APPENDIX G

Section 24

Outfall 009, February 6, 2009

MEC^X Data Validation Report

DATA VALIDATION REPORT

Boeing SSFL NPDES

SAMPLE DELIVERY GROUP: ISB0723

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:	ISB0723
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 009	ISB0723-01	D9B100262-001, 31402-001, F9B100172-001, CSB0299-001	Water	02/06/09 1410	100.2, 200.7, 200.7 (Diss), 200.8, 200.8 (Diss), 245.1, 245.1 (Diss), 525.2, 900.0, 901.1, 903.0, 904.0, 905.0, 906.0, 908.0, 1613B, SM2130B SM2540D, SM4500-O-G

II. Sample Management

No anomalies were observed regarding sample management. The samples were received at TestAmerica-Irvine and TestAmerica-St. Louis within the temperature limit of 4 ±2^{o}C. The samples were received at Vista and TestAmerica-Denver below the control limit; however, the samples were not noted to be damaged or frozen. The temperature upon receipt was not noted by EMS; however, due to the nonvolatile nature of the analyte, no qualification was required. According to the case narrative for this SDG, the samples were received intact at all laboratories. The COCs were appropriately signed and dated by field and/or laboratory personnel. As the sample was couriered to TestAmerica-Irvine and EMS, custody seals were not required. Custody seal were present and intact upon arrival at TestAmerica-Denver, TestAmerica-St. Louis, and Vista. 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.	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—Asbestos

Reviewed By: P. Meeks
Date Reviewed: March 23, 2009

The sample listed in Table 1 for this analysis was validated based on the guidelines outlined in the *MEC^X Data Validation Procedure for General Minerals (DVP-6, Rev. 0), EPA Method 600/R-93/116*, and the *National Functional Guidelines for Inorganic Data Review* (10/2004).

- Holding Times: There is no established holding time for asbestos analysis; however, the sample was analyzed within 30 days of collection.

- Calibration: The laboratory provided no documentation for the light microscope refractive index calibration.

- Blanks: A method blanks was analyzed with the site sample. Asbestos was not detected in the method blank.

- Blank Spikes and Laboratory Control Samples: Not applicable to this analysis.

- Laboratory Duplicates: No laboratory duplicate analyses were performed.

- Matrix Spike/Matrix Spike Duplicate: Not applicable to this analysis.

- Sample Result Verification: The sample result was verified against the raw data. No transcription errors were noted. Due to the turbidity of the sample, the standard sensitivity was not met. Detects reported below 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.

B. EPA METHOD 1613—Dioxin/Furans

Reviewed By: K. Shadowlight
Date Reviewed: March 19, 2009

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* (9/05).

- 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 not analyzed prior to the initial calibration sequence or at the beginning of each analytical sequence; however, the first and last eluting congeners and isomer specificity compounds were added to the midpoint of the initial calibration and to the continuing calibration standards. 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 $\leq$20% for the 16 native compounds (calibration by isotope dilution) and $\leq$35% for the one 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 no target compound detects above the EDL.

- Blank Spikes and Laboratory Control Samples: OPR 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: There were no field duplicate samples identified for this SDG.

- Internal Standards Performance: The labeled standard recoveries 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 detect between the estimated detection limit (EDL) and the reporting limit (RL) was qualified as estimated, "J," and coded with "DNQ," in order to comply with the NPDES permit. Nondetects are valid to the estimated detection limit (EDL).

C. EPA METHODS 200.7, 200.8, and 245.1—Metals and Mercury

Reviewed By: P. Meeks
Date Reviewed: March 20, 2009

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 2007, 200.8, and 245.1,* and the *National Functional Guidelines for Inorganic Data Review* (10/04).

- Holding Times: The analytical holding times, 180 days for ICP and ICP-MS metals and 28 days for mercury, were met.

- Tuning: The mass calibration and resolution checks criteria were met. All tuning solution %RSDs were ≤5%, and all masses of interest were calibrated to ≤ 0.1 amu and ≤0.9 amu at 10% peak height.

- Calibration: Calibration criteria were met. Mercury initial calibration r^2 values were ≥0.995. Initial and continuing calibration recoveries were within 90-110% for the ICP and ICP-MS metals and 85-115% for mercury. The CRI and CRA and check standards were recovered within the control limits of 70-130%.

