APPENDIX F

THIRD QUARER 2012 ANALYTICAL LABORATORY REPORTS, CHAIN-OFCUSTODY, AND VALIDATION REPORTS

APPENDIX F

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Section No.

APPENDIX F

Section 1

Outfall 019 – July 2 & 3, 2012

MEC^X Data Validation Report

DATA VALIDATION REPORT

Boeing SSFL NPDES

SAMPLE DELIVERY GROUP: 440-16173-1

Prepared by

MEC^X, LP
12269 East Vassar Drive
Aurora, CO 80014

I. INTRODUCTION

Task Order Title:	Boeing SSFL NPDES
Contract Task Order:	1261.100D.00
Sample Delivery Group:	440-16173-1
Project Manager:	B. Kelly
Matrix:	Water
QC Level:	IV
No. of Samples:	1
No. of Reanalyses/Dilutions:	0
Laboratory:	TestAmerica-Irvine

Table 1. Sample Identification

Client ID	Laboratory ID	Sub-Laboratory ID	Matrix	Collected	Method
Outfall 019 Composite	440-16347-1	G2G060440-001	Water	7/3/2012 10:00:00 AM	1613B, 180.1, 200.7 tot/diss, 245.1 tot/diss, 314.0, SM 4500 NH3 C, SM 5310B, SM5210B

II. Sample Management

No anomalies were observed regarding sample management. The samples in this SDG were received at the laboratory within the temperature limits of 4°C ±2°C. According to the case narrative for this SDG, the samples were received intact, on ice, and properly preserved, if applicable. The COCs were appropriately signed and dated by field and/or laboratory personnel. Samples delivered to TestAmerica-West Sacramento by FedEx did not have custody seals. As the samples were delivered by courier to TestAmerica-Irvine, custody seals were not required. If necessary, the client ID was added to the sample result summary by the reviewer.

Data Qualifier Reference Table

Qualifier	Organics	Inorganics
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit. The associated value is the quantitation limit or the estimated detection limit for dioxins or PCB congeners.	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit. The associated value is the sample detection limit or the quantitation limit for perchlorate only.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.	The associated value is an estimated quantity.
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."	Not applicable.
NJ	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.	Not applicable.
UJ	The analyte was not deemed above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.	The material was analyzed for, but was not detected. The associated value is an estimate and may be inaccurate or imprecise.
R	The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.	The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.

Qualification Code Reference Table

Qualifier	Organics	Inorganics
H	Holding times were exceeded.	Holding times were exceeded.
S	Surrogate recovery was outside QC limits.	The sequence or number of standards used for the calibration was incorrect
C	Calibration %RSD or %D was noncompliant.	Correlation coefficient is <0.995.
R	Calibration RRF was <0.05.	%R for calibration is not within control limits.
B	Presumed contamination as indicated by the preparation (method) blank results.	Presumed contamination as indicated by the preparation (method) or calibration blank results.
L	Laboratory Blank Spike/Blank Spike Duplicate %R was not within control limits.	Laboratory Control Sample %R was not within control limits.
Q	MS/MSD recovery was poor or RPD high.	MS recovery was poor.
E	Not applicable.	Duplicates showed poor agreement.
I	Internal standard performance was unsatisfactory.	ICP ICS results were unsatisfactory.
A	Not applicable.	ICP Serial Dilution %D were not within control limits.
M	Tuning (BFB or DFTPP) was noncompliant.	Not applicable.
T	Presumed contamination as indicated by the trip blank results.	Not applicable.
+	False positive – reported compound was not present.	Not applicable.
-	False negative – compound was present but not reported.	Not applicable.
F	Presumed contamination as indicated by the FB or ER results.	Presumed contamination as indicated by the FB or ER results.
$	Reported result or other information was incorrect.	Reported result or other information was incorrect.
?	TIC identity or reported retention time has been changed.	Not applicable.

Qualification Code Reference Table Cont.

D	The analysis with this flag should not be used because another more technically sound analysis is available.	The analysis with this flag should not be used because another more technically sound analysis is available.
P	Instrument performance for pesticides was poor.	Post Digestion Spike recovery was not within 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.
*II, *III	Unusual problems found with the data that have been 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.	Unusual problems found with the data that have been 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. Method Analyses

A. EPA METHOD 1613—Dioxin/Furans

Reviewed By: L. Calvin
Date Reviewed: August 9, 2012

The sample listed in Table 1 for this analysis was validated based on the guidelines outlined in the *MEC^X Data Validation Procedure for Dioxins and Furans (DVP-19, Rev. 0), USEPA Method 1613*, and the *National Functional Guidelines Chlorinated Dioxin/Furan Data Review* (8/02).

- Holding Times: Extraction and analytical holding times were met. The water sample was extracted and analyzed within one year of collection.

- Instrument Performance: Instrument performance criteria were met. Following are findings associated with instrument performance.

    - GC Column Performance: A Windows Defining Mix (WDM) containing the first and last eluting congeners of each descriptor and isomer specificity compounds was analyzed prior to the initial calibration sequence and at the beginning of each analytical sequence. The GC column performance in the calibrations was acceptable, with the height of the valley between the closely eluting isomers and 2,3,7,8-TCDD reported as less than 25%.

    - Mass Spectrometer Performance: The mass spectrometer performance was acceptable with the static resolving power greater than 10,000. The case narrative for this SDG noted that due to a computer error, an end static mass resolution check was not generated within the 12-hour window. As the sample was analyzed following an acceptable resolution check, and the resolution check analyzed following discovery of the computer error was acceptable, the sample data was not considered to be adversely impacted, and no qualifications were assigned.

- Calibration: Calibration criteria were met.

    - Initial Calibration: Initial calibration criteria were met. The initial calibration was acceptable with %RSDs $\leq$20% for the 15 native compounds (calibration by isotope dilution) and $\leq$35% for the two native and all labeled compounds (calibration by internal standard). The relative retention times and ion abundance ratios were within the Method 1613 QC limits for all standards.

    - Continuing Calibration: Calibration verification (VER) consisted of a mid-level standard (CS3) analyzed at the beginning of each analytical sequence. The VERs were acceptable with the concentrations within the acceptance criteria listed in Table 6 of EPA Method 1613. The ion abundance ratios and relative retention times were within the method QC limits.

- Blanks: The method blank had reported detects between the EDL and the reporting limit for 1,2,3,4,6,7,8-HpCDD, total HpCDD, OCDD, and OCDF. OCDF was reported as an EMPCs; however, the reviewer deemed it appropriate to evaluate all method blank results for the purpose of qualifying sample results. The results for 1,2,3,4,6,7,8-HpCDD, total HpCDD, and OCDD were qualified as nondetected, "U," at the level of contamination. OCDF was not detected in the associated sample.

- Blank Spikes and Laboratory Control Samples: Recoveries were within the acceptance criteria listed in Table 6 of Method 1613.

- 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. Following are findings associated with field QC samples:

    - Field Blanks and Equipment Rinsates: This SDG had no identified field blank or equipment rinsate samples.

    - Field Duplicates: This SDG had no identified field duplicate samples.

- Internal Standards Performance: The labeled internal standard recoveries for the sample were within the acceptance criteria listed in Table 7 of Method 1613 for all internal standards.

- Compound Identification: Compound identification was verified. The laboratory analyzed for polychlorinated dioxins/furans by EPA Method 1613.

- Compound Quantification and Reported Detection Limits: Compound quantitation was verified. The laboratory calculated and reported compound-specific detection limits. Any detects below the laboratory lower calibration level were qualified as estimated, "J." Any detects reported between the EDL and the reporting limit (RL) were qualified as estimated, "J," and coded with "DNQ," in order to comply with the NPDES permit. Nondetects are valid to the EDL.

  The reported EMPC result for 1,2,3,4,6,7,8-HpCDD previously qualified as nondetected for method blank contamination was not further qualified as an EMPC. The result for 1,2,3,4,6,7,8-HpCDF reported as an EMPC was qualified as an estimated nondetect, "UJ," as was total HpCDF, at the level of the EMPC.

B. EPA METHODS 200.7 and 245.1—Metals and Mercury

Reviewed By: P. Meeks
Date Reviewed: August 7, 2012

The sample listed in Table 1 for these analyses was validated based on the guidelines outlined in the *MEC^X Data Validation Procedure for Metals (DVP-5, Rev. 0 and DVP-21, Rev. 0), EPA Methods 200.7, 245.1*, and the *National Functional Guidelines for Inorganic Data Review* (7/02).

- Holding Times: Analytical holding times, six months for ICP metals and 28 days for mercury, were met.

- Calibration: Calibration criteria were met. Mercury initial calibration r^2 values were $\geq$0.995 and all initial and continuing calibration recoveries were within 90-110% for the ICP metals and 85-115% for mercury. CRDL/CRI recoveries were within the control limits of 70-130%.

- Blanks: Method blanks and CCBs had no detects.

- Interference Check Samples: Recoveries were within 80-120%. Zinc was not detected in the ICSA solution.

- Blank Spikes and Laboratory Control Samples: Recoveries were within method-established QC limits.

- Laboratory Duplicates: No laboratory duplicate analyses were performed on the sample in this SDG.

- Matrix Spike/Matrix Spike Duplicate: MSD/MSD analyses were performed on total and dissolved mercury. Recoveries and RPDs were within method-established QC limits.

- Serial Dilution: No serial dilution analyses were performed.

- Sample Result Verification: Calculations were verified and the sample results reported on the sample result summary were verified against the raw data. No transcription errors or calculation errors were noted. When the sample results were qualified and the reviewer was able to clearly determine bias, detected results were qualified as either “J+” or “J-“; otherwise, bias was not indicated in the qualification. Any detects between the method detection limit and the reporting limit were qualified as estimated, “J,” and coded with “DNQ,” in order to comply with the NPDES permit. Reported nondetects are valid to the MDL.

- 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. Following are findings associated with field QC samples:

- Field Blanks and Equipment Rinsates: This SDG had no identified field blank or equipment rinsate samples.

- Field Duplicates: There were no field duplicate samples identified for this SDG.

C. EPA METHOD 314.0—Perchlorate

Reviewed By: P. Meeks
Date Reviewed: August 7, 2012

The sample listed in Table 1 for this analysis were validated based on the guidelines outlined in the *MEC^X Data Validation Procedure for Metals (DVP-20, Rev. 0), EPA Method 314.0*, and the *National Functional Guidelines for Inorganic Data Review* (10/04).

- Holding Times: The analytical holding time, 28 days, was met.

- Calibration: Calibration criteria were met. The initial calibration r^2 value was $\geq$0.995 and all initial and continuing calibration recoveries affecting sample results were within 90-110%. The IPC recovery was within the method-established control limits of 80-120% and the ICCS recovery was within method-established control limits of 75-125%.

- Blanks: The method blank and CCBs had no detects.

- Blank Spikes and Laboratory Control Samples: Recoveries were within the method-established QC limits of 85-115%.

- Laboratory Duplicates: No laboratory duplicate analyses were performed on the sample in this SDG.

- Matrix Spike/Matrix Spike Duplicate: No MS/MSD analyses were performed on the sample in this SDG. Method accuracy was evaluated based on LCS results.

- Sample Result Verification: Calculations were verified and the sample results reported on the sample result summary were verified against the raw data. No transcription errors or calculation errors were noted. Any detects between the method detection limit and the reporting limit were qualified as estimated, "J," and coded with "DNQ," in order to comply with the NPDES permit. Reported nondetects are valid to the reporting limit.

- 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. Following are findings associated with field QC samples:

- Field Blanks and Equipment Rinsates: This SDG had no identified field blank or equipment rinsate samples.

- Field Duplicates: There were no field duplicate samples identified for this SDG.

D. VARIOUS EPA METHODS—General Minerals

Reviewed By: P. Meeks
Date Reviewed: August 7, 2012

The samples listed in Table 1 for this analysis were validated based on the guidelines outlined in the *MEC^X Data Validation Procedure for General Minerals (DVP-6, Rev. 0), EPA Method SM 4500 NH3 C, SM 5310B, SM 5210B, and 180.1*, and the *National Functional Guidelines for Inorganic Data Review* (7/02).

- Holding Times: The analytical holding time, 48 hours for turbidity and BOD, and 28 days for ammonia and TOC, was met.

- Calibration: The turbidity ICV was recovered at 111%; however, as the bracketing CCVs were recovered within the control limits, no qualifications were applied. The remaining ICVs and CCVs were recovered within 90-110%.

- Blanks: The turbidity method blank and CCBs had no detects.

- Blank Spikes and Laboratory Control Samples: The recoveries and the BOD RPD were within laboratory-established QC limits.

- Laboratory Duplicates: A laboratory duplicate analysis was performed on the sample in this SDG for turbidity. The RPD was within the laboratory-established control limit.

- Matrix Spike/Matrix Spike Duplicate: No MS/MSD analyses were performed on the sample in this SDG. Method accuracy was evaluated based on LCS results.

- Sample Result Verification: Calculations were verified and the sample results reported on the sample result summary were verified against the raw data. No transcription errors or calculation errors were noted. When the sample results were qualified and the reviewer was able to clearly determine bias, detected results were qualified as either “J+” or “J-“; otherwise, bias was not indicated in the qualification. Any detects between the method detection limit and the reporting limit were qualified as estimated, “J,” and coded with “DNQ,” in order to comply with the NPDES permit. Reported nondetects are valid to the MDL.

- 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.

Following are findings associated with field QC samples:

- Field Blanks and Equipment Rinsates: This SDG had no identified field blank or equipment rinsate samples.

- Field Duplicates: There were no field duplicate samples identified for this SDG.

Validated Sample Result Forms 440-16173-1

Analysis Method 1613B

Sample Name Outfall 019 Composite **Matrix Type:** Water **Validation Level:** IV

Lab Sample Name: 440-16347-1 **Sample Date:** 7/3/2012 10:00:00 AM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,2,3,4,6,7,8-HpCDD	35822-46-9	ND	0.000050	0.0000027	ug/L	J Q B	U	B
1,2,3,4,6,7,8-HpCDF	67562-39-4	ND	0.000050	0.0000024	ug/L	J Q	UJ	*III
1,2,3,4,7,8,9-HpCDF	55673-89-7	ND	0.000050	0.0000033	ug/L		U	
1,2,3,4,7,8-HxCDD	39227-28-6	ND	0.000050	0.0000026	ug/L		U	
1,2,3,4,7,8-HxCDF	70648-26-9	ND	0.000050	0.0000033	ug/L		U	
1,2,3,6,7,8-HxCDD	57653-85-7	ND	0.000050	0.0000024	ug/L		U	
1,2,3,6,7,8-HxCDF	57117-44-9	ND	0.000050	0.0000030	ug/L		U	
1,2,3,7,8,9-HxCDD	19408-74-3	ND	0.000050	0.0000022	ug/L		U	
1,2,3,7,8,9-HxCDF	72918-21-9	ND	0.000050	0.0000033	ug/L		U	
1,2,3,7,8-PeCDD	40321-76-4	ND	0.000050	0.0000052	ug/L		U	
1,2,3,7,8-PeCDF	57117-41-6	ND	0.000050	0.0000077	ug/L		U	
2,3,4,6,7,8-HxCDF	60851-34-5	ND	0.000050	0.0000029	ug/L		U	
2,3,4,7,8-PeCDF	57117-31-4	ND	0.000050	0.0000089	ug/L		U	
2,3,7,8-TCDD	1746-01-6	ND	0.000010	0.0000036	ug/L		U	
2,3,7,8-TCDF	51207-31-9	ND	0.000010	0.0000081	ug/L		U	
OCDD	3268-87-9	ND	0.00010	0.0000061	ug/L	J Q B	U	B
OCDF	39001-02-0	ND	0.00010	0.0000057	ug/L		U	
Total HpCDD	37871-00-4	ND	0.000050	0.0000027	ug/L	J Q B	U	B
Total HpCDF	38998-75-3	ND	0.000050	0.0000028	ug/L	J Q	UJ	*III
Total HxCDD	34465-46-8	ND	0.000050	0.0000022	ug/L		U	
Total HxCDF	55684-94-1	ND	0.000050	0.0000029	ug/L		U	
Total PeCDD	36088-22-9	ND	0.000050	0.0000052	ug/L		U	
Total PeCDF	30402-15-4	ND	0.000050	0.0000077	ug/L		U	
Total TCDD	41903-57-5	ND	0.000010	0.0000036	ug/L		U	
Total TCDF	55722-27-5	ND	0.000010	0.0000081	ug/L		U	

Analysis Method 180.1

Sample Name Outfall 019 Composite **Matrix Type:** Water **Validation Level:** IV

Lab Sample Name: 440-16347-1 **Sample Date:** 7/3/2012 10:00:00 AM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Turbidity	STL00189	0.060	0.10	0.040	NTU	J,DX	J	DNQ

Analysis Method 200.7 Rev 4.4

Sample Name Outfall 019 Composite **Matrix Type:** Water **Validation Level:** IV

Lab Sample Name: 440-16347-1 **Sample Date:** 7/3/2012 10:00:00 AM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Hardness, as CaCO3	STL00009	310	0.33	0.17	mg/L	MB		
Hardness, as CaCO3, Dissolved	STL00009	300	0.33	0.17	mg/L	MB		
Zinc	7440-66-6	ND	20	6.0	ug/L		U	
Zinc, Dissolved	7440-66-6	ND	20	6.0	ug/L		U	

Analysis Method 245.1

Sample Name Outfall 019 Composite **Matrix Type:** Water **Validation Level:** IV

Lab Sample Name: 440-16347-1 **Sample Date:** 7/3/2012 10:00:00 AM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Mercury	7439-97-6	ND	0.20	0.10	ug/L		U	
Mercury, Dissolved	7439-97-6	ND	0.20	0.10	ug/L		U	

Analysis Method 314.0

Sample Name Outfall 019 Composite **Matrix Type:** Water **Validation Level:** IV

Lab Sample Name: 440-16347-1 **Sample Date:** 7/3/2012 10:00:00 AM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Perchlorate	14797-73-0	ND	4.0	0.95	ug/L		U	

Analysis Method SM 4500 NH3 C

Sample Name Outfall 019 Composite **Matrix Type:** Water **Validation Level:** IV

Lab Sample Name: 440-16347-1 **Sample Date:** 7/3/2012 10:00:00 AM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Ammonia (as N)	7664-41-7	0.280	0.400	0.157	mg/L	J,DX	J	DNQ

Analysis Method SM 5310B

Sample Name Outfall 019 Composite **Matrix Type:** Water **Validation Level:** IV

Lab Sample Name: 440-16347-1 **Sample Date:** 7/3/2012 10:00:00 AM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Total Organic Carbon	7440-44-0	0.95	1.0	0.75	mg/L	J,DX	J	DNQ

Analysis Method SM5210B

Sample Name Outfall 019 Composite **Matrix Type:** Water **Validation Level:** IV

Lab Sample Name: 440-16347-1 **Sample Date:** 7/3/2012 10:00:00 AM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Biochemical Oxygen Demand	STL00311	4.1	2.0	0.50	mg/L			

APPENDIX F

Section 2

Outfall 019 – July 2 & 3, 2012

Test America Analytical Laboratory Report

TestAmerica

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: 440-16173-1
Client Project/Site: Boeing SSFL outfalls
Sampling Event: Quarterly Outfall 019
Revision: 3

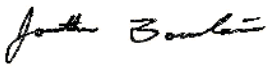
For:
MWH Americas Inc
618 Michillinda Avenue, Suite 200
Arcadia, California 91007

Attn: Bronwyn Kelly

Authorized for release by:
10/5/2012 10:06:08 AM

Jonathan Bousselaire
Project Manager I
jonathan.bousselaire@testamericainc.com

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.



