APPENDIX G

Section 21

Outfall 009 – October 6, 2010

MEC^X Data Validation Report

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DATA VALIDATION REPORT

Boeing SSFL NPDES

SAMPLE DELIVERY GROUP: ITJ0796

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:	ITJ0796
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	ITJ0796-01	140790-01	WATER	10/6/2010 8:00:00 AM	100.2

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. Custody seals were intact. 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 100.2—Asbestos

Reviewed By: P. Meeks
Date Reviewed: October 21, 2010

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 100.2*, and the *National Functional Guidelines for Inorganic Data Review* (07/02).

- Holding Times: There is no established holding time for asbestos analysis; however, the sample was ozonated and filtered within 48 hours of collection and the sample was analyzed within 30 days of collection.

- Calibration: The laboratory did not provide magnification calibration information.

- Blanks: Method blanks are not applicable to this analysis. The laboratory provided documentation indicating that all supplies used in the analysis of the sample were checked and found to be free from asbestos contamination.

- 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: An EPA Level IV review was performed for the sample in this data package. The sample result reported on the sample result form was verified against the raw data and no transcription errors were noted.

- 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: There were no field blank or equipment rinsate samples associated with this SDG.

    - Field Duplicates: There were no filed duplicate samples identified in this SDG.

Validated Sample Result Forms ITJ0796

Analysis Method TEM

Sample Name Outfall 009 **Matrix Type:** WATER **Validation Level:** IV

Lab Sample Name ITJ0796-01 **Sample Date:** 10/6/2010 8:00:00 AM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
ASBESTOS	1332-21-4	<0.4			MFL		U	

DATA VALIDATION REPORT

Boeing SSFL NPDES

SAMPLE DELIVERY GROUP: ITJ0820

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:	ITJ0820
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 (COMPOSITE)	ITJ0820	G0J110459-001, S010089-01	WATER	10/6/2010 11:50	245.1, 245.1 (Diss), ASTM 5174-91, 900.0 MOD, 901.1 MOD, 903.1 MOD, 904 MOD, 905 MOD, 906.0 MOD, 1613, SM2540D

II. Sample Management

No anomalies were observed regarding sample management. Eberline did not note the temperature upon receipt; however, due to the nonvolatile nature of the analytes, no qualifications were required. The samples in this SDG were received at the remaining laboratories 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: December 5, 2010

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 analyzed with 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 $\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 detects between the EDL and the RL for total TCDD, total HPCDD, and OCDD. Total TCDD and OCDD were reported as EMPCs in the method blank. The associated sample had no TCDD detected, and the method blank concentrations for total HpCDD and OCDD were insufficient to qualify the sample results.

- 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 a representative number of reportable sample results. All individual isomers reported as EMPCs were qualified as nondetected and the EDL raised to the level of the EMPC. Any totals including EMPC peaks were qualified as estimated, "J." Any detects reported between the estimated detection limit (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 200.8 & 245.1—Metals and Mercury

Reviewed By: P. Meeks
Date Reviewed: December 6, 2010

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 200.8 and 245.1*, and the *National Functional Guidelines for Inorganic Data Review* (7/02).

- Holding Times: The analytical holding times, 6 months for ICP-MS metals and 28 days for mercury, were met.

- Tuning: Not applicable to this method.

- Calibration: Calibration criteria were met. Mercury initial calibration r^2 values were $\geq$0.995 and all mercury initial and continuing calibration recoveries were within 85-115%. The ICP-MS initial and continuing calibration recoveries were within 90-100%. The copper 1.0

ppb CRDL recovery was above the control limit at 136%; therefore, dissolved copper detected in the sample was qualified as estimated, "J." The remaining CDRL recoveries and all mercury CRI recoveries were within the control limits of 70-130%.

- Blanks: Antimony was reported in a bracketing CCB at -0.30 µg/L; therefore, nondetected dissolved antimony was qualified as estimated, "UJ." Method blanks and CCBs had no other applicable detects.

- Interference Check Samples: Copper and cadmium were detected in the ICSA; however, the reviewer was unable to determine if the detects were due to matrix interference or to low level contamination in the ICSA standard. The ICSA and ICSAB recoveries were within 80-120%..

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

- 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.

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

- Internal Standards Performance: Not applicable to this method.

- 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: December 6, 2010

The sample 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 prepared beyond the five-day analytical holding time for unpreserved samples; therefore, all results all results, except for tritium were qualified as estimated, "UJ," for nondetects and , "J," for detects.

- Calibration: The laboratory calibration information included the standard certificates and applicable preparation/dilutions logs for NIST-traceability. The 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. 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: Radium-228 was recovered above the control limit; however, as radium-228 was not detected in the site sample, no qualifications were required. The remaining recoveries were within laboratory-established control limits.

- Laboratory Duplicates: Laboratory duplicate analyses were performed on the sample in this SDG. The RPDs were within the laboratory-established control limits or within ± the reporting limit if the result or duplicate were less than the reporting limit.

- Matrix Spike/Matrix Spike Duplicate: No matrix spike or MS/MSD analyses were performed on the sample in this SDG. Method accuracy 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. 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: December 6, 2010

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), Standard Method 2540D*, and the *National Functional Guidelines for Inorganic Data Review* (7/02).

- Holding Times: The analytical holding time, seven days from collection, was met.

- Calibration: Balance calibration logs were provided and found to be acceptable.

- Blanks: TSS was not detected in the method blank.

- Blank Spikes and Laboratory Control Samples: The recovery was within laboratory-established QC limits.

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

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

- Sample Result Verification: Calculations were verified and the sample result reported on the sample result summary was 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 ITJ0820

Analysis Method 8639

Sample Name Outfall 009 Composite **Matrix Type:** WATER **Validation Level:** IV

Lab Sample Name ITJ0820-01 **Sample Date:** 10/6/2010 7:30:00 PM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Uranium, Total		0.208	1	0.023	pCi/L	Jb	J	H, DNQ

Analysis Method 900

Sample Name Outfall 009 Composite **Matrix Type:** WATER **Validation Level:** IV

Lab Sample Name ITJ0820-01 **Sample Date:** 10/6/2010 7:30:00 PM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Gross Alpha	12587461	0.865	3	0.481	pCi/L	Jb	J	H, DNQ
Gross Beta	12587472	3.81	4	1.93	pCi/L	Jb	J	H, DNQ

Analysis Method 901.1

Sample Name Outfall 009 Composite **Matrix Type:** WATER **Validation Level:** IV

Lab Sample Name ITJ0820-01 **Sample Date:** 10/6/2010 7:30:00 PM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Cesium-137	10045973	ND	20	1.62	pCi/L	U	UJ	H
Potassium-40	13966002	ND	25	20.3	pCi/L	U	UJ	H

Analysis Method 903.1

Sample Name Outfall 009 Composite **Matrix Type:** WATER **Validation Level:** IV

Lab Sample Name ITJ0820-01 **Sample Date:** 10/6/2010 7:30:00 PM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Radium-226	13982633	0.181	1	0.619	pCi/L	U	UJ	H

Analysis Method 904

Sample Name Outfall 009 Composite **Matrix Type:** WATER **Validation Level:** IV

Lab Sample Name ITJ0820-01 **Sample Date:** 10/6/2010 7:30:00 PM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Radium-228	15262201	0.071	1	0.753	pCi/L	U	UJ	H

Analysis Method 905

Sample Name Outfall 009 Composite **Matrix Type:** WATER **Validation Level:** IV

Lab Sample Name ITJ0820-01 **Sample Date:** 10/6/2010 7:30:00 PM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Strontium-90	10098972	-0.13	2	0.879	pCi/L	U	UJ	H

Analysis Method 906

Sample Name Outfall 009 Composite **Matrix Type:** WATER **Validation Level:** IV

Lab Sample Name ITJ0820-01 **Sample Date:** 10/6/2010 7:30:00 PM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Tritium	10028178	-13.6	200	162	pCi/L	U	U	

Analysis Method EPA 200.8

Sample Name Outfall 009 Composite **Matrix Type:** Water **Validation Level:** IV

Lab Sample Name ITJ0820-01 **Sample Date:** 10/6/2010 7:30:00 PM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Antimony	7440-36-0	0.73	2.0	0.30	ug/l	J	J	DNQ
Cadmium	7440-43-9	0.18	1.0	0.10	ug/l	J	J	DNQ
Copper	7440-50-8	9.6	2.0	0.50	ug/l			
Lead	7439-92-1	11	1.0	0.20	ug/l			
Thallium	7440-28-0	ND	1.0	0.20	ug/l		U	

Analysis Method EPA 200.8-Diss

Sample Name Outfall 009 Composite **Matrix Type:** Water **Validation Level:** IV

Lab Sample Name ITJ0820-01 **Sample Date:** 10/6/2010 7:30:00 PM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Antimony, dissolved	7440-36-0	ND	2.0	0.30	ug/l		UJ	B
Cadmium, dissolved	7440-43-9	0.11	1.0	0.10	ug/l	J	J	DNQ
Copper, dissolved	7440-50-8	7.1	2.0	0.50	ug/l		J	C
Lead, dissolved	7439-92-1	7.1	1.0	0.20	ug/l			
Thallium, dissolved	7440-28-0	ND	1.0	0.20	ug/l	C	U	

Analysis Method EPA 245.1

Sample Name Outfall 009 Composite **Matrix Type:** Water **Validation Level:** IV

Lab Sample Name ITJ0820-01 **Sample Date:** 10/6/2010 7:30:00 PM

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	

Analysis Method EPA 245.1-Diss

Sample Name Outfall 009 Composite **Matrix Type:** Water **Validation Level:** IV

Lab Sample Name ITJ0820-01 **Sample Date:** 10/6/2010 7:30:00 PM

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

Analysis Method EPA-5 1613B

Sample Name Outfall 009 Composite **Matrix Type:** WATER **Validation Level:** IV

Lab Sample Name ITJ0820-01 **Sample Date:** 10/6/2010 7:30:00 PM

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	7.6e-005	0.00005	0.0000027	ug/L			
1,2,3,4,6,7,8-HpCDF	67562-39-4	2.1e-005	0.00005	0.0000018	ug/L	J	J	DNQ
1,2,3,4,7,8,9-HpCDF	55673-89-7	ND	0.00005	0.0000028	ug/L		U	
1,2,3,4,7,8-HxCDD	39227-28-6	3.5e-006	0.00005	0.0000021	ug/L	J	J	DNQ
1,2,3,4,7,8-HxCDF	70648-26-9	ND	0.00005	0.0000025	ug/L		U	
1,2,3,6,7,8-HxCDD	57653-85-7	ND	0.00005	0.0000017	ug/L	J, Q	UJ	*III
1,2,3,6,7,8-HxCDF	57117-44-9	ND	0.00005	0.0000022	ug/L		U	
1,2,3,7,8,9-HxCDD	19408-74-3	3.9e-006	0.00005	0.0000017	ug/L	J	J	DNQ
1,2,3,7,8,9-HxCDF	72918-21-9	ND	0.00005	0.0000031	ug/L		U	
1,2,3,7,8-PeCDD	40321-76-4	ND	0.00005	0.0000026	ug/L		U	
1,2,3,7,8-PeCDF	57117-41-6	ND	0.00005	0.0000053	ug/L		U	
2,3,4,6,7,8-HxCDF	60851-34-5	ND	0.00005	0.0000024	ug/L		U	
2,3,4,7,8-PeCDF	57117-31-4	ND	0.00005	0.0000058	ug/L		U	
2,3,7,8-TCDD	1746-01-6	ND	0.00001	0.000001	ug/L		U	
2,3,7,8-TCDF	51207-31-9	ND	0.00001	0.0000047	ug/L		U	
OCDD	3268-87-9	0.001	0.0001	0.000011	ug/L	B		
OCDF	39001-02-0	5.3e-005	0.0001	0.0000022	ug/L	J	J	DNQ
Total HpCDD	37871-00-4	0.00023	0.00005	0.0000027	ug/L	J, B	J	*III, DNQ
Total HpCDF	38998-75-3	5.3e-005	0.00005	0.0000018	ug/L	J		
Total HxCDD	34465-46-8	2.9e-005	0.00005	0.0000017	ug/L	J, Q	J	DNQ, *III
Total HxCDF	55684-94-1	1.5e-005	0.00005	0.0000022	ug/L	J	J	DNQ
Total PeCDD	36088-22-9	ND	0.00005	0.0000026	ug/L		U	
Total PeCDF	30402-15-4	ND	0.00005	0.0000029	ug/L		U	
Total TCDD	41903-57-5	ND	0.00001	0.000001	ug/L		U	
Total TCDF	55722-27-5	ND	0.00001	0.0000047	ug/L		U	

Analysis Method SM 2540D

Sample Name Outfall 009 Composite **Matrix Type:** Water **Validation Level:** IV

Lab Sample Name ITJ0820-01 **Sample Date:** 10/6/2010 7:30:00 PM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Total Suspended Solids	TSS	56	10	1.0	mg/l			

APPENDIX G

Section 22

Outfall 009 – October 6, 2010

Test America Analytical Laboratory Report

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TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

17461 Derian Avenue. Suite 100, Irvine, CA 92614 (949) 261-1022 Fax:(949) 260-3297

LABORATORY REPORT

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

Project: Northern Drainage-DTSC Requirement
Surface Water Sampling
Sampled: 10/06/10
Received: 10/06/10
Issued: 10/20/10 21:13

NELAP #01108CA California ELAP#2706 CSDLAC #10256 AZ #AZ0671 NV #CA01531

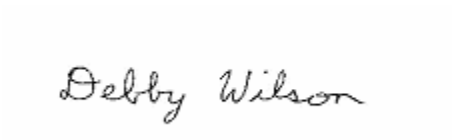
SAMPLE CROSS REFERENCE

SUBCONTRACTED: Refer to the last page for specific subcontract laboratory information included in this report.

LABORATORY ID	CLIENT ID	MATRIX
ITJ0796-01	Outfall 009	Water

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.

Reviewed By:



TestAmerica Irvine

Debby Wilson
Project Manager

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: Northern Drainage-DTSC Requirement
Surface Water Sampling
Report Number: ITJ0796

Sampled: 10/06/10
Received: 10/06/10

EPA 600 R 94 134, 100.2

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: ITJ0796-01 (Outfall 009 - Water)									
Reporting Units: MFL									
ASBESTOS	TEM	140790		NA	**<0.4**		LK	10/14/10	

TestAmerica Irvine

Debby Wilson
Project Manager

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

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

Project ID: Northern Drainage-DTSC Requirement
Surface Water Sampling
Report Number: ITJ0796

Sampled: 10/06/10
Received: 10/06/10

DATA QUALIFIERS AND DEFINITIONS

ND Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified.

RPD Relative Percent Difference

TestAmerica Irvine

Debby Wilson
Project Manager

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: Northern Drainage-DTSC Requirement
Surface Water Sampling
Report Number: ITJ0796

Sampled: 10/06/10
Received: 10/06/10

Certification Summary

Subcontracted Laboratories

EMS Laboratories *California Cert #1119, Nevada Cert #NJ003372008A*
117 W. Bellevue Drive - Pasadena, CA 91105
Method Performed: TEM
Samples: ITJ0796-01

TestAmerica Irvine

Debby Wilson
Project Manager

Test America CAO No. R4-2007-0054 **CHAIN OF CUSTODY FORM** ETJ0796 Page 1 of 1

Client Name/Address:	Project:
MWH-Arcadia 618 Michillinda Avenue, Suite 200 Arcadia, CA 91007 Test America Contact: Debby Wilson	Boeing-SSFL Northern Drainage **Surface Water Sampling – DTSC Requirement** Outfall 009
Project Manager: Bronwyn Kelly Sampler: Rick Bangan	Phone Number: (626) 568-6691 Fax Number: (626) 568-6515

Sample Description	Sample Matrix	Container Type	# of Cont.	Sampling Date/Time	Preservative	Bottle #	ANALYSIS REQUIRED: Asbestos (EPA 100.2)	Field readings / Comments
Outfall 009	W	500 ml Poly	1	10-6-2010 08:00	None	1	X	Field readings: Temp = 58° pH = 7.8 Time of readings = 08:00 **Comments**

0.0
10/8/10
4:30

Relinquished By	Date/Time	Received By	Date/Time
[signature]	10-6-2010 14:30	[signature]	10/6/10 1444
[signature]	10/6/10 1720	[signature]	10/6/10 17:20

Turn around Time: (check)
24 Hours ____ 5 Days ____
48 Hours ____ 10 Days ____
72 Hours ____ Normal X

Sample Integrity: (check)
Intact X On Ice: X
2.9°C

#116

DATE: October 15, 2010

CUSTOMER: Test America-Irvine
17461 Derian Avenue, Suite 100
Irvine, CA 92614

ATTENTION: Debby Wilson

REPORT NO: 140790

REFERENCE: ITJ0796

RECEIVED: October 8, 2010 at 0932

DATE ANALYZED: October 14, 2010

SUBJECT: ANALYSIS OF WATER SAMPLES FOR ASBESTOS BY TEM

ACCREDITATION: California Dept. of Health Services ELAP 1119

The date and times of collection, ozonation and filtration are as follows:

Sample	Date/Time of Collection	Date/Time of Ozonation	Date/Time of Filtration
ITJ0796-01	10/6/10 0800	10/8/10 1000-1300	10/8/10 1322

In the drinking water document, EPA 600 R 94 134, 100.2, samples are analyzed for fibers >10 um in length. The regulation calls for ar MCL (maximum contaminant level) of 7 MFL (million of fibers per liter) and an analytical sensitivity of 0.2 MFL.

The analytical sensitivity of 0.2 MFL was not reached due to turbidity.

The results of the analysis and the detection limit(s) are summarized on the following page(s), accompanied by the chain of custody.

Respectfully submitted,
EMS Laboratories, Inc.

B.M. Kolk
Laboratory Director
BMK/vm

Note: The results of the analysis are based upon the sample submitted to the laboratory. No representation is made regarding the sampling area other than that implied by the analytical results for the immediate vicinity of the samples analyzed as calculated from the data presented with those samples. All the analytical quality control data meet the requirement of the procedure unless otherwise indicated. Any deviation or exclusion from the test method is noted in this cover letter. Unless otherwise noted in this cover letter the samples wre received properly packaged, clearly identified and intact.

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

LAB NO: 140790
CUSTOMER: Test America-Irvine
10/14/2010

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			
140790-01	ITJ0796-01*	PC	47	1017	10	0.094	30

* FOR FIBERS > 10um ONLY

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
140790-01	ITJ0796-01*	-	-	N.D.	0.4	-	-	<0.4

* 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

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

TEM-7A (2009Rev.)

