-110)	
440-206832-2	Outfall002_20180323_Comp	82.9	
LCS 160-358155/1-A	Lab Control Sample	101	
LCSD 160-358155/2-A	Lab Control Sample Dup	103	
MB 160-358155/23-A	Method Blank	104	
Tracer/Carrier Legend	1		

Ba Carrier = Ba Carrier

Method: 904.0 - Radium-228 (GFPC) Matrix: Water

				Percent Yield
		Ba Carrier		
Lab Sample ID	Client Sample ID	(40-110)	(40-110)	
440-206832-2	Outfall002_20180323_Comp	82.9	92.3	
LCS 160-358165/1-A	Lab Control Sample	101	92.3	
LCSD 160-358165/2-A	Lab Control Sample Dup	103	91.2	
MB 160-358165/23-A	Method Blank	104	93.5	
Tracer/Carrier Legend				
Ba Carrier = Ba Carrier				
Y Carrier = Y Carrier				

Method: 905 - Strontium-90 (GFPC)

Matrix: Water				Prep Type: Total/NA
-				Percent Yield (Acceptance Limits)
		Sr Carrier	Y Carrier	
Lab Sample ID	Client Sample ID	(40-110)	(40-110)	
440-206832-2	Outfall002_20180323_Comp	73.8	90.8	
LCS 160-358324/1-A	Lab Control Sample	85.4	92.3	
LCSD 160-358324/2-A	Lab Control Sample Dup	83.4	92.7	
MB 160-358324/10-A	Method Blank	82.3	88.2	

Tracer/Carrier Legend

Sr Carrier = Sr Carrier Y Carrier = Y Carrier

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry) Matrix: Water

			Percent Yield (Acceptance Limits)
		ranium-23	
Lab Sample ID	Client Sample ID	(30-110)	
440-206741-A-1-G MS	Matrix Spike	64.3	
440-206741-A-1-H MSD	Matrix Spike Duplicate	65.0	
440-206832-2	Outfall002_20180323_Comp	85.2	
LCS 160-358015/2-A	Lab Control Sample	93.5	
MB 160-358015/1-A	Method Blank	96.5	

Prep Type: Total/NA

Tracer/Carrier Summary

Client: Haley & Aldrich, Inc. Project/Site: Annual Outfall 002 Comp

Uranium-232 = Uranium-232

TestAmerica Irvine



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S	440-206832 Field Sheet
---	------------------------

Job:_____

Tracking #4171 2 2740 8814 SO 1001 FO

Use this form to record Sample Custody Seal, Cooler Custody Seal, Temperature & corrected Temperature & other observations. File in the job folder with the COC.

Notes: Sample 5A Was recieved prokon, Mir DH Sizilis	Therm. ID: AK-2 / AK-3 / AK-4 / AK-5 / HA Ice Wet Gel Cooler Custody Seal: Sample Custody Seal: Cooler ID: Temp: Observed			
	From: Temp Blank D Sample	P		
	NCM Filed: Yes D No			
	Perchlorate has headspace?	Yes	<u>No</u>	NA
and the second se	CoC is complete w/o discrepancies?	6		Ē
	Samples received within holding time?	p		
	Sample preservatives verified?	D		P
	Cooler compromised/tampered with?		P	È
	Samples compromised/tampered with?		S	
	Samples w/o discrepancies?	D	qq	
		P	0,1	
	Containers are not broken or leaking?	X	P	
	Sample date/times are provided.	P		
	Appropriate containers are used?	岛		
	Sample bottles are completely filled?	p		
and the second	Zero headspace?*			P
	Multiphasic samples are not present?	P		
	Sample temp OK?	3		
	Sample out of temp?		P	
	Initials: Mg Date: 3/27/18 Tim	ne 4	250)
	*Containers requiring zero headspace have no headspace, or		e < 6 mr	n (1/4

WZGC

Q:\DOCUMENT-MANAGEMENT\FORMS\QA-812 REV. 1.5 SAMPLE RECEIVING NOTES 2018-01-26.DOC

QA-812 RKE 01/26/2018

DATA VALIDATION REPORT

Boeing SSFL Outfall 009

SAMPLE DELIVERY GROUP: 440-206580-1

Prepared for

Haley & Aldrich

April 2, 2018

MEC^x, Inc. 8864 Interchange Drive Houston, Texas 77054

www.mecx.net





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TABLES

1 – Sample Identification

2 – Data Qualifier Reference

3 - Reason Code Reference



I. INTRODUCTION

Task Order Title: Boeing SSFL Outfall 009

Contract: 40458-078 and 40458-083

MEC^x Project No.: 1272.003D.01 002

Sample Delivery Group: 440-206580-1

Project Manager: K. Miller

Matrix: Water

QC Level: IV

No. of Samples: 1

No. of Reanalyses/Dilutions: 0

Laboratory: TestAmerica - Irvine

TABLE 1 - SAMPLE IDENTIFICATION

Sample Name	Lab Sample Name	Matrix	Collection	Method	
Outfall009_20180321_Grab	440-206580-1	Water	3/21/2018 5:15:00 PM	SM9221F	



II. SAMPLE MANAGEMENT

According to the case narrative, sample condition upon receipt form and the chain-of-custody (COC) provided by the laboratory for sample delivery group (SDG) 440-206580-1:

- The laboratory received the sample in this sample delivery group (SDG) on ice and within the temperature limits of less than 6 degrees Celsius (°C) and greater than 0°C.
- The laboratory received the sample containers intact and properly preserved, as applicable.
- Field and laboratory personnel signed and dated the COC.
- According to the sample receipt form, custody seals were absent.

MEC^x noted the anomaly regarding sample management identified below.

• The time of relinquishment was not recorded on the COC.



TABLE 2 - DATA QUALIFIER REFERENCE

Qualifier	Organics	Inorganics
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit. For dioxins or PCB congeners, the associated value is the quantitation limit or the estimated detection limit.	The analyte was analyzed for, but was not detected above the reported sample quantitation limit. For perchlorate, the associated value is the sample detection limit or the quantitation limit.
L	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
J+	The result is an estimated quantity, but the result may be biased high.	The result is an estimated quantity, but the result may be biased high.
J-	The result is an estimated quantity, but the result may be biased low.	The result is an estimated quantity, but the result may be biased low.
UJ	The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate and may inaccurate or imprecise.	The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate and may inaccurate or imprecise.
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."	Not applicable.
NJ	The analyte has been "tentatively identified" or "presumptively" as present and the associated numerical value is the estimated concentration in the sample.	Not applicable.
R	The data are unusable. The sample results are rejected due to serious deficiencies in meeting quality control criteria. The analyte may or may not be present in the sample.	The data are unusable. The sample results are rejected due to serious deficiencies in meeting quality control criteria. The analyte may or may not be present in the sample.



TABLE 3 - REASON CODE REFERENCE

Reason Code	Organic	Inorganic
Н	Holding time was exceeded.	Holding time was exceeded.
S	Surrogate recovery was outside control limits.	Not applicable.
С	Calibration percent relative standard deviation (%RSD) or percent deviation (%D) were noncompliant, or coefficient of determination (r ²) was <0.990.	Correlation coefficient (r) was <0.995.
R	Calibration relative response factor (RRF) was <0.05.	Percent recovery (%R) for calibration was outside control limits.
В	The analyte was detected in an associated blank as well as in the sample.	The analyte was detected in an associated blank as well as in the sample.
L	Laboratory control sample (LCS) or /LCS duplicate (LCSD) %R was outside the control limits.	LCS or LCSD %R was outside the control limits.
L1	LCS/LCSD relative percent difference (RPD) was outside the control limit.	LCS/LCSD RPD was outside the control limit.
Q	Matrix spike/matrix spike duplicate (MS/MSD) %R was outside control limits.	MS or MSD %R was outside the control limit.
Q1	MS/MSD RPD was outside the control limit.	MS/MSD RPD was outside the control limit.
E	Result was reported as an estimated maximum possible concentration (EMPC).	Laboratory duplicate RPD was outside the control limit.
I	Internal standard recovery was outside control limits.	Inductively coupled plasma (ICP) interference check standard (ICSA/ICSAB) result was outside control limits.
11	Not applicable.	ICP mass spectrometer (ICPMS) internal standard recovery was outside control limits.
А	Not applicable.	Serial dilution %D was outside control limits.
М	Tuning (BFB or DFTPP) was not compliant.	ICPMS tune was not compliant.
Т	The analyte was detected in an associated trip blank as well as in the sample.	Not applicable.
+	False positive – reported compound was not present.	False positive – reported compound was not present.
-	False negative – compound was present but not reported.	False negative – compound was present but not reported.



Reason Code	Organic	Inorganic		
F	The analyte was detected in an associated field blank (FB) or equipment blank (EB) as well as in the sample.	The analyte was detected in an associated field blank (FB) or equipment blank (EB) as well as in the sample.		
F1	Field duplicate RPD was outside the control limit.	Field duplicate RPD was outside the control limit.		
\$	The reviewer corrected the reported result and/or other information.	The reviewer corrected the reported result and/or other information.		
D	The analysis was not used because another more technically sound analysis was available.	The analysis was not used because another more technically sound analysis was available.		
Р	Instrument performance not compliant.	Post digestion spike recovery was outside of control limits.		
DNQ	The reported result is above the method detection limit but is less than the reporting limit.	The reported result is above the method detection limit but is less than the reporting limit.		
*11, *111	Other problems identified in the data are described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found.	Other problems identified in the data are described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found.		



III. STANDARD METHODS 9221F — E. COLI

Marcia Hilchey of MEC^x reviewed the SDG on April 2, 2018.

The sample listed in Table 1 for this analysis was validated based on the guidelines outlined in the *MEC^X* Data Validation Procedure for General Minerals (DVP-6, Rev. 1), Standard Methods for the Examination of Water and Wastewater 9221F, and the National Functional Guidelines for Inorganic Superfund Data Review (2014).

III.1. HOLDING TIMES

The analytical holding time, 30 hours as stated in the QAPP for Method 9221F and 8 hours as requested on the CoC, was met.

III.2. CALIBRATION

Calibration criteria were met. Biological controls were acceptable.

III.3. QUALITY CONTROL SAMPLES

III.3.1. METHOD BLANKS

The method blank is not applicable to the biological method. The negative control sample was acceptable.

III.3.2. LABORATORY CONTROL SAMPLES

The presumptive test was analyzed with the positive detects for the target bacteria.

III.3.3. LABORATORY DUPLICATES

Laboratory duplicate analysis was performed on the sample from this SDG at 10x dilution. The laboratory duplicate RPD was <20%

III.3.4. MATRIX SPIKE/MATRIX SPIKE DUPLICATE

MS/MSD analysis is not applicable to this method.

III.4. SAMPLE RESULT VERIFICATION

Calculations were verified and the sample result reported on the sample results summary was verified against the raw data. No transcription errors or calculation errors were noted.

III.5. FIELD QC SAMPLES

MEC^x evaluated field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. MEC^x used the remaining detects to evaluate the associated site sample. Findings associated with field QC samples are summarized below.

III.5.1. FIELD BLANKS AND EQUIPMENT BLANKS

Field blank or equipment blank samples were not identified for this SDG.

III.5.2. FIELD DUPLICATES

There were no field duplicate samples identified for this SDG.

Validated Sample Result Forms: 4402065801

Analysis Method SM9221F

Sample Name Out	tfall009_2018	0321_Grab	Ma	trix Type:	WM	Res	ult Type: TI	RG	
Sample Date: 3/21/20	18 5:15:00 PM	Valida	tion Level: 8						
Lab Sample Name:	440-206580-1								
Analyte	Fractio	on: CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Escherichia coli	Ν	ECOLI	390	1.8	1.8	mpn/100			



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ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Irvine 17461 Derian Ave Suite 100 Irvine, CA 92614-5817 Tel: (949)261-1022

TestAmerica Job ID: 440-206580-1 Client Project/Site: Annual Outfall 009 Grab

For:

Haley & Aldrich, Inc. 400 E Van Buren St. Suite 545 Phoenix, Arizona 85004

Attn: Katherine Miller

Ilshi fatel

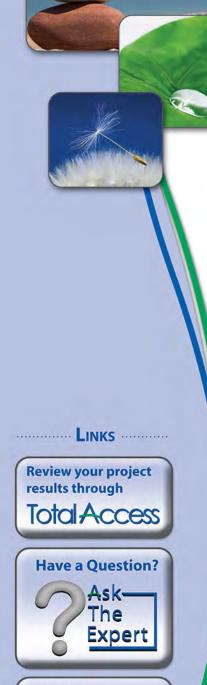
Authorized for release by: 3/29/2018 10:22:28 AM

Urvashi Patel, Manager of Project Management (949)261-1022 urvashi.patel@testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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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I certify under penalty of perjury that the information contained in this report and all attachments was produced in accordance with the indicated methods and laboratory standard operating procedures, except as noted, and are complete and accurate to the best of my knowledge and belief. Subcontract laboratory reports that are attached have been evaluated for completeness and quality control acceptability.

Ushi fatel

Urvashi Patel Manager of Project Management 3/29/2018 10:22:28 AM

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Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collected Received
440-206580-1	Outfall009_20180321_Grab	Water	03/21/18 17:15 03/21/18 20:00
440-206580-3	TB-20180321	Water	03/21/18 17:15 03/21/18 20:00

Job ID: 440-206580-1

Laboratory: TestAmerica Irvine

Narrative

Job Narrative 440-206580-1

Comments

Client sent Human Bacti directly to sub lab.

Receipt

The samples were received on 3/21/2018 8:00 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.4° C.

Receipt Exceptions

Did not receive a container for SAM348-357

GC/MS VOA

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

Biology

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

Organic Prep

Method(s) 1664A: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 440-465984 and analytical batch 440-466047. The laboratory control sample (LCS) was performed in duplicate to provide precision data for this batch

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

4

TestAmerica Job ID: 440-206580-1

Client Sample ID: Outfall009_20180321_Grab Date Collected: 03/21/18 17:15 Date Received: 03/21/18 20:00

Lab Sample ID: 440-206580-1 Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.50	0.25	ug/L			03/24/18 14:04	1
2-Chloroethyl vinyl ether	ND		2.0	1.0	ug/L			03/22/18 09:56	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.25	ug/L			03/24/18 14:04	1
Acrolein	ND		5.0	2.5	ug/L			03/22/18 09:56	1
1,1,2-Trichloroethane	ND		0.50	0.25	ug/L			03/24/18 14:04	1
Acrylonitrile	ND		2.0	1.0	ug/L			03/22/18 09:56	1
1,1-Dichloroethane	ND		0.50	0.25	ug/L			03/24/18 14:04	1
1,1-Dichloroethene	ND		0.50	0.25	ug/L			03/24/18 14:04	1
1,2-Dichlorobenzene	ND		0.50	0.25	ug/L			03/24/18 14:04	1
1,2-Dichloroethane	ND		0.50	0.25	ug/L			03/24/18 14:04	1
1,2-Dichloropropane	ND		0.50	0.25	ug/L			03/24/18 14:04	1
1,3-Dichlorobenzene	ND		0.50	0.25	-			03/24/18 14:04	1
1,4-Dichlorobenzene	ND		0.50	0.25	ug/L			03/24/18 14:04	1
Benzene	ND		0.50	0.25	-			03/24/18 14:04	1
Bromoform	ND		1.0	0.40	-			03/24/18 14:04	1
Bromomethane	ND		0.50		ug/L			03/24/18 14:04	1
Carbon tetrachloride	ND		0.50	0.25	-			03/24/18 14:04	1
Chlorobenzene	ND		0.50	0.25	-			03/24/18 14:04	1
Dibromochloromethane	ND		0.50	0.25	-			03/24/18 14:04	1
Chloroethane	ND		1.0	0.40	-			03/24/18 14:04	1
Chloroform	ND		0.50	0.25	-			03/24/18 14:04	1
Chloromethane	ND		0.50		ug/L			03/24/18 14:04	1
cis-1,3-Dichloropropene	ND		0.50		ug/L			03/24/18 14:04	1
Bromodichloromethane	ND		0.50	0.25	-			03/24/18 14:04	1
Ethylbenzene	ND		0.50		ug/L			03/24/18 14:04	1
Methylene Chloride	ND		2.0		ug/L			03/24/18 14:04	1
Tetrachloroethene	ND		0.50	0.25	-			03/24/18 14:04	1
Toluene	ND		0.50		ug/L			03/24/18 14:04	1
trans-1,2-Dichloroethene	ND		0.50	0.25	-			03/24/18 14:04	1
rans-1,3-Dichloropropene	ND		0.50	0.25	-			03/24/18 14:04	1
Trichlorofluoromethane	ND		0.50		ug/L			03/24/18 14:04	
Vinyl chloride	ND		0.50	0.25	-			03/24/18 14:04	1
Trichloroethene	ND		0.50	0.25	-			03/24/18 14:04	1
cis-1,2-Dichloroethene	ND		0.50	0.25	-			03/24/18 14:04	
Naphthalene	ND		1.0	0.40	-			03/24/18 14:04	1
Xylenes, Total	ND		1.0	0.50	-			03/24/18 14:04	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	102		80 - 128				•	03/22/18 09:56	1
Dibromofluoromethane (Surr)	99		76 - 132					03/22/18 09:56	1
4-Bromofluorobenzene (Surr)	95		80 - 120					03/22/18 09:56	1
4-Bromofluorobenzene (Surr)	101		80 - 120					03/24/18 14:04	1
Dibromofluoromethane (Surr)	103		76 - 132					03/24/18 14:04	1
Toluene-d8 (Surr)	104		80 - 128					03/24/18 14:04	1
General Chemistry									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HEM (Oil & Grease)	ND		5.1		mg/L		•	03/26/18 12:58	1

Method: SM 9221F - E.Coli Analyte	· · ·	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Escherichia coli	390		1.8	1.8	MPN/100mL		-	03/21/18 20:53	1
Client Sample ID: TB-20)180321					Lat	o Sample	ID: 440-206	580-3
Date Collected: 03/21/18 17:								Matrix	
Date Received: 03/21/18 20:0	00								
- Method: 624 - Volatile Orga Analyte		<mark>ls (GC/MS)</mark> Qualifier	RL	мпі	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.50	0.25	ug/L		Tropurcu	03/24/18 14:32	
2-Chloroethyl vinyl ether	ND		2.0		ug/L			03/22/18 09:31	
1,1,2,2-Tetrachloroethane	ND		0.50		ug/L			03/24/18 14:32	-
Acrolein	ND		5.0		ug/L			03/22/18 09:31	,
1,1,2-Trichloroethane	ND		0.50		ug/L			03/24/18 14:32	
Acrylonitrile	ND		2.0		ug/L			03/22/18 09:31	
1,1-Dichloroethane	ND		0.50		ug/L			03/24/18 14:32	
1,1-Dichloroethene	ND		0.50		ug/L ug/L			03/24/18 14:32	
1,2-Dichlorobenzene	ND		0.50		ug/L ug/L			03/24/18 14:32	
					-				
1,2-Dichloroethane	ND ND		0.50 0.50		ug/L			03/24/18 14:32	•
1,2-Dichloropropane					ug/L			03/24/18 14:32	
1,3-Dichlorobenzene	ND		0.50		ug/L			03/24/18 14:32	•
1,4-Dichlorobenzene	ND		0.50		ug/L			03/24/18 14:32	
Benzene	ND		0.50		ug/L			03/24/18 14:32	
Bromoform	ND		1.0		ug/L			03/24/18 14:32	•
Bromomethane	ND		0.50		ug/L			03/24/18 14:32	
Carbon tetrachloride	ND		0.50		ug/L			03/24/18 14:32	
Chlorobenzene	ND		0.50		ug/L			03/24/18 14:32	•
Dibromochloromethane	ND		0.50		ug/L			03/24/18 14:32	
Chloroethane	ND		1.0		ug/L			03/24/18 14:32	
Chloroform	ND		0.50		ug/L			03/24/18 14:32	•
Chloromethane	ND		0.50		ug/L			03/24/18 14:32	
cis-1,3-Dichloropropene	ND		0.50	0.25	ug/L			03/24/18 14:32	1
Bromodichloromethane	ND		0.50	0.25	ug/L			03/24/18 14:32	1
Ethylbenzene	ND		0.50		ug/L			03/24/18 14:32	1
Methylene Chloride	ND		2.0		ug/L			03/24/18 14:32	
Tetrachloroethene	ND		0.50	0.25				03/24/18 14:32	
Toluene	ND		0.50	0.25	ug/L			03/24/18 14:32	• • • • • • •
trans-1,2-Dichloroethene	ND		0.50	0.25	ug/L			03/24/18 14:32	1
trans-1,3-Dichloropropene	ND		0.50	0.25	ug/L			03/24/18 14:32	
Trichlorofluoromethane	ND		0.50	0.25	ug/L			03/24/18 14:32	
Vinyl chloride	ND		0.50	0.25	ug/L			03/24/18 14:32	1
Trichloroethene	ND		0.50	0.25	ug/L			03/24/18 14:32	1
cis-1,2-Dichloroethene	ND		0.50	0.25	ug/L			03/24/18 14:32	
Naphthalene	ND		1.0	0.40	ug/L			03/24/18 14:32	
Xylenes, Total	ND		1.0	0.50	ug/L			03/24/18 14:32	
Surrogate	%Recovery	Qualifier I	Limits				Prepared	Analyzed	Dil Fa
Toluene-d8 (Surr)	104		80 - 128			_		03/22/18 09:31	-
Dibromofluoromethane (Surr)	98	7	76 - 132					03/22/18 09:31	1
4-Bromofluorobenzene (Surr)	98	ξ	80 - 120					03/22/18 09:31	1
4-Bromofluorobenzene (Surr)	99		80 - 120					03/24/18 14:32	

Client Sample ID: Outfall009_20180321_Grab Date Collected: 03/21/18 17:15

Data Bassiwadi 02/21/19 20:00

Method: SM 9221F - E.Coli (Mu	ultiple-Tube	Fermenta	tion; EC-MUG)						
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Escherichia coli	390		1.8	1.8	MPN/100mL	_		03/21/18 20:53	1

Client Sample Results

Client: Haley & Aldrich, Inc. Project/Site: Annual Outfall 009 Grab

TestAmerica Job ID: 440-206580-1

Lab Sample ID: 440-206580-1

Matrix: Water

5

TestAmerica Irvine

Limits

76 - 132

80 - 128

Client Sample ID: TB-20180321 Date Collected: 03/21/18 17:15 Date Received: 03/21/18 20:00

Surrogate

Toluene-d8 (Surr)

Dibromofluoromethane (Surr)

Method: 624 - Volatile Organic Compounds (GC/MS) (Continued)

%Recovery Qualifier

105

102

Lab Sample ID: 440-206580-3 Matrix: Water

Analyzed

03/24/18 14:32

03/24/18 14:32

Prepared

	5	
	8	
	9	
í		

Dil Fac

1

Client: Haley & Aldrich, Inc. Project/Site: Annual Outfall 009 Grab

5
6
8
9

TestAmerica Irvine

Method	Method Description	Protocol	Laboratory
624	Volatile Organic Compounds (GC/MS)	40CFR136A	TAL IRV
1664A	HEM and SGT-HEM	1664A	TAL IRV
SM 9221F	E.Coli (Multiple-Tube Fermentation; EC-MUG)	SM	TAL IRV

Protocol References:

1664A = EPA-821-98-002

40CFR136A = "Methods for Organic Chemical Analysis of Municipal Industrial Wastewater", 40CFR, Part 136, Appendix A, October 26, 1984 and subsequent revisions.

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

Laboratory References:

TAL IRV = TestAmerica Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022

Client Sample ID: Outfall009_20180321_Grab

Date Collected: 03/21/18 17:15 Date Received: 03/21/18 20:00

Lab Sample	ID: 440-206580-1
	Matrix: Water

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Ргер Туре	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	624		1	10 mL	10 mL	465193	03/22/18 09:56	AYL	TAL IR\
Total/NA	Analysis	624		1	10 mL	10 mL	465795	03/24/18 14:04	AYL	TAL IR\
Total/NA	Prep	1664A			980 mL	1000 mL	465984	03/26/18 09:43	JC1	TAL IRV
Total/NA	Analysis	1664A		1			466047	03/26/18 12:58	JC1	TAL IR
Total/NA	Analysis	SM 9221F		1	100 mL	100 mL	466348		CMM	TAL IR
							(Start)	03/21/18 20:53		
							(End)	03/24/18 17:36		

Client Sample ID: TB-20180321 Date Collected: 03/21/18 17:15 Date Received: 03/21/18 20:00

Lab Sample ID: 440-206580-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analvzed	Analvst	Lab	
Total/NA	Analysis	624		1	10 mL	10 mL	465193	03/22/18 09:31		TAL IRV	1
Total/NA	Analysis	624		1	10 mL	10 mL	465795	03/24/18 14:32	AYL	TAL IRV	

Laboratory References:

TAL IRV = TestAmerica Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022

RL

2.0

5.0

2.0

Limits

80 - 128

76 - 132

80 - 120

MDL Unit

1.0 ug/L

2.5 ug/L

1.0 ug/L

D

Prepared

Prepared

Lab Sample ID: MB 440-465193/4

Matrix: Water

Analyte

Acrolein

Acrylonitrile

Surrogate

Toluene-d8 (Surr)

Matrix: Water

Dibromofluoromethane (Surr)

4-Bromofluorobenzene (Surr)

Lab Sample ID: LCS 440-465193/5

Analysis Batch: 465193

2-Chloroethyl vinyl ether

Method: 624 - Volatile Organic Compounds (GC/MS)

MB MB

ND

ND

ND

102

98

96

%Recovery

MB MB

Qualifier

Result Qualifier

2 3 4 5

Dil Fac

Dil Fac

1

1

1

1

1

1

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

Client Sample ID: Outfall009_20180321_Grab

Client Sample ID: Outfall009_20180321_Grab

Analysis Batch: 465193 LCS LCS Spike %Rec. Analyte Added **Result Qualifier** Unit D %Rec Limits 2-Chloroethyl vinyl ether 25.0 16.6 ug/L 66 37 - 150 Acrolein 25.0 87 21.7 ug/L 10 - 145 250 Acrylonitrile 197 ug/L 79 48 - 140

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
Toluene-d8 (Surr)	101		80 - 128
Dibromofluoromethane (Surr)	97		76 - 132
4-Bromofluorobenzene (Surr)	97		80 - 120

Lab Sample ID: 440-206580-1 MS Matrix: Water Analysis Batch: 465193

	Sample	Sample	Spike	MS	MS				%Rec.
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits
2-Chloroethyl vinyl ether	ND		25.0	19.2		ug/L		77	10 - 140
Acrolein	ND		25.0	22.2		ug/L		89	10 - 147
Acrylonitrile	ND		250	202		ug/L		81	38 - 144
	MS	MS							

Surrogate	%Recovery	Qualifier	Limits
Toluene-d8 (Surr)	97		80 - 128
Dibromofluoromethane (Surr)	100		76 - 132
4-Bromofluorobenzene (Surr)	96		80 - 120

Lab Sample ID: 440-206580-1 MSD Matrix: Water Analysis Batch: 465193

	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
2-Chloroethyl vinyl ether	ND		25.0	20.4		ug/L		82	10 - 140	6	25
Acrolein	ND		25.0	21.1		ug/L		84	10 - 147	5	40
Acrylonitrile	ND		250	203		ug/L		81	38 - 144	0	40

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Prep Type: Total/NA

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

Analyzed

03/22/18 08:14

03/22/18 08:14

03/22/18 08:14

Analyzed

03/22/18 08:14

03/22/18 08:14

03/22/18 08:14

Prep Type: Total/NA

Method: 624 - Volatile Organic Compounds (GC/MS) (Continued)

MSD MSD

Limits

80 - 128

76 - 132

80 - 120

%Recovery Qualifier

99

100

97

Lab Sample ID: 440-206580-1 MSD

Matrix: Water

Toluene-d8 (Surr)

Surrogate

Prep Type: Total/NA

2 3 4 5 6 7 8

Lab Sample ID: MB 440-465795/4 Matrix: Water Analysis Batch: 465795

Analysis Batch: 465193

Dibromofluoromethane (Surr)

4-Bromofluorobenzene (Surr)

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

Client Sample ID: Outfall009_20180321_Grab

Analysis Balch. 405/95	MB	МВ							
Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.50	0.25	ug/L			03/24/18 10:48	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.25	ug/L		03/24/18 10:48		1
1,1,2-Trichloroethane	ND		0.50	0.25	ug/L			03/24/18 10:48	
1,1-Dichloroethane	ND		0.50	0.25	ug/L			03/24/18 10:48	1
1,1-Dichloroethene	ND		0.50		ug/L			03/24/18 10:48	1
1,2-Dichlorobenzene	ND		0.50	0.25	ug/L			03/24/18 10:48	1
1,2-Dichloroethane	ND		0.50	0.25	ug/L			03/24/18 10:48	1
1,2-Dichloropropane	ND		0.50	0.25	ug/L			03/24/18 10:48	1
1,3-Dichlorobenzene	ND		0.50	0.25	ug/L			03/24/18 10:48	1
1,4-Dichlorobenzene	ND		0.50	0.25	ug/L			03/24/18 10:48	1
Benzene	ND		0.50	0.25	ug/L			03/24/18 10:48	1
Bromoform	ND		1.0	0.40	ug/L			03/24/18 10:48	1
Bromomethane	ND		0.50	0.25	ug/L			03/24/18 10:48	1
Carbon tetrachloride	ND		0.50	0.25	ug/L			03/24/18 10:48	1
Chlorobenzene	ND		0.50	0.25	ug/L			03/24/18 10:48	1
Dibromochloromethane	ND		0.50	0.25	ug/L			03/24/18 10:48	1
Chloroethane	ND		1.0	0.40	ug/L			03/24/18 10:48	1
Chloroform	ND		0.50	0.25	ug/L			03/24/18 10:48	1
Chloromethane	ND		0.50	0.25	ug/L			03/24/18 10:48	1
cis-1,3-Dichloropropene	ND		0.50	0.25	ug/L			03/24/18 10:48	1
Bromodichloromethane	ND		0.50	0.25	ug/L			03/24/18 10:48	1
Ethylbenzene	ND		0.50	0.25	ug/L			03/24/18 10:48	1
Methylene Chloride	ND		2.0	0.88	ug/L			03/24/18 10:48	1
Tetrachloroethene	ND		0.50	0.25	ug/L			03/24/18 10:48	1
Toluene	ND		0.50	0.25	ug/L			03/24/18 10:48	1
trans-1,2-Dichloroethene	ND		0.50	0.25	ug/L			03/24/18 10:48	1
trans-1,3-Dichloropropene	ND		0.50	0.25	ug/L			03/24/18 10:48	1
Trichlorofluoromethane	ND		0.50	0.25	ug/L			03/24/18 10:48	1
Vinyl chloride	ND		0.50	0.25	ug/L			03/24/18 10:48	1
Trichloroethene	ND		0.50	0.25	ug/L			03/24/18 10:48	1
cis-1,2-Dichloroethene	ND		0.50	0.25	ug/L			03/24/18 10:48	1
Naphthalene	ND		1.0	0.40	ug/L			03/24/18 10:48	1
Xylenes, Total	ND		1.0	0.50	ug/L			03/24/18 10:48	1
	МВ	MB							
Surrogate	%Recovery		Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	99		80 - 120			-		03/24/18 10:48	1
Dibromofluoromethane (Surr)	98		76 - 132					03/24/18 10:48	1
Toluene-d8 (Surr)	105		80 - 128					03/24/18 10:48	1
_ ```									

TestAmerica Irvine

Prep Type: Total/NA

Method: 624 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 440-465795/5 Matrix: Water

Analysis Batch: 465795	Spike						
		LCS	LCS				%Rec.
Analyte A	dded		Qualifier	Unit	D	%Rec	Limits
1,1,1-Trichloroethane	25.0	24.4		ug/L		98	70 - 130
1,1,2,2-Tetrachloroethane	25.0	25.5		ug/L		102	63 - 130
1,1,2-Trichloroethane	25.0	25.9		ug/L		104	70 - 130
1,1-Dichloroethane	25.0	24.8		ug/L		99	64 - 130
1,1-Dichloroethene	25.0	24.2		ug/L		97	70 - 130
1,2-Dichlorobenzene	25.0	26.7		ug/L		107	70 - 130
1,2-Dichloroethane	25.0	26.3		ug/L		105	57 - 138
1,2-Dichloropropane	25.0	28.0		ug/L		112	67 - 130
1,3-Dichlorobenzene	25.0	25.1		ug/L		100	70 - 130
1,4-Dichlorobenzene	25.0	25.5		ug/L		102	70 - 130
Benzene	25.0	26.9		ug/L		108	68 - 130
Bromoform	25.0	25.2		ug/L		101	60 - 148
Bromomethane	25.0	23.1		ug/L		92	64 - 139
Carbon tetrachloride	25.0	23.9		ug/L		96	60 - 150
Chlorobenzene	25.0	25.3		ug/L		101	70 - 130
Dibromochloromethane	25.0	26.8		ug/L		107	69 - 145
Chloroethane	25.0	23.1		ug/L		92	64 - 135
Chloroform	25.0	27.5		ug/L		110	70 - 130
Chloromethane	25.0	18.3		ug/L		73	47 - 140
cis-1,3-Dichloropropene	25.0	29.1		ug/L		116	70 - 133
Bromodichloromethane	25.0	27.9		ug/L		111	70 - 132
Ethylbenzene	25.0	25.1		ug/L		100	70 - 130
Methylene Chloride	25.0	26.4		ug/L		106	52 - 130
Tetrachloroethene	25.0	24.1		ug/L		96	70 - 130
Toluene	25.0	26.0		ug/L		104	70 - 130
trans-1,2-Dichloroethene	25.0	25.1		ug/L		100	70 - 130
trans-1,3-Dichloropropene	25.0	28.0		ug/L		112	70 - 132
Trichlorofluoromethane	25.0	20.8		ug/L		83	60 - 150
Vinyl chloride	25.0	21.7		ug/L		87	59 - 133
Trichloroethene	25.0	26.2		ug/L		105	70 - 130
cis-1,2-Dichloroethene	25.0	26.1		ug/L		104	70 - 133
Naphthalene	25.0	29.1		ug/L		116	60 - 140
Xylenes, Total	50.0	51.3		ug/L		103	70 - 130

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	97		80 - 120
Dibromofluoromethane (Surr)	101		76 - 132
Toluene-d8 (Surr)	97		80 - 128

Lab Sample ID: 440-206915-D-1 MS Matrix: Water Analysis Batch: 465795

	Sample	Sample	Spike	MS	MS				%Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
1,1,1-Trichloroethane	ND		25.0	25.4		ug/L		102	70 - 130	
1,1,2,2-Tetrachloroethane	ND		25.0	26.4		ug/L		106	63 - 130	
1,1,2-Trichloroethane	ND		25.0	26.4		ug/L		106	70 - 130	
1,1-Dichloroethane	ND		25.0	25.5		ug/L		102	65 - 130	

TestAmerica Irvine

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Client Sample ID: Lab Control Sample

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Method: 624 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 440-206915-D-1 MS

Matrix: Water Analysis Batch: 465795

Analysis Batch. 403733	Sample	Sample	Spike	MS	MS				%Rec.	5
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
1,1-Dichloroethene	ND		25.0	27.7		ug/L		111	70 - 130	6
1,2-Dichlorobenzene	ND		25.0	26.8		ug/L		107	70 ₋ 130	
1,2-Dichloroethane	ND		25.0	25.9		ug/L		104	56 ₋ 146	
1,2-Dichloropropane	ND		25.0	27.9		ug/L		112	69 - 130	
1,3-Dichlorobenzene	ND		25.0	25.5		ug/L		102	70 - 130	8
1,4-Dichlorobenzene	ND		25.0	25.4		ug/L		102	70 - 130	
Benzene	ND		25.0	26.1		ug/L		105	66 ₋ 130	
Bromoform	ND		25.0	25.9		ug/L		104	59 ₋ 150	
Bromomethane	ND		25.0	23.6		ug/L		94	62 - 131	
Carbon tetrachloride	ND		25.0	26.0		ug/L		104	60 ₋ 150	
Chlorobenzene	ND		25.0	25.3		ug/L		101	70 - 130	
Dibromochloromethane	ND		25.0	26.9		ug/L		108	70 ₋ 148	
Chloroethane	ND		25.0	24.3		ug/L		97	68 ₋ 130	
Chloroform	ND		25.0	26.5		ug/L		106	70 - 130	
Chloromethane	ND		25.0	20.8		ug/L		83	39 - 144	
cis-1,3-Dichloropropene	ND		25.0	28.7		ug/L		115	70 - 133	
Bromodichloromethane	ND		25.0	27.9		ug/L		112	70 ₋ 138	
Ethylbenzene	ND		25.0	25.5		ug/L		102	70 - 130	
Methylene Chloride	ND		25.0	28.6		ug/L		114	52 - 130	
Tetrachloroethene	ND		25.0	25.8		ug/L		103	70 ₋ 137	
Toluene	ND		25.0	26.7		ug/L		107	70 - 130	
trans-1,2-Dichloroethene	ND		25.0	26.1		ug/L		105	70 ₋ 130	
trans-1,3-Dichloropropene	ND		25.0	28.7		ug/L		115	70 ₋ 138	
Trichlorofluoromethane	ND		25.0	23.6		ug/L		94	60 ₋ 150	
Vinyl chloride	ND		25.0	23.7		ug/L		95	50 ₋ 137	
Trichloroethene	ND		25.0	26.7		ug/L		107	70 - 130	
cis-1,2-Dichloroethene	ND		25.0	27.7		ug/L		111	70 ₋ 130	
Naphthalene	ND		25.0	29.1		ug/L		116	60 ₋ 140	
Xylenes, Total	ND		50.0	52.5		ug/L		105	70 - 133	

	MS	MS	
Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	99		80 - 120
Dibromofluoromethane (Surr)	104		76 - 132
Toluene-d8 (Surr)	100		80 - 128

Lab Sample ID: 440-206915-D-1 MSD Matrix: Water Analysis Batch: 465795

	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
1,1,1-Trichloroethane	ND		25.0	25.0		ug/L		100	70 - 130	2	20
1,1,2,2-Tetrachloroethane	ND		25.0	27.4		ug/L		110	63 - 130	4	30
1,1,2-Trichloroethane	ND		25.0	28.1		ug/L		112	70 - 130	6	25
1,1-Dichloroethane	ND		25.0	24.9		ug/L		100	65 - 130	2	20
1,1-Dichloroethene	ND		25.0	25.7		ug/L		103	70 - 130	7	20
1,2-Dichlorobenzene	ND		25.0	27.2		ug/L		109	70 - 130	2	20
1,2-Dichloroethane	ND		25.0	25.7		ug/L		103	56 - 146	1	20
1,2-Dichloropropane	ND		25.0	26.7		ug/L		107	69 - 130	5	20

TestAmerica Irvine

Prep Type: Total/NA

Client Sample ID: Matrix Spike Duplicate

Method: 624 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 440-206915-D-1 MSD Matrix: Water