Jonathan Bousselaire
Project Manager I
10/5/2012 10:06:08 AM

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Sample Summary

Client: MWH Americas Inc
Project/Site: Boeing SSFL outfalls

TestAmerica Job ID: 440-16173-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
440-16173-1	Outfall 019 Grab	Water	07/02/12 09:45	07/02/12 16:50
440-16173-2	Trip Blanks	Water	07/02/12 09:45	07/02/12 16:50
440-16347-1	Outfall 019 Composite	Water	07/03/12 10:00	07/03/12 19:15

Job ID: 440-16173-1

Laboratory: TestAmerica Irvine

Narrative

Job Narrative
440-16173-1

Comments
No additional comments.

Receipt
The samples were received on 7/2/2012 4:50 PM and 7/3/2012 7:15 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 3 coolers at receipt time were 2.4º C, 2.4º C and 5.9º C.

GC/MS VOA
No analytical or quality issues were noted.

GC/MS Semi VOA
Method(s) 625: Insufficient sample volume was available to perform batch matrix spike/matrix spike duplicate (MS/MSD) associated with batch 36890. The laboratory control sample (LCS) was performed in duplicate to provide precision data for this batch.

No other analytical or quality issues were noted.

HPLC
Method(s) 300.0: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for batch 36611 were outside control limits. The associated laboratory control sample (LCS) recovery met acceptance criteria.

Method(s) 300.0: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for batch 36610 were outside control limits. The associated laboratory control sample (LCS) recovery met acceptance criteria.

No other analytical or quality issues were noted.

GC Semi VOA
Method(s) 608: Insufficient sample volume was available to perform batch matrix spike/matrix spike duplicate (MS/MSD) associated with batch 37663. The laboratory control sample (LCS) was performed in duplicate to provide precision data for this batch.

Method(s) 608: The continuing calibration verification (CCV) associated with batch 37815 recovered above the upper control limit for A-BHC, D-BHC, Endrin and DDT. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The following samples are impacted: (CCV 440-37815/18), (CCVRT 440-37815/8), Outfall 019 Composite (440-16347-1).

No other analytical or quality issues were noted.

Metals
Method(s) 200.8, 6020: The following sample(s) was diluted due to the nature of the sample matrix: 1052796 (440-16520-5), 1053285 (440-16520-9). Elevated reporting limits (RLs) are provided.

No other analytical or quality issues were noted.

General Chemistry
Method(s) 1664A: Insufficient sample volume was available to perform batch matrix spike/matrix spike duplicate (MS/MSD) associated with batch 37223. The laboratory control sample (LCS) was performed in duplicate to provide precision data for this batch.

Method(s) SM 4500 NH3 C: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for batch 39910 were outside control limits. The associated laboratory control sample (LCS) recovery met acceptance criteria.

No other analytical or quality issues were noted.

Radiological Analyses

Job ID: 440-16173-1 (Continued)

Laboratory: TestAmerica Irvine (Continued)

Container for Radiological analyses broken during shipment to Eberline. Analyses were cancelled and sample was recollected and reported under separate cover.

WATER, 1613B, Dioxins/Furans with Totals
Sample: 1
Some analytes in this sample and the associated method blank have an ion abundance ratio that is outside of criteria. The analytes are considered as an "estimated maximum possible concentration" (EMPC) because the quantitation is based on the theoretical ion abundance ratio. Analytical results are reported with a "Q" flag.

Organic Prep
No analytical or quality issues were noted.

Client Sample ID: Outfall 019 Grab

Lab Sample ID: 440-16173-1

Date Collected: 07/02/12 09:45

Matrix: Water

Date Received: 07/02/12 16:50

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.50	0.30	ug/L			07/10/12 17:12	1
1,1,2-Trichloroethane	ND		0.50	0.30	ug/L			07/10/12 17:12	1
1,1-Dichloroethane	ND		0.50	0.40	ug/L			07/10/12 17:12	1
Trichlorotrifluoroethane(F-113)	ND		5.0	0.50	ug/L			07/10/12 17:12	1
1,1-Dichloroethene	ND		0.50	0.42	ug/L			07/10/12 17:12	1
1,2-Dichloroethane	ND		0.50	0.28	ug/L			07/10/12 17:12	1
Benzene	ND		0.50	0.28	ug/L			07/10/12 17:12	1
Carbon tetrachloride	ND		0.50	0.28	ug/L			07/10/12 17:12	1
Chloroform	ND		0.50	0.33	ug/L			07/10/12 17:12	1
Ethylbenzene	ND		0.50	0.25	ug/L			07/10/12 17:12	1
Tetrachloroethene	ND		0.50	0.32	ug/L			07/10/12 17:12	1
Toluene	ND		0.50	0.36	ug/L			07/10/12 17:12	1
Trichlorofluoromethane	ND		0.50	0.34	ug/L			07/10/12 17:12	1
Trichloroethene	ND		0.50	0.26	ug/L			07/10/12 17:12	1
cis-1,2-Dichloroethene	ND		0.50	0.32	ug/L			07/10/12 17:12	1
Xylenes, Total	ND		1.5	0.90	ug/L			07/10/12 17:12	1
Vinyl chloride	ND		0.50	0.40	ug/L			07/10/12 17:12	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*114*		*80 - 120*		*07/10/12 17:12*	*1*
Dibromofluoromethane (Surr)	*104*		*80 - 120*		*07/10/12 17:12*	*1*
Toluene-d8 (Surr)	*103*		*80 - 120*		*07/10/12 17:12*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HEM	ND		4.7	1.3	mg/L		07/06/12 09:15	07/06/12 09:32	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Specific Conductance	**680**		1.0	1.0	umhos/cm			07/09/12 16:53	1
Settleable Solids	ND		0.10	0.10	mL/L/Hr			07/03/12 07:35	1

Client Sample ID: Trip Blanks

Lab Sample ID: 440-16173-2

Date Collected: 07/02/12 09:45

Matrix: Water

Date Received: 07/02/12 16:50

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.50	0.30	ug/L			07/10/12 16:43	1
1,1,2-Trichloroethane	ND		0.50	0.30	ug/L			07/10/12 16:43	1
1,1-Dichloroethane	ND		0.50	0.40	ug/L			07/10/12 16:43	1
Trichlorotrifluoroethane(F-113)	ND		5.0	0.50	ug/L			07/10/12 16:43	1
1,1-Dichloroethene	ND		0.50	0.42	ug/L			07/10/12 16:43	1
1,2-Dichloroethane	ND		0.50	0.28	ug/L			07/10/12 16:43	1
Benzene	ND		0.50	0.28	ug/L			07/10/12 16:43	1
Carbon tetrachloride	ND		0.50	0.28	ug/L			07/10/12 16:43	1
Chloroform	ND		0.50	0.33	ug/L			07/10/12 16:43	1
Ethylbenzene	ND		0.50	0.25	ug/L			07/10/12 16:43	1
Tetrachloroethene	ND		0.50	0.32	ug/L			07/10/12 16:43	1
Toluene	ND		0.50	0.36	ug/L			07/10/12 16:43	1
Trichlorofluoromethane	ND		0.50	0.34	ug/L			07/10/12 16:43	1
Vinyl chloride	ND		0.50	0.40	ug/L			07/10/12 16:43	1
Trichloroethene	ND		0.50	0.26	ug/L			07/10/12 16:43	1

Client Sample ID: Trip Blanks

Lab Sample ID: 440-16173-2

Date Collected: 07/02/12 09:45

Matrix: Water

Date Received: 07/02/12 16:50

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,2-Dichloroethene	ND		0.50	0.32	ug/L			07/10/12 16:43	1
Xylenes, Total	ND		1.5	0.90	ug/L			07/10/12 16:43	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*116*		*80 - 120*		*07/10/12 16:43*	*1*
Dibromofluoromethane (Surr)	*111*		*80 - 120*		*07/10/12 16:43*	*1*
Toluene-d8 (Surr)	*101*		*80 - 120*		*07/10/12 16:43*	*1*

Client Sample ID: Outfall 019 Composite

Lab Sample ID: 440-16347-1

Date Collected: 07/03/12 10:00

Matrix: Water

Date Received: 07/03/12 19:15

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4,6-Trichlorophenol	ND		5.66	0.0943	ug/L		07/05/12 07:38	07/09/12 04:14	1
Bis(2-ethylhexyl) phthalate	ND		4.72	1.60	ug/L		07/05/12 07:38	07/09/12 04:14	1
N-Nitrosodimethylamine	ND	BA	4.72	0.0943	ug/L		07/05/12 07:38	07/09/12 04:14	1
Pentachlorophenol	ND		4.72	0.377	ug/L		07/05/12 07:38	07/09/12 04:14	1
2,4-Dinitrotoluene	ND		4.72	0.189	ug/L		07/05/12 07:38	07/09/12 04:14	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol	*94*		*40 - 120*	*07/05/12 07:38*	*07/09/12 04:14*	*1*
2-Fluorobiphenyl	*87*		*50 - 120*	*07/05/12 07:38*	*07/09/12 04:14*	*1*
2-Fluorophenol	*71*		*30 - 120*	*07/05/12 07:38*	*07/09/12 04:14*	*1*
Nitrobenzene-d5	*78*		*45 - 120*	*07/05/12 07:38*	*07/09/12 04:14*	*1*
Phenol-d6	*77*		*35 - 120*	*07/05/12 07:38*	*07/09/12 04:14*	*1*
Terphenyl-d14	*84*		*50 - 125*	*07/05/12 07:38*	*07/09/12 04:14*	*1*

Method: 608 Pesticides - Organochlorine Pesticides Low level

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
alpha-BHC	ND		0.0047	0.0024	ug/L		07/09/12 19:05	07/10/12 16:27	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*82*		*35 - 115*	*07/09/12 19:05*	*07/10/12 16:27*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**34**		10	8.0	mg/L			07/04/12 02:20	20
Nitrate as N	ND		0.11	0.080	mg/L			07/04/12 02:04	1
Nitrate Nitrite as N	ND		0.26	0.11	mg/L			07/04/12 02:04	1
Sulfate	**150**		10	8.0	mg/L			07/04/12 02:20	20
Nitrite as N	ND		0.15	0.11	mg/L			07/04/12 02:04	1

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		4.0	0.95	ug/L			07/05/12 18:21	1

Method: 1613B - Dioxins/Furans, HRGC/HRMS (1613B)

Analyte	Result	Qualifier	ML	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.000010	0.0000036	ug/L		07/19/12 09:00	07/28/12 00:25	0.97
Total TCDD	ND		0.000010	0.0000036	ug/L		07/19/12 09:00	07/28/12 00:25	0.97
1,2,3,7,8-PeCDD	ND		0.000050	0.0000052	ug/L		07/19/12 09:00	07/28/12 00:25	0.97

Client: MWH Americas Inc
Project/Site: Boeing SSFL outfalls

TestAmerica Job ID: 440-16173-1

Client Sample ID: Outfall 019 Composite
Date Collected: 07/03/12 10:00
Date Received: 07/03/12 19:15

Lab Sample ID: 440-16347-1
Matrix: Water

Method: 1613B - Dioxins/Furans, HRGC/HRMS (1613B) (Continued)

Analyte	Result	Qualifier	ML	EDL	Unit	D	Prepared	Analyzed	Dil Fac
Total PeCDD	ND		0.000050	0.0000052	ug/L		07/19/12 09:00	07/28/12 00:25	0.97
1,2,3,4,7,8-HxCDD	ND		0.000050	0.0000026	ug/L		07/19/12 09:00	07/28/12 00:25	0.97
1,2,3,6,7,8-HxCDD	ND		0.000050	0.0000024	ug/L		07/19/12 09:00	07/28/12 00:25	0.97
1,2,3,7,8,9-HxCDD	ND		0.000050	0.0000022	ug/L		07/19/12 09:00	07/28/12 00:25	0.97
Total HxCDD	ND		0.000050	0.0000022	ug/L		07/19/12 09:00	07/28/12 00:25	0.97
1,2,3,4,6,7,8-HpCDD	**0.0000034**	**J Q B**	0.000050	0.0000027	ug/L		07/19/12 09:00	07/28/12 00:25	0.97
Total HpCDD	**0.0000060**	**J Q B**	0.000050	0.0000027	ug/L		07/19/12 09:00	07/28/12 00:25	0.97
OCDD	**0.000013**	**J Q B**	0.00010	0.0000061	ug/L		07/19/12 09:00	07/28/12 00:25	0.97
2,3,7,8-TCDF	ND		0.000010	0.0000081	ug/L		07/19/12 09:00	07/28/12 00:25	0.97
Total TCDF	ND		0.000010	0.0000081	ug/L		07/19/12 09:00	07/28/12 00:25	0.97
1,2,3,7,8-PeCDF	ND		0.000050	0.0000077	ug/L		07/19/12 09:00	07/28/12 00:25	0.97
2,3,4,7,8-PeCDF	ND		0.000050	0.0000089	ug/L		07/19/12 09:00	07/28/12 00:25	0.97
Total PeCDF	ND		0.000050	0.0000077	ug/L		07/19/12 09:00	07/28/12 00:25	0.97
1,2,3,4,7,8-HxCDF	ND		0.000050	0.0000033	ug/L		07/19/12 09:00	07/28/12 00:25	0.97
1,2,3,6,7,8-HxCDF	ND		0.000050	0.0000030	ug/L		07/19/12 09:00	07/28/12 00:25	0.97
2,3,4,6,7,8-HxCDF	ND		0.000050	0.0000029	ug/L		07/19/12 09:00	07/28/12 00:25	0.97
1,2,3,7,8,9-HxCDF	ND		0.000050	0.0000033	ug/L		07/19/12 09:00	07/28/12 00:25	0.97
Total HxCDF	ND		0.000050	0.0000029	ug/L		07/19/12 09:00	07/28/12 00:25	0.97
1,2,3,4,6,7,8-HpCDF	**0.0000038**	**J Q**	0.000050	0.0000024	ug/L		07/19/12 09:00	07/28/12 00:25	0.97
1,2,3,4,7,8,9-HpCDF	ND		0.000050	0.0000033	ug/L		07/19/12 09:00	07/28/12 00:25	0.97
Total HpCDF	**0.0000038**	**J Q**	0.000050	0.0000028	ug/L		07/19/12 09:00	07/28/12 00:25	0.97
OCDF	ND		0.00010	0.0000057	ug/L		07/19/12 09:00	07/28/12 00:25	0.97

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*117*		*35 - 197*	*07/19/12 09:00*	*07/28/12 00:25*	*0.97*

Internal Standard	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*56*		*25 - 164*	*07/19/12 09:00*	*07/28/12 00:25*	*0.97*
13C-1,2,3,7,8-PeCDD	*52*		*25 - 181*	*07/19/12 09:00*	*07/28/12 00:25*	*0.97*
13C-1,2,3,4,7,8-HxCDD	*57*		*32 - 141*	*07/19/12 09:00*	*07/28/12 00:25*	*0.97*
13C-1,2,3,6,7,8-HxCDD	*60*		*28 - 130*	*07/19/12 09:00*	*07/28/12 00:25*	*0.97*
13C-1,2,3,4,6,7,8-HpCDD	*69*		*23 - 140*	*07/19/12 09:00*	*07/28/12 00:25*	*0.97*
13C-OCDD	*72*		*17 - 157*	*07/19/12 09:00*	*07/28/12 00:25*	*0.97*
13C-2,3,7,8-TCDF	*62*		*24 - 169*	*07/19/12 09:00*	*07/28/12 00:25*	*0.97*
13C-1,2,3,7,8-PeCDF	*55*		*24 - 185*	*07/19/12 09:00*	*07/28/12 00:25*	*0.97*
13C-2,3,4,7,8-PeCDF	*57*		*21 - 178*	*07/19/12 09:00*	*07/28/12 00:25*	*0.97*
13C-1,2,3,6,7,8-HxCDF	*73*		*26 - 123*	*07/19/12 09:00*	*07/28/12 00:25*	*0.97*
13C-2,3,4,6,7,8-HxCDF	*71*		*28 - 136*	*07/19/12 09:00*	*07/28/12 00:25*	*0.97*
13C-1,2,3,7,8,9-HxCDF	*70*		*29 - 147*	*07/19/12 09:00*	*07/28/12 00:25*	*0.97*
13C-1,2,3,4,6,7,8-HpCDF	*67*		*28 - 143*	*07/19/12 09:00*	*07/28/12 00:25*	*0.97*
13C-1,2,3,4,7,8,9-HpCDF	*73*		*26 - 138*	*07/19/12 09:00*	*07/28/12 00:25*	*0.97*
13C-1,2,3,4,7,8-HxCDF	*68*		*26 - 152*	*07/19/12 09:00*	*07/28/12 00:25*	*0.97*

Method: 200.7 Rev 4.4 - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Zinc	ND		20	6.0	ug/L		07/10/12 14:24	07/10/12 20:24	1
Hardness, as CaCO3	**310**	**MB**	0.33	0.17	mg/L		07/10/12 14:24	07/11/12 12:29	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Zinc	ND		20	6.0	ug/L		07/10/12 08:26	07/10/12 19:35	1

Client: MWH Americas Inc
Project/Site: Boeing SSFL outfalls

TestAmerica Job ID: 440-16173-1

Client Sample ID: Outfall 019 Composite
Date Collected: 07/03/12 10:00
Date Received: 07/03/12 19:15

Lab Sample ID: 440-16347-1
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hardness, as CaCO3	300		0.33	0.17	mg/L		07/10/12 08:26	07/10/12 19:35	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.0	0.10	ug/L		07/10/12 14:28	07/12/12 12:17	1
Copper	ND		2.0	0.50	ug/L		07/10/12 14:28	07/12/12 12:17	1
Lead	ND		1.0	0.20	ug/L		07/10/12 14:28	07/12/12 12:17	1
Selenium	ND		2.0	0.50	ug/L		07/10/12 14:28	07/12/12 12:17	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.0	0.10	ug/L		07/10/12 08:24	07/10/12 16:00	1
Copper	0.51	J,DX	2.0	0.50	ug/L		07/10/12 08:24	07/10/12 16:00	1
Lead	ND		1.0	0.20	ug/L		07/10/12 08:24	07/10/12 16:00	1
Selenium	ND		2.0	0.50	ug/L		07/10/12 08:24	07/10/12 16:00	1