- Blanks: Mercury was detected in the method blank at 0.036 µg/L; therefore total and dissolved mercury detected in the sample were qualified as nondetected, "U," at the reporting limit. Antimony was detected in CCBs bracketing the sample analyses at 0.284 and 0.419 µg/L; therefore both total and dissolved antimony detected in the sample were qualified as nondetected, "U," at the reporting limit. There were no other applicable detects in the method blanks or CCBs.

- Interference Check Samples: ICSA/B analyses were performed in association with the ICP and dissolved ICP-MS metals analyses only. Recoveries were within the method-established control limits. Cadmium and copper were detected at 2.0 µg/L each in the ICP-MS ICSA; however, the reviewer was unable to ascertain if the detects were due to matrix interference.

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

- Laboratory Duplicates: No laboratory duplicate analysis was 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.

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

- Internal Standards Performance: All associated sample internal standard intensities were within 60-125% of the internal standard intensities measured in the initial calibration.

- Sample Result Verification: Calculations were verified and the sample results reported on the sample result summaries were verified against the raw data. No transcription errors or calculation errors were noted. Detects reported below 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.

D. EPA METHOD 608—PCBs

Reviewed By: K. Shadowlight
Date Reviewed: March 21, 2009

The sample listed in Table 1 for this analysis was validated based on the guidelines outlined in the *MEC^X Data Validation Procedure for Organochlorine Pesticides/PCBs by GC (DVP-4, Rev. 0), EPA Methods 608*, and the *National Functional Guidelines for Organic Data Review* (2/99).

- Holding Times: Extraction and analytical holding times were met. The water sample was extracted within seven days of collection and analyzed within 40 days of extraction.

- Calibration: The initial calibration had average %RSDs of ≤10% or r^2 ≥0.995. As there were no confirmed detects, the confirmation column %Ds were not evaluated. The ICV and CCVs bracketing the sample analysis had %Ds within the QC limit of ≤15%.

- Blanks: The method blanks had no target compound detects above the MDL.

- Blank Spikes and Laboratory Control Samples: Recoveries and RPDs for the blank spike/blank spike duplicate pair were within laboratory-established QC limits.

- Surrogate Recovery: Recoveries were within laboratory-established QC limits.

- Matrix Spike/Matrix Spike Duplicate: MS/MSD analyses were not performed for the sample in this SDG. Method accuracy and precision was evaluated based on the blank spike/blank spike duplicate results.

- 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.

- Compound Identification: Compound identification was verified. The laboratory analyzed for PCBs by EPA Method 608. Review of the sample chromatograms and retention times indicated no problems with target compound identification.

- Compound Quantification and Reported Detection Limits: Compound quantification was verified from the raw data. The reporting limits were supported by the lower level of the initial calibration. Any result reported between the MDL and the reporting limit was qualified as estimated, "J," and coded with "DNQ," in order to comply with the NPDES permit. Reported nondetects are valid to the reporting limit.

E. VARIOUS EPA METHODS — Radionuclides

Reviewed By: P. Meeks
Date Reviewed: March 18, 2009

The sample listed in Table 1 for this analysis was 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. The aliquots for gross alpha and gross beta were prepared beyond the five-day holding time for unpreserved samples; therefore, the nondetected results for these analytes were qualified as estimated, "UJ." All remaining aliquots were prepared within the five-day holding time for unpreserved samples.

- 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 gross beta detector efficiency was greater than 20%.

  The tritium aliquot was spiked for efficiency determination; therefore, no calibration was necessary. The tritium detector efficiency for the sample was at least 20% and was considered acceptable. The strontium, radium-226, and radium-228 chemical yields 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.

- Blank Spikes and Laboratory Control Samples: The recoveries and the strontium-90, radium-226, and radium-228 RPDs were within laboratory-established control limits.

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

- Matrix Spike/Matrix Spike Duplicate: No matrix spike or MS/MSD analyses were performed on the sample in this SDG. Method accuracy and/or precision was evaluated based on 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. Total uranium, normally reported in aqueous units, was converted to pCi/L using a conversion factor for naturally occurring uranium. Detects reported below 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.

- 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.