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

Watrix: water									Prep Ty	pe: Tot	al/NA
Analysis Batch: 465795	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
1,3-Dichlorobenzene	ND		25.0	25.1		ug/L		101	70 - 130	1	20
1,4-Dichlorobenzene	ND		25.0	25.0		ug/L		100	70 - 130	1	20
Benzene	ND		25.0	25.5		ug/L		102	66 - 130	2	20
Bromoform	ND		25.0	26.4		ug/L		106	59 - 150	2	25
Bromomethane	ND		25.0	23.8		ug/L		95	62 - 131	1	25
Carbon tetrachloride	ND		25.0	24.9		ug/L		100	60 - 150	4	25
Chlorobenzene	ND		25.0	24.8		ug/L		99	70 - 130	2	20
Dibromochloromethane	ND		25.0	27.6		ug/L		110	70 - 148	2	25
Chloroethane	ND		25.0	24.4		ug/L		97	68 - 130	0	25
Chloroform	ND		25.0	26.2		ug/L		105	70 - 130	1	20
Chloromethane	ND		25.0	20.1		ug/L		81	39 - 144	3	25
cis-1,3-Dichloropropene	ND		25.0	28.8		ug/L		115	70 ₋ 133	0	20
Bromodichloromethane	ND		25.0	25.7		ug/L		103	70 - 138	8	20
Ethylbenzene	ND		25.0	25.8		ug/L		103	70 - 130	1	20
Methylene Chloride	ND		25.0	27.5		ug/L		110	52 - 130	4	20
Tetrachloroethene	ND		25.0	26.6		ug/L		106	70 - 137	3	20
Toluene	ND		25.0	26.5		ug/L		106	70 - 130	1	20
trans-1,2-Dichloroethene	ND		25.0	25.0		ug/L		100	70 - 130	4	20
trans-1,3-Dichloropropene	ND		25.0	28.5		ug/L		114	70 - 138	1	25
Trichlorofluoromethane	ND		25.0	23.0		ug/L		92	60 - 150	3	25
Vinyl chloride	ND		25.0	23.4		ug/L		94	50 - 137	1	30
Trichloroethene	ND		25.0	26.1		ug/L		104	70 - 130	2	20
cis-1,2-Dichloroethene	ND		25.0	25.7		ug/L		103	70 - 130	7	20
Naphthalene	ND		25.0	30.8		ug/L		123	60 - 140	6	30
Xylenes, Total	ND		50.0	52.5		ug/L		105	70 - 133	0	20
	MSD	MSD									
Surrogate	%Recovery	Qualifier	Limits								
4-Bromofluorobenzene (Surr)	98		80 - 120								
			70 100								

Method: 1664A - HEM and SGT-HEM

Dibromofluoromethane (Surr)

Toluene-d8 (Surr)

Lab Sample ID: MB 440-4659 Matrix: Water Analysis Batch: 466047		МВ							Clie		ole ID: Method Prep Type: To Prep Batch:	otal/NA
Analyte	Result	Qualifier		RL	I	MDL U	nit	D	Р	repared	Analyzed	Dil Fac
HEM (Oil & Grease)	ND			5.0		1.4 m	g/L		03/2	26/18 09:43	03/26/18 12:58	1
Lab Sample ID: LCS 440-465 Matrix: Water Analysis Batch: 466047	984/2-A							Client	t Sa		Lab Control S Prep Type: To Prep Batch:	otal/NA
			Spike		LCS	LCS					%Rec.	
Analyte			Added		Result	Qualifi	er	Unit	D	%Rec	Limits	
HEM (Oil & Grease)			40.0		33.4			mg/L		83	78 - 114	

76 - 132

80 - 128

5

Method: 1664A - HEM and SGT-HEM (Continued)

Lab Sample ID: LCSD 440-465984/3-A Matrix: Water			C	Client S	ample	ID: Lat	Control Prep Ty		
Analysis Batch: 466047	Spike	LCSD	LCSD				Prep Ba %Rec.	atch: 46	85984 RPD
 Analyte HEM (Oil & Grease)	Added 40.0	Result 33.4	Qualifier	Unit mg/L	D	%Rec	Limits 78 - 114	RPD	Limit 11

TestAmerica Irvine

GC/MS VOA

Analysis Batch: 465193

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-206580-1	Outfall009_20180321_Grab	Total/NA	Water	624	
440-206580-3	TB-20180321	Total/NA	Water	624	
MB 440-465193/4	Method Blank	Total/NA	Water	624	
LCS 440-465193/5	Lab Control Sample	Total/NA	Water	624	
440-206580-1 MS	Outfall009_20180321_Grab	Total/NA	Water	624	
440-206580-1 MSD	Outfall009_20180321_Grab	Total/NA	Water	624	
Analysis Batch: 4657		Prep Type	Matrix	Method	Prep Batch
Lab Sample ID	Client Sample ID	Prep Type	Matrix Water	Method 624	Prep Batch
Lab Sample ID 440-206580-1		Prep Type Total/NA Total/NA	Matrix Water Water	<u>Method</u> 624 624	Prep Batch
-	Client Sample ID Outfall009_20180321_Grab	Total/NA	Water	624	Prep Batch
Lab Sample ID 440-206580-1 440-206580-3	Client Sample ID Outfall009_20180321_Grab TB-20180321	Total/NA Total/NA	Water Water	624 624	Prep Batch
Lab Sample ID 440-206580-1 440-206580-3 MB 440-465795/4	Client Sample ID Outfall009_20180321_Grab TB-20180321 Method Blank	Total/NA Total/NA Total/NA	Water Water Water	624 624 624	Prep Batch

QC Association Summary

Prep Batch: 465984

Lab Sample ID 440-206580-1	Client Sample ID Outfall009 20180321 Grab	Prep Type Total/NA	Matrix Water	Method 1664A	Prep Batch
MB 440-465984/1-A	Method Blank	Total/NA	Water	1664A	
LCS 440-465984/2-A	Lab Control Sample	Total/NA	Water	1664A	
LCSD 440-465984/3-A	Lab Control Sample Dup	Total/NA	Water	1664A	

Analysis Batch: 466047

Lab Sample ID 440-206580-1	Client Sample ID Outfall009 20180321 Grab	Prep Type Total/NA	Matrix Water	Method 1664A	Prep Batch 465984
MB 440-465984/1-A	Method Blank	Total/NA	Water	1664A	465984
LCS 440-465984/2-A	Lab Control Sample	Total/NA	Water	1664A	465984
LCSD 440-465984/3-A	Lab Control Sample Dup	Total/NA	Water	1664A	465984

Biology

Analysis Batch: 466348

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-206580-1	Outfall009_20180321_Grab	Total/NA	Water	SM 9221F	

Definitions/Glossary

Client: Haley & Aldrich, Inc. Project/Site: Annual Outfall 009 Grab

Glossary

	& Aldrich, Inc. TestAmerica Job ID: 440-206580-1 Annual Outfall 009 Grab	
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	5
CFL	Contains Free Liquid	5
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)	8
EDL	Estimated Detection Limit (Dioxin)	
LOD	Limit of Detection (DoD/DOE)	9
LOQ	Limit of Quantitation (DoD/DOE)	
MDA	Minimum Detectable Activity (Radiochemistry)	10
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	13
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) Client: Haley & Aldrich, Inc. Project/Site: Annual Outfall 009 Grab TestAmerica Job ID: 440-206580-1

Laboratory: TestAmerica Irvine

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

uthority	Program		EPA Region	Identification Number	Expiration Date	
alifornia	ornia State Program		9	CA ELAP 2706	06-30-18	
The following analytes	are included in this repo	rt, but accreditation/	certification is not off	ered by the governing autho	ority:	
Analysis Method	Prep Method	Matrix	Analvt	e		
Analysis Method	i icp metrioù	in a cinx	7 4 101 9 6	0		
624		Water		2-Dichloroethene		
			cis-1,2			

TestAmerica Irvine



CHAIN OF CUSTODY FORM

	Field Readings Meter serial #	Field Readings: (Include units) Time of Readings: CAt S	ил н р 4. 4 10 на			Checked by: And 13 120	Comments	Deliver to lab ASAP 8 hr hold time	Detiver to lab ASAP & hr hold time, Need 1x, 10x, 100x dilutions						ļ	440-206580 Chain of Custody		Turn-around time: (Check)	24 Hour: 72 Hour. 10 Day: X	34	Sample integrity: (Check) Intact: On foe. On foe.	Store samples for 6 months. Data Requirements: (Check) No Level IV: All Level IV. X	3.4 1237
ARAA	ANALYSIS REQUIRED		(\$26))]) [[uoau	rii , ea	(1526M2) 913) seearc 1081yx + 99 1-A+A Vino -	AOC8 Oil & C		×	×	×	×	I	I I I				Date/Time	3/21/18 20:00	Date/Time		DateTime	5 4 6
×	Project:	Boerrg-SSFL NPDES Permit 2018 I Outfail (p03-007, 009, 010) Outfail 009		Project Manager: Katherine Miller	Field Manager: Mark Dominick	978.234.5033, 818.599 0702 (cell)	# of Preservative Bottle MS/MSD S	1 None 5 No X	3 Na2S2O3 10 No	2 HC: 15 No	3 HCt 40 No	None 55	HC 5	HCI 45		None 55	l acand: R = Routine A = Annual	Received BV	7	Received By		Received By	
		Boosi Annual Ou			Field Ma	978.234.5	Sample Container Type Matrix	WM 125 mL Sterile Poly	<u> </u>	MW	VM 40 mL VOA	M	- MM		MM	m siti		Company	the Mit all it	Company		Company	
	388.	er Rd Suite 300 108	lact. Urvashi Patel Suite #100	TestAmerica's services under this CoC shall be parformed in scoordarce with the TaCe within Blankel Service Agreenenate 2015:15:157'setAmerica by and between Haley & Addidr, Inc. , the ubaldarfee and afflates, and TestAmerica Laborationes inc		Joff Sexton/201 Bunias	Sample I D Sampling DeterTime			Outrailoog_20180321_Grap				Ouffall009_20160321_Grab_Extre 3/21/2018		80321 3/2//2018		DgterTime	2/1/18	Date/pime		Date/Time	
	Client Name/Address	Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	Test America Contact. Urvashi Pate 17461 Denan Ave Suite #100 Irvine CA 92614 Tel 949-265-2269 Cell 949-333-9055	TestAmerica's services und Agreements 2015-15-7estA TestAmerica Laboratores à	Sampler		Page Page Page Page Page Page Page Page	L			Outfield 00B					Trip Blanks TB-20180321		Relinguished By	W. N	Relinquished By		Relinquished By	

3/29/2018

. . .

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Client: Haley & Aldrich, Inc.

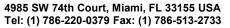
Login Number: 206580 List Number: 1 Creator: Escalante, Maria I

Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	True	
The cooler's custody seal, if present, is intact.	N/A	Not present
Sample custody seals, if present, are intact.	N/A	Not Present
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.	False	Refer to Job Narrative for details.
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 <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Job Number: 440-206580-1

List Source: TestAmerica Irvine







ND: Not Detected

Human Fecal Quantification ID

Detection and quantification of the fecal associated Human gene biomarker by real-time quantitative Polymerase Chain Reaction (qPCR) DNA analytical technology

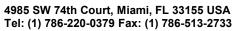
> Submitter: Haley and Aldrich Date Received: March 23, 2018 Report Generated: March 29, 2018

SM #	Sample ID	Analysis Requested	Marker Quantified (copies/100 ml)	DNA Analytical Results
SM-8C23021	Outfall009_20180321_Grab	Human Bacteroidetes ID: Dorei	ND	Not Detected

Limitation of Damages – Repayment of Service Price It is agreed that in the event of breach of any warranty or breach of contract, or negligence of Source Molecular Corporation, as well as its agents or representatives, the liability of the company shall be limited to the repayment, to the purchaser (submitter), of the individual analysis price paid by him/her to Source Molecular Corp. The company shall not be liable for any damages, either direct or consequential. Source Molecular Corp. provides analytical services on a PRIME CONTRACT BASIS ONLY. Terms are available upon request. The sample(s) cited in this report may be used for research purposes after an archiving period of 3 months from the date of this report. Research includes, but is not limited to internal validation studies and peer-reviewed research publications. Anonymity of the sample(s), including the exact geographic location will be maintained by assigning an arbitrary internal reference. These anonymous samples will only be gro uped by state / province of origin for research purposes. The client must contact Source Molecular in writing within 10 days from the date of this report if he/she does not wish for their submitted sample(s) to be used for any type of future research.

> **Revision 1.2** Effective Date 11/2/17







Preliminary Interpretation of Human Fecal "Quantification" ID Results

Detection and quantification of the fecal associated Human gene biomarker by real-time quantitative Polymerase Chain Reaction (qPCR) DNA analytical technology

> Submitter: Haley and Aldrich Date Received: March 23, 2018 Report Generated: March 29, 2018

	INTE	RPRETATION
Sample ID	Concentration of Human Fecal Pollution in Sample	Comment
Outfall009_20180321_Grab	Not Detected	Human fecal biomarker not detected

The opinions/interpretations identified/expressed in this report are outside the scope of this organization's A2LA Accreditation.

Non-Detect Results

In sample(s) classified as non-detect, the host-associated fecal gene biomarker(s) was either not detected in test replicates, one replicate was detected at a cycle threshold greater than 35 and the other was not, or one replicate was detected at a cycle threshold less than 35 and the other was not after repeated analysis.

Detected Results

In sample(s) classified as detected, the host-associated fecal gene biomarker(s) was detected in both test replicates suggesting that the host's fecal contamination is present in the sample(s). Copy number measurements reported are relative, not absolute, quantification.

Detected Not Quantified (DNQ) Results

In sample(s) classified as Detected Not Quantified (DNQ), the host-associated fecal biomarker was detected in both test replicates but in quantities below the limit of quantification. This result indicates that fecal indicators associated with the respective host was present in the sample(s) but in low concentrations.

Fecal Reference Samples

The client is encouraged to submit fecal samples from suspected sources in the surrounding area in order to gain a better understanding of the concentration of the host-associated biomarker with the regional population. A more precise interpretation would be available to the client with the submittal of such baseline samples.

Result Interpretations

Quantitative results are reported along with interpretations. Interpretations are given as "non-detect", "low concentration", "moderate concentration", or "high concentration" based on the concentration of the genetic markers found in the sample(s).

The presence of the biomarker does not signify the presence or absence of that form of fecal pollution conclusively. Only repeated sampling will enable you to draw more definitive conclusions as to the contributor(s) of fecal pollution.

Additional Testing

A portion of all samples has been frozen and will be archived for 3 months. The client is encouraged to perform additional tests on the sample(s) for other hosts suspected of contributing to the fecal contamination. A list of available tests can be found at **sourcemolecular.com/tests**

DNA Analytical Method Explanation

Water Samples: Each submitted water sample is filtered through 0.45 micron membrane filter(s). Each filter is placed in a separate, sterile 2ml disposable tube containing a unique mix of beads and lysis buffer. The sample is homogenized for 1min and the DNA extracted using the Generite DNA-EZ ST1 extraction kit (GeneRite, NJ), as per manufacturer's protocol. Devitations to these procedures may occur at the client's request.

Non-Water Samples: Each non-water sample submitted by the client is processed as per internal laboratory extraction procedures. An extracted DNA sample is proceed directly to PCR analysis. Details available upon request.

Amplifications to detect the target gene biomarker were run on an Applied Biosystems StepOnePlus real-time thermal cycler (Applied Biosystems, Foster City, CA) in a final reaction volume of 20ul sample extract, forward primer, reverse primer, probe and an optimized buffer. All assays are run in duplicate. Quantification is achieved by extrapolating target gene copy numbers from a standard curve generated from serial dilutions of known gene copy numbers.

For quality control purposes, a positive control and a negative control, were run alongside the sample(s) to ensure a properly functioning reaction and reveal any false negatives or false positives.

Human Bacteroidetes ID[™] Species: B. dorei

The **Human Bacteroidetes ID[™] Species**: *B. dorei* service targets the species *Bacteroides dorei*. *B. dorei* is an anaerobe that is frequently shed from the gastrointestinal tract and isolated from human feces worldwide. It is a newly discovered species that is widely distributed in the USA.^{1,2} The human-associated marker DNA sequence is located on the 16S rRNA gene of *B. dorei*.³ The marker is the microbial source tracking (MST) marker of choice for detecting human fecal pollution due to its exceptional sensitivity and specificity. Internal validations have been conducted on hundreds of sewage, septage, human and animal host fecal samples collected from throughout the U.S and archived in the Source Molecular fecal bank. The marker has also been evaluated in both inland and coastal waters. A recent, comprehensive, multi-laboratory MST method evaluation study, exploring the performance of current MST methods, concluded the *B. dorei* qPCR assay to be the top performing human-associated assay amongst those tested. The success and consistency of this marker in numerous studies around the world^{1,3,4} makes the **Human Bacteroidetes IDTM Species**: *B. dorei* service the primary service for identifying human fecal pollution at Source Molecular.

Fecal *Bacteroidetes* are considered for several reasons an interesting alternative to more traditional indicator organisms such as *E. coli* and *Enterococci.*⁵ Since they are strict anaerobes, they are indicative of recent fecal contamination when found in water systems. This is a particularly strong reference point when trying to determine recent outbreaks in fecal pollution. They are also more abundant in feces of warm-blooded animals than *E. coli* and *Enterococci*.

The Human Bacteroidetes IDTM service is designed around the principle that fecal *Bacteroidetes* are found in large quantities in feces of warm-blooded animals.^{3,5,6,7,8} Furthermore, certain strains of *Bacteroidetes* have been found to be associated with humans.^{3,6} As such, these bacterial strains can be used as indicators of human fecal contamination.

Accuracy of the results is possible because the method amplifies DNA into a large number of small copies of the gene biomarker of interest. This is accomplished with small pieces of DNA called primers that are complementary and specific to the unique *B. dorei* DNA sequence. Through a heating process called thermal cycling, the double stranded DNA is denatured, hybridized to the complementary primers and amplified to create many copies of the DNA fragment desired. If the primers are successful in finding a site on the DNA fragment that is specific to the *B. dorei* DNA sequence, then billions of copies of the DNA fragment will be available and detected in real-time. The accumulation of DNA product is plotted as an amplification curve by the qPCR software. The absence of an amplification curve indicates that the *B. dorei* gene biomarker is not detected in the water sample because it is either not present or present at concentrations below the analytical detection limit.

To strengthen the validity of the results, additional tests targeting other high-ranking, human-associated *Bacteroidetes* species should be performed, such as

Human Bacteroidetes ID[™] Species: B. stercoris,

Human Bacteroidetes ID[™] Species: B. fragilis, and

Human Bacteroidetes ID[™] Species: B. thetaiotaomicron.

¹Boehm, A., Fuhrman, J., Mrse, R., Grant, S. **Tiered approach for identification of a human fecal pollution source at a recreational beach: case study at Avalon Bay, Catalina Island, California**. Environ Sci Technol. 2003 37: 673–680. ²Bakir, M., Sakamoto, M., Kitahara, M., Matsumoto, M., Benno, Y. **Bacteroides dorei sp. nov., isolated from human faeces**. Int. J. Syst. Evol. Microbiol.

2006 56: 1639–1641. ³ Bernhard, A., Field, K. A PCR assay to discriminate human and ruminant feces on the basis of host differences in Bacteroides-Prevotella genes

encoding 16S rRNA. Appl. Environ. Microbiol. 2000b 66: 4571-4574. ⁴Ahmed, w., Masters, N., Toze, S. Consistency in the host specificity and host sensitivity of the Bacteroides HF183 marker for sewage pollution tracking. Lett. Appl. Microbiol. 2012 55: 283-289.

⁵ Scott, T., Rose, J., Jenkins, T., Farrah, S., Lukasik, J. Microbial Source Tracking: Current Methodology and Future Directions. Appl. Environ. Microbiol. 2002 68: 5796-5803.

⁶ Bernhard, A., Field, K. **Identification of nonpoint sources of fecal pollution in coastal waters by using host-specific 16S ribosomal DNA genetic** markers from fecal anaerobes. Appl. Environ. Microbiol. 2000a 66: 1587-1594.

⁷ Fogarty, L., Voytek, M. A Comparison of Bacteroides-Prevotella 16S rRNA Genetic Markers for Fecal Samples from Different Animal Species. Appl. Environ. Microbiol. 2005 71: 5999-6007.

⁸ Dick, L., Bernhard, A., Brodeur, T., Santo Domingo, J., *et al.* Host Distributions of Uncultivated Fecal Bacteroidales Bacteria Reveal Genetic Markers for Fecal Source Identification. Appl. Environ. Microbiol. 2005 71: 3184-3191.

DATA VALIDATION REPORT

Boeing SSFL Outfall 009

SAMPLE DELIVERY GROUP: 440-206741-1

Prepared for

Haley & Aldrich

April 4, 2018

MEC^x, Inc. 8864 Interchange Drive Houston, Texas 77054

www.mecx.net





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TABLES

1 – Sample Identification

2 – Data Qualifier Reference

3 - Reason Code Reference



I. INTRODUCTION

Task Order Title: Boeing SSFL Outfall 009

Contract: 40458-078 and 40458-083

MEC^x Project No.: 1272.003D.01 002

Sample Delivery Group: 440-206741-1

Project Manager: K. Miller

Matrix: Water

QC Level: IV

No. of Samples: 2

No. of Reanalyses/Dilutions: 0

Laboratory: TestAmerica - Irvine

TABLE 1 - SAMPLE IDENTIFICATION

Sample Name	Lab Sample Name	Matrix	Collection	Method
Outfall009_20180322_Comp	440-206741-1	Water	3/22/2018 3:30:00 PM	E200.7, E200.8, E218.6, E245.1, E300, SM2340B, SM2540C/D
Outfall009_20180322_Comp_F	440-206741-2	Water	3/22/2018 3:30:00 PM	E200.7, E200.8, E245.1, SM2340B



II. SAMPLE MANAGEMENT

According to the case narrative, sample condition upon receipt form and the chain-of-custody (COC) provided by the laboratory for sample delivery group (SDG) 440-206741-1:

- The laboratory received the samples in this sample delivery group (SDG) on ice and within the temperature limits of less than 6 degrees Celsius (°C) and greater than 0°C.
- The laboratory received the sample containers intact and properly preserved, as applicable.
- Field and laboratory personnel signed and dated the COC.
- According to the sample receipt form, custody seals were absent; however, the sample receipt checklist indicated that the containers did not appear to have been compromised or tampered with.
- Sample Outfall009_20180322_Comp_F was filtered and preserved upon receipt at the laboratory.
- A borosilicate vial was not provided for total mercury analysis. The laboratory obtained the aliquot for this analysis from the 1 L poly container, as directed on the COC.

MEC^x noted the anomaly regarding sample management identified below.

- Corrections to the COC were not initialed and/or dated.
- Sample collection times were not recorded on the COC.



TABLE 2 - DATA QUALIFIER REFERENCE

Qualifier	Organics	Inorganics
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit. For dioxins or PCB congeners, the associated value is the quantitation limit or the estimated detection limit.	The analyte was analyzed for, but was not detected above the reported sample quantitation limit. For perchlorate, the associated value is the sample detection limit or the quantitation limit.
J	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
J+	The result is an estimated quantity, but the result may be biased high.	The result is an estimated quantity, but the result may be biased high.
J-	The result is an estimated quantity, but the result may be biased low.	The result is an estimated quantity, but the result may be biased low.
UJ	The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate and may inaccurate or imprecise.	The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate and may inaccurate or imprecise.
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."	Not applicable.
NJ	The analyte has been "tentatively identified" or "presumptively" as present and the associated numerical value is the estimated concentration in the sample.	Not applicable.
R	The data are unusable. The sample results are rejected due to serious deficiencies in meeting quality control criteria. The analyte may or may not be present in the sample.	The data are unusable. The sample results are rejected due to serious deficiencies in meeting quality control criteria. The analyte may or may not be present in the sample.



TABLE 3 - REASON CODE REFERENCE

Reason Code	Organic	Inorganic
Н	Holding time was exceeded.	Holding time was exceeded.
S	Surrogate recovery was outside control limits.	Not applicable.
С	Calibration percent relative standard deviation (%RSD) or percent deviation (%D) were noncompliant, or coefficient of determination (r ²) was <0.990.	Correlation coefficient (r) was <0.995.
R	Calibration relative response factor (RRF) was <0.05.	Percent recovery (%R) for calibration was outside control limits.
В	The analyte was detected in an associated blank as well as in the sample.	The analyte was detected in an associated blank as well as in the sample.
L	Laboratory control sample (LCS) or /LCS duplicate (LCSD) %R was outside the control limits.	LCS or LCSD %R was outside the control limits.
L1	LCS/LCSD relative percent difference (RPD) was outside the control limit.	LCS/LCSD RPD was outside the control limit.
Q	Matrix spike/matrix spike duplicate (MS/MSD) %R was outside control limits.	MS or MSD %R was outside the control limit.
Q1	MS/MSD RPD was outside the control limit.	MS/MSD RPD was outside the control limit.
E	Result was reported as an estimated maximum possible concentration (EMPC).	Laboratory duplicate RPD was outside the control limit.
I	Internal standard recovery was outside control limits.	Inductively coupled plasma (ICP) interference check standard (ICSA/ICSAB) result was outside control limits.
11	Not applicable.	ICP mass spectrometer (ICPMS) internal standard recovery was outside control limits.
А	Not applicable.	Serial dilution %D was outside control limits.
М	Tuning (BFB or DFTPP) was not compliant.	ICPMS tune was not compliant.
Т	The analyte was detected in an associated trip blank as well as in the sample.	Not applicable.
+	False positive – reported compound was not present.	False positive – reported compound was not present.
-	False negative – compound was present but not reported.	False negative – compound was present but not reported.



Reason Code	Organic	Inorganic
F	The analyte was detected in an associated field blank (FB) or equipment blank (EB) as well as in the sample.	The analyte was detected in an associated field blank (FB) or equipment blank (EB) as well as in the sample.
F1	Field duplicate RPD was outside the control limit.	Field duplicate RPD was outside the control limit.
\$	The reviewer corrected the reported result and/or other information.	The reviewer corrected the reported result and/or other information.
D	The analysis was not used because another more technically sound analysis was available.	The analysis was not used because another more technically sound analysis was available.
Р	Instrument performance not compliant.	Post digestion spike recovery was outside of control limits.
DNQ	The reported result is above the method detection limit but is less than the reporting limit.	The reported result is above the method detection limit but is less than the reporting limit.
*11, *111	Other problems identified in the data are described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found.	Other problems identified in the data are described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found.



III. EPA METHODS 200.8, 200.7, 245.1 AND 2340B — METALS, MERCURY AND HARDNESS

Marcia Hilchey of MEC^x reviewed the SDG on April 4, 2018.

The samples listed in Table 1 for these analyses were validated based on the guidelines outlined in the MEC^x Data Validation Procedure for Metals (DVP-5, Rev. 2), EPA Methods 200.8, 200.7, 245.1 and Standard Methods for the Examination of Water and Wastewater 2340B, and the National Functional Guidelines for Inorganic Data Review (2014).

III.1. HOLDING TIMES

The analytical holding times, 28 days for mercury and six months for the metals, were met.

III.2. MS TUNING AND CALIBRATION

ICPMS mass calibrations were within 0.1 atomic mass units of the true value and the %RSDs were \leq 5%.

QAPP calibration criteria were met. A blank and two to four standards were used for calibration of all target analytes. The initial calibration r values were \geq 0.995. CRQL recoveries were within the laboratory control limits of 50-150%. ICV and CCV recoveries were within NFG control limits of 90-110%.

III.3. QUALITY CONTROL SAMPLES

III.3.1. METHOD BLANKS

There were no target analyte detections in the calibration blanks or method blanks of sufficient concentration to warrant qualification of site sample results.

III.3.2. INTERFERENCE CHECK SAMPLES:

ICP-MS ICSAB recoveries were within the control limits of 80-120% or $\pm 2x$ the reporting limit, whichever is greater. All of the interferents were present in the site samples at concentrations less than half that of the ICSAs, therefore, the samples were not further assessed for matrix interference.

III.3.3. LABORATORY CONTROL SAMPLES

Laboratory control sample recoveries were within the method control limits of 85-115%.

III.3.4. LABORATORY DUPLICATES:

Laboratory duplicate analyses were not performed on a sample in this SDG.

III.3.5. MATRIX SPIKE/MATRIX SPIKE DUPLICATE

MS/MSD analyses were performed on both samples in this SDG for Methods 200.7 and 200.8. MS/MSD analyses were performed on sample Outfall009_20180322_Comp_F, and MS analysis was performed on sample Outfall009_20180322_Comp for Method 245.1. Results were not assessed when the parent sample concentration exceeded the spike amount by 4×. Recoveries and RPDs were within the method control limits of 70-130% and \leq 20%, respectively with the exception of total aluminum recoveries (155%/165%). The result for total aluminum was qualified as estimated with high bias (J+).

III.4. SERIAL DILUTION

No serial dilution analyses were reported.



III.1. INTERNAL STANDARDS PERFORMANCE

Sample internal standard recoveries were within 60-125% of the calibration blank.

III.2. COMPOUND QUANTIFICATION AND REPORTED DETECTION LIMITS

Calculations were verified and the reported sample results were verified against the raw data. No transcription errors or calculation errors were noted. Detects between the MDL and the RL were qualified as estimated (J) and coded with DNQ to comply with the NPDES permit. Nondetects are valid to the MDL.

III.3. FIELD QC SAMPLES

MEC^x evaluated field QC samples, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. MEC^x used the remaining detects to evaluate the associated site samples. Findings associated with field QC samples are summarized below:

III.3.1. FIELD BLANKS AND EQUIPMENT BLANKS

Field blank or equipment blank samples were not identified for this SDG.

III.3.2. FIELD DUPLICATES

There were no field duplicate samples identified for this SDG.

IV. METHODS SM2540D, SM2540C, EPA 300.0, EPA 218.6— TOTAL SUSPENDED SOLIDS (TSS), TOTAL DISSOLVED SOLIDS (TDS), ANIONS, AND HEXAVALENT CHROMIUM

Marcia Hilchey of MEC^x reviewed the SDG on April 5, 2018.

The sample listed in Table 1 for these analyses was validated based on the guidelines outlined in the MEC^{X} Data Validation Procedure for General Minerals (DVP-6, Rev. 1), Standard Methods for the Examination of Water and Wastewater 2540D and 2540C, EPA Methods 300.0 and 218.6, and the National Functional Guidelines for Inorganic Superfund Data Review (2014).

IV.1. HOLDING TIMES

The analytical holding times as listed below were met:

- 7 days for TDS
- 7 days for TSS
- 28 days for chloride, fluoride and sulfate
- 48 hours for nitrate as N and nitrite as N
- 24 hours for hexavalent chromium

IV.2. CALIBRATION

Initial calibration criteria were met. The initial calibration r^2 values were ≥ 0.995 . The analytical balance was properly calibrated. Initial (ICV) and continuing (CCV) calibration recoveries were within QAPP control limits for hexavalent chromium, and CCV recoveries were within QAPP control limits for anions. ICV



recoveries for chloride (91%) and nitrate as N (94%) exceeded QAPP control limits of 95-105%. Accepted sample results for chloride, nitrate as N, and nitrite/nitrate were qualified as estimated with low bias (J-).

IV.3.QUALITY CONTROL SAMPLES

IV.3.1. METHOD BLANKS

Method blanks and calibration blanks had no detects.

IV.3.2. LABORATORY CONTROL SAMPLES

Laboratory control sample recoveries met QAPP control limits.

IV.3.3. LABORATORY DUPLICATES

Laboratory duplicate analyses were performed on the sample in this SDG for TSS and TDS. QAPP RPD requirements were met.

IV.3.4. MATRIX SPIKE/MATRIX SPIKE DUPLICATE

MS/MSD analyses were performed on the sample in this SDG for anions and hexavalent chromium. QAPP recovery and RPD requirements were met.

IV.4. SAMPLE RESULT VERIFICATION

Calculations were verified and the reported sample results were verified against the raw data. No transcription errors or calculation errors were noted. Detects between the MDL and the RL were qualified as estimated (J) and coded with DNQ to comply with the NPDES permit. Nondetects are valid to the MDL.

The laboratory analyzed and reported results for both diluted and undiluted analyses for chloride, nitrate and N, and sulfate. The results of the undiluted analyses were accepted and the results of the diluted analyses were rejected (R) as there were no technical differences between the analyses.

IV.5. FIELD QC SAMPLES

MEC^x evaluated field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. MEC^x used the remaining detects to evaluate the associated site sample. Findings associated with field QC samples are summarized below.

IV.5.1. FIELD BLANKS AND EQUIPMENT BLANKS

Field blank or equipment blank samples were not identified for this SDG.

IV.5.2. FIELD DUPLICATES

Field duplicate samples were not identified in this SDG.

Validated Sample Result Forms: 4402067411

Analysis Method E200.7

Sample Name Outfall009 20180322 Comp Matrix Type: WM Result Type: TRG Sample Date: 3/22/2018 3:30:00 PM Validation Level: 8 Lab Sample Name: 440-206741-1 Analyte Fraction: CAS No Result RL MDL Result Lab Validation Validation Value Units Qualifier Qualifier Notes Aluminum Т 7429-90-5 800 100 50 ug/L J+ Q U Arsenic Т 7440-38-2 10 8.9 ug/L U Beryllium Т 7440-41-7 2.0 1.0 ug/L U U

Boron	Т	7440-42-8	0.041	0.050	0.025	mg/L	J,DX	J	DNQ
Chromium	Т	7440-47-3		5.0	2.5	ug/L	U	U	
Iron	Т	7439-89-6	0.77	0.10	0.050	mg/L			
Nickel	Т	7440-02-0		10	5.0	ug/L	U	U	
Silver	Т	7440-22-4		10	5.0	ug/L	U	U	
Vanadium	Т	7440-62-2		10	5.0	ug/L	U	U	
Zinc	Т	7440-66-6		20	12	ug/L	U	U	

Sample Name Outfall009_20180322_Comp_F Matrix Type: WM

Result Type: TRG

Sample Date: 3/22/2018 3:30:00 PM Validation Level: 8

Lab Sample Name: 440-206741-2

Analyte	Fractio	on: CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Aluminum	D	7429-90-5	140	100	50	ug/L			
Arsenic	D	7440-38-2		10	8.9	ug/L	U	U	
Beryllium	D	7440-41-7		2.0	1.0	ug/L	U	U	
Boron	D	7440-42-8	0.044	0.050	0.025	mg/L	J,DX	J	DNQ
Chromium	D	7440-47-3		5.0	2.5	ug/L	U	U	
Iron	D	7439-89-6	0.16	0.10	0.050	mg/L			
Nickel	D	7440-02-0		10	5.0	ug/L	U	U	
Silver	D	7440-22-4		10	5.0	ug/L	U	U	
Vanadium	D	7440-62-2		10	5.0	ug/L	U	U	
Zinc	D	7440-66-6		20	12	ug/L	U	U	
Analysia Mathad	ED	າດ ໑							

Analysis Method E200.8

Sample Name Outfall009 20180322 Comp Matrix Type: WM

Result Type: TRG

Sample Date: 3/22/2018 3:30:00 PM Validation Level: 8

Lab Sample Name: 440-206741-1

Analyte	Fractio	n: CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Antimony	Т	7440-36-0	0.69	2.0	0.50	ug/L	J,DX	J	DNQ
Cadmium	Т	7440-43-9		1.0	0.25	ug/L	U	U	