Method: 245.1 - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.10	ug/L		07/05/12 16:00	07/06/12 14:27	1

Method: 245.1 - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.10	ug/L		07/09/12 16:35	07/10/12 15:11	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Turbidity	0.060	J,DX	0.10	0.040	NTU			07/04/12 08:49	1
Total Dissolved Solids	520		10	10	mg/L			07/05/12 10:29	1
Total Suspended Solids	ND		10	10	mg/L			07/06/12 21:09	1
Cyanide, Total	ND		5.0	3.0	ug/L		07/10/12 10:16	07/10/12 16:32	1
Ammonia (as N)	0.280	J,DX	0.400	0.157	mg/L		07/19/12 19:43	07/19/12 21:59	1
Total Organic Carbon	0.95	J,DX	1.0	0.75	mg/L			07/09/12 14:37	1
Methylene Blue Active Substances	ND		0.10	0.050	mg/L			07/03/12 23:41	1
Biochemical Oxygen Demand	4.1		2.0	0.50	mg/L			07/04/12 10:39	1

Client Sample ID: Outfall 019 Grab

Lab Sample ID: 440-16173-1

Date Collected: 07/02/12 09:45

Matrix: Water

Date Received: 07/02/12 16:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624		1	10 mL	10 mL	37697	07/10/12 17:12	SS	TAL IRV
Total/NA	Analysis	SM 2540F		1	1000 mL	1000 mL	36582	07/03/12 07:35	DAE	TAL IRV
Total/NA	Prep	1664A			1055 mL	1000 mL	37209	07/06/12 09:15	DA	TAL IRV
Total/NA	Analysis	1664A		1			37223	07/06/12 09:32	DA	TAL IRV
Total/NA	Analysis	120.1		1			37640	07/09/12 16:53	XL	TAL IRV

Client Sample ID: Trip Blanks

Lab Sample ID: 440-16173-2

Date Collected: 07/02/12 09:45

Matrix: Water

Date Received: 07/02/12 16:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624		1	10 mL	10 mL	37697	07/10/12 16:43	SS	TAL IRV

Client Sample ID: Outfall 019 Composite

Lab Sample ID: 440-16347-1

Date Collected: 07/03/12 10:00

Matrix: Water

Date Received: 07/03/12 19:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	625			1060 mL	2 mL	36890	07/05/12 07:38	AG	TAL IRV
Total/NA	Analysis	625		1			37457	07/09/12 04:14	AI	TAL IRV
Total/NA	Prep	608			1060 mL	2 mL	37663	07/09/12 19:05	AB	TAL IRV
Total/NA	Analysis	608 Pesticides		1			37815	07/10/12 16:27	CN	TAL IRV
Total/NA	Analysis	300.0		1	1 mL	1.0 mL	36610	07/04/12 02:04	CC	TAL IRV
Total/NA	Analysis	300.0		20	1 mL	1.0 mL	36611	07/04/12 02:20	CC	TAL IRV
Total/NA	Analysis	314.0		1	5 mL	1.0 mL	36941	07/05/12 18:21	MN	TAL IRV
Total	Prep	3542			1032.56 mL	20 uL	2201093_P	07/19/12 09:00	TL	TAL WSC
Total	Analysis	1613B		0.97			2201093	07/28/12 00:25	SHK	TAL WSC
Total/NA	Prep	245.1			20 mL	20 mL	37016	07/05/12 16:00	SN	TAL IRV
Total/NA	Analysis	245.1		1			37312	07/06/12 14:27	DB	TAL IRV
Dissolved	Prep	245.1			20 mL	20 mL	37614	07/09/12 16:35	SN	TAL IRV
Dissolved	Analysis	245.1		1			37877	07/10/12 15:11	DB	TAL IRV
Dissolved	Prep	200.2			50 mL	50 mL	37713	07/10/12 08:24	EN	TAL IRV
Dissolved	Analysis	200.8		1			37957	07/10/12 16:00	RC	TAL IRV
Dissolved	Prep	200.2			50 mL	50 mL	37715	07/10/12 08:26	EN	TAL IRV
Dissolved	Analysis	200.7 Rev 4.4		1			37983	07/10/12 19:35	DT	TAL IRV
Total Recoverable	Prep	200.2			50 mL	50 mL	37819	07/10/12 14:24	SC	TAL IRV
Total Recoverable	Analysis	200.7 Rev 4.4		1			38008	07/10/12 20:24	FR	TAL IRV
Total Recoverable	Analysis	200.7 Rev 4.4		1			38303	07/11/12 12:29	FR	TAL IRV
Total Recoverable	Prep	200.2			50 mL	50 mL	37821	07/10/12 14:28	SC	TAL IRV
Total Recoverable	Analysis	200.8		1			38360	07/12/12 12:17	NH	TAL IRV
Total/NA	Analysis	SM 5540C		1	100 mL	100 mL	36810	07/03/12 23:41	SL	TAL IRV
Total/NA	Analysis	180.1		1			36826	07/04/12 08:49	EC	TAL IRV
Total/NA	Analysis	SM5210B		1			36831	07/04/12 10:39	TAI	TAL IRV

Client: MWH Americas Inc
Project/Site: Boeing SSFL outfalls

TestAmerica Job ID: 440-16173-1

Client Sample ID: Outfall 019 Composite
Date Collected: 07/03/12 10:00
Date Received: 07/03/12 19:15

Lab Sample ID: 440-16347-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	36942	07/05/12 10:29	XL	TAL IRV
Total/NA	Analysis	SM 2540D		1	100 mL	100 mL	37346	07/06/12 21:09	DK	TAL IRV
Total/NA	Analysis	SM 5310B		1	10 mL	10 mL	37683	07/09/12 14:37		TAL IRV
Total/NA	Prep	Distill/CN			50 mL	50 mL	37761	07/10/12 10:16	TN	TAL IRV
Total/NA	Analysis	SM 4500 CN E		1			37862	07/10/12 16:32	SL	TAL IRV
Total/NA	Prep	SM 4500 NH3 B			50 mL	50 mL	39893	07/19/12 19:43	RW	TAL IRV
Total/NA	Analysis	SM 4500 NH3 C		1			39910	07/19/12 21:59	RW	TAL IRV

Laboratory References:

SC0127 = Aquatic Testing Laboratories, 4350 Transport #107, Ventura, CA 93003

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

TAL WSC = TestAmerica West Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

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

Lab Sample ID: MB 440-37697/4
Matrix: Water
Analysis Batch: 37697

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.50	0.30	ug/L			07/10/12 09:00	1
1,1,2-Trichloroethane	ND		0.50	0.30	ug/L			07/10/12 09:00	1
1,1-Dichloroethane	ND		0.50	0.40	ug/L			07/10/12 09:00	1
Trichlorotrifluoroethane(F-113)	ND		5.0	0.50	ug/L			07/10/12 09:00	1
1,1-Dichloroethene	ND		0.50	0.42	ug/L			07/10/12 09:00	1
1,2-Dichloroethane	ND		0.50	0.28	ug/L			07/10/12 09:00	1
Benzene	ND		0.50	0.28	ug/L			07/10/12 09:00	1
Carbon tetrachloride	ND		0.50	0.28	ug/L			07/10/12 09:00	1
Chloroform	ND		0.50	0.33	ug/L			07/10/12 09:00	1
Ethylbenzene	ND		0.50	0.25	ug/L			07/10/12 09:00	1
Tetrachloroethene	ND		0.50	0.32	ug/L			07/10/12 09:00	1
Toluene	ND		0.50	0.36	ug/L			07/10/12 09:00	1
Trichlorofluoromethane	ND		0.50	0.34	ug/L			07/10/12 09:00	1
Trichloroethene	ND		0.50	0.26	ug/L			07/10/12 09:00	1
cis-1,2-Dichloroethene	ND		0.50	0.32	ug/L			07/10/12 09:00	1
Xylenes, Total	ND		1.5	0.90	ug/L			07/10/12 09:00	1
Vinyl chloride	ND		0.50	0.40	ug/L			07/10/12 09:00	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*112*		*80 - 120*		*07/10/12 09:00*	*1*
Dibromofluoromethane (Surr)	*92*		*80 - 120*		*07/10/12 09:00*	*1*
Toluene-d8 (Surr)	*100*		*80 - 120*		*07/10/12 09:00*	*1*

Lab Sample ID: LCS 440-37697/5
Matrix: Water
Analysis Batch: 37697

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	25.0	25.3		ug/L		101	65 - 135
1,1,2-Trichloroethane	25.0	23.8		ug/L		95	70 - 125
1,1-Dichloroethane	25.0	24.4		ug/L		98	70 - 125
1,1-Dichloroethene	25.0	26.9		ug/L		108	70 - 125
1,2-Dichloroethane	25.0	22.0		ug/L		88	60 - 140
Benzene	25.0	26.8		ug/L		107	70 - 120
Carbon tetrachloride	25.0	28.2		ug/L		113	65 - 140
Chloroform	25.0	24.3		ug/L		97	70 - 130
Ethylbenzene	25.0	26.7		ug/L		107	75 - 125
Tetrachloroethene	25.0	28.6		ug/L		115	70 - 125
Toluene	25.0	27.1		ug/L		108	70 - 120
Trichlorofluoromethane	25.0	26.7		ug/L		107	65 - 145
Trichloroethene	25.0	27.2		ug/L		109	70 - 125
cis-1,2-Dichloroethene	25.0	25.9		ug/L		104	70 - 125
m,p-Xylene	50.0	52.8		ug/L		106	75 - 125
o-Xylene	25.0	25.8		ug/L		103	75 - 125
Xylenes, Total	75.0	78.6		ug/L		105	70 - 125
Vinyl chloride	25.0	23.1		ug/L		92	55 - 135

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*103*		*80 - 120*

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

Lab Sample ID: LCS 440-37697/5
Matrix: Water
Analysis Batch: 37697

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

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Dibromofluoromethane (Surr)	*88*		*80 - 120*
Toluene-d8 (Surr)	*103*		*80 - 120*

Lab Sample ID: 440-16635-C-1 MS
Matrix: Water
Analysis Batch: 37697

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	ND		25.0	24.7		ug/L		99	65 - 140
1,1,2-Trichloroethane	ND		25.0	26.7		ug/L		107	65 - 130
1,1-Dichloroethane	17		25.0	41.0		ug/L		95	65 - 130
1,1-Dichloroethene	1.7		25.0	26.4		ug/L		99	60 - 130
1,2-Dichloroethane	ND		25.0	24.4		ug/L		98	60 - 140
Benzene	ND		25.0	26.5		ug/L		106	65 - 125
Carbon tetrachloride	ND		25.0	24.7		ug/L		99	65 - 140
Chloroform	ND		25.0	26.0		ug/L		104	65 - 135
Ethylbenzene	ND		25.0	24.6		ug/L		98	65 - 130
Tetrachloroethene	4.0		25.0	29.0		ug/L		100	65 - 130
Toluene	ND		25.0	26.5		ug/L		106	70 - 125
Trichlorofluoromethane	ND		25.0	23.3		ug/L		93	60 - 145
Trichloroethene	55		25.0	75.3		ug/L		80	65 - 125
cis-1,2-Dichloroethene	57		25.0	80.1		ug/L		94	65 - 130
m,p-Xylene	ND		50.0	49.0		ug/L		98	65 - 130
o-Xylene	ND		25.0	24.9		ug/L		100	65 - 125
Xylenes, Total	ND		75.0	73.9		ug/L		99	60 - 130
Vinyl chloride	ND		25.0	19.4		ug/L		78	45 - 140

Surrogate	MS %Recovery	MS Qualifier	Limits
4-Bromofluorobenzene (Surr)	*106*		*80 - 120*
Dibromofluoromethane (Surr)	*102*		*80 - 120*
Toluene-d8 (Surr)	*105*		*80 - 120*

Lab Sample ID: 440-16635-C-1 MSD
Matrix: Water
Analysis Batch: 37697

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1-Trichloroethane	ND		25.0	24.9		ug/L		100	65 - 140	1	20
1,1,2-Trichloroethane	ND		25.0	26.8		ug/L		107	65 - 130	1	25
1,1-Dichloroethane	17		25.0	41.8		ug/L		98	65 - 130	2	20
1,1-Dichloroethene	1.7		25.0	25.8		ug/L		97	60 - 130	2	20
1,2-Dichloroethane	ND		25.0	24.5		ug/L		98	60 - 140	0	20
Benzene	ND		25.0	26.3		ug/L		105	65 - 125	1	20
Carbon tetrachloride	ND		25.0	25.3		ug/L		101	65 - 140	2	25
Chloroform	ND		25.0	25.7		ug/L		103	65 - 135	1	20
Ethylbenzene	ND		25.0	24.3		ug/L		97	65 - 130	1	20
Tetrachloroethene	4.0		25.0	28.3		ug/L		97	65 - 130	2	20
Toluene	ND		25.0	26.6		ug/L		106	70 - 125	0	20
Trichlorofluoromethane	ND		25.0	23.1		ug/L		92	60 - 145	1	25

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

Lab Sample ID: 440-16635-C-1 MSD
Matrix: Water
Analysis Batch: 37697

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Trichloroethene	55		25.0	76.8		ug/L		86	65 - 125	2	20
cis-1,2-Dichloroethene	57		25.0	80.8		ug/L		96	65 - 130	1	20
m,p-Xylene	ND		50.0	48.4		ug/L		97	65 - 130	1	25
o-Xylene	ND		25.0	24.6		ug/L		98	65 - 125	1	20
Xylenes, Total	ND		75.0	73.0		ug/L					
Vinyl chloride	ND		25.0	18.5		ug/L		74	45 - 140	5	30

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*107*		*80 - 120*
Dibromofluoromethane (Surr)	*101*		*80 - 120*
Toluene-d8 (Surr)	*104*		*80 - 120*

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

Lab Sample ID: MB 440-36890/1-A
Matrix: Water
Analysis Batch: 37457

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 36890

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4,6-Trichlorophenol	ND		6.00	0.100	ug/L		07/05/12 07:38	07/08/12 22:04	1
Bis(2-ethylhexyl) phthalate	ND		5.00	1.70	ug/L		07/05/12 07:38	07/08/12 22:04	1
N-Nitrosodimethylamine	ND		5.00	0.100	ug/L		07/05/12 07:38	07/08/12 22:04	1
Pentachlorophenol	ND		5.00	0.400	ug/L		07/05/12 07:38	07/08/12 22:04	1
2,4-Dinitrotoluene	ND		5.00	0.200	ug/L		07/05/12 07:38	07/08/12 22:04	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol	*84*		*40 - 120*	*07/05/12 07:38*	*07/08/12 22:04*	*1*
2-Fluorobiphenyl	*83*		*50 - 120*	*07/05/12 07:38*	*07/08/12 22:04*	*1*
2-Fluorophenol	*67*		*30 - 120*	*07/05/12 07:38*	*07/08/12 22:04*	*1*
Nitrobenzene-d5	*78*		*45 - 120*	*07/05/12 07:38*	*07/08/12 22:04*	*1*
Phenol-d6	*73*		*35 - 120*	*07/05/12 07:38*	*07/08/12 22:04*	*1*
Terphenyl-d14	*84*		*50 - 125*	*07/05/12 07:38*	*07/08/12 22:04*	*1*

Lab Sample ID: LCS 440-36890/2-A
Matrix: Water
Analysis Batch: 37457

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 36890

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
2,4,6-Trichlorophenol	10.0	6.928		ug/L		69	20 - 139
Bis(2-ethylhexyl) phthalate	10.0	8.278		ug/L		83	61 - 126
N-Nitrosodimethylamine	10.0	5.898		ug/L		59	20 - 143
Pentachlorophenol	10.0	7.014		ug/L		70	20 - 137
2,4-Dinitrotoluene	10.0	7.289		ug/L		73	65 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2,4,6-Tribromophenol	*70*		*40 - 120*
2-Fluorobiphenyl	*70*		*50 - 120*
2-Fluorophenol	*58*		*30 - 120*

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

Lab Sample ID: LCS 440-36890/2-A
Matrix: Water
Analysis Batch: 37457

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 36890

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Nitrobenzene-d5	*68*		*45 - 120*
Phenol-d6	*65*		*35 - 120*
Terphenyl-d14	*78*		*50 - 125*

Lab Sample ID: LCSD 440-36890/3-A
Matrix: Water
Analysis Batch: 37457

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 36890

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
2,4,6-Trichlorophenol	10.0	7.952		ug/L		80	20 - 139	14	30
Bis(2-ethylhexyl) phthalate	10.0	8.849		ug/L		88	61 - 126	7	20
N-Nitrosodimethylamine	10.0	8.021	BA	ug/L		80	20 - 143	31	20
Pentachlorophenol	10.0	8.138		ug/L		81	20 - 137	15	25
2,4-Dinitrotoluene	10.0	8.505		ug/L		85	65 - 120	15	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2,4,6-Tribromophenol	*82*		*40 - 120*
2-Fluorobiphenyl	*80*		*50 - 120*
2-Fluorophenol	*75*		*30 - 120*
Nitrobenzene-d5	*87*		*45 - 120*
Phenol-d6	*79*		*35 - 120*
Terphenyl-d14	*82*		*50 - 125*

Method: 608 Pesticides - Organochlorine Pesticides Low level

Lab Sample ID: MB 440-37663/1-A
Matrix: Water
Analysis Batch: 37815

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 37663

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
alpha-BHC	ND		0.0050	0.0025	ug/L		07/09/12 19:05	07/10/12 15:44	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*88*		*35 - 115*	*07/09/12 19:05*	*07/10/12 15:44*	*1*

Lab Sample ID: LCS 440-37663/2-A
Matrix: Water
Analysis Batch: 37815

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 37663

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
alpha-BHC	0.500	0.481		ug/L		96	45 - 115

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Tetrachloro-m-xylene	*77*		*35 - 115*

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

Lab Sample ID: LCSD 440-37663/3-A
Matrix: Water
Analysis Batch: 37815

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 37663

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
alpha-BHC			0.500	0.497		ug/L		99	45 - 115	3	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Tetrachloro-m-xylene	*80*		*35 - 115*

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 440-36610/2
Matrix: Water
Analysis Batch: 36610

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	ND		0.11	0.080	mg/L			07/03/12 09:54	1
Nitrate Nitrite as N	ND		0.26	0.11	mg/L			07/03/12 09:54	1
Nitrite as N	ND		0.15	0.11	mg/L			07/03/12 09:54	1

Lab Sample ID: LCS 440-36610/3
Matrix: Water
Analysis Batch: 36610

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Nitrate as N			1.13	1.19		mg/L		105	90 - 110		
Nitrate Nitrite as N			2.65	2.72		mg/L		103	90 - 110		
Nitrite as N			1.52	1.53		mg/L		101	90 - 110		

Lab Sample ID: 440-16346-A-1 MS
Matrix: Water
Analysis Batch: 36610

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Nitrate as N	2.7		1.13	3.38	LN	mg/L		60	80 - 120		
Nitrate Nitrite as N	2.7		2.65	4.77	LN	mg/L		78	80 - 120		
Nitrite as N	ND		1.52	1.39		mg/L		91	80 - 120		