Analysis of Water by Transmission Electron Microscopy
(EPA-600 R 94 134) EPA 100.2

EMS No. 140790 **Customer** Test America-Irvine

Sample No. ITJ0796-01 **Date Analyzed** 10/14/2010

Fibers > 10 µm in length (chrysotile)	BDL*	MFL
Mass (chrysotile)	0	ug/L
More/Less than 5 Fibers in Sample (chrysotile)	LESS	
Poisson 95% Confidence Interval	0 to 1.3	MFL
Detection Limit	0.4	MFL

* BDL : Below Detection Limit; MFL: Million Fibers per Liter

Particle Size Distribution (Chrysotile)

Particle Length - Microns

O -0.49	0.50 - 0.99	1.00 - 1.49	1.50 - 1.99	2.00 - 2.49	2.5 - 4.99	5.00 - 9.99	10 & UP
0	0	0	0	0	0	0	0

Particle Width - Microns

O - .04	.05 - .09	.1 - .14	.15 - .19	.2 - .24	.25 - .49	.50 - .99	1 & UP
0	0	0	0	0	0	0	0

Aspect Ratio L/W

0 - 9.9	10 - 19.9	20 - 29.9	30 - 39.9	40 - 49.9	50 - 99	100 - 199	200 & UP
0	0	0	0	0	0	0	0

TEM 7B (1994)

TEM ASBESTOS ANALYSIS

Client: Test America
Sample No.: LTJ0796-01
EMS Lab No.: 140790
Page ____ of ____

RECEIVING

TYPE OF SAMPLE
Air ☐ Water ☒ Soil ☐ Bulk ☐ Other ____

METHOD OF ANALYSIS
EPA 600/4-83-043 ☒ ISO ☐

LEVEL OF ANALYSIS
Chrysotile: CD-CDQ
Amphibole: ADQ-AZ

ASPECT RATIO
3:1 ☐ 5:1 ☐
EPA/600/R-94/134 100.1 ☐ 100.2 ☐

LENGTHS
All Sizes (EPA) ☐
(µm) ≥0.5 ☐
≥1.0 ☐
≥5.0 ☐
≥10.0 ☒
PCM Range* ☐
*(≥0.25 µm width ≥5.0 µm length)

FILTER TYPE / AREA (mm±)
MCE ☐ 385 ☐
PC ☒ 314 ☐
MCN ☐ 1017 ☒
Other ____

PORE SIZE
0.45 µm ☐ 0.8 µm ☐
0.1 µm ☐ 0.22 µm ☐
Other 0.4

G.O. Area (mm²) 0.0094
No. of G.O. to Analyze 10

PREP

DIRECT PREP ☐
INDIRECT PREP ☐

10-8-10
Ozonated to 1Pm.
Sonicated 105-120Pm
filtered 1:22

Volume ____ liters
Working Volume 30 ml
Weight ____ grams
Ashed Area ____ %
Prepared By Rs
Date 10-13-10

ANALYSIS

MICROSCOPE
H600A - Serial No. 542-36-01 ☒
H600B - Serial No. 542-05-06 ☐
H600C - Serial No. 542-24-03 ☐

ENERGY DISPERSIVE X-RAY SYSTEM
Kevex - Model No. 3200-0106-0365 ☒
Kevex - Model No. 3600-0206-0146 ☐ Quantum System

Grid Address: A
Screen Magnification: 9300 X
Camera Constant: 294
Accelerating Voltage: 100KV
Beam Current: 10 µA
K-Factor:
Analyst [illegible] Date 10-14-10

Grid Opening	Structure Number	Structure	Width	Length	NAM	TM	CM	CD	CQ	CMQ	CDQ	UF	AD	AX	ADX	AQ	ADQ	AZQ	AZZ	Na	Mg	Si	Ca	Fe	Comments
F4	NSD																								
H4	NSD																								
E2	NSD																								
E4	NSD																								

(Dimensions (mm): Width, Length; Fiber Classification: NAM–AZZ; EDS Analysis: Na–Fe)

OBSERVATIONS:

Clean ☐
Debris: ☒ Very Light ☐ Light ☐ Moderate ☒ Heavy ☐ Very Heavy ☐
Gypsum: ☐ Very Light ☐ Light ☐ Moderate ☐ Heavy ☐ Very Heavy ☐
Condition of the Grid: ☒ Good ☒ Scrappy ☐ Undissolved Filter ☐ Folded ☐

TEM - 1A (1-08)

TEM ASBESTOS ANALYSIS

Client Test America
Sample No. 01

EMS Lab No. 140790
Page _____ of _____

RECEIVING

Page 5 of 9

ANALYSIS

Grid Address: B
Screen Magnification: 9200 X
Camera Constant: 29.8
Accelerating Voltage: 100KV
Beam Current: 10 µA
K-Factor: 1.5
Analyst [signature] Date 10-14-10

MICROSCOPE

H600A - Serial No. 542-36-01 ☒
H600B - Serial No. 542-05-06 ☐
H600C - Serial No. 542-24-03 ☐

ENERGY DISPERSIVE X-RAY SYSTEM

Kevex - Model No. 3200-0106-0365 ☒
Kevex - Model No. 3600-0206-0146 Quantum System ☐

Grid Opening	Structure Number	Structure	Dimensions (mm) Width	Dimensions (mm) Length	Fiber Classification NAM	TM	CM	CD	CQ	CMQ	CDQ	UF	AD	AX	ADX	AQ	ADQ	AZQ	AZZ	EDS Analysis Na	Mg	Si	Ca	Fe	Comments
B3	NSD																								
F6	NSD																								
G34	NSD																								

OBSERVATIONS:

Clean ☐
Debris: ☒ Very Light ☐ Light ☐ Moderate ☒ Heavy ☐ Very Heavy ☐
Gypsum: ☐ Very Light ☐ Light ☐ Moderate ☐ Heavy ☐ Very Heavy ☐
Condition of the Grid: ☒ Good ☒ Scrappy ☐ Undissolved Filter ☐ Folded ☐

TEM - 1B (1-08)

TEM ASBESTOS ANALYSIS

Client Test Amera
Sample No. 01

EMS Lab No. 140790
Page _____ of _____

RECEIVING

Page 0 of 9

ANALYSIS

MICROSCOPE

H600A - Serial No. 542-36-01 ☒
H600B - Serial No. 542-05-06 ☐
H600C - Serial No. 542-24-03 ☐

Grid Address: C
Screen Magnification: 9300 X
Camera Constant: 25.8
Accelerating Voltage: 100KV
Beam Current: 10 µA
K-Factor: 1.5

ENERGY DISPERSIVE X-RAY SYSTEM

Kevex - Model No. 3200-0106-0365 ☐
Kevex - Model No. 3600-0206-0146 Quantum System ☐

Analyst Work Date 10-14-10

Grid Opening	Structure Number	Structure	Dimensions (mm) Width	Dimensions (mm) Length	Fiber Classification NAM	TM	CM	CD	CQ	CMQ	CDQ	UF	AD	AX	ADX	AQ	ADQ	AZQ	AZZ	EDS Analysis Na	Mg	Si	Ca	Fe	Comments
33 NSD																									
34 NSD																									
46 NSD																									

TEM - 1B (1-08)

OBSERVATIONS:

Clean ☐
Debris: ☒ Very Light ☐ Light ☐ Moderate ☒ Heavy ☐ Very Heavy ☐
Gypsum: ☐ Very Light ☐ Light ☐ Moderate ☐ Heavy ☐ Very Heavy ☐
Condition of the Grid: ☒ Good ☒ Scrappy ☐ Undissolved Filter ☐ Folded ☐

Analysis of Water by Transmission Electron Microscopy
(EPA-600/4-83-043)

EMS No.	140790	**Date Analyzed**	10/14/2010
Customer	Test America-Irvine		
Sample No.	EMS BLANK		

Fibers (chrysotile)	ND	MFL
> 5 Micron length (chrysotile)	ND	MFL
Mass (chrysotile)	0	ug/L
More/Less than 5 Fibers in Sample (chrysotile)	LESS	
Sensitivity Level	0.01	MFL

Particle Size Distribution (Chrysotile)

Particle Length - Microns

O -0.49	0.50 - 0.99	1.00 - 1.49	1.50 - 1.99	2.00 - 2.49	2.5 & UP
0	0	0	0	0	0

Particle Width - Microns

O - .04	.05 - .09	.1 - .14	.15 - .19	.2 - .24	.25 & UP
0	0	0	0	0	0

Aspect Ratio L/W

0 - 9.9	10 - 19.9	20 - 29.9	30 - 39.9	40 - 49.9	50 & UP
0	0	0	0	0	0

TEM ASBESTOS ANALYSIS

Client EMS BLANK EMS Lab No. 140789
Sample No. 10-8-10 Page _____ of _____

RECEIVING

TYPE OF SAMPLE
Air ☐ Water ☑
Soil ☐ Bulk ☐
Other _____

METHOD OF ANALYSIS
EPA 600/4-83-043 ☑ ISO ☐

LEVEL OF ANALYSIS
Chrysotile DCOd
Amphibole ND

ASPECT RATIO
3:1 ☑ 5:1 ☐

EPA/600/R-94/134 100.1 ☐ 100.2 ☐

LENGTHS
All Sizes (EPA) ☑
(μm) ≥0.5 ☐
≥1.0 ☐
≥5.0 ☐
≥10.0 ☐
PCM Range* ☐
*(≥0.25 μm width ≥5.0 μm length)

FILTER TYPE / AREA (mm±)
MCE ☐ 385 ☐
PC ☑ 314 ☐
MCN ☐ 1017 ☑
Other _____

PORE SIZE
0.45 μm ☐ 0.8 μm ☐
0.1 μm ☑ 0.22 μm ☐
Other _____

G.O. Area (mm²) 0.0 094
No. of G.O. to Analyze 20

PREP

DIRECT PREP ☐
INDIRECT PREP ☐

Volume _____ liters
Working Volume 500 ml
Weight _____ grams
Ashed Area _____ %
10-14-10
Prepared By [illegible]
Date 10-14-10

ANALYSIS

MICROSCOPE
H600A - Serial No. 542-36-01 ☑
H600B - Serial No. 542-05-06 ☐
H600C - Serial No. 542-24-03 ☐

ENERGY DISPERSIVE X-RAY SYSTEM
Kevex - Model No. 3200-0106-0365 ☑
Kevex - Model No. 3600-0206-0146 ☐
Quantum System

Grid Address: A
Screen Magnification: 19300 X
Camera Constant: 29.8
Accelerating Voltage: 100KV
Beam Current: 10 μA
K-Factor: 1.5
Analyst [illegible] Date 10-14-10

Grid Opening	Structure Number	Structure	Dimensions (mm) Width	Dimensions (mm) Length	Fiber Classification NAM	TM	CM	CD	CQ	CMQ	CDQ	UF	AD	AX	ADX	AQ	ADQ	AZQ	AZZ	EDS Analysis Na	Mg	Si	Ca	Fe	Comments
B33	NSD																								
B36	NSD																								
C33	NSD																								
C36	NSD																								
E33	NSD																								
E36	NSD																								
F33	NSD																								
F36	NSD																								
G33	NSD																								
G36	NSD																								

TEM - 1A (1-08)

OBSERVATIONS:

Clean ☐
Debris: ☑ Very Light ☑ Light ☐ Moderate ☐ Heavy ☐ Very Heavy ☐
Gypsum: ☐ Very Light ☐ Light ☐ Moderate ☐ Heavy ☐ Very Heavy ☐
Condition of the Grid: ☑ Good ☑ Scrappy ☐ Undissolved Filter ☐ Folded ☐

TEM ASBESTOS ANALYSIS

Client EMS BLANK EMS Lab No. 140789
Sample No. 10-8-10 Page _____ of _____

RECEIVING

ANALYSIS

Grid Address: B
Screen Magnification: 1900 X
Camera Constant: 29.8
Accelerating Voltage: 100KV
Beam Current: 10 µA
K-Factor: 1.5
Analyst [illegible] Date 10-14-10

MICROSCOPE
- H600A - Serial No. 542-36-01 ☑
- H600B - Serial No. 542-05-06 ☐
- H600C - Serial No. 542-24-03 ☐

ENERGY DISPERSIVE X-RAY SYSTEM
- Kevex - Model No. 3200-0106-0365 ☑
- Kevex - Model No. 3600-0206-0146 Quantum System ☐

Grid Opening	Structure Number	Structure	Dimensions (mm) Width	Dimensions (mm) Length	Fiber Classification NAM	TM	CM	CD	CQ	CMQ	CDQ	UF	AD	AX	ADX	AQ	ADQ	AZQ	AZZ	EDS Analysis Na	Mg	Si	Ca	Fe	Comments
B33	NSD																								
B36	NSD																								
C33	NSD																								
C36	NSD																								
E33	NSD																								
E36	NSD																								
F33	NSD																								
F36	NSD																								
G33	NSD																								
F44	NSD																								

OBSERVATIONS:

Clean ☐					
Debris: ☑	Very Light ☑	Light ☐	Moderate ☐	Heavy ☐	Very Heavy ☐
Gypsum: ☐	Very Light ☐	Light ☐	Moderate ☐	Heavy ☐	Very Heavy ☐
Condition of the Grid: ☐	Good ☑	Scrappy ☐	Undissolved Filter ☐	Folded ☐	

TEM - 1B (1-08)

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

17461 Derian Avenue. Suite 100, Irvine, CA 92614 (949) 261-1022 Fax:(949) 260-3297

LABORATORY REPORT

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

Project: Semi-Annual Outfall 009 2010
Semi-Annual Outfall 009

Sampled: 10/06/10
Received: 10/07/10
Issued: 12/02/10 10:22

NELAP #01108CA California ELAP#2706 CSDLAC #10256 AZ #AZ0671 NV #CA01531

SAMPLE CROSS REFERENCE

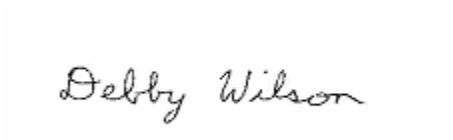
SUBCONTRACTED: Refer to the last page for specific subcontract laboratory information included in this report.

ADDITIONAL INFORMATION: WATER, 1613B, Dioxins/Furans with Totals
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.
Revised report to include analyst initials for radchem data.

LABORATORY ID	CLIENT ID	MATRIX
ITJ0820-01	Outfall 009 Composite	Water
ITJ0820-02	Outfall 009 Grab	Water

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.

Reviewed By:



TestAmerica Irvine

Debby Wilson
Project Manager

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: Semi-Annual Outfall 009 2010
Semi-Annual Outfall 009
Report Number: ITJ0820

Sampled: 10/06/10
Received: 10/07/10

HEXANE EXTRACTABLE MATERIAL

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: ITJ0820-02 (Outfall 009 Grab - Water)									
Reporting Units: mg/l									
Hexane Extractable Material (Oil & Grease)	EPA 1664A	10J2232	1.3	4.8	ND	1	DA	10/20/10	

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Debby Wilson
Project Manager

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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: Semi-Annual Outfall 009 2010
Semi-Annual Outfall 009
Report Number: ITJ0820

Sampled: 10/06/10
Received: 10/07/10

METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: ITJ0820-01 (Outfall 009 Composite - Water)									
Reporting Units: ug/l									
Mercury	EPA 245.1	10J1223	0.10	0.20	ND	1	DB	10/12/10	
Antimony	EPA 200.8	10J1993	0.30	2.0	**0.73**	1	NH	10/19/10	J
Cadmium	EPA 200.8	10J1993	0.10	1.0	**0.18**	1	NH	10/19/10	J
Copper	EPA 200.8	10J1993	0.50	2.0	**9.6**	1	NH	10/19/10	
Lead	EPA 200.8	10J1993	0.20	1.0	**11**	1	NH	10/19/10	
Thallium	EPA 200.8	10J1993	0.20	1.0	ND	1	NH	10/19/10	

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Debby Wilson
Project Manager

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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

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DISSOLVED METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: ITJ0820-01 (Outfall 009 Composite - Water) - cont.									
Reporting Units: ug/l									
Mercury	EPA 245.1-Diss	10J1224	0.10	0.20	ND	1	DB	10/12/10	
Antimony	EPA 200.8-Diss	10J1068	0.30	2.0	ND	1	RDC	10/16/10	
Cadmium	EPA 200.8-Diss	10J1068	0.10	1.0	**0.11**	1	NH	10/13/10	J
Copper	EPA 200.8-Diss	10J1068	0.50	2.0	**7.1**	1	NH	10/13/10	
Lead	EPA 200.8-Diss	10J1068	0.20	1.0	**7.1**	1	FR	10/14/10	
Thallium	EPA 200.8-Diss	10J1068	0.20	1.0	ND	1	NH	10/13/10	C

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Debby Wilson
Project Manager

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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

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INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: ITJ0820-01 (Outfall 009 Composite - Water) - cont.									
Reporting Units: mg/l									
Chloride	EPA 300.0	10J0693	0.25	0.50	**2.0**	1	KS	10/08/10	
Nitrate/Nitrite-N	EPA 300.0	10J0693	0.15	0.26	**0.77**	1	KS	10/08/10	
Sulfate	EPA 300.0	10J0693	0.20	0.50	**3.2**	1	KS	10/08/10	
Total Dissolved Solids	SM2540C	10J1321	1.0	10	**27**	1	NN	10/13/10	
Total Suspended Solids	SM 2540D	10J1131	1.0	10	**56**	1	DK	10/11/10	
Sample ID: ITJ0820-01 (Outfall 009 Composite - Water)									
Reporting Units: ug/l									
Perchlorate	EPA 314.0	10J0794	0.90	4.0	ND	1	mn	10/08/10	
Total Cyanide	SM4500CN-E	10J2189	2.2	5.0	ND	1	HH	10/19/10	

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Debby Wilson
Project Manager

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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

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8639

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: ITJ0820-01 (Outfall 009 Composite - Water) - cont.									
Reporting Units: pCi/L									
Uranium, Total	8639	8639	0.023	1	**0.208**	1	CSS	10/26/10	Jb

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Project Manager

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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
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900

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: ITJ0820-01 (Outfall 009 Composite - Water) - cont.									
Reporting Units: pCi/L									
Gross Alpha	900	8639	0.481	3	**0.865**	1	DVP	10/26/10	Jb
Gross Beta	900	8639	1.93	4	**3.81**	1	DVP	10/26/10	Jb

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Debby Wilson
Project Manager

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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
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901.1

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: ITJ0820-01 (Outfall 009 Composite - Water) - cont.									
Reporting Units: pCi/L									
Cesium-137	901.1	8639	1.62	20	ND	1	CSS	11/04/10	U
Potassium-40	901.1	8639	20.3	25	ND	1	CSS	11/04/10	U

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Debby Wilson
Project Manager