Thursday, April 5, 2018

Copper	Т	7440-50-8	5.8	2.0	0.50	ug/L			
Lead	Т	7439-92-1	2.1	1.0	0.50	ug/L			
Selenium	Т	7782-49-2		2.0	0.50	ug/L	U	U	
Thallium	Т	7440-28-0		1.0	0.50	ug/L	U	U	
Sample Name Outfall(009_2018	0322_Comp_F	Ma	trix Type:	WM	Res	ult Type: TI	RG	
Sample Date: 3/22/2018 3:3	30:00 PM	Valida	tion Level: 8						
Lab Sample Name: 440	0-206741-2								
Analyte	Fractio	on: CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Antimony	D	7440-36-0	1.3	2.0	0.50	ug/L	J,DX	J	DNQ
Cadmium	D	7440-43-9		1.0	0.25	ug/L	U	U	
Copper	D	7440-50-8	4.9	2.0	0.50	ug/L			
Lead	D	7439-92-1	0.52	1.0	0.50	ug/L	J,DX	J	DNQ
Selenium	D	7782-49-2		2.0	0.50	ug/L	U	U	
Thallium	D	7440-28-0		1.0	0.50	ug/L	U	U	
Sample Name Outfall(00 2018	18.6	Ma	trix Type:	WM	Res	ult Type• T	26	
-		0322_Comp	Ma ation Level: ⁸	trix Type:	WM	Res	ult Type: TI	RG	
Sample Date: 3/22/2018 3:3 Lab Sample Name: 440	30:00 PM 0-206741-1	0322_Comp			WM MDL	Result Units	ult Type: ^{TI} Lab Qualifier		Validation Notes
Sample Date: 3/22/2018 3:: Lab Sample Name: 440 Analyte	30:00 PM 0-206741-1	0322_Comp Valida	ntion Level: 8 Result			Result	Lab	Validation	
Sample Date: 3/22/2018 3:: Lab Sample Name: 440 Analyte	30:00 PM 0-206741-1 Fractio T	0322_Comp Valida on: CAS No 18540-29-9	ntion Level: 8 Result	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	
Sample Date: 3/22/2018 3:3 Lab Sample Name: 440 Analyte Chromium VI (Hexavalent)	30:00 PM D-206741-1 Fractio T E24	0322_Comp Valida on: CAS No 18540-29-9	ntion Level: 8 Result Value	RL	MDL 0.25	Result Units ug/L	Lab Qualifier	Validation Qualifier U	
Sample Date: 3/22/2018 3:: Lab Sample Name: 44(Analyte Chromium VI (Hexavalent) Analysis Method Sample Name Outfall(30:00 PM D-206741-1 Fractio T E24 D09_2018	0322_Comp Valida on: CAS No 18540-29-9 15.1 0322_Comp	ntion Level: 8 Result Value	RL 1.0 trix Type:	MDL 0.25	Result Units ug/L	Lab Qualifier U	Validation Qualifier U	
Sample Date: 3/22/2018 3:3 Lab Sample Name: 44(Analyte Chromium VI (Hexavalent) Analysis Method Sample Name Outfall(Sample Date: 3/22/2018 3:3	30:00 PM D-206741-1 Fractio T E24 D09_2018	0322_Comp Valida on: CAS No 18540-29-9 15.1 0322_Comp	ntion Level: 8 Result Value Ma	RL 1.0 trix Type:	MDL 0.25	Result Units ug/L	Lab Qualifier U	Validation Qualifier U	
Sample Date: 3/22/2018 3:3 Lab Sample Name: 440 Analyte Chromium VI (Hexavalent) Analysis Method Sample Name Outfall(Sample Date: 3/22/2018 3:3 Lab Sample Name: 440	30:00 PM D-206741-1 Fractio T <i>E24</i> D09_2018 30:00 PM D-206741-1	0322_Comp Valida on: CAS No 18540-29-9 15.1 0322_Comp	ntion Level: 8 Result Value Ma	RL 1.0 trix Type:	MDL 0.25	Result Units ug/L	Lab Qualifier U	Validation Qualifier U	Notes
Sample Date: 3/22/2018 3:3 Lab Sample Name: 440 Analyte Chromium VI (Hexavalent) Analysis Method Sample Name Outfall(Sample Date: 3/22/2018 3:3 Lab Sample Name: 440 Analyte	30:00 PM D-206741-1 Fractio T <i>E24</i> D09_2018 30:00 PM D-206741-1	0322_Comp Valida on: CAS No 18540-29-9 25.] 0322_Comp Valida	ntion Level: 8 Result Value Ma ntion Level: 8 Result	RL 1.0 trix Type:	MDL 0.25 WM	Result Units ug/L Result	Lab Qualifier U ult Type: Ti Lab	Validation Qualifier U RG Validation	Notes
Sample Date: 3/22/2018 3:3 Lab Sample Name: 440 Analyte Chromium VI (Hexavalent) Analysis Method Sample Name Outfall(Sample Date: 3/22/2018 3:3 Lab Sample Name: 440 Analyte Mercury	30:00 PM D-206741-1 Fractio T E24 009_2018 30:00 PM D-206741-1 Fractio	0322_Comp Valida on: CAS No 18540-29-9 (5.] 0322_Comp Valida on: CAS No	ntion Level: 8 Result Value Ma ntion Level: 8 Result Value	RL 1.0 trix Type: RL	MDL 0.25 WM	Result ug/L Result Units ug/L	Lab Qualifier U ult Type: Ti Lab Qualifier	Validation Qualifier U RG Validation Qualifier U	Notes
Sample Date: 3/22/2018 3:3 Lab Sample Name: 440 Analyte Chromium VI (Hexavalent) <i>Analysis Method</i> Sample Name Outfall(Sample Date: 3/22/2018 3:3 Lab Sample Name: 440 Analyte Mercury Sample Name Outfall(30:00 PM D-206741-1 Fractio T E224 D09_2018 30:00 PM D-206741-1 Fractio T 009_2018	0322_Comp Valida on: CAS No 18540-29-9 25.] 0322_Comp Valida on: CAS No 7439-97-6 0322_Comp_F	ntion Level: 8 Result Value Ma ntion Level: 8 Result Value	RL 1.0 trix Type: RL 0.20 trix Type:	MDL 0.25 WM MDL 0.10	Result ug/L Result Units ug/L	Lab Qualifier U ult Type: Ti Lab Qualifier U	Validation Qualifier U RG Validation Qualifier U	Notes
Sample Date: 3/22/2018 3:3 Lab Sample Name: 440 Analyte Chromium VI (Hexavalent) <i>Analysis Method</i> Sample Name Outfall(Sample Date: 3/22/2018 3:3 Lab Sample Name: 440 Analyte Mercury Sample Name Outfall(Sample Date: 3/22/2018 3:3	30:00 PM D-206741-1 Fractio T E224 D09_2018 30:00 PM D-206741-1 Fractio T 009_2018	0322_Comp Valida on: CAS No 18540-29-9 25.] 0322_Comp Valida on: CAS No 7439-97-6 0322_Comp_F	ntion Level: 8 Result Ma ntion Level: 8 Result Value Ma	RL 1.0 trix Type: RL 0.20 trix Type:	MDL 0.25 WM MDL 0.10	Result ug/L Result Units ug/L	Lab Qualifier U ult Type: Ti Lab Qualifier U	Validation Qualifier U RG Validation Qualifier U	Notes
Sample Date: 3/22/2018 3:3 Lab Sample Name: 440 Analyte Chromium VI (Hexavalent) Analysis Method Sample Name Outfall(Sample Date: 3/22/2018 3:3 Lab Sample Name: 440 Analyte Mercury Sample Name Outfall(Sample Date: 3/22/2018 3:3	30:00 PM D-206741-1 Fractio T E224 009_2018 30:00 PM D-206741-1 Fractio T 009_2018 30:00 PM D-206741-2	0322_Comp Valida on: CAS No 18540-29-9 25.] 0322_Comp Valida on: CAS No 7439-97-6 0322_Comp_F	ntion Level: 8 Result Ma ntion Level: 8 Result Value Ma	RL 1.0 trix Type: RL 0.20 trix Type:	MDL 0.25 WM MDL 0.10	Result ug/L Result Units ug/L	Lab Qualifier U ult Type: Ti Lab Qualifier U	Validation Qualifier U RG Validation Qualifier U	Notes

Analysis Method E300

Sample Name Outfa	11009_2018	0322_Comp	Ma	trix Type:	WM	Res	ult Type: Th	RG	
Sample Date: 3/22/2018	3:30:00 PM	Validati	ion Level: 8						
Lab Sample Name:	440-206741-1								
Analyte	Fractio	n: CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Chloride	Ν	16887-00-6	2.3	0.50	0.25	mg/L		J-	R
Chloride	Ν	16887-00-6	2.7	2.5	1.3	mg/L		R	D
Nitrate (as N)	Ν	14797-55-8	0.42	0.11	0.055	mg/L		J-	R
Nitrate (as N)	Ν	14797-55-8	0.43	0.55	0.28	mg/L	J,DX	R	D
Nitrite/Nitrate	Ν	NO2NO3	0.42	0.15	0.070	mg/L		J-	R
Sulfate	Ν	14808-79-8	2.7	0.50	0.25	mg/L			
Sulfate	Ν	14808-79-8	2.7	2.5	1.3	mg/L		R	D
Analysis Method	d SM2	2340							
Sample Name Outfa	11009_2018	0322_Comp	Ma	trix Type:	WM	Res	ult Type: Th	۲G	
Sample Date: 3/22/2018	3:30:00 PM	 Validati	ion Level: 8						
-	440 206741 1								
Lab Sample Name:	440-206741-1								
Lab Sample Name:		n: CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Lab Sample Name: Analyte		n: CAS No HARDNESSCA CO3		RL	MDL 0.17				Validation Notes
Lab Sample Name: Analyte	Fractio T	HARDNESSCA CO3	Value 20			Units mg/L		Qualifier	
Lab Sample Name: Analyte Hardness as CaCO3 Sample Name Outfa	Fractio T .11009_2018	HARDNESSCA CO3 0322_Comp_F	Value 20	0.33	0.17	Units mg/L	Qualifier	Qualifier	
Lab Sample Name: Analyte Hardness as CaCO3 Sample Name Outfa Sample Date: 3/22/2018	Fractio T .11009_2018	HARDNESSCA CO3 0322_Comp_F	Value 20 Ma	0.33	0.17	Units mg/L	Qualifier	Qualifier	
Lab Sample Name: Analyte Hardness as CaCO3 Sample Name Outfa Sample Date: 3/22/2018 Lab Sample Name:	Fractio T .11009_2018 3:30:00 PM 440-206741-2	HARDNESSCA CO3 0322_Comp_F	Value 20 Ma	0.33	0.17	Units mg/L	Qualifier	Qualifier RG	
Lab Sample Name: Analyte Hardness as CaCO3 Sample Name Outfa Sample Date: 3/22/2018 Lab Sample Name: Analyte	Fractio T .11009_2018 3:30:00 PM 440-206741-2	HARDNESSCA CO3 0322_Comp_F Validati	Value 20 Ma ion Level: 8 Result	0.33 trix Type:	0.17 WM	Units mg/L Result	Qualifier ult Type: TF Lab	Qualifier RG Validation	Notes
Lab Sample Name: Analyte Hardness as CaCO3 Sample Name Outfa Sample Date: 3/22/2018 Lab Sample Name: Analyte	Fractio T .11009_20180 3:30:00 PM 440-206741-2 Fractio D	HARDNESSCA CO3 0322_Comp_F Validati n: CAS No HARDNESSCA	Value 20 Ma ion Level: 8 Result Value	0.33 trix Type: RL	0.17 WM MDL	Units mg/L Result Units	Qualifier ult Type: TF Lab	Qualifier RG Validation	Notes
Lab Sample Name: Analyte Hardness as CaCO3 Sample Name Outfa Sample Date: 3/22/2018 Lab Sample Name: Analyte Hardness as CaCO3	Fractio T .11009_20180 3:30:00 PM 440-206741-2 Fractio D .1	HARDNESSCA CO3 D322_Comp_F Validati n: CAS No HARDNESSCA CO3 2540C	Value 20 Ma ion Level: 8 Result Value 19	0.33 trix Type: RL	0.17 WM MDL 0.17	Units mg/L Result Units mg/L	Qualifier ult Type: TF Lab	Qualifier RG Validation Qualifier	Notes
Lab Sample Name: Analyte Hardness as CaCO3 Sample Name Outfa Sample Date: 3/22/2018 Lab Sample Name: Analyte Hardness as CaCO3 Analysis Method Sample Name Outfa	Fractio T .11009_2018(3:30:00 PM 440-206741-2 Fractio D d SM2 .11009_2018(HARDNESSCA CO3 D322_Comp_F Validati n: CAS No HARDNESSCA CO3 2540C D322_Comp	Value 20 Ma ion Level: 8 Result Value 19	0.33 trix Type: RL 0.33 trix Type:	0.17 WM MDL 0.17	Units mg/L Result Units mg/L	Qualifier ult Type: TH Lab Qualifier	Qualifier RG Validation Qualifier	Notes
Lab Sample Name: Analyte Hardness as CaCO3 Sample Name Outfa Sample Date: 3/22/2018 Lab Sample Name: Analyte Hardness as CaCO3 Analysis Method Sample Name Outfa Sample Date: 3/22/2018	Fractio T .11009_2018(3:30:00 PM 440-206741-2 Fractio D d SM2 .11009_2018(HARDNESSCA CO3 D322_Comp_F Validati n: CAS No HARDNESSCA CO3 2540C D322_Comp	Value 20 Ma ion Level: 8 Result Value 19 Ma	0.33 trix Type: RL 0.33 trix Type:	0.17 WM MDL 0.17	Units mg/L Result Units mg/L	Qualifier ult Type: TH Lab Qualifier	Qualifier RG Validation Qualifier	Notes
Lab Sample Name: Analyte Hardness as CaCO3 Sample Name Outfa Sample Date: 3/22/2018 Lab Sample Name: Analyte Hardness as CaCO3 Analysis Method Sample Name Outfa Sample Date: 3/22/2018	Fractio T .11009_20180 3:30:00 PM 440-206741-2 Fractio D d SM2 .11009_20180 3:30:00 PM 440-206741-1	HARDNESSCA CO3 D322_Comp_F Validati n: CAS No HARDNESSCA CO3 2540C D322_Comp	Value 20 Ma ion Level: 8 Result Value 19 Ma	0.33 trix Type: RL 0.33 trix Type:	0.17 WM MDL 0.17	Units mg/L Result Units mg/L	Qualifier ult Type: TH Lab Qualifier	Qualifier RG Validation Qualifier	Notes Validation Notes

Analysis Method	SM2.	540D							
Sample Name Outfall(09_201803	322_Comp	Ma	trix Type:	WM	Res	ult Type: TI	RG	
Sample Date: 3/22/2018 3:3	0:00 PM	Valida	ation Level: 8						
Lab Sample Name: 440	-206741-1								
Analyte	Fraction	: CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Total Suspended Solids (TSS)	Ν	TSS	9.0	2.0	1.0	mg/L			



THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Irvine 17461 Derian Ave Suite 100 Irvine, CA 92614-5817 Tel: (949)261-1022

TestAmerica Job ID: 440-206741-1

Client Project/Site: Annual Outfall 009 Comp Revision: 1

For:

Haley & Aldrich, Inc. 400 E Van Buren St. Suite 545 Phoenix, Arizona 85004

Attn: Katherine Miller

Usli fatel

Authorized for release by: 4/5/2018 4:28:28 PM Urvashi Patel, Manager of Project Management (949)261-1022 urvashi.patel@testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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.



I certify under penalty of perjury that the information contained in this report and all attachments was produced in accordance with the indicated methods and laboratory standard operating procedures, except as noted, and are complete and accurate to the best of my knowledge and belief. Subcontract laboratory reports that are attached have been evaluated for completeness and quality control acceptability.

Ushi fatel

Urvashi Patel Manager of Project Management 4/5/2018 4:28:28 PM

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Sample Summary

Client: Haley & Aldrich, Inc. Project/Site: Annual Outfall 009 Comp

TestAmerica Job ID: 440-206741-1

Lab Sample ID	Client Sample ID	Matrix	Collected Received
440-206741-1	Outfall009_20180322_Comp	Water	03/22/18 15:30 03/22/18 20:00
440-206741-2	Outfall009_20180322_Comp_F	Water	03/22/18 15:30 03/22/18 20:00

Job ID: 440-206741-1

Laboratory: TestAmerica Irvine

Narrative

Job Narrative 440-206741-1

Comments

Revision created to report Silver by 200.8 instead of 200.7

Receipt

The samples were received on 3/22/2018 8:00 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 5 coolers at receipt time were 2.1° C, 2.1° C, 2.3° C, 3.5° C and 3.6° C.

GC/MS Semi VOA

Method(s) 625: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 440-466272 and analytical batch 440-466864 were outside control limits. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method(s) 625: The matrix spike / matrix spike duplicate (MS/MSD) precision for preparation batch 440-466272 and analytical batch 440-466864 was outside control limits. Sample matrix interference is suspected.

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

HPLC/IC

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

GC Semi VOA

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

Metals

Method(s) 200.7 Rev 4.4: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 440-466017 and analytical batch 440-466147 were outside control limits for Aluminum. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method(s) 200.7 Rev 4.4: The method blank for preparation batch 440-465710 and 440-466029 and analytical batch 440-466147 contained Calcium above the method detection limit (MDL). Associated samples were not re-analyzed because results were less than the reporting limit (RL) OR practical quantitation limit (PQL).

Method(s) 200.8: The following samples requested dissolved metals and were not filtered in the field: Outfall009_20180322_Comp_F (440-206741-2). These samples were filtered and preserved upon receipt to the laboratory.

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

General Chemistry

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

Organic Prep

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

Client Sample ID: Outfall009_20180322_Comp Date Collected: 03/22/18 15:30 Date Received: 03/22/18 20:00

Lab Sample ID: 440-206741-1 Matrix: Water

AcenaphtheneNDAcenaphthyleneNDAnthraceneNDBenzd[a]anthraceneNDBenzo[a]anthraceneNDBenzo[b]fluorantheneNDBenzo[a]pyreneNDBis(2-chloroethoxy)methaneNDBis(2-chloroethoxy)methaneNDBis(2-chloroethoxy)methaneNDBis(2-chloroethyl)etherNDBis(2-chloroethyl)phthalateND4-Bromophenyl phenyl etherNDButyl benzyl phthalateND2-Chloro-3-methylphenolND2-ChlorophenolND2-ChlorophenolNDDibenz(a,h)anthraceneNDDibenz(a,h)anthraceneND1,3-DichlorobenzeneND3,3'-DichlorobenzeneND2,4-DinklorophenolND2,4-DinklorophenolND2,4-DimethylphenolND2,4-DimethylphenolND2,4-DinitrophenolND2,4-DinitrophenolND2,4-DinitrophenolND2,4-DinitrophenolND2,4-DinitrophenolND2,4-DinitrophenolND2,4-DinitrophenolND2,4-DinitrophenolND2,4-DinitrophenolND2,4-DinitrophenolND2,4-DinitrophenolND2,4-DinitrophenolND2,4-DinitrophenolND2,4-DinitrophenolND2,4-DinitrophenolND2,4-DinitrophenolND2,4-DinitrophenolND2,4-DinitrophenolND <th>0.478 0.478 0.478 9.57 4.78 1.91 0.478 1.91 0.478 0.478 4.78 0.957 4.78 1.91 0.478 0.957 0.478 0.957 0.478 0.478 0.478 1.91</th> <th>1.91 0.957 0.239 0.478 0.191 0.191 1.91 0.478 1.91 0.191 0.191 0.478</th> <th>ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L</th> <th> 03/27/18 09:48 03/27/18 09:48 03/27/18 09:48 03/27/18 09:48 03/27/18 09:48 03/27/18 09:48 03/27/18 09:48 03/27/18 09:48</th> <th>03/29/18 15:14 03/29/18 15:14 03/29/18 15:14 03/29/18 15:14 03/29/18 15:14 03/29/18 15:14 03/29/18 15:14 03/29/18 15:14 03/29/18 15:14</th> <th>1 1 1 1 1 1 1 1 1 1 1 1 1</th>	0.478 0.478 0.478 9.57 4.78 1.91 0.478 1.91 0.478 0.478 4.78 0.957 4.78 1.91 0.478 0.957 0.478 0.957 0.478 0.478 0.478 1.91	1.91 0.957 0.239 0.478 0.191 0.191 1.91 0.478 1.91 0.191 0.191 0.478	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	 03/27/18 09:48 03/27/18 09:48 03/27/18 09:48 03/27/18 09:48 03/27/18 09:48 03/27/18 09:48 03/27/18 09:48 03/27/18 09:48	03/29/18 15:14 03/29/18 15:14 03/29/18 15:14 03/29/18 15:14 03/29/18 15:14 03/29/18 15:14 03/29/18 15:14 03/29/18 15:14 03/29/18 15:14	1 1 1 1 1 1 1 1 1 1 1 1 1
AnthraceneNDBenzidineNDBenzo[a]anthraceneNDBenzo[b]fluorantheneNDBenzo[k]fluorantheneNDBenzo[a]pyreneNDBis(2-chloroethoxy)methaneNDBis(2-chloroethyl)etherNDBis(2-chloroethyl)pthalateND4-Bromophenyl phenyl etherNDButyl benzyl phthalateND2-Chloro-3-methylphenolND2-ChlorophenolND2-ChlorophenolND2-ChlorophenolNDDibenz(a,h)anthraceneND1,2-DichlorobenzeneND1,3-DichlorobenzeneND3,3'-DichlorobenzeneND2,4-DinthrophenolND2,4-DimethylphenolND2,4-DimethylphenolND2,4-Dinitro-2-methylphenolND2,4-DinitrophenolND2,4-Di	0.478 9.57 4.78 1.91 0.478 1.91 0.478 0.478 4.78 0.957 4.78 1.91 0.478 0.957 0.478 0.478 0.478	0.191 4.78 1.91 0.957 0.239 0.478 0.191 1.91 0.478 1.91 0.191 0.191 0.478	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	03/27/18 09:48 03/27/18 09:48 03/27/18 09:48 03/27/18 09:48 03/27/18 09:48 03/27/18 09:48 03/27/18 09:48 03/27/18 09:48	03/29/18 15:14 03/29/18 15:14 03/29/18 15:14 03/29/18 15:14 03/29/18 15:14 03/29/18 15:14 03/29/18 15:14 03/29/18 15:14	1 1 1 1 1 1 1 1 1 1
BenzidineNDBenzo[a]anthraceneNDBenzo[b]fluorantheneNDBenzo[k]fluorantheneNDBenzo[a]pyreneNDBis(2-chloroethoxy)methaneNDBis(2-chloroethyl)etherNDBis(2-chloroethyl)phthalateND4-Bromophenyl phenyl etherNDButyl benzyl phthalateND4-Chloro-3-methylphenolND2-ChlorophenolND2-ChlorophenolND4-Chlorophenyl phenyl etherND2-ChlorophenolND2-ChlorophenolND1,2-DichlorobenzeneND1,2-DichlorobenzeneND1,4-DichlorobenzeneND2,4-DinthralateND2,4-DimethylphenolND2,4-DimethylphenolND2,4-DimitrojenolND2,4-Dinitrop-2-methylphenolND2,4-DinitrophenolND2,4-DinitrophenolND2,4-DinitrophenolND2,4-DinitrophenolND2,4-DinitrophenolND2,4-DinitrophenolND2,4-DinitrophenolND2,4-DinitrophenolND2,4-DinitrophenolND2,4-DinitrophenolND2,4-DinitrophenolND2,4-DinitrophenolND2,4-DinitrophenolND2,4-DinitrophenolND2,4-DinitrophenolND2,4-DinitrophenolND2,4-DinitrophenolND2,4-DinitrophenolND2,4-DinitrophenolND <t< td=""><td>9.57 4.78 1.91 0.478 1.91 0.478 0.478 4.78 0.957 4.78 1.91 0.478 0.957 0.478 0.478 0.478</td><td>4.78 1.91 0.957 0.239 0.478 0.191 0.191 0.478 1.91 0.191 0.191 0.191 0.478</td><td>ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L</td><td>03/27/18 09:48 03/27/18 09:48 03/27/18 09:48 03/27/18 09:48 03/27/18 09:48 03/27/18 09:48 03/27/18 09:48 03/27/18 09:48</td><td>03/29/18 15:14 03/29/18 15:14 03/29/18 15:14 03/29/18 15:14 03/29/18 15:14 03/29/18 15:14 03/29/18 15:14 03/29/18 15:14</td><td>1 1 1 1 1 1 1 1</td></t<>	9.57 4.78 1.91 0.478 1.91 0.478 0.478 4.78 0.957 4.78 1.91 0.478 0.957 0.478 0.478 0.478	4.78 1.91 0.957 0.239 0.478 0.191 0.191 0.478 1.91 0.191 0.191 0.191 0.478	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	03/27/18 09:48 03/27/18 09:48 03/27/18 09:48 03/27/18 09:48 03/27/18 09:48 03/27/18 09:48 03/27/18 09:48 03/27/18 09:48	03/29/18 15:14 03/29/18 15:14 03/29/18 15:14 03/29/18 15:14 03/29/18 15:14 03/29/18 15:14 03/29/18 15:14 03/29/18 15:14	1 1 1 1 1 1 1 1
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Benzo[b]fluorantheneNDBenzo[k]fluorantheneNDBenzo[a]pyreneNDBis(2-chloroethoxy)methaneNDBis(2-chloroethyl)etherNDBis(2-chloroethyl)etherNDBis(2-ethylhexyl) phthalateND4-Bromophenyl phenyl etherNDButyl benzyl phthalateND4-Chloro-3-methylphenolND2-ChlorophenolND2-ChlorophenolND4-ChlorophenolND2-ChlorophenolND1,2-DichlorobenzeneND1,2-DichlorobenzeneND1,3-DichlorobenzeneND3,3'-DichlorobenzidineND2,4-DimethylphenolND2,4-DimethylphenolND2,4-DimethylphenolND2,4-DinitrophenolND2,4-DinitrophenolND2,4-DinitrophenolND2,4-DinitrophenolND2,4-DinitrophenolND2,4-DinitrophenolND2,4-DinitrophenolND2,4-DinitrophenolND2,4-DinitrophenolND2,4-DinitrophenolND2,4-DinitrophenolND2,4-DinitrophenolND2,4-DinitrophenolND2,4-DinitrophenolND2,4-DinitrophenolND2,4-DinitrophenolND2,4-DinitrophenolND2,4-DinitrophenolND2,4-DinitrophenolND3,3-DichlorobenzeneND3,3-DichlorobenzeneND3,3-DichlorobenzeneND <td>1.91 0.478 1.91 0.478 0.478 4.78 0.957 4.78 1.91 0.478 0.957 0.478 0.478 0.478</td> <td>0.957 0.239 0.478 0.191 0.191 1.91 0.478 1.91 0.191 0.191 0.478</td> <td>ug/L ug/L ug/L ug/L ug/L ug/L ug/L</td> <td>03/27/18 09:48 03/27/18 09:48 03/27/18 09:48 03/27/18 09:48 03/27/18 09:48 03/27/18 09:48</td> <td>03/29/18 15:14 03/29/18 15:14 03/29/18 15:14 03/29/18 15:14 03/29/18 15:14 03/29/18 15:14</td> <td>1 1 1 1 1 1 1</td>	1.91 0.478 1.91 0.478 0.478 4.78 0.957 4.78 1.91 0.478 0.957 0.478 0.478 0.478	0.957 0.239 0.478 0.191 0.191 1.91 0.478 1.91 0.191 0.191 0.478	ug/L ug/L ug/L ug/L ug/L ug/L ug/L	03/27/18 09:48 03/27/18 09:48 03/27/18 09:48 03/27/18 09:48 03/27/18 09:48 03/27/18 09:48	03/29/18 15:14 03/29/18 15:14 03/29/18 15:14 03/29/18 15:14 03/29/18 15:14 03/29/18 15:14	1 1 1 1 1 1 1
Benzo[k]fluorantheneNDBenzo[a]pyreneNDBis(2-chloroethoxy)methaneNDBis(2-chloroethyl)etherNDBis(2-chloroethyl)etherNDBis(2-ethylhexyl) phthalateND4-Bromophenyl phenyl etherNDButyl benzyl phthalateND4-Chloro-3-methylphenolND2-ChloronaphthaleneND2-ChlorophenolND4-ChlorophenolND2-ChlorophenolND1,2-DichlorobenzeneND1,3-DichlorobenzeneND1,3-DichlorobenzeneND3,3'-DichlorobenzeneND2,4-DinethylphenolND2,4-DimethylphenolND2,4-DimethylphenolND2,4-DinitrophenolND <td>0.478 1.91 0.478 4.78 0.957 4.78 1.91 0.478 0.957 0.478 0.478 0.478</td> <td>0.239 0.478 0.191 0.191 1.91 0.478 1.91 0.191 0.191 0.478</td> <td>ug/L ug/L ug/L ug/L ug/L ug/L ug/L</td> <td>03/27/18 09:48 03/27/18 09:48 03/27/18 09:48 03/27/18 09:48 03/27/18 09:48</td> <td>03/29/18 15:14 03/29/18 15:14 03/29/18 15:14 03/29/18 15:14 03/29/18 15:14</td> <td>1 1 1 1 1</td>	0.478 1.91 0.478 4.78 0.957 4.78 1.91 0.478 0.957 0.478 0.478 0.478	0.239 0.478 0.191 0.191 1.91 0.478 1.91 0.191 0.191 0.478	ug/L ug/L ug/L ug/L ug/L ug/L ug/L	03/27/18 09:48 03/27/18 09:48 03/27/18 09:48 03/27/18 09:48 03/27/18 09:48	03/29/18 15:14 03/29/18 15:14 03/29/18 15:14 03/29/18 15:14 03/29/18 15:14	1 1 1 1 1
Benzo[a]pyreneNDBis(2-chloroethoxy)methaneNDBis(2-chloroethyl)etherNDBis(2-chloroethyl)etherNDBis(2-ethylhexyl) phthalateND4-Bromophenyl phenyl etherNDButyl benzyl phthalateND4-Chloro-3-methylphenolND2-ChloronaphthaleneND2-ChlorophenolND4-ChlorophenolND2-ChlorophenolND2-ChlorophenolND1,2-DichlorobenzeneND1,3-DichlorobenzeneND1,4-DichlorobenzeneND3,3'-DichlorobenzidineND2,4-DinethylphenolND2,4-DimethylphenolND2,4-DinitrophenolND2	1.91 0.478 0.478 4.78 0.957 4.78 1.91 0.478 0.957 0.478 0.478 0.478	0.478 0.191 0.191 1.91 0.478 1.91 0.191 0.191 0.478	ug/L ug/L ug/L ug/L ug/L ug/L	03/27/18 09:48 03/27/18 09:48 03/27/18 09:48 03/27/18 09:48	03/29/18 15:14 03/29/18 15:14 03/29/18 15:14 03/29/18 15:14	1 1 1 1
Bis (2-chloroethoxy)methaneNDBis (2-chloroethyl)etherNDBis (2-chloroethyl)etherNDBis (2-ethylhexyl) phthalateND4-Bromophenyl phenyl etherNDButyl benzyl phthalateND4-Chloro-3-methylphenolND2-ChloronaphthaleneND2-ChlorophenolND4-ChlorophenolND4-ChlorophenolND2-ChlorophenolND4-Chlorophenyl phenyl etherNDDibenz (a,h)anthraceneNDDi-n-butyl phthalateND1,2-DichlorobenzeneND1,3-DichlorobenzeneND3,3'-DichlorobenzeneND2,4-DichlorophenolND2,4-Dimethyl phthalateND2,4-Dimethyl phthalateND2,4-Dimethyl phthalateND2,4-Dinitro-2-methylphenolND2,4-DinitrophenolND2,4-DinitrophenolND	0.478 0.478 4.78 0.957 4.78 1.91 0.478 0.957 0.478 0.478 0.478	0.191 0.191 1.91 0.478 1.91 0.191 0.191 0.478	ug/L ug/L ug/L ug/L ug/L	03/27/18 09:48 03/27/18 09:48 03/27/18 09:48	03/29/18 15:14 03/29/18 15:14 03/29/18 15:14	1 1 1
Bis(2-chloroethyl)etherNDBis(2-ethylhexyl) phthalateND4-Bromophenyl phenyl etherNDButyl benzyl phthalateND4-Chloro-3-methylphenolND2-ChloronaphthaleneND2-ChlorophenolND4-Chlorophenyl phenyl etherND2-ChlorophenolND4-Chlorophenyl phenyl etherNDDibenz(a,h)anthraceneNDDi-n-butyl phthalateND1,2-DichlorobenzeneND1,3-DichlorobenzeneND3,3'-DichlorobenzeneND2,4-DichlorophenolNDDiethyl phthalateND2,4-DimethylphenolND2,4-DimethylphenolND2,4-DimethylphenolND2,4-Dinitro-2-methylphenolND2,4-Dinitrophenol </td <td>0.478 4.78 0.957 4.78 1.91 0.478 0.957 0.478 0.478 0.478</td> <td>0.191 1.91 0.478 1.91 0.191 0.191 0.478</td> <td>ug/L ug/L ug/L ug/L</td> <td>03/27/18 09:48 03/27/18 09:48</td> <td>03/29/18 15:14 03/29/18 15:14</td> <td>1 1</td>	0.478 4.78 0.957 4.78 1.91 0.478 0.957 0.478 0.478 0.478	0.191 1.91 0.478 1.91 0.191 0.191 0.478	ug/L ug/L ug/L ug/L	03/27/18 09:48 03/27/18 09:48	03/29/18 15:14 03/29/18 15:14	1 1
Bis(2-ethylhexyl) phthalateND4-Bromophenyl phenyl etherNDButyl benzyl phthalateND4-Chloro-3-methylphenolND2-ChloronaphthaleneND2-ChlorophenolND4-ChlorophenolND2-ChlorophenolND4-Chlorophenyl phenyl etherNDChryseneNDDibenz(a,h)anthraceneND1,2-DichlorobenzeneND1,3-DichlorobenzeneND3,3'-DichlorobenzeneND2,4-DichlorophenolNDDiethyl phthalateND2,4-DimethylphenolND2,4-DimethylphenolND2,4-DimethylphenolND2,4-Dinitro-2-methylphenolND2,4-DinitrophenolND2,4-DinitrophenolND2,4-DinitrophenolND2,4-DinitrophenolND2,4-DinitrophenolND2,4-DinitrophenolND	4.78 0.957 4.78 1.91 0.478 0.957 0.478 0.478 0.478	1.91 0.478 1.91 0.191 0.191 0.478	ug/L ug/L ug/L	03/27/18 09:48	03/29/18 15:14	1
4-Bromophenyl phenyl ether ND Butyl benzyl phthalate ND 4-Chloro-3-methylphenol ND 2-Chloronaphthalene ND 2-Chlorophenol ND 2-Chlorophenol ND 4-Chlorophenol ND 2-Chlorophenol ND 1-Chlorophenol ND 2-Chlorophenol ND 2-Chlorophenol ND 2-Chlorophenol ND 1,2-Dichlorobenzene ND 1,3-Dichlorobenzene ND 3,3'-Dichlorobenzidine ND 2,4-Dichlorophenol ND Diethyl phthalate ND 2,4-Dimethylphenol ND Dimethyl phthalate ND 2,4-Dinitro-2-methylphenol ND 2,4-Dinitrophenol ND	0.957 4.78 1.91 0.478 0.957 0.478 0.478 0.478	0.478 1.91 0.191 0.191 0.478	ug/L ug/L			•
Butyl benzyl phthalateND4-Chloro-3-methylphenolND2-ChloronaphthaleneND2-ChlorophenolND4-Chlorophenyl phenyl etherND4-Chlorophenyl phenyl etherNDChryseneNDDibenz(a,h)anthraceneNDDi-n-butyl phthalateND1,2-DichlorobenzeneND1,3-DichlorobenzeneND3,3'-DichlorobenzidineND2,4-DichlorophenolNDDiethyl phthalateND2,4-DimethylphenolND2,4-DimethylphenolND2,4-DimethylphenolND2,4-Dinitro-2-methylphenolND2,4-DinitrophenolND2,4-DinitrophenolND2,4-DinitrophenolND2,4-DinitrophenolND2,4-DinitrophenolND2,4-DinitrophenolND2,4-DinitrophenolND2,4-DinitrophenolND2,4-DinitrophenolND2,4-DinitrophenolND2,4-DinitrophenolND2,4-DinitrophenolND2,4-DinitrophenolND2,4-DinitrophenolND	4.78 1.91 0.478 0.957 0.478 0.478 0.478	1.91 0.191 0.191 0.478	ug/L	03/27/18 09:48	03/29/18 15:14	,
4-Chloro-3-methylphenolND2-ChloronaphthaleneND2-ChlorophenolND4-Chlorophenyl phenyl etherNDChryseneNDDibenz(a,h)anthraceneNDDi-n-butyl phthalateND1,2-DichlorobenzeneND1,3-DichlorobenzeneND3,3'-DichlorobenzeneND2,4-DichlorophenolNDDiethyl phthalateND2,4-DimethylphenolND2,4-DimethylphenolND2,4-Dimitro-2-methylphenolND2,4-DinitrophenolND2,4-DinitrophenolND2,4-DinitrophenolND2,4-DinitrophenolND2,4-DinitrophenolND2,4-DinitrophenolND	1.91 0.478 0.957 0.478 0.478 0.478	1.91 0.191 0.191 0.478	ug/L			1
4-Chloro-3-methylphenolND2-ChloronaphthaleneND2-ChlorophenolND4-Chlorophenyl phenyl etherNDChryseneNDDibenz(a,h)anthraceneNDDi-n-butyl phthalateND1,3-DichlorobenzeneND1,3-DichlorobenzeneND3,3'-DichlorobenzeneND2,4-DichlorophenolND2,4-DichlorophenolND2,4-Dimethyl phthalateND2,4-Dimethyl phthalateND2,4-Dimethyl phthalateND2,4-Dimethyl phthalateND2,4-Dimethyl phthalateND2,4-Dimethyl phthalateND2,4-Dinitro-2-methylphenolND2,4-DinitrophenolND2,4-DinitrophenolND2,4-DinitrophenolND	0.478 0.957 0.478 0.478 0.478	0.191 0.191 0.478	-	03/27/18 09:48	03/29/18 15:14	1
2-ChloronaphthaleneND2-ChlorophenolND4-Chlorophenyl phenyl etherNDChryseneNDDibenz(a,h)anthraceneNDDi-n-butyl phthalateND1,2-DichlorobenzeneND1,3-DichlorobenzeneND1,4-DichlorobenzeneND2,4-DichlorophenolND2,4-DichlorophenolNDDiethyl phthalateND2,4-DimethylphenolND2,4-DimethylphenolND2,4-Dinitro-2-methylphenolND2,4-DinitrophenolND2,4-DinitrophenolND2,4-DinitrophenolND2,4-DinitrophenolND2,4-DinitrophenolND2,4-DinitrophenolND2,4-DinitrophenolND2,4-DinitrophenolND2,4-DinitrophenolND2,4-DinitrophenolND2,4-DinitrophenolND2,4-DinitrophenolND2,4-DinitrophenolND	0.957 0.478 0.478 0.478	0.191 0.478	•	03/27/18 09:48	03/29/18 15:14	1
2-Chlorophenol ND I-Chlorophenyl phenyl ether ND Chrysene ND Dibenz(a,h)anthracene ND Di-n-butyl phthalate ND I,2-Dichlorobenzene ND I,3-Dichlorobenzene ND I,4-Dichlorobenzene ND 3,3'-Dichlorobenzidine ND 2,4-Dichlorophenol ND Diethyl phthalate ND Diethyl phthalate ND 2,4-Dimethylphenol ND Dimethyl phthalate ND 2,4-Dinitro-2-methylphenol ND 2,4-Dinitrophenol ND	0.478 0.478 0.478	0.478	ug/L	03/27/18 09:48	03/29/18 15:14	1
I-Chlorophenyl phenyl etherNDChryseneNDDibenz(a,h)anthraceneNDDi-n-butyl phthalateNDJ-n-butyl phthalateNDJ-DichlorobenzeneNDJ-DichlorobenzeneNDJ-DichlorobenzeneNDJ-DichlorobenzeneNDJ-DichlorobenzeneNDJ-DichlorobenzeneNDJ-DichlorobenzeneNDJ-DichlorobenzidineNDZ-4-DichlorophenolNDDiethyl phthalateNDDiethyl phthalateNDZ-4-DimethylphenolNDDimethyl phthalateNDZ-4-Dinitro-2-methylphenolNDZ-4-DinitrophenolND	0.478 0.478 0.478			03/27/18 09:48	03/29/18 15:14	1
ChryseneNDDibenz(a,h)anthraceneNDDi-n-butyl phthalateNDJ-n-butyl phthalateND,2-DichlorobenzeneND,3-DichlorobenzeneND,3-DichlorobenzeneND,3'-DichlorobenzeneND,3'-DichlorobenzeneND,2-DichlorobenzeneND,2,4-DichlorobenzidineNDDiethyl phthalateNDDiethyl phthalateND,2,4-DimethylphenolNDDimethyl phthalateND,6-Dinitro-2-methylphenolND,2,4-DinitrophenolND	0.478 0.478	0.191	ug/L	03/27/18 09:48	03/29/18 15:14	1
DisplayNDDi-n-butyl phthalateNDDi-n-butyl phthalateND,2-DichlorobenzeneND,3-DichlorobenzeneND,4-DichlorobenzeneND,3'-DichlorobenzidineND2,4-DichlorophenolNDDiethyl phthalateNDDiethyl phthalateND2,4-DimethylphenolNDDimethyl phthalateND2,4-Dinitro-2-methylphenolND2,4-DinitrophenolNDDimethyl phthalateND2,4-DinitrophenolNDNDND2,4-DinitrophenolND	0.478	0.191	-		03/29/18 15:14	1
Di-n-butyl phthalateND,2-DichlorobenzeneND,3-DichlorobenzeneND,4-DichlorobenzeneND,3'-DichlorobenzidineND,2-DichlorophenolND,2-DichlorophenolNDDiethyl phthalateND,2-Dimethyl phthalateND,2-Dinitro-2-methylphenolND,2-DinitrophenolND,2-DinitrophenolND,2-DinitrophenolND,2-DinitrophenolND,2-DinitrophenolND		0.239	-		03/29/18 15:14	1
,2-DichlorobenzeneND,3-DichlorobenzeneND,4-DichlorobenzeneND,3'-DichlorobenzidineND,4-DichlorophenolND,4-DichlorophenolNDDiethyl phthalateND,4-Dimethyl phthalateND,6-Dinitro-2-methylphenolND,4-DinitrophenolND		0.957	-		03/29/18 15:14	1
,3-DichlorobenzeneND,4-DichlorobenzeneND,3'-DichlorobenzidineND,4-DichlorophenolNDDiethyl phthalateND,4-DimethylphenolNDDimethyl phthalateND,6-Dinitro-2-methylphenolND,4-DinitrophenolND	0.478	0.191	-		03/29/18 15:14	1
A-DichlorobenzeneND,3'-DichlorobenzidineND,4-DichlorophenolNDbiethyl phthalateND,4-DimethylphenolNDbimethyl phthalateNDbinethyl phthalateND	0.478	0.191	0		03/29/18 15:14	1
,3'-DichlorobenzidineND,4-DichlorophenolNDbiethyl phthalateND,4-DimethylphenolNDimethyl phthalateNDbiethyl phthalateNDbiethyl phthalateND,6-Dinitro-2-methylphenolND,4-DinitrophenolND	0.478	0.191	-		03/29/18 15:14	1
,4-DichlorophenolNDDiethyl phthalateND,4-DimethylphenolNDDimethyl phthalateND,6-Dinitro-2-methylphenolND,4-DinitrophenolND	4.78		ug/L		03/29/18 15:14	1
iethyl phthalate ND ,4-Dimethylphenol ND imethyl phthalate ND ,6-Dinitro-2-methylphenol ND ,4-Dinitrophenol ND	1.91	0.957			03/29/18 15:14	1
,4-DimethylphenolNDDimethyl phthalateND,6-Dinitro-2-methylphenolND,4-DinitrophenolND	0.957	0.478	ug/L		03/29/18 15:14	1
oimethyl phthalate ND ,6-Dinitro-2-methylphenol ND ,4-Dinitrophenol ND	1.91	0.957	-		03/29/18 15:14	1
,6-Dinitro-2-methylphenol ND ,4-Dinitrophenol ND	0.478	0.239			03/29/18 15:14	1
,4-Dinitrophenol ND	4.78	1.91	•		03/29/18 15:14	1
·	4.78	1.91	•		03/29/18 15:14	1
	4.78	1.91			03/29/18 15:14	1
.,6-Dinitrotoluene ND	4.78	1.91	0		03/29/18 15:14	1
	4.78	1.91	•		03/29/18 15:14	1
······································						
,2-Diphenylhydrazine(as ND Azobenzene)	0.957	0.478	uy/L	03/21/10 09.48	03/29/18 15:14	1
Fluoranthene ND	0.478	0.191	ua/L	03/27/18 09:48	03/29/18 15:14	1
Fluorene ND	0.478	0.191	-		03/29/18 15:14	1
lexachlorobenzene ND	0.957	0.478			03/29/18 15:14	1
lexachlorobutadiene ND	1.91	0.478	-		03/29/18 15:14	1
lexachloroethane ND	2.87	0.478	-		03/29/18 15:14	1
lexachlorocyclopentadiene ND	4.78		ug/L		03/29/18 15:14	1
ndeno[1,2,3-cd]pyrene ND	1.91	0.957			03/29/18 15:14	1
sophorone ND	0.957	0.937	-		03/29/18 15:14	1
laphthalene ND	0.957	0.478			03/29/18 15:14	1
			-			1
ND	0.957	0.478	-		03/29/18 15:14	•
P-Nitrophenol ND	1.91	0.957	-		03/29/18 15:14	1
I-Nitrophenol ND	4.78		ug/L		03/29/18 15:14	1
N-Nitrosodimethylamine ND N-Nitrosodiphenylamine ND	1.91	0.957 0.478	-		03/29/18 15:14 03/29/18 15:14	1