Lab Sample ID: 440-16346-A-1 MSD
Matrix: Water
Analysis Batch: 36610

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Nitrate as N	2.7		1.13	3.45	LN	mg/L		67	80 - 120	2	20
Nitrate Nitrite as N	2.7		2.65	4.93		mg/L		84	80 - 120	3	20
Nitrite as N	ND		1.52	1.48		mg/L		97	80 - 120	6	20

Lab Sample ID: MB 440-36611/2
Matrix: Water
Analysis Batch: 36611

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		0.50	0.40	mg/L			07/03/12 09:54	1
Sulfate	ND		0.50	0.40	mg/L			07/03/12 09:54	1

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCS 440-36611/3
Matrix: Water
Analysis Batch: 36611

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	5.00	4.85		mg/L		97	90 - 110
Sulfate	10.0	9.84		mg/L		98	90 - 110

Lab Sample ID: 440-16239-A-2 MS
Matrix: Water
Analysis Batch: 36611

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	110		50.0	161		mg/L		100	80 - 120
Sulfate	87		100	178		mg/L		91	80 - 120

Lab Sample ID: 440-16239-A-2 MSD
Matrix: Water
Analysis Batch: 36611

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	110		50.0	158		mg/L		93	80 - 120	2	20
Sulfate	87		100	176		mg/L		89	80 - 120	1	20

Lab Sample ID: 440-16346-A-1 MS
Matrix: Water
Analysis Batch: 36611

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	51		5.00	53.9	BB	mg/L		49	80 - 120
Sulfate	42		10.0	49.4	BB	mg/L		71	80 - 120

Lab Sample ID: 440-16346-A-1 MSD
Matrix: Water
Analysis Batch: 36611

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	51		5.00	55.1	BB	mg/L		73	80 - 120	2	20
Sulfate	42		10.0	49.5	BB	mg/L		73	80 - 120	0	20

Method: 314.0 - Perchlorate (IC)

Lab Sample ID: MB 440-36941/5
Matrix: Water
Analysis Batch: 36941

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		4.0	0.95	ug/L			07/05/12 11:54	1

Lab Sample ID: LCS 440-36941/4
Matrix: Water
Analysis Batch: 36941

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perchlorate	25.0	25.0		ug/L		100	85 - 115

Method: 314.0 - Perchlorate (IC) (Continued)

Lab Sample ID: MRL 440-36941/2 MRL
Matrix: Water
Analysis Batch: 36941

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

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits		
Perchlorate			4.00	3.65	J,DX	ug/L		91			

Lab Sample ID: 440-16355-N-1 MS
Matrix: Water
Analysis Batch: 36941

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Perchlorate	3.2	J,DX	25.0	30.4		ug/L		109	80 - 120		

Lab Sample ID: 440-16355-N-1 MSD
Matrix: Water
Analysis Batch: 36941

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perchlorate	3.2	J,DX	25.0	30.3		ug/L		108	80 - 120	0	20

Method: 1613B - Dioxins/Furans, HRGC/HRMS (1613B)

Lab Sample ID: G2G190000093B
Matrix: Water
Analysis Batch: 2201093

Client Sample ID: Method Blank
Prep Type: Total
Prep Batch: 2201093_P

Analyte	MB Result	MB Qualifier	ML	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.000010	0.0000023	ug/L		07/19/12 09:00	07/28/12 18:29	1
Total TCDD	ND		0.000010	0.0000023	ug/L		07/19/12 09:00	07/28/12 18:29	1
1,2,3,7,8-PeCDD	ND		0.000050	0.0000044	ug/L		07/19/12 09:00	07/28/12 18:29	1
Total PeCDD	ND		0.000050	0.0000044	ug/L		07/19/12 09:00	07/28/12 18:29	1
1,2,3,4,7,8-HxCDD	ND		0.000050	0.0000021	ug/L		07/19/12 09:00	07/28/12 18:29	1
1,2,3,6,7,8-HxCDD	ND		0.000050	0.0000020	ug/L		07/19/12 09:00	07/28/12 18:29	1
1,2,3,7,8,9-HxCDD	ND		0.000050	0.0000018	ug/L		07/19/12 09:00	07/28/12 18:29	1
Total HxCDD	ND		0.000050	0.0000018	ug/L		07/19/12 09:00	07/28/12 18:29	1
1,2,3,4,6,7,8-HpCDD	0.0000025	J	0.000050	0.0000010	ug/L		07/19/12 09:00	07/28/12 18:29	1
Total HpCDD	0.0000047	J	0.000050	0.0000010	ug/L		07/19/12 09:00	07/28/12 18:29	1
OCDD	0.000017	J	0.00010	0.0000035	ug/L		07/19/12 09:00	07/28/12 18:29	1
2,3,7,8-TCDF	ND		0.000010	0.0000041	ug/L		07/19/12 09:00	07/28/12 18:29	1
Total TCDF	ND		0.000010	0.0000041	ug/L		07/19/12 09:00	07/28/12 18:29	1
1,2,3,7,8-PeCDF	ND		0.000050	0.0000071	ug/L		07/19/12 09:00	07/28/12 18:29	1
2,3,4,7,8-PeCDF	ND		0.000050	0.0000080	ug/L		07/19/12 09:00	07/28/12 18:29	1
Total PeCDF	ND		0.000050	0.0000071	ug/L		07/19/12 09:00	07/28/12 18:29	1
1,2,3,4,7,8-HxCDF	ND		0.000050	0.0000033	ug/L		07/19/12 09:00	07/28/12 18:29	1
1,2,3,6,7,8-HxCDF	ND		0.000050	0.0000030	ug/L		07/19/12 09:00	07/28/12 18:29	1
2,3,4,6,7,8-HxCDF	ND		0.000050	0.0000028	ug/L		07/19/12 09:00	07/28/12 18:29	1
1,2,3,7,8,9-HxCDF	ND		0.000050	0.0000032	ug/L		07/19/12 09:00	07/28/12 18:29	1
Total HxCDF	ND		0.000050	0.0000028	ug/L		07/19/12 09:00	07/28/12 18:29	1
1,2,3,4,6,7,8-HpCDF	ND		0.000050	0.0000021	ug/L		07/19/12 09:00	07/28/12 18:29	1
1,2,3,4,7,8,9-HpCDF	ND		0.000050	0.0000030	ug/L		07/19/12 09:00	07/28/12 18:29	1
Total HpCDF	ND		0.000050	0.0000021	ug/L		07/19/12 09:00	07/28/12 18:29	1
OCDF	0.0000034	J Q	0.00010	0.0000022	ug/L		07/19/12 09:00	07/28/12 18:29	1

Method: 1613B - Dioxins/Furans, HRGC/HRMS (1613B) (Continued)

Lab Sample ID: G2G190000093B
Matrix: Water
Analysis Batch: 2201093

Client Sample ID: Method Blank
Prep Type: Total
Prep Batch: 2201093_P

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	107		35 - 197	07/19/12 09:00	07/28/12 18:29	1

Internal Standard	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-2,3,7,8-TCDD	51		25 - 164	07/19/12 09:00	07/28/12 18:29	1
13C-1,2,3,7,8-PeCDD	48		25 - 181	07/19/12 09:00	07/28/12 18:29	1
13C-1,2,3,4,7,8-HxCDD	54		32 - 141	07/19/12 09:00	07/28/12 18:29	1
13C-1,2,3,6,7,8-HxCDD	57		28 - 130	07/19/12 09:00	07/28/12 18:29	1
13C-1,2,3,4,6,7,8-HpCDD	67		23 - 140	07/19/12 09:00	07/28/12 18:29	1
13C-OCDD	63		17 - 157	07/19/12 09:00	07/28/12 18:29	1
13C-2,3,7,8-TCDF	55		24 - 169	07/19/12 09:00	07/28/12 18:29	1
13C-1,2,3,7,8-PeCDF	49		24 - 185	07/19/12 09:00	07/28/12 18:29	1
13C-2,3,4,7,8-PeCDF	51		21 - 178	07/19/12 09:00	07/28/12 18:29	1
13C-1,2,3,6,7,8-HxCDF	57		26 - 123	07/19/12 09:00	07/28/12 18:29	1
13C-2,3,4,6,7,8-HxCDF	56		28 - 136	07/19/12 09:00	07/28/12 18:29	1
13C-1,2,3,7,8,9-HxCDF	57		29 - 147	07/19/12 09:00	07/28/12 18:29	1
13C-1,2,3,4,6,7,8-HpCDF	63		28 - 143	07/19/12 09:00	07/28/12 18:29	1
13C-1,2,3,4,7,8,9-HpCDF	70		26 - 138	07/19/12 09:00	07/28/12 18:29	1
13C-1,2,3,4,7,8-HxCDF	55		26 - 152	07/19/12 09:00	07/28/12 18:29	1

Lab Sample ID: G2G190000093C
Matrix: Water
Analysis Batch: 2201093

Client Sample ID: Lab Control Sample
Prep Type: Total
Prep Batch: 2201093_P

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
2,3,7,8-TCDD			0.000200	0.000245		ug/L		123	67 - 158		
1,2,3,7,8-PeCDD			0.00100	0.00115		ug/L		115	70 - 142		
1,2,3,4,7,8-HxCDD			0.00100	0.00126		ug/L		126	70 - 164		
1,2,3,6,7,8-HxCDD			0.00100	0.00118		ug/L		118	76 - 134		
1,2,3,7,8,9-HxCDD			0.00100	0.00119		ug/L		119	64 - 162		
1,2,3,4,6,7,8-HpCDD			0.00100	0.00116	B	ug/L		116	70 - 140		
OCDD			0.00200	0.00218	B	ug/L		109	78 - 144		
2,3,7,8-TCDF			0.000200	0.000230		ug/L		115	75 - 158		
1,2,3,7,8-PeCDF			0.00100	0.00120		ug/L		120	80 - 134		
2,3,4,7,8-PeCDF			0.00100	0.00124		ug/L		124	68 - 160		
1,2,3,4,7,8-HxCDF			0.00100	0.00113		ug/L		113	72 - 134		
1,2,3,6,7,8-HxCDF			0.00100	0.00115		ug/L		115	84 - 130		
2,3,4,6,7,8-HxCDF			0.00100	0.00111		ug/L		111	70 - 156		
1,2,3,7,8,9-HxCDF			0.00100	0.00111		ug/L		111	78 - 130		
1,2,3,4,6,7,8-HpCDF			0.00100	0.00112		ug/L		112	82 - 122		
1,2,3,4,7,8,9-HpCDF			0.00100	0.00118		ug/L		118	78 - 138		
OCDF			0.00200	0.00231	B	ug/L		116	63 - 170		

Surrogate	LCS %Recovery	LCS Qualifier	Limits
37Cl4-2,3,7,8-TCDD	117		31 - 191

Internal Standard	LCS %Recovery	LCS Qualifier	Limits
13C-2,3,7,8-TCDD	71		20 - 175
13C-1,2,3,7,8-PeCDD	68		21 - 227

Method: 1613B - Dioxins/Furans, HRGC/HRMS (1613B) (Continued)

Lab Sample ID: G2G190000093C
Matrix: Water
Analysis Batch: 2201093

Client Sample ID: Lab Control Sample
Prep Type: Total
Prep Batch: 2201093_P

Internal Standard	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C-1,2,3,4,7,8-HxCDD	*67*		*21 - 193*
13C-1,2,3,6,7,8-HxCDD	*86*		*25 - 163*
13C-1,2,3,4,6,7,8-HpCDD	*85*		*26 - 166*
13C-OCDD	*98*		*13 - 199*
13C-2,3,7,8-TCDF	*78*		*22 - 152*
13C-1,2,3,7,8-PeCDF	*69*		*21 - 192*
13C-2,3,4,7,8-PeCDF	*72*		*13 - 328*
13C-1,2,3,6,7,8-HxCDF	*90*		*21 - 159*
13C-2,3,4,6,7,8-HxCDF	*91*		*22 - 176*
13C-1,2,3,7,8,9-HxCDF	*87*		*17 - 205*
13C-1,2,3,4,6,7,8-HpCDF	*84*		*21 - 158*
13C-1,2,3,4,7,8,9-HpCDF	*89*		*20 - 186*
13C-1,2,3,4,7,8-HxCDF	*86*		*19 - 202*

Method: 200.7 Rev 4.4 - Metals (ICP)

Lab Sample ID: MB 440-37819/1-A
Matrix: Water
Analysis Batch: 38008

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 37819

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Zinc	ND		20	6.0	ug/L		07/10/12 14:24	07/10/12 20:06	1

Lab Sample ID: MB 440-37819/1-A
Matrix: Water
Analysis Batch: 38303

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 37819

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hardness, as CaCO3	0.206	J,DX	0.33	0.17	mg/L		07/10/12 14:24	07/11/12 12:01	1

Lab Sample ID: LCS 440-37819/2-A
Matrix: Water
Analysis Batch: 38008

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 37819

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Zinc			500	522		ug/L		104	85 - 115		

Lab Sample ID: 440-16520-C-6-B MS
Matrix: Water
Analysis Batch: 38008

Client Sample ID: Matrix Spike
Prep Type: Total Recoverable
Prep Batch: 37819

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Zinc	170		500	675		ug/L		101	70 - 130		

Lab Sample ID: 440-16520-C-6-C MSD
Matrix: Water
Analysis Batch: 38008

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total Recoverable
Prep Batch: 37819

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Zinc	170		500	687		ug/L		104	70 - 130	2	20

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

Lab Sample ID: 440-16520-C-6-C MSD — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 38303 — **Prep Batch: 37819**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Manganese	57		500	576	IB	ug/L		104	70 - 130	1	20

Lab Sample ID: MB 440-37008/1-D — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Dissolved**
Analysis Batch: 37983 — **Prep Batch: 37715**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Zinc	ND		20	6.0	ug/L		07/10/12 08:26	07/10/12 19:20	1
Hardness, as CaCO3	ND		0.33	0.17	mg/L		07/10/12 08:26	07/10/12 19:20	1

Lab Sample ID: LCS 440-37008/2-D — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Dissolved**
Analysis Batch: 37983 — **Prep Batch: 37715**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Zinc	500	499		ug/L		100	85 - 115

Lab Sample ID: 440-16361-I-1-C MS — **Client Sample ID: Matrix Spike**
Matrix: Water — **Prep Type: Dissolved**
Analysis Batch: 37983 — **Prep Batch: 37715**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Zinc	ND		500	504		ug/L		101	70 - 130

Lab Sample ID: 440-16361-I-1-D MSD — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Water — **Prep Type: Dissolved**
Analysis Batch: 37983 — **Prep Batch: 37715**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Zinc	ND		500	514		ug/L		103	70 - 130	2	20

Method: 200.8 - Metals (ICP/MS)

Lab Sample ID: MB 440-37821/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 38360 — **Prep Batch: 37821**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.0	0.10	ug/L		07/10/12 14:28	07/12/12 11:59	1
Copper	ND		2.0	0.50	ug/L		07/10/12 14:28	07/12/12 11:59	1
Lead	ND		1.0	0.20	ug/L		07/10/12 14:28	07/12/12 11:59	1
Selenium	ND		2.0	0.50	ug/L		07/10/12 14:28	07/12/12 11:59	1

Lab Sample ID: LCS 440-37821/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 38360 — **Prep Batch: 37821**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cadmium	80.0	77.8		ug/L		97	85 - 115
Copper	80.0	81.6		ug/L		102	85 - 115
Lead	80.0	80.2		ug/L		100	85 - 115

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

Lab Sample ID: LCS 440-37821/2-A
Matrix: Water
Analysis Batch: 38360

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 37821

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Selenium	80.0	79.8		ug/L		100	85 - 115

Lab Sample ID: 250-4355-A-3-B MS
Matrix: Water
Analysis Batch: 38360

Client Sample ID: Matrix Spike
Prep Type: Total Recoverable
Prep Batch: 37821

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Cadmium	1.1		80.0	78.9		ug/L		97	70 - 130
Copper	600		80.0	668	BB	ug/L		85	70 - 130
Lead	0.68	J,DX	80.0	81.9		ug/L		102	70 - 130
Selenium	ND		80.0	79.6		ug/L		99	70 - 130

Lab Sample ID: 250-4355-A-3-C MSD
Matrix: Water
Analysis Batch: 38360

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total Recoverable
Prep Batch: 37821

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Cadmium	1.1		80.0	79.3		ug/L		98	70 - 130	0	20
Copper	600		80.0	677	BB	ug/L		96	70 - 130	1	20
Lead	0.68	J,DX	80.0	83.3		ug/L		103	70 - 130	2	20
Selenium	ND		80.0	79.5		ug/L		99	70 - 130	0	20

Lab Sample ID: MB 440-37008/1-C
Matrix: Water
Analysis Batch: 37957

Client Sample ID: Method Blank
Prep Type: Dissolved
Prep Batch: 37713

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.0	0.10	ug/L		07/10/12 08:24	07/10/12 15:45	1
Copper	ND		2.0	0.50	ug/L		07/10/12 08:24	07/10/12 15:45	1
Lead	ND		1.0	0.20	ug/L		07/10/12 08:24	07/10/12 15:45	1
Selenium	ND		2.0	0.50	ug/L		07/10/12 08:24	07/10/12 15:45	1

Lab Sample ID: LCS 440-37008/2-C
Matrix: Water
Analysis Batch: 37957

Client Sample ID: Lab Control Sample
Prep Type: Dissolved
Prep Batch: 37713

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cadmium	80.0	84.4		ug/L		106	85 - 115
Copper	80.0	83.7		ug/L		105	85 - 115
Lead	80.0	84.1		ug/L		105	85 - 115
Selenium	80.0	79.2		ug/L		99	85 - 115

Lab Sample ID: 440-16330-A-2-C MS
Matrix: Water
Analysis Batch: 37957

Client Sample ID: Matrix Spike
Prep Type: Dissolved
Prep Batch: 37713

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Cadmium	0.26	J,DX	80.0	80.3		ug/L		100	70 - 130
Copper	3.8		80.0	74.1		ug/L		88	70 - 130
Lead	1.2		80.0	75.0		ug/L		92	70 - 130
Selenium	1.4	J,DX	80.0	88.2		ug/L		108	70 - 130

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

Lab Sample ID: 440-16330-A-2-D MSD
Matrix: Water
Analysis Batch: 37957

Client Sample ID: Matrix Spike Duplicate
Prep Type: Dissolved
Prep Batch: 37713

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Cadmium	0.26	J,DX	80.0	79.7		ug/L		99	70 - 130	1	20
Copper	3.8		80.0	72.0		ug/L		85	70 - 130	3	20
Lead	1.2		80.0	76.1		ug/L		94	70 - 130	1	20
Selenium	1.4	J,DX	80.0	88.9		ug/L		109	70 - 130	1	20

Method: 245.1 - Mercury (CVAA)