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
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903.1

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: ITJ0820-01 (Outfall 009 Composite - Water) - cont.									
Reporting Units: pCi/L									
Radium-226	903.1	8639	0.619	1	**0.181**	1	TM	10/30/10	U

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Debby Wilson
Project Manager

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

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904

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: ITJ0820-01 (Outfall 009 Composite - Water) - cont.									
Reporting Units: pCi/L									
Radium-228	904	8639	0.753	1	**0.071**	1	TAC	11/04/10	U

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Debby Wilson
Project Manager

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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

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905

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: ITJ0820-01 (Outfall 009 Composite - Water) - cont.									
Reporting Units: pCi/L									
Strontium-90	905	8639	0.879	2	-0.13	1	WL	10/26/10	U

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Debby Wilson
Project Manager

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

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906

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: ITJ0820-01 (Outfall 009 Composite - Water) - cont.									
Reporting Units: pCi/L									
Tritium	906	8639	162	200	-13.6	1	JO	11/05/10	U

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Debby Wilson
Project Manager

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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
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EPA-5 1613Bx

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: ITJ0820-01 (Outfall 009 Composite - Water) - cont.									
Reporting Units: ug/L									
1,2,3,4,6,7,8-HpCDD	EPA-5 1613B	286459	0.0000027	0.00005	**7.6e-005**	1.02	SK	10/16/10	
1,2,3,4,6,7,8-HpCDF	EPA-5 1613B	286459	0.0000018	0.00005	**2.1e-005**	1.02	SK	10/16/10	J
1,2,3,4,7,8,9-HpCDF	EPA-5 1613B	286459	0.0000028	0.00005	ND	1.02	SK	10/16/10	
1,2,3,4,7,8-HxCDD	EPA-5 1613B	286459	0.0000021	0.00005	**3.5e-006**	1.02	SK	10/16/10	J
1,2,3,4,7,8-HxCDF	EPA-5 1613B	286459	0.0000025	0.00005	ND	1.02	SK	10/16/10	
1,2,3,6,7,8-HxCDD	EPA-5 1613B	286459	0.0000017	0.00005	**3e-006**	1.02	SK	10/16/10	J, Q
1,2,3,6,7,8-HxCDF	EPA-5 1613B	286459	0.0000022	0.00005	ND	1.02	SK	10/16/10	
1,2,3,7,8,9-HxCDD	EPA-5 1613B	286459	0.0000017	0.00005	**3.9e-006**	1.02	SK	10/16/10	J
1,2,3,7,8,9-HxCDF	EPA-5 1613B	286459	0.0000031	0.00005	ND	1.02	SK	10/16/10	
1,2,3,7,8-PeCDD	EPA-5 1613B	286459	0.0000026	0.00005	ND	1.02	SK	10/16/10	
1,2,3,7,8-PeCDF	EPA-5 1613B	286459	0.0000053	0.00005	ND	1.02	SK	10/16/10	
2,3,4,6,7,8-HxCDF	EPA-5 1613B	286459	0.0000024	0.00005	ND	1.02	SK	10/16/10	
2,3,4,7,8-PeCDF	EPA-5 1613B	286459	0.0000058	0.00005	ND	1.02	SK	10/16/10	
2,3,7,8-TCDD	EPA-5 1613B	286459	0.000001	0.00001	ND	1.02	SK	10/16/10	
2,3,7,8-TCDF	EPA-5 1613B	286459	0.0000047	0.00001	ND	1.02	SK	10/16/10	
OCDD	EPA-5 1613B	286459	0.000011	0.0001	**0.001**	1.02	SK	10/16/10	B
OCDF	EPA-5 1613B	286459	0.0000022	0.0001	**5.3e-005**	1.02	SK	10/16/10	J
Total HpCDD	EPA-5 1613B	286459	0.0000027	0.00005	**0.00023**	1.02	SK	10/16/10	J, B
Total HpCDF	EPA-5 1613B	286459	0.0000018	0.00005	**5.3e-005**	1.02	SK	10/16/10	J
Total HxCDD	EPA-5 1613B	286459	0.0000017	0.00005	**2.9e-005**	1.02	SK	10/16/10	J, Q
Total HxCDF	EPA-5 1613B	286459	0.0000022	0.00005	**1.5e-005**	1.02	SK	10/16/10	J
Total PeCDD	EPA-5 1613B	286459	0.0000026	0.00005	ND	1.02	SK	10/16/10	
Total PeCDF	EPA-5 1613B	286459	0.0000029	0.00005	ND	1.02	SK	10/16/10	
Total TCDD	EPA-5 1613B	286459	0.000001	0.00001	ND	1.02	SK	10/16/10	
Total TCDF	EPA-5 1613B	286459	0.0000047	0.00001	ND	1.02	SK	10/16/10	
Surrogate: 13C-1,2,3,4,6,7,8-HpCDD (23-140%)					*97 %*				
Surrogate: 13C-1,2,3,4,6,7,8-HpCDF (28-143%)					*84 %*				
Surrogate: 13C-1,2,3,4,7,8,9-HpCDF (26-138%)					*77 %*				
Surrogate: 13C-1,2,3,4,7,8-HxCDD (32-141%)					*56 %*				
Surrogate: 13C-1,2,3,4,7,8-HxCDF (26-152%)					*74 %*				
Surrogate: 13C-1,2,3,6,7,8-HxCDD (28-130%)					*86 %*				
Surrogate: 13C-1,2,3,6,7,8-HxCDF (26-123%)					*98 %*				
Surrogate: 13C-1,2,3,7,8,9-HxCDF (29-147%)					*89 %*				
Surrogate: 13C-1,2,3,7,8-PeCDD (25-181%)					*70 %*				
Surrogate: 13C-1,2,3,7,8-PeCDF (24-185%)					*62 %*				
Surrogate: 13C-2,3,4,6,7,8-HxCDF (28-136%)					*92 %*				
Surrogate: 13C-2,3,4,7,8-PeCDF (21-178%)					*61 %*				
Surrogate: 13C-2,3,7,8-TCDD (25-164%)					*72 %*				
Surrogate: 13C-2,3,7,8-TCDF (24-169%)					*63 %*				
Surrogate: 13C-OCDD (17-157%)					*78 %*				
Surrogate: 37Cl4-2,3,7,8-TCDD (35-197%)					*77 %*				

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Debby Wilson
Project Manager

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
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SHORT HOLD TIME DETAIL REPORT

	Hold Time (in days)	Date/Time Sampled	Date/Time Received	Date/Time Extracted	Date/Time Analyzed
Sample ID: Outfall 009 Composite (ITJ0820-01) - Water					
EPA 300.0	2	10/06/2010 19:30	10/07/2010 18:40	10/07/2010 22:00	10/08/2010 02:01
Filtration	1	10/06/2010 19:30	10/07/2010 18:40	10/08/2010 23:00	10/08/2010 23:00

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Debby Wilson
Project Manager

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METHOD BLANK/QC DATA

HEXANE EXTRACTABLE MATERIAL

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 10J2232 Extracted: 10/20/10										
Blank Analyzed: 10/20/2010 (10J2232-BLK1)										
Hexane Extractable Material (Oil & Grease)	ND	5.0	mg/l							
LCS Analyzed: 10/20/2010 (10J2232-BS1)										**MNR1**
Hexane Extractable Material (Oil & Grease)	19.3	5.0	mg/l	20.0		96	78-114			
LCS Dup Analyzed: 10/20/2010 (10J2232-BSD1)										
Hexane Extractable Material (Oil & Grease)	19.0	5.0	mg/l	20.0		95	78-114	2	11	

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Project Manager

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METHOD BLANK/QC DATA

METALS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 10J1223 Extracted: 10/12/10										
Blank Analyzed: 10/12/2010 (10J1223-BLK1)										
Mercury	ND	0.20	ug/l							
LCS Analyzed: 10/12/2010 (10J1223-BS1)										
Mercury	7.86	0.20	ug/l	8.00		98	85-115			
Matrix Spike Analyzed: 10/12/2010 (10J1223-MS1)					**Source: ITJ0896-01**					
Mercury	7.79	0.20	ug/l	8.00	ND	97	70-130			
Matrix Spike Dup Analyzed: 10/12/2010 (10J1223-MSD1)					**Source: ITJ0896-01**					
Mercury	7.63	0.20	ug/l	8.00	ND	95	70-130	2	20	
Batch: 10J1993 Extracted: 10/18/10										
Blank Analyzed: 10/19/2010 (10J1993-BLK1)										
Antimony	ND	2.0	ug/l							
Cadmium	ND	1.0	ug/l							
Copper	ND	2.0	ug/l							
Lead	ND	1.0	ug/l							
Thallium	ND	1.0	ug/l							
LCS Analyzed: 10/19/2010 (10J1993-BS1)										
Antimony	83.3	2.0	ug/l	80.0		104	85-115			
Cadmium	80.3	1.0	ug/l	80.0		100	85-115			
Copper	81.3	2.0	ug/l	80.0		102	85-115			
Lead	82.5	1.0	ug/l	80.0		103	85-115			
Thallium	81.4	1.0	ug/l	80.0		102	85-115			

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Project Manager

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METHOD BLANK/QC DATA

METALS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 10J1993 Extracted: 10/18/10										
Matrix Spike Analyzed: 10/19/2010 (10J1993-MS1)					**Source: ITJ1263-01**					
Antimony	82.8	2.0	ug/l	80.0	ND	104	70-130			
Cadmium	79.8	1.0	ug/l	80.0	ND	100	70-130			
Copper	81.4	2.0	ug/l	80.0	4.68	96	70-130			
Lead	84.2	1.0	ug/l	80.0	1.73	103	70-130			
Thallium	82.2	1.0	ug/l	80.0	ND	103	70-130			
Matrix Spike Analyzed: 10/19/2010 (10J1993-MS2)					**Source: ITJ0820-01**					
Antimony	62.6	2.0	ug/l	80.0	0.730	77	70-130			
Cadmium	82.5	1.0	ug/l	80.0	0.182	103	70-130			
Copper	91.5	2.0	ug/l	80.0	9.60	102	70-130			
Lead	89.2	1.0	ug/l	80.0	10.6	98	70-130			
Thallium	79.2	1.0	ug/l	80.0	ND	99	70-130			
Matrix Spike Dup Analyzed: 10/19/2010 (10J1993-MSD1)					**Source: ITJ1263-01**					
Antimony	83.0	2.0	ug/l	80.0	ND	104	70-130	0.2	20	
Cadmium	80.0	1.0	ug/l	80.0	ND	100	70-130	0.2	20	
Copper	81.6	2.0	ug/l	80.0	4.68	96	70-130	0.3	20	
Lead	84.2	1.0	ug/l	80.0	1.73	103	70-130	0.004	20	
Thallium	82.2	1.0	ug/l	80.0	ND	103	70-130	0.1	20	

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Debby Wilson
Project Manager

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MWH-Pasadena/Boeing
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Received: 10/07/10

METHOD BLANK/QC DATA

DISSOLVED METALS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 10J1068 Extracted: 10/11/10										
Blank Analyzed: 10/13/2010 (10J1068-BLK1)										
Antimony	ND	2.0	ug/l							
Cadmium	ND	1.0	ug/l							
Copper	ND	2.0	ug/l							
Lead	ND	1.0	ug/l							
Thallium	ND	1.0	ug/l							
LCS Analyzed: 10/13/2010 (10J1068-BS1)										
Antimony	83.3	2.0	ug/l	80.0		104	85-115			
Cadmium	82.8	1.0	ug/l	80.0		103	85-115			
Copper	82.5	2.0	ug/l	80.0		103	85-115			
Lead	85.9	1.0	ug/l	80.0		107	85-115			
Thallium	85.0	1.0	ug/l	80.0		106	85-115			
Matrix Spike Analyzed: 10/13/2010 (10J1068-MS1)					**Source: ITJ0701-01**					
Antimony	83.4	2.0	ug/l	80.0	ND	104	70-130			
Cadmium	80.5	1.0	ug/l	80.0	ND	101	70-130			
Copper	82.6	2.0	ug/l	80.0	0.997	102	70-130			
Lead	82.0	1.0	ug/l	80.0	ND	102	70-130			
Thallium	81.7	1.0	ug/l	80.0	ND	102	70-130			
Matrix Spike Dup Analyzed: 10/13/2010 (10J1068-MSD1)					**Source: ITJ0701-01**					
Antimony	89.4	2.0	ug/l	80.0	ND	112	70-130	7	20	
Cadmium	87.0	1.0	ug/l	80.0	ND	109	70-130	8	20	
Copper	89.6	2.0	ug/l	80.0	0.997	111	70-130	8	20	
Lead	88.6	1.0	ug/l	80.0	ND	111	70-130	8	20	
Thallium	88.2	1.0	ug/l	80.0	ND	110	70-130	8	20	

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Debby Wilson
Project Manager

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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: Semi-Annual Outfall 009 2010
Semi-Annual Outfall 009
Report Number: ITJ0820

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METHOD BLANK/QC DATA

DISSOLVED METALS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 10J1224 Extracted: 10/12/10										
Blank Analyzed: 10/12/2010 (10J1224-BLK1)										
Mercury	ND	0.20	ug/l							
LCS Analyzed: 10/12/2010 (10J1224-BS1)										
Mercury	7.87	0.20	ug/l	8.00		98	85-115			
Matrix Spike Analyzed: 10/12/2010 (10J1224-MS1)					**Source: ITJ0820-01**					
Mercury	7.82	0.20	ug/l	8.00	ND	98	70-130			
Matrix Spike Dup Analyzed: 10/12/2010 (10J1224-MSD1)					**Source: ITJ0820-01**					
Mercury	7.79	0.20	ug/l	8.00	ND	97	70-130	0.3	20	

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Debby Wilson
Project Manager

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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

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METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 10J0693 Extracted: 10/07/10										
Blank Analyzed: 10/07/2010 (10J0693-BLK1)										
Chloride	ND	0.50	mg/l							
Nitrate/Nitrite-N	ND	0.26	mg/l							
Sulfate	ND	0.50	mg/l							
LCS Analyzed: 10/07/2010 (10J0693-BS1)										
Chloride	4.98	0.50	mg/l	5.00		100	90-110			*M-3*
Sulfate	9.76	0.50	mg/l	10.0		98	90-110			*M-3*
Matrix Spike Analyzed: 10/08/2010 (10J0693-MS2)					**Source: ITJ0710-02**					
Chloride	56.0	10	mg/l	50.0	11.0	90	80-120			
Sulfate	156	10	mg/l	100	68.0	88	80-120			
Matrix Spike Dup Analyzed: 10/08/2010 (10J0693-MSD2)					**Source: ITJ0710-02**					
Chloride	57.5	10	mg/l	50.0	11.0	93	80-120	3	20	
Sulfate	160	10	mg/l	100	68.0	92	80-120	3	20	
Batch: 10J0794 Extracted: 10/08/10										
Blank Analyzed: 10/08/2010 (10J0794-BLK1)										
Perchlorate	ND	4.0	ug/l							
LCS Analyzed: 10/08/2010 (10J0794-BS1)										
Perchlorate	25.5	4.0	ug/l	25.0		102	85-115			
Matrix Spike Analyzed: 10/08/2010 (10J0794-MS1)					**Source: ITJ0691-01**					
Perchlorate	27.5	4.0	ug/l	25.0	1.26	105	80-120			

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Debby Wilson
Project Manager

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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
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INORGANICS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 10J0794 Extracted: 10/08/10										
Matrix Spike Dup Analyzed: 10/08/2010 (10J0794-MSD1)					**Source: ITJ0691-01**					
Perchlorate	28.0	4.0	ug/l	25.0	1.26	107	80-120	2	20	
Batch: 10J1131 Extracted: 10/11/10										
Blank Analyzed: 10/11/2010 (10J1131-BLK1)										
Total Suspended Solids	ND	10	mg/l							
LCS Analyzed: 10/11/2010 (10J1131-BS1)										
Total Suspended Solids	998	10	mg/l	1000		100	85-115			
Duplicate Analyzed: 10/11/2010 (10J1131-DUP1)					**Source: ITJ0820-01**					
Total Suspended Solids	57.0	10	mg/l		56.0			2	10	
Batch: 10J1321 Extracted: 10/13/10										
Blank Analyzed: 10/13/2010 (10J1321-BLK1)										
Total Dissolved Solids	ND	10	mg/l							
LCS Analyzed: 10/13/2010 (10J1321-BS1)										
Total Dissolved Solids	1000	10	mg/l	1000		100	90-110			
Duplicate Analyzed: 10/13/2010 (10J1321-DUP1)					**Source: ITJ0957-04**					
Total Dissolved Solids	2360	10	mg/l		2350			0.3	10	
Batch: 10J2189 Extracted: 10/19/10										
Blank Analyzed: 10/19/2010 (10J2189-BLK1)										
Total Cyanide	ND	5.0	ug/l							

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Debby Wilson
Project Manager

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
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INORGANICS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 10J2189 Extracted: 10/19/10										
LCS Analyzed: 10/19/2010 (10J2189-BS1)										
Total Cyanide	208	5.0	ug/l	200		104	90-110			
Matrix Spike Analyzed: 10/19/2010 (10J2189-MS1)					**Source: ITJ1444-02**					
Total Cyanide	206	5.0	ug/l	200	ND	103	70-115			
Matrix Spike Dup Analyzed: 10/19/2010 (10J2189-MSD1)					**Source: ITJ1444-02**					
Total Cyanide	207	5.0	ug/l	200	ND	104	70-115	0.4	15	

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Debby Wilson
Project Manager

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

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METHOD BLANK/QC DATA

900

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 8639 Extracted: 10/25/10										
LCS Analyzed: 10/26/2010 (S010089-02)					**Source:**					
Gross Alpha	51.8	3	pCi/L	40.4		128	70-130			
Gross Beta	35	4	pCi/L	35.2		99	70-130			
Blank Analyzed: 10/26/2010 (S010089-03)					**Source:**					
Gross Alpha	-0.012	3	pCi/L				-			*U*
Gross Beta	-0.296	4	pCi/L				-			*U*
Duplicate Analyzed: 10/26/2010 (S010089-04)					**Source: ITJ0820-01**					
Gross Alpha	1.22	3	pCi/L		0.865		-	34		*Jb*
Gross Beta	2.16	4	pCi/L		3.81		-	55		*Jb*

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Debby Wilson
Project Manager