RL

1.91

MDL Unit

0.957 ug/L

Analyte

N-Nitrosodi-n-propylamine

Client Sample ID: Outfall009_20180322_Comp Date Collected: 03/22/18 15:30 Date Received: 03/22/18 20:00

Method: 625 - Semivolatile Organic Compounds (GC/MS) (Continued)

Result Qualifier

ND

Lab Sample ID: 440-206741-1 Matrix: Water

03/27/18 09:48 03/29/18 15:14

Analyzed

Prepared

D

5

Dil Fac

1

1 1	8
1 1	9
Fac	
1 1	
1	
1 1	

Dil Fac

1

Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	80		50 - 120				03/27/18 09:48	03/29/18 15:14	1
2-Fluorophenol	68		30 - 120				03/27/18 09:48	03/29/18 15:14	1
2,4,6-Tribromophenol	93		40 - 120				03/27/18 09:48	03/29/18 15:14	1
Nitrobenzene-d5	80		45 - 120				03/27/18 09:48	03/29/18 15:14	1
Terphenyl-d14	89		37 - 144				03/27/18 09:48	03/29/18 15:14	1
Phenol-d6	72		35 - 120				03/27/18 09:48	03/29/18 15:14	1
	webloringtod Bin	henvis (P	CBs) Low le	vel					
Method: 608 PCB LL - Pol	ycinormateu Dip					D	Prepared	Analyzed	
Method: 608 PCB LL - Pol Analyte	Result (RL	MDL	Unit	0	Flepaleu	,, j	Dil Fac
			RL 0.48		Unit ug/L		03/27/18 06:02		Dil Fac 1
Analyte	Result			0.24			03/27/18 06:02		Dil Fac 1 1
Analyte Aroclor 1016	Result ND		0.48	0.24 0.24	ug/L		03/27/18 06:02 03/27/18 06:02	03/27/18 15:03	Dil Fac 1 1 1
Analyte Aroclor 1016 Aroclor 1221	Result 0 ND ND		0.48	0.24 0.24 0.24	ug/L ug/L		03/27/18 06:02 03/27/18 06:02 03/27/18 06:02	03/27/18 15:03 03/27/18 15:03	Dil Fac 1 1 1 1
Analyte Aroclor 1016 Aroclor 1221 Aroclor 1232	Result of ND ND ND ND		0.48 0.48 0.48	0.24 0.24 0.24 0.24	ug/L ug/L ug/L	_ _	03/27/18 06:02 03/27/18 06:02 03/27/18 06:02 03/27/18 06:02	03/27/18 15:03 03/27/18 15:03 03/27/18 15:03	Dil Fac 1 1 1 1 1 1
Analyte Aroclor 1016 Aroclor 1221 Aroclor 1232 Aroclor 1242	Result 0 ND ND ND ND		0.48 0.48 0.48 0.48 0.48	0.24 0.24 0.24 0.24 0.24	ug/L ug/L ug/L ug/L	_	03/27/18 06:02 03/27/18 06:02 03/27/18 06:02 03/27/18 06:02 03/27/18 06:02	03/27/18 15:03 03/27/18 15:03 03/27/18 15:03 03/27/18 15:03	Dil Fac 1 1 1 1 1 1 1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Ľ
DCB Decachlorobiphenyl (Surr)	92		29 - 115	03/27/18 06:02	03/27/18 15:03	

Method: 608 Pesticides - 0	Organochlorine Pestic	ides Low level						
Analyte	Result Qualifie	er RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	ND	0.0048	0.0014	ug/L		03/27/18 06:02	03/28/18 11:25	1
alpha-BHC	ND	0.0048	0.0024	ug/L		03/27/18 06:02	03/28/18 11:25	1
beta-BHC	ND	0.0096	0.0038	ug/L		03/27/18 06:02	03/28/18 11:25	1
Chlordane (technical)	ND	0.096	0.077	ug/L		03/27/18 06:02	03/28/18 11:25	1
delta-BHC	ND	0.0048	0.0033	ug/L		03/27/18 06:02	03/28/18 11:25	1
Dieldrin	ND	0.0048	0.0019	ug/L		03/27/18 06:02	03/28/18 11:25	1
Endosulfan I	ND	0.0048	0.0029	ug/L		03/27/18 06:02	03/28/18 11:25	1
Endosulfan II	ND	0.0048	0.0019	ug/L		03/27/18 06:02	03/28/18 11:25	1
Endosulfan sulfate	ND	0.0096	0.0029	ug/L		03/27/18 06:02	03/28/18 11:25	1
Endrin	ND	0.0048	0.0019	ug/L		03/27/18 06:02	03/28/18 11:25	1
Endrin aldehyde	ND	0.0096	0.0019	ug/L		03/27/18 06:02	03/28/18 11:25	1
gamma-BHC (Lindane)	ND	0.0096	0.0029	ug/L		03/27/18 06:02	03/28/18 11:25	1
Heptachlor	ND	0.0096	0.0029	ug/L		03/27/18 06:02	03/28/18 11:25	1
Heptachlor epoxide	ND	0.0048	0.0024	ug/L		03/27/18 06:02	03/28/18 11:25	1
Toxaphene	ND	0.48	0.24	ug/L		03/27/18 06:02	03/28/18 11:25	1
4,4'-DDD	ND	0.0048	0.0038	ug/L		03/27/18 06:02	03/28/18 11:25	1
4,4'-DDE	ND	0.0048	0.0029	ug/L		03/27/18 06:02	03/28/18 11:25	1

Date Collected: 03/22/18 15:30

Date Received: 03/22/18 20:00

Client Sample ID: Outfall009_20180322_Comp

Lab Sample ID: 440-206741-1 Matrix: Water

5

Analyte		Qualifier	Low level	•	Unit	D	Prepared	Analyzed	Dil Fa
4,4'-DDT	ND		0.0096	0.0038	ug/L		03/27/18 06:02	03/28/18 11:25	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
Tetrachloro-m-xylene	54		10 - 150				03/27/18 06:02	03/28/18 11:25	
Method: 218.6 - Chromium, Hexa			· · · · ·						
Analyte		Qualifier	RL	MDL		D	Prepared	Analyzed	Dil Fa
Chromium, hexavalent	ND		1.0	0.25	ug/L			03/22/18 23:25	
Method: 300.0 - Anions, Ion Chr	omatoara	nhv							
Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Chloride	2.3		0.50		mg/L			03/23/18 00:11	
litrate as N	0.42		0.00	0.055	-			03/23/18 00:11	
Fluoride	ND		0.50		mg/L			03/23/18 00:11	
vitrite as N	ND		0.15	0.070				03/23/18 00:11	
Sulfate	2.7		0.15		mg/L			03/23/18 00:11	
Junate	2.1		0.00	0.20	iiig/L			00/20/10 00:11	
Method: 314.0 - Perchlorate (IC)									
Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil F
Perchlorate	ND		4.0	0.95	ug/L			03/30/18 09:12	
Method: NO3NO2 Calc - Nitroge	n, Nitrate	-Nitrite							
\nalvto	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil F
	nooun						•		
•	0.42		0.15	0.070	mg/L			04/03/18 09:18	
Nitrate Nitrite as N	0.42		0.15	0.070	mg/L			04/03/18 09:18	
Nitrate Nitrite as N Method: 200.7 Rev 4.4 - Metals (0.42 (ICP) - Tot	al Recover	0.15		-	— –	Propared		
Nitrate Nitrite as N Method: 200.7 Rev 4.4 - Metals (Analyte	0.42 (ICP) - Tot Result		0.15 rable RL	MDL	Unit	D	Prepared	Analyzed	Dil F
Analyte Nitrate Nitrite as N Method: 200.7 Rev 4.4 - Metals (Analyte Aluminum	0.42 (ICP) - Tot Result 800	al Recover	0.15	MDL 50	Unit ug/L	D	03/26/18 11:35	Analyzed 03/26/18 18:21	Dil F
Nitrate Nitrite as N Method: 200.7 Rev 4.4 - Metals (Analyte Aluminum Arsenic	0.42 (ICP) - Tot Result 800 ND	al Recover Qualifier	0.15 able <u>RL</u> 100 10	MDL 50 8.9	Unit ug/L ug/L	D	03/26/18 11:35 03/26/18 11:35	Analyzed 03/26/18 18:21 03/26/18 18:21	Dil F
Nitrate Nitrite as N Method: 200.7 Rev 4.4 - Metals (Analyte Aluminum Arsenic Boron	0.42 (ICP) - Tot Result 800 ND 0.041	al Recover Qualifier	0.15 able RL 100 10 0.050	MDL 50 8.9 0.025	Unit ug/L ug/L mg/L	D	03/26/18 11:35 03/26/18 11:35 03/26/18 11:35	Analyzed 03/26/18 18:21 03/26/18 18:21 03/26/18 18:21	Dil F
Nitrate Nitrite as N Method: 200.7 Rev 4.4 - Metals (Analyte Aluminum Arsenic Boron Beryllium	0.42 (ICP) - Tot Result 800 ND 0.041 ND	al Recover Qualifier	0.15 able RL 100 10 0.050 2.0	MDL 50 8.9 0.025 1.0	Unit ug/L ug/L ug/L ug/L	D	03/26/18 11:35 03/26/18 11:35 03/26/18 11:35 03/26/18 11:35	Analyzed 03/26/18 18:21 03/26/18 18:21 03/26/18 18:21 03/26/18 18:21	Dil F
Nitrate Nitrite as N Method: 200.7 Rev 4.4 - Metals (Analyte Aluminum Arsenic Boron Beryllium Chromium	0.42 (ICP) - Tot Result 800 ND 0.041 ND ND	al Recover Qualifier	0.15 able RL 100 10 0.050 2.0 5.0	MDL 50 8.9 0.025 1.0 2.5	Unit ug/L ug/L ug/L ug/L ug/L	D	03/26/18 11:35 03/26/18 11:35 03/26/18 11:35 03/26/18 11:35 03/26/18 11:35	Analyzed 03/26/18 18:21 03/26/18 18:21 03/26/18 18:21 03/26/18 18:21 03/26/18 18:21	Dil F
Nitrate Nitrite as N Method: 200.7 Rev 4.4 - Metals (Analyte Aluminum Arsenic Boron Beryllium Chromium ron	0.42 (ICP) - Tot Result 800 ND 0.041 ND ND 0.77	al Recover Qualifier	0.15 able RL 100 10 0.050 2.0 5.0 0.10	MDL 50 8.9 0.025 1.0 2.5 0.050	Unit ug/L ug/L ug/L ug/L mg/L	D	03/26/18 11:35 03/26/18 11:35 03/26/18 11:35 03/26/18 11:35 03/26/18 11:35 03/26/18 11:35	Analyzed 03/26/18 18:21 03/26/18 18:21 03/26/18 18:21 03/26/18 18:21 03/26/18 18:21	Dil F
Nitrate Nitrite as N Method: 200.7 Rev 4.4 - Metals (Analyte Aluminum Arsenic Boron Beryllium Chromium ron Nickel	0.42 (ICP) - Tot Result 800 ND 0.041 ND ND 0.77 ND	al Recover Qualifier	0.15 able RL 100 10 0.050 2.0 5.0 0.10 10	MDL 50 8.9 0.025 1.0 2.5 0.050 5.0	Unit ug/L ug/L ug/L ug/L ug/L ug/L	D	03/26/18 11:35 03/26/18 11:35 03/26/18 11:35 03/26/18 11:35 03/26/18 11:35 03/26/18 11:35 03/26/18 11:35	Analyzed 03/26/18 18:21 03/26/18 18:21 03/26/18 18:21 03/26/18 18:21 03/26/18 18:21 03/26/18 18:21	Dil F
Nitrate Nitrite as N Method: 200.7 Rev 4.4 - Metals (Analyte Aluminum Arsenic Boron Beryllium Chromium ron Vickel /anadium	0.42 (ICP) - Tot Result 800 ND 0.041 ND ND 0.77 ND ND	al Recover Qualifier	0.15 able RL 100 10 0.050 2.0 5.0 0.10 10 10 10	MDL 50 8.9 0.025 1.0 2.5 0.050 5.0	Unit ug/L ug/L ug/L ug/L ug/L ug/L ug/L	D	03/26/18 11:35 03/26/18 11:35 03/26/18 11:35 03/26/18 11:35 03/26/18 11:35 03/26/18 11:35 03/26/18 11:35 03/26/18 11:35	Analyzed 03/26/18 18:21 03/26/18 18:21 03/26/18 18:21 03/26/18 18:21 03/26/18 18:21 03/26/18 18:21 03/26/18 18:21	Dil F
Nitrate Nitrite as N Method: 200.7 Rev 4.4 - Metals (Analyte	0.42 (ICP) - Tot Result 800 ND 0.041 ND ND 0.77 ND	al Recover Qualifier	0.15 able RL 100 10 0.050 2.0 5.0 0.10 10	MDL 50 8.9 0.025 1.0 2.5 0.050 5.0	Unit ug/L ug/L ug/L ug/L ug/L ug/L	D	03/26/18 11:35 03/26/18 11:35 03/26/18 11:35 03/26/18 11:35 03/26/18 11:35 03/26/18 11:35 03/26/18 11:35	Analyzed 03/26/18 18:21 03/26/18 18:21 03/26/18 18:21 03/26/18 18:21 03/26/18 18:21 03/26/18 18:21 03/26/18 18:21	Dil F
Nitrate Nitrite as N Method: 200.7 Rev 4.4 - Metals (Analyte Aluminum Arsenic Boron Beryllium Chromium ron Vickel /anadium Zinc	0.42 (ICP) - Tot Result 800 ND 0.041 ND ND 0.77 ND ND ND	ual Recover Qualifier J,DX	0.15 able RL 100 10 0.050 2.0 5.0 0.10 10 10 20	MDL 50 8.9 0.025 1.0 2.5 0.050 5.0	Unit ug/L ug/L ug/L ug/L ug/L ug/L ug/L	D	03/26/18 11:35 03/26/18 11:35 03/26/18 11:35 03/26/18 11:35 03/26/18 11:35 03/26/18 11:35 03/26/18 11:35 03/26/18 11:35	Analyzed 03/26/18 18:21 03/26/18 18:21 03/26/18 18:21 03/26/18 18:21 03/26/18 18:21 03/26/18 18:21 03/26/18 18:21	Dil F
Nitrate Nitrite as N Method: 200.7 Rev 4.4 - Metals (Analyte Aluminum Arsenic Boron Beryllium Chromium Chromium ron Nickel /anadium Zinc Method: 200.8 - Metals (ICP/MS)	0.42 (ICP) - Tot Result 800 ND 0.041 ND 0.77 ND ND ND ND	al Recover Qualifier J,DX	0.15 able RL 100 10 0.050 2.0 5.0 0.10 10 10 20	MDL 50 8.9 0.025 1.0 2.5 0.050 5.0 5.0 12	Unit ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	D	03/26/18 11:35 03/26/18 11:35 03/26/18 11:35 03/26/18 11:35 03/26/18 11:35 03/26/18 11:35 03/26/18 11:35 03/26/18 11:35 03/26/18 11:35	Analyzed 03/26/18 18:21 03/26/18 18:21 03/26/18 18:21 03/26/18 18:21 03/26/18 18:21 03/26/18 18:21 03/26/18 18:21 03/26/18 18:21	
Nitrate Nitrite as N Method: 200.7 Rev 4.4 - Metals (Analyte Aluminum Arsenic Boron Beryllium Chromium ron Nickel /anadium Zinc Method: 200.8 - Metals (ICP/MS) Analyte	0.42 (ICP) - Tot Result 800 ND 0.041 ND ND 0.77 ND ND ND ND ND	ual Recover Qualifier J,DX	0.15 able RL 100 10 0.050 2.0 5.0 0.10 10 10 20 RL	MDL 50 8.9 0.025 1.0 2.5 0.050 5.0 5.0 12 MDL	Unit ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L		03/26/18 11:35 03/26/18 11:35 03/26/18 11:35 03/26/18 11:35 03/26/18 11:35 03/26/18 11:35 03/26/18 11:35 03/26/18 11:35 03/26/18 11:35 03/26/18 11:35	Analyzed 03/26/18 18:21 03/26/18 18:21 03/26/18 18:21 03/26/18 18:21 03/26/18 18:21 03/26/18 18:21 03/26/18 18:21 03/26/18 18:21 03/26/18 18:21 03/26/18 18:21	
Nitrate Nitrite as N Method: 200.7 Rev 4.4 - Metals (Analyte Aluminum Arsenic Boron Beryllium Chromium ron Vickel /anadium Zinc Method: 200.8 - Metals (ICP/MS) Analyte Cadmium	0.42 (ICP) - Tot Result 800 ND 0.041 ND ND 0.77 ND ND ND ND ND ND	al Recover Qualifier J,DX	0.15 able RL 100 10 0.050 2.0 5.0 0.10 10 10 20 RL 1.0	MDL 50 8.9 0.025 1.0 2.5 0.050 5.0 5.0 12 MDL 0.25	Unit ug/L ug/L ug/L ug/L ug/L ug/L ug/L Unit ug/L		03/26/18 11:35 03/26/18 11:35 03/26/18 11:35 03/26/18 11:35 03/26/18 11:35 03/26/18 11:35 03/26/18 11:35 03/26/18 11:35 03/26/18 11:35 Prepared 03/26/18 11:37	Analyzed 03/26/18 18:21 03/26/18 18:21 03/26/18 18:21 03/26/18 18:21 03/26/18 18:21 03/26/18 18:21 03/26/18 18:21 03/26/18 18:21 03/26/18 18:21 03/26/18 18:34	
Nitrate Nitrite as N Method: 200.7 Rev 4.4 - Metals (Analyte Aluminum Arsenic Boron Beryllium Chromium ron Nickel /anadium Zinc Method: 200.8 - Metals (ICP/MS) Analyte Cadmium Copper	0.42 (ICP) - Tot Result 800 ND 0.041 ND 0.77 ND ND ND ND 0 - Total R Result ND 5.8	al Recover Qualifier J,DX	0.15 able RL 100 10 0.050 2.0 5.0 0.10 10 10 20 RL 1.0 2.0	MDL 50 8.9 0.025 1.0 2.5 0.050 5.0 5.0 12 MDL 0.25 0.50	Unit ug/L ug/L ug/L ug/L ug/L ug/L ug/L Unit ug/L ug/L		03/26/18 11:35 03/26/18 11:35 03/26/18 11:35 03/26/18 11:35 03/26/18 11:35 03/26/18 11:35 03/26/18 11:35 03/26/18 11:35 03/26/18 11:35 Prepared 03/26/18 11:37 03/26/18 11:37	Analyzed 03/26/18 18:21 03/26/18 18:21 03/26/18 18:21 03/26/18 18:21 03/26/18 18:21 03/26/18 18:21 03/26/18 18:21 03/26/18 18:21 03/26/18 18:34 03/26/18 18:34	
Nitrate Nitrite as N Method: 200.7 Rev 4.4 - Metals (Analyte Aluminum Arsenic Boron Beryllium Chromium Chromium Chromium Chromium Chromium Chromium Chromium Chromium Chromium Chromium Chromium Chromium Chromium Chromium Chromium Chromium Copper Lead	0.42 (ICP) - Tot Result 800 ND 0.041 ND 0.77 ND ND ND ND ND S.8 2.1	al Recover Qualifier J,DX ecoverable Qualifier	0.15 able RL 100 10 0.050 2.0 5.0 0.10 10 10 20 RL 1.0 2.0 1.0	MDL 50 8.9 0.025 1.0 2.5 0.050 5.0 5.0 12 MDL 0.25 0.50 0.50	Unit ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L		03/26/18 11:35 03/26/18 11:35 03/26/18 11:35 03/26/18 11:35 03/26/18 11:35 03/26/18 11:35 03/26/18 11:35 03/26/18 11:35 03/26/18 11:35 03/26/18 11:37 03/26/18 11:37 03/26/18 11:37	Analyzed 03/26/18 18:21 03/26/18 18:21 03/26/18 18:21 03/26/18 18:21 03/26/18 18:21 03/26/18 18:21 03/26/18 18:21 03/26/18 18:21 03/26/18 18:34 03/26/18 18:34 03/26/18 18:34	
Nitrate Nitrite as N Method: 200.7 Rev 4.4 - Metals (Analyte Aluminum Arsenic Boron Beryllium Chromium Chro	0.42 (ICP) - Tot Result 800 ND 0.041 ND 0.77 ND ND ND ND 0.77 ND ND S.8 2.1 0.69	al Recover Qualifier J,DX	0.15 able RL 100 10 0.050 2.0 5.0 0.10 10 10 20 RL 1.0 2.0 1.0 2.0	MDL 50 8.9 0.025 1.0 2.5 0.050 5.0 12 MDL 0.25 0.50 0.50 0.50	Unit ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L		03/26/18 11:35 03/26/18 11:35 03/26/18 11:35 03/26/18 11:35 03/26/18 11:35 03/26/18 11:35 03/26/18 11:35 03/26/18 11:35 03/26/18 11:35 03/26/18 11:37 03/26/18 11:37 03/26/18 11:37 03/26/18 11:37	Analyzed 03/26/18 18:21 03/26/18 18:21 03/26/18 18:21 03/26/18 18:21 03/26/18 18:21 03/26/18 18:21 03/26/18 18:21 03/26/18 18:21 03/26/18 18:34 03/26/18 18:34 03/26/18 18:34 03/26/18 18:34	
Nitrate Nitrite as N Method: 200.7 Rev 4.4 - Metals (Analyte Aluminum Arsenic Boron Beryllium Chromium Chro	0.42 (ICP) - Tot Result 800 ND 0.041 ND 0.77 ND ND ND 0.77 ND ND 0.77 ND ND 0.77 ND ND 0.77 ND ND ND 0.77 ND ND ND ND ND ND ND ND ND ND ND ND ND	al Recover Qualifier J,DX ecoverable Qualifier	0.15 able RL 100 10 0.050 2.0 5.0 0.10 10 10 20 RL 1.0 2.0 1.0 2.0 2.0 2.0 2.0 0.10 2.0 0.10 0.05 0.10 0.10 0.05 0.10 0.05 0.10 0.05 0.10 0.05 0.10 0.05 0.10 0.10 0.05 0.10 0.05 0.10 0.05 0.10 0.10 0.05 0.10 0.10 0.10 0.05 0.10 0.20 0.10 0.10 0.10 0.20 0.10 0.10 0.20 0.10 0.10 0.20 0.10 0.20 0.10 0.10 0.20 0.10 0.20 0.10 0.20 0.10 0.20 0.10 0.20 0.10 0.20 0.10 0.20 0.20 0.10 0.20 0.	MDL 50 8.9 0.025 1.0 2.5 0.050 5.0 12 MDL 0.25 0.50 0.50 0.50 0.50	Unit ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L		03/26/18 11:35 03/26/18 11:35 03/26/18 11:35 03/26/18 11:35 03/26/18 11:35 03/26/18 11:35 03/26/18 11:35 03/26/18 11:35 03/26/18 11:35 03/26/18 11:37 03/26/18 11:37 03/26/18 11:37 03/26/18 11:37 03/26/18 11:37	Analyzed 03/26/18 18:21 03/26/18 18:21 03/26/18 18:21 03/26/18 18:21 03/26/18 18:21 03/26/18 18:21 03/26/18 18:21 03/26/18 18:21 03/26/18 18:34 03/26/18 18:34 03/26/18 18:34 03/26/18 18:34 03/26/18 18:34 03/26/18 18:34	
Nitrate Nitrite as N Method: 200.7 Rev 4.4 - Metals (Analyte Aluminum Arsenic Boron Beryllium Chromium ron Nickel /anadium Zinc Method: 200.8 - Metals (ICP/MS) Analyte Cadmium Copper Lead Antimony Selenium Challium	0.42 (ICP) - Tot Result 800 ND 0.041 ND 0.77 ND ND ND 0 - Total R Result ND 5.8 2.1 0.69 ND ND	al Recover Qualifier J,DX ecoverable Qualifier	0.15 able RL 100 10 0.050 2.0 5.0 0.10 10 20 RL 1.0 2.0 1.0 2.0 1.0 2.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1	MDL 50 8.9 0.025 1.0 2.5 0.050 5.0 5.0 12 MDL 0.25 0.50 0.50 0.50 0.50 0.50	Unit ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L		03/26/18 11:35 03/26/18 11:35 03/26/18 11:35 03/26/18 11:35 03/26/18 11:35 03/26/18 11:35 03/26/18 11:35 03/26/18 11:35 03/26/18 11:35 03/26/18 11:37 03/26/18 11:37 03/26/18 11:37 03/26/18 11:37 03/26/18 11:37	Analyzed 03/26/18 18:21 03/26/18 18:21 03/26/18 18:21 03/26/18 18:21 03/26/18 18:21 03/26/18 18:21 03/26/18 18:21 03/26/18 18:21 03/26/18 18:34 03/26/18 18:34 03/26/18 18:34 03/26/18 18:34 03/26/18 18:34 03/26/18 18:34	
Nitrate Nitrite as N Method: 200.7 Rev 4.4 - Metals (Analyte Aluminum Arsenic Boron Beryllium Chromium Chro	0.42 (ICP) - Tot Result 800 ND 0.041 ND 0.77 ND ND ND 0.77 ND ND 0.77 ND ND 0.77 ND ND 0.77 ND ND ND 0.77 ND ND ND ND ND ND ND ND ND ND ND ND ND	al Recover Qualifier J,DX ecoverable Qualifier	0.15 able RL 100 10 0.050 2.0 5.0 0.10 10 10 20 RL 1.0 2.0 1.0 2.0 2.0 2.0 2.0 0.10 2.0 0.10 0.05 0.10 0.10 0.05 0.10 0.05 0.10 0.05 0.10 0.05 0.10 0.05 0.10 0.10 0.05 0.10 0.05 0.10 0.05 0.10 0.10 0.05 0.10 0.10 0.10 0.05 0.10 0.20 0.10 0.10 0.10 0.20 0.10 0.10 0.20 0.10 0.10 0.20 0.10 0.20 0.10 0.10 0.20 0.10 0.20 0.10 0.20 0.10 0.20 0.10 0.20 0.10 0.20 0.10 0.20 0.20 0.10 0.20 0.	MDL 50 8.9 0.025 1.0 2.5 0.050 5.0 5.0 12 MDL 0.25 0.50 0.50 0.50 0.50 0.50	Unit ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L		03/26/18 11:35 03/26/18 11:35 03/26/18 11:35 03/26/18 11:35 03/26/18 11:35 03/26/18 11:35 03/26/18 11:35 03/26/18 11:35 03/26/18 11:35 03/26/18 11:37 03/26/18 11:37 03/26/18 11:37 03/26/18 11:37 03/26/18 11:37	Analyzed 03/26/18 18:21 03/26/18 18:21 03/26/18 18:21 03/26/18 18:21 03/26/18 18:21 03/26/18 18:21 03/26/18 18:21 03/26/18 18:21 03/26/18 18:34 03/26/18 18:34 03/26/18 18:34 03/26/18 18:34 03/26/18 18:34 03/26/18 18:34	Dil F
Nitrate Nitrite as N Method: 200.7 Rev 4.4 - Metals (Analyte Aluminum Arsenic Boron Beryllium Chromium ron Nickel /anadium Zinc Method: 200.8 - Metals (ICP/MS) Analyte Cadmium Copper Lead Antimony Selenium Thallium Silver	0.42 (ICP) - Tot Result 800 ND 0.041 ND ND ND ND 0.77 ND ND ND 0.77 ND ND 0.77 ND ND ND 0.69 ND ND ND ND 5.8 2.1 0.69 ND ND ND	al Recover Qualifier J,DX ecoverable Qualifier	0.15 able RL 100 10 0.050 2.0 5.0 0.10 10 20 RL 1.0 2.0 1.0 2.0 1.0 2.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1	MDL 50 8.9 0.025 1.0 2.5 0.050 5.0 5.0 12 MDL 0.25 0.50 0.50 0.50 0.50 0.50	Unit ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L		03/26/18 11:35 03/26/18 11:35 03/26/18 11:35 03/26/18 11:35 03/26/18 11:35 03/26/18 11:35 03/26/18 11:35 03/26/18 11:35 03/26/18 11:35 03/26/18 11:37 03/26/18 11:37 03/26/18 11:37 03/26/18 11:37 03/26/18 11:37	Analyzed 03/26/18 18:21 03/26/18 18:21 03/26/18 18:21 03/26/18 18:21 03/26/18 18:21 03/26/18 18:21 03/26/18 18:21 03/26/18 18:21 03/26/18 18:34 03/26/18 18:34 03/26/18 18:34 03/26/18 18:34 03/26/18 18:34 03/26/18 18:34	
Nitrate Nitrite as N Method: 200.7 Rev 4.4 - Metals (Analyte Aluminum Arsenic Boron Beryllium Chromium ron Vickel /anadium Zinc Method: 200.8 - Metals (ICP/MS) Analyte Cadmium Copper Lead Antimony Selenium Thallium	0.42 (ICP) - Tot Result 800 ND 0.041 ND ND 0.77 ND ND ND 0.77 ND ND 0.77 ND ND ND 0.77 ND ND ND ND ND 0.69 ND ND ND ND 0.69 ND	al Recover Qualifier J,DX ecoverable Qualifier	0.15 able RL 100 10 0.050 2.0 5.0 0.10 10 20 RL 1.0 2.0 1.0 2.0 1.0 2.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1	MDL 50 8.9 0.025 1.0 2.5 0.050 5.0 5.0 12 MDL 0.25 0.50 0.50 0.50 0.50 0.50	Unit ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L		03/26/18 11:35 03/26/18 11:35 03/26/18 11:35 03/26/18 11:35 03/26/18 11:35 03/26/18 11:35 03/26/18 11:35 03/26/18 11:35 03/26/18 11:35 03/26/18 11:37 03/26/18 11:37 03/26/18 11:37 03/26/18 11:37 03/26/18 11:37	Analyzed 03/26/18 18:21 03/26/18 18:21 03/26/18 18:21 03/26/18 18:21 03/26/18 18:21 03/26/18 18:21 03/26/18 18:21 03/26/18 18:21 03/26/18 18:34 03/26/18 18:34 03/26/18 18:34 03/26/18 18:34 03/26/18 18:34 03/26/18 18:34	

Client Sample ID: Outfall009_20180322_Comp Date Collected: 03/22/18 15:30 Date Received: 03/22/18 20:00

Lab Sample ID: 440-206741-1 Matrix: Water

Lab Sample ID: 440-206741-2

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hardness, as CaCO3	20		0.33	0.17	mg/L			03/27/18 17:57	1
General Chemistry									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	75		10	5.0	mg/L			03/26/18 12:09	1
Total Suspended Solids	9.0		2.0	1.0	mg/L			03/26/18 16:12	1
			5.0		ug/L		03/23/18 10:40	03/24/18 09:57	

Client Sample ID: Outfall009_20180322_Comp_F

Date Collected: 03/22/18 15:30

Date Received: 03/22/18 20:00

Method: 200.7 Rev 4.4	Method: 200.7 Rev 4.4 - Metals (ICP) - Dissolved										
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac		
Aluminum	140		100	50	ug/L		03/26/18 12:21	03/26/18 18:05	1		
Arsenic	ND		10	8.9	ug/L		03/26/18 12:21	03/26/18 18:05	1		
Boron	0.044	J,DX	0.050	0.025	mg/L		03/26/18 12:21	03/26/18 18:05	1		
Beryllium	ND		2.0	1.0	ug/L		03/26/18 12:21	03/26/18 18:05	1		
Chromium	ND		5.0	2.5	ug/L		03/28/18 14:11	03/28/18 18:44	1		
Iron	0.16		0.10	0.050	mg/L		03/26/18 12:21	03/26/18 18:05	1		
Nickel	ND		10	5.0	ug/L		03/26/18 12:21	03/26/18 18:05	1		
Vanadium	ND		10	5.0	ug/L		03/26/18 12:21	03/26/18 18:05	1		
Zinc	ND		20	12	ug/L		03/26/18 12:21	03/26/18 18:05	1		

Method: 200.8 - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.0	0.25	ug/L		03/26/18 12:22	03/26/18 12:59	1
Copper	4.9		2.0	0.50	ug/L		03/26/18 12:22	03/26/18 12:59	1
Lead	0.52	J,DX	1.0	0.50	ug/L		03/26/18 12:22	03/26/18 12:59	1
Antimony	1.3	J,DX	2.0	0.50	ug/L		03/26/18 12:22	03/26/18 12:59	1
Selenium	ND		2.0	0.50	ug/L		03/26/18 12:22	03/26/18 12:59	1
Thallium	ND		1.0	0.50	ug/L		03/26/18 12:22	03/26/18 12:59	1
Silver	ND		1.0	0.50	ug/L		04/04/18 17:07	04/04/18 22:53	1
_ Method: 245.1 - Mercur	y (CVAA) - Dissolv	/ed							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.10	ug/L		03/26/18 13:15	03/27/18 16:34	1
	tal Hardness (as C	CaCO3) by c	alculation -	Dissolv	ved				
Analyte	•	Qualifier	RL	MDL		D	Prepared	Analyzed	Dil Fac

Analyte		Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Hardness, as CaCO3	19		0.33	0.17	mg/L			03/27/18 17:57	1

Method Summary

Client: Haley & Aldrich, Inc. Project/Site: Annual Outfall 009 Comp

lethod	Method Description	Protocol	Laboratory
25	Semivolatile Organic Compounds (GC/MS)	EPA	TAL IRV
08 PCB LL	Polychlorinated Biphenyls (PCBs) Low level	40CFR136A	TAL IRV
08 Pesticides	Organochlorine Pesticides Low level	40CFR136A	TAL IRV
18.6	Chromium, Hexavalent (Ion Chromatography)	EPA	TAL IRV
00.0	Anions, Ion Chromatography	MCAWW	TAL IRV
14.0	Perchlorate (IC)	EPA	TAL IRV
IO3NO2 Calc	Nitrogen, Nitrate-Nitrite	EPA	TAL IRV
00.7 Rev 4.4	Metals (ICP)	EPA	TAL IRV
00.8	Metals (ICP/MS)	EPA	TAL IRV
45.1	Mercury (CVAA)	EPA	TAL IRV
M 2340B	Total Hardness (as CaCO3) by calculation	SM	TAL IRV
M 2540C	Solids, Total Dissolved (TDS)	SM	TAL IRV
M 2540D	Solids, Total Suspended (TSS)	SM	TAL IRV
M 4500 CN E	Cyanide, Total (Low Level)	SM	TAL IRV

Protocol References:

40CFR136A = "Methods for Organic Chemical Analysis of Municipal Industrial Wastewater", 40CFR, Part 136, Appendix A, October 26, 1984 and subsequent revisions.