Lab Sample ID: MB 440-37016/1-A
Matrix: Water
Analysis Batch: 37312

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 37016

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.10	ug/L		07/05/12 16:00	07/06/12 14:21	1

Lab Sample ID: LCS 440-37016/2-A
Matrix: Water
Analysis Batch: 37312

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 37016

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	8.00	7.59		ug/L		95	85 - 115

Lab Sample ID: 440-16347-1 MS
Matrix: Water
Analysis Batch: 37312

Client Sample ID: Outfall 019 Composite
Prep Type: Total/NA
Prep Batch: 37016

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	ND		8.00	7.71		ug/L		96	70 - 130

Lab Sample ID: 440-16347-1 MSD
Matrix: Water
Analysis Batch: 37312

Client Sample ID: Outfall 019 Composite
Prep Type: Total/NA
Prep Batch: 37016

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	ND		8.00	7.33		ug/L		92	70 - 130	5	20

Lab Sample ID: MB 440-37008/1-B
Matrix: Water
Analysis Batch: 37877

Client Sample ID: Method Blank
Prep Type: Dissolved
Prep Batch: 37614

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.10	ug/L		07/09/12 16:35	07/10/12 15:01	1

Lab Sample ID: LCS 440-37008/2-B
Matrix: Water
Analysis Batch: 37877

Client Sample ID: Lab Control Sample
Prep Type: Dissolved
Prep Batch: 37614

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	8.00	8.04		ug/L		101	85 - 115

Method: 245.1 - Mercury (CVAA) (Continued)

Lab Sample ID: 440-16347-1 MS
Matrix: Water
Analysis Batch: 37877

Client Sample ID: Outfall 019 Composite
Prep Type: Dissolved
Prep Batch: 37614

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Mercury	ND		8.00	7.81		ug/L		98	70 - 130		

Lab Sample ID: 440-16347-1 MSD
Matrix: Water
Analysis Batch: 37877

Client Sample ID: Outfall 019 Composite
Prep Type: Dissolved
Prep Batch: 37614

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	ND		8.00	8.18		ug/L		102	70 - 130	5	20

Method: 120.1 - Conductivity, Specific Conductance

Lab Sample ID: MB 440-37640/3
Matrix: Water
Analysis Batch: 37640

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

Analyte	MB Result	MB Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Specific Conductance	ND		1.0	1.0	umhos/cm			07/09/12 16:53	1

Lab Sample ID: LCS 440-37640/4
Matrix: Water
Analysis Batch: 37640

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Specific Conductance	501	541		umhos/cm		108	90 - 110

Lab Sample ID: 440-16173-1 DU
Matrix: Water
Analysis Batch: 37640

Client Sample ID: Outfall 019 Grab
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Specific Conductance	680		682		umhos/cm		0.3	5

Method: 1664A - HEM and SGT-HEM

Lab Sample ID: MB 440-37209/1-A
Matrix: Water
Analysis Batch: 37223

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 37209

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HEM	ND		5.0	1.4	mg/L		07/06/12 09:15	07/06/12 09:32	1

Lab Sample ID: LCS 440-37209/2-A
Matrix: Water
Analysis Batch: 37223

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 37209

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
HEM	20.0	18.1		mg/L		90	78 - 114

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

Lab Sample ID: LCSD 440-37209/3-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 37223 — **Prep Batch: 37209**

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
HEM			20.0	18.8		mg/L		94	78 - 114	4	11

Method: 180.1 - Turbidity, Nephelometric

Lab Sample ID: MB 440-36826/6 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 36826

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Turbidity	ND		0.10	0.040	NTU			07/04/12 08:49	1

Lab Sample ID: MRL 440-36826/3 MRL — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 36826

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits		
Turbidity			0.100	0.110	J,DX	NTU		110			

Lab Sample ID: 440-16347-1 DU — **Client Sample ID: Outfall 019 Composite**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 36826

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Turbidity	0.060	J,DX		0.0500	J,DX	NTU				18	20

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

Lab Sample ID: MB 440-36942/1 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 36942

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10	10	mg/L			07/05/12 10:29	1

Lab Sample ID: LCS 440-36942/2 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 36942

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Dissolved Solids			1000	964		mg/L		96	90 - 110		

Lab Sample ID: 440-16239-A-2 DU — **Client Sample ID: Duplicate**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 36942

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Dissolved Solids	400			405		mg/L				0.7	10

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

Lab Sample ID: MB 440-37346/1
Matrix: Water
Analysis Batch: 37346

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		10	10	mg/L			07/06/12 21:09	1

Lab Sample ID: LCS 440-37346/2
Matrix: Water
Analysis Batch: 37346

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Suspended Solids			1000	1000		mg/L		100	85 - 115		

Lab Sample ID: 440-16460-B-1 DU
Matrix: Water
Analysis Batch: 37346

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Suspended Solids	17			18.0		mg/L				0	10

Method: SM 4500 CN E - Cyanide, Total (Low Level)

Lab Sample ID: MB 440-37761/1-A
Matrix: Water
Analysis Batch: 37862

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 37761

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	ND		5.0	3.0	ug/L		07/10/12 10:16	07/10/12 16:30	1

Lab Sample ID: LCS 440-37761/2-A
Matrix: Water
Analysis Batch: 37862

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 37761

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Cyanide, Total			100	103		ug/L		103	90 - 110		

Lab Sample ID: 440-16275-B-2-B MS
Matrix: Water
Analysis Batch: 37862

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 37761

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Cyanide, Total	ND		100	103		ug/L		103	70 - 115		

Lab Sample ID: 440-16275-B-2-C MSD
Matrix: Water
Analysis Batch: 37862

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 37761

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Cyanide, Total	ND		100	109		ug/L		109	70 - 115	6	15

Method: SM 4500 NH3 C - Ammonia

Lab Sample ID: MB 440-39893/2-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 39910 — **Prep Batch: 39893**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	ND		0.400	0.157	mg/L		07/19/12 19:43	07/19/12 21:59	1

Lab Sample ID: LCS 440-39893/1-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 39910 — **Prep Batch: 39893**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia (as N)	10.0	10.08		mg/L		101	85 - 115

Lab Sample ID: 440-16473-L-1-A MS — **Client Sample ID: Matrix Spike**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 39910 — **Prep Batch: 39893**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia (as N)	ND		10.0	4.200	LN	mg/L		42	70 - 120

Lab Sample ID: 440-16473-L-1-B MSD — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 39910 — **Prep Batch: 39893**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ammonia (as N)	ND		10.0	5.040	LN BA	mg/L		50	70 - 120	18	15

Method: SM 5310B - Organic Carbon, Total (TOC)

Lab Sample ID: MB 440-37683/6 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 37683

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		1.0	0.75	mg/L			07/09/12 14:20	1

Lab Sample ID: LCS 440-37683/5 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 37683

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	10.0	10.1		mg/L		101	90 - 110

Lab Sample ID: 440-16275-B-3 MS — **Client Sample ID: Matrix Spike**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 37683

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	4.8		5.00	10.0		mg/L		105	80 - 120

Method: SM 5310B - Organic Carbon, Total (TOC) (Continued)

Lab Sample ID: 440-16275-B-3 MSD — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 37683

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon	4.8		5.00	9.93		mg/L		103	80 - 120	1	20

Method: SM 5540C - Methylene Blue Active Substances (MBAS)

Lab Sample ID: MB 440-36810/3 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 36810

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methylene Blue Active Substances	ND		0.10	0.050	mg/L			07/03/12 23:40	1

Lab Sample ID: LCS 440-36810/4 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 36810

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Methylene Blue Active Substances	0.250	0.260		mg/L		104	90 - 110

Lab Sample ID: 440-16239-A-2 MS — **Client Sample ID: Matrix Spike**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 36810

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Methylene Blue Active Substances	ND		0.250	0.265		mg/L		106	50 - 125

Lab Sample ID: 440-16239-A-2 MSD — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 36810

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Methylene Blue Active Substances	ND		0.250	0.262		mg/L		105	50 - 125	1	20

Method: SM5210B - BOD, 5 Day

Lab Sample ID: USB 440-36831/1 USB — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 36831

Analyte	USB Result	USB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Biochemical Oxygen Demand	ND		2.0	0.50	mg/L			07/04/12 09:38	1

Lab Sample ID: LCS 440-36831/4 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 36831

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Biochemical Oxygen Demand	199	211		mg/L		106	85 - 115

Client: MWH Americas Inc
Project/Site: Boeing SSFL outfalls

TestAmerica Job ID: 440-16173-1

Method: SM5210B - BOD, 5 Day (Continued)

Lab Sample ID: LCSD 440-36831/5
Matrix: Water
Analysis Batch: 36831

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Biochemical Oxygen Demand			199	206		mg/L		104	85 - 115	2	20

GC/MS VOA

Analysis Batch: 37697

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-16173-1	Outfall 019 Grab	Total/NA	Water	624	
440-16173-2	Trip Blanks	Total/NA	Water	624	
440-16635-C-1 MS	Matrix Spike	Total/NA	Water	624	
440-16635-C-1 MSD	Matrix Spike Duplicate	Total/NA	Water	624	
LCS 440-37697/5	Lab Control Sample	Total/NA	Water	624	
MB 440-37697/4	Method Blank	Total/NA	Water	624	

GC/MS Semi VOA

Prep Batch: 36890

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-16347-1	Outfall 019 Composite	Total/NA	Water	625	
LCS 440-36890/2-A	Lab Control Sample	Total/NA	Water	625	
LCSD 440-36890/3-A	Lab Control Sample Dup	Total/NA	Water	625	
MB 440-36890/1-A	Method Blank	Total/NA	Water	625	

Analysis Batch: 37457

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-16347-1	Outfall 019 Composite	Total/NA	Water	625	36890
LCS 440-36890/2-A	Lab Control Sample	Total/NA	Water	625	36890
LCSD 440-36890/3-A	Lab Control Sample Dup	Total/NA	Water	625	36890
MB 440-36890/1-A	Method Blank	Total/NA	Water	625	36890

GC Semi VOA

Prep Batch: 37663

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-16347-1	Outfall 019 Composite	Total/NA	Water	608	
LCS 440-37663/2-A	Lab Control Sample	Total/NA	Water	608	
LCSD 440-37663/3-A	Lab Control Sample Dup	Total/NA	Water	608	
MB 440-37663/1-A	Method Blank	Total/NA	Water	608	

Analysis Batch: 37815

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-16347-1	Outfall 019 Composite	Total/NA	Water	608 Pesticides	37663
LCS 440-37663/2-A	Lab Control Sample	Total/NA	Water	608 Pesticides	37663
LCSD 440-37663/3-A	Lab Control Sample Dup	Total/NA	Water	608 Pesticides	37663
MB 440-37663/1-A	Method Blank	Total/NA	Water	608 Pesticides	37663

HPLC/IC

Analysis Batch: 36610

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-16346-A-1 MS	Matrix Spike	Total/NA	Water	300.0	
440-16346-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	
440-16347-1	Outfall 019 Composite	Total/NA	Water	300.0	
LCS 440-36610/3	Lab Control Sample	Total/NA	Water	300.0	
MB 440-36610/2	Method Blank	Total/NA	Water	300.0	

HPLC/IC (Continued)

Analysis Batch: 36611

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-16239-A-2 MS	Matrix Spike	Total/NA	Water	300.0	
440-16239-A-2 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	
440-16346-A-1 MS	Matrix Spike	Total/NA	Water	300.0	
440-16346-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	
440-16347-1	Outfall 019 Composite	Total/NA	Water	300.0	
LCS 440-36611/3	Lab Control Sample	Total/NA	Water	300.0	
MB 440-36611/2	Method Blank	Total/NA	Water	300.0	

Analysis Batch: 36941

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-16347-1	Outfall 019 Composite	Total/NA	Water	314.0	
440-16355-N-1 MS	Matrix Spike	Total/NA	Water	314.0	
440-16355-N-1 MSD	Matrix Spike Duplicate	Total/NA	Water	314.0	
LCS 440-36941/4	Lab Control Sample	Total/NA	Water	314.0	
MB 440-36941/5	Method Blank	Total/NA	Water	314.0	
MRL 440-36941/2 MRL	Lab Control Sample	Total/NA	Water	314.0	

Specialty Organics

Analysis Batch: 2201093

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-16347-1	Outfall 019 Composite	Total	Water	1613B	
G2G190000093B	Method Blank	Total	Water	1613B	
G2G190000093C	Lab Control Sample	Total	Water	1613B	

Prep Batch: 2201093_P

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-16347-1	Outfall 019 Composite	Total	Water	3542	
G2G190000093B	Method Blank	Total	Water	3542	
G2G190000093C	Lab Control Sample	Total	Water	3542	

Metals

Prep Batch: 37016

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-16347-1	Outfall 019 Composite	Total/NA	Water	245.1	
440-16347-1 MS	Outfall 019 Composite	Total/NA	Water	245.1	
440-16347-1 MSD	Outfall 019 Composite	Total/NA	Water	245.1	
LCS 440-37016/2-A	Lab Control Sample	Total/NA	Water	245.1	
MB 440-37016/1-A	Method Blank	Total/NA	Water	245.1	

Analysis Batch: 37312

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-16347-1	Outfall 019 Composite	Total/NA	Water	245.1	37016
440-16347-1 MS	Outfall 019 Composite	Total/NA	Water	245.1	37016
440-16347-1 MSD	Outfall 019 Composite	Total/NA	Water	245.1	37016
LCS 440-37016/2-A	Lab Control Sample	Total/NA	Water	245.1	37016
MB 440-37016/1-A	Method Blank	Total/NA	Water	245.1	37016

Prep Batch: 37614

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-16347-1	Outfall 019 Composite	Dissolved	Water	245.1	

Metals (Continued)

Prep Batch: 37614 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-16347-1 MS	Outfall 019 Composite	Dissolved	Water	245.1	
440-16347-1 MSD	Outfall 019 Composite	Dissolved	Water	245.1	
LCS 440-37008/2-B	Lab Control Sample	Dissolved	Water	245.1	
MB 440-37008/1-B	Method Blank	Dissolved	Water	245.1	

Prep Batch: 37713

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-16330-A-2-C MS	Matrix Spike	Dissolved	Water	200.2	
440-16330-A-2-D MSD	Matrix Spike Duplicate	Dissolved	Water	200.2	
440-16347-1	Outfall 019 Composite	Dissolved	Water	200.2	
LCS 440-37008/2-C	Lab Control Sample	Dissolved	Water	200.2	
MB 440-37008/1-C	Method Blank	Dissolved	Water	200.2	

Prep Batch: 37715

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-16347-1	Outfall 019 Composite	Dissolved	Water	200.2	
440-16361-I-1-C MS	Matrix Spike	Dissolved	Water	200.2	
440-16361-I-1-D MSD	Matrix Spike Duplicate	Dissolved	Water	200.2	
LCS 440-37008/2-D	Lab Control Sample	Dissolved	Water	200.2	
MB 440-37008/1-D	Method Blank	Dissolved	Water	200.2	

Prep Batch: 37819

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-16347-1	Outfall 019 Composite	Total Recoverable	Water	200.2	
440-16520-C-6-B MS	Matrix Spike	Total Recoverable	Water	200.2	
440-16520-C-6-C MSD	Matrix Spike Duplicate	Total Recoverable	Water	200.2	
LCS 440-37819/2-A	Lab Control Sample	Total Recoverable	Water	200.2	
MB 440-37819/1-A	Method Blank	Total Recoverable	Water	200.2	

Prep Batch: 37821

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
250-4355-A-3-B MS	Matrix Spike	Total Recoverable	Water	200.2	
250-4355-A-3-C MSD	Matrix Spike Duplicate	Total Recoverable	Water	200.2	
440-16347-1	Outfall 019 Composite	Total Recoverable	Water	200.2	
LCS 440-37821/2-A	Lab Control Sample	Total Recoverable	Water	200.2	
MB 440-37821/1-A	Method Blank	Total Recoverable	Water	200.2	

Analysis Batch: 37877

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-16347-1	Outfall 019 Composite	Dissolved	Water	245.1	37614
440-16347-1 MS	Outfall 019 Composite	Dissolved	Water	245.1	37614
440-16347-1 MSD	Outfall 019 Composite	Dissolved	Water	245.1	37614
LCS 440-37008/2-B	Lab Control Sample	Dissolved	Water	245.1	37614
MB 440-37008/1-B	Method Blank	Dissolved	Water	245.1	37614

Analysis Batch: 37957

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-16330-A-2-C MS	Matrix Spike	Dissolved	Water	200.8	37713
440-16330-A-2-D MSD	Matrix Spike Duplicate	Dissolved	Water	200.8	37713
440-16347-1	Outfall 019 Composite	Dissolved	Water	200.8	37713
LCS 440-37008/2-C	Lab Control Sample	Dissolved	Water	200.8	37713
MB 440-37008/1-C	Method Blank	Dissolved	Water	200.8	37713

Metals (Continued)

Analysis Batch: 37983

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-16347-1	Outfall 019 Composite	Dissolved	Water	200.7 Rev 4.4	37715
440-16361-I-1-C MS	Matrix Spike	Dissolved	Water	200.7 Rev 4.4	37715
440-16361-I-1-D MSD	Matrix Spike Duplicate	Dissolved	Water	200.7 Rev 4.4	37715
LCS 440-37008/2-D	Lab Control Sample	Dissolved	Water	200.7 Rev 4.4	37715
MB 440-37008/1-D	Method Blank	Dissolved	Water	200.7 Rev 4.4	37715

Analysis Batch: 38008

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-16347-1	Outfall 019 Composite	Total Recoverable	Water	200.7 Rev 4.4	37819
440-16520-C-6-B MS	Matrix Spike	Total Recoverable	Water	200.7 Rev 4.4	37819
440-16520-C-6-C MSD	Matrix Spike Duplicate	Total Recoverable	Water	200.7 Rev 4.4	37819
LCS 440-37819/2-A	Lab Control Sample	Total Recoverable	Water	200.7 Rev 4.4	37819
MB 440-37819/1-A	Method Blank	Total Recoverable	Water	200.7 Rev 4.4	37819

Analysis Batch: 38303

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-16347-1	Outfall 019 Composite	Total Recoverable	Water	200.7 Rev 4.4	37819
440-16520-C-6-B MS	Matrix Spike	Total Recoverable	Water	200.7 Rev 4.4	37819
440-16520-C-6-C MSD	Matrix Spike Duplicate	Total Recoverable	Water	200.7 Rev 4.4	37819
LCS 440-37819/2-A	Lab Control Sample	Total Recoverable	Water	200.7 Rev 4.4	37819
MB 440-37819/1-A	Method Blank	Total Recoverable	Water	200.7 Rev 4.4	37819

Analysis Batch: 38360

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
250-4355-A-3-B MS	Matrix Spike	Total Recoverable	Water	200.8	37821
250-4355-A-3-C MSD	Matrix Spike Duplicate	Total Recoverable	Water	200.8	37821
440-16347-1	Outfall 019 Composite	Total Recoverable	Water	200.8	37821
LCS 440-37821/2-A	Lab Control Sample	Total Recoverable	Water	200.8	37821
MB 440-37821/1-A	Method Blank	Total Recoverable	Water	200.8	37821