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

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METHOD BLANK/QC DATA

901.1

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 8639 Extracted: 10/25/10										
LCS Analyzed: 11/05/2010 (S010089-02)					**Source:**					
Cesium-137	115	20	pCi/L	111		104	80-120			
Blank Analyzed: 11/05/2010 (S010089-03)					**Source:**					
Cesium-137	ND	20	pCi/L				-			*U*
Potassium-40	ND	25	pCi/L				-			*U*
Duplicate Analyzed: 11/05/2010 (S010089-04)					**Source: ITJ0820-01**					
Cesium-137	ND	20	pCi/L		0		-	0		*U*
Potassium-40	ND	25	pCi/L		0		-	0		*U*

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Debby Wilson
Project Manager

TestAmerica
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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
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903.1

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 8639 Extracted: 10/30/10										
LCS Analyzed: 10/30/2010 (S010089-02)					**Source:**					
Radium-226	60	1	pCi/L	55.7		108	80-120			
Blank Analyzed: 10/30/2010 (S010089-03)					**Source:**					
Radium-226	0.09	1	pCi/L				-			*U*
Duplicate Analyzed: 10/30/2010 (S010089-04)					**Source: ITJ0820-01**					
Radium-226	0.287	1	pCi/L		0.181		-	0		*U*

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Debby Wilson
Project Manager

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MWH-Pasadena/Boeing
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Arcadia, CA 91007
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METHOD BLANK/QC DATA

904

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 8639 Extracted: 11/04/10										
LCS Analyzed: 11/04/2010 (S010089-02)					**Source:**					
Radium-228	5.68	1	pCi/L	4.75		120	60-140			
Blank Analyzed: 11/04/2010 (S010089-03)					**Source:**					
Radium-228	-0.175	1	pCi/L				-			*U*
Duplicate Analyzed: 11/04/2010 (S010089-04)					**Source: ITJ0820-01**					
Radium-228	0.132	1	pCi/L		0.071		-	0		*U*

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Debby Wilson
Project Manager

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
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METHOD BLANK/QC DATA

905

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 8639 Extracted: 10/26/10										
LCS Analyzed: 10/26/2010 (S010089-02)					**Source:**					
Strontium-90	17.9	2	pCi/L	17.6		102	80-120			
Blank Analyzed: 10/26/2010 (S010089-03)					**Source:**					
Strontium-90	0.102	2	pCi/L				-			*U*
Duplicate Analyzed: 10/26/2010 (S010089-04)					**Source: ITJ0820-01**					
Strontium-90	0.09	2	pCi/L		-0.13		-	0		*U*

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Debby Wilson
Project Manager

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
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METHOD BLANK/QC DATA

906

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 8639 Extracted: 11/04/10										
LCS Analyzed: 11/05/2010 (S010089-02)					**Source:**					
Tritium	2490	200	pCi/L	2570		97	80-120			
Blank Analyzed: 11/05/2010 (S010089-03)					**Source:**					
Tritium	-27.5	200	pCi/L				-			*U*
Duplicate Analyzed: 11/05/2010 (S010089-04)					**Source: ITJ0820-01**					
Tritium	27.6	200	pCi/L		-13.6		-	0		*U*

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Debby Wilson
Project Manager

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

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METHOD BLANK/QC DATA

EPA-5 1613Bx

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 286459 Extracted: 10/13/10										
Blank Analyzed: 10/15/2010 (G0J130000459B)					**Source:**					
1,2,3,4,6,7,8-HpCDD	ND	0.00005	ug/L				-			
1,2,3,4,6,7,8-HpCDF	ND	0.00005	ug/L				-			
1,2,3,4,7,8,9-HpCDF	ND	0.00005	ug/L				-			
1,2,3,4,7,8-HxCDD	ND	0.00005	ug/L				-			
1,2,3,4,7,8-HxCDF	ND	0.00005	ug/L				-			
1,2,3,6,7,8-HxCDD	ND	0.00005	ug/L				-			
1,2,3,6,7,8-HxCDF	ND	0.00005	ug/L				-			
1,2,3,7,8,9-HxCDD	ND	0.00005	ug/L				-			
1,2,3,7,8,9-HxCDF	ND	0.00005	ug/L				-			
1,2,3,7,8-PeCDD	ND	0.00005	ug/L				-			
1,2,3,7,8-PeCDF	ND	0.00005	ug/L				-			
2,3,4,6,7,8-HxCDF	ND	0.00005	ug/L				-			
2,3,4,7,8-PeCDF	ND	0.00005	ug/L				-			
2,3,7,8-TCDD	ND	0.00001	ug/L				-			
2,3,7,8-TCDF	ND	0.00001	ug/L				-			
OCDD	5e-006	0.0001	ug/L				-			*J, Q*
OCDF	ND	0.0001	ug/L				-			
Total HpCDD	1.8e-006	0.00005	ug/L				-			*J*
Total HpCDF	ND	0.00005	ug/L				-			
Total HxCDD	ND	0.00005	ug/L				-			
Total HxCDF	ND	0.00005	ug/L				-			
Total PeCDD	ND	0.00005	ug/L				-			
Total PeCDF	ND	0.00005	ug/L				-			
Total TCDD	3.2e-006	0.00001	ug/L				-			*J, Q*
Total TCDF	ND	0.00001	ug/L				-			
Surrogate: 13C-1,2,3,4,6,7,8-HpCDD	*0.0022*		*ug/L*	*0.002*		*110*	*23-140*			
Surrogate: 13C-1,2,3,4,6,7,8-HpCDF	*0.0018*		*ug/L*	*0.002*		*92*	*28-143*			
Surrogate: 13C-1,2,3,4,7,8,9-HpCDF	*0.0017*		*ug/L*	*0.002*		*86*	*26-138*			
Surrogate: 13C-1,2,3,4,7,8-HxCDD	*0.0014*		*ug/L*	*0.002*		*70*	*32-141*			
Surrogate: 13C-1,2,3,4,7,8-HxCDF	*0.0016*		*ug/L*	*0.002*		*80*	*26-152*			
Surrogate: 13C-1,2,3,6,7,8-HxCDD	*0.0017*		*ug/L*	*0.002*		*85*	*28-130*			
Surrogate: 13C-1,2,3,6,7,8-HxCDF	*0.0019*		*ug/L*	*0.002*		*96*	*26-123*			
Surrogate: 13C-1,2,3,7,8,9-HxCDF	*0.0018*		*ug/L*	*0.002*		*91*	*29-147*			
Surrogate: 13C-1,2,3,7,8-PeCDD	*0.0014*		*ug/L*	*0.002*		*68*	*25-181*			
Surrogate: 13C-1,2,3,7,8-PeCDF	*0.0011*		*ug/L*	*0.002*		*56*	*24-185*			
Surrogate: 13C-2,3,4,6,7,8-HxCDF	*0.002*		*ug/L*	*0.002*		*98*	*28-136*			

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Debby Wilson
Project Manager

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

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METHOD BLANK/QC DATA

EPA-5 1613Bx

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 286459 Extracted: 10/13/10										
Blank Analyzed: 10/15/2010 (G0J130000459B)					**Source:**					
Surrogate: 13C-2,3,4,7,8-PeCDF	*0.0012*		*ug/L*	*0.002*		*58*	*21-178*			
Surrogate: 13C-2,3,7,8-TCDD	*0.0012*		*ug/L*	*0.002*		*62*	*25-164*			
Surrogate: 13C-2,3,7,8-TCDF	*0.0011*		*ug/L*	*0.002*		*54*	*24-169*			
Surrogate: 13C-OCDD	*0.0037*		*ug/L*	*0.004*		*91*	*17-157*			
Surrogate: 37Cl4-2,3,7,8-TCDD	*0.00067*		*ug/L*	*0.0008*		*84*	*35-197*			
LCS Analyzed: 10/19/2010 (G0J130000459C)					**Source:**					
1,2,3,4,6,7,8-HpCDD	0.00112	0.00005	ug/L	0.001		112	70-140			
1,2,3,4,6,7,8-HpCDF	0.00116	0.00005	ug/L	0.001		116	82-122			
1,2,3,4,7,8,9-HpCDF	0.00117	0.00005	ug/L	0.001		117	78-138			
1,2,3,4,7,8-HxCDD	0.00119	0.00005	ug/L	0.001		119	70-164			
1,2,3,4,7,8-HxCDF	0.00115	0.00005	ug/L	0.001		115	72-134			
1,2,3,6,7,8-HxCDD	0.00113	0.00005	ug/L	0.001		113	76-134			
1,2,3,6,7,8-HxCDF	0.00114	0.00005	ug/L	0.001		114	84-130			
1,2,3,7,8,9-HxCDD	0.00114	0.00005	ug/L	0.001		114	64-162			
1,2,3,7,8,9-HxCDF	0.00117	0.00005	ug/L	0.001		117	78-130			
1,2,3,7,8-PeCDD	0.00109	0.00005	ug/L	0.001		109	70-142			
1,2,3,7,8-PeCDF	0.00113	0.00005	ug/L	0.001		113	80-134			
2,3,4,6,7,8-HxCDF	0.00114	0.00005	ug/L	0.001		114	70-156			
2,3,4,7,8-PeCDF	0.00114	0.00005	ug/L	0.001		114	68-160			
2,3,7,8-TCDD	0.000216	0.00001	ug/L	0.0002		108	67-158			
2,3,7,8-TCDF	0.000213	0.00001	ug/L	0.0002		106	75-158			
OCDD	0.00224	0.0001	ug/L	0.002		112	78-144			*B*
OCDF	0.00219	0.0001	ug/L	0.002		110	63-170			
Surrogate: 13C-1,2,3,4,6,7,8-HpCDD	*0.00183*		*ug/L*	*0.002*		*92*	*26-166*			
Surrogate: 13C-1,2,3,4,6,7,8-HpCDF	*0.00163*		*ug/L*	*0.002*		*82*	*21-158*			
Surrogate: 13C-1,2,3,4,7,8,9-HpCDF	*0.00185*		*ug/L*	*0.002*		*93*	*20-186*			
Surrogate: 13C-1,2,3,4,7,8-HxCDD	*0.00162*		*ug/L*	*0.002*		*81*	*21-193*			
Surrogate: 13C-1,2,3,4,7,8-HxCDF	*0.00153*		*ug/L*	*0.002*		*77*	*19-202*			
Surrogate: 13C-1,2,3,6,7,8-HxCDD	*0.00161*		*ug/L*	*0.002*		*80*	*25-163*			
Surrogate: 13C-1,2,3,6,7,8-HxCDF	*0.00156*		*ug/L*	*0.002*		*78*	*21-159*			
Surrogate: 13C-1,2,3,7,8,9-HxCDF	*0.0016*		*ug/L*	*0.002*		*80*	*17-205*			
Surrogate: 13C-1,2,3,7,8-PeCDD	*0.00146*		*ug/L*	*0.002*		*73*	*21-227*			
Surrogate: 13C-1,2,3,7,8-PeCDF	*0.00127*		*ug/L*	*0.002*		*63*	*21-192*			
Surrogate: 13C-2,3,4,6,7,8-HxCDF	*0.00164*		*ug/L*	*0.002*		*82*	*22-176*			
Surrogate: 13C-2,3,4,7,8-PeCDF	*0.00131*		*ug/L*	*0.002*		*65*	*13-328*			

TestAmerica Irvine

Debby Wilson
Project Manager

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: Semi-Annual Outfall 009 2010
Semi-Annual Outfall 009
Report Number: ITJ0820

Sampled: 10/06/10
Received: 10/07/10

METHOD BLANK/QC DATA

EPA-5 1613Bx

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 286459 Extracted: 10/13/10										
LCS Analyzed: 10/19/2010 (G0J130000459C)					**Source:**					
Surrogate: 13C-2,3,7,8-TCDD	*0.0013*		*ug/L*	*0.002*		*65*	*20-175*			
Surrogate: 13C-2,3,7,8-TCDF	*0.0012*		*ug/L*	*0.002*		*60*	*22-152*			
Surrogate: 13C-OCDD	*0.00478*		*ug/L*	*0.004*		*120*	*13-199*			
Surrogate: 37Cl4-2,3,7,8-TCDD	*0.000685*		*ug/L*	*0.0008*		*86*	*31-191*			

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Compliance Check

The results obtained from the analytical testing of this data set were checked against compliance limits received from the client. Any results at or above the compliance limits appear in bold on this page.

LabNumber	Analysis	Analyte	Units	Result	MRL	Compliance Limit
ITJ0820-01	Antimony-200.8	Antimony	ug/l	0.73	2.0	6
ITJ0820-01	Cadmium-200.8	Cadmium	ug/l	0.18	1.0	4
ITJ0820-01	Chloride - 300.0	Chloride	mg/l	2.04	0.50	150
ITJ0820-01	Copper-200.8	Copper	ug/l	9.60	2.0	14
ITJ0820-01	Cyanide, Total-4500CN-E (5ppb)	Total Cyanide	ug/l	-2	5.0	9.5
ITJ0820-01	**Lead-200.8**	**Lead**	**ug/l**	**11**	**1.0**	**5.2**
ITJ0820-01	Mercury - 245.1	Mercury	ug/l	0.022	0.20	0.13
ITJ0820-01	Nitrogen, NO3+NO2 -N EPA 300.0	Nitrate/Nitrite-N	mg/l	0.77	0.26	10
ITJ0820-01	Perchlorate 314.0 - Default	Perchlorate	ug/l	0	4.0	6
ITJ0820-01	Sulfate-300.0	Sulfate	mg/l	3.22	0.50	250
ITJ0820-01	TDS - SM2540C	Total Dissolved Solids	mg/l	27	10	850
ITJ0820-01	Thallium-200.8	Thallium	ug/l	0.15	1.0	2
ITJ0820-01	**TSS - SM2540D**	**Total Suspended Solids**	**mg/l**	**56**	**10**	**45**

Compliance Check

The results obtained from the analytical testing of this data set were checked against compliance limits received from the client. Any results at or above the compliance limits appear in bold on this page.

LabNumber	Analysis	Analyte	Units	Result	MRL	Compliance Limit
ITJ0820-02	1664-HEM	Hexane Extractable Material (Oil & Greas	mg/l	0	4.8	15

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Semi-Annual Outfall 009
Report Number: ITJ0820

Sampled: 10/06/10
Received: 10/07/10

DATA QUALIFIERS AND DEFINITIONS

B	Method blank contamination. The associated method blank contains the target analyte at a reportable level.
C	Calibration Verification recovery was above the method control limit for this analyte. Analyte not detected, data not impacted.
J	Estimated value. Analyte detected at a level less than the Reporting Limit (RL) and greater than or equal to the Method Detection Limit (MDL). The user of this data should be aware that this data is of limited reliability.
Jb	The RESULT is less than the RDL (Required Detection Limit) and no U qualifier is assigned.
M-3	Results exceeded the linear range in the MS/MSD and therefore are not available for reporting. The batch was accepted based on acceptable recovery in the Blank Spike (LCS).
MNR1	There was no MS/MSD analyzed with this batch due to insufficient sample volume. See Blank Spike/Blank Spike Duplicate.
Q	Estimated maximum possible concentration (EMPC).
U	The RESULT is less than the MDA (Minimum Detectable Activity). If the MDA is blank, the ERROR is used as the limit.
ND	Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified.
RPD	Relative Percent Difference

TestAmerica Irvine

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Semi-Annual Outfall 009
Report Number: ITJ0820

Sampled: 10/06/10
Received: 10/07/10

Certification Summary

TestAmerica Irvine

Method	Matrix	Nelac	California
EDD + Level 4	Water	N/A	N/A
EPA 1664A	Water	X	X
EPA 200.8-Diss	Water	X	X
EPA 200.8	Water	X	X
EPA 245.1-Diss	Water	X	X
EPA 245.1	Water	X	X
EPA 300.0	Water	X	X
EPA 314.0	Water	X	X
Filtration	Water	N/A	N/A
SM 2540D	Water	X	X
SM2540C	Water	X	
SM4500CN-E	Water	X	X

Nevada and NELAP provide analyte specific accreditations. Analyte specific information for TestAmerica may be obtained by contacting the laboratory or visiting our website at www.testamericainc.com

Subcontracted Laboratories

Aquatic Testing Laboratories-SUB *California Cert #1775*
4350 Transport Street, Unit 107 - Ventura, CA 93003

Analysis Performed: Bioassay-7 dy Chrnic
Samples: ITJ0820-01

TestAmerica Irvine

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Attention: Bronwyn Kelly

Project ID: Semi-Annual Outfall 009 2010
Semi-Annual Outfall 009
Report Number: ITJ0820

Sampled: 10/06/10
Received: 10/07/10

Eberline Services - SUB

2030 Wright Avenue - Richmond, CA 94804

Analysis Performed: Gamma Spec
Samples: ITJ0820-01

Analysis Performed: Gross Alpha
Samples: ITJ0820-01

Analysis Performed: Gross Beta
Samples: ITJ0820-01

Analysis Performed: Level 4 Data Package
Samples: ITJ0820-01

Analysis Performed: Radium 226
Samples: ITJ0820-01

Analysis Performed: Radium 228
Samples: ITJ0820-01

Analysis Performed: Strontium 90
Samples: ITJ0820-01

Analysis Performed: Tritium
Samples: ITJ0820-01

Analysis Performed: Uranium, Combined
Samples: ITJ0820-01

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618 Michillinda Avenue, Suite 200
Arcadia, CA 91007
Attention: Bronwyn Kelly

Project ID: Semi-Annual Outfall 009 2010
Semi-Annual Outfall 009
Report Number: ITJ0820

Sampled: 10/06/10
Received: 10/07/10

TestAmerica Buffalo

10 Hazelwood Drive, Suite 106 - Amherst, NY 14228

Method Performed: 8639
Samples: ITJ0820-01

Method Performed: 900
Samples: ITJ0820-01

Method Performed: 901.1
Samples: ITJ0820-01

Method Performed: 903.1
Samples: ITJ0820-01

Method Performed: 904
Samples: ITJ0820-01

Method Performed: 905
Samples: ITJ0820-01

Method Performed: 906
Samples: ITJ0820-01

TestAmerica West Sacramento *NELAC Cert #1119CA, Nevada Cert #CA44*

880 Riverside Parkway - West Sacramento, CA 95605

Method Performed: EPA-5 1613B
Samples: ITJ0820-01

TestAmerica Irvine

Debby Wilson
Project Manager

CHAIN OF CUSTODY FORM

ETJ0820

Client Name/Address:	Project:
MWH-Arcadia 618 Michillinda Ave, Suite 200 Arcadia, CA 91007 Test America Contact: Debby Wilson	Boeing-SSFL NPDES **Semi-Annual Outfall 009** **COMPOSITE**
Project Manager: Bronwyn Kelly Sampler: Rick Baniach	Phone Number: (626) 568-6691 Fax Number: (626) 568-6515

Sample Description	Sample Matrix	Container Type	# of Cont.	Sampling Date/Time	Preservative	Bottle #	ANALYSIS REQUIRED: Total Recoverable Metals: Sb, Cd, Cu, Pb, Hg, Tl	TCDD (and all congeners)	Cl⁻, SO_4, NO_3+NO_2-N, Perchlorate	TDS, TSS	Total Dissolved Metals: Sb, Cd, Cu, Pb, Hg, Tl	Gross Alpha(900.0), Gross Beta(900.0), Tritium (H-3) (906.0), Sr-90 (905.0), Total Combined Radium 226 (903.0 or 903.1) & Radium 228 (904.0), Uranium (908.0), K-40, CS-137 (901.0 or 901.1)	Cyanide	Chronic Toxicity	Comments
Outfall 009	W	1L Poly	1	10-6-2010 19:30	HNO_3	2A	X								LOW FLOW
Outfall 009 Dup	W	1L Poly	1		HNO_3	2B	X								
Outfall 009	W	1L Amber	2		None	3A, 3B		X							
Outfall 009	W	500 mL Poly	2		None	4A, 4B			X						
Outfall 009	W	500 mL Poly	1		None	5				X					
Outfall 009	W	1L Poly	1		None	6					X				Filter w/in 24hrs of receipt at lab
Outfall 009	W	2.5 Gal Cube	1		None	7A						X			Unfiltered and unpreserved analysis
		500 mL Amber	1		None	7B									
Outfall 009	W	500 mL Poly	1		NaOH	8							X		
Outfall 009	W	1 Gal Poly	1	10-6-2010 19:30	None	9								X	Only test if first or second rain events of the year

21:30 10/7/10 NP

COC Page 2 of 2 list the Composite Samples for Outfall 009 for this storm event.