EPA = US Environmental Protection Agency

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

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

Laboratory References:

TAL IRV = TestAmerica Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022

Client Sample ID: Outfall009_20180322_Comp

Lab Sample ID: 440-206741-1 Matrix: Water

Date Collected: 03/22/18 15:30 Date Received: 03/22/18 20:00

Γ	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	625			1045 mL	2.0 mL	466272	03/27/18 09:48	JS1	TAL IRV
Total/NA	Analysis	625		1			466864	03/29/18 15:14	DF	TAL IRV
Total/NA	Prep	608			1045 mL	2 mL	466200	03/27/18 06:02	L1H	TAL IRV
Total/NA	Analysis	608 PCB LL		1			466278	03/27/18 15:03	JM	TAL IRV
Total/NA	Prep	608			1045 mL	2 mL	466200	03/27/18 06:02	L1H	TAL IRV
Total/NA	Analysis	608 Pesticides		1			466528	03/28/18 11:25	IVA	TAL IRV
Total/NA	Analysis	218.6		1			465186	03/22/18 23:25	MN	TAL IRV
Total/NA	Analysis	300.0		1			465264	03/23/18 00:11	NTN	TAL IRV
Total/NA	Analysis	300.0		1			465265	03/23/18 00:11	NTN	TAL IRV
Total/NA	Analysis	300.0	DL	5			465264	03/23/18 00:27	NTN	TAL IRV
Total/NA	Analysis	300.0	DL	5			465265	03/23/18 00:27	NTN	TAL IRV
Total/NA	Analysis	314.0		1			467055	03/30/18 09:12	СТН	TAL IRV
Total/NA	Analysis	NO3NO2 Calc		1			467739	04/03/18 09:18	TLN	TAL IRV
Total Recoverable	Prep	200.2			25 mL	25 mL	466017	03/26/18 11:35	Q1N	TAL IRV
Total Recoverable	Analysis	200.7 Rev 4.4		1			466147	03/26/18 18:21	K1E	TAL IRV
Total Recoverable	Prep	200.2			25 mL	25 mL	466018	03/26/18 11:37	Q1N	TAL IRV
Total Recoverable	Analysis	200.8		1			466136	03/26/18 18:34	B1H	TAL IRV
Total/NA	Prep	245.1			20 mL	20 mL	465644	03/23/18 13:27	DB	TAL IRV
Total/NA	Analysis	245.1		1			465777	03/23/18 20:57	P1P	TAL IRV
Total Recoverable	Analysis	SM 2340B		1			466444	03/27/18 17:57	A1S	TAL IRV
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	466028	03/26/18 12:09	XL	TAL IRV
Total/NA	Analysis	SM 2540D		1	500 mL	1000 mL	466101	03/26/18 16:12	HTL	TAL IRV
Total/NA	Prep	Distill/CN			50 mL	50 mL	465583	03/23/18 10:40	KMY	TAL IRV
Total/NA	Analysis	SM 4500 CN E		1			465829	03/24/18 09:57	KMY	TAL IRV

Client Sample ID: Outfall009_20180322_Comp_F Date Collected: 03/22/18 15:30 Date Received: 03/22/18 20:00

Lab Sample ID: 440-206741-2 Matrix: Water

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Dissolved	Filtration	FILTRATION			200 mL	200 mL	465710	03/23/18 17:38	MN1	TAL IRV
Dissolved	Prep	200.2			25 mL	25 mL	466029	03/26/18 12:21	Q1N	TAL IRV
Dissolved	Analysis	200.7 Rev 4.4		1			466147	03/26/18 18:05	K1E	TAL IRV
Dissolved	Filtration	FILTRATION			200 mL	200 mL	465710	03/23/18 17:38	MN1	TAL IRV
Dissolved	Prep	200.2			25 mL	25 mL	466646	03/28/18 14:11	JL	TAL IRV
Dissolved	Analysis	200.7 Rev 4.4		1			466739	03/28/18 18:44	K1E	TAL IRV
Dissolved	Filtration	FILTRATION			200 mL	200 mL	465710	03/23/18 17:38	MN1	TAL IRV
Dissolved	Prep	200.2			25 mL	25 mL	466030	03/26/18 12:22	Q1N	TAL IRV
Dissolved	Analysis	200.8		1			466054	03/26/18 12:59	B1H	TAL IRV
Dissolved	Filtration	FILTRATION			200 mL	200 mL	465710	03/23/18 17:38	MN1	TAL IRV
Dissolved	Prep	200.2			25 mL	25 mL	468190	04/04/18 17:07	JL	TAL IRV
Dissolved	Analysis	200.8		1			468347	04/04/18 22:53	B1H	TAL IRV
Dissolved	Filtration	FILTRATION			200 mL	200 mL	465710	03/23/18 17:38	MN1	TAL IRV

Lab Sample ID: 440-206741-2

Matrix: Water

Client Sample ID: Outfall009_20180322_Comp_F Date Collected: 03/22/18 15:30

Date Received: 03/22/18 20:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	245.1			20 mL	20 mL	466055	03/26/18 13:15	DB	TAL IRV
Dissolved	Analysis	245.1		1			466636	03/27/18 16:34	DB	TAL IRV
Dissolved	Analysis	SM 2340B		1			466444	03/27/18 17:57	A1S	TAL IRV

Laboratory References:

TAL IRV = TestAmerica Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022

2 3 4 5

Client Sample ID: Method Blank Prep Type: Total/NA Prep Batch: 466272

Client: Haley & Aldrich, Inc. Project/Site: Annual Outfall 009 Comp

Method: 625 - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID:	MB	440-466272/1-A
Matrix: Water		

Result ND ND ND ND ND ND ND ND ND		RL 0.505 0.505 10.1 5.05 2.02 0.505	0.202 0.202 0.202 5.05 2.02 1.01	ug/L ug/L ug/L	<u>D</u>	03/27/18 09:48 03/27/18 09:48	Prep Batch: 4 Analyzed 03/29/18 12:03 03/29/18 12:03 03/29/18 12:03	Dil Fac	5 6
Result ND ND ND ND ND ND ND ND ND	Qualifier	0.505 0.505 0.505 10.1 5.05 2.02 0.505	0.202 0.202 0.202 5.05 2.02 1.01	ug/L ug/L ug/L ug/L	<u>D</u>	03/27/18 09:48 03/27/18 09:48 03/27/18 09:48	03/29/18 12:03 03/29/18 12:03	1 1	6
ND ND ND ND ND ND ND ND		0.505 0.505 10.1 5.05 2.02 0.505	0.202 0.202 5.05 2.02 1.01	ug/L ug/L ug/L		03/27/18 09:48 03/27/18 09:48	03/29/18 12:03 03/29/18 12:03	1	
ND ND ND ND ND ND ND		0.505 10.1 5.05 2.02 0.505	0.202 0.202 5.05 2.02 1.01	ug/L ug/L ug/L		03/27/18 09:48			
ND ND ND ND ND ND		10.1 5.05 2.02 0.505	0.202 5.05 2.02 1.01	ug/L ug/L			03/29/18 12:03	1	
ND ND ND ND ND		5.05 2.02 0.505	2.02 1.01	-					
ND ND ND ND ND		2.02 0.505	2.02 1.01	-		03/27/18 09:48	03/29/18 12:03	1	
ND ND ND ND ND		2.02 0.505	1.01				03/29/18 12:03		8
ND ND ND ND		0.505		ug/L			03/29/18 12:03		
ND ND ND			0.253	-			03/29/18 12:03		9
ND ND		2.02	0.505	-			03/29/18 12:03		
ND		0.505	0.202	-			03/29/18 12:03		
		0.505							
				-					
				-					
				-					
				-					
				-					
				•					
				-					
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				•					
				-					
				-				1	
ND		0.505		-					
ND		0.505		-					
ND		0.505		-					
ND		5.05		-		03/27/18 09:48	03/29/18 12:03	1	
ND		2.02	1.01	ug/L		03/27/18 09:48	03/29/18 12:03	1	
ND		1.01	0.505	ug/L		03/27/18 09:48	03/29/18 12:03	1	
ND		2.02	1.01	ug/L		03/27/18 09:48	03/29/18 12:03	1	
ND		0.505	0.253	ug/L		03/27/18 09:48	03/29/18 12:03	1	
ND		5.05		-		03/27/18 09:48	03/29/18 12:03	1	
ND		5.05		-		03/27/18 09:48	03/29/18 12:03	1	
ND		5.05		-					
ND		5.05		-					
ND		5.05		-					
ND		1.01		-					
		-		• <u>3</u>			•••••		
ND		0.505	0.202	ug/L		03/27/18 09:48	03/29/18 12:03	1	
ND		0.505						1	
ND		1.01						1	
ND		2.02							
ND		3.03		-				1	
		5.05		-					
				-					
				-					
				-					
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	ND ND ND ND ND ND ND ND ND ND ND ND ND N	ND ND ND ND ND ND ND ND ND ND ND ND ND N	ND 5.05 ND 1.01 ND 2.02 ND 0.505 ND 1.01 ND 0.505 ND 2.02 ND 0.505 ND 2.02 ND 1.01 ND 2.02 ND 1.01 ND 5.05 ND 5.05 ND 5.05 ND 5.05 ND 5.05 ND 1.01 ND 2.02 ND 3.03 ND 5.05 ND 2.02	ND 5.05 2.02 ND 1.01 0.505 ND 2.02 0.202 ND 0.505 0.202 ND 0.505 0.202 ND 1.01 0.505 ND 1.01 0.505 ND 0.505 0.202 ND 1.01 0.505 ND 2.02 1.01 ND 2.02 1.01 ND 5.05 2.02 ND 5.05 2.02 ND 5.05 2.02 ND 5.05 2.02 ND	ND 5.05 2.02 ug/L ND 1.01 0.505 2.02 ug/L ND 2.02 0.202 ug/L ND 2.02 0.202 ug/L ND 0.505 0.202 ug/L ND 2.02 1.01 ug/L ND 0.505 0.202 ug/L ND 5.05 2.02 ug/L ND 5.05 2.02 ug/L	ND 5.05 2.02 ug/L ND 1.01 0.505 ug/L ND 2.02 0.202 ug/L ND 2.02 0.202 ug/L ND 0.505 0.202 ug/L ND 1.01 0.505 ug/L ND 0.505 0.202 ug/L ND 1.01 0.505 ug/L ND 2.02 1.01 ug/L ND 0.505 2.02 ug/L ND 5.05 2.02 ug/L ND	ND 5.05 2.02 ug/L 03/27/18 09:48 ND 1.01 0.505 ug/L 03/27/18 09:48 ND 2.02 ug/L 03/27/18 09:48 ND 2.02 0.202 ug/L 03/27/18 09:48 ND 0.505 0.202 ug/L 03/27/18 09:48 ND 1.0	ND 5.05 2.02 ug/L 03/27/18 09:48 03/29/18 12:03 ND 1.01 0.505 ug/L 03/27/18 09:48 03/29/18 12:03 ND 2.02 0.02 ug/L 03/27/18 09:48 03/29/18 12:03 ND 2.02 0.02 ug/L 03/27/18 09:48 03/29/18 12:03 ND 0.505 0.202 ug/L 03/27/18 09:48 03/29/18 12:03 ND 5.05 2.02 ug/L 03/27/18 09:48 03/29/18 12:03	ND 5.05 2.02 ug/L 03/27/18 09:48 03/29/18 12:03 1 ND 1.01 0.505 ug/L 03/27/18 09:48 03/29/18 12:03 1 ND 2.02 ug/L 03/27/18 09:48 03/29/18 12:03 1 ND 0.505 0.202 ug/L 03/27/18 09:48 03/29/18 12:03 1 ND 1.01 0.505 0.202 ug/L 03/27/18 09:48 03/29/18 12:03 1 ND 0.505 0.202 ug/L 03/27/18 09:48 03/29/18 12:03 1 ND 0.505 0.202 ug/L 03/27/18 09:48 03/29/18 12:03 1 ND 0.505 0.202 ug/L 03/27/18 09:48 03/29/18 12:03 1 ND 0.505 0.202 ug/L 03/27/18 09:48 03/29/18 12:03 1 ND 0.505 0.202 ug/L 03/27/18 09:48 03/29/18 12:03 1 ND 0.505 0.202 ug/L 03/27/18 09:48 03/29/18

Lab Sample ID: MB 440-466272/1-A

03/27/18 09:48 03/29/18 12:03

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Client Sample ID: Method Blank 5

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Method: 625 - Semivolatile O	raanic Compounds	(GC/MS)	(Continued)	
Wethou. 025 - Semivolatile O	ngame compounds		(Continueu)	

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Matrix: Water								Prep Type: To	otal/NA
Analysis Batch: 466864								Prep Batch:	466272
-	MB	MB							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
N-Nitrosodiphenylamine	ND		1.01	0.505	ug/L		03/27/18 09:48	03/29/18 12:03	1
N-Nitrosodi-n-propylamine	ND		2.02	1.01	ug/L		03/27/18 09:48	03/29/18 12:03	1
Pentachlorophenol	ND		2.02	1.01	ug/L		03/27/18 09:48	03/29/18 12:03	1
Phenanthrene	ND		0.505	0.202	ug/L		03/27/18 09:48	03/29/18 12:03	1
Phenol	ND		1.01	0.505	ug/L		03/27/18 09:48	03/29/18 12:03	1
Pyrene	ND		0.505	0.202	ug/L		03/27/18 09:48	03/29/18 12:03	1
1,2,4-Trichlorobenzene	ND		1.01	0.505	ug/L		03/27/18 09:48	03/29/18 12:03	1
2,4,6-Trichlorophenol	ND		1.01	0.505	ug/L		03/27/18 09:48	03/29/18 12:03	1
Benzo[g,h,i]perylene	ND		5.05	2.02	ug/L		03/27/18 09:48	03/29/18 12:03	1
bis (2-chloroisopropyl) ether	ND		0.505	0.202	ug/L		03/27/18 09:48	03/29/18 12:03	1
	МВ	МВ							
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	71		50 - 120				03/27/18 09:48	03/29/18 12:03	1
2-Fluorophenol	66		30 - 120				03/27/18 09:48	03/29/18 12:03	1
2,4,6-Tribromophenol	95		40 - 120				03/27/18 09:48	03/29/18 12:03	1
Nitrobenzene-d5	74		45 - 120				03/27/18 09:48	03/29/18 12:03	1
Terphenyl-d14	83		37 - 144				03/27/18 09:48	03/29/18 12:03	1

35 - 120

Lab Sample ID: LCS 440-466272/2-A **Matrix: Water**

Phenol-d6

Analysis Batch: 466864 **Prep Batch: 466272** LCS LCS Spike %Rec. Added **Result Qualifier** Unit Limits D %Rec Analyte 10.2 Acenaphthene 8.031 ug/L 79 47 - 145 Acenaphthylene 10.2 7.949 ug/L 78 33 - 145 Anthracene 10.2 8.037 ug/L 79 27 - 133 Benzidine 10.2 ND ug/L 33 5 - 66 Benzo[a]anthracene 10.2 8.265 81 33 - 143 ug/L Benzo[b]fluoranthene 10.2 8.071 79 24 - 150 ug/L 81 Benzo[k]fluoranthene 10.2 8.234 ug/L 11 - 150 Benzo[a]pyrene 10.2 8.051 ug/L 79 17 - 150 Bis(2-chloroethoxy)methane 10.2 7.948 ug/L 78 33 - 150 Bis(2-chloroethyl)ether 10.2 8.040 ug/L 79 12 - 150 Bis(2-ethylhexyl) phthalate 10.2 8.614 ug/L 85 10 - 150 4-Bromophenyl phenyl ether 10.2 7.758 ug/L 76 53 - 127 Butyl benzyl phthalate 10.2 8.578 84 10 - 150 ug/L 4-Chloro-3-methylphenol 10.2 8.551 ug/L 84 22 - 147 77 2-Chloronaphthalene 10.2 7.858 ug/L 60 - 1182-Chlorophenol 10.2 7.397 ug/L 73 23 - 134 4-Chlorophenyl phenyl ether 10.2 7.862 ug/L 77 25 - 150 Chrysene 10.2 8.188 ug/L 81 17 - 150 10.2 75 10 - 150 Dibenz(a,h)anthracene 7.596 ug/L 84 Di-n-butyl phthalate 10.2 8.540 10_118 ug/L 1,2-Dichlorobenzene 10.2 7.083 ug/L 70 32 - 129 68 1.3-Dichlorobenzene 10.2 6.868 ug/L 10 - 150 1,4-Dichlorobenzene 10.2 6.990 ug/L 69 20 - 124 3,3'-Dichlorobenzidine 10.2 7.083 ug/L 70 10 - 150

Method: 625 - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 440-466272/2-A Matrix: Water				Clie	nt Sample ID	: Lab Control Sample Prep Type: Total/NA
Analysis Batch: 466864	Creika	LCS	1.00			Prep Batch: 466272 %Rec.
Analyte	Spike Added	-	Qualifier	Unit	D %Rec	%Rec. Limits
2,4-Dichlorophenol		7.801	Quaimer	ug/L	$-\frac{1}{2} - \frac{7}{77}$	<u> </u>
Diethyl phthalate	10.2	8.136		ug/L	80	10 - 114
2,4-Dimethylphenol	10.2	7.566		ug/L ug/L	80 75	32 - 119
Dimethyl phthalate	10.2	7.954		ug/L	73	10 - 112
4,6-Dinitro-2-methylphenol	20.3	15.44		ug/L ug/L	76	10 - 112
2,4-Dinitrophenol	20.3	13.90		-	68	50 - 150
	20.3	7.950		ug/L	78	39 - 139
2,4-Dinitrotoluene 2.6-Dinitrotoluene	10.2	7.950 8.066		ug/L ug/L	78 79	59 - 159 50 - 150
				-		
Di-n-octyl phthalate	10.2	8.989		ug/L	89 75	10 - 146
1,2-Diphenylhydrazine(as Azobenzene)	10.3	7.646		ug/L	75	47 - 116
Fluoranthene	10.2	8.634		ug/L	85	26 - 137
Fluorene	10.2	7.974		ug/L	79	59 - 121
Hexachlorobenzene	10.2	8.139		ug/L	80	10 - 150
Hexachlorobutadiene	10.2	6.205		ug/L	61	24 - 116
Hexachloroethane	10.2	6.210		ug/L	61	40 - 113
Hexachlorocyclopentadiene	10.2	3.903	J,DX	ug/L	38	10 - 67
Indeno[1,2,3-cd]pyrene	10.2	8.113		ug/L	80	10 - 150
Isophorone	10.2	8.559		ug/L	84	21 - 150
Naphthalene	10.2	7.377		ug/L	73	21 - 133
Nitrobenzene	10.2	7.602		ug/L	75	35 - 150
2-Nitrophenol	10.2	7.443		ug/L	73	29 - 150
4-Nitrophenol	20.3	14.35		ug/L	71	10 - 132
N-Nitrosodimethylamine	10.2	8.272		ug/L	81	26 - 117
N-Nitrosodiphenylamine	10.2	7.673		ug/L	76	54 ₋ 110
N-Nitrosodi-n-propylamine	10.2	8.247		ug/L	81	10 - 150
Pentachlorophenol	20.3	14.13		ug/L	70	14 ₋ 150
Phenanthrene	10.2	8.169		ug/L	80	54 - 120
Phenol	10.2	7.026		ug/L	69	10 - 112
Pyrene	10.2	8.160		ug/L	80	52 - 115
1,2,4-Trichlorobenzene	10.2	7.170		ug/L	71	44 - 142
2,4,6-Trichlorophenol	10.2	8.278		ug/L	82	37 - 144
Benzo[g,h,i]perylene	10.2	7.599		ug/L	75	10 - 150
bis (2-chloroisopropyl) ether	10.2	7.265		ug/L	72	47 - 103

	LCS	LUS	
Surrogate	%Recovery	Qualifier	Limits
2-Fluorobiphenyl	77		50 - 120
2-Fluorophenol	67		30 - 120
2,4,6-Tribromophenol	86		40 - 120
Nitrobenzene-d5	75		45 - 120
Terphenyl-d14	79		37 - 144
Phenol-d6	74		35 - 120

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Method: 625 - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 440-206741			Client Sample ID: Outfall009_20180322_Co						
Matrix: Water									Prep Type: Total/NA
Analysis Batch: 466864									Prep Batch: 466272
	Sample	Sample	Spike	MS	MS				%Rec.
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits
Acenaphthene	ND		9.71	7.630		ug/L		79	47 - 145
Acenaphthylene	ND		9.71	3.848		ug/L		40	33 - 145
Anthracene	ND		9.71	6.008		ug/L		62	27 - 133
Benzidine	ND		9.71	ND	LN	ug/L		0	30 - 160
Benzo[a]anthracene	ND		9.71	7.868		ug/L		81	33 - 143
Benzo[b]fluoranthene	ND		9.71	9.597		ug/L		99	24 - 150
Benzo[k]fluoranthene	ND		9.71	9.334		ug/L		96	11 - 150
Benzo[a]pyrene	ND		9.71	5.917		ug/L		61	17 - 150
Bis(2-chloroethoxy)methane	ND		9.71	0.7542	LN	ug/L		8	33 - 150
Bis(2-chloroethyl)ether	ND		9.71	6.855		ug/L		71	12 - 150
Bis(2-ethylhexyl) phthalate	ND		9.71	9.068		ug/L		93	10 - 150
4-Bromophenyl phenyl ether	ND		9.71	8.050		ug/L		83	53 ₋ 127
Butyl benzyl phthalate	ND		9.71	8.121		ug/L		84	10 - 150
4-Chloro-3-methylphenol	ND		9.71	8.763		ug/L		90	22 - 147
2-Chloronaphthalene	ND		9.71	7.638		ug/L		79	60 - 118
2-Chlorophenol	ND		9.71	7.168		ug/L		74	23 - 134
4-Chlorophenyl phenyl ether	ND		9.71	8.231		ug/L		85	25 - 150
Chrysene	ND		9.71	7.978		ug/L		82	17 - 150
Dibenz(a,h)anthracene	ND		9.71	7.217		ug/L		74	10 - 150
Di-n-butyl phthalate	ND		9.71	8.849		ug/L		91	10 - 118
1,2-Dichlorobenzene	ND		9.71	6.679		ug/L		69	32 - 129
1,3-Dichlorobenzene	ND		9.71	6.470		ug/L		67	10 - 150
1,4-Dichlorobenzene	ND		9.71	6.592		ug/L		68	20 - 124
3,3'-Dichlorobenzidine	ND		9.71		LN	ug/L		0	10 - 150
2,4-Dichlorophenol	ND		9.71	7.750		ug/L		80	39 - 135
Diethyl phthalate	ND		9.71	8.532		ug/L		88	10 - 114
2,4-Dimethylphenol	ND		9.71	7.614		ug/L		78	32 - 119
Dimethyl phthalate	ND		9.71	8.086		ug/L		83	10 - 112
4,6-Dinitro-2-methylphenol	ND		19.4	15.65		ug/L		81	10 - 112
2,4-Dinitrophenol	ND		19.4	15.33		ug/L		79	50 - 150
2,4-Dinitrotoluene	ND		9.71	8.376		ug/L		86	39 - 139
2,6-Dinitrotoluene	ND		9.71	8.322				86	50 - 150
Di-n-octyl phthalate	ND		9.71 9.71	9.142		ug/L ug/L		94	10 - 146
	ND		9.71		J,DX LN			8	60 - 120
1,2-Diphenylhydrazine(as Azobenzene)	ND		9.01	0.0200	J,DA LIN	ug/L		0	00 - 120
Fluoranthene	ND		9.71	8.754		ug/L		90	26 - 137
Fluorene	ND		9.71	8.131		ug/L		84	59 - 121
Hexachlorobenzene	ND		9.71	8.042		ug/L		83	10 - 150
Hexachlorobutadiene	ND		9.71	6.583		ug/L		68	24 - 116
Hexachloroethane	ND		9.71	6.006		ug/L		62	40 - 113
Hexachlorocyclopentadiene	ND		9.71		J,DX	ug/L		37	25 - 120
Indeno[1,2,3-cd]pyrene	ND		9.71	7.167	-,	ug/L		74	10 - 150
Isophorone	ND		9.71	8.242		ug/L		85	21 - 150
Naphthalene	ND		9.71	7.147		ug/L		74	21 - 133
Nitrobenzene	ND		9.71	7.179		ug/L		74	35 - 150
2-Nitrophenol	ND		9.71	7.337		ug/L		76	29 - 150
4-Nitrophenol	ND		19.4	15.54		ug/L		80	10 - 132
N-Nitrosodimethylamine	ND		9.71	7.460		ug/L		77	12 - 123
i in osoumetry annie	ND		5.71	7.400		ug/L			12 - 120

Client Sample ID: Outfall009_20180322_Comp

Prep Type: Total/NA

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Method: 625 - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 440-2067	/41-1 MS				Clie	nt Sam	ole ID:	Outfall	009_20180322_Comp			
Matrix: Water					Prep Type: Total/NA							
Analysis Batch: 466864									Prep Batch: 466272			
-	Sample	Sample	Spike	MS	MS				%Rec.			
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits			
N-Nitrosodiphenylamine	ND		9.71	3.731	LN	ug/L		38	60 - 120			
N-Nitrosodi-n-propylamine	ND		9.71	7.681		ug/L		79	10 - 150			
Pentachlorophenol	ND		19.4	15.29		ug/L		79	14 - 150			
Phenanthrene	ND		9.71	8.076		ug/L		83	54 - 120			
Phenol	ND		9.71	6.438		ug/L		66	10_112			
Pyrene	ND		9.71	7.844		ug/L		81	52 - 115			
1,2,4-Trichlorobenzene	ND		9.71	7.041		ug/L		73	44 - 142			
2,4,6-Trichlorophenol	ND		9.71	8.235		ug/L		85	37 - 144			
Benzo[g,h,i]perylene	ND		9.71	6.686		ug/L		69	10 - 150			
bis (2-chloroisopropyl) ether	ND		9.71	6.582		ug/L		68	45 - 120			
	MS	MS										
Surrogate	%Recovery	Qualifier	Limits									
2-Fluorobiphenyl	77		50 - 120									
2-Fluorophenol	67		30 - 120									
2,4,6-Tribromophenol	92		40 - 120									
Nitrobenzene-d5	74		45 - 120									
Terphenyl-d14	93		37 - 144									
Phenol-d6	64		35 - 120									

Lab Sample ID: 440-206741-1 MSD Matrix: Water

Analysis Batch: 466864	Sample	Sample Qualifier	Spike Added	-	MSD Qualifier	Unit	D	%Rec	Prep Ba %Rec.	atch: 40	6272 RPD
	•								Limits	RPD	Limit
Acenaphthene	ND		9.62	6.859		ug/L		71	47 - 145	11	25
Acenaphthylene	ND		9.62	2.778	LN BA	ug/L		29	33 - 145	32	25
Anthracene	ND		9.62	5.557		ug/L		58	27 - 133	8	25
Benzidine	ND		9.62	ND	LN	ug/L		0	30 - 160	NC	35
Benzo[a]anthracene	ND		9.62	6.822		ug/L		71	33 - 143	14	20
Benzo[b]fluoranthene	ND		9.62	8.092		ug/L		84	24 - 150	17	25
Benzo[k]fluoranthene	ND		9.62	7.614		ug/L		79	11 - 150	20	30
Benzo[a]pyrene	ND		9.62	4.242	BA	ug/L		44	17 - 150	33	25
Bis(2-chloroethoxy)methane	ND		9.62	0.3898	J,DX LN BA	ug/L		4	33 - 150	64	25
Bis(2-chloroethyl)ether	ND		9.62	7.190		ug/L		75	12 - 150	5	25
Bis(2-ethylhexyl) phthalate	ND		9.62	7.671		ug/L		80	10 - 150	17	25
4-Bromophenyl phenyl ether	ND		9.62	7.247		ug/L		75	53 - 127	11	25
Butyl benzyl phthalate	ND		9.62	4.422	J,DX BA	ug/L		46	10 - 150	59	25
4-Chloro-3-methylphenol	ND		9.62	7.766		ug/L		81	22 - 147	12	25
2-Chloronaphthalene	ND		9.62	7.116		ug/L		74	60 - 118	7	20
2-Chlorophenol	ND		9.62	6.505		ug/L		68	23 - 134	10	25
4-Chlorophenyl phenyl ether	ND		9.62	7.711		ug/L		80	25 - 150	7	25
Chrysene	ND		9.62	6.961		ug/L		72	17 - 150	14	25
Dibenz(a,h)anthracene	ND		9.62	6.106		ug/L		64	10 - 150	17	30
Di-n-butyl phthalate	ND		9.62	7.834		ug/L		81	10 - 118	12	25
1,2-Dichlorobenzene	ND		9.62	6.506		ug/L		68	32 - 129	3	25
1,3-Dichlorobenzene	ND		9.62	6.199		ug/L		64	10 - 150	4	25
1,4-Dichlorobenzene	ND		9.62	6.276		ug/L		65	20 - 124	5	25

2,4,6-Tribromophenol

Nitrobenzene-d5

Terphenyl-d14

Phenol-d6

Method: 625 - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 440-20674 Matrix: Water	41-1 MSD				Clie	nt Samp	ole ID:	Outfall	009_2018 Prep Ty	pe: Tot	al/NA
Analysis Batch: 466864	Comple	Comula	Creika	MOD	MSD				Prep Ba %Rec.	atch: 46	6272 RPD
Analyte	•	Sample Qualifier	Spike Added	-	Qualifier	Unit	D	%Rec	%Rec.	RPD	Limit
3.3'-Dichlorobenzidine	ND	Quaimer	9.62	ND		ug/L		0	10 - 150	NC	25
2,4-Dichlorophenol	ND		9.62	6.908		ug/L		72	39 - 135	12	25
Diethyl phthalate	ND		9.62	7.616		ug/L		72	10 - 114	12	30
2,4-Dimethylphenol	ND		9.62	6.869		ug/L		73	32 - 119	10	25
Dimethyl phthalate	ND		9.62 9.62	7.357		ug/L		77	10 - 112	9	30
4,6-Dinitro-2-methylphenol	ND		19.2	14.18		ug/L		74	10 - 112	10	25
2,4-Dinitrophenol	ND		19.2	13.45		ug/L		70	10 - 150 50 - 150	13	25
2,4-Dinitrotoluene	ND		9.62	7.447		ug/L		77	39 - 139	10	25
2,6-Dinitrotoluene	ND		9.62	7.602		ug/L		79	50 - 150	9	20
Di-n-octyl phthalate	ND		9.62	8.001		ug/L		83	10 - 146	13	20
1,2-Diphenylhydrazine(as	ND		9.71		LN BA	ug/L		12	60 - 120	32	25
Azobenzene)			0.71	1.102		ug/L		12	00-120	02	20
Fluoranthene	ND		9.62	7.797		ug/L		81	26 - 137	12	25
Fluorene	ND		9.62	7.485		ug/L		78	59 ₋ 121	8	25
Hexachlorobenzene	ND		9.62	7.366		ug/L		77	10 - 150	9	25
Hexachlorobutadiene	ND		9.62	6.376		ug/L		66	24 - 116	3	25
Hexachloroethane	ND		9.62	5.922		ug/L		62	40 - 113	1	25
Hexachlorocyclopentadiene	ND		9.62	3.791	J,DX	ug/L		39	25 - 120	4	30
Indeno[1,2,3-cd]pyrene	ND		9.62	5.768		ug/L		60	10 - 150	22	30
Isophorone	ND		9.62	7.567		ug/L		79	21 - 150	9	25
Naphthalene	ND		9.62	6.580		ug/L		68	21 - 133	8	25
Nitrobenzene	ND		9.62	6.635		ug/L		69	35 - 150	8	25
2-Nitrophenol	ND		9.62	6.629		ug/L		69	29 - 150	10	25
4-Nitrophenol	ND		19.2	13.71		ug/L		71	10 - 132	13	30
N-Nitrosodimethylamine	ND		9.62	7.451		ug/L		77	12 - 123	0	35
N-Nitrosodiphenylamine	ND		9.62	2.702	LN BA	ug/L		28	60 - 120	32	25
N-Nitrosodi-n-propylamine	ND		9.62	7.129		ug/L		74	10 - 150	7	25
Pentachlorophenol	ND		19.2	13.48		ug/L		70	14 - 150	13	25
Phenanthrene	ND		9.62	7.313		ug/L		76	54 ₋ 120	10	25
Phenol	ND		9.62	5.856		ug/L		61	10_112	9	25
Pyrene	ND		9.62	6.399		ug/L		67	52 - 115	20	25
1,2,4-Trichlorobenzene	ND		9.62	6.552		ug/L		68	44 - 142	7	20
2,4,6-Trichlorophenol	ND		9.62	7.398		ug/L		77	37 - 144	11	30
Benzo[g,h,i]perylene	ND		9.62	4.957		ug/L		52	10 - 150	30	30
bis (2-chloroisopropyl) ether	ND		9.62	6.165		ug/L		64	45 - 120	7	25
		MSD									
Surrogate	%Recovery	Qualifier	Limits								
2-Fluorobiphenyl	71		50 - 120								
2-Fluorophenol	62		30 - 120								

TestAmerica Irvine

40 - 120

45 - 120

37 - 144

35 - 120

84

67

79

54

Method: 608 PCB LL - Polychlorinated Biphenyls (PCBs) Low level

Lab Sample ID: MB 440-4	66200/1-A							Clie		ole ID: Meth		
Matrix: Water										Prep Type:		
Analysis Batch: 466278										Prep Batc	h: 4	6620
		в мв										
Analyte		It Qualifier	RI		MDL		D		repared	Analyzed		Dil Fa
Aroclor 1016	N	D	0.50)	0.25	ug/L		03/2	27/18 06:02	03/27/18 14:	09	
Aroclor 1221	N	D	0.50)	0.25	ug/L		03/2	27/18 06:02	03/27/18 14:	09	
Aroclor 1232	N	D	0.50)	0.25	ug/L		03/2	27/18 06:02	03/27/18 14:	09	
Aroclor 1242	N	D	0.50)	0.25	ug/L		03/2	27/18 06:02	03/27/18 14:	09	
Aroclor 1248	N	D	0.50)	0.25	ug/L		03/2	27/18 06:02	03/27/18 14:	09	
Aroclor 1254	N	D	0.50)	0.25	ug/L		03/2	27/18 06:02	03/27/18 14:	09	
Aroclor 1260	Ň	D	0.50)	0.25	ug/L		03/2	27/18 06:02	03/27/18 14:	09	
	M	BMB										
Surrogate	%Recove	ry Qualifier	Limits					P	repared	Analyzed		Dil Fa
DCB Decachlorobiphenyl (Surr)		79	29 - 115	_					•	03/27/18 14:		
	40000017											
Lab Sample ID: LCS 440-	466200/5-A						Clien	t Sa		Lab Contro		
Matrix: Water										Prep Type:		
Analysis Batch: 466278			• "							Prep Batc	h: 4	6620
			Spike		LCS			_	a/ -	%Rec.		
Analyte			Added	Result		lifier	Unit	_ D		Limits		
Aroclor 1016			4.00	3.94			ug/L		99	10 - 127		
Aroclor 1260			4.00	4.05			ug/L		101	50 - 115		
	LCS L	cs										
Surrogate	%Recovery G	ualifier	Limits									
DCB Decachlorobiphenyl (Surr)	93		29 - 115									
Lab 0						0		. 10.	0			•
Lab Sample ID: 440-20674	41-1 WIS					Clier	nt Sampi	e iD:		09_201803		
Matrix: Water										Prep Type:		
Analysis Batch: 466278	0		Omilia							Prep Batc	n: 4	6620
A	Sample S	•	Spike		MS		11	_	0/ D	%Rec.		
Analyte	Result Q	ualifier	Added	Result		litier	Unit	D	%Rec	Limits		
Aroclor 1016	ND		3.81	3.74			ug/L		98	45 - 120		
Aroclor 1260	ND		3.81	3.82			ug/L		100	55 - 125		
	MS N	IS										
Surrogate	%Recovery G	ualifier	Limits									
DCB Decachlorobiphenyl (Surr)	91		29 - 115									
Lab Sample ID: 440-20674	41-1 MSD					Clier	nt Sampl	e ID:		09_201803		
Matrix: Water										Prep Type:		
Analysis Batch: 466278	0	I-	Omilie							Prep Batc	h: 4	
Amelia	Sample S	-	Spike		MSD		11	_	0/ D = -	%Rec.		RPI
Analyte	Result Q		Added	Result	_	intier	Unit	D	<u>%Rec</u>			Lim
Aroclor 1016	ND		3.86	3.49			ug/L		90	45 - 120	7	3
Aroclor 1260	ND		3.86	3.76			ug/L		97	55 - 125	2	2
	MSD N	ISD										
		02										

ounoguic	<i>/////////////////////////////////////</i>	Quanner	Linits
DCB Decachlorobiphenyl (Surr)	89		29 - 115

Z 3 Client Sample ID: Method Blank Prep Type: Total/NA Prep Batch: 466200 5

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Method: 608 Pesticides - Organochlorine Pesticides Low level

Lab Sample ID: MB 440-4662 Matrix: Water Analysis Batch: 466528	00/1-A							le ID: Method Prep Type: To Prep Batch:	otal/NA
	MB	МВ							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	ND		0.0050	0.0015	ug/L		03/27/18 06:02	03/28/18 09:42	1
alpha-BHC	ND		0.0050	0.0025	ug/L		03/27/18 06:02	03/28/18 09:42	1
beta-BHC	ND		0.010	0.0040	ug/L		03/27/18 06:02	03/28/18 09:42	1
Chlordane (technical)	ND		0.10	0.080	ug/L		03/27/18 06:02	03/28/18 09:42	1
delta-BHC	ND		0.0050	0.0035	ug/L		03/27/18 06:02	03/28/18 09:42	1
Dieldrin	ND		0.0050	0.0020	ug/L		03/27/18 06:02	03/28/18 09:42	1
Endosulfan I	ND		0.0050	0.0030	ug/L		03/27/18 06:02	03/28/18 09:42	1
Endosulfan II	ND		0.0050	0.0020	ug/L		03/27/18 06:02	03/28/18 09:42	1
Endosulfan sulfate	ND		0.010	0.0030	ug/L		03/27/18 06:02	03/28/18 09:42	1
Endrin	ND		0.0050	0.0020	ug/L		03/27/18 06:02	03/28/18 09:42	1
Endrin aldehyde	ND		0.010	0.0020	ug/L		03/27/18 06:02	03/28/18 09:42	1
gamma-BHC (Lindane)	ND		0.010	0.0030	ug/L		03/27/18 06:02	03/28/18 09:42	1
Heptachlor	ND		0.010	0.0030	ug/L		03/27/18 06:02	03/28/18 09:42	1
Heptachlor epoxide	ND		0.0050	0.0025	ug/L		03/27/18 06:02	03/28/18 09:42	1
Toxaphene	ND		0.50	0.25	ug/L		03/27/18 06:02	03/28/18 09:42	1
4,4'-DDD	ND		0.0050	0.0040	ug/L		03/27/18 06:02	03/28/18 09:42	1
4,4'-DDE	ND		0.0050	0.0030	ug/L		03/27/18 06:02	03/28/18 09:42	1
4,4'-DDT	ND		0.010	0.0040	ug/L		03/27/18 06:02	03/28/18 09:42	1
	МВ	МВ							
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	59		10 - 150				03/27/18 06:02	03/28/18 09:42	1