General Chemistry

Analysis Batch: 36582

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-16173-1	Outfall 019 Grab	Total/NA	Water	SM 2540F	

Analysis Batch: 36810

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-16239-A-2 MS	Matrix Spike	Total/NA	Water	SM 5540C	
440-16239-A-2 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 5540C	
440-16347-1	Outfall 019 Composite	Total/NA	Water	SM 5540C	
LCS 440-36810/4	Lab Control Sample	Total/NA	Water	SM 5540C	
MB 440-36810/3	Method Blank	Total/NA	Water	SM 5540C	

Analysis Batch: 36826

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-16347-1	Outfall 019 Composite	Total/NA	Water	180.1	
440-16347-1 DU	Outfall 019 Composite	Total/NA	Water	180.1	
MB 440-36826/6	Method Blank	Total/NA	Water	180.1	
MRL 440-36826/3 MRL	Lab Control Sample	Total/NA	Water	180.1	

General Chemistry (Continued)

Analysis Batch: 36831

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-16347-1	Outfall 019 Composite	Total/NA	Water	SM5210B	
LCS 440-36831/4	Lab Control Sample	Total/NA	Water	SM5210B	
LCSD 440-36831/5	Lab Control Sample Dup	Total/NA	Water	SM5210B	
USB 440-36831/1 USB	Method Blank	Total/NA	Water	SM5210B	

Analysis Batch: 36942

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-16239-A-2 DU	Duplicate	Total/NA	Water	SM 2540C	
440-16347-1	Outfall 019 Composite	Total/NA	Water	SM 2540C	
LCS 440-36942/2	Lab Control Sample	Total/NA	Water	SM 2540C	
MB 440-36942/1	Method Blank	Total/NA	Water	SM 2540C	

Prep Batch: 37209

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-16173-1	Outfall 019 Grab	Total/NA	Water	1664A	
LCS 440-37209/2-A	Lab Control Sample	Total/NA	Water	1664A	
LCSD 440-37209/3-A	Lab Control Sample Dup	Total/NA	Water	1664A	
MB 440-37209/1-A	Method Blank	Total/NA	Water	1664A	

Analysis Batch: 37223

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-16173-1	Outfall 019 Grab	Total/NA	Water	1664A	37209
LCS 440-37209/2-A	Lab Control Sample	Total/NA	Water	1664A	37209
LCSD 440-37209/3-A	Lab Control Sample Dup	Total/NA	Water	1664A	37209
MB 440-37209/1-A	Method Blank	Total/NA	Water	1664A	37209

Analysis Batch: 37346

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-16347-1	Outfall 019 Composite	Total/NA	Water	SM 2540D	
440-16460-B-1 DU	Duplicate	Total/NA	Water	SM 2540D	
LCS 440-37346/2	Lab Control Sample	Total/NA	Water	SM 2540D	
MB 440-37346/1	Method Blank	Total/NA	Water	SM 2540D	

Analysis Batch: 37640

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-16173-1	Outfall 019 Grab	Total/NA	Water	120.1	
440-16173-1 DU	Outfall 019 Grab	Total/NA	Water	120.1	
LCS 440-37640/4	Lab Control Sample	Total/NA	Water	120.1	
MB 440-37640/3	Method Blank	Total/NA	Water	120.1	

Analysis Batch: 37683

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-16275-B-3 MS	Matrix Spike	Total/NA	Water	SM 5310B	
440-16275-B-3 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 5310B	
440-16347-1	Outfall 019 Composite	Total/NA	Water	SM 5310B	
LCS 440-37683/5	Lab Control Sample	Total/NA	Water	SM 5310B	
MB 440-37683/6	Method Blank	Total/NA	Water	SM 5310B	

Prep Batch: 37761

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-16275-B-2-B MS	Matrix Spike	Total/NA	Water	Distill/CN	
440-16275-B-2-C MSD	Matrix Spike Duplicate	Total/NA	Water	Distill/CN	

General Chemistry (Continued)

Prep Batch: 37761 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-16347-1	Outfall 019 Composite	Total/NA	Water	Distill/CN	
LCS 440-37761/2-A	Lab Control Sample	Total/NA	Water	Distill/CN	
MB 440-37761/1-A	Method Blank	Total/NA	Water	Distill/CN	

Analysis Batch: 37862

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-16275-B-2-B MS	Matrix Spike	Total/NA	Water	SM 4500 CN E	37761
440-16275-B-2-C MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 CN E	37761
440-16347-1	Outfall 019 Composite	Total/NA	Water	SM 4500 CN E	37761
LCS 440-37761/2-A	Lab Control Sample	Total/NA	Water	SM 4500 CN E	37761
MB 440-37761/1-A	Method Blank	Total/NA	Water	SM 4500 CN E	37761

Prep Batch: 39893

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-16347-1	Outfall 019 Composite	Total/NA	Water	SM 4500 NH3 B	
440-16473-L-1-A MS	Matrix Spike	Total/NA	Water	SM 4500 NH3 B	
440-16473-L-1-B MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 NH3 B	
LCS 440-39893/1-A	Lab Control Sample	Total/NA	Water	SM 4500 NH3 B	
MB 440-39893/2-A	Method Blank	Total/NA	Water	SM 4500 NH3 B	

Analysis Batch: 39910

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-16347-1	Outfall 019 Composite	Total/NA	Water	SM 4500 NH3 C	39893
440-16473-L-1-A MS	Matrix Spike	Total/NA	Water	SM 4500 NH3 C	39893
440-16473-L-1-B MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 NH3 C	39893
LCS 440-39893/1-A	Lab Control Sample	Total/NA	Water	SM 4500 NH3 C	39893
MB 440-39893/2-A	Method Blank	Total/NA	Water	SM 4500 NH3 C	39893

Qualifiers

GC/MS Semi VOA

Qualifier	Qualifier Description
BA	Relative percent difference out of control

HPLC/IC

Qualifier	Qualifier Description
LN	MS and/or MSD below acceptance limits. See Blank Spike (LCS)
BB	Sample > 4X spike concentration
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL

DIOXIN

Qualifier	Qualifier Description
J	Estimated result. Result is less than the reporting limit.
Q	Estimated maximum possible concentration (EMPC).
B	Method blank contamination. The associated method blank contains the target analyte at a reportable level.

Metals

Qualifier	Qualifier Description
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
BB	Sample > 4X spike concentration
MB	Analyte present in the method blank
IB	CCV recovery above limit; analyte not detected

General Chemistry

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

Glossary

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

Certification Summary

Client: MWH Americas Inc
Project/Site: Boeing SSFL outfalls

TestAmerica Job ID: 440-16173-1

Laboratory: TestAmerica Irvine

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Arizona	State Program	9	AZ0671	10-13-12
California	LA Cty Sanitation Districts	9	10256	01-31-13
California	NELAC	9	1108CA	01-31-13
California	State Program	9	2706	06-30-14
Guam	State Program	9	Cert. No. 12.002r	01-23-13
Hawaii	State Program	9	N/A	01-31-13
Nevada	State Program	9	CA015312007A	09-30-12
New Mexico	State Program	6	N/A	01-31-13
Northern Mariana Islands	State Program	9	MP0002	01-31-13
Oregon	NELAC	10	4005	09-12-13
USDA	Federal		P330-09-00080	06-06-14

Laboratory: TestAmerica West Sacramento

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

Authority	Program	EPA Region	Certification ID	Expiration Date
A2LA	DoD ELAP		2928-01	01-31-14
Alaska (UST)	State Program	10	UST-055	12-18-12
Arizona	State Program	9	AZ0708	08-11-13
Arkansas DEQ	State Program	6	88-0691	06-17-13
California	NELAC	9	1119CA	01-31-13
Colorado	State Program	8	N/A	08-31-12
Connecticut	State Program	1	PH-0691	06-30-13
Florida	NELAC	4	E87570	06-30-13
Georgia	State Program	4	960	06-30-12
Guam	State Program	9	N/A	08-31-12
Hawaii	State Program	9	N/A	01-31-13
Illinois	NELAC	5	200060	03-17-13
Kansas	NELAC	7	E-10375	10-31-12
Louisiana	NELAC	6	30612	06-30-13
Michigan	State Program	5	9947	01-31-13
Nevada	State Program	9	CA44	09-30-12
New Jersey	NELAC	2	CA005	06-30-13
New Mexico	State Program	6	N/A	06-30-12
New York	NELAC	2	11666	04-01-13
Northern Mariana Islands	State Program	9	MP0007	01-31-13
Oregon	NELAC	10	CA200005	03-28-13
Pennsylvania	NELAC	3	68-01272	03-31-13
South Carolina	State Program	4	87014	06-30-13
Texas	NELAC	6	T104704399-08-TX	05-31-13
US Fish & Wildlife	Federal		LE148388-0	02-28-13
USDA	Federal		P330-11-00436	12-30-14
Utah	NELAC	8	QUAN1	01-31-13
Washington	State Program	10	C581	05-05-13
West Virginia	State Program	3	9930C	12-31-12
Wisconsin	State Program	5	998204680	08-31-12
Wyoming	State Program	8	8TMS-Q	01-31-13

Login Sample Receipt Checklist

Client: MWH Americas Inc

Job Number: 440-16173-1

Login Number: 16173

List Source: TestAmerica Irvine

List Number: 1

Creator: King, Ronald

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	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	
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	Rick Banaga
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: MWH Americas Inc

Job Number: 440-16173-1

Login Number: 16347

List Source: TestAmerica Irvine

List Number: 1

Creator: Robb, Kathleen

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	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	
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	Rick Banaga
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

APPENDIX F

Section 3

Outfall 019 – July 10, 2012

MEC^X Data Validation Report

DATA VALIDATION REPORT

Boeing SSFL NPDES

SAMPLE DELIVERY GROUP: 440-16846-1

Prepared by

MEC^X, LP
12269 East Vassar Drive
Aurora, CO 80014

I. INTRODUCTION

Task Order Title:	Boeing SSFL NPDES
Contract Task Order:	1261.100D.00
Sample Delivery Group:	440-16846-1
Project Manager:	B. Kelly
Matrix:	Water
QC Level:	IV
No. of Samples:	1
No. of Reanalyses/Dilutions:	0
Laboratory:	Eberline

Table 1. Sample Identification

Client ID	Laboratory ID	Sub-Laboratory ID	Matrix	Collected	Method
OUTFALL 019	440-16846-1	S207033-01	Water	7/10/2012 11:05	900. 901.1, 903.1, 904, 905, 906, ASTM D-5174

II. Sample Management

No anomalies were observed regarding sample management. The samples in this SDG were received at the laboratory above the temperature limits of 4°C ±2°C; however, due to the nonvolatile nature of the analytes, no qualifications were required. According to the case narrative for this SDG, the samples were received intact, on ice, and properly preserved, if applicable. The COCs were appropriately signed and dated by field and/or laboratory personnel. As the sample was delivered by courier, custody seals were not utilized. If necessary, the client ID was added to the sample result summary by the reviewer.

Data Qualifier Reference Table

Qualifier	Organics	Inorganics
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit. The associated value is the quantitation limit or the estimated detection limit for dioxins or PCB congeners.	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit. The associated value is the sample detection limit or the quantitation limit for perchlorate only.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.	The associated value is an estimated quantity.
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."	Not applicable.
NJ	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.	Not applicable.
UJ	The analyte was not deemed above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.	The material was analyzed for, but was not detected. The associated value is an estimate and may be inaccurate or imprecise.
R	The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.	The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.

Qualification Code Reference Table

Qualifier	Organics	Inorganics
H	Holding times were exceeded.	Holding times were exceeded.
S	Surrogate recovery was outside QC limits.	The sequence or number of standards used for the calibration was incorrect
C	Calibration %RSD or %D was noncompliant.	Correlation coefficient is <0.995.
R	Calibration RRF was <0.05.	%R for calibration is not within control limits.
B	Presumed contamination as indicated by the preparation (method) blank results.	Presumed contamination as indicated by the preparation (method) or calibration blank results.
L	Laboratory Blank Spike/Blank Spike Duplicate %R was not within control limits.	Laboratory Control Sample %R was not within control limits.
Q	MS/MSD recovery was poor or RPD high.	MS recovery was poor.
E	Not applicable.	Duplicates showed poor agreement.
I	Internal standard performance was unsatisfactory.	ICP ICS results were unsatisfactory.
A	Not applicable.	ICP Serial Dilution %D were not within control limits.
M	Tuning (BFB or DFTPP) was noncompliant.	Not applicable.
T	Presumed contamination as indicated by the trip blank results.	Not applicable.
+	False positive – reported compound was not present.	Not applicable.
-	False negative – compound was present but not reported.	Not applicable.
F	Presumed contamination as indicated by the FB or ER results.	Presumed contamination as indicated by the FB or ER results.
$	Reported result or other information was incorrect.	Reported result or other information was incorrect.
?	TIC identity or reported retention time has been changed.	Not applicable.

Qualification Code Reference Table Cont.

D	The analysis with this flag should not be used because another more technically sound analysis is available.	The analysis with this flag should not be used because another more technically sound analysis is available.
P	Instrument performance for pesticides was poor.	Post Digestion Spike recovery was not within 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.
*II, *III	Unusual problems found with the data that have been 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.	Unusual problems found with the data that have been 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. Method Analyses

A. VARIOUS EPA METHODS — Radionuclides

Reviewed By: P. Meeks
Date Reviewed: August 30, 2012

The samples listed in Table 1 for these analyses were validated based on the guidelines outlined in the *EPA Methods 900.0, 901.1, 903.1, 904.0, 905.0, and 906.0, ASTM Method D-5174,* and the *National Functional Guidelines for Inorganic Data Review* (10/04).

- Holding Times: The tritium sample was analyzed within 180 days of collection. All remaining aliquots were preserved within the five-day holding time.

- Calibration: The laboratory calibration information included the standard certificates and applicable preparation/dilutions logs for NIST-traceability.

  The gross alpha detector efficiency was less than 20%; therefore, nondetected gross alpha in the sample was qualified as estimated, "UJ." The remaining detector efficiencies were greater than 20%.

  The tritium aliquot was spiked for efficiency determination; therefore, no calibration was necessary. All chemical yields were at least 40% and were considered acceptable. The gamma spectroscopy analytes were determined at the maximum photopeak energy. The kinetic phosphorescence analyzer (KPA) was calibrated immediately prior to the sample analysis. All KPA calibration check standard recoveries were within 90-110% and were deemed acceptable.

- Blanks: There were no analytes detected in the method blanks or the KPA CCBs.

- Blank Spikes and Laboratory Control Samples: The recoveries were within laboratory-established control limits.

- Laboratory Duplicates: Laboratory duplicate analyses were performed on the sample in this SDG for all analytes. Radium-226 was detected below the reporting limit in the duplicate but was not detected in the parent sample; however, the results were within the 2-sigma errors. The uranium RPD was within the laboratory-established control limit. There were no other analytes detected in either sample.

- Matrix Spike/Matrix Spike Duplicate: No MS/MSD analyses were performed for the sample in this SDG. Method accuracy was evaluated based on the LCS results.

- Sample Result Verification: An EPA Level IV review was performed for the sample in this data package. The sample results and MDAs reported on the sample result form were verified against the raw data and no calculation or transcription errors were noted. Any detects between the MDA and the reporting limit were qualified as estimated, "J," and

coded with "DNQ," in order to comply with the NPDES permit. Reported nondetects are valid to the MDA. Total uranium, normally reported in aqueous units, was converted to pCi/L using the conversion factor of 0.67 for naturally occurring uranium.

- 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. Following are findings associated with field QC samples:

    - Field Blanks and Equipment Rinsates: This SDG had no identified field blank or equipment rinsate samples.

    - Field Duplicates: There were no field duplicate samples identified for this SDG.

Validated Sample Result Forms 440-16846-1

Analysis Method Gamma Spec K-40 CS-137

Sample Name Outfall 019 Composite **Matrix Type:** Water **Validation Level:** IV

Lab Sample Name: 440-16846-1 **Sample Date:** 7/10/2012 11:05:00 AM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Cesium-137	10045973	-1.39	20	2.98	pCi/L	U	U	
Potassium-40	13966002	-8.61	25	34.5	pCi/L	U	U	

Analysis Method Gross Alpha

Sample Name Outfall 019 Composite **Matrix Type:** Water **Validation Level:** IV

Lab Sample Name: 440-16846-1 **Sample Date:** 7/10/2012 11:05:00 AM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Gross Alpha	12587461	0.853	3	1.33	pCi/L	U	UJ	C
Gross Beta	12587472	1.35	4	2.1	pCi/L	U	U	

Analysis Method Radium Combined

Sample Name Outfall 019 Composite **Matrix Type:** Water **Validation Level:** IV

Lab Sample Name: 440-16846-1 **Sample Date:** 7/10/2012 11:05:00 AM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Radium-226	13982633	0.126	1	0.476	pCi/L	U	U	
Radium-228	15262201	0.228	1	0.43	pCi/L	U	U	

Analysis Method Strontium 90

Sample Name Outfall 019 Composite **Matrix Type:** Water **Validation Level:** IV

Lab Sample Name: 440-16846-1 **Sample Date:** 7/10/2012 11:05:00 AM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Strontium-90	10098972	0.131	2	0.786	pCi/L	U	U	

Analysis Method Tritium

Sample Name Outfall 019 Composite **Matrix Type:** Water **Validation Level:** IV

Lab Sample Name: 440-16846-1 **Sample Date:** 7/10/2012 11:05:00 AM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Tritium	10028178	25.7	500	180	pCi/L	U	U	

Analysis Method *Uranium, Combined*

Sample Name Outfall 019 Composite **Matrix Type:** Water **Validation Level:** IV

Lab Sample Name: 440-16846-1 **Sample Date:** 7/10/2012 11:05:00 AM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Uranium, Total		0.117	1	0.016	pCi/L	J	J	DNQ

APPENDIX F

Section 4

Outfall 019 – July 10, 2012

Test America Analytical Laboratory Report

TestAmerica

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: 440-16846-1
Client Project/Site: Quarterly Outfall 019 Composite
Revision: 2

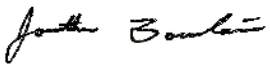
For:
MWH Americas Inc
618 Michillinda Avenue, Suite 200
Arcadia, California 91007

Attn: Bronwyn Kelly

Authorized for release by:
9/10/2012 1:44:19 PM

Jonathan Bousselaire
Project Manager I
jonathan.bousselaire@testamericainc.com

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.