These must be added to the same work order for COC Page 1 of 2 for Outfall 009 for the same event.

Relinquished By	Date/Time	Received By	Date/Time
	10-7-2010 15:00		10-7-10 15:00
	10-7-10 18:40		
			10/07/10 1840

Turn-around time: (Check)
24 Hour: _____ 72 Hour: _____ 10 Day: _____
48 Hour: _____ 5 Day: _____ Normal: X

Sample Integrity: (Check)
Intact: _____ On Ice: _____

Data Requirements: (Check)
No Level IV: _____ All Level IV: _____ NPDES Level IV: X

07M03 3.1

Test America Version 7/19/2010

CHAIN OF CUSTODY FORM

ITJ0820

~~ITJ0865~~

Client Name/Address:	Project:
MWH-Arcadia 618 Michillinda Ave, Suite 200 Arcadia, CA 91007 Test America Contact: Debby Wilson	Boeing-SSFL NPDES **Semi-Annual Outfall 009** **GRAB**
Project Manager: Bronwyn Kelly Sampler: Rick BANACH	Phone Number: (626) 568-6691 Fax Number: (626) 568-6515

Sample Description	Sample Matrix	Container Type	# of Cont.	Sampling Date/Time	Preservative	Bottle #	ANALYSIS REQUIRED: Oil & Grease (1664-HEM)	Comments
Outfall 009	W	1L Amber	2	10-6-2010 08:00	HCl	1A, 1B	X	

Field readings:
(Log in and include in report Temp and pH)

Temp °F = 58°

pH = 7.8

Time of readings = 08:08

These Samples are the Grab Portion of Outfall 009 for this storm event. Composite samples will follow and are to be added to this work order.

Relinquished By	Date/Time:	Received By	Date/Time:
	10-6-2010 14:30		10/6/10 1444
Relinquished By	Date/Time:	Received By	Date/Time:
	10/6/10 1720	Vu Bank	10/6/10 1720
Relinquished By	Date/Time:	Received By	Date/Time:

Turn-around time: (Check)

24 Hour: _____ 72 Hour: _____ 10 Day: _____

48 Hour: _____ 5 Day: _____ Normal: X

Sample Integrity: (Check)

Intact: X On Ice: 2.9 C

Data Requirements: (Check)

No Level IV: _____ All Level IV: _____ NPDES Level IV: X

L.F. 10-7-10 9:50

#

#116

LABORATORY REPORT

Aquatic Testing Laboratories

"dedicated to providing quality aquatic toxicity testing"

4350 Transport Street, Unit 107
Ventura, CA 93003
(805) 650-0546 FAX (805) 650-0756
CA DOHS ELAP Cert. No.: 1775

Date: October 15, 2010

Client: TestAmerica, Irvine
17461 Derian Ave., Suite 100
Irvine, CA 92614
Attn: Debby Wilson

Laboratory No.: A-10100804-001
Sample I.D.: ITJ0820-01 (Outfall 009)

Sample Control: The sample was received by ATL within the recommended hold time, chilled and with the chain of custody record attached. Testing conducted on only one sample per client instruction (rain runoff sample). Chronic testing initiated outside the recommended hold time of 36 hr per additional client instruction.

Date Sampled:	10/06/10 - composite
Date Received:	10/08/10
Temp. Received:	5.0°C
Chlorine (TRC):	0.0 mg/l
Date Tested:	10/08/10 to 10/15/10

Sample Analysis: The following analyses were performed on your sample:

Ceriodaphnia dubia Survival and Reproduction Test (EPA Method 1002).

Attached are the test data generated from the analysis of your sample.

Result Summary:

	NOEC	TUc
Ceriodaphnia Survival:	100%	1.0
Ceriodaphnia Reproduction:	100%	1.0

Quality Control: Reviewed and approved by:

Joseph A. LeMay
Laboratory Director

CERIODAPHNIA CHRONIC BIOASSAY
EPA METHOD 1002.0

Aquatic Testing Laboratories

Lab No.: A-10100804-001
Client/ID: Test America – ITJ0820-01 (Outfall 009)

Date Tested: 10/08/10 to 10/15/10

TEST SUMMARY

Test type: Daily static-renewal.
Species: *Ceriodaphnia dubia*.
Age: < 24 hrs; all released within 8 hrs.
Test vessel size: 30 ml.
Number of test organisms per vessel: 1.
Temperature: 25 +/- 1°C.
Dilution water: Mod. hard reconstituted (MHRW).
QA/QC Batch No.: RT-101007.

Endpoints: Survival and Reproduction.
Source: In-laboratory culture.
Food: .1 ml YTC, algae per day.
Test solution volume: 15 ml.
Number of replicates: 10.
Photoperiod: 16/8 hrs. light/dark cycle.
Test duration: 7 days.
Statistics: ToxCalc computer program.

RESULTS SUMMARY

Sample Concentration	Percent Survival	Mean Number of Young Per Female
Control	100%	20.3
100% Sample	100%	25.0
* Sample not statistically significantly less than Control.		

CHRONIC TOXICITY

Survival NOEC	100%
Survival TUc	1.0
Reproduction NOEC	100%
Reproduction TUc	1.0

QA/QC TEST ACCEPTABILITY

Parameter	Result
Control survival ≥80%	Pass (100% survival)
≥15 young per surviving control female	Pass (20.3 young)
≥60% surviving controls had 3 broods	Pass (90% with 3 broods)
PMSD <47% for reproduction; if >47% and no toxicity at IWC, the test must be repeated	Pass (PMSD = 21.7%)
Statistically significantly different concentrations relative difference >13%	Pass (no concentration significantly different)
Concentration response relationship acceptable	Pass (no significant response at concentration tested)

Ceriodaphnia Survival and Reproduction Test-7 Day Survival

Start Date:	10/8/2010 14:00	Test ID:	10100804c	Sample ID:	REF-Ref Toxicant
End Date:	10/15/2010 13:00	Lab ID:	CAATL-Aquatic Testing Labs	Sample Type:	EFF2-Industrial
Sample Date:	10/6/2010 19:30	Protocol:	FWCH EPA	Test Species:	CD-Ceriodaphnia dubia
Comments:					

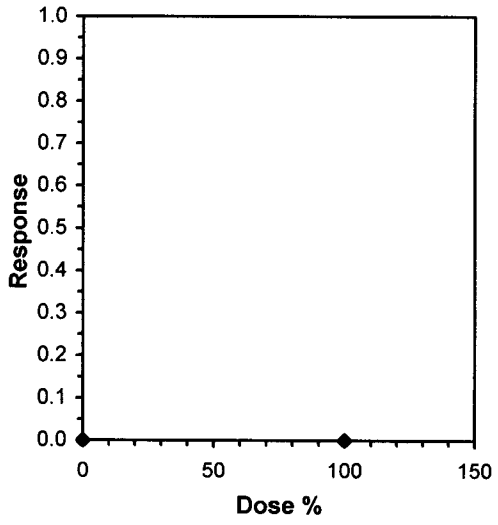
Conc-%	1	2	3	4	5	6	7	8	9	10
D-Control	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
100	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

Conc-%	Mean	N-Mean	Resp	Not Resp	Total	N	Fisher's Exact P	1-Tailed Critical	Isotonic Mean	Isotonic N-Mean
D-Control	1.0000	1.0000	0	10	10	10			1.0000	1.0000
100	1.0000	1.0000	0	10	10	10	1.0000	0.0500	1.0000	1.0000

Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU
Fisher's Exact Test	100	>100		1
Treatments vs D-Control				

Linear Interpolation (200 Resamples)

Point	%	SD	95% CL	Skew
IC05	>100			
IC10	>100			
IC15	>100			
IC20	>100			
IC25	>100			
IC40	>100			
IC50	>100			



Reviewed by:

Ceriodaphnia Survival and Reproduction Test-Reproduction

Start Date:	10/8/2010 14:00	Test ID:	10100804c	Sample ID:	REF-Ref Toxicant
End Date:	10/15/2010 13:00	Lab ID:	CAATL-Aquatic Testing Labs	Sample Type:	EFF2-Industrial
Sample Date:	10/6/2010 19:30	Protocol:	FWCH EPA	Test Species:	CD-Ceriodaphnia dubia
Comments:					

Conc-%	1	2	3	4	5	6	7	8	9	10
D-Control	19.000	21.000	18.000	20.000	20.000	24.000	27.000	20.000	24.000	10.000
100	22.000	24.000	34.000	9.000	30.000	30.000	25.000	25.000	25.000	26.000

			Transform: Untransformed					Rank	1-Tailed	Isotonic	
Conc-%	Mean	N-Mean	Mean	Min	Max	CV%	N	Sum	Critical	Mean	N-Mean
D-Control	20.300	1.0000	20.300	10.000	27.000	22.400	10			22.650	1.0000
100	25.000	1.2315	25.000	9.000	34.000	26.600	10	136.00	82.00	22.650	1.0000

Auxiliary Tests	Statistic	Critical	Skew	Kurt
Shapiro-Wilk's Test indicates non-normal distribution (p <= 0.05)	0.87082	0.905	-1.3205	3.11897
F-Test indicates equal variances (p = 0.27)	2.13864	6.54109		

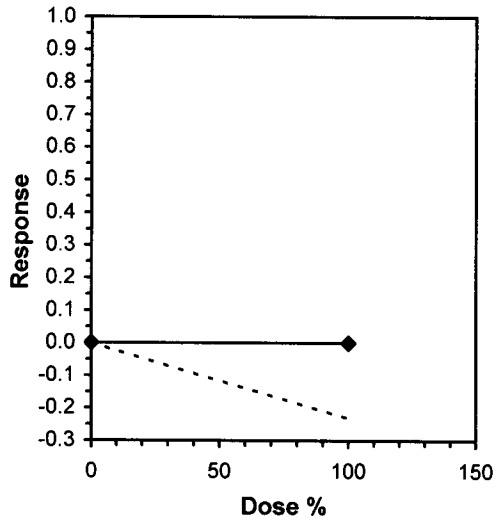
Hypothesis Test (1-tail, 0.05)

Wilcoxon Two-Sample Test indicates no significant differences

Treatments vs D-Control

Linear Interpolation (200 Resamples)

Point	%	SD	95% CL	Skew
IC05	>100			
IC10	>100			
IC15	>100			
IC20	>100			
IC25	>100			
IC40	>100			
IC50	>100			



ToxCalc v5.0.23

Reviewed by:

CERIODAPHNIA DUBIA CHRONIC BIOASSAY
EPA METHOD 1002.0 Raw Data Sheet

Aquatic Testing Laboratories

Lab No.: A-10100804-001
Client ID: TestAmerica - ITJ0820-01 Outfall 009
Start Date: 10/08/2010

		DAY 1		DAY 2		DAY 3		DAY 4		DAY 5		DAY 6		DAY 7	
		0 hr	24hr	0 hr	24hr	0 hr	24hr	0 hr	24hr	0 hr	24hr	0 hr	24hr	0 hr	24hr
Analyst Initials:															
Time of Readings:		1460	1300	1300	1400	1400	1430	1430	1400	1400	1500	1500	1300	1300	1300
Control	DO	8.5	8.7	8.1	7.9	8.1	7.7	7.9	7.8	8.0	8.2	8.1	7.9	8.2	>6
	pH	8.0	8.0	8.1	7.9	8.1	7.9	7.9	7.8	8.0	8.1	8.0	8.0	8.1	7.8
	Temp	25.2	24.6	25.4	24.7	26.0	25.3	25.2	24.6	25.3	25.0	25.3	24.4	24.5	24.2
100%	DO	9.1	8.4	9.0	7.1	8.4	7.2	7.9	7.6	8.2	7.8	9.2	7.6	8.0	7.4
	pH	6.9	7.5	7.1	7.1	6.8	7.4	6.0	7.3	6.6	7.0	6.5	7.1	7.1	7.4
	Temp	25.8	24.6	24.5	24.6	25.8	25.3	25.2	25.0	25.0	25.1	25.2	24.3	24.8	24.1

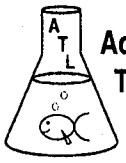
Additional Parameters	Control	100% Sample
Conductivity (umohms)	333	58
Alkalinity (mg/l $CaCO_3$)	72	15
Hardness (mg/l $CaCO_3$)	94	17
Ammonia (mg/l NH_3-N)	<0.1	0.6

Source of Neonates

Replicate:	A	B	C	D	E	F	G	H	I	J
Brood ID:	2A	1B	3C	1D	2E	1F	3G	2H	3I	1J

Sample	Day	Number of Young Produced										Total Live Young	No. Live Adults	Analyst Initials
		A	B	C	D	E	F	G	H	I	J			
Control	1	0	0	0	0	0	0	0	0	0	0	0	10	
	2	0	0	0	0	0	0	0	0	0	0	0	10	
	3	0	0	0	3	4	0	0	4	0	0	11	10	
	4	3	3	4	0	0	3	4	0	4	5	26	10	
	5	0	0	5	0	6	7	13	7	8	5	51	10	
	6	8	6	0	7	0	0	0	0	0	0	21	10	
	7	8	12	9	10	10	14	10	9	12	0	94	10	
	Total	19	21	18	20	20	24	27	20	24	10	203	10	
100%	1	0	0	0	0	0	0	0	0	0	0	0	10	
	2	0	0	0	0	0	0	0	0	0	0	0	10	
	3	0	0	0	3	0	0	4	0	0	0	7	10	
	4	4	3	5	0	4	4	0	5	4	3	32	10	
	5	4	6	15	0	10	9	7	5	7	6	69	10	
	6	0	15	0	6	0	0	14	15	14	0	64	10	
	7	14	0	14	0	16	17	(16)	0	0	17	78	10	
	Total	22	24	34	9	30	30	25	25	25	26	250	10	

Circled fourth brood not used in statistical analysis.
7th day only used if <60% of the surviving control females have produced their third brood.



Aquatic
Testing
Laboratories

CHAIN OF CUSTODY

SUBCONTRACT ORDER
TestAmerica Irvine

ITJ0820

SENDING LABORATORY:

TestAmerica Irvine
17461 Derian Avenue. Suite 100
Irvine, CA 92614
Phone: (949) 261-1022
Fax: (949) 260-3297
Project Manager: Debby Wilson

RECEIVING LABORATORY:

Aquatic Testing Laboratories-SUB
4350 Transport Street, Unit 107
Ventura, CA 93003
Phone :(805) 650-0546
Fax: (805) 650-0756
Project Location: CA - CALIFORNIA
Receipt Temperature: 5-C °C Ice: Y N

Standard TAT is requested unless specific due date is requested. => Due Date: _____ Initials: _____

Analysis	Units	Expires	Comments
Sample ID: ITJ0820-01 (Outfall 009 - Water)		Sampled: **10/06/10 19:30**	
Bioassay-7 dy Chrnic	N/A	10/08/10 07:30	Cerio, EPA/821-R02-013, Sub to Aquatic testing
Containers Supplied:			
1 gal Poly (M)			

Released By — Date/Time 10-8-10 7:30
Received By — Date/Time 10-8-10 7:30
Released By — Date/Time 10-8-10 11:45
Received By — Date/Time 10-8-10 11:45

Aquatic
Testing
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REFERENCE TOXICANT DATA

CERIODAPHNIA CHRONIC BIOASSAY
EPA METHOD 1002.0
REFERENCE TOXICANT - NaCl

Aquatic Testing Laboratories

QA/QC Batch No.: RT-101007

Date Tested: 10/07/10 to 10/13/10

TEST SUMMARY

Test type: Daily static-renewal.
Species: *Ceriodaphnia dubia*.
Age: <24 hrs; all released within 8 hrs.
Test vessel size: 30 ml.
Number of test organisms per vessel: 1.
Temperature: 25 +/- 1°C.
Dilution water: Mod. hard reconstituted (MHRW).
Reference Toxicant: Sodium chloride (NaCl).

Endpoints: Survival and Reproduction.
Source: In-laboratory culture.
Food: .1 ml YTC, algae per day.
Test solution volume: 20 ml.
Number of replicates: 10.
Photoperiod: 16/8 hrs. light/dark cycle.
Test duration: 6 days.
Statistics: ToxCalc computer program.

RESULTS SUMMARY

Sample Concentration	Percent Survival		Mean Number of Young Per Female	
Control	100%		21.4	
0.25 g/l	100%		22.3	
0.5 g/l	100%		22.1	
1.0 g/l	100%		13.1	*
2.0 g/l	90%		3.1	*
4.0 g/l	0%	*	0	**

* Statistically significantly less than control at P = 0.05 level
** Reproduction data from concentrations greater than survival NOEC are excluded from statistical analysis.