Lab Sample ID: LCS 440-466200/2-A Matrix: Water Analysis Batch: 466528

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

Prep Batch: 466200

	Spike	LCS	LCS				%Rec.
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits
Aldrin	0.200	0.162		ug/L		81	42 - 122
alpha-BHC	0.200	0.162		ug/L		81	37 - 134
beta-BHC	0.200	0.165		ug/L		83	17 ₋ 147
delta-BHC	0.200	0.171		ug/L		85	19 - 140
Dieldrin	0.200	0.170		ug/L		85	36 - 146
Endosulfan I	0.200	0.168		ug/L		84	45 - 150
Endosulfan II	0.200	0.167		ug/L		83	10 - 150
Endosulfan sulfate	0.200	0.163		ug/L		81	26 - 144
Endrin	0.200	0.154		ug/L		77	30 - 147
Endrin aldehyde	0.200	0.155		ug/L		77	47 - 115
gamma-BHC (Lindane)	0.200	0.157		ug/L		79	32 - 127
Heptachlor	0.200	0.147		ug/L		73	34 - 115
Heptachlor epoxide	0.200	0.169		ug/L		85	37 - 142
4,4'-DDD	0.200	0.163		ug/L		81	31 - 141
4,4'-DDE	0.200	0.165		ug/L		82	30 - 145
4,4'-DDT	0.200	0.141		ug/L		71	25 - 150
	LCS LCS						

	LCS LCS	
Surrogate	%Recovery Qualifier	Limits
Tetrachloro-m-xylene	69	10 - 150

Method: 608 Pesticides - Organochlorine Pesticides Low level (Continued)

Lab Sample ID: 440-2067 Matrix: Water	741-1 MS				Clie	nt Samr	ple ID:	Outfall	I009_20180322_Comp Prep Type: Total/NA	
Analysis Batch: 466528		Sample	Spike	MS	MS				Prep Batch: 466200 %Rec.	5
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Aldrin	ND		0.193	0.147		ug/L		76	35 - 120	
alpha-BHC	ND		0.193	0.138		ug/L		71	40 - 120	
beta-BHC	ND		0.193	0.132		ug/L		68	50 ₋ 120	
delta-BHC	ND		0.193	0.156		ug/L		81	50 ₋ 120	
Dieldrin	ND		0.193	0.148		ug/L		76	50 - 120	8
Endosulfan I	ND		0.193	0.143		ug/L		74	50 ₋ 120	
Endosulfan II	ND		0.193	0.140		ug/L		72	50 - 125	9
Endosulfan sulfate	ND		0.193	0.151		ug/L		78	55 ₋ 125	
Endrin	ND		0.193	0.147		ug/L		76	50 ₋ 120	
Endrin aldehyde	ND		0.193	0.138		ug/L		71	45 - 125	
gamma-BHC (Lindane)	ND		0.193	0.140		ug/L		72	40 - 120	
Heptachlor	ND		0.193	0.152		ug/L		79	40 - 120	
Heptachlor epoxide	ND		0.193	0.155		ug/L		80	50 ₋ 120	
4,4'-DDD	ND		0.193	0.140		ug/L		73	50 ₋ 125	
4,4'-DDE	ND		0.193	0.142		ug/L		73	45 - 125	13
4,4'-DDT	ND		0.193	0.124		ug/L		64	50 - 125	
	MS	MS								
Surrogate	%Recovery	Qualifier	Limits							

Surregues /streeters	 Emito
Tetrachloro-m-xylene 62	10 - 150

Lab Sample ID: 440-206741-1 MSD **Matrix: Water**

Analysis Batch: 466528									Prep Ba	atch: 40	
	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Aldrin	ND		0.191	0.143		ug/L		75	35 - 120	3	30
alpha-BHC	ND		0.191	0.135		ug/L		70	40 - 120	2	30
beta-BHC	ND		0.191	0.143		ug/L		75	50 - 120	8	30
delta-BHC	ND		0.191	0.146		ug/L		77	50 - 120	6	30
Dieldrin	ND		0.191	0.134		ug/L		70	50 - 120	10	30
Endosulfan I	ND		0.191	0.134		ug/L		70	50 - 120	7	30
Endosulfan II	ND		0.191	0.129		ug/L		67	50 - 125	8	30
Endosulfan sulfate	ND		0.191	0.133		ug/L		69	55 - 125	13	30
Endrin	ND		0.191	0.131		ug/L		68	50 - 120	11	30
Endrin aldehyde	ND		0.191	0.115		ug/L		60	45 - 125	18	30
gamma-BHC (Lindane)	ND		0.191	0.149		ug/L		78	40 - 120	6	30
Heptachlor	ND		0.191	0.141		ug/L		74	40 - 120	8	30
Heptachlor epoxide	ND		0.191	0.139		ug/L		72	50 - 120	11	30
4,4'-DDD	ND		0.191	0.123		ug/L		64	50 - 125	13	30
4,4'-DDE	ND		0.191	0.133		ug/L		69	45 - 125	7	30
4,4'-DDT	ND		0.191	0.112		ug/L		59	50 - 125	10	30
	MSD	MSD									

	mee	III O D	
Surrogate	%Recovery	Qualifier	Limits
Tetrachloro-m-xylene	58		10 - 150

Client Sample ID: Outfall009_20180322_Comp Prep Type: Total/NA

Lab Sample ID: MB 440-465186/6

Analyte Chloride Fluoride Sulfate

Client Sample ID: Method Blank

8

Total/NA Dil Fac)5 1 ol Sample **Total/NA** I Sample Total/NA 22_Comp **Total/NA**

Analysis Batch: 465186 MB MB Analyte Result Qualifier RL MDL Unit D Prepared Analyzed Dil Fac Chromium, hexavalent ND 1.0 0.25 ug/L 03/22/18 07:05 11 Lab Sample ID: LCS 440-465186/5 ND 0.25 ug/L 03/22/18 07:05 11 Lab Sample ID: LCS 440-465186/5 Spike LCS LCS %Rec. Ware. ND 100 90-110 10 90-110 100 90-110 100 90-110 100 90-110 100 90-110 100 90-110 100 90-110 100 90-110 100 100 90-110 100 100 90-110 100 100 90-110 100 100 90-110 100 <td< th=""><th>Lab Sample ID. MB 440-465</th><th>0100/0</th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th>U</th><th>ne</th><th>int Sam</th><th></th><th></th><th></th></td<>	Lab Sample ID. MB 440-465	0100/0									U	ne	int Sam			
MB MB MDL Unit D Prepared Analyzed DII Fac Chromium, hexavalent ND 1.0 0.25 uglt D Prepared Analyzed DII Fac Lab Sample ID: LCS 440-465186/5 Matrix: Water Spike LCS LCS LCS LCS LCS MC Prepared Analyzed Prep Type: Total/NA Analysis Batch: 465186 Spike Result Qualifier Unit D %Rec. Immits Lab Sample ID: MRL 440-465186/4 Added Result Qualifier Unit D %Rec. MRec. Analysis Batch: 465186 Spike MRL MRL Unit D %Rec. Lab Control Sample Analysis Batch: 465186 Spike MRL Result Qualifier Unit D %Rec. Lab Control Sample Prep Type: Total/NA Analysis Batch: 465186 Spike Result Qualifier Unit D %Rec. Limits Client Sample ID: 40.206741-1 MS<	Matrix: Water													Prep Typ	e: To	tal/NA
Analyte Result Qualifier RL MDL Unit D Prepared Analyce OII Fax Chromium, hexavalent ND 1.0 0.25 ugit. D Prepared Analyce 0322/18.07.05 DII Fax Lab Sample ID: LCS 440-465186/5 Spike Client Sample ID: Lab Control Sample WRec. Limits Varee. Analysis Batch: 465186 Spike Result Qualifier Unit D %Rec. Limits Lab Sample ID: MRL 440-465186/4 Spike Result Qualifier Unit D %Rec. Limits Chromium, hexavalent 1.00 50.2 Client Sample ID: Lab Control Sample Prep Type: Total/NA Analysis Batch: 465186 Spike MRL MRL Unit D %Rec. Limits Chromium, hexavalent 1.00 1.15 Unit D %Rec. Limits Lab Sample ID: 440-206741-1 MS Client Sample ID: Cutfall009_20180322_Comp Prep Type: Total/NA Analyte Result Qualifier Added Result Qualifier	Analysis Batch: 465186															
Offromium, hexavalent ND 1.0 0.25 ugit 0.3322/18.07:05 1 Lab Sample ID: LCS 440-465186/5 Matrix: Water Client Sample ID: Lab Control Sample Prep Type: Total/NA Analysis Batch: 465186 Spike LCS LCS LS KRec. Analysis Batch: 465186 Spike Result Qualifier Unit D %Rec. Lab Sample ID: MRL 440-465186/4 Matrix: Water Added Result Qualifier Unit D %Rec. Analysis Batch: 465186 Spike MRL MRL Unit D %Rec. Analysis Batch: 465186 Spike MRL Unit D %Rec. Units Lab Sample ID: 440-206741-1 MS Client Sample ID: Outfail009_20180322_Comp Prep Type: Total/NA Analysis Batch: 465186 Sample Sample Spike MS MS %Rec. Imits Chromium, hexavalent ND 50.0 49.5 Outfail009_20180322_Comp Prep Type: Total/NA Analysis Batch: 465186 Sample Sample Sample Spike MSD MSD MSD MSD WRec. Limits Outfail009_201803			MB I	MB												
Lab Sample ID: LCS 440-465186/5 Matrix: Water Analysis Batch: 465186 Spike Added Solo Client Sample ID: Lab Control Sample Prep Type: Total/NA Analysis Batch: 465186 Chromium, heavalent 50.0 50.2 Unit D %Rec. Limits Lab Control Sample Prep Type: Total/NA Analysis Batch: 465186 Analyse Chromium, heavalent 1.00 50.0 KRL MRL MRL MRL MRL Lab Control Sample Prep Type: Total/NA Analysis Batch: 465186 Analyte Chromium, heavalent 1.00 1.05 Uiglt D %Rec. Limits Lab Control Sample Prep Type: Total/NA Analysis Batch: 465186 Analyte Chromium, heavalent 1.00 1.05 Client Sample ID: Uutfall009_20180322_Comp Prep Type: Total/NA Analysis Batch: 465186 MS MS MS MS %Rec. Limits Limits Analysis Batch: 465186 Sample Sample Sample Added Result Qualifier MS MS MSD MSD 99 90.110 D Prep Type: Total/NA Analysis Batch: 465186 Analysis Batch: 465186 Sample Sample Sample Sample Sample Sample Sample Sample MSD MSD MSD 99 90.110 D Prep Type: Total/NA Analysis Batch: 465186 Analysis Batch: 465186 MSD MSD MSD MSD 0	Analyte	Re	esult (Qualifier		RL		MDL	Unit		D	P	repared	Analyzo	ed	Dil Fac
Matrix: Water Analysis Batch: 465186 Prep Type: Total/NA Analysis Batch: 465186 Analyte Added Chromium, hexavalent 50.0 Lab Sample ID: MRL 440-465186/4 Matrix: Water Analysis Batch: 465186 Client Sample ID: Lab Control Sample Prep Type: Total/NA Analysis Batch: 465186 Analyte Added Chromium, hexavalent 1.00 Lab Sample ID: 440-206741-1 MS Matrix: Water Analysis Batch: 465186 MRL MRL ug/L MRL MRL b Analyte Added Chromium, hexavalent 1.00 Lab Sample ID: 440-206741-1 MS Matrix: Water Analysis Batch: 465186 Sample Sample Sample Sample Spike Analyte Analyte Result Qualifier Analyte Result Qualifier Analyte Matrix: Water Analysis Batch: 465186 Analyte Result Qualifier Analyte ND Client Sample ID: MB 440-465264/14 Matrix: Water Analysis Batch: 465264 Matrix: Water Analysis Batch: 465264 Matrix: Water Analysis	Chromium, hexavalent		ND			1.0		0.25	ug/L					03/22/18 0	07:05	1
Matrix: Water Analysis Batch: 465186 Prep Type: Total/NA Analysis Batch: 465186 Analyte Added Chromium, hexavalent 50.0 Lab Sample ID: MRL 440-465186/4 Matrix: Water Analysis Batch: 465186 Client Sample ID: Lab Control Sample Prep Type: Total/NA Analysis Batch: 465186 Analyte Added Chromium, hexavalent 1.00 Lab Sample ID: 440-206741-1 MS Matrix: Water Analysis Batch: 465186 MRL MRL ug/L MRL MRL b Analyte Added Chromium, hexavalent 1.00 Lab Sample ID: 440-206741-1 MS Matrix: Water Analysis Batch: 465186 Sample Sample Sample Sample Spike Analyte Analyte Result Qualifier Analyte Result Qualifier Analyte Matrix: Water Analysis Batch: 465186 Analyte Result Qualifier Analyte ND Client Sample ID: MB 440-465264/14 Matrix: Water Analysis Batch: 465264 Matrix: Water Analysis Batch: 465264 Matrix: Water Analysis	Lab Sample ID: LCS 440-46	5186/5								CI	ient S	ar	nole ID	: Lab Con	trol S	ample
Analysis Batch: 465186 Spike Added Result Qualifier Unit D %Rec. Limits Analyte 50.0 50.2 ug/L 100 90.110 10 Lab Sample ID: MRL 440-465186/4 Spike KRec. Limits Prop Type: Total/NA Analyte Added Result Qualifier Unit D %Rec. Analyte Added Result Qualifier Unit D %Rec. Analyte Added Result Qualifier Unit D %Rec. Chromium, hexavalent 1.00 1.15 ug/L 115 50.160 Imits Lab Sample ID: 440-206741-1 MS Matrix: Water Result Qualifier MS %Rec. Limits Prop Type: Total/NA Analyte Result Qualifier Added Result Qualifier Unit D %Rec. Limits Prop Type: Total/NA Analyte Result Qualifier Added Result Qualifier MS MS MS MS MS MS MS MS																
Splike LCS LCS %Rec. Analyte Result Qualifier Unit D %Rec. Chromium, hexavalent 50.0 50.0 00 90.110 90.110 Lab Sample ID: MRL 440-465186/4 Matrix: Water Splike MRL Result Qualifier Unit D %Rec. Analyte Added Splike MRL NRL WRL NRL NRL Chromium, hexavalent 1.00 1.15 ug/L 115 50.160 Lab Sample ID: 440-206741-1 MS Client Sample ID: Outfall009_20180322_Comp Prep Type: Total/NA Matrix: Water Result Qualifier Ug/L D %Rec. Analyte Result Qualifier Ug/L D %Rec. Client/Sample ID: Outfall009_20180322_Comp Chromium, hexavalent ND 50.0 49.5 ug/L D %Rec. Rec Chromium, hexavalent ND 50.0 49.5 ug/L D %Rec. RPD Limits														пертур	0.10	
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Lab Sample ID: MRL 440-465186/4 Matrix: Water Analysis Batch: 465186 Spike Added MRL MRL Result Qualifier Unit Client Sample ID: Lab Control Sample Prep Type: Total/NA Analyte Added Result Qualifier ND 1.15 Unit D %Rec. Limits Lab Sample ID: 440-206741-1 MS Matrix: Water Sample Sample ND Spike Spike MS MS %Rec. Limits MRL Analyte Result Qualifier Added MS MS %Rec. Limits %Rec. Limits MRL Analyte Result Qualifier Added MS MS %Rec. Limits %Rec. Limits %Rec. Limits Analyte Result Qualifier ND 50.0 49.5 Unit D %Rec. WSD %Rec. Limits Prep Type: Total/NA Analyte Result Qualifier ND 50.0 49.5 Unit D %Rec. Prep Type: Total/NA Analyte Result Qualifier MSD MSD %Rec. Result Qualifier MSD %Rec. WSD Result Qualifier Unit D %Rec. Prep Type: Total/NA Analyte Result Qualifier ND 0.50 0.25 MSD 0322218 18:21 11 Anal								Qua				_				
Matrix: Water Analysis Batch: 465186 Prep Type: Total/NA Added Prep Type: Total/NA Result Analysis Batch: 465186 Spike Added MRL Result MRL Qualifier Unit D WRec. Limits MRc. Limits Lab Sample ID: 440-206741-1 MS Matrix: Water Analysis Batch: 465186 Sample Sample ND Spike Spike MS MS MS MS %Rec. Limits Analyse Result Analysis Batch: 465186 Sample Sample Spike Spike MS MS MS %Rec. Limits Limits Analyte Result Qualifier Added Analysis Batch: 465186 Sample Sample Spike Spike MSD MSD WSD %Rec. Limits Limits Analyte Result Qualifier Qualifier Analyte MSD Spike MSD WSD %Rec. Limits Prep Type: Total/NA %Rec. Analyte Result Qualifier Qualifier Analyte ND Spike MSD WSD %Rec. RPD Wrep Type: Total/NA %Rec. Prep Type: Total/NA %Rec. Analyte Result Qualifier Analyte ND Spike MSD WB Matrix: Water MD D Spike MSD WB MB Matrix: Water D %Rec. RPD Wrep Type: Total/NA Analysis Batch: 465264 D MB MB Analyte ND 0.50 0.25 Mg/L D Prep Type: Total/NA Analysis Batch: 465264 Lab Sample ID: LCS 440-465264/13 Matrix: Water Analysis Batch: 465264 ND 0.50 0.25					50.0		50.Z			ug/L			100	90-110		
Analysis Batch: 465186 Spike Analyte MRL Added MRL Result MRL Qualifier Unit Unit D %Rec. Limits Chromium, hexavalent 1.00 1.15 ug/L 115 50.150 Lab Sample ID: 440-206741-1 MS Matrix: Water Sample MS MS MS %Rec. Limits Client Sample ID: Outfall009_20180322_Comp Chromium, hexavalent ND 50.0 49.5 ug/L 9 90.110	Lab Sample ID: MRL 440-46	65186/4								CI	ient S	ar	nple ID	: Lab Con	trol S	ample
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Spike MRL Math Limits Limits Limits Citient Sample ID: Cultant/All (000) 20180322_Comp Comp MRL Math	Analysis Batch: 465186															
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Lab Sample ID: 440-206741-1 MS Matrix: Water Sample Sample Sample Sample Sample Spike Analyte Client Sample ID: Outfall009_20180322_Comp Prep Type: Total/NA Analyte Result Qualifier Added MS MS 49.5 Unit D %Rec. Analyte Result Qualifier Added Result Qualifier Unit D %Rec. Lab Sample ID: 440-206741-1 MSD Matrix: Water ND 50.0 49.5 Unit D %Rec. Rec Analyte Result Qualifier Added MS D MSD Verce. Rec Rec Analyte Result Qualifier Added Result Qualifier Unit D %Rec. RPD Limits Analyte Result Qualifier Added Result Qualifier Unit D %Rec. RPD Limits Analyte Result Qualifier ND 50.0 47.8 ug/L 96 90-110 3 10 Viethod: 300.0 - Anions, Ion Chromatography Lab Sample ID: MB 440-465264/14 Client Sample ID: Method Blank Prep Type: Total/NA Analyte MB MB ND 0.50 0.25 Mg/L 03/22/18 18.21					1.00							_		50 - 150		
Matrix: Water Analysis Batch: 465186 Sample Result Qualifier Sample Analyte Sample Result Qualifier Spike Added MS Result 49.5 MS Unit Ug/L D %Rec. Limits Limits Analyte Result Qualifier ND 50.0 49.5 Unit Ug/L D %Rec. Limits Limits										- 0						
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Analysis Batch: 465186 Sample Sample Spike MS MS MS MS MS MS MS Client MRec. Limits Analyte Result Qualifier Added 49.5 ug/L 99 90.110 0 %Rec. Limits Chient Sample 1D: 440-206741-1 MSD Client Sample 1D: 0utfall009_20180322_Comp Matrix: Water Analyte Result Qualifier Added Result Qualifier Unit D %Rec. RPD Analyte Result Qualifier Added Result Qualifier Unit D %Rec. RPD Limits MRD Result Qualifier NR MS MS <td< td=""><td>Matrix: Water</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>Prep Typ</td><td>e: To</td><td>tal/NA</td></td<>	Matrix: Water													Prep Typ	e: To	tal/NA
Sample AnalyteSample ResultSpike QualifierMSMS%Rec. LimitsAnalyteResultQualifierAddedResultQualifierUnitD%Rec. gyllLimitsChromium, hexavalentND50.049.5Ug/LD%Rec. gyllLimitsLab Sample ID: 440-206741-1 MSDClient Sample ID: Outfall009_20180322_Comp Prep Type: Total/NAAnalytesSample SampleSample SpikeMSDMSDV/Rec.RPD gyllAnalyteResult QualifierQualifierAdded 47.8MSDUnit ug/LD%Rec.RPD gyllLimits gyllChromium, hexavalentND50.047.8Ug/LD%Rec.RPD gyllLimit gyllMethod: 300.0 - Anions, Ion ChromatographyLab Sample ID: MB 440-465264/14 Matrix: WaterMB MBMB MBClient Sample ID: Method Blank Prep Type: Total/NA Analysis Batch: 465264AnalyteResult ND0.500.25mg/LD9/2/2/18Dil Fac O3/22/18Dil Fac <br< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></br<>																
AnalyteResultQualifierAddedResultQualifierUnitD%RecLimitsChromium, hexavalentND50.049.5ug/LD%RecLimits9990 - 110Lab Sample ID: 440-206741-1 MSDClient Sample ID: Outfall009_20180322_Comp Prep Type: Total/NAAnalyteResultQualifierAddedResultQualifierUnitD%RecRPCAnalyteResultQualifierAddedResultQualifierUnitD%RecRPDAnalyteResultQualifier50.047.8Ug/LD%RecRPDLimitsAnalyteResultQualifierAddedAddedResultQualifierUg/LD%RecRPDLab Sample ID: MB 440-465264/14MBMBMatrix: WaterAnalysisBatch: 465264MBMBAnalyteResultQualifierRLMDLUnitDPreparedAnalyzedDIDIChiorideND0.500.25mg/L03/22/18 18:2111SulfateND0.500.25mg/L03/22/18 18:2111Lab Sample ID: LCS 440-465264/13ND0.500.25mg/L03/22/18 18:211Lab Sample ID: LCS 440-465264/13SpikeLCSLCSV%Rec.Analysis Batch: 465264KecAddedResultQualifierUnitD%Rec.Client Sample ID: LCS 440-465264/13		Sample	Samp	ole	Spike		MS	MS						%Rec.		
Chromium, hexavalent ND 50.0 49.5 ug/L 99 90.110 Lab Sample ID: 440-206741-1 MSD Matrix: Water Client Sample ID: Outfall009_20180322_Comp Prep Type: Total/NA Analyte Sample Sample Result Sample Sample Qualifier Spike Added MSD 47.8 MSD ug/L D %Rec. WRec. RPD Limits RPD Limits Limits RPD Limits RPD Limits Limits RPD Limits RPD RPD Limits RPD Limits RPD RPD Limits RPD	Analyte	•	•		•		Result	Qua	alifier	Unit		D	%Rec			
Lab Sample ID: 440-206741-1 MSD Matrix: Water Analysis Batch: 465186 Client Sample ID: Outfall009_20180322_Comp Prep Type: Total/NA Analysis Batch: 465186 Sample Sample Spike Result Qualifier MSD MSD MSD D %Rec. RPD Analyte Result Qualifier Added Result Qualifier Unit D %Rec. RPD Chromium, hexavalent ND 50.0 47.8 Qualifier Unit D %Rec. RPD Analyte Result Qualifier Added 47.8 Qualifier Unit D %Rec. RPD Analyte Result Qualifier MB MB Prep Type: Total/NA Analyte Result Qualifier RL MDL Unit D %Rec. Prep Type: Total/NA Analyte Result Qualifier ND 0.50 0.25 mg/L 03/22/18 18:21 1 Sulfate ND 0.50 0.25 mg/L 03/22/18 18:21 1 1 Lab Sample ID: LCS 440-465264/13 ND 0.50 0.25 mg/L 03/22/18 18:21 1 1 Lab Sample ID: LCS 440-465264/13 </td <td></td> <td>_</td> <td></td> <td></td> <td></td> <td></td>												_				
AnalyteResultQualifierAddedResultQualifierUnitD%RecLimitsRPDLimitChromium, hexavalentND50.047.8ug/L9690.110310Method:300.0 - Anions, Ion ChromatographyLab Sample ID: MB 440-465264/14 Matrix: Water Analysis Batch: 465264Client Sample ID: Method Blank Prep Type: Total/NAAnalyteResult QualifierResult QualifierMD0.500.25mg/L03/22/18 18:2111ChorideND0.500.25mg/L03/22/18 18:2111															e: 10	
Chromium, hexavalentND50.047.8ug/L9690.110310Method: 300.0 - Anions, Ion ChromatographyLab Sample ID: MB 440-465264/14 Matrix: Water Analysis Batch: 465264Client Sample ID: Method Blank Prep Type: Total/NAAnalyteResult Result QualifierRL NDMDL 0.50Unit 0.25D mg/LPrepared 03/22/18 18:21Analyzed 03/22/18 18:21Dil Fac D 0.3/22/18 18:21Dil Fac 03/22/18 18:21FluorideND0.500.25mg/L03/22/18 18:211 03/22/18 18:211 DSulfateND0.500.25mg/L03/22/18 18:211 DLab Sample ID: LCS 440-465264/13 Matrix: Water Analysis Batch: 465264SpikeLCSLCSLCSMec. Prep Type: Total/NAAnalyteAddedResult 5.00QualifierUnit mg/LD%Rec. Prep Type: Total/NA		Sample	Samp	ble	Spike		MSD	MSI	D					%Rec.		RPD
Method: 300.0 - Anions, Ion Chromatography Lab Sample ID: MB 440-465264/14 Matrix: Water Client Sample ID: Method Blank Prep Type: Total/NA Analyte MB MB Analyte Result Qualifier RL MDL Unit D Prepared Analyzed Dil Fac Choride ND 0.50 0.25 mg/L 03/22/18 18:21 1 Fluoride ND 0.50 0.25 mg/L 03/22/18 18:21 1 Sulfate ND 0.50 0.25 mg/L 03/22/18 18:21 1 Lab Sample ID: LCS 440-465264/13 Matrix: Water ND 0.50 0.25 mg/L 03/22/18 18:21 1 Analysis Batch: 465264 ND 0.50 0.25 mg/L 03/22/18 18:21 1 Analysis Batch: 465264 Spike LCS LCS LCS Mot %Rec. Analyse Added Result Qualifier Unit D %Rec. Limits Optimize Spike LCS LCS LCS Mot 93 90-110	Analyte	Result	Quali	fier	Added		Result	Qua	alifier	Unit		D	%Rec	Limits	RPD	Limit
Lab Sample ID: MB 440-465264/14 Matrix: Water Client Sample ID: Method Blank Prep Type: Total/NA Analysis Batch: 465264 MB MB Analyte Result Qualifier RL MDL Unit D Prepared Analyzed Dil Fac Chloride ND 0.50 0.25 mg/L 03/22/18 18:21 1 Fluoride ND 0.50 0.25 mg/L 03/22/18 18:21 1 Sulfate ND 0.50 0.25 mg/L 03/22/18 18:21 1 Lab Sample ID: LCS 440-465264/13 Matrix: Water ND 0.50 0.25 mg/L 03/22/18 18:21 1 Analysis Batch: 465264 ND 0.50 0.25 mg/L 03/22/18 18:21 1 Client Sample ID: LCS 440-465264/13 Matrix: Water ND 0.50 0.25 mg/L 03/22/18 18:21 1 Analysis Batch: 465264 ME Spike LCS LCS Kes %Rec. %Rec. Analysis Batch: 465264 Matrix:	Chromium, hexavalent	ND			50.0		47.8			ug/L		_	96	90 - 110	3	10
Matrix: Water Prep Type: Total/NA Analysis Batch: 465264 MB MB Analyte Result Qualifier RL MDL Unit D Prepared Analyzed Dil Fac Chloride ND 0.50 0.25 mg/L D O3/22/18 18:21 O1 Fluoride ND 0.50 0.25 mg/L D 03/22/18 18:21 O1 Sulfate ND 0.50 0.25 mg/L D 03/22/18 18:21 O1 Lab Sample ID: LCS 440-465264/13 ND 0.50 0.25 mg/L O3/22/18 18:21 O1 Matrix: Water Analysis Batch: 465264 ND Client Sample ID: Lab Control Sample Prep Type: Total/NA Analyte Spike LCS LCS LCS Mec. Analyte Matrix: Water Model Result Qualifier 4.63 Unit D %Rec. Analyte Added Result Qualifier 4.63 Unit D %Rec. Limits Mec	Method: 300.0 - Anions,	Ion Chro	oma	tograp	hy											
Matrix: Water Prep Type: Total/NA Analysis Batch: 465264 MB MB Analyte Result Qualifier RL MDL Unit D Prepared Analyzed Dil Fac Chloride ND 0.50 0.25 mg/L D O3/22/18 18:21 O1 Fluoride ND 0.50 0.25 mg/L D 03/22/18 18:21 O1 Sulfate ND 0.50 0.25 mg/L D 03/22/18 18:21 O1 Lab Sample ID: LCS 440-465264/13 ND 0.50 0.25 mg/L O3/22/18 18:21 O1 Matrix: Water Analysis Batch: 465264 ND Client Sample ID: Lab Control Sample Prep Type: Total/NA Analyte Spike LCS LCS LCS Mec. Analyte Matrix: Water Model Result Qualifier 4.63 Unit D %Rec. Analyte Added Result Qualifier 4.63 Unit D %Rec. Limits Mec	I ab Sample ID: MB 440-465	264/14									С	lie	ont Sam	nle ID: Me	othod	Blank
Analysis Batch: 465264 MB MB Analyte Result Qualifier RL MDL Unit D Prepared Analyzed Dil Fac Chloride ND 0.50 0.25 mg/L 03/22/18 18:21 1 Fluoride ND 0.50 0.25 mg/L 03/22/18 18:21 1 Sulfate ND 0.50 0.25 mg/L 03/22/18 18:21 1 Lab Sample ID: LCS 440-465264/13 ND 0.50 0.25 mg/L Client Sample ID: Lab Control Sample Matrix: Water Analysis Batch: 465264 Spike LCS LCS %Rec. Analyte	-													•		
MB AnalyteResult QualifierQualifierRL 0.50MDL 0.50Unit mg/LD PreparedAnalyzed 03/22/18 18:21Dil Fact 03/22/18 18:21FluorideND0.500.25mg/L03/22/18 18:211SulfateND0.500.25mg/L03/22/18 18:211Lab Sample ID: LCS 440-465264/13 Matrix: Water Analysis Batch: 465264NDClient Sample ID: Lab Control Sample Prep Type: Total/NA AddedClient Sample ID: Lab Control Sample Prep Type: Total/NA 93Analyte ChlorideSpikeLCSLCS%Rec. mg/LMRec. 93Limits 90-110															0.10	
AnalyteResultQualifierRLMDLUnitDPreparedAnalyzedDil FactoriaChlorideND0.500.25mg/L03/22/18 18:211FluorideND0.500.25mg/L03/22/18 18:211SulfateND0.500.25mg/L03/22/18 18:211Lab Sample ID: LCS 440-465264/13ND0.500.25mg/L03/22/18 18:211Matrix: WaterND0.500.25mg/L03/22/18 18:211Analysis Batch: 465264SpikeLCSLCSMRec.Prep Type: Total/NAAnalyteAddedResultQualifierUnitD%Rec.LimitsChloride5.004.63mg/LD%Rec.Limits-	Analysis Datch. 405204		MR I	MB												
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Fluoride ND 0.50 0.25 mg/L 03/22/18 18:21 1 Sulfate ND 0.50 0.25 mg/L 03/22/18 18:21 1 Lab Sample ID: LCS 440-465264/13 Matrix: Water Analysis Batch: 465264 Client Sample ID: Lab Control Sample Prep Type: Total/NA Matrix: Water Analysis Batch: 465264 Spike LCS LCS %Rec. Analyte Added Result Qualifier Unit D %Rec Limits Chloride 5.00 4.63 mg/L D 93 90 - 110	•	Ke		guaillef							- <u> </u>		epareu	-		
SulfateND0.500.25 mg/L03/22/18 18:211Lab Sample ID: LCS 440-465264/13 Matrix: Water Analysis Batch: 465264Client Sample ID: Lab Control Sample Prep Type: Total/NA AddedClient Sample ID: Lab Control Sample Prep Type: Total/NA Water Analysis Batch: 465264Analyte ChlorideSpike AddedLCS Result 4.63Unit mg/LD 93%Rec. 90-110									-							
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Matrix: Water Prep Type: Total/NA Analysis Batch: 465264 Spike LCS LCS %Rec. Analyte Added Result Qualifier Unit D %Rec. Chloride 5.00 4.63 mg/L D %Rec —	Sulfate		ND			0.50		0.25	mg/L					03/22/18 1	18:21	1
Matrix: Water Prep Type: Total/NA Analysis Batch: 465264 Spike LCS LCS %Rec. Analyte Added Result Qualifier Unit D %Rec. Chloride 5.00 4.63 mg/L D %Rec —	Lab Sample ID: LCS 440-46	5264/13								CI	ient S	ar	nple ID	: Lab Con	trol S	ample
Analysis Batch: 465264 Spike LCS LCS %Rec. Analyte Added Result Qualifier Unit D %Rec Limits Chloride 5.00 4.63 mg/L 93 90 - 110													-			
Analyte Added Result Qualifier Unit D %Rec. Chloride 5.00 4.63 mg/L D %Rec.																
Chloride 5.00 4.63 mg/L 93 90 - 110																
Chloride 5.00 4.63 mg/L 93 90 - 110	-				Spike		LCS	LCS	6					%Rec.		
•	-				-					Unit		D	%Rec			
	Analyte				Added		Result					D		Limits		

TestAmerica Irvine

4.90

mg/L

98

90 - 110

5.00

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: MB 440-465	265/14							(Clie	ent Sam	nple ID: M		
Matrix: Water											Prep Typ	be: Tot	tal/NA
Analysis Batch: 465265													
		MB MB											
Analyte	Re	esult Qualifier		RL		MDL Uni		D	Ρ	repared	Analyz		Dil Fa
Nitrate as N		ND		0.11		.055 mg/					03/22/18	18:21	
Nitrite as N		ND		0.15	0	.070 mg/	L				03/22/18	18:21	
Lab Sample ID: LCS 440-46	5265/13						CI	lient	Sai	nple ID	: Lab Con	trol Sa	ampl
Matrix: Water											Prep Typ		
Analysis Batch: 465265													
			Spike		LCS	LCS					%Rec.		
Analyte			Added		Result	Qualifier	Unit		D	%Rec	Limits		
Nitrate as N			1.13		1.10		mg/L		_	97	90 - 110		
Nitrite as N			1.52		1.48		mg/L			97	90 - 110		
lethod: 300.0 - Anions,	Ion Chr	omatograp	ohy - D	L									
Lab Sample ID: 440-206741	-1 MS					Clie	ent San	nnle	יסו	Outfall	009_2018	0322	Com
Matrix: Water						U.I.		inpite		outiun	Prep Typ		
Analysis Batch: 465264													
-	Sample	Sample	Spike		MS	MS					%Rec.		
Analyte	Result	Qualifier	Added		Result	Qualifier	Unit		D	%Rec	Limits		
Chloride - DL	2.7		25.0		25.9		mg/L		_	93	80 - 120		
Fluoride - DL	ND		25.0		24.3		mg/L			97	80 - 120		
Sulfate - DL	2.7		25.0		28.0		mg/L			101	80 - 120		
Lab Sample ID: 440-206741						Cliv	nt San	nnlo	יחו	Outfall	009_2018	0322	Com
Matrix: Water						Olic	ant San	inhie	D .	Outrai	Prep Typ	_	
Analysis Batch: 465264											пертур	Je. 10	
Analysis Datch: 403204	Sample	Sample	Spike		MSD	MSD					%Rec.		RP
Analyte	-	Qualifier	Added		-	Qualifier	Unit		D	%Rec	Limits	RPD	Lim
Chloride - DL	2.7		25.0		26.1	guunner	mg/L		_	93	80 - 120	1	2
Fluoride - DL	ND		25.0 25.0		24.4		mg/L			97	80 - 120	0	2
Sulfate - DL	2.7		25.0 25.0		24.4		mg/L			101	80 - 120 80 - 120	0	2
							Ū						_
Lab Sample ID: 440-206741	-1 MS					Clie	ent San	nple	ID:	Outfall	009_2018		
Matrix: Water											Prep Typ	be: Tot	tal/N/
Analysis Batch: 465265													
		Sample	Spike			MS					%Rec.		
Analyte		Qualifier	Added			Qualifier			D	%Rec	Limits		
Nitrate as N - DL	0.43	J,DX	5.65		6.00		mg/L			99	80 - 120		
Nitrite as N - DL	ND		7.61		7.42		mg/L			97	80 - 120		
Lab Sample ID: 440-206741 Matrix: Water	-1 MSD					Clie	ent San	nple	ID:	Outfall	1009_2018 Prep Typ		
Analysis Batch: 465265	Sample	Sample	Spike		мер	MSD					%Rec.		RP
Analyte		Qualifier	Added			Qualifier	Unit		п	%Rec	Limits	RPD	
	Result					Quaimer			D				Lim
	0 40		E 6 E		6 00		m~//			100	QA 19A	· · ·	
Nitrate as N - DL Nitrite as N - DL	0.43 ND	J,DX	5.65 7.61		6.09 7.44		mg/L mg/L			100 98	80 ₋ 120 80 ₋ 120	2 0	2 2

Method: 314.0 - Perchlorate (IC)

Lab Sample ID: MB 440-467055/6 Matrix: Water	5							CI	ient San	nple ID: Me Prep Typ		
Analysis Batch: 467055										гіертур	e. 100	.al/11/
Analysis Datch. 407035		МВ МВ										
Analyte		sult Qualifier		RL	r	MDL Unit		D	Prepared	Analyz	ed	Dil Fa
Perchlorate		ND		4.0		0.95 ug/L				03/30/18 0	08:09	
Lab Sample ID: LCS 440-467055/	5						Cli	ent Sa	ample IC): Lab Con	trol Sa	ampl
Matrix: Water									•	Prep Typ		
Analysis Batch: 467055												
Analyte			Spike Added			LCS Qualifier	Unit	г) %Rec	%Rec. Limits		
Perchlorate			25.0		23.0		ug/L	L	92	85 - 115		
							-					
Lab Sample ID: MRL 440-467055 Matrix: Water	/4						Cli	ent Sa	ample IE): Lab Con Prep Typ		
Analysis Batch: 467055												
			Spike			MRL				%Rec.		
Analyte			Added	I		Qualifier	Unit		%Rec	Limits		
Perchlorate			1.00		ND		ug/L		84	75 - 125		
Lab Sample ID: 440-206741-1 MS	5					Clie	nt Sam	ple ID	: Outfal	1009_20180)322_(Com
Matrix: Water										Prep Typ	e: Tot	al/N
Analysis Batch: 467055												
Sa	ample	Sample	Spike		MS	MS				%Rec.		
Analyte F	Result	Qualifier	Added	I	Result	Qualifier	Unit	0) %Rec	Limits		
Perchlorate	ND		25.0		25.4		ug/L		102	80 - 120		
Lab Sample ID: 440-206741-1 MS	D					Clie	nt Sam	DI ela	: Outfal	1009_20180)322 (Com
Matrix: Water								·		Prep Typ		
Analysis Batch: 467055												
	ample	Sample	Spike		MSD	MSD				%Rec.		RP
Analyte F	Result	Qualifier	Added	F	Result	Qualifier	Unit	0	%Rec	Limits	RPD	Lim
Perchlorate	ND		25.0		26.3		ug/L		105	80 - 120	3	2