Jonathan Bousselaire
Project Manager I
9/10/2012 1:44:19 PM

Table of Contents

Sample Summary

Client: MWH Americas Inc
Project/Site: Quarterly Outfall 019 Composite

TestAmerica Job ID: 440-16846-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
440-16846-1	Outfall 019 Composite	Water	07/10/12 11:05	07/10/12 17:15
440-16846-2	Trip Blank	Water	07/10/12 11:05	07/10/12 17:15

Client Sample ID: Outfall 019 Composite

Lab Sample ID: 440-16846-1

Date Collected: 07/10/12 11:05

Matrix: Water

Date Received: 07/10/12 17:15

Method: Gamma Spec K-40 CS-137 - General Sub Contract Method

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cesium-137	-1.39	U	20		pCi/L		07/17/12 00:00	07/17/12 00:00	1
Potassium-40	-8.61	U	25		pCi/L		07/17/12 00:00	07/17/12 00:00	1

Method: Gross Alpha - Gross Alpha/Beta

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gross Alpha	0.853	U	3		pCi/L		07/17/12 00:00	07/18/12 09:20	1
Gross Beta	1.35	U	4		pCi/L		07/17/12 00:00	07/18/12 09:20	1

Method: Radium Combined - RAD-226-228 combined

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Radium-226	0.126	U	1		pCi/L		08/03/12 00:00	08/03/12 14:47	1
Radium-228	0.228	U	1		pCi/L		08/03/12 00:00	08/03/12 14:47	1

Method: Strontium 90 - General Sub Contract Method

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Strontium-90	0.131	U	2		pCi/L		07/25/12 00:00	07/25/12 11:18	1

Method: Tritium - General Sub Contract Method

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tritium	25.7	U	500		pCi/L		07/29/12 00:00	07/30/12 01:05	1

Method: Uranium, Combined - General Sub Contract Method

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Uranium, Total	0.117	J	1		pCi/L		07/24/12 00:00	07/24/12 00:00	1

Client Sample ID: Trip Blank

Lab Sample ID: 440-16846-2

Date Collected: 07/10/12 11:05

Matrix: Water

Date Received: 07/10/12 17:15

Method: Gamma Spec K-40 CS-137 - General Sub Contract Method

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cesium-137	-1.36	U	20		pCi/L		07/17/12 00:00	07/26/12 00:00	1
Potassium-40	-8.04	U	25		pCi/L		07/17/12 00:00	07/26/12 00:00	1

Method: Gross Alpha - Gross Alpha/Beta

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gross Alpha	0.138	U	3		pCi/L		07/17/12 00:00	07/18/12 09:20	1
Gross Beta	-0.438	U	4		pCi/L		07/17/12 00:00	07/18/12 09:20	1

Method: Radium Combined - RAD-226-228 combined

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Radium-226	0.178	U	1		pCi/L		08/03/12 00:00	08/03/12 14:47	1
Radium-228	-0.104	U	1		pCi/L		08/03/12 00:00	08/03/12 14:47	1

Method: Strontium 90 - General Sub Contract Method

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Strontium-90	-0.104	U	2		pCi/L		07/25/12 00:00	07/25/12 11:18	1

Method: Uranium, Combined - General Sub Contract Method

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Uranium, Total	0.005	U	1		pCi/L		07/24/12 00:00	07/24/12 00:00	1

Lab Chronicle

Client: MWH Americas Inc
Project/Site: Quarterly Outfall 019 Composite

TestAmerica Job ID: 440-16846-1

Client Sample ID: Outfall 019 Composite

Lab Sample ID: 440-16846-1

Date Collected: 07/10/12 11:05

Matrix: Water

Date Received: 07/10/12 17:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Gamma Spec K-40 CS-137		1			8620	07/17/12 00:00	AK	Eber-Rich
Total/NA	Prep	General Prep		1			8620_P	07/17/12 00:00		Eber-Rich
Total/NA	Analysis	Gross Alpha		1			8620	07/18/12 09:20	DVP	Eber-Rich
Total/NA	Prep	General Prep		1			8620_P	08/01/12 00:00		Eber-Rich
Total/NA	Prep	General Prep		1			8620_P	08/03/12 00:00		Eber-Rich
Total/NA	Analysis	Radium Combined		1			8620	08/03/12 14:47	ASM	Eber-Rich
Total/NA	Prep	General Prep		1			8620_P	07/25/12 00:00		Eber-Rich
Total/NA	Analysis	Strontium 90		1			8620	07/25/12 11:18	WL	Eber-Rich
Total/NA	Prep	General Prep		1			8620_P	07/29/12 00:00		Eber-Rich
Total/NA	Analysis	Tritium		1			8620	07/30/12 01:05	WL	Eber-Rich
Total/NA	Analysis	Uranium, Combined		1			8620	07/24/12 00:00	CSS	Eber-Rich
Total/NA	Prep	General Prep		1			8620_P	07/24/12 00:00		Eber-Rich

Client Sample ID: Trip Blank

Lab Sample ID: 440-16846-2

Date Collected: 07/10/12 11:05

Matrix: Water

Date Received: 07/10/12 17:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	General Prep		1			8620_P	07/17/12 00:00		Eber-Rich
Total/NA	Analysis	Gamma Spec K-40 CS-137		1			8620	07/26/12 00:00	AK	Eber-Rich
Total/NA	Analysis	Gross Alpha		1			8620	07/18/12 09:20	DVP	Eber-Rich
Total/NA	Prep	General Prep		1			8620_P	08/01/12 00:00		Eber-Rich
Total/NA	Prep	General Prep		1			8620_P	08/03/12 00:00		Eber-Rich
Total/NA	Analysis	Radium Combined		1			8620	08/03/12 14:47	ASM	Eber-Rich
Total/NA	Prep	General Prep		1			8620_P	07/25/12 00:00		Eber-Rich
Total/NA	Analysis	Strontium 90		1			8620	07/25/12 11:18	WL	Eber-Rich
Total/NA	Analysis	Uranium, Combined		1			8620	07/24/12 00:00	CSS	Eber-Rich
Total/NA	Prep	General Prep		1			8620_P	07/24/12 00:00		Eber-Rich

Laboratory References:

Eber-Rich = Eberline - Richmond, 2030 Wright Avenue, Richmond, CA 94804

Method: Gross Alpha - Gross Alpha/Beta

Lab Sample ID: S207033-04 — **Client Sample ID: Method Blank**
Matrix: WATER — **Prep Type: Total/NA**
Analysis Batch: 8620 — **Prep Batch: 8620_P**

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cesium-137	-0.313	U	20		pCi/L		07/17/12 00:00	07/17/12 00:00	1
Potassium-40	2.92	U	25		pCi/L		07/17/12 00:00	07/17/12 00:00	1

Lab Sample ID: S207033-04 — **Client Sample ID: Method Blank**
Matrix: WATER — **Prep Type: Total/NA**
Analysis Batch: 8620 — **Prep Batch: 8620_P**

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gross Alpha	0.019	U	3		pCi/L		07/17/12 00:00	07/23/12 14:11	1
Gross Beta	0.468	U	4		pCi/L		07/17/12 00:00	07/23/12 14:11	1

Lab Sample ID: S207033-04 — **Client Sample ID: Method Blank**
Matrix: WATER — **Prep Type: Total/NA**
Analysis Batch: 8620 — **Prep Batch: 8620_P**

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Uranium, Total	0	U	1		pCi/L		07/24/12 00:00	07/24/12 00:00	1

Lab Sample ID: S207033-04 — **Client Sample ID: Method Blank**
Matrix: WATER — **Prep Type: Total/NA**
Analysis Batch: 8620 — **Prep Batch: 8620_P**

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Strontium-90	0.293	U	2		pCi/L		07/25/12 00:00	07/25/12 11:18	1

Lab Sample ID: S207033-04 — **Client Sample ID: Method Blank**
Matrix: WATER — **Prep Type: Total/NA**
Analysis Batch: 8620 — **Prep Batch: 8620_P**

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tritium	70.6	U	500		pCi/L		07/29/12 00:00	07/30/12 01:05	1

Lab Sample ID: S207033-04 — **Client Sample ID: Method Blank**
Matrix: WATER — **Prep Type: Total/NA**
Analysis Batch: 8620 — **Prep Batch: 8620_P**

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Radium-228	-0.219	U	1		pCi/L		08/01/12 00:00	08/01/12 16:12	1

Lab Sample ID: S207033-04 — **Client Sample ID: Method Blank**
Matrix: WATER — **Prep Type: Total/NA**
Analysis Batch: 8620 — **Prep Batch: 8620_P**

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Radium-226	0.271	U	1		pCi/L		08/03/12 00:00	08/03/12 14:47	1

Method: Gross Alpha - Gross Alpha/Beta (Continued)

Lab Sample ID: S207033-03 — **Client Sample ID: Lab Control Sample**
Matrix: WATER — **Prep Type: Total/NA**
Analysis Batch: 8620 — **Prep Batch: 8620_P**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cesium-137	122	127		pCi/L		104	80 - 120
Cobalt-60	104	112		pCi/L		108	80 - 120

Lab Sample ID: S207033-03 — **Client Sample ID: Lab Control Sample**
Matrix: WATER — **Prep Type: Total/NA**
Analysis Batch: 8620 — **Prep Batch: 8620_P**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Gross Alpha	37	37.3		pCi/L		101	70 - 130
Gross Beta	33.7	31.9		pCi/L		95	70 - 130

Lab Sample ID: S207033-03 — **Client Sample ID: Lab Control Sample**
Matrix: WATER — **Prep Type: Total/NA**
Analysis Batch: 8620 — **Prep Batch: 8620_P**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Uranium, Total	62.5	64.6		pCi/L		103	80 - 120

Lab Sample ID: S207033-03 — **Client Sample ID: Lab Control Sample**
Matrix: WATER — **Prep Type: Total/NA**
Analysis Batch: 8620 — **Prep Batch: 8620_P**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Strontium-90	16.9	17.2		pCi/L		102	80 - 120

Lab Sample ID: S207033-03 — **Client Sample ID: Lab Control Sample**
Matrix: WATER — **Prep Type: Total/NA**
Analysis Batch: 8620 — **Prep Batch: 8620_P**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Tritium	2180	2270		pCi/L		104	80 - 120

Lab Sample ID: S207033-03 — **Client Sample ID: Lab Control Sample**
Matrix: WATER — **Prep Type: Total/NA**
Analysis Batch: 8620 — **Prep Batch: 8620_P**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Radium-228	4.28	4.12		pCi/L		96	60 - 140

Lab Sample ID: S207033-03 — **Client Sample ID: Lab Control Sample**
Matrix: WATER — **Prep Type: Total/NA**
Analysis Batch: 8620 — **Prep Batch: 8620_P**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Radium-226	50.1	47.4		pCi/L		95	80 - 120

Method: Gross Alpha - Gross Alpha/Beta (Continued)

Lab Sample ID: S207033-05 — **Client Sample ID: OUTFALL 019 DU**
Matrix: WATER — **Prep Type: Total/NA**
Analysis Batch: 8620 — **Prep Batch: 8620_P**

Analyte	Sample Result	Sample Qualifier	Duplicate Result	Duplicate Qualifier	Unit	D	RPD	RPD Limit
Cesium-137	-1.39	U	-0.656	U	pCi/L		0	
Potassium-40	-8.61	U	10.4	U	pCi/L		0	

Lab Sample ID: S207033-05 — **Client Sample ID: OUTFALL 019 DU**
Matrix: WATER — **Prep Type: Total/NA**
Analysis Batch: 8620 — **Prep Batch: 8620_P**

Analyte	Sample Result	Sample Qualifier	Duplicate Result	Duplicate Qualifier	Unit	D	RPD	RPD Limit
Uranium, Total	0.117	J	0.115	J	pCi/L		2	

Lab Sample ID: S207033-05 — **Client Sample ID: OUTFALL 019 DU**
Matrix: WATER — **Prep Type: Total/NA**
Analysis Batch: 8620 — **Prep Batch: 8620_P**

Analyte	Sample Result	Sample Qualifier	Duplicate Result	Duplicate Qualifier	Unit	D	RPD	RPD Limit
Gross Alpha	0.853	U	0.308	U	pCi/L		0	
Gross Beta	1.35	U	1.55	U	pCi/L		0	

Lab Sample ID: S207033-05 — **Client Sample ID: OUTFALL 019 DU**
Matrix: WATER — **Prep Type: Total/NA**
Analysis Batch: 8620 — **Prep Batch: 8620_P**

Analyte	Sample Result	Sample Qualifier	Duplicate Result	Duplicate Qualifier	Unit	D	RPD	RPD Limit
Strontium-90	0.131	U	-0.032	U	pCi/L		0	

Lab Sample ID: S207033-05 — **Client Sample ID: OUTFALL 019 DU**
Matrix: WATER — **Prep Type: Total/NA**
Analysis Batch: 8620 — **Prep Batch: 8620_P**

Analyte	Sample Result	Sample Qualifier	Duplicate Result	Duplicate Qualifier	Unit	D	RPD	RPD Limit
Tritium	25.7	U	-1.78	U	pCi/L		0	

Lab Sample ID: S207033-05 — **Client Sample ID: OUTFALL 019 DU**
Matrix: WATER — **Prep Type: Total/NA**
Analysis Batch: 8620 — **Prep Batch: 8620_P**

Analyte	Sample Result	Sample Qualifier	Duplicate Result	Duplicate Qualifier	Unit	D	RPD	RPD Limit
Radium-228	0.228	U	0.244	U	pCi/L		0	

Lab Sample ID: S207033-05 — **Client Sample ID: OUTFALL 019 DU**
Matrix: WATER — **Prep Type: Total/NA**
Analysis Batch: 8620 — **Prep Batch: 8620_P**

Analyte	Sample Result	Sample Qualifier	Duplicate Result	Duplicate Qualifier	Unit	D	RPD	RPD Limit
Radium-226	0.126	U	0.72	J	pCi/L		140	

Client: MWH Americas Inc
Project/Site: Quarterly Outfall 019 Composite

TestAmerica Job ID: 440-16846-1

Subcontract

Analysis Batch: 8620

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-16846-1	Outfall 019 Composite	Total/NA	Water	Gamma Spec K-40 CS-137	8620_P
440-16846-1	Outfall 019 Composite	Total/NA	Water	Gross Alpha	8620_P
440-16846-1	Outfall 019 Composite	Total/NA	Water	Radium Combined	8620_P
440-16846-1	Outfall 019 Composite	Total/NA	Water	Strontium 90	8620_P
440-16846-1	Outfall 019 Composite	Total/NA	Water	Tritium	8620_P
440-16846-1	Outfall 019 Composite	Total/NA	Water	Uranium, Combined	8620_P
440-16846-2	Trip Blank	Total/NA	Water	Gamma Spec K-40 CS-137	8620_P
440-16846-2	Trip Blank	Total/NA	Water	Gross Alpha	8620_P
440-16846-2	Trip Blank	Total/NA	Water	Radium Combined	8620_P
440-16846-2	Trip Blank	Total/NA	Water	Strontium 90	8620_P
440-16846-2	Trip Blank	Total/NA	Water	Uranium, Combined	8620_P
S207033-03	Lab Control Sample	Total/NA	WATER	Gross Alpha	8620_P
S207033-04	Method Blank	Total/NA	WATER	Gross Alpha	8620_P
S207033-05	OUTFALL 019 DU	Total/NA	WATER	Gross Alpha	8620_P

Prep Batch: 8620_P

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-16846-1	Outfall 019 Composite	Total/NA	Water	General Prep	
440-16846-2	Trip Blank	Total/NA	Water	General Prep	
S207033-03	Lab Control Sample	Total/NA	WATER	General Prep	
S207033-04	Method Blank	Total/NA	WATER	General Prep	
S207033-05	OUTFALL 019 DU	Total/NA	WATER	General Prep	

Qualifiers

Subcontract

Qualifier	Qualifier Description
U	The RESULT is less than the MDA (Minimum Detectable Activity). If the MDA is blank, the ERROR is used as the limit.
J	The RESULT is less than the RDL (Required Detection Limit) and no U qualifier is assigned.

Glossary

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

Certification Summary

Client: MWH Americas Inc
Project/Site: Quarterly Outfall 019 Composite

TestAmerica Job ID: 440-16846-1

Laboratory: TestAmerica Irvine

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Arizona	State Program	9	AZ0671	10-13-12
California	LA Cty Sanitation Districts	9	10256	01-31-13
California	NELAC	9	1108CA	01-31-13
California	State Program	9	2706	06-30-14
Guam	State Program	9	Cert. No. 12.002r	01-23-13
Hawaii	State Program	9	N/A	01-31-13
Nevada	State Program	9	CA015312007A	07-31-12
New Mexico	State Program	6	N/A	01-31-12
Northern Mariana Islands	State Program	9	MP0002	01-31-13
Oregon	NELAC	10	4005	09-12-12
USDA	Federal		P330-09-00080	06-06-14

Login Sample Receipt Checklist

Client: MWH Americas Inc

Job Number: 440-16846-1

Login Number: 16846

List Source: TestAmerica Irvine

List Number: 1

Creator: Perez, Angel

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

APPENDIX F

Section 5

Outfall 019 – August 1 & 2, 2012

MEC^X Data Validation Report

DATA VALIDATION REPORT

Boeing SSFL NPDES

SAMPLE DELIVERY GROUP: 440-18989-1

Prepared by

MEC^X, LP
12269 East Vassar Drive
Aurora, CO 80014

I. INTRODUCTION

Task Order Title:	Boeing SSFL NPDES
Contract Task Order:	1261.100D.00
Sample Delivery Group:	440-18989-1
Project Manager:	B. Kelly
Matrix:	Water
QC Level:	IV
No. of Samples:	1
No. of Reanalyses/Dilutions:	0
Laboratory:	TestAmerica-Irvine

Table 1. Sample Identification

Client ID	Laboratory ID	Sub-Laboratory ID	Matrix	Collected	Method
Outfall 019	440-19096-1	G2H040421-001, S208035-01	Water	8/2/2012 10:00:00 AM	1613B, 180.1, 245.1, 245.1 Diss, 314.0, SM 5310B, ASTM D5174, 900. 901.1, 903.1, 904, 905, 906

II. Sample Management

No anomalies were observed regarding sample management. A portion of the samples were received at TestAmerica-Irvine above the temperature limits; however, as the samples had insufficient time to cool, no qualifications were required. Eberline did not note the temperature upon receipt; however, due to the nonvolatile nature of the analytes, no qualifications were required. The remaining samples in this SDG were received at the laboratory within the temperature limits of 4°C ±2°C. According to the case narrative for this SDG, the samples were received intact, on ice, and properly preserved, if applicable. The COCs were appropriately signed and dated by field and/or laboratory personnel. Custody seals were intact upon receipt at TestAmerica-Sacramento and Eberline. As the samples were couriered to TestAmerica-Irvine, custody seals were not required. If necessary, the client ID was added to the sample result summary by the reviewer.

Data Qualifier Reference Table

Qualifier	Organics	Inorganics
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit. The associated value is the quantitation limit or the estimated detection limit for dioxins or PCB congeners.	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit. The associated value is the sample detection limit or the quantitation limit for perchlorate only.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.	The associated value is an estimated quantity.
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."	Not applicable.
NJ	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.	Not applicable.
UJ	The analyte was not deemed above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.	The material was analyzed for, but was not detected. The associated value is an estimate and may be inaccurate or imprecise.
R	The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.	The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.