F. EPA METHOD 525.2—Semivolatile Organic Compounds (SVOCs)

Reviewed By: P. Meeks
Date Reviewed: March 23, 2009

The sample listed in Table 1 for this analysis was validated based on the guidelines outlined in the *MEC^X Data Validation Procedure for Semivolatile Organics (DVP-3, Rev. 0), EPA Method 525.2*, and the *National Functional Guidelines for Organic Data Review* (10/99).

- Holding Times: Extraction and analytical holding times were met. The water sample was extracted within 24 hours of collection and analyzed within 30 days of extraction.

- GC/MS Tuning: The DFTPP tunes met the method abundance criteria. The sample was analyzed within 12 hours of the DFTPP injection time.

- Calibration: Calibration criteria were met. The diazinon initial calibration average RRF was ≥0.05 and %RSD ≤30%. The continuing calibration RRF for diazinon was ≥0.05 and recovery was within the method QC limits of 70-130%. The reviewer could not duplicate the chlorpyrifos initial calibration; however, the calculated average RRF was ≥0.05 and %RSD ≤30%. Additionally the calculated chlorpyrifos continuing calibration RRF was ≥0.05 and the recovery was within the method QC limits of 70-130%.

- Blanks: The method blank had no applicable target compound detects above the MDL.

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

- Surrogate Recovery: Recoveries were within laboratory-established QC limits.

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

- 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.

- Internal Standards Performance: The internal standard area counts and retention times were within the method control limits established by the continuing calibration standards of ±30%.

- Compound Identification: Compound identification was verified. The laboratory analyzed for chlorpyrifos and diazinon by Method 525.2. Review of the sample chromatogram, retention times, and spectra indicated no problems with target compound identification.

- Compound Quantification and Reported Detection Limits: Compound quantification was verified. The reporting limits were supported by the low point of the initial calibration and the laboratory MDLs. Due to the color of the extract, the laboratory reported the results for both target compounds from a 2× dilution. The MDLs and RLs were appropriately adjusted. Reported nondetects are valid to the reporting limit.

- Tentatively Identified Compounds: TICs were not reported by the laboratory for this analysis.

- System Performance: Review of the raw data indicated no problems with system performance.

G. VARIOUS EPA METHODS—General Minerals

Reviewed By: P. Meeks
Date Reviewed: March 18, 2009

The sample listed in Table 1 for these analyses was validated based on the guidelines outlined in the *MEC^X Data Validation Procedure for General Minerals (DVP-6, Rev. 0), Standard Methods SM2130B, SM4500-O-G, and SM2540D*, and the *National Functional Guidelines for Inorganic Data Review* (07/02).

- Holding Times: The 48-hour analytical holding time for turbidity was exceeded; therefore, the turbidity result was qualified as estimated, "J." Although dissolved oxygen (DO) is a field analysis, qualifications are not generally applied if the laboratory performs the analysis within 24 hours of sample receipt. As the dissolved oxygen analysis was performed three

days after receipt, the DO result was qualified as estimated, "J." The analytical holding time, 7 days from collection for TSS, was met.

- Calibration: Calibration criteria were met. The turbidity Initial calibration r^2 value was ≥0.995 and all check standard recoveries were considered acceptable.

- Blanks: Method blanks and CCBs had no detects.

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

- Laboratory Duplicates: A laboratory duplicate analysis was performed on the sample in this SDG for DO. 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. Both nitrate and nitrate/nitrite were analyzed at 20× dilutions in order to report the analytes within the linear range of the calibration. Any detects reported below 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.

ANALYSIS OF WATER BY TEM (EPA-600 R 94 134) EPA 100.2

LAB NO: 127043
CLIENT: Test America
2/17/2009

Laboratory I.D.	Client I.D.	FILTER MEDIA DATA			No. of G.O.	Analyzed Area, mm^2	Sample Volume (ml)
		Type	Diameter mm	Effective Area mm^2			
127043-1	ISB0723-01*	PC	47	1017	10	0.093	1

* FOR FIBERS > 10um ONLY

Outfall 009

ANALYTICAL RESULTS

Laboratory I.D.	Client I.D.	No. of Asbestos Str.			Detection Limit (MFL)	CONCENTRATION (MFL)		
		All Sizes	5-9.9um	>10um		All Sizes	5-9.9um	>10um
127043-1	ISB0723-01*	-	-	N.D.	11	-	-	N.D.

* FOR FIBERS > 10um ONLY

The analysis was carried out to the approved TEM method. This laboratory is in compliance with the quality specified by the method.

Authorized Signature

TEM-7A (2009Rev.)

PC - Polycarbonate
MCE - Mixed cellulose ester
G.O. - Grid Openings
Str.- Structures
MFL - Millions of fibers per liter

LEVEL IV

Sample ID: ISB0723-01 (Outfall 009) **EPA Method 1613**

Client Data		Sample Data		Laboratory Data			
Name:	Test America-Irvine, CA	Matrix:	Aqueous	Lab Sample:	31402-001	Date Received:	10-Feb-09
Project:	ISB0723	Sample Size:	1.05 L	QC Batch No.:	1876	Date Extracted:	11-Feb-09
Date Collected:	6-Feb-09			Date Analyzed DB-5:	13-Feb-09	Date Analyzed DB-225:	NA
Time Collected:	1410						

Analyte	Conc. (ug/L)	DL [a]	EMPC[b]	Qualifiers
2,3,7,8-TCDD	ND U	0.000000455		
1,2,3,7,8-PeCDD	ND U	0.00000123		
1,2,3,4,7,8-HxCDD	0.00000263 J/DNQ			J
1,2,3,6,7,8-HxCDD	0.00000447			J
1,2,3,7,8,9-HxCDD	0.00000350			J
1,2,3,4,6,7,8-HpCDD	0.0000877			
OCDD	0.000778			
2,3,7,8-TCDF	ND U	0.000000592		
1,2,3,7,8-PeCDF	ND	0.000000677		
2,3,4,7,8-PeCDF	ND	0.000000671		
1,2,3,4,7,8-HxCDF	ND	0.000000881		
1,2,3,6,7,8-HxCDF	ND	0.000000901		
2,3,4,6,7,8-HxCDF	ND	0.000000816		
1,2,3,7,8,9-HxCDF	ND	0.00000132		
1,2,3,4,6,7,8-HpCDF	0.0000177 J/DNQ			J
1,2,3,4,7,8,9-HpCDF	ND U	0.00000255		
OCDF	0.0000357 J/DNQ			J

	Labeled Standard	%R	LCL-UCL[d]	Qualifiers
IS	13C-2,3,7,8-TCDD	87.4	25 - 164	
	13C-1,2,3,7,8-PeCDD	79.2	25 - 181	
	13C-1,2,3,4,7,8-HxCDD	81.0	32 - 141	
	13C-1,2,3,6,7,8-HxCDD	78.1	28 - 130	
	13C-1,2,3,4,6,7,8-HpCDD	93.3	23 - 140	
	13C-OCDD	82.3	17 - 157	
	13C-2,3,7,8-TCDF	95.8	24 - 169	
	13C-1,2,3,7,8-PeCDF	79.7	24 - 185	
	13C-2,3,4,7,8-PeCDF	78.9	21 - 178	
	13C-1,2,3,4,7,8-HxCDF	85.0	26 - 152	
	13C-1,2,3,6,7,8-HxCDF	75.3	26 - 123	
	13C-2,3,4,6,7,8-HxCDF	98.4	28 - 136	
	13C-1,2,3,7,8,9-HxCDF	84.3	29 - 147	
	13C-1,2,3,4,6,7,8-HpCDF	81.4	28 - 143	
	13C-1,2,3,4,7,8,9-HpCDF	86.3	26 - 138	
	13C-OCDF	83.9	17 - 157	
CRS	37Cl-2,3,7,8-TCDD	86.7	35 - 197	

Totals		
Total TCDD	ND U	0.000000455
Total PeCDD	ND U	0.00000123
Total HxCDD	0.0000280	
Total HpCDD	0.000198	
Total TCDF	ND U	0.000000592
Total PeCDF	0.00000317 J/DNQ	
Total HxCDF	0.0000181	
Total HpCDF	0.0000421	

Footnotes

a. Sample specific estimated detection limit.

b. Estimated maximum possible concentration.

c. Method detection limit.

d. Lower control limit - upper control limit.

Analyst: JMH

Approved By: Martha M. Maier 20-Feb-2009 10:12

LEVEL IV

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
17461 Derian Avenue. Suite 100, Irvine, CA 92614 (949) 261-1022 Fax:(949) 260-3297

MWH-Pasadena/Boeing
618 Michillinda Avenue, Suite 200
Arcadia, CA 91007
Attention: Bronwyn Kelly

Project ID: Annual Outfall 009
Report Number: ISB0723

Sampled: 02/06/09
Received: 02/06/09

METALS

Analyte	Method	Batch	MDL	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: ISB0723-01 (Outfall 009 - Water) - cont.					**Sampled: 02/06/09**				
Reporting Units: mg/l									
Hardness as CaCO3	SM2340B	[CALC]	N/A	0.33	**26**	1	02/09/09	02/14/09	
Boron J/DNQ	EPA 200.7	9B09073	0.020	0.050	**0.034**	1	02/09/09	02/16/09	Ja
Calcium	EPA 200.7	9B09073	0.050	0.10	**6.4**	1	02/09/09	02/14/09	
Iron	EPA 200.7	9B09073	0.015	0.040	**3.2**	1	02/09/09	02/14/09	
Magnesium	EPA 200.7	9B09073	0.012	0.020	**2.3**	1	02/09/09	02/14/09	

LEVEL IV

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MWH-Pasadena/Boeing
618 Michillinda Avenue, Suite 200
Arcadia, CA 91007
Attention: Bronwyn Kelly

Project ID: Annual Outfall 009
Report Number: ISB0723

Sampled: 02/06/09
Received: 02/06/09

METALS

Analyte	Method	Batch	MDL	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: ISB0723-01 (Outfall 009 - Water) - cont.					**Sampled: 02/06/09**				
Reporting Units: ug/l									
Aluminum	EPA 200.7	9B09073	40	50	**2600**	1	02/09/09	02/16/09	
Arsenic U	EPA 200.7	9B09073	7.0	10	ND	1	02/09/09	02/14/09	
Antimony U/B	EPA 200.8	9B09075	0.20	2.0	**1.0**	1	02/09/09	02/10/09	Ja
Beryllium U	EPA 200.7	9B09073	0.90	2.0	ND	1	02/09/09	02/14/09	
Chromium	EPA 200.7	9B09073	2.0	5.0	**5.0**	1	02/09/09	02/14/09	
Nickel J/DNQ	EPA 200.7	9B09073	2.0	10	**5.0**	1	02/09/09	02/14/09	Ja
Selenium U	EPA 200.7	9B09073	8.0	10	ND	1	02/09/09	02/14/09	
Silver U	EPA 200.7	9B09073	6.0	10	ND	1	02/09/09	02/14/09	
Cadmium J/DNQ	EPA 200.8	9B09075	0.11	1.0	**0.18**	1	02/09/09	02/10/09	Ja
Vanadium ↓↓	EPA 200.7	9B09073	3.0	10	**6.8**	1	02/09/09	02/14/09	Ja
Zinc	EPA 200.7	9B09073	6.0	20	**22**	1	02/09/09	02/14/09	
Copper	EPA 200.8	9B09075	0.75	2.0	**6.5**	1	02/09/09	02/10/09	
Lead	EPA 200.8	9B09075	0.30	1.0	**7.5**	1	02/09/09	02/10/09	
Thallium U	EPA 200.8	9B09075	0.20	1.0	ND	1	02/09/09	02/10/09	

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Received: 02/06/09

DISSOLVED METALS

Analyte	Method	Batch	MDL	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: ISB0723-01 (Outfall 009 - Water) - cont.					**Sampled: 02/06/09**				
Reporting Units: mg/l									
Hardness as CaCO3	SM2340B-Diss	[CALC]	N/A	0.33	**21**	1	02/09/09	02/11/09	
Boron J/DNQ	EPA 200.7-Diss	9B09083	0.020	0.050	**0.026**	1	02/09/09	02/11/09	Ja
Calcium	EPA 200.7-Diss	9B09083	0.050	0.10	**5.7**	1	02/09/09	02/11/09	
Iron	EPA 200.7-Diss	9B09083	0.015	0.040	**0.43**	1	02/09/09	02/11/09	
Magnesium	EPA 200.7-Diss	9B09083	0.012	0.020	**1.7**	1	02/09/09	02/11/09	

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DISSOLVED METALS

Analyte	Method	Batch	MDL	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: ISB0723-01 (Outfall 009 - Water) - cont.					**Sampled: 02/06/09**				
Reporting Units: ug/l									
Aluminum	EPA 200.7-Diss	9B09083	40	50	**350**	1	02/09/09	02/11/09	
Arsenic U	EPA 200.7-Diss	9B09083	7.0	10	ND	1	02/09/09	02/11/09	
Antimony U/B	EPA 200.8-Diss	9B12130	0.20	2.0	**0.96**	1	02/12/09	02/13/09	Ja
Beryllium U	EPA 200.7-Diss	9B09083	0.90	2.0	ND	1	02/09/09	02/11/09	
Chromium	EPA 200.7-Diss	9B09083	2.0	5.0	ND	1	02/09/09	02/11/09	
Nickel	EPA 200.7-Diss	9B09083	2.0	10	ND	1	02/09/09	02/11/09	
Selenium	EPA 200.7-Diss	9B09083	8.0	10	ND	1	02/09/09	02/11/09	
Silver	EPA 200.7-Diss	9B09083	6.0	10	ND	1	02/09/09	02/11/09	
Cadmium	EPA 200.8-Diss	9B12130	0.11	1.0	ND	1	02/12/09	02/13/09	
Vanadium	EPA 200.7-Diss	9B09083	3.0	10	ND	1	02/09/09	02/11/09	
Zinc J/DNQ	EPA 200.7-Diss	9B09083	6.0	20	**6.3**	1	02/09/09	02/11/09	Ja
Copper	EPA 200.8-Diss	9B12130	0.75	2.0	**3.9**	1	02/12/09	02/13/09	
Lead	EPA 200.8-Diss	9B12130	0.30	1.0	**1.4**	1	02/12/09	02/13/09	
Thallium U	EPA 200.8-Diss	9B12130	0.20	1.0	ND	1	02/12/09	02/13/09	C

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Sampled: 02/06/09
Received: 02/06/09

MCAWW 245.1

Analyte	Method	Batch	MDL	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: ISB0723-01 (Outfall 009 - Water) - cont.					**Sampled: 02/06/09**				
Reporting Units: ug/L									
Mercury U/B	MCAWW 245.1	9043305	0.027	0.2	**0.071**	1	02/12/09	02/12/09	J, Ba

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Report Number: ISB0723

Sampled: 02/06/09
Received: 02/06/09

MCAWW 245.1-DISS

Analyte	Method	Batch	MDL	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: ISB0723-01 (Outfall 009 - Water) - cont.					**Sampled: 02/06/09**				
Reporting Units: ug/L									
Mercury U/B	MCAWW 245.1-DISS	9043330	0.027	0.2	**0.06**	1	02/12/09	02/12/09	J, Ba

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TOTAL PCBS (EPA 608)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: ISB0723-01 (Outfall 009 - Water) - cont.					**Sampled: 02/06/09**				
Reporting Units: ug/l									
Aroclor 1016	EPA 608	9B12048	0.24	0.47	ND	0.943	02/12/09	02/12/09	
Aroclor 1221	EPA 608	9B12048	0.24	0.47	ND	0.943	02/12/09	02/12/09	
Aroclor 1232	EPA 608	9B12048	0.24	0.47	ND	0.943	02/12/09	02/12/09	
Aroclor 1242	EPA 608	9B12048	0.24	0.47	ND	0.943	02/12/09	02/12/09	
Aroclor 1248	EPA 608	9B12048	0.24	0.47	ND	0.943	02/12/09	02/12/09	
Aroclor 1254	EPA 608	9B12048	0.24	0.47	ND	0.943	02/12/09	02/12/09	
Aroclor 1260	EPA 608	9B12048	0.24	0.47	ND	0.943	02/12/09	02/12/09	
Surrogate: Decachlorobiphenyl (45-120%)					*101 %*				

LEVEL IV

TestAmerica Irvine

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Project Manager

Outfall 009

TestAmerica Irvine

Client Sample ID: ISB0723-01

Radiochemistry

Lab Sample ID: F9B100172-001
Work Order: K603N
Matrix: WATER

Date Collected: 02/06/09 1410
Date Received: 02/10/09 0900

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Gamma Cs-137 & Hits by EPA 901.1 MOD				**pCi/L**	**Batch # 9042113**		**Yld %**
Cesium 137 U	0.3	U	7.3	20.0	14	02/11/09	02/26/09
Potassium 40 U	-80	U	510		270	02/11/09	02/26/09
Gross Alpha/Beta EPA 900				**pCi/L**	**Batch # 9043152**		**Yld %**
Gross Alpha UJ/C,H	0.96	U	0.80	3.00	1.2	02/12/09	02/16/09
Gross Beta UJ/H	0.73	U	0.67	4.00	1.0	02/12/09	02/16/09
Radium 226 by EPA 903.0 MOD				**pCi/L**	**Batch # 9041370**		**Yld % 63**
Radium (226) U	0.18	U	0.16	1.00	0.23	02/10/09	03/06/09
Radium 228 by GFPC EPA 904 MOD				**pCi/L**	**Batch # 9041371**		**Yld % 62**
Radium 228 U	0.24	U	0.33	1.00	0.55	02/10/09	03/06/09
TRITIUM (Distill) by EPA 906.0 MOD				**pCi/L**	**Batch # 9059104**		**Yld %**
Tritium U	10	U	190	500	340	02/28/09	03/06/09
SR-90 BY GFPC EPA-905 MOD				**pCi/L**	**Batch # 9041372**		**Yld % 54**
Strontium 90 U	0.36	U	0.41	3.00	0.66	02/10/09	02/26/09
Total Uranium by KPA ASTM 5174-91				**pCi/L**	**Batch # 9041382**		**Yld %**
Total Uranium U	0.228	U	0.027	1.35	0.42	02/10/09	03/08/09

LEVEL IV

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

LOT# F9B100172 **less than the sample detection limit.**

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ORGANIC COMPOUNDS BY GC/MS (EPA 525.2)

Analyte	Method	Batch	MDL	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: ISB0723-01 (Outfall 009 - Water) - cont.					**Sampled: 02/06/09**				**RL1**
Reporting Units: ug/l									
Chlorpyrifos U	EPA 525.2	C9B0701	0.21	2.0	ND	1.98	02/07/09	02/07/09	
Diazinon U	EPA 525.2	C9B0701	0.48	0.50	ND	1.98	02/07/09	02/07/09	
Surrogate: 1,3-Dimethyl-2-nitrobenzene (70-130%)					*106 %*				
Surrogate: Triphenylphosphate (70-130%)					*116 %*				
Surrogate: Perylene-d12 (70-130%)					*98 %*				

LEVEL IV

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INORGANICS

Analyte	Method	Batch	MDL	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: ISB0723-01 (Outfall 009 - Water) - cont.					**Sampled: 02/06/09**				
Reporting Units: mg/l									
Chloride *	EPA 300.0	9B06069	0.25	0.50	**5.0**	1	02/06/09	02/07/09	
Total Cyanide *	SM4500-CN-C,E	9B09095	0.0022	0.0050	ND	1	02/09/09	02/09/09	
Dissolved Oxygen J/H	SM4500-O G	9B09093	1.0	1.0	**8.5**	1	02/09/09	02/09/09	HFT
Fluoride *	SM 4500-F-C	9B16034	0.020	0.10	**0.17**	1	02/16/09	02/16/09	B
Nitrate/Nitrite-N	EPA 300.0	9B06069	0.15	0.26	**0.68**	1	02/06/09	02/07/09	
Sulfate	EPA 300.0	9B06069	0.20	0.50	**5.1**	1	02/06/09	02/07/09	
Total Dissolved Solids *	SM2540C	9B11043	10	10	**72**	1	02/11/09	02/11/09	
Total Suspended Solids	SM 2540D	9B12141	1.0	10	**27**	1	02/12/09	02/12/09	

LEVEL IV

*Analysis not validated

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INORGANICS

Analyte	Method	Batch	MDL	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: ISB0723-01 (Outfall 009 - Water) - cont.					**Sampled: 02/06/09**				
Reporting Units: NTU									
Turbidity J/H	SM2130B	9B10064	0.080	2.0	**55**	2	02/10/09	02/10/09	H-1

LEVEL IV

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