Method: 200.7 Rev 4.4 - Metals (ICP)

Lab Sample ID: MB 440-466017/1-/ Matrix: Water Analysis Batch: 466147		МВ						e: Total Recov Prep Batch:	verable
Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		100	50	ug/L		03/26/18 11:35	03/26/18 18:16	1
Arsenic	ND		10	8.9	ug/L		03/26/18 11:35	03/26/18 18:16	1
Boron	ND		0.050	0.025	mg/L		03/26/18 11:35	03/26/18 18:16	1
Beryllium	ND		2.0	1.0	ug/L		03/26/18 11:35	03/26/18 18:16	1
Chromium	ND		5.0	2.5	ug/L		03/26/18 11:35	03/26/18 18:16	1
Iron	ND		0.10	0.050	mg/L		03/26/18 11:35	03/26/18 18:16	1
Nickel	ND		10	5.0	ug/L		03/26/18 11:35	03/26/18 18:16	1
Vanadium	ND		10	5.0	ug/L		03/26/18 11:35	03/26/18 18:16	1
Zinc	ND		20	12	ug/L		03/26/18 11:35	03/26/18 18:16	1

Method: 200.7 Rev 4.4 - Metals (ICP) (Continued)

Lab Sample ID: LCS 440-466017/2-A Matrix: Water Analysis Batch: 466147				Clie		-	: Lab Control Sample be: Total Recoverable Prep Batch: 466017
	Spike	LCS	LCS				%Rec.
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits
Aluminum	500	472		ug/L		94	85 - 115
Arsenic	500	475		ug/L		95	85 - 115
Boron	0.500	0.462		mg/L		92	85 - 115
Beryllium	500	467		ug/L		93	85 - 115
Calcium	2.50	2.33		mg/L		93	85 - 115
Chromium	500	464		ug/L		93	85 - 115
Iron	0.500	0.466		mg/L		93	85 - 115
Magnesium	2.50	2.34		mg/L		94	85 - 115
Nickel	500	472		ug/L		94	85 - 115
Vanadium	500	460		ug/L		92	85 - 115
Zinc	500	470		ug/L		94	85 - 115

Lab Sample ID: 440-206741-1 MS Matrix: Water Analysis Batch: 466147

Client Sample ID: Outfall009_20180322_Comp Prep Type: Total Recoverable

Client Sample ID: Outfall009_20180322_Comp

Prep Type: Total Recoverable

Analysis Batch: 466147	Sample	Sample	Spike	MS	MS				Prep Batch: 466017 %Rec.
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits
Aluminum	800		500	1580	LM	ug/L		155	70 - 130
Arsenic	ND		500	475		ug/L		95	70 - 130
Boron	0.041	J,DX	0.500	0.507		mg/L		93	70 - 130
Beryllium	ND		500	477		ug/L		95	70 - 130
Calcium	5.4		2.50	7.73		mg/L		92	70 - 130
Chromium	ND		500	472		ug/L		94	70 - 130
Iron	0.77		0.500	1.29		mg/L		102	70 - 130
Magnesium	1.6		2.50	3.98		mg/L		94	70 - 130
Nickel	ND		500	477		ug/L		95	70 - 130
Vanadium	ND		500	475		ug/L		95	70 - 130
Zinc	ND		500	482		ug/L		96	70 - 130

Lab Sample ID: 440-206741-1 MSD Matrix: Water Analysis Batch: 466147

Analysis Batch: 466147 Prep Batch: 466017 MSD MSD RPD Sample Sample Spike %Rec. Analyte **Result Qualifier** Added Result Qualifier Unit D %Rec Limits RPD Limit 500 Aluminum 800 1630 LM ug/L 165 70 - 130 3 20 ND 500 Arsenic 473 ug/L 95 70 - 130 0 20 Boron 0.500 0.041 J,DX 0.510 mg/L 94 70 - 130 20 1 Beryllium ND 500 479 96 70 - 130 20 ug/L 0 Calcium 2.50 20 5.4 7.93 mg/L 100 70 - 130 3 Chromium ND 500 473 ug/L 95 70 - 130 0 20 Iron 0.77 0.500 1.32 mg/L 109 70 - 130 2 20 2.50 97 20 Magnesium 1.6 4.04 mg/L 70 - 130 2 Nickel ND 500 478 ug/L 96 70 - 130 0 20 ND 500 475 Vanadium ug/L 95 70 - 130 0 20 Zinc ND 500 483 ug/L 97 70 - 130 0 20

TestAmerica Irvine

8

Client Sample ID: Method Blank

03/26/18 12:21 03/26/18 18:00

03/26/18 12:21 03/26/18 18:00

Prep Type: Dissolved

Analyzed

Prep Batch: 466029

Dil Fac

1

1

8

Analysis Batch: 466147	Spike	LCS	LCS				Prep Batch: 466029 %Rec.
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits
Aluminum	500	481		ug/L		96	85 - 115
Arsenic	500	454		ug/L		91	85 - 115
Boron	0.500	0.455		mg/L		91	85 - 115
Beryllium	500	457		ug/L		91	85 - 115
Calcium	2.50	2.35		mg/L		94	85 - 115
Iron	0.500	0.465		mg/L		93	85 - 115
Magnesium	2.50	2.29		mg/L		92	85 - 115
Nickel	500	462		ug/L		92	85 - 115
Vanadium	500	451		ug/L		90	85 - 115
Zinc	500	457		ug/L		91	85 - 115

Lab Sample ID: 440-206741-2 MS **Matrix: Water**

Prep Batch: 466029 Analysis Batch: 466147 MS MS Spike %Rec. Sample Sample Analyte **Result Qualifier** Added Result Qualifier Unit D %Rec Limits Aluminum 140 500 609 94 ug/L 70 - 130 Arsenic ND 500 449 ug/L 90 70 - 130 0.500 0.490 Boron 0.044 J,DX mg/L 89 70 - 130 Beryllium ND 500 457 ug/L 91 70 - 130 Calcium 5.4 MB 2.50 7.52 mg/L 87 70 - 130 Iron 0.16 0.500 0.593 mg/L 87 70 - 130 Magnesium 1.5 2.50 3.71 mg/L 90 70 - 130 Nickel ND 500 454 91 70 - 130 ug/L 451 Vanadium ND 500 ug/L 90 70 - 130 Zinc 457 ND 500 ug/L 91 70 - 130

Lab Sample ID: 440-206741-2 MSD **Matrix: Water** Analysis Batch: 466147

Analysis Batch: 466147									Prep Ba	atch: 46	6029
-	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Aluminum	140		500	608		ug/L		94	70 - 130	0	20
Arsenic	ND		500	465		ug/L		93	70 - 130	4	20
Boron	0.044	J,DX	0.500	0.492		mg/L		90	70 - 130	1	20

TestAmerica Irvine

Prep Type: Dissolved

RL

100

10

MDL Unit

50 ug/L

8.9 ug/L

D

Prepared

Method: 200.7 Rev 4.4 - Metals (ICP) (Continued)

MB MB

ND

ND

Result Qualifier

Lab Sample ID: MB 440-465710/1-B **Matrix: Water**

Analysis Batch: 466147

Analyte

Arsenic

Aluminum

Boron	ND	0.05	0 0	0.025	mg/L		03/2	6/18 12:2 [,]	1 03/26/18 18:00	1
Beryllium	ND	2.	0	1.0	ug/L		03/2	6/18 12:2	1 03/26/18 18:00	1
Iron	ND	0.1	0 0	0.050	mg/L		03/2	6/18 12:2 [,]	1 03/26/18 18:00	1
Nickel	ND	1	0	5.0	ug/L		03/2	6/18 12:2 [,]	1 03/26/18 18:00	1
Vanadium	ND	1	0	5.0	ug/L		03/2	6/18 12:2	1 03/26/18 18:00	1
Zinc	ND	2	0	12	ug/L		03/2	6/18 12:2 [,]	1 03/26/18 18:00	1
Lab Sample ID: LCS 440-465710/2-B Matrix: Water						Clien	t Sar		Lab Control Prep Type: Dis	ssolved
Analysis Batch: 466147		Spike	LCS	LCS					Prep Batch: %Rec.	400029
Analyte		Added	Result	Qua	lifier	Unit	D	%Rec	Limits	
Aluminum		500	481			ug/L		96	85 - 115	
Arsenic		500	454			ug/L		91	85 ₋ 115	
Boron		0.500	0.455			mg/L		91	85 ₋ 115	
Beryllium		500	457			ug/L		91	85 - 115	
Calcium		2.50	2.35			mg/L		94	85 ₋ 115	
Iron		0.500	0.465			mg/L		93	85 ₋ 115	
Magnesium		2.50	2.29			mg/L		92	85 ₋ 115	
Nickol		500	462			ua/l		02	95 115	

Client Sample ID: Outfall009_20180322_Comp_F

Client Sample ID: Outfall009_20180322_Comp_F

Prep Type: Dissolved

Lab Sample ID: 440-206741-2 MSD

Lab Sample ID: MB 440-465710/1-G

Lab Sample ID: LCS 440-465710/2-G

Matrix: Water

Analyte

Calcium

Magnesium

Vanadium

Analyte

Analyte Chromium

Chromium

Matrix: Water

Matrix: Water

Analysis Batch: 466739

Analysis Batch: 466739

Iron

Nickel

Zinc

Beryllium

Analysis Batch: 466147

Method: 200.7 Rev 4.4 - Metals (ICP) (Continued)

Sample Sample

5.4 MB

ND

0.16

1.5

ND

ND

ND

MB MB

ND

Result Qualifier

Result Qualifier

%Rec.

Limits

70 - 130

Prep Type: Dissolved

Prep Batch: 466029

RPD

1

Client Sample ID: Outfall009_20180322_Comp_F

92

D %Rec

			70 - 130	92	
	20	1	70 - 130	84	
	20	1	70 - 130	86	
	20	0	70 - 130	90	
8	20	1	70 - 130	92	
	20	1	70 - 130	91	
9	20	1	70 - 130	93	
				Client Samp	Clie
	lved	Disso	rep Type:	P	
	6646	ch: 466	Prep Bato		
	6 646 il Fac		Analyzed	Prepared	Pr
			Analyzed	Prepared 03/28/18 14:11	
	il Fac 1	d D 1:39	Analyzed 03/28/18 18		03/28

RPD

Limit 00

	5.0	2.5 ug/L		03/2	8/18 14:11	03/28/18 18:39 1	
			Clien	it Sar		Lab Control Sample Prep Type: Dissolved	1
Calles	1.00	1.00				Prep Batch: 466646	
Spike Added	-	LCS Qualifier	Unit	D	%Rec	%Rec. Limits	
500	507		ug/L		101	85 - 115	

D

Lab Sample ID: 440-20674 Matrix: Water	1-2 MS				Client	Sample	D: O		09_20180322_Comp_F Prep Type: Dissolved
Analysis Batch: 466739	Sample	Sample	Spike	MS	MS				Prep Batch: 466646 %Rec.
Analyte Chromium	Result ND	Qualifier	Added 500	Result 499	Qualifier	Unit ug/L	D	%Rec	Limits 70 - 130

RL

Lab Sample ID: 440-20674 Matrix: Water	1-2 MSD				Client	Sample	D: O		9_201803 Prep Type	e: Diss	olved
Analysis Batch: 466739	Sampla	Sample	Spike	MSD	Med				Prep Ba %Rec.	tch: 46	66646 RPD
	•	•		-	-						
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Chromium	ND		500	504		ug/L		101	70 - 130	1	20

Method: 200.8 - Metals (ICP/MS)

Lab Sample ID: MB 440-4660 Matrix: Water Analysis Batch: 466136		мв					Prep Type	le ID: Methoo : Total Recov Prep Batch:	verable
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.0	0.25	ug/L		03/26/18 11:37	03/26/18 18:28	1
Copper	ND		2.0	0.50	ug/L		03/26/18 11:37	03/26/18 18:28	1
Lead	ND		1.0	0.50	ug/L		03/26/18 11:37	03/26/18 18:28	1
Antimony	ND		2.0	0.50	ug/L		03/26/18 11:37	03/26/18 18:28	1
Selenium	ND		2.0	0.50	ug/L		03/26/18 11:37	03/26/18 18:28	1
Thallium	ND		1.0	0.50	ug/L		03/26/18 11:37	03/26/18 18:28	1

TestAmerica Irvine

Spike

Added

500

2.50

0.500

2.50

500

500

500

MSD MSD

462

7.44

0.589

3.71

458

456

464

MDL Unit

Result Qualifier

Unit

ug/L

mg/L

mg/L

mg/L

ug/L

ug/L

ug/L

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 440-466018 Matrix: Water Analysis Batch: 466136		МВ				Prep Type	le ID: Method : Total Recov Prep Batch:	verable
Analyte Silver	Result	Qualifier	RL	MDL 0.50	 D	Prepared	Analyzed 03/26/18 18:28	Dil Fac

QC Sample Results

Lab Sample ID: LCS 440-466018/2-A Matrix: Water Analysis Batch: 466136

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 466018

Client Sample ID: Outfall009_20180322_Comp

Client Sample ID: Outfall009_20180322_Comp

Prep Type: Total Recoverable

Prep Type: Total Recoverable

Client Sample ID: Method Blank

Prep Type: Dissolved

	Spike	LCS	LCS				%Rec.
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits
Cadmium	80.0	76.0		ug/L		95	85 - 115
Copper	80.0	74.1		ug/L		93	85 - 115
Lead	80.0	74.5		ug/L		93	85 - 115
Antimony	80.0	78.4		ug/L		98	85 - 115
Selenium	80.0	79.2		ug/L		99	85 - 115
Thallium	80.0	75.9		ug/L		95	85 - 115
Silver	80.0	74.3		ug/L		93	85 - 115

Lab Sample ID: 440-206741-1 MS Matrix: Water Analysis Batch: 466136

Analysis Batch: 466136	Sample	Sample	Spike	MS	MS				Prep Batch: 466018 %Rec.
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits
Cadmium	ND		80.0	80.6		ug/L		101	70 - 130
Copper	5.8		80.0	83.2		ug/L		97	70 - 130
Lead	2.1		80.0	80.9		ug/L		99	70 - 130
Antimony	0.69	J,DX	80.0	83.7		ug/L		104	70 - 130
Selenium	ND		80.0	78.7		ug/L		98	70 - 130
Thallium	ND		80.0	80.1		ug/L		100	70 - 130
Silver	ND		80.0	79.0		ug/L		99	70 - 130

Lab Sample ID: 440-206741-1 MSD Matrix: Water

Analysis Batch: 466136									Prep Ba	tch: 46	6018
	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Cadmium	ND		80.0	76.7		ug/L		96	70 - 130	5	20
Copper	5.8		80.0	79.4		ug/L		92	70 - 130	5	20
Lead	2.1		80.0	77.3		ug/L		94	70 - 130	5	20
Antimony	0.69	J,DX	80.0	81.1		ug/L		101	70 - 130	3	20
Selenium	ND		80.0	78.8		ug/L		99	70 - 130	0	20
Thallium	ND		80.0	75.6		ug/L		94	70 - 130	6	20
Silver	ND		80.0	75.4		ug/L		94	70 - 130	5	20

Lab Sample ID: MB 440-465710/1-C Matrix: Water Analysis Batch: 466054

Analysis Batch: 466054								Prep Batch:	466030
	MB	МВ							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.0	0.25	ug/L		03/26/18 12:22	03/26/18 12:54	1
Copper	ND		2.0	0.50	ug/L		03/26/18 12:22	03/26/18 12:54	1
Lead	ND		1.0	0.50	ug/L		03/26/18 12:22	03/26/18 12:54	1

Lab Sample ID: MB 440-465710/1-C

Matrix: Water

Analyte

Antimony

Selenium

Thallium

Analysis Batch: 466054

Method: 200.8 - Metals (ICP/MS) (Continued)

MB MB

ND

ND

ND

Result Qualifier

Client Sample ID: Method Blank

03/26/18 12:22 03/26/18 12:54

03/26/18 12:22 03/26/18 12:54

03/26/18 12:22 03/26/18 12:54

Client Sample ID: Lab Control Sample

Prepared

Client Sample ID: Outfall009_20180322_Comp_F

Client Sample ID: Outfall009_20180322_Comp_F

D

Prep Type: Dissolved

Prep Type: Dissolved

Prep Type: Dissolved

Prep Type: Dissolved

Client Sample ID: Method Blank

Prep Type: Dissolved

Analyzed

Prep Batch: 466030

Dil Fac

1

1

1

2 3 4 5

0 7 8 9 10 11 12

Lab Sample ID: LCS 440-465710/2-C Matrix: Water Analysis Batch: 466054

Analysis Batch: 466054							Prep Batch: 466030
	Spike	LCS	LCS				%Rec.
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits
Cadmium	80.0	76.1		ug/L		95	85 - 115
Copper	80.0	75.7		ug/L		95	85 - 115
Lead	80.0	70.5		ug/L		88	85 - 115
Antimony	80.0	75.2		ug/L		94	85 ₋ 115
Selenium	80.0	75.5		ug/L		94	85 - 115
Thallium	80.0	78.3		ug/L		98	85 - 115

QC Sample Results

RL

2.0

2.0

1.0

MDL Unit

0.50 ug/L

0.50 ug/L

0.50 ug/L

Lab Sample ID: 440-206741-2 MS Matrix: Water Analysis Batch: 466054

Analysis Batch: 466054	Sample	Sample	Spike	MS	MS				Prep Batch: 466030 %Rec.
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits
Cadmium	ND		80.0	78.1		ug/L		98	70 - 130
Copper	4.9		80.0	84.1		ug/L		99	70 - 130
Lead	0.52	J,DX	80.0	73.0		ug/L		91	70 - 130
Antimony	1.3	J,DX	80.0	78.7		ug/L		97	70 - 130
Selenium	ND		80.0	76.9		ug/L		96	70 - 130
Thallium	ND		80.0	80.3		ug/L		100	70 - 130

Lab Sample ID: 440-206741-2 MSD Matrix: Water

Analysis Batch: 466054									Prep Ba	atch: 40	6030
-	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Cadmium	ND		80.0	73.8		ug/L		92	70 - 130	6	20
Copper	4.9		80.0	79.0		ug/L		93	70 - 130	6	20
Lead	0.52	J,DX	80.0	69.6		ug/L		86	70 - 130	5	20
Antimony	1.3	J,DX	80.0	73.5		ug/L		90	70 - 130	7	20
Selenium	ND		80.0	75.0		ug/L		94	70 - 130	2	20
Thallium	ND		80.0	74.6		ug/L		93	70 - 130	7	20

Lab Sample ID: MB 440-465710/1-K Matrix: Water

Analysis Batch: 468347								Prep Batch:	468190
-	MB	МВ							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	ND		1.0	0.50	ug/L		04/04/18 17:07	04/04/18 22:40	1

Method: 200.8 - Metals (ICP/MS) (Continued) Lab Sample ID: LCS 440-465710/2-K **Client Sample ID: Lab Control Sample Matrix: Water Prep Type: Dissolved** Analysis Batch: 468347 Prep Batch: 468190 Spike LCS LCS %Rec. Added Result Qualifier Unit Limits Analyte D %Rec 80.0 Silver 69.5 ug/L 87 85 - 115 Lab Sample ID: 440-206741-2 MS Client Sample ID: Outfall009 20180322 Comp F **Matrix: Water Prep Type: Dissolved** Analysis Batch: 468347 **Prep Batch: 468190** Sample Sample Spike MS MS %Rec. **Result Qualifier** Added Analyte **Result Qualifier** Limits Unit D %Rec Silver ND 80.0 74.4 ug/L 93 70 - 130 Lab Sample ID: 440-206741-2 MSD Client Sample ID: Outfall009_20180322_Comp_F **Matrix: Water Prep Type: Dissolved** Analysis Batch: 468347 Prep Batch: 468190 Sample Sample Spike MSD MSD %Rec. RPD **Result Qualifier** Added **Result Qualifier** Limits RPD Limit Analyte Unit D %Rec Silver ND 80.0 79.2 ug/L 99 70 - 130 20 6 Method: 245.1 - Mercury (CVAA) Lab Sample ID: MB 440-465644/1-A **Client Sample ID: Method Blank Matrix: Water** Prep Type: Total/NA Analysis Batch: 465777 Prep Batch: 465644 MB MB **Result Qualifier** RL MDL Unit Analyte D Prepared Analyzed Dil Fac ND 0.20 0.10 ua/L 03/23/18 13:27 03/23/18 20:52 1 Mercury Lab Sample ID: LCS 440-465644/2-A **Client Sample ID: Lab Control Sample Matrix: Water** Prep Type: Total/NA Analysis Batch: 465777 **Prep Batch: 465644** Spike LCS LCS %Rec. Added Result Qualifier Limits Analyte Unit D %Rec 8.00 8.01 ug/L 100 85 - 115 Mercury Lab Sample ID: 440-206741-1 MS Client Sample ID: Outfall009_20180322_Comp **Matrix: Water** Prep Type: Total/NA Analysis Batch: 465777 **Prep Batch: 465644** Spike MS MS %Rec. Sample Sample Added Analyte **Result Qualifier Result Qualifier** Unit %Rec Limits D Mercury ND 8.00 7.98 uq/L 100 70 - 130 Lab Sample ID: 440-206741-1 MSD Client Sample ID: Outfall009_20180322_Comp **Matrix: Water** Prep Type: Total/NA Analysis Batch: 465777 Prep Batch: 465644 Sample Sample Spike MSD MSD %Rec. RPD Analyte **Result Qualifier** Added Result Qualifier Unit D %Rec Limits RPD Limit Mercury ND 8.00 7.90 ug/L 99 70 - 130 1 20

Method: 245.1 - Mercury (CVAA) (Continued) Lab Sample ID: MB 440-465710/1-D **Client Sample ID: Method Blank Matrix: Water Prep Type: Dissolved** Analysis Batch: 466636 Prep Batch: 466055 MB MB Analyte **Result Qualifier** RL MDL Unit Prepared Analyzed Dil Fac D 0.20 03/26/18 13:15 03/27/18 16:22 ND 0.10 ug/L Mercury 1 Lab Sample ID: LCS 440-465710/2-D **Client Sample ID: Lab Control Sample** Matrix: Water **Prep Type: Dissolved** Analysis Batch: 466636 **Prep Batch: 466055** Spike LCS LCS %Rec. Limits Added Analyte **Result Qualifier** Unit D %Rec Mercury 8.00 8.34 ug/L 104 85 - 115 Lab Sample ID: 440-206741-2 MS Client Sample ID: Outfall009_20180322_Comp_F **Matrix: Water Prep Type: Dissolved** Analysis Batch: 466636 Prep Batch: 466055 Sample Sample Spike MS MS %Rec. **Result Qualifier** Added Result Qualifier Limits Analyte Unit D %Rec Mercury ND 8.00 8.07 ug/L 101 70 - 130 Lab Sample ID: 440-206741-2 MSD Client Sample ID: Outfall009_20180322_Comp_F **Matrix: Water Prep Type: Dissolved** Analysis Batch: 466636 Prep Batch: 466055 Sample Sample Spike MSD MSD %Rec. RPD Analyte **Result Qualifier** Added **Result Qualifier** Unit %Rec Limits RPD Limit D Mercury ND 8.00 8.24 103 70 - 130 2 20 ug/L

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

Lab Sample ID: MB 440-466028/1 Matrix: Water Analysis Batch: 466028									Clie	ent Sam	ple ID: Metho Prep Type: T	
	M	в мв										
Analyte	Resu	t Qualifier		RL	I	MDL	Unit		D P	repared	Analyzed	Dil Fac
Total Dissolved Solids	N	0		10		5.0	mg/L				03/26/18 12:09	1
Lab Sample ID: LCS 440-466028/2								Clie	ent Sa	mple ID	: Lab Control	Sample
Matrix: Water										1 - C	Prep Type: T	
Analysis Batch: 466028												
			Spike		LCS	LCS	5				%Rec.	
Analyte			Added		Result	Qua	lifier	Unit	D	%Rec	Limits	
Total Dissolved Solids			1000		996			mg/L		100	90 - 110	
Lab Sample ID: 440-206741-1 DU							Clier	nt Samp	ple ID:	Outfall	009_20180322	
Matrix: Water											Prep Type: T	otal/NA
Analysis Batch: 466028												
	nple Sa	•				DU						RPD
Analyte Re	esult Q	ualifier			Result	Qua	lifier	Unit	D		RP	D Limit
Total Dissolved Solids	75				76.0			mg/L				1 5

TestAmerica Irvine

4/5/2018 (Rev. 1)

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

									~					
Lab Sample ID: MB 440-46	6101/1								C	lie	nt Sam	ple ID: M		
Matrix: Water												Prep Ty	pe: 10	(al/NA
Analysis Batch: 466101														
Ameliate	р.	MB MB	1				11		-	D		Amaha		Dil Fac
Analyte	Re	sult Qualif	ier	RL -		MDL			D	Pr	epared	Analy		
Total Suspended Solids		ND		1.0	(0.50	mg/L					03/26/18	16:12	1
Lab Sample ID: LCS 440-4	66101/2							CI	ont S	20		: Lab Coi	ntrol S	amplo
Matrix: Water	00101/2								ent J	an		Prep Ty		
												Prepiry	pe. 10	lai/NA
Analysis Batch: 466101			Spike		LCS	109						%Rec.		
Analyta			Added	-	Result		fior	Unit		D	%Rec	Limits		
Analyte Total Suspended Solids			1000	r	960	Quai	mer			_	96	85 - 115		
Total Suspended Solids			1000		900			mg/L			90	00-110		
Lab Sample ID: 440-20674	1-1 DU						Clier	nt Sam	nole II) :	Outfall	009_2018	30322	Comp
Matrix: Water							•	it ouii			outiun	Prep Ty		
Analysis Batch: 466101												i icp i j	pc. 10	
Analysis Daten. 400101	Sample	Sample			DU	DU								RPD
Analyte	•	Qualifier		F	Result		lifier	Unit		D			RPD	Limit
Total Suspended Solids	9.0				9.60			mg/L		_			6	10
	0.0				0.00			ing/L					0	10
Method: SM 4500 CN E		e, Total	(Low Lev	/el)										
Method: SM 4500 CN E Lab Sample ID: MB 440-46 Matrix: Water		e, Total	(Low Lev	vel)					С	lie	nt Sam	nple ID: M Prep Ty		
Lab Sample ID: MB 440-46		e, Total ((Low Lev	/el)					С	lie	nt Sam	•	pe: To	tal/NA
Lab Sample ID: MB 440-46 Matrix: Water		e, Total (мв мв	(Low Lev	vel)					С	lie	nt Sam	Prep Ty	pe: To	tal/NA
Lab Sample ID: MB 440-46 Matrix: Water Analysis Batch: 465829 Analyte	55583/1-A			/el) _{RL}	Ν	MDL			D	Pr	epared	Prep Ty Prep Ba Analy	vpe: To atch: 4 vzed	tal/NA
Lab Sample ID: MB 440-46 Matrix: Water Analysis Batch: 465829	55583/1-A	MB MB			Ν	MDL 2.5			D	Pr	epared	Prep Ty Prep Ba	vpe: To atch: 4 vzed	tal/NA 65583
Lab Sample ID: MB 440-46 Matrix: Water Analysis Batch: 465829 Analyte Cyanide, Total	55583/1-A	MB MB sult Qualif		RL	Ν			0	D — 03	Pr 3/23	epared 3/18 10:4	Prep Ty Prep Ba Analy 0 03/24/18	pe: To atch: 4 zed 3 09:55	tal/NA 65583 Dil Fac
Lab Sample ID: MB 440-46 Matrix: Water Analysis Batch: 465829 Analyte Cyanide, Total Lab Sample ID: LCS 440-4	55583/1-A	MB MB sult Qualif		RL	N			Cli	D — 03	Pr 3/23	epared 3/18 10:4	Prep Ty Prep Ba Analy 0 03/24/18	vpe: To atch: 4 vzed 3 09:55	tal/NA 65583 Dil Fac 1 ample
Lab Sample ID: MB 440-46 Matrix: Water Analysis Batch: 465829 Analyte Cyanide, Total Lab Sample ID: LCS 440-4 Matrix: Water	55583/1-A	MB MB sult Qualif		RL	N			Cli	D — 03	Pr 3/23	epared 3/18 10:4	Prep Ty Prep Ba Analy 0 03/24/18 : Lab Con Prep Ty	rpe: To atch: 4 zed 09:55 ntrol S rpe: To	tal/NA 65583 Dil Fac 1 ample tal/NA
Lab Sample ID: MB 440-46 Matrix: Water Analysis Batch: 465829 Analyte Cyanide, Total Lab Sample ID: LCS 440-4	55583/1-A	MB MB sult Qualif	ier	RL		2.5		CI	D — 03	Pr 3/23	epared 3/18 10:4	Prep Ty Prep B Analy 0 03/24/18 : Lab Con Prep Ty Prep B	rpe: To atch: 4 zed 09:55 ntrol S rpe: To	tal/NA 65583 Dil Fac 1 ample tal/NA
Lab Sample ID: MB 440-46 Matrix: Water Analysis Batch: 465829 Analyte Cyanide, Total Lab Sample ID: LCS 440-4 Matrix: Water Analysis Batch: 465829	55583/1-A	MB MB sult Qualif	ier Spike	RL 5.0	LCS	2.5	ug/L		D or ient S	Pr 3/23	epared 3/18 10:4 nple ID	Prep Ty Prep Ba 03/24/18 : Lab Con Prep Ty Prep Ba %Rec.	rpe: To atch: 4 zed 09:55 ntrol S rpe: To	tal/NA 65583 Dil Fac 1 ample tal/NA
Lab Sample ID: MB 440-46 Matrix: Water Analysis Batch: 465829 Analyte Cyanide, Total Lab Sample ID: LCS 440-4 Matrix: Water Analysis Batch: 465829 Analyte	55583/1-A	MB MB sult Qualif	ier Spike Added	RL 5.0	LCS Result	2.5	ug/L	Unit	D or ient S	Pr 3/23	epared 3/18 10:4 nple ID %Rec	Prep Ty Prep B Analy 03/24/18 : Lab Con Prep Ty Prep B %Rec. Limits	rpe: To atch: 4 zed 09:55 ntrol S rpe: To	tal/NA 65583 Dil Fac 1 ample tal/NA
Lab Sample ID: MB 440-46 Matrix: Water Analysis Batch: 465829 Analyte Cyanide, Total Lab Sample ID: LCS 440-4 Matrix: Water Analysis Batch: 465829	55583/1-A	MB MB sult Qualif	ier Spike	RL 5.0	LCS	2.5	ug/L		D or ient S	Pr 3/23	epared 3/18 10:4 nple ID	Prep Ty Prep Ba 03/24/18 : Lab Con Prep Ty Prep Ba %Rec.	rpe: To atch: 4 zed 09:55 ntrol S rpe: To	tal/NA 65583 Dil Fac 1 ample tal/NA
Lab Sample ID: MB 440-46 Matrix: Water Analysis Batch: 465829 Analyte Cyanide, Total Lab Sample ID: LCS 440-4 Matrix: Water Analysis Batch: 465829 Analyte Cyanide, Total	55583/1-A 	MB MB sult Qualif	ier Spike Added	RL 5.0	LCS Result	2.5 LCS Qual	ug/L	Unit ug/L	<u>D</u> ent S	Pr 3/23 an	epared 3/18 10:4 nple ID %Rec 105	Prep Ty Prep B 03/24/18 : Lab Con Prep Ty Prep B %Rec. Limits 90 - 110	rpe: To atch: 4 209:55 ntrol S rpe: To atch: 4	tal/NA 65583 Dil Fac 1 ample tal/NA 65583
Lab Sample ID: MB 440-46 Matrix: Water Analysis Batch: 465829 Analyte Cyanide, Total Lab Sample ID: LCS 440-4 Matrix: Water Analysis Batch: 465829 Analysis Batch: 465829 Analysis Batch: 465829 Analyte Cyanide, Total Lab Sample ID: 440-20674	55583/1-A 	MB MB sult Qualif	ier Spike Added	RL 5.0	LCS Result	2.5 LCS Qual	ug/L	Unit ug/L	<u>D</u> ent S	Pr 3/23 an	epared 3/18 10:4 nple ID %Rec 105	Prep Ty Prep B 0 03/24/18 : Lab Con Prep Ty Prep B %Rec. Limits 90-110	pe: To atch: 4 209:55 ntrol S pe: To atch: 4 80322_	tal/NA 65583 Dil Fac 1 ample tal/NA 65583
Lab Sample ID: MB 440-46 Matrix: Water Analysis Batch: 465829 Analyte Cyanide, Total Lab Sample ID: LCS 440-4 Matrix: Water Analysis Batch: 465829 Analysis Batch: 465829 Analysis Batch: 465829 Analyte Cyanide, Total Lab Sample ID: 440-20674 Matrix: Water	55583/1-A 	MB MB sult Qualif	ier Spike Added	RL 5.0	LCS Result	2.5 LCS Qual	ug/L	Unit ug/L	<u>D</u> ent S	Pr 3/23 an	epared 3/18 10:4 nple ID %Rec 105	Prep Ty Prep B 0 03/24/18 : Lab Con Prep Ty Prep B %Rec. Limits 90 - 110 009_2018 Prep Ty	pe: To atch: 4 22ed 09:55 ntrol S pe: To atch: 4 80322_ pe: To	tal/NA 65583 Dil Fac 1 ample tal/NA 65583
Lab Sample ID: MB 440-46 Matrix: Water Analysis Batch: 465829 Analyte Cyanide, Total Lab Sample ID: LCS 440-4 Matrix: Water Analysis Batch: 465829 Analysis Batch: 465829 Analysis Batch: 465829 Analyte Cyanide, Total Lab Sample ID: 440-20674	55583/1-A Re 655583/2-A 	MB MB sult Qualif	ier Spike Added 100	RL 5.0	LCS Result 105	2.5 LCS Qual	ug/L	Unit ug/L	<u>D</u> ent S	Pr 3/23 an	epared 3/18 10:4 nple ID %Rec 105	Prep Ty Prep B 0 03/24/18 : Lab Con Prep Ty Prep B %Rec. Limits 90 - 110 009_2018 Prep Ty Prep B	pe: To atch: 4 22ed 09:55 ntrol S pe: To atch: 4 80322_ pe: To	tal/NA 65583 Dil Fac 1 ample tal/NA 65583
Lab Sample ID: MB 440-46 Matrix: Water Analysis Batch: 465829 Analyte Cyanide, Total Lab Sample ID: LCS 440-4 Matrix: Water Analysis Batch: 465829 Analyte Cyanide, Total Lab Sample ID: LCS 440-4 Matrix: Water Analysis Batch: 465829 Analyte Cyanide, Total Lab Sample ID: 440-20674 Matrix: Water Analysis Batch: 465829	55583/1-A Re 655583/2-A 1-1 MS Sample	MB MB sult Qualif ND	ier Spike Added 100 Spike	RL 5.0	LCS Result 105 MS	2.5 LCS Qual	ug/L lifier Clier	Unit ug/L	D ent S	Pr 3/23 an D	epared 3/18 10:4 nple ID <u>%Rec</u> 105 - Outfall	Prep Ty Prep B 0 03/24/18 : Lab Con Prep Ty Prep B %Rec. Limits 90 - 110 009_2018 Prep B %Rec.	pe: To atch: 4 22ed 09:55 ntrol S pe: To atch: 4 80322_ pe: To	tal/NA 65583 Dil Fac 1 ample tal/NA 65583
Lab Sample ID: MB 440-46 Matrix: Water Analysis Batch: 465829 Analyte Cyanide, Total Lab Sample ID: LCS 440-4 Matrix: Water Analysis Batch: 465829 Analysis Batch: 465829 Analysis Batch: 465829 Analyte Cyanide, Total Lab Sample ID: 440-20674 Matrix: Water	55583/1-A Re 655583/2-A 1-1 MS Sample	MB MB sult Qualif	ier Spike Added 100	RL 5.0	LCS Result 105	2.5 LCS Qual	ug/L lifier Clier	Unit ug/L nt Sam Unit	D ent S	Pr 3/23 an	epared 3/18 10:4 nple ID %Rec 105	Prep Ty Prep B 0 03/24/18 : Lab Con Prep Ty Prep B %Rec. Limits 90 - 110 009_2018 Prep Ty Prep B	pe: To atch: 4 22ed 09:55 ntrol S pe: To atch: 4 80322_ pe: To	tal/NA 65583 Dil Fac 1 ample tal/NA 65583
Lab Sample ID: MB 440-46 Matrix: Water Analysis Batch: 465829 Analyte Cyanide, Total Lab Sample ID: LCS 440-4 Matrix: Water Analysis Batch: 465829 Analyte Cyanide, Total Lab Sample ID: LCS 440-4 Matrix: Water Analysis Batch: 465829 Analyte Cyanide, Total Lab Sample ID: 440-20674 Matrix: Water Analysis Batch: 465829 Analysis Batch: 465829 Analysis Batch: 465829	55583/1-A Re 65583/2-A 1-1 MS Sample Result	MB MB sult Qualif ND	ier Spike Added 100 Spike Added	RL 5.0	LCS Result 105 MS Result	2.5 LCS Qual	ug/L lifier Clier	Unit ug/L	D ent S	Pr 3/23 an D	epared 3/18 10:4 nple ID %Rec 0utfall	Prep Ty Prep B 0 03/24/18 Contraction 2012 Prep Ty Prep B %Rec. Limits 90 - 110 009_2018 Prep B %Rec. Limits	pe: To atch: 4 22ed 09:55 ntrol S pe: To atch: 4 80322_ pe: To	tal/NA 65583 Dil Fac 1 ample tal/NA 65583 Comp tal/NA
Lab Sample ID: MB 440-46 Matrix: Water Analysis Batch: 465829 Analyte Cyanide, Total Lab Sample ID: LCS 440-4 Matrix: Water Analysis Batch: 465829 Analyte Cyanide, Total Lab Sample ID: LCS 440-4 Matrix: Water Analysis Batch: 465829 Analyte Cyanide, Total Lab Sample ID: 440-20674 Matrix: Water Analysis Batch: 465829 Analysis Batch: 465829 Analysis Batch: 465829	25583/1-A Re 265583/2-A 1-1 MS 1-1 MS Sample Result ND	MB MB sult Qualif ND	ier Spike Added 100 Spike Added	RL 5.0	LCS Result 105 MS Result	2.5 Qual MS Qual	ug/L Clier lifier	Unit ug/L nt Sam Unit ug/L	p ent S	Pr 3/23 an D D:	epared 3/18 10:4 nple ID %Rec 0utfall %Rec 93	Prep Ty Prep B 0 03/24/18 Contraction 2012 Prep Ty Prep B %Rec. Limits 90 - 110 009_2018 Prep B %Rec. Limits	rpe: To atch: 4 2 2 ed 0 09:55 2 pe: To atch: 4 80322_ 2 pe: To atch: 4	tal/NA 65583 Dil Fac 1 ample tal/NA 65583 Comp tal/NA 65583
Lab Sample ID: MB 440-46 Matrix: Water Analysis Batch: 465829 Analyte Cyanide, Total Lab Sample ID: LCS 440-4 Matrix: Water Analysis Batch: 465829 Analyte Cyanide, Total Lab Sample ID: 440-20674 Matrix: Water Analysis Batch: 465829 Analyte Cyanide, Total	25583/1-A Re 265583/2-A 1-1 MS 1-1 MS Sample Result ND	MB MB sult Qualif ND	ier Spike Added 100 Spike Added	RL 5.0	LCS Result 105 MS Result	2.5 Qual MS Qual	ug/L Clier lifier	Unit ug/L nt Sam Unit ug/L	p ent S	Pr 3/23 an D D:	epared 3/18 10:4 nple ID %Rec 0utfall %Rec 93	Prep Ty Prep B 0 03/24/18 : Lab Con Prep Ty Prep B %Rec. Limits 90-110 009_2018 Prep Ty Prep B %Rec. Limits 70-115	rpe: To atch: 4 309:55 ntrol S rpe: To atch: 4 80322_ rpe: To atch: 4 80322_	Comp tal/NA 65583 1 ample tal/NA 65583 Comp tal/NA 65583
Lab Sample ID: MB 440-46 Matrix: Water Analysis Batch: 465829 Analyte Cyanide, Total Lab Sample ID: LCS 440-4 Matrix: Water Analysis Batch: 465829 Analyte Cyanide, Total Lab Sample ID: LCS 440-4 Matrix: Water Analyte Cyanide, Total Lab Sample ID: 440-20674 Matrix: Water Analysis Batch: 465829 Analysis Batch: 465829 Analysis Batch: 465829 Analysis Batch: 465829 Lab Sample ID: 440-20674 Lab Sample ID: 440-20674	25583/1-A Re 265583/2-A 1-1 MS 1-1 MS Sample Result ND	MB MB sult Qualif ND	ier Spike Added 100 Spike Added	RL 5.0	LCS Result 105 MS Result 93.2	2.5 Qual MS Qual	ug/L Clier ifier	Unit ug/L nt Sam Unit ug/L	p ent S	Pr 3/23 an D D:	epared 3/18 10:4 nple ID %Rec 0utfall %Rec 93	Prep Ty Prep B 03/24/18 : Lab Con Prep Ty Prep B %Rec. Limits 90-110 009_2018 Prep B %Rec. Limits 70-115	rpe: To atch: 4 309:55 ntrol S rpe: To atch: 4 80322_ rpe: To atch: 4 80322_ rpe: To	Comp tal/NA 65583 1 ample tal/NA 65583 Comp tal/NA 65583
Lab Sample ID: MB 440-46 Matrix: Water Analysis Batch: 465829 Analyte Cyanide, Total Lab Sample ID: LCS 440-4 Matrix: Water Analysis Batch: 465829 Analyte Cyanide, Total Lab Sample ID: 440-20674 Matrix: Water Analysis Batch: 465829 Analyte Cyanide, Total Lab Sample ID: 440-20674 Matrix: Water Analysis Batch: 465829	55583/1-A Re 655583/2-A 1-1 MS Sample Result ND 1-1 MSD Sample	MB MB sult Qualif ND Sample Qualifier	ier Spike Added 100 Spike Added 100 Spike	RL 5.0 -	LCS Result 105 MS Result 93.2	2.5 Qual MS Qual	ug/L Clier Clier	Unit ug/L nt Sam Unit ug/L	p ent S	Pr 3/23 an D D: D	epared 3/18 10:4 nple ID %Rec 105 Outfall 93 Outfall	Prep Ty Prep B Analy 0 03/24/18 : Lab Con Prep Ty Prep B %Rec. Limits 90 - 110 009_2018 Prep Ty Prep B %Rec. Limits 70 - 115 009_2018 Prep Ty Prep B %Rec.	rpe: To atch: 4 309:55 ntrol S rpe: To atch: 4 80322_ rpe: To atch: 4 80322_ rpe: To	Comp tal/NA 65583 1 ample tal/NA 65583 Comp tal/NA 65583
Lab Sample ID: MB 440-46 Matrix: Water Analysis Batch: 465829 Analyte Cyanide, Total Lab Sample ID: LCS 440-4 Matrix: Water Analysis Batch: 465829 Analyte Cyanide, Total Lab Sample ID: 440-20674 Matrix: Water Analyte Cyanide, Total Lab Sample ID: 440-20674 Matrix: Water Analysis Batch: 465829 Analysis Batch: 465829 Analysis Batch: 465829 Analysis Batch: 465829 Lab Sample ID: 440-20674 Matrix: Water Cyanide, Total Lab Sample ID: 440-20674 Matrix: Water	55583/1-A Re 655583/2-A 1-1 MS Sample Result ND 1-1 MSD Sample	MB MB sult Qualif ND Sample Qualifier	ier Spike Added 100 Spike Added 100	RL 5.0 -	LCS Result 105 MS Result 93.2	2.5 Qual MS Qual	ug/L Clier Clier	Unit ug/L nt Sam Unit ug/L	D ent S	Pr 3/23 an D D: D	epared 3/18 10:4 nple ID %Rec 0utfall %Rec 93	Prep Ty Prep B 0 03/24/18 : Lab Con Prep Ty Prep B %Rec. Limits 90 - 110 009_2018 Prep Ty Prep B %Rec. Limits 70 - 115 009_2018 Prep Ty Prep B	rpe: To atch: 4 309:55 ntrol S rpe: To atch: 4 80322_ rpe: To atch: 4 80322_ rpe: To	Comp tal/NA 65583 Dil Fac 1 ample tal/NA 65583 Comp tal/NA 65583