Qualification Code Reference Table

Qualifier	Organics	Inorganics
H	Holding times were exceeded.	Holding times were exceeded.
S	Surrogate recovery was outside QC limits.	The sequence or number of standards used for the calibration was incorrect
C	Calibration %RSD or %D was noncompliant.	Correlation coefficient is <0.995.
R	Calibration RRF was <0.05.	%R for calibration is not within control limits.
B	Presumed contamination as indicated by the preparation (method) blank results.	Presumed contamination as indicated by the preparation (method) or calibration blank results.
L	Laboratory Blank Spike/Blank Spike Duplicate %R was not within control limits.	Laboratory Control Sample %R was not within control limits.
Q	MS/MSD recovery was poor or RPD high.	MS recovery was poor.
E	Not applicable.	Duplicates showed poor agreement.
I	Internal standard performance was unsatisfactory.	ICP ICS results were unsatisfactory.
A	Not applicable.	ICP Serial Dilution %D were not within control limits.
M	Tuning (BFB or DFTPP) was noncompliant.	Not applicable.
T	Presumed contamination as indicated by the trip blank results.	Not applicable.
+	False positive – reported compound was not present.	Not applicable.
-	False negative – compound was present but not reported.	Not applicable.
F	Presumed contamination as indicated by the FB or ER results.	Presumed contamination as indicated by the FB or ER results.
$	Reported result or other information was incorrect.	Reported result or other information was incorrect.
?	TIC identity or reported retention time has been changed.	Not applicable.

Qualification Code Reference Table Cont.

D	The analysis with this flag should not be used because another more technically sound analysis is available.	The analysis with this flag should not be used because another more technically sound analysis is available.
P	Instrument performance for pesticides was poor.	Post Digestion Spike recovery was not within 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.
*II, *III	Unusual problems found with the data that have been 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.	Unusual problems found with the data that have been 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. Method Analyses

A. EPA METHOD 1613—Dioxin/Furans

Reviewed By: L. Calvin
Date Reviewed: September 26, 2012

The sample listed in Table 1 for this analysis was validated based on the guidelines outlined in the *MEC^X Data Validation Procedure for Dioxins and Furans (DVP-19, Rev. 0), USEPA Method 1613*, and the *National Functional Guidelines Chlorinated Dioxin/Furan Data Review* (8/02).

- Holding Times: Extraction and analytical holding times were met. The water sample was extracted and analyzed within one year of collection.

- Instrument Performance: Instrument performance criteria were met. Following are findings associated with instrument performance.

    - GC Column Performance: A Windows Defining Mix (WDM) containing the first and last eluting congeners of each descriptor and isomer specificity compounds was analyzed prior to the initial calibration sequence and at the beginning of each analytical sequence. The GC column performance in the calibrations was acceptable, with the height of the valley between the closely eluting isomers and 2,3,7,8-TCDD reported as less than 25%.

    - Mass Spectrometer Performance: The mass spectrometer performance was acceptable with the static resolving power greater than 10,000.

- Calibration: Calibration criteria were met.

    - Initial Calibration: Initial calibration criteria were met. The initial calibration was acceptable with %RSDs ≤20% for the 15 native compounds (calibration by isotope dilution) and ≤35% for the two native and all labeled compounds (calibration by internal standard). The relative retention times and ion abundance ratios were within the Method 1613 QC limits for all standards.

    - Continuing Calibration: Calibration verification (VER) consisted of a mid-level standard (CS3) analyzed at the beginning of each analytical sequence. The VERs were acceptable with the concentrations within the acceptance criteria listed in Table 6 of EPA Method 1613. The ion abundance ratios and relative retention times were within the method QC limits.

- Blanks: The method blank had reported detects reported for all target compounds and totals with the exception of isomers and totals for TCDFs, TCDDs, PeCDDs, and PeCDFs. Some method blank results were reported below the EDL, and some were reported as EMPCs; however, due to the extent of the method blank contamination, the reviewer deemed it appropriate to use all method blank results to qualify sample results. Sample

results for the individual isomer method blank contaminants were qualified as nondetected, "U," at the EDL, as the sample results were reported below the EDL. All detected total results associated with method blank contamination were also qualified as nondetected, "U," as the peaks comprising the totals in the sample were present at comparable concentrations in the method blank.

- Blank Spikes and Laboratory Control Samples: Recoveries were within the acceptance criteria listed in Table 6 of Method 1613.

- 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. Following are findings associated with field QC samples:

    - Field Blanks and Equipment Rinsates: This SDG had no identified field blank or equipment rinsate samples.

    - Field Duplicates: This SDG had no identified field duplicate samples.

- Internal Standards Performance: The labeled internal standard recoveries for the sample were within the acceptance criteria listed in Table 7 of Method 1613.

- Compound Identification: Compound identification was verified. The laboratory analyzed for polychlorinated dioxins/furans by EPA Method 1613.

- Compound Quantification and Reported Detection Limits: Compound quantitation was verified by recalculating any sample detects and a representative number of blank spike concentrations. The laboratory calculated and reported compound-specific detection limits. Any detects below the laboratory lower calibration level were qualified as estimated, "J."

  Individual isomer EMPCs qualified as nondetected for method blank contamination were not further qualified as EMPCs.

  Any detects reported between the EDL and the reporting limit (RL) were qualified as estimated, "J," and coded with "DNQ," in order to comply with the NPDES permit. Nondetects are valid to the EDL.

B. EPA METHODS 200.7 & 245.1—Zinc and Mercury

Reviewed By: P. Meeks
Date Reviewed: September 25, 2012

The sample listed in Table 1 for these analyses was validated based on the guidelines outlined in the *MEC^X Data Validation Procedure for Metals (DVP-5, Rev. 0 and DVP-21, Rev. 0), EPA Methods 200.7, 245.1*, and the *National Functional Guidelines for Inorganic Data Review* (7/02).

- Holding Times: Analytical holding times, six months for ICP metals and 28 days for mercury, were met.

- Calibration: Calibration criteria were met. Mercury initial calibration r^2 values were $\geq$0.995 and all initial and continuing calibration recoveries were within 90-110% for the ICP metals and 85-115% for mercury. CRDL/CRI recoveries were within the control limits of 70-130%.

- Blanks: Method blanks and CCBs had no detects.

- Interference Check Samples: Recoveries were within the method-established control limits. There were no target compounds present in the ICSA solution at concentrations indicative of matrix interference.

- Blank Spikes and Laboratory Control Samples: Recoveries were within laboratory-established QC limits.

- Laboratory Duplicates: No laboratory duplicate analyses were performed on the sample I this SDG.

- Matrix Spike/Matrix Spike Duplicate: MS/MSD analyses were performed on the sample in this SDG for total and dissolved zinc and mercury. Recoveries and RPDs were within laboratory-established QC limits.

- Serial Dilution: No serial dilution analyses were performed on the sample in this SDG.

- Sample Result Verification: Calculations were verified and the sample results reported on the sample result summary were verified against the raw data. No transcription errors or calculation errors were noted. When the sample results were qualified and the reviewer was able to clearly determine bias, detected results were qualified as either “J+” or “J-“; otherwise, bias was not indicated in the qualification. Any detects between the method detection limit and the reporting limit were qualified as estimated, “J,” and coded with “DNQ,” in order to comply with the NPDES permit. Reported nondetects are valid to the MDL.

- 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.

Following are findings associated with field QC samples:

- Field Blanks and Equipment Rinsates: This SDG had no identified field blank or equipment rinsate samples.

- Field Duplicates: There were no field duplicate samples identified for this SDG.

C. VARIOUS EPA METHODS — Radionuclides

Reviewed By: P. Meeks
Date Reviewed: September 25, 2012

The samples listed in Table 1 for these analyses were validated based on the guidelines outlined in the *EPA Methods 900.0, 901.1, 903.1, 904.0, 905.0, and 906.0, ASTM Method D-5174,* and the *National Functional Guidelines for Inorganic Data Review* (10/04).

- Holding Times: The tritium sample was analyzed within 180 days of collection. All remaining aliquots were preserved within the five-day holding time.

- Calibration: The laboratory calibration information included the standard certificates and applicable preparation/dilutions logs for NIST-traceability.

  The gross alpha detector efficiency was less than 20%; therefore, nondetected gross alpha in the sample was qualified as estimated, "UJ." The remaining detector efficiencies were greater than 20%.

  The tritium aliquot was spiked for efficiency determination; therefore, no calibration was necessary. All chemical yields were at least 40% and were considered acceptable. The gamma spectroscopy analytes were determined at the maximum photopeak energy. The kinetic phosphorescence analyzer (KPA) was calibrated immediately prior to the sample analysis. All KPA calibration check standard recoveries were within 90-110% and were deemed acceptable.

- Blanks: There were no analytes detected in the method blanks or the KPA CCBs.

- Blank Spikes and Laboratory Control Samples: The recoveries were within laboratory-established control limits.

- Laboratory Duplicates: Laboratory duplicate analyses were performed on the sample in this SDG for all analytes. All RPDs were within the laboratory-established control limits or within ± the 2-sigma error.

- Matrix Spike/Matrix Spike Duplicate: No MS/MSD analyses were performed for the sample in this SDG. Method accuracy was evaluated based on the LCS results.

- Sample Result Verification: An EPA Level IV review was performed for the sample in this data package. The sample results and MDAs reported on the sample result form were verified against the raw data and no calculation or transcription errors were noted. Any detects between the MDA and the reporting limit were qualified as estimated, "J," and coded with "DNQ," in order to comply with the NPDES permit. Reported nondetects are valid to the MDA. Total uranium, normally reported in aqueous units, was converted to pCi/L using the conversion factor of 0.67 for naturally occurring uranium.

- 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. Following are findings associated with field QC samples:

    - Field Blanks and Equipment Rinsates: This SDG had no identified field blank or equipment rinsate samples.

    - Field Duplicates: There were no field duplicate samples identified for this SDG.

D. VARIOUS EPA METHODS—General Minerals

Reviewed By: P. Meeks
Date Reviewed: September 25, 2012

The samples listed in Table 1 for this analysis were validated based on the guidelines outlined in the *MEC^X Data Validation Procedure for General Minerals (DVP-6, Rev. 0), EPA Methods 180.1, 314.0, and SM5310B*, and the *National Functional Guidelines for Inorganic Data Review* (7/02).

- Holding Times: Analytical holding times, 48 hours for turbidity and 28 days for TOC and perchlorate, were met.

- Calibration: Calibration criteria were met. The perchlorate and TOC initial calibration r^2 values were $\geq$0.995. A bracketing turbidity CCV was recovered at 118%; therefore, the sample turbidity result was qualified as estimated, "J." All remaining TOC initial and continuing calibration recoveries and the perchlorate ICV recovery were within 90-110%. The perchlorate IPC and ICCS were recovered within the method-established control limits of 80-120% and 75-125%, respectively. The perchlorate CCVs were within the method-established control limits of 85-115%.

- Blanks: Method blanks and CCBs had no detects.

- Blank Spikes and Laboratory Control Samples: The TOC recovery was within laboratory-established QC limits. The perchlorate recovery was within the method-established control limits of 85-115%.

- Laboratory Duplicates: A laboratory duplicate analysis was performed on the sample in this SDG for turbidity. The turbidity RPD was within the laboratory-established control limit.

- Matrix Spike/Matrix Spike Duplicate: MS/MSD analyses were performed on the sample in this SDG for TOC. The MS recovery was above the control limit at 121%; therefore, TOC detected in the sample was qualified as estimated, "J." The MSD recovery and RPD were within laboratory-established QC limits.

- Sample Result Verification: Calculations were verified and the sample results reported on the sample result summary were verified against the raw data. No transcription errors or calculation errors were noted. When the sample results were qualified and the reviewer was able to clearly determine bias, detected results were qualified as either "J+" or "J-"; otherwise, bias was not indicated in the qualification. Any detects between the method detection limit and the reporting limit were qualified as estimated, "J," and coded with "DNQ," in order to comply with the NPDES permit. Reported nondetects are valid to the MDL.

- 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. Following are findings associated with field QC samples:

    - Field Blanks and Equipment Rinsates: This SDG had no identified field blank or equipment rinsate samples.

    - Field Duplicates: There were no field duplicate samples identified for this SDG.

Validated Sample Result Forms 440-18989-1

Analysis Method 1613B

Sample Name Outfall 019 **Matrix Type:** Water **Validation Level:** IV

Lab Sample Name: 440-19096-1 **Sample Date:** 8/2/2012 10:00:00 AM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,2,3,4,6,7,8-HpCDD	35822-46-9	ND	0.000048	0.0000027	ug/L	J Q B	U	B
1,2,3,4,6,7,8-HpCDF	67562-39-4	ND	0.000048	0.0000029	ug/L	J Q B	U	B
1,2,3,4,7,8,9-HpCDF	55673-89-7	ND	0.000048	0.0000038	ug/L		U	
1,2,3,4,7,8-HxCDD	39227-28-6	ND	0.000048	0.0000037	ug/L		U	
1,2,3,4,7,8-HxCDF	70648-26-9	ND	0.000048	0.0000060	ug/L		U	
1,2,3,6,7,8-HxCDD	57653-85-7	ND	0.000048	0.0000037	ug/L		U	
1,2,3,6,7,8-HxCDF	57117-44-9	ND	0.000048	0.0000058	ug/L		U	
1,2,3,7,8,9-HxCDD	19408-74-3	ND	0.000048	0.0000030	ug/L		U	
1,2,3,7,8,9-HxCDF	72918-21-9	ND	0.000048	0.0000066	ug/L		U	
1,2,3,7,8-PeCDD	40321-76-4	ND	0.000048	0.0000071	ug/L		U	
1,2,3,7,8-PeCDF	57117-41-6	ND	0.000048	0.0000094	ug/L		U	
2,3,4,6,7,8-HxCDF	60851-34-5	ND	0.000048	0.0000052	ug/L		U	
2,3,4,7,8-PeCDF	57117-31-4	ND	0.000048	0.0000099	ug/L		U	
2,3,7,8-TCDD	1746-01-6	ND	0.0000096	0.0000049	ug/L		U	
2,3,7,8-TCDF	51207-31-9	ND	0.0000096	0.0000093	ug/L		U	
OCDD	3268-87-9	ND	0.000096	0.0000080	ug/L	J Q B	U	B
OCDF	39001-02-0	ND	0.000096	0.0000052	ug/L	J Q B	U	B
Total HpCDD	37871-00-4	ND	0.000048	0.0000027	ug/L	J Q B	U	B
Total HpCDF	38998-75-3	ND	0.000048	0.0000033	ug/L	J Q B	U	B
Total HxCDD	34465-46-8	ND	0.000048	0.0000030	ug/L		U	
Total HxCDF	55684-94-1	ND	0.000048	0.0000052	ug/L		U	
Total PeCDD	36088-22-9	ND	0.000048	0.0000071	ug/L		U	
Total PeCDF	30402-15-4	ND	0.000048	0.0000094	ug/L		U	
Total TCDD	41903-57-5	ND	0.0000096	0.0000049	ug/L		U	
Total TCDF	55722-27-5	ND	0.0000096	0.0000093	ug/L		U	

Analysis Method 180.1

Sample Name Outfall 019 **Matrix Type:** Water **Validation Level:** IV

Lab Sample Name: 440-19096-1 **Sample Date:** 8/2/2012 10:00:00 AM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Turbidity	STL00189	0.10	0.10	0.040	NTU		J	C

Analysis Method 200.7 Rev 4.4

Sample Name Outfall 019 **Matrix Type:** Water **Validation Level:** IV

Lab Sample Name: 440-19096-1 **Sample Date:** 8/2/2012 10:00:00 AM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Zinc	7440-66-6	ND	20	6.0	ug/L		U	
Zinc, Dissolved	7440-66-6	ND	20	6.0	ug/L		U	

Analysis Method 245.1

Sample Name Outfall 019 **Matrix Type:** Water **Validation Level:** IV

Lab Sample Name: 440-19096-1 **Sample Date:** 8/2/2012 10:00:00 AM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Mercury	7439-97-6	ND	0.00020	0.00010	mg/L		U	
Mercury, Dissolved	7439-97-6	ND	0.00020	0.00010	mg/L		U	

Analysis Method 314.0

Sample Name Outfall 019 **Matrix Type:** Water **Validation Level:** IV

Lab Sample Name: 440-19096-1 **Sample Date:** 8/2/2012 10:00:00 AM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Perchlorate	14797-73-0	ND	4.0	0.95	ug/L		U	

Analysis Method 5174

Sample Name OUTFALL 019 (440-1909 **Matrix Type:** WATER **Validation Level:** IV

Lab Sample Name: S208035-01 **Sample Date:**

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Uranium, Total	NA	0.132	1	0.013	pCi/L	J	J	DNQ

Analysis Method 900

Sample Name OUTFALL 019 (440-1909 **Matrix Type:** WATER **Validation Level:** IV

Lab Sample Name: S208035-01 **Sample Date:**

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Gross Alpha	12587461	-0.162	3	1.7	pCi/L	U	UJ	C
Gross Beta	12587472	3.28	4	2.49	pCi/L	J	J	DNQ

Analysis Method 901.1

Sample Name OUTFALL 019 (440-1909 **Matrix Type:** WATER **Validation Level:** IV

Lab Sample Name: S208035-01 **Sample Date:**

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Cesium-137	10045973	-1.32	20	2.87	pCi/L	U	U	
Potassium-40	13966002	8.51	25	32.8	pCi/L	U	U	

Analysis Method 903.1

Sample Name OUTFALL 019 (440-1909 **Matrix Type:** WATER **Validation Level:** IV

Lab Sample Name: S208035-01 **Sample Date:**

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Radium-226	13982633	0.285	1	0.519	pCi/L	U	U	

Analysis Method 904

Sample Name OUTFALL 019 (440-1909 **Matrix Type:** WATER **Validation Level:** IV

Lab Sample Name: S208035-01 **Sample Date:**

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Radium-228	15262201	0.212	1	0.42	pCi/L	U	U	

Analysis Method 905

Sample Name OUTFALL 019 (440-1909 **Matrix Type:** WATER **Validation Level:** IV

Lab Sample Name: S208035-01 **Sample Date:**

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Strontium-90	10098972	0.046	2	0.595	pCi/L	U	U	

Analysis Method 906

Sample Name OUTFALL 019 (440-1909 **Matrix Type:** WATER **Validation Level:** IV

Lab Sample Name: S208035-01 **Sample Date:**

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Tritium	10028178	-50.4	500	176	pCi/L	U	U	

Analysis Method SM 5310B

Sample Name Outfall 019 **Matrix Type:** Water **Validation Level:** IV

Lab Sample Name: 440-19096-1 **Sample Date:** 8/2/2012 10:00:00 AM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Total Organic Carbon	7440-44-0	0.90	1.0	0.75	mg/L	J,DX	J	Q, DNQ