CHRONIC TOXICITY

Survival LC50	2.6 g/l
Reproduction IC25	0.81 mg/l

QA/QC TEST ACCEPTABILITY

Parameter	Result
Control survival ≥80%	Pass (100% Survival)
≥15 young per surviving control female	Pass (21.4 young)
≥60% surviving controls had 3 broods	Pass (100% with 3 broods)
PMSD <47% for reproduction	Pass (PMSD = 10.6%)
Stat. sig. diff. conc. relative difference >13%	Pass (Stat. sig. diff. conc. Relative difference= 38.8%)
Concentration response relationship acceptable	Pass (Response curve normal)

Ceriodaphnia Survival and Reproduction Test-Survival Day 6

Start Date:	10/7/2010 14:00	Test ID:	RT101007c	Sample ID:	REF-Ref Toxicant
End Date:	10/13/2010 13:00	Lab ID:	CAATL-Aquatic Testing Labs	Sample Type:	NACL-Sodium chloride
Sample Date:	10/7/2010	Protocol:	FWCH EPA	Test Species:	CD-Ceriodaphnia dubia
Comments:					

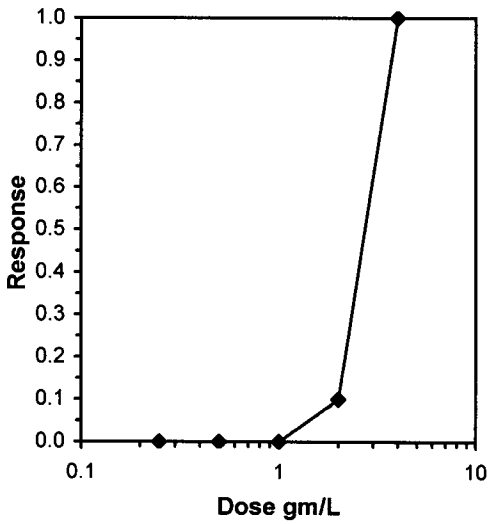
Conc-gm/L	1	2	3	4	5	6	7	8	9	10
D-Control	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
0.25	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
0.5	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
1	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
2	1.0000	1.0000	1.0000	1.0000	0.0000	1.0000	1.0000	1.0000	1.0000	1.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Conc-gm/L	Mean	N-Mean	Resp	Not Resp	Total	N	Fisher's Exact P	1-Tailed Critical	Number Resp	Total Number
D-Control	1.0000	1.0000	0	10	10	10			0	10
0.25	1.0000	1.0000	0	10	10	10	1.0000	0.0500	0	10
0.5	1.0000	1.0000	0	10	10	10	1.0000	0.0500	0	10
1	1.0000	1.0000	0	10	10	10	1.0000	0.0500	0	10
2	0.9000	0.9000	1	9	10	10	0.5000	0.0500	1	10
4	0.0000	0.0000	10	0	10	10			10	10

Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU
Fisher's Exact Test	2	4	2.82843	
Treatments vs D-Control				

Trimmed Spearman-Karber

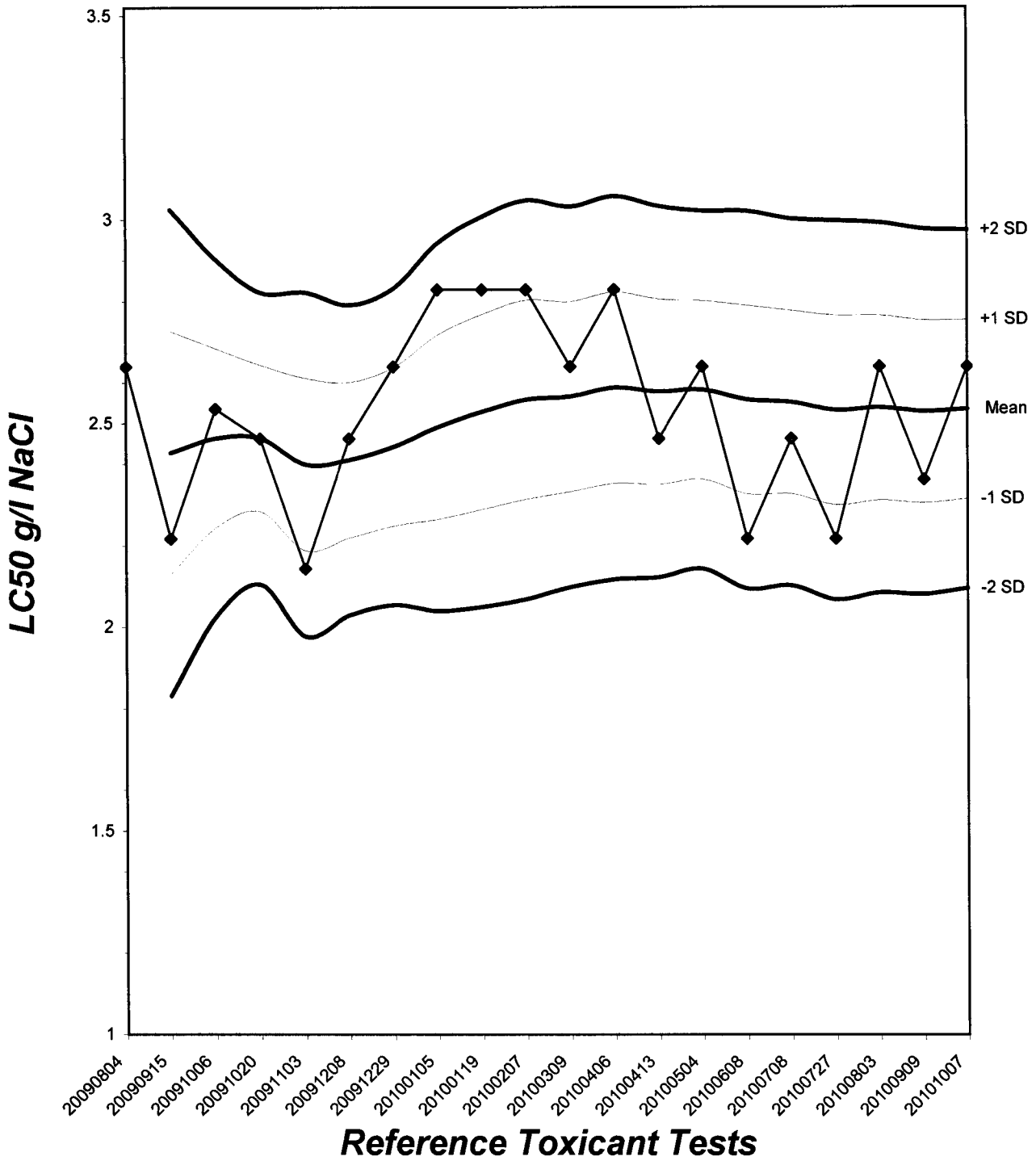
Trim Level	EC50	95% CL	
0.0%	2.6390	2.3138	3.0099
5.0%	2.6984	2.2899	3.1798
10.0%	2.7216	2.5094	2.9517
20.0%	2.7216	2.5094	2.9517
Auto-0.0%	2.6390	2.3138	3.0099



Reviewed by:

Ceriodaphnia Chronic Survival Laboratory Control Chart

CV% = 8.67



Ceriodaphnia Survival and Reproduction Test-Reproduction

Start Date:	10/7/2010 14:00	Test ID:	RT101007c	Sample ID:	REF-Ref Toxicant
End Date:	10/13/2010 13:00	Lab ID:	CAATL-Aquatic Testing Labs	Sample Type:	NACL-Sodium chloride
Sample Date:	10/7/2010	Protocol:	FWCH EPA	Test Species:	CD-Ceriodaphnia dubia
Comments:					

Conc-gm/L	1	2	3	4	5	6	7	8	9	10
D-Control	18.000	24.000	20.000	22.000	22.000	19.000	21.000	22.000	23.000	23.000
0.25	19.000	21.000	20.000	25.000	24.000	20.000	27.000	22.000	20.000	25.000
0.5	22.000	21.000	24.000	25.000	21.000	20.000	19.000	24.000	24.000	21.000
1	13.000	12.000	12.000	10.000	15.000	9.000	17.000	15.000	14.000	14.000
2	3.000	2.000	3.000	4.000	0.000	3.000	7.000	0.000	3.000	6.000
4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

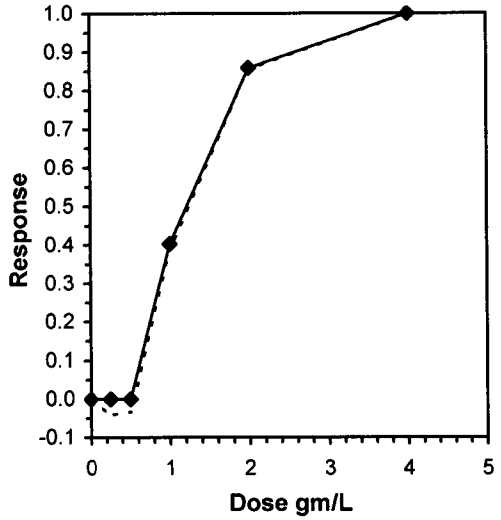
			Transform: Untransformed					1-Tailed			Isotonic	
Conc-gm/L	Mean	N-Mean	Mean	Min	Max	CV%	N	t-Stat	Critical	MSD	Mean	N-Mean
D-Control	21.400	1.0000	21.400	18.000	24.000	8.866	10				21.933	1.0000
0.25	22.300	1.0421	22.300	19.000	27.000	12.335	10	-0.880	2.223	2.273	21.933	1.0000
0.5	22.100	1.0327	22.100	19.000	25.000	9.162	10	-0.685	2.223	2.273	21.933	1.0000
*1	13.100	0.6121	13.100	9.000	17.000	18.507	10	8.118	2.223	2.273	13.100	0.5973
*2	3.100	0.1449	3.100	0.000	7.000	72.051	10	17.899	2.223	2.273	3.100	0.1413
4	0.000	0.0000	0.000	0.000	0.000	0.000	10				0.000	0.0000

Auxiliary Tests	Statistic	Critical	Skew	Kurt
Shapiro-Wilk's Test indicates normal distribution (p > 0.05)	0.96438	0.947	0.08587	-0.8006
Bartlett's Test indicates equal variances (p = 0.83)	1.50628	13.2767		

Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU	MSDu	MSDp	MSB	MSE	F-Prob	df
Dunnett's Test Treatments vs D-Control	0.5	1	0.70711		2.27317	0.10622	700.2	5.22667	2.2E-24	4, 45

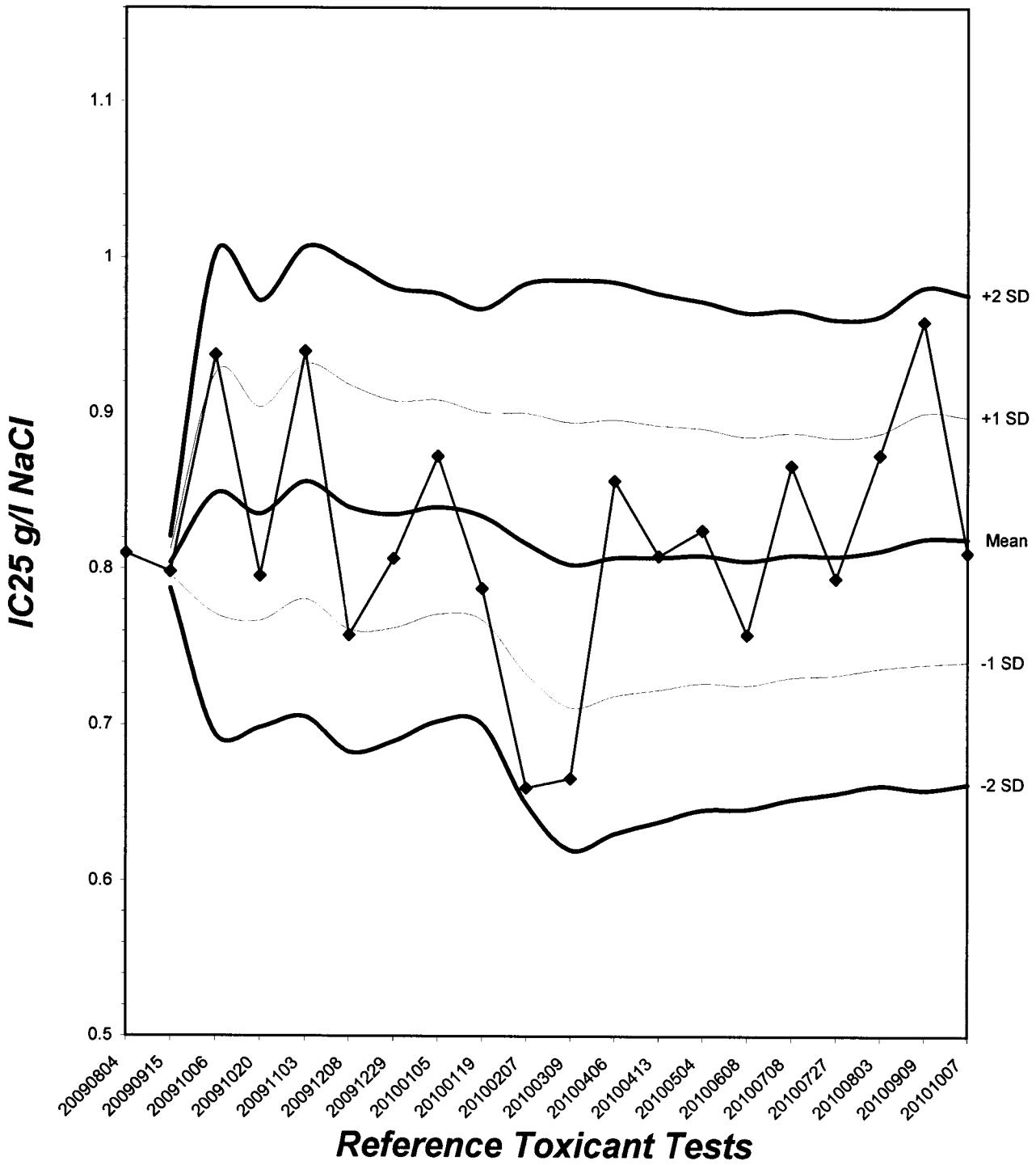
Linear Interpolation (200 Resamples)

Point	gm/L	SD	95% CL		Skew
IC05	0.5621	0.0442	0.4151	0.5733	-4.2243
IC10	0.6242	0.0252	0.5373	0.6466	-1.7522
IC15	0.6862	0.0254	0.6039	0.7200	-1.2089
IC20	0.7483	0.0270	0.6723	0.7933	-0.6359
IC25	0.8104	0.0296	0.7434	0.8683	-0.1929
IC40	0.9966	0.0501	0.9298	1.1143	0.4891
IC50	1.2133	0.0576	1.1011	1.3148	-0.3182



Ceriodaphnia Chronic Reproduction Laboratory Control Chart

CV% = 9.58



CERIODAPHNIA DUBIA CHRONIC BIOASSAY
Reference Toxicant - NaCl
Reproduction and Survival Raw Data Sheet

Aquatic Testing Laboratories

QA/QC No.: RT-101007

Start Date:10/07/2010

Sample	Day	Number of Young Produced										Total Live Young	No. Live Adults	Analyst Initials
		A	B	C	D	E	F	G	H	I	J			
Control	1	0	0	0	0	0	0	0	0	0	0	0	10	
	2	0	0	0	0	0	0	0	0	0	0	0	10	
	3	0	0	0	0	4	0	0	3	3	0	10	10	
	4	3	4	3	3	0 (4)	4	4	9 (4)	0	5	26	10	
	5	6	8	6	7	8	7	8	6	6	8	70	10	
	6	9	12	11	12	10	8	9	13	14	10	108	10	
	7	—	—	—	—	—	—	—	—	—	—	—	—	—
	Total	18	24	20	22	22	19	21	22	23	23	214	10	
0.25 g/l	1	0	0	0	0	0	0	0	0	0	0	0	10	
	2	0	0	0	0	0	0	0	0	0	0	0	10	
	3	0	0	0	0	3	0	0	4	0	0	7	10	
	4	5	4	3	5	0	4	4	0	3	5	33	10	
	5	6	7	8	8	7	6	8	6	5	7	68	10	
	6	8	10	9	12	14	10	15	12	12	13	115	10	
	7	—	—	—	—	—	—	—	—	—	—	—	—	—
	Total	19	21	20	25	24	20	27	22	20	25	223	10	
0.5 g/l	1	0	0	0	0	0	0	0	0	0	0	0	10	
	2	0	0	0	0	0	0	0	0	0	0	0	10	
	3	0	0	0	0	4	0	0	0	0	3	7	10	
	4	3	3	4	5	0	5	3	4	4	0	31	10	
	5	7	8	7	6	7	7	8	6	7	7	70	10	
	6	12	10	13	14	10	8	8	14	13	11	113	10	
	7	—	—	—	—	—	—	—	—	—	—	—	—	—
	Total	22	21	24	25	21	20	19	24	24	21	221	10	

Circled fourth brood not used in statistical analysis.
7th day only used if <60% of the surviving control females have produced their third brood.

CERIODAPHNIA DUBIA CHRONIC BIOASSAY
Reference Toxicant - NaCl
Reproduction and Survival Raw Data Sheet

Aquatic Testing Laboratories

QA/QC No.: RT-101007

Start Date:10/07/2010

Sample	Day	Number of Young Produced										Total Live Young	No. Live Adults	Analyst Initials
		A	B	C	D	E	F	G	H	I	J			
1.0 g/l	1	0	0	0	0	0	0	0	0	0	0	0	10	
	2	0	0	0	0	0	0	0	0	0	0	0	10	
	3	0	0	0	0	0	0	0	3	2	0	5	10	
	4	3	2	3	0	3	4	3	C	C	3	21	10	
	5	6	4	4	5	4	5	5	6	7	4	50	10	
	6	4	6	5	5	8	0	9	6	5	7	55	10	
	7	-	-	-	-	-	-	-	-	-	-	-	-	-
	Total	13	12	12	10	15	9	17	15	14	14	131	10	
2.0 g/l	1	0	0	0	0	0	0	0	0	0	0	0	10	
	2	0	0	0	0	0	0	0	0	0	0	0	10	
	3	0	0	0	0	X	0	0	0	0	0	0	9	
	4	0	0	0	0	-	0	0	0	0	0	0	9	
	5	3	0	3	4	-	0	3	0	0	3	16	9	
	6	0	2	0	0	-	3	4	0	3	3	15	9	
	7	-	-	-	-	-	-	-	-	-	-	-	-	-
	Total	3	2	3	4	0	3	7	0	3	6	31	9	
4.0 g/l	1	X	X	X	X	X	X	X	X	X	X	0	0	
	2	-	-	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-	-	-
	4	-	-	-	-	-	-	-	-	-	-	-	-	-
	5	-	-	-	-	-	-	-	-	-	-	-	-	-
	6	-	-	-	-	-	-	-	-	-	-	-	-	-
	7	-	-	-	-	-	-	-	-	-	-	-	-	-
	Total	0	0	0	0	0	0	0	0	0	0	0	0	

Circled fourth brood not used in statistical analysis.
7th day only used if <60% of the surviving control females have produced their third brood.

CERIODAPHNIA DUBIA CHRONIC BIOASSAY
Reference Toxicant - NaCl
Water Chemistries Raw Data Sheet

Aquatic Testing Laboratories

QA/QC No.: RT-101007

Start Date:10/07/2010

		DAY 1		DAY 2		DAY 3		DAY 4		DAY 5		DAY 6		DAY 7	
		Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final
Analyst Initials:		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	—	—
Time of Readings:		1400	1300	1300	1300	1300	1400	1400	1330	1330	1330	1330	1300	—	—
Control	DO	8.3	8.6	9.0	8.5	8.1	7.8	8.0	7.7	8.0	7.7	7.9	7.9	—	—
	pH	8.1	8.2	8.0	8.1	8.1	7.9	8.1	8.0	7.9	7.7	8.0	7.8	—	—
	Temp	25.3	24.3	25.0	24.5	25.4	25.0	25.6	25.2	24.5	24.7	25.4	24.2	—	—
0.25 g/l	DO	8.3	8.6	9.0	8.4	8.1	7.8	7.9	7.7	7.9	7.9	7.9	7.7	—	—
	pH	8.1	8.2	8.0	8.1	8.1	7.9	8.1	8.0	8.0	7.8	8.0	7.6	—	—
	Temp	25.3	24.4	25.0	24.6	25.4	25.0	25.4	25.3	24.7	25.1	25.4	24.2	—	—
0.5 g/l	DO	8.3	8.7	9.0	8.5	8.1	8.0	7.9	7.8	8.1	7.7	8.0	8.0	—	—
	pH	8.1	8.2	8.0	8.1	8.1	8.1	8.1	7.9	8.1	7.6	7.9	8.0	—	—
	Temp	25.3	24.4	25.1	24.7	25.4	25.3	25.4	25.4	25.6	25.4	25.5	24.4	—	—
1.0 g/l	DO	8.3	8.6	9.1	8.4	8.1	7.9	8.0	7.8	8.1	7.7	8.0	8.0	—	—
	pH	8.1	8.2	8.0	8.1	8.1	8.0	8.2	8.1	8.1	7.6	7.9	7.8	—	—
	Temp	25.2	24.4	25.1	24.6	25.4	25.4	25.4	25.5	25.3	25.4	25.5	24.5	—	—
2.0 g/l	DO	8.4	8.5	9.1	8.6	8.2	8.0	8.1	7.6	8.0	8.0	7.9	8.0	—	—
	pH	8.2	8.2	8.0	8.1	8.1	7.9	8.2	8.1	8.1	7.7	7.9	7.9	—	—
	Temp	25.2	24.3	25.2	24.6	25.5	25.5	25.4	25.5	25.5	25.3	25.4	24.6	—	—
4.0 g/l	DO	8.4	8.7	—	—	—	—	—	—	—	—	—	—	—	—
	pH	8.2	8.2	—	—	—	—	—	—	—	—	—	—	—	—
	Temp	25.0	24.3	—	—	—	—	—	—	—	—	—	—	—	—

Dissolved Oxygen (DO) readings are in mg/l O_2; Temperature (Temp) readings are in ºC.

Additional Parameters	Control			High Concentration		
	Day 1	Day 3	Day 5	Day 1	Day 3	Day 5
Conductivity (µS)	333	337	302	6440	3310	3302
Alkalinity (mg/l $CaCO_3$)	72	73	64	74	73	70
Hardness (mg/l $CaCO_3$)	94	94	90	97	95	91

Source of Neonates

Replicate:	A	B	C	D	E	F	G	H	I	J
Brood ID:	3A	2B	1C	3D	2E	2F	1G	2H	1I	3J

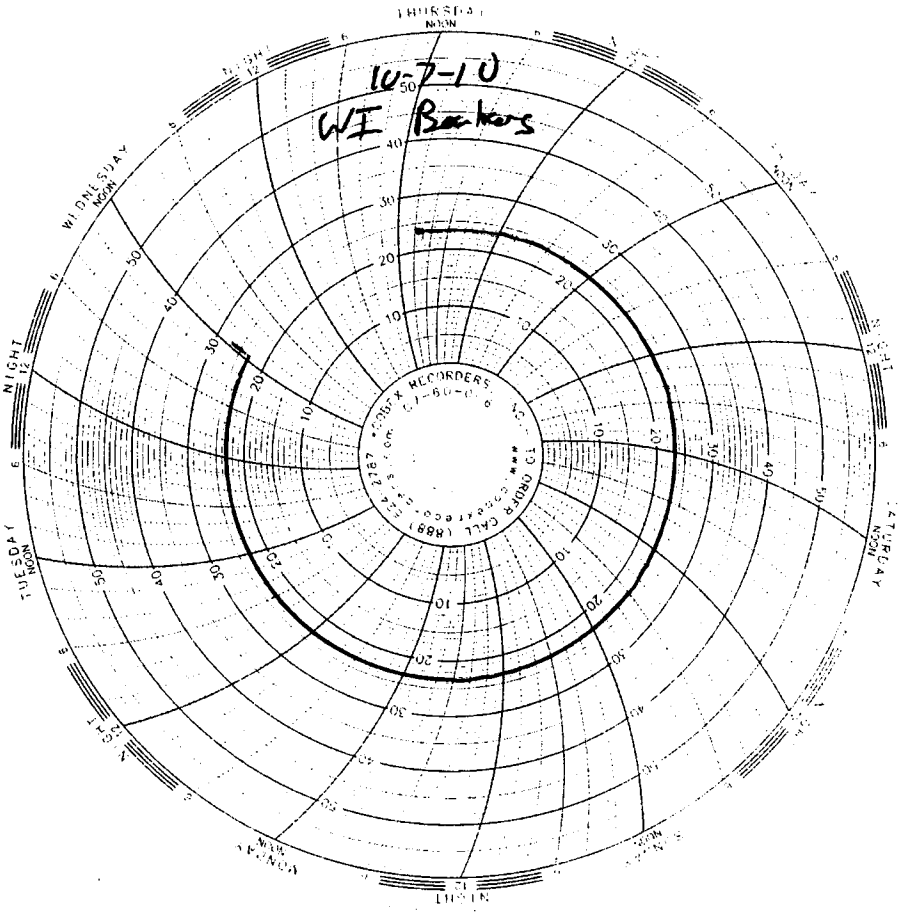
Aquatic Testing Laboratories

Test Temperature Chart

Test No: RT-101007

Date Tested: 10/07/10 to 10/13/10

Acceptable Range: 25+/- 1°C



EBERLINE ANALYTICAL
SDG 8639

SDG 8639	Client Test America, Inc.
Contact N. Joseph Verville	Contract ITJ0820

SUMMARY DATA SECTION

TABLE OF CONTENTS

Prepared by

Reviewed by

Lab id	EAS
Protocol	TA
Version	Ver 1.0
Form	DVD-TOC
Version	3.06
Report date	11/16/10

EBERLINE ANALYTICAL

SDG 8639

LAB SAMPLE SUMMARY

SDG 8639
Contact N. Joseph Verville

Client Test America, Inc.
Contract ITJ0820

LAB SAMPLE ID	CLIENT SAMPLE ID	LOCATION	MATRIX	LEVEL	SAS NO	CHAIN OF CUSTODY	COLLECTED
S010089-01	ITJ0820-01	Boeing-SSFL	WATER			ITJ0820	10/06/10 19:30
S010089-02	Lab Control Sample		WATER				
S010089-03	Method Blank		WATER				
S010089-04	Duplicate (S010089-01)	Boeing-SSFL	WATER				10/06/10 19:30

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-LS
Version 3.06
Report date 11/16/10

EBERLINE ANALYTICAL

SDG 8639

SDG 8639
Contact N. Joseph Verville

QC SUMMARY

Client Test America, Inc.
Contract ITJ0820

QC BATCH	CHAIN OF CUSTODY	CLIENT SAMPLE ID	MATRIX	% MOIST	SAMPLE AMOUNT	BASIS AMOUNT	DAYS SINCE RECEIVED	DAYS SINCE COLL	LAB SAMPLE ID	DEPARTMENT SAMPLE ID
8639	ITJ0820	ITJ0820-01	WATER		9.8 L		10/09/10	3	S010089-01	8639-001
		Method Blank	WATER						S010089-03	8639-003
		Lab Control Sample	WATER						S010089-02	8639-002
		Duplicate (S010089-01)	WATER		9.8 L		10/09/10	3	S010089-04	8639-004

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-QS
Version 3.06
Report date 11/16/10

EBERLINE ANALYTICAL

SDG 8639

PREP BATCH SUMMARY

SDG 8639
Contact N. Joseph Verville

Client Test America, Inc.
Contract ITJ0820

TEST	MATRIX	METHOD	PREPARATION BATCH	ERROR 2σ %	PLANCHETS ANALYZED CLIENT	MORE	RE	BLANK	LCS	DUP/ORIG	MS/ORIG	QUALIFIERS
Beta Counting												
AC	WATER	Radium-228 in Water	7258-125	10.4	1			1	1	1/1		
SR	WATER	Strontium-90 in Water	7258-125	10.4	1			1	1	1/1		
Gas Proportional Counting												
80A	WATER	Gross Alpha in Water	7258-125	20.6	1			1	1	1/1		
80B	WATER	Gross Beta in Water	7258-125	11.0	1			1	1	1/1		
Gamma Spectroscopy												
GAM	WATER	Gamma Emitters in Water	7258-125	7.0	1			1	1	1/1		
Kinetic Phosphorimetry, ug												
U_T	WATER	Uranium, Total	7258-125		1			1	1	1/1		
Liquid Scintillation Counting												
H	WATER	Tritium in Water	7258-125	10.0	1			1	1	1/1		
Radon Counting												
RA	WATER	Radium-226 in Water	7258-125	16.4	1			1	1	1/1		

Duplicates and Matrix Spikes are those with original (Client) sample in this Sample Delivery Group.
Blank and LCS planchets are those in the same preparation batch as some Client, Duplicate or Spike sample.

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-PBS
Version 3.06
Report date 11/16/10

EBERLINE ANALYTICAL

SDG 8639

LAB WORK SUMMARY

SDG 8639
Contact N. Joseph Verville

Client Test America, Inc.
Contract ITJ0820

LAB SAMPLE / COLLECTED / RECEIVED	CLIENT SAMPLE ID / LOCATION / CUSTODY / SAS no	MATRIX	PLANCHET	TEST	SUF-FIX	ANALYZED	REVIEWED	BY	METHOD
S010089-01	ITJ0820-01		8639-001	80A/80		10/26/10	10/28/10	BW	Gross Alpha in Water
10/06/10	Boeing-SSFL	WATER	8639-001	80B/80		10/26/10	10/28/10	BW	Gross Beta in Water
10/09/10	ITJ0820		8639-001	AC		11/04/10	11/05/10	BW	Radium-228 in Water
			8639-001	GAM		11/04/10	11/08/10	CSS	Gamma Emitters in Water
			8639-001	H		11/05/10	11/09/10	BW	Tritium in Water
			8639-001	RA		10/30/10	11/01/10	BW	Radium-226 in Water
			8639-001	SR		10/26/10	11/04/10	BW	Strontium-90 in Water
			8639-001	U_T		10/26/10	10/26/10	CSS	Uranium, Total
S010089-02	Lab Control Sample		8639-002	80A/80		10/26/10	10/28/10	BW	Gross Alpha in Water
		WATER	8639-002	80B/80		10/26/10	10/28/10	BW	Gross Beta in Water
			8639-002	AC		11/04/10	11/05/10	BW	Radium-228 in Water
			8639-002	GAM		11/05/10	11/08/10	CSS	Gamma Emitters in Water
			8639-002	H		11/05/10	11/09/10	BW	Tritium in Water
			8639-002	RA		10/30/10	11/01/10	BW	Radium-226 in Water
			8639-002	SR		10/26/10	11/04/10	BW	Strontium-90 in Water
			8639-002	U_T		10/26/10	10/26/10	CSS	Uranium, Total
S010089-03	Method Blank		8639-003	80A/80		10/26/10	10/28/10	BW	Gross Alpha in Water
		WATER	8639-003	80B/80		10/26/10	10/28/10	BW	Gross Beta in Water
			8639-003	AC		11/04/10	11/05/10	BW	Radium-228 in Water
			8639-003	GAM		11/05/10	11/08/10	CSS	Gamma Emitters in Water
			8639-003	H		11/05/10	11/09/10	BW	Tritium in Water
			8639-003	RA		10/30/10	11/01/10	BW	Radium-226 in Water
			8639-003	SR		10/26/10	11/04/10	BW	Strontium-90 in Water
			8639-003	U_T		10/26/10	10/26/10	CSS	Uranium, Total
S010089-04	Duplicate (S010089-01)		8639-004	80A/80		10/26/10	10/28/10	BW	Gross Alpha in Water
10/06/10	Boeing-SSFL	WATER	8639-004	80B/80		10/26/10	10/28/10	BW	Gross Beta in Water
10/09/10			8639-004	AC		11/04/10	11/05/10	BW	Radium-228 in Water
			8639-004	GAM		11/05/10	11/08/10	CSS	Gamma Emitters in Water
			8639-004	H		11/05/10	11/09/10	BW	Tritium in Water
			8639-004	RA		10/30/10	11/01/10	BW	Radium-226 in Water
			8639-004	SR		10/26/10	11/04/10	BW	Strontium-90 in Water
			8639-004	U_T		10/26/10	10/26/10	CSS	Uranium, Total

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-LWS
Version 3.06
Report date 11/16/10

SDG 8639
Contact N. Joseph Verville

WORK SUMMARY, cont.

Client Test America, Inc.
Contract ITJ0820

COUNTS OF TESTS BY SAMPLE TYPE

TEST	SAS no	METHOD	REFERENCE	CLIENT	MORE	RE	BLANK	LCS	DUP SPIKE	TOTAL
80A/80		Gross Alpha in Water	900.0	1			1	1	1	4
80B/80		Gross Beta in Water	900.0	1			1	1	1	4
AC		Radium-228 in Water	904.0	1			1	1	1	4
GAM		Gamma Emitters in Water	901.1	1			1	1	1	4
H		Tritium in Water	906.0	1			1	1	1	4
RA		Radium-226 in Water	903.1	1			1	1	1	4
SR		Strontium-90 in Water	905.0	1			1	1	1	4
U_T		Uranium, Total	D5174	1			1	1	1	4
TOTALS				8			8	8	8	32

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-LWS
Version 3.06
Report date 11/16/10

EBERLINE ANALYTICAL

SDG 8639

8639-003 **Method Blank**

METHOD BLANK

SDG	8639	Client	Test America, Inc.
Contact	N. Joseph Verville	Contract	ITJ0820
Lab sample id	S010089-03	Client sample id	Method Blank
Dept sample id	8639-003	Material/Matrix	WATER

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Gross Alpha	12587461	-0.012	0.34	0.824	3.00	U	80A
Gross Beta	12587472	-0.296	0.82	1.48	4.00	U	80B
Tritium	10028178	-27.5	96	164	200	U	H
Radium-226	13982633	0.090	0.34	0.619	1.00	U	RA
Radium-228	15262201	-0.175	0.22	0.720	1.00	U	AC
Strontium-90	10098972	0.102	0.42	0.920	2.00	U	SR
Uranium, Total		0	0.010	0.023	1.00	U	U_T
Potassium-40	13966002	U		22.8	25.0	U	GAM
Cesium-137	10045973	U		1.78	20.0	U	GAM

QC-BLANK #75645

Lab id	EAS
Protocol	TA
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	11/16/10

EBERLINE ANALYTICAL

SDG 8639

8639-002

Lab Control Sample

LAB CONTROL SAMPLE

SDG 8639 | Client Test America, Inc.
Contact N. Joseph Verville | Contract ITJ0820

Lab sample id S010089-02 | Client sample id Lab Control Sample
Dept sample id 8639-002 | Material/Matrix WATER

ANALYTE	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST	ADDED pCi/L	2σ ERR pCi/L	REC %	2σ LMTS (TOTAL)	PROTOCOL LIMITS
Gross Alpha	51.8	3.7	0.992	3.00		80A	40.4	1.6	128	72-128	70-130
Gross Beta	35.0	2.2	2.23	4.00		80B	35.2	1.4	99	87-113	70-130
Tritium	2490	160	162	200		H	2570	100	97	88-112	80-120
Radium-226	60.0	2.7	0.630	1.00		RA	55.7	2.2	108	81-119	80-120
Radium-228	5.68	0.50	0.694	1.00		AC	4.75	0.19	120	83-117	60-140
Strontium-90	17.9	1.1	0.577	2.00		SR	17.6	0.70	102	87-113	80-120
Uranium, Total	62.5	7.3	0.225	1.00		U_T	56.5	2.3	111	86-114	80-120
Cesium-137	115	4.1	2.70	20.0		GAM	111	4.4	104	91-109	80-120

QC-LCS #75644

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-LCS
Version 3.06
Report date 11/16/10

EBERLINE ANALYTICAL

SDG 8639

8639-004

ITJ0820-01

DUPLICATE

SDG 8639
Contact N. Joseph Verville
Client Test America, Inc.
Contract ITJ0820

DUPLICATE	ORIGINAL	
Lab sample id S010089-04	Lab sample id S010089-01	Client sample id ITJ0820-01
Dept sample id 8639-004	Dept sample id 8639-001	Location/Matrix Boeing-SSFL WATER
	Received 10/09/10	Collected/Volume 10/06/10 19:30 9.8 L
		Chain of custody id ITJ0820

ANALYTE	DUPLICATE pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST	ORIGINAL pCi/L	2σ ERR (COUNT)	MDA pCi/L	QUALI-FIERS	RPD %	3σ TOT	DER σ
Gross Alpha	1.22	0.53	0.524	3.00	J	80A	0.865	0.44	0.481	J	34	109	0.9
Gross Beta	2.16	0.94	1.40	4.00	J	80B	3.81	1.3	1.93	J	55	84	2.0
Tritium	27.6	98	164	200	U	H	-13.6	95	162	U	-		0.6
Radium-226	0.287	0.37	0.621	1.00	U	RA	0.181	0.36	0.619	U	-		0.4
Radium-228	0.132	0.35	1.08	1.00	U	AC	0.071	0.26	0.753	U	-		0.3
Strontium-90	0.090	0.45	1.02	2.00	U	SR	-0.130	0.36	0.879	U	-		0.8
Uranium, Total	0.222	0.027	0.023	1.00	J	U_T	0.208	0.025	0.023	J	7	26	0.8
Potassium-40	U		73.5	25.0	U	GAM	U		20.3	U	-		1.4
Cesium-137	U		2.68	20.0	U	GAM	U		1.62	U	-		0.7

QC-DUP#1 75646

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-DUP
Version 3.06
Report date 11/16/10

EBERLINE ANALYTICAL

SDG 8639

8639-001 ITJ0820-01

DATA SHEET

SDG	8639	Client	Test America, Inc.
Contact	N. Joseph Verville	Contract	ITJ0820
Lab sample id	S010089-01	Client sample id	ITJ0820-01
Dept sample id	8639-001	Location/Matrix	Boeing-SSFL WATER
Received	10/09/10	Collected/Volume	10/06/10 19:30 9.8 L
		Chain of custody id	ITJ0820

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Gross Alpha	12587461	0.865	0.44	0.481	3.00	J	80A
Gross Beta	12587472	3.81	1.3	1.93	4.00	J	80B
Tritium	10028178	-13.6	95	162	200	U	H
Radium-226	13982633	0.181	0.36	0.619	1.00	U	RA
Radium-228	15262201	0.071	0.26	0.753	1.00	U	AC
Strontium-90	10098972	-0.130	0.36	0.879	2.00	U	SR
Uranium, Total		0.208	0.025	0.023	1.00	J	U_T
Potassium-40	13966002	U		20.3	25.0	U	GAM
Cesium-137	10045973	U		1.62	20.0	U	GAM

Lab id	EAS
Protocol	TA
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	11/16/10

EBERLINE ANALYTICAL

SDG 8639

LAB METHOD SUMMARY

RADIUM-228 IN WATER

BETA COUNTING

Test AC Matrix WATER
SDG 8639
Contact N. Joseph Verville

Client Test America, Inc.
Contract ITJ0820

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Radium-228
Preparation batch 7258-125					
S010089-01			8639-001	ITJ0820-01	U
S010089-02			8639-002	Lab Control Sample	ok
S010089-03			8639-003	Method Blank	U
S010089-04			8639-004	Duplicate (S010089-01)	- U
Nominal values and limits from method				RDLs (pCi/L)	1.00

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/L	ALIQ L	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 7258-125 2σ prep error 10.4 % Reference Lab Notebook No. 7258 pg. 125																
S010089-01			ITJ0820-01	0.753	1.80			81		60			29	11/04/10	11/04	GRB-221
S010089-02			Lab Control Sample	0.694	1.80			82		60				11/04/10	11/04	GRB-222
S010089-03			Method Blank	0.720	1.80			80		60				11/04/10	11/04	GRB-223
S010089-04			Duplicate (S010089-01)	1.08	1.80			60		60			29	11/04/10	11/04	GRB-224
Nominal values and limits from method				1.00	1.80			30-105		50			180			

PROCEDURES REFERENCE 904.0
DWP-894 Sequential Separation of Actinium-228 and Radium-226 in Drinking Water (>1 Liter Aliquot), rev 5

AVERAGES ± 2 SD FOR 4 SAMPLES
MDA 0.812 ± 0.361
YIELD 76 ± 21

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 11/16/10

EBERLINE ANALYTICAL

SDG 8639

Test SR Matrix WATER
SDG 8639
Contact N. Joseph Verville

LAB METHOD SUMMARY

STRONTIUM-90 IN WATER

BETA COUNTING

Client Test America, Inc.
Contract ITJ0820

RESULTS

LAB SAMPLE ID	RAW TEST	SUF- FIX	PLANCHET	CLIENT SAMPLE ID	Strontium-90	
Preparation batch 7258-125						
S010089-01			8639-001	ITJ0820-01	U	
S010089-02			8639-002	Lab Control Sample	ok	
S010089-03			8639-003	Method Blank	U	
S010089-04			8639-004	Duplicate (S010089-01)	-	U
Nominal values and limits from method				RDLs (pCi/L)	2.00	

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF- FIX	CLIENT SAMPLE ID	MDA pCi/L	ALIQ L	PREP FAC	DILU- TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL- YZED	DETECTOR
Preparation batch 7258-125			2σ prep error 10.4 %	Reference Lab Notebook No. 7258 pg. 125												
S010089-01			ITJ0820-01	0.879	0.500			79		50			20	10/26/10	10/26	GRB-221
S010089-02			Lab Control Sample	0.577	0.500			80		81				10/26/10	10/26	GRB-206
S010089-03			Method Blank	0.920	0.500			72		50				10/26/10	10/26	GRB-223
S010089-04			Duplicate (S010089-01)	1.02	0.500			81		50			20	10/26/10	10/26	GRB-204
Nominal values and limits from method				2.00	0.500			30-105		50			180			

PROCEDURES REFERENCE 905.0
DWP-380 Strontium in Drinking Water, rev 8

AVERAGES ± 2 SD FOR 4 SAMPLES
MDA 0.849 ± 0.382
YIELD 78 ± 8

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 11/16/10

EBERLINE ANALYTICAL

SDG 8639

Test 80A Matrix WATER
SDG 8639
Contact N. Joseph Verville

LAB METHOD SUMMARY

GROSS ALPHA IN WATER

GAS PROPORTIONAL COUNTING

Client Test America, Inc.
Contract ITJ0820

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Gross Alpha	
Preparation batch 7258-125						
S010089-01	80		8639-001	ITJ0820-01	0.865	J
S010089-02	80		8639-002	Lab Control Sample	ok	
S010089-03	80		8639-003	Method Blank	U	
S010089-04	80		8639-004	Duplicate (S010089-01)	ok	J
Nominal values and limits from method				RDLs (pCi/L)	3.00	

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/L	ALIQ L	PREP FAC	DILU-TION	RESID mg	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 7258-125 2σ prep error 20.6 % Reference Lab Notebook No. 7258 pg. 125																
S010089-01	80		ITJ0820-01	0.481	0.250			10		251			20	10/25/10	10/26	GRB-107
S010089-02	80		Lab Control Sample	0.992	0.250			64		200				10/25/10	10/26	GRB-213
S010089-03	80		Method Blank	0.824	0.250			65		200				10/25/10	10/26	GRB-216
S010089-04	80		Duplicate (S010089-01)	0.524	0.250			10		200			20	10/25/10	10/26	GRB-101
Nominal values and limits from method				3.00	0.250			0-200		100			180			

PROCEDURES REFERENCE 900.0
DWP-121 Gross Alpha and Gross Beta in Drinking Water, rev 10

AVERAGES ± 2 SD FOR 4 SAMPLES
MDA 0.705 ± 0.489
RESIDUE 37 ± 63

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 11/16/10

EBERLINE ANALYTICAL

SDG 8639

Test 80B Matrix WATER
SDG 8639
Contact N. Joseph Verville

LAB METHOD SUMMARY

GROSS BETA IN WATER
GAS PROPORTIONAL COUNTING

Client Test America, Inc.
Contract ITJ0820

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Gross Beta	
Preparation batch 7258-125						
S010089-01	80		8639-001	ITJ0820-01	3.81	J
S010089-02	80		8639-002	Lab Control Sample	ok	
S010089-03	80		8639-003	Method Blank	U	
S010089-04	80		8639-004	Duplicate (S010089-01)	ok	J
Nominal values and limits from method				RDLs (pCi/L)	4.00	

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/L	ALIQ L	PREP FAC	DILU-TION	RESID mg	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 7258-125			2σ prep error 11.0 %		Reference Lab Notebook No. 7258 pg. 125											
S010089-01	80		ITJ0820-01	1.93	0.250			10		251			20	10/25/10	10/26	GRB-107
S010089-02	80		Lab Control Sample	2.23	0.250			64		200				10/25/10	10/26	GRB-213
S010089-03	80		Method Blank	1.48	0.250			65		200				10/25/10	10/26	GRB-216
S010089-04	80		Duplicate (S010089-01)	1.40	0.250			10		200			20	10/25/10	10/26	GRB-101
Nominal values and limits from method				4.00	0.250			0-200		100			180			

PROCEDURES REFERENCE 900.0
DWP-121 Gross Alpha and Gross Beta in Drinking Water, rev 10

AVERAGES ± 2 SD FOR 4 SAMPLES
MDA 1.76 ± 0.781
RESIDUE 37 ± 63

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 11/16/10

EBERLINE ANALYTICAL

SDG 8639

Test GAM Matrix WATER
SDG 8639
Contact N. Joseph Verville

LAB METHOD SUMMARY

GAMMA EMITTERS IN WATER

GAMMA SPECTROSCOPY

Client Test America, Inc.
Contract ITJ0820

RESULTS

LAB SAMPLE ID	RAW TEST	SUF- FIX	PLANCHET	CLIENT SAMPLE ID	Cobalt-60	Cesium-137
Preparation batch 7258-125						
S010089-01			8639-001	ITJ0820-01	U	
S010089-02			8639-002	Lab Control Sample	ok	
S010089-03			8639-003	Method Blank	U	
S010089-04			8639-004	Duplicate (S010089-01)	-	U
Nominal values and limits from method				RDLs (pCi/L)	10.0	20.0

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF- FIX	CLIENT SAMPLE ID	MDA pCi/L	ALIQ L	PREP FAC	DILU- TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL- YZED	DETECTOR
Preparation batch 7258-125			2σ prep error 7.0 %		Reference Lab Notebook No. 7258 pg. 125											
S010089-01			ITJ0820-01		2.00					605			29	10/25/10	11/04	01,01,00
S010089-02			Lab Control Sample		2.00					636				10/25/10	11/05	01,04,00
S010089-03			Method Blank		2.00					636				10/25/10	11/05	01,01,00
S010089-04			Duplicate (S010089-01)		2.00					636			30	10/25/10	11/05	MB,05,00
Nominal values and limits from method				6.00	2.00					400			180			

PROCEDURES REFERENCE 901.1
DWP-100 Preparation of Drinking Water Samples for Gamma Spectroscopy, rev 5

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 11/16/10

EBERLINE ANALYTICAL

SDG 8639

Test U T Matrix WATER
SDG 8639
Contact N. Joseph Verville

LAB METHOD SUMMARY

URANIUM, TOTAL

KINETIC PHOSPHORIMETRY, UG

Client Test America, Inc.
Contract ITJ0820

RESULTS

LAB SAMPLE ID	RAW TEST	SUF- FIX	PLANCHET	CLIENT SAMPLE ID	Uranium, Total
Preparation batch 7258-125					
S010089-01			8639-001	ITJ0820-01	0.208 J
S010089-02			8639-002	Lab Control Sample	ok
S010089-03			8639-003	Method Blank	U
S010089-04			8639-004	Duplicate (S010089-01)	ok J
Nominal values and limits from method				RDLs (pCi/L)	1.00

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF- FIX	CLIENT SAMPLE ID	MDA pCi/L	ALIQ L	PREP FAC	DILU- TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL- YZED	DETECTOR
Preparation batch 7258-125			2σ prep error		Reference Lab Notebook No. 7258 pg. 125											
S010089-01			ITJ0820-01	0.023	0.0200								20	10/26/10	10/26	KPA-001
S010089-02			Lab Control Sample	0.225	0.0200									10/26/10	10/26	KPA-001
S010089-03			Method Blank	0.023	0.0200									10/26/10	10/26	KPA-001
S010089-04			Duplicate (S010089-01)	0.023	0.0200								20	10/26/10	10/26	KPA-001
Nominal values and limits from method				1.00	0.0200								180			

PROCEDURES REFERENCE D5174

AVERAGES ± 2 SD FOR 4 SAMPLES
MDA 0.074 ± 0.202
YIELD _____ ± _____

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 11/16/10

EBERLINE ANALYTICAL

SDG 8639

Test H Matrix WATER
SDG 8639
Contact N. Joseph Verville

LAB METHOD SUMMARY

TRITIUM IN WATER

LIQUID SCINTILLATION COUNTING

Client Test America, Inc.
Contract ITJ0820

RESULTS

LAB SAMPLE ID	RAW TEST	SUF- FIX	PLANCHET	CLIENT SAMPLE ID	Tritium	
Preparation batch 7258-125						
S010089-01			8639-001	ITJ0820-01	U	
S010089-02			8639-002	Lab Control Sample	ok	
S010089-03			8639-003	Method Blank	U	
S010089-04			8639-004	Duplicate (S010089-01)	-	U
Nominal values and limits from method				RDLs (pCi/L)	200	

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF- FIX	CLIENT SAMPLE ID	MDA pCi/L	ALIQ L	PREP FAC	DILU- TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL- YZED	DETECTOR
Preparation batch 7258-125			2σ prep error 10.0 %	Reference Lab Notebook No. 7258 pg. 125												
S010089-01			ITJ0820-01	162	0.0100			100		150			30	11/04/10	11/05	LSC-004
S010089-02			Lab Control Sample	162	0.100			10		150				11/04/10	11/05	LSC-004
S010089-03			Method Blank	164	0.100			10		150				11/04/10	11/05	LSC-004
S010089-04			Duplicate (S010089-01)	164	0.0100			100		150			30	11/04/10	11/05	LSC-004
Nominal values and limits from method				200	0.0100					100			180			

PROCEDURES REFERENCE 906.0
DWP-212 Tritium in Drinking Water by Distillation, rev 8

AVERAGES ± 2 SD FOR 4 SAMPLES
MDA 163 ± 2.31
YIELD 55 ± 104

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 11/16/10

EBERLINE ANALYTICAL

SDG 8639

LAB METHOD SUMMARY

RADIUM-226 IN WATER

RADON COUNTING

Test RA Matrix WATER
SDG 8639
Contact N. Joseph Verville

Client Test America, Inc.
Contract ITJ0820

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Radium-226
Preparation batch 7258-125					
S010089-01			8639-001	ITJ0820-01	U
S010089-02			8639-002	Lab Control Sample	ok
S010089-03			8639-003	Method Blank	U
S010089-04			8639-004	Duplicate (S010089-01)	- U
Nominal values and limits from method				RDLs (pCi/L)	1.00

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/L	ALIQ L	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 7258-125			2σ prep error 16.4 %		Reference Lab Notebook No. 7258 pg. 125											
S010089-01			ITJ0820-01	0.619	0.100			100		100			24	10/30/10	10/30	RN-010
S010089-02			Lab Control Sample	0.630	0.100			100		100				10/30/10	10/30	RN-011
S010089-03			Method Blank	0.619	0.100			100		100				10/30/10	10/30	RN-015
S010089-04			Duplicate (S010089-01)	0.621	0.100			100		100			24	10/30/10	10/30	RN-014
Nominal values and limits from method				1.00	0.100					100			180			

PROCEDURES REFERENCE 903.1
DWP-881A Ra-226 Screening in Drinking Water, rev 6

AVERAGES ± 2 SD FOR 4 SAMPLES
MDA 0.622 ± 0.011
YIELD 100 ± 0

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 11/16/10

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APPENDIX G

Section 23

Outfall 009 – October 20, 2010

MEC^X Data Validation Report

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DATA VALIDATION REPORT

Boeing SSFL NPDES

SAMPLE DELIVERY GROUP: ITJ2060

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:	ITJ2060
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 (COMPOSITE)	ITJ2060	S010169-01	WATER	10/20/2010 15:15	245.1, 245.1 (Diss), ASTM 5174-91, 900.0 MOD, 901.1 MOD, 903.1 MOD, 904 MOD, 905 MOD, 906.0 MOD, 1613, SM2540D

II. Sample Management

No anomalies were observed regarding sample management. Eberline did not note the temperature upon receipt; however, due to the nonvolatile nature of the analytes, no qualifications were required. The samples in this SDG were received at the remaining laboratories 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.

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: December 15, 2010

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 analyzed with 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 $\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 detects between the EDL and the RL for most target compounds. Several target compounds were reported as EMPCs in the method blank; however, due to the extent of the method blank contamination, the reviewer considered it appropriate to use the EMPCs to qualify sample results. The method blank result for OCDD was insufficient to qualify the sample result. All other target compounds detected

in the method blank were qualified as nondetected, "U," at the EDL or at the level of contamination. All sample totals containing one or more peaks detected in the method blank were qualified as estimated, "J."

- 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 a representative number of reportable sample results. Any individual isomers reported as EMPCs were qualified as estimated and nondetected "UJ," and the EDL raised to the level of the EMPC. Any totals including EMPC peaks were qualified as estimated, "J." Any detects reported between the estimated detection limit (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 METHOD 245.1—Mercury

Reviewed By: P. Meeks
Date Reviewed: December 14, 2010

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 Method 245.1*, and the *National Functional Guidelines for Inorganic Data Review* (7/02).

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

- Tuning: Not applicable to this method.

- Calibration: Calibration criteria were met. Mercury initial calibration r^2 values were ≥0.995 and all mercury initial and continuing calibration recoveries were within 85-115%. The mercury CRI recoveries were within the control limits of 70-130%.

- Blanks: Method blanks and CCBs had no applicable detects.

- Interference Check Samples: Not applicable to this analysis.

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

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

- Matrix Spike/Matrix Spike Duplicate: MS/MSD analyses were performed on the sample in this SDG for dissolved mercury. Recoveries and the RPD were within the laboratory-established control limit.

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

- Internal Standards Performance: Not applicable to this method.

- 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: December 15, 2010

The sample 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 prepared within the five-day analytical 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 below 20%; therefore, gross alpha detected in the sample was qualified as estimated, "J." 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. All KPA 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 were within laboratory-established control limits.

- Laboratory Duplicates: Laboratory duplicate analyses were performed on the sample in this SDG. The RPDs were within the laboratory-established control limits or within ± the 2-sigma error if the result or duplicate were less than the reporting limit.

- Matrix Spike/Matrix Spike Duplicate: No matrix spike or MS/MSD analyses were performed on the sample in this SDG. Method accuracy 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. 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: December 14, 2010

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), Standard Method 2540D*, and the *National Functional Guidelines for Inorganic Data Review* (7/02).

- Holding Times: The analytical holding time, seven days from collection, was met.

- Calibration: Balance calibration logs were provided and found to be acceptable.

- Blanks: TSS was not detected in the method blank.

- Blank Spikes and Laboratory Control Samples: The recovery was within laboratory-established QC limits.

- Laboratory Duplicates: No laboratory duplicate analysis was performed on the sample in this SDG.

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

- Sample Result Verification: Calculations were verified and the sample result reported on the sample result summary was 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 ITJ2060

Analysis Method 8640

Sample Name Outfall 009 (composite) **Matrix Type:** WATER **Validation Level:** IV

Lab Sample Name: ITJ2060-02 **Sample Date:** 10/20/2010 3:15:00 AM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Uranium, Total	NA	0.076	1	0.02	pCi/L	Jb	J	DNQ

Analysis Method 900

Sample Name Outfall 009 (composite) **Matrix Type:** WATER **Validation Level:** IV

Lab Sample Name: ITJ2060-02 **Sample Date:** 10/20/2010 3:15:00 AM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Gross Alpha	12