QC Association Summary

466272	
466272	10
466272	
	11
	12

GC/MS Semi VOA Prep Batch: 466272

Client Sample ID	Prep Type	Matrix	Method	Prep Batch
Outfall009_20180322_Comp	Total/NA	Water	625	
Method Blank	Total/NA	Water	625	
Lab Control Sample	Total/NA	Water	625	
Outfall009_20180322_Comp	Total/NA	Water	625	
Outfall009_20180322_Comp	Total/NA	Water	625	
364				
Client Sample ID	Prep Type	Matrix	Method	Prep Batch
Outfall009_20180322_Comp	Total/NA	Water	625	466272
Method Blank	Total/NA	Water	625	466272
Lab Control Sample	Total/NA	Water	625	466272
Outfall009_20180322_Comp	Total/NA	Water	625	466272
Outfall009_20180322_Comp	Total/NA	Water	625	466272
Client Sample ID	Pren Type	Matrix	Method	Prep Batch
•				
Outfall009 20180322 Comp	Total/NA	Water	608	
Outfall009_20180322_Comp Outfall009_20180322_Comp	Total/NA Total/NA	Water Water	608 608	
	Outfall009_20180322_Comp Method Blank Lab Control Sample Outfall009_20180322_Comp Outfall009_20180322_Comp 364 Client Sample ID Outfall009_20180322_Comp Method Blank Lab Control Sample Outfall009_20180322_Comp	Outfall009_20180322_Comp Total/NA Method Blank Total/NA Lab Control Sample Total/NA Outfall009_20180322_Comp Total/NA Outfall009_20180322_Comp Total/NA Outfall009_20180322_Comp Total/NA Outfall009_20180322_Comp Total/NA Outfall009_20180322_Comp Total/NA Method Blank Total/NA Lab Control Sample Total/NA Outfall009_20180322_Comp Total/NA Method Blank Total/NA Lab Control Sample ID Prep Type Outfall009_20180322_Comp Total/NA Method Blank Total/NA Lab Control Sample Total/NA Lab Control Sample Total/NA	Outfall009_20180322_Comp Total/NA Water Method Blank Total/NA Water Lab Control Sample Total/NA Water Outfall009_20180322_Comp Total/NA Water Method Blank Total/NA Water Lab Control Sample Total/NA Water Outfall009_20180322_Comp Total/NA Water Dutfall009_20180322_Comp Total/NA Water	Outfall009_20180322_Comp Total/NA Water 625 Method Blank Total/NA Water 625 Lab Control Sample Total/NA Water 625 Outfall009_20180322_Comp Total/NA Water 625 Method Blank Total/NA Water 625 Lab Control Sample Total/NA Water 625 Outfall009_20180322_Comp Total/NA Water 625 Method Blank Total/NA Water 608

Analysis Batch: 466278

Outfall009_20180322_Comp

440-206741-1 MSD

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-206741-1	Outfall009_20180322_Comp	Total/NA	Water	608 PCB LL	466200
MB 440-466200/1-A	Method Blank	Total/NA	Water	608 PCB LL	466200
LCS 440-466200/5-A	Lab Control Sample	Total/NA	Water	608 PCB LL	466200
440-206741-1 MS	Outfall009_20180322_Comp	Total/NA	Water	608 PCB LL	466200
440-206741-1 MSD	Outfall009_20180322_Comp	Total/NA	Water	608 PCB LL	466200

Total/NA

Water

608

Analysis Batch: 466528

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-206741-1	Outfall009_20180322_Comp	Total/NA	Water	608 Pesticides	466200
MB 440-466200/1-A	Method Blank	Total/NA	Water	608 Pesticides	466200
LCS 440-466200/2-A	Lab Control Sample	Total/NA	Water	608 Pesticides	466200
440-206741-1 MS	Outfall009_20180322_Comp	Total/NA	Water	608 Pesticides	466200
440-206741-1 MSD	Outfall009_20180322_Comp	Total/NA	Water	608 Pesticides	466200

HPLC/IC

Analysis Batch: 465186

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-206741-1	Outfall009_20180322_Comp	Total/NA	Water	218.6	
MB 440-465186/6	Method Blank	Total/NA	Water	218.6	
LCS 440-465186/5	Lab Control Sample	Total/NA	Water	218.6	

Prep Type

Total/NA

Total/NA

Total/NA

Prep Type

Total/NA

Total/NA

Total/NA

Total/NA

Total/NA

Total/NA

Total/NA

Total/NA

Matrix

Water

Water

Water

Matrix

Water

Water

Water

Water

Water

Water

Water

Water

Analysis Batch: 465186 (Continued)

Client Sample ID

Client Sample ID

Method Blank

Lab Control Sample

Lab Control Sample

Outfall009_20180322_Comp

Outfall009_20180322_Comp

Outfall009_20180322_Comp

Outfall009_20180322_Comp

Outfall009 20180322 Comp

Outfall009_20180322_Comp

Outfall009_20180322_Comp

Outfall009_20180322_Comp

HPLC/IC (Continued)

Lab Sample ID

Lab Sample ID

440-206741-1 - DL

MB 440-465264/14

LCS 440-465264/13

440-206741-1 MS - DL

440-206741-1 MSD - DL

440-206741-1

MRL 440-465186/4

440-206741-1 MS

440-206741-1 MSD

Analysis Batch: 465264

Method

218.6

218.6

218.6

Method

300.0

300.0

300.0

300.0

300.0

300.0

300.0

300.0

Prep Batch

Prep Batch

Prep Batch

/ 8 9 10 11

Analysis Batch: 465265						
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method		
440-206741-1	Outfall009_20180322_Comp	Total/NA	Water	300.0		
440-206741-1 - DL	Outfall009_20180322_Comp	Total/NA	Water	300.0		
MB 440-465265/14	Method Blank	Total/NA	Water	300.0		
LCS 440-465265/13	Lab Control Sample	Total/NA	Water	300.0		

Analysis Batch: 467055

440-206741-1 MS - DL

440-206741-1 MSD - DL

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-206741-1	Outfall009_20180322_Comp	Total/NA	Water	314.0	
MB 440-467055/6	Method Blank	Total/NA	Water	314.0	
LCS 440-467055/5	Lab Control Sample	Total/NA	Water	314.0	
MRL 440-467055/4	Lab Control Sample	Total/NA	Water	314.0	
440-206741-1 MS	Outfall009_20180322_Comp	Total/NA	Water	314.0	
440-206741-1 MSD	Outfall009 20180322 Comp	Total/NA	Water	314.0	

Lab Sample ID	Client Sample ID	Ргер Туре	Matrix	Method	Prep Batch
440-206741-1	Outfall009_20180322_Comp	Total/NA	Water	NO3NO2 Calc	

Metals

Prep Batch: 465644

Lab Sample ID 440-206741-1	Client Sample ID Outfall009_20180322_Comp	Prep Type Total/NA	Matrix Water	Method 245.1	Prep Batch
MB 440-465644/1-A	Method Blank	Total/NA	Water	245.1	
LCS 440-465644/2-A	Lab Control Sample	Total/NA	Water	245.1	
440-206741-1 MS	Outfall009_20180322_Comp	Total/NA	Water	245.1	
440-206741-1 MSD	Outfall009_20180322_Comp	Total/NA	Water	245.1	

Filtration Batch: 465710

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-206741-2	Outfall009_20180322_Comp_F	Dissolved	Water	FILTRATION	
MB 440-465710/1-B	Method Blank	Dissolved	Water	FILTRATION	
MB 440-465710/1-C	Method Blank	Dissolved	Water	FILTRATION	

Metals (Continued)

Filtration Batch: 465	710 (Continued)				
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batcl
MB 440-465710/1-D	Method Blank	Dissolved	Water	FILTRATION	
MB 440-465710/1-G	Method Blank	Dissolved	Water	FILTRATION	
MB 440-465710/1-K	Method Blank	Dissolved	Water	FILTRATION	
LCS 440-465710/2-B	Lab Control Sample	Dissolved	Water	FILTRATION	
LCS 440-465710/2-C	Lab Control Sample	Dissolved	Water	FILTRATION	
LCS 440-465710/2-D	Lab Control Sample	Dissolved	Water	FILTRATION	
LCS 440-465710/2-G	Lab Control Sample	Dissolved	Water	FILTRATION	
LCS 440-465710/2-K	Lab Control Sample	Dissolved	Water	FILTRATION	
440-206741-2 MS	Outfall009_20180322_Comp_F	Dissolved	Water	FILTRATION	
440-206741-2 MSD	Outfall009_20180322_Comp_F	Dissolved	Water	FILTRATION	
Analysis Batch: 465	777				
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batc
440-206741-1	Outfall009_20180322_Comp	Total/NA	Water	245.1	46564
MB 440-465644/1-A	Method Blank	Total/NA	Water	245.1	46564
LCS 440-465644/2-A	Lab Control Sample	Total/NA	Water	245.1	46564
440-206741-1 MS	Outfall009_20180322_Comp	Total/NA	Water	245.1	46564
440-206741-1 MSD	Outfall009_20180322_Comp	Total/NA	Water	245.1	46564
rep Batch: 466017					
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batc
440-206741-1	Outfall009_20180322_Comp	Total Recoverable	Water	200.2	
MB 440-466017/1-A	Method Blank	Total Recoverable	Water	200.2	
LCS 440-466017/2-A	Lab Control Sample	Total Recoverable	Water	200.2	
440-206741-1 MS	Outfall009_20180322_Comp	Total Recoverable	Water	200.2	
440-206741-1 MSD	Outfall009_20180322_Comp	Total Recoverable	Water	200.2	
Prep Batch: 466018					
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batc
440-206741-1	Outfall009_20180322_Comp	Total Recoverable	Water	200.2	
MB 440-466018/1-A	Method Blank	Total Recoverable	Water	200.2	
LCS 440-466018/2-A	Lab Control Sample	Total Recoverable	Water	200.2	
440-206741-1 MS	Outfall009_20180322_Comp	Total Recoverable	Water	200.2	
440-206741-1 MSD	Outfall009_20180322_Comp	Total Recoverable	Water	200.2	
Prep Batch: 466029					
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batc
440-206741-2	Outfall009_20180322_Comp_F	Dissolved	Water	200.2	46571
MB 440-465710/1-B	Method Blank	Dissolved	Water	200.2	46571
LCS 440-465710/2-B	Lab Control Sample	Dissolved	Water	200.2	46571
440-206741-2 MS	Outfall009_20180322_Comp_F	Dissolved	Water	200.2	46571
440-206741-2 MSD	Outfall009_20180322_Comp_F	Dissolved	Water	200.2	46571
Prep Batch: 466030					
Lab Sample ID	Client Sample ID	Ргер Туре	Matrix	Method	Prep Batc
440-206741-2	Outfall009_20180322_Comp_F	Dissolved	Water	200.2	46571
MB 440-465710/1-C	Method Blank	Dissolved	Water	200.2	46571
LCS 440-465710/2-C	Lab Control Sample	Dissolved	Water	200.2	46571
440-206741-2 MS	Outfall009_20180322_Comp_F	Dissolved	Water	200.2	46571

Prep Type

Dissolved

Dissolved

Dissolved

Dissolved

Dissolved

Prep Type

Dissolved

Dissolved

Dissolved

Dissolved

Dissolved

Client Sample ID

Lab Control Sample

Client Sample ID

Lab Control Sample

Method Blank

Method Blank

Outfall009_20180322_Comp_F

Outfall009_20180322_Comp_F

Outfall009_20180322_Comp_F

Outfall009_20180322_Comp_F

Outfall009_20180322_Comp_F

Outfall009_20180322_Comp_F

Metals (Continued) Analysis Batch: 466054

Lab Sample ID

MB 440-465710/1-C

LCS 440-465710/2-C

440-206741-2 MS

Lab Sample ID

440-206741-2

440-206741-2 MSD

Prep Batch: 466055

MB 440-465710/1-D

LCS 440-465710/2-D

440-206741-2 MS

440-206741-2 MSD

440-206741-2

Method

200.8

200.8

200.8

200.8

200.8

Method

245.1

245.1

245.1

245.1

245.1

Matrix

Water

Water

Water

Water

Water

Matrix

Water

Water

Water

Water

Water

Prep Batch

466030

466030

466030

466030

466030

Prep Batch

465710

465710

465710

465710

465710

Analysis Bat	ch: 466136

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch	
440-206741-1	Outfall009_20180322_Comp	Total Recoverable	Water	200.8	466018	
MB 440-466018/1-A	Method Blank	Total Recoverable	Water	200.8	466018	
LCS 440-466018/2-A	Lab Control Sample	Total Recoverable	Water	200.8	466018	
440-206741-1 MS	Outfall009_20180322_Comp	Total Recoverable	Water	200.8	466018	
440-206741-1 MSD	Outfall009_20180322_Comp	Total Recoverable	Water	200.8	466018	

Analysis Batch: 466147

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-206741-1	Outfall009_20180322_Comp	Total Recoverable	Water	200.7 Rev 4.4	466017
440-206741-2	Outfall009_20180322_Comp_F	Dissolved	Water	200.7 Rev 4.4	466029
MB 440-465710/1-B	Method Blank	Dissolved	Water	200.7 Rev 4.4	466029
MB 440-466017/1-A	Method Blank	Total Recoverable	Water	200.7 Rev 4.4	466017
LCS 440-465710/2-B	Lab Control Sample	Dissolved	Water	200.7 Rev 4.4	466029
LCS 440-466017/2-A	Lab Control Sample	Total Recoverable	Water	200.7 Rev 4.4	466017
440-206741-1 MS	Outfall009_20180322_Comp	Total Recoverable	Water	200.7 Rev 4.4	466017
440-206741-1 MSD	Outfall009_20180322_Comp	Total Recoverable	Water	200.7 Rev 4.4	466017
440-206741-2 MS	Outfall009_20180322_Comp_F	Dissolved	Water	200.7 Rev 4.4	466029
440-206741-2 MSD	Outfall009_20180322_Comp_F	Dissolved	Water	200.7 Rev 4.4	466029

Analysis Batch: 466444

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-206741-1	Outfall009_20180322_Comp	Total Recoverable	Water	SM 2340B	
440-206741-2	Outfall009_20180322_Comp_F	Dissolved	Water	SM 2340B	

Analysis Batch: 466636

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-206741-2	Outfall009_20180322_Comp_F	Dissolved	Water	245.1	466055
MB 440-465710/1-D	Method Blank	Dissolved	Water	245.1	466055
LCS 440-465710/2-D	Lab Control Sample	Dissolved	Water	245.1	466055
440-206741-2 MS	Outfall009_20180322_Comp_F	Dissolved	Water	245.1	466055
440-206741-2 MSD	Outfall009_20180322_Comp_F	Dissolved	Water	245.1	466055
Prep Batch: 466646					
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-206741-2	Outfall009_20180322_Comp_F	Dissolved	Water	200.2	465710

Prep Type

Dissolved

Dissolved

Dissolved

Dissolved

Prep Type

Dissolved

Dissolved

Dissolved

Dissolved

Dissolved

Prep Type

Dissolved

Dissolved

Dissolved

Dissolved

Dissolved

Matrix

Water

Water

Water

Water

Matrix

Water

Water

Water

Water

Water

Matrix

Water

Water

Water

Water

Water

Prep Batch: 466646 (Continued)

Client Sample ID

Lab Control Sample

Client Sample ID

Lab Control Sample

Client Sample ID

Lab Control Sample

Method Blank

Method Blank

Outfall009_20180322_Comp_F

Outfall009_20180322_Comp_F

Outfall009_20180322_Comp_F

Outfall009 20180322 Comp F

Outfall009_20180322_Comp_F

Outfall009_20180322_Comp_F

Outfall009_20180322_Comp_F

Outfall009_20180322_Comp_F

Method Blank

Metals (Continued)

Lab Sample ID

MB 440-465710/1-G

LCS 440-465710/2-G

440-206741-2 MS

Lab Sample ID

MB 440-465710/1-G

LCS 440-465710/2-G

440-206741-2 MS

Lab Sample ID

440-206741-2

440-206741-2 MSD

Prep Batch: 468190

MB 440-465710/1-K

LCS 440-465710/2-K

440-206741-2 MS

440-206741-2

440-206741-2 MSD

Analysis Batch: 466739

Method

200.2

200.2

200.2

200.2

Method

200.7 Rev 4.4

Method

200.2

200.2

200.2

200.2

200.2

Prep Batch

465710

465710

465710

465710

Prep Batch

466646

466646

466646

466646

466646

Prep Batch

465710

465710

465710

465710

465710

8 9 10 11

440-206741-2 MSD
Analysis Batch: 468347

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-206741-2	Outfall009_20180322_Comp_F	Dissolved	Water	200.8	468190
MB 440-465710/1-K	Method Blank	Dissolved	Water	200.8	468190
LCS 440-465710/2-K	Lab Control Sample	Dissolved	Water	200.8	468190
440-206741-2 MS	Outfall009_20180322_Comp_F	Dissolved	Water	200.8	468190
440-206741-2 MSD	Outfall009_20180322_Comp_F	Dissolved	Water	200.8	468190

General Chemistry

Prep Batch: 465583

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method Prep	Batch
440-206741-1	Outfall009_20180322_Comp	Total/NA	Water	Distill/CN	
MB 440-465583/1-A	Method Blank	Total/NA	Water	Distill/CN	
LCS 440-465583/2-A	Lab Control Sample	Total/NA	Water	Distill/CN	
440-206741-1 MS	Outfall009_20180322_Comp	Total/NA	Water	Distill/CN	
440-206741-1 MSD	Outfall009_20180322_Comp	Total/NA	Water	Distill/CN	

Analysis Batch: 465829

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-206741-1	Outfall009_20180322_Comp	Total/NA	Water	SM 4500 CN E	465583
MB 440-465583/1-A	Method Blank	Total/NA	Water	SM 4500 CN E	465583
LCS 440-465583/2-A	Lab Control Sample	Total/NA	Water	SM 4500 CN E	465583
440-206741-1 MS	Outfall009_20180322_Comp	Total/NA	Water	SM 4500 CN E	465583
440-206741-1 MSD	Outfall009_20180322_Comp	Total/NA	Water	SM 4500 CN E	465583

Analysis Batch: 466028

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-206741-1	Outfall009_20180322_Comp	Total/NA	Water	SM 2540C	

Client: Haley & Aldrich, Inc. Project/Site: Annual Outfall 009 Comp

1 2 3 4 5 6 7 8 9

General Chemistry (Continued)

Analysis Batch: 466028 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 440-466028/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 440-466028/2	Lab Control Sample	Total/NA	Water	SM 2540C	
440-206741-1 DU	Outfall009_20180322_Comp	Total/NA	Water	SM 2540C	

Analysis Batch: 466101

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-206741-1	Outfall009_20180322_Comp	Total/NA	Water	SM 2540D	
MB 440-466101/1	Method Blank	Total/NA	Water	SM 2540D	
LCS 440-466101/2	Lab Control Sample	Total/NA	Water	SM 2540D	
440-206741-1 DU	Outfall009_20180322_Comp	Total/NA	Water	SM 2540D	

Qualifiers

GC/MS Semi VOA

Qualifier		
Quaimer	Qualifier Description	_
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL	5
LN	MS and/or MSD below acceptance limits. See Blank Spike (LCS)	
BA	Relative percent difference out of control	
Metals		
Qualifier	Qualifier Description	
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL	
LM	MS and/or MSD above acceptance limits. See Blank Spike (LCS)	0
		0

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.	10
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis	1 0
%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)	13
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)	

Laboratory: TestAmerica Irvine

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority California	Program State Prog	Iram	EPA Region 9	Identification Number CA ELAP 2706	Expiration Date
The following analytes	are included in this repor	t, but accreditation/c	ertification is not off	ered by the governing auth	ority:
Analysis Method	Prep Method	Matrix	Analyt	e	
625	625	Water	1,2-Di	phenylhydrazine(as Azober	nzene)

Patel, Urvashi

From: Sent: To: Cc: Subject: Attachments:

Baluran, Dwayne <DBaluran@haleyaldrich.com> Friday, March 30, 2018 3:25 PM Patel, Urvashi Miller, Katherine SSFL Boeing - COC 440-206741 COC 440-206741 (201803222242)_20180328_DB update.pdf

-External Email-

Hi Urvashi,

Catching up on the recent sampling events that occurred, could you please ensure that sample delivery group **440-206741** (OF009 – Annual Composite) reflects the following:

• COC had no sample time written on; lab listed time in receipt from labels. Updated COC sample times to 15:30, scanned, and is attached here.

If you have any questions feel free to contact me.

Thank you, Dwayne Baluran, EIT, QSP Staff Engineer

Haley & Aldrich, Inc. 5850 Canoga Avenue | Suite 400 Woodland Hills, CA 91367

T: (978) 234.5022 C: (818) 224.0704

www.haleyaldrich.com

Patel, Urvashi

From:	Miller, Katherine <kmiller@haleyaldrich.com></kmiller@haleyaldrich.com>
Sent:	Friday, March 23, 2018 2:07 PM
To:	Patel, Urvashi
Subject:	OF009 sample time comp
Follow Up Flag:	Follow up
Flag Status:	Flagged
Categories:	Red Category

-External Email-

OF009 sample time comp is 1530 on 3/22.

Katherine Miller Project Manager

Haley Aldrich, Inc. 600 South Meyer Ave. | Suite 100 Tucson, AZ 85701

T: (520) 289.8606 C: (520) 904.6944

www.haleyaldrich.com

Test America

CHAIN OF CUSTODY FORM

Paget of 2

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	Project:	Boeing-SSFL NFUES Permit 2018 Annuai Outtali (003-007, 003	Comp Comp	Project Manager: Kathe 520.289.9606, 520.904.	Field Manager: Mark Dominick 78.234.5033, 818.599.0702 (ce	er Type & of Preservetive Bottle	ŝ	None			HOW	None	None	Your	None	ONH	None None	Sere Sere Sere Sere Sere Sere Sere Sere	Photo	None			K	202			بر ~	5-1	5.1	3.0	
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	-	E Amuai		Projec 520.25	Field 978.23	Container Type	500 mL Paly	1 L Glass Amber	No.1 141 DOG	500 mL Poly	500 mL Poly	2.6 Gal Cube	1.5. Clinics Amber	† Gef Cube	1 L Glass Amber	ogroel(scate viale	1 L Poly	borosilicate vials	1 L. Glass Amber	500 mL Poly 1 L Ginse Amber		, , , , , , , , , , , , , , , , , , ,		י הי	any:						
				ş,		Sample Matrix	M	WM	Ē		I I	WW	M	ž	Ā	ŧ	M	ş	M	WW.		Company	J.	00 V	Company						
				ta trib the TSCs within Blanted S. its subsidiaries and affiliates, ar		Sampling Date/Time	÷	*	T	`		. Brucker	9	>	4	1	•	arzzze (~	3/22/2018		- 11/11 -	1001-	\$ \$1							
	Address:	Haiey & Aldrich 5333 Mission Center Rd Sutte 300 San Diego, CA 92108	Test America Contact: Urvashi Patel 17461 Derlan Ave Suita \$100 Inhe CA 29294 Tel 949-260-3269 Cell 949-333-9055	TestArmstrar's services under this CoC shall be performed in accordance with the TaCo within Blanked Service TestArennediz 2016-16-16-04-04-metica by and between Haley & Adaton, inc., its achedentes and efficiene, and TestArenderic Laborations bu.		Sample I.D.						Certheling 21160320 Comm						Outhail008_2018032_Camp_F		Cuttalicos_20180322_Comp_Extra		12	Mary Contract	12 - 2-3	Date/Time.						
	Client Name/Address:	Haiey & Aldrich 5333 Mission Cent San Diego, CA 921	Test America Conb 17461 Derlan Ave Invine CA 92614 Tal 949-280-3269 Cell 949-333-9055	TestAmerica's servi Agreements 2015-1. TestAmerica Labora	Sempler:	Sample Description									Outhell 009		<u> </u>		<u> </u>			Reinquished By	Rehnniched Ru	Y.	Reinquistred By	1					

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10 Dey: X Normel ы В С All Level IV: Sample Integrity: (Check) Intect: Store samples for 6 months. Data Requirements: (Check) No Lovel (V: At Turn-eround time: (Check) 24 Hour: 72 Hour. 48 Hour: 5 Day: 200 U 2 7.30 322 Date/Time 3-21-16 Thal eceived By ceived By ceived B ろ Company. 970 92 2 - 11 - 18/ DeterTime. 3-22 Detertine. Date/Time.

Page 2 of 2

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X Sample receiving DO NOT CPEN SAG Beg to be opened in Mircury Prep using Clean procedures						-		Ya	1	1	-	boroasicate viais	-	<u> </u>	5.2	B			
Filter and preserve with receipt at lab			×	1	+			Yes	8	None	3	1 L Poty	WM	-		1		2	
X Sample receiving DO NOT OPEN 84/3 Bad to be opened in Mercury Prep using clean procedures						*	From hith	4		HNO	3	DOTOBILIZATIS VIAIS	++	4				Ι	
X avents of the year	#				++	Ħ		Yes	44-	None	_	1L Glass Amber	11	**		C	F	09	Outrali 009
Analyze duplicate, not MS/MSD. Only tast If first or second rain	T	1	-	1	-	1		No.	7007	None	12.	1 Gal Cube	WW I	-	15:30	1	1		
unitisied and unpreed analysis, Separate RA		*	_	+	+	1		Yes	25	None	+	26 Gal Cube	+	<u>.</u>	3/22/2018		Cuttal1009_20180322_Comp	0	
	×			Å		Ħ		Yes	220	NaOH	3	600 mL Poly	+					_	
				+	×	T		No		None		1 L Poly	WM	1) 1124			
48 hours Halding Time NCS & NO2					×			Yes		None		500 mL Poly		-				-	
	1		-	1	+	×	×	No	11	HINO	er 2	11. Gless Amber		* •					
Total		Chron	(200	4.		TCD	Total (E20) Hardi (E20)	MISINIBD		Preservative	e Rof	Container Type	Sample o		Sampling Date/Time		Semple I.D.	97 °	Sample
Recoverabl			18): Ag, Cd,	(160.2 (SM2 Dissolved h	-, SD4, NO.)) (SM2540C/F) (and all co	Recoverable 17): Al, As, ness as Cat 18): Ag, Cd,		1702 (cell)	520.904.0 F: Mark D 818,599.0	Fridex, teatrager - Nativers in miner 520.269.8606, 520.904.6944 (cell) Field Manager: Mark Dominick 978.234.5033, 818.599.0702 (cell)	520.2 Fiel	_	d affiliates, and	eutraichanhas an	6 Aldrinoti, tinc., Ka	gronnensi Zahri-ta-Tradulmartea iy and bokwen Haley & Aditot, ma, ika subsidianiea and stillaten, and sed-madua Laboratotea inc. Sampbler:	sf 2015-14-TestAir on Laboratories in f":	Agroements TeetAmerican Septipler:
Pesticides+PCBs (E e Metals Mercury (E letals: Mercury (E245	-CN-E / E335 2)	2.0), Gross Beta(E90 16.0), Sr-90 (E905 0), n 226 (E903 0 or E90 904.0), Uranium (E90 01 0 or E901.1) Selenastrum 13)	letals B, Be, Cr, Fe, Ni, V, 2 O3 Cu, Pb, Sb, Se, Ti 2.0), Gross Beta(E90 6.0), Sr-90 (E905 0).		3+NO2-N, Perchlorate E160 1)	ngeners) (E1613B)	a Metals 8, Be, Cr, Fe, Ni, V, 2 X03 Cu, Pb, Sb, Se, Ti		009,010)	Comp	Annual Outfail (003-007, 008, 010) Outfail 009 Comp	Annu					San Diego, CA 22108 Trasi Annarita Contact: Urvastil Patel 17461 Derian Ave Suth #100 Invine CA 22614 Tel 848-230-3269 Cell 948-333-8065	San Diego, CA 82105 Treat America Contact: Unrasti 17461 Derian: Ave Suthe #100 Invine CA 9261 Tel 946-280-9265 Call 949-333-9055	San Die Test Am 17461 E Irvine C Tel 949 Ceil 949
245 1)	22	- ž					Zn,		ß	nject: SFL NPD nit 2018	Project: Boeing-SSFL NPDES Permit 2018						Client Name/Address: Haley & Aldrich 5333 Mission Center Rd Suite 300	Client Name/Address: Haley & Aldrich 5333 Mission Center F	Client N Haley J 5333 Mi
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Relinquished By		and the second se			-					T	Cuttal 009	****		Sample	Sampler:	TestAmetica's services under Agreement# 2015-18-TestAme TestAmetica Laboratories inc.	Test America Contact: Urvasi 17461 Derian Ave Suite #100 Irvine CA 92614 Tel 949-230-3269 Cell 949-333-8055	Haley & Aldrich 5333 Mission Center San Dieen, CA 92108	Client Name/Address:
000071778	Care to .							And the second sec	Outfail009_20180322_Comp_Extra		50	Outtail009 20180322 Comp 0		Sample I.D.		readynantics is envices under the COC at each proformad in accordance with the "RCG within Banetal Service (greeneme)? 2015-15-15-140kmainta by and between Heley & Adrich, Inc., its subsidiaries and elfitates, and septemetra Laboratorias Inc.	Test America Conflect: Urvaehl Patel 17491 Derian Ave Suite #100 17/ne CA 92614 Tel 849-290-2969 Sell 949-333-9055	Haley & Afdrich 5333 Mission Center Rd Suite 300 San Dieen. CA 92108	ess:
010	alux a	And a second							BLOCKZZN - U.	ic		3/22/2018		Sampling Date/Time		with the T&Cs within Blanket its subsidieries and elititates,			
Company:	Campany		It	11	1			A MAN	ANN C	WM	e ww	4 WM	MM	Sample		and			
De S	146		ł					I L Giase Milling	1 L Glass Amber	500 mL Poly	1 L Glass Amber	1L Poly	110	Contain	Field 1 978.234	Project 520.289		Annual C	,
i i	1							A	N	3	6	-	6	# of Cont	Manager 1.5033, 8	Manager 3.8506, 5	Co	Penni Penni Outfall (0	Pro
	_	Legend: R = Routine, A = Annual						T	None	None	GH	None	None	Preservative	Field Manager: Mark Dominick 978.234.5033, 818.599,0702 (cell)	Project Manager: Katherine Miller 520.289.8906, 520.804.6944 (cell)	Comp	Annual Cuttali (003-007, 009, 010)	Project:
Received By Received By	Received By	toutine,		$\left \right $				C/7	1		275	t	-	_	vick (cell)	(oell)	B	010	
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2	1	ual		H	+		\square	-	I		-	×	×			PA100	VOCs (E625)		
OctoFine	2.0			$\frac{1}{1}$				I	1		×		Π				on (E525.2)		
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48 Hour:	Tum-arour 24 Hour:		IF	Π		-		1											YSIS RE
48 Hour: 5 Day: Sample Integrity: (Check) Intect:	Turn-around time: (Check) 24 Hour: 72 Hour			+	+	+	+	+					$\left \right $						ANALYSIS REQUIRED
5 Day: (Check) 6 monthe ta: (Check	72 Hour:						11	1				П							
					+	+	+	+				\square							
On Ice:	10 Day: X							Hold	Hold		Extract within 24-Hours of sampling	Only at Outfatt 008, 009					Comments		

Client: Haley & Aldrich, Inc.

Login Number: 206741 List Number: 1 Creator: Garcia, Veronica G

Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	True	
The cooler's custody seal, if present, is intact.	N/A	Not present
Sample custody seals, if present, are intact.	N/A	Not Present
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 <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Job Number: 440-206741-1

List Source: TestAmerica Irvine



THE LEADER IN ENVIRONMENTAL TESTING

Si	440-206741 Field Sheet
Job:	

Tracking # 4176 2740 8505 SO (PO / FO

Use this form to record Sample Custody Seal, Cooler Custody Seal, Temperature & corrected Temperature & other observations. File in the job folder with the COC.

Notes:	Ice Wet Gel	Other		
	1			
	Cooler Custody Seal:			
and the second	Sample Custody Seal:			
	Cooler ID: (6+2	_		
	Temp: Observed			
	From: Temp Blank D Sample	R		
	NCM Filed: Yes D No			
and the second		Yes	No	NA
	Perchlorate has headspace?	D	D	Ô
	CoC is complete w/o discrepancies?	ø		
	Samples received within holding time?	Þ		
	Sample preservatives verified?	'n		00
Contraction of the second s	Cooler compromised/tampered with?		В	
and the second	Samples compromised/tampered with?	Δ,	D	
the second s	Samples w/o discrepancies?	Þ		
A REAL PROPERTY AND A REAL	Sample containers have legible labels?	ø		
	Containers are not broken or leaking?	Ø	D	
	Sample date/times are provided.	M		
	Appropriate containers are used?	D/		П
	Sample bottles are completely filled?	A A		
	Zero headspace?*	D		b
	Multiphasic samples are not present?	Ø		
	Sample temp OK?	A		
	Sample out of temp?		60	
	Initials: A H Date: 3/24/18 Ti	9	10	

Q:\DOCUMENT-MANAGEMENT\FORMS\QA-812 REV. 1.5 SAMPLE RECEIVING NOTES 2018-01-26.DOC

QA-812 RKE 01/26/2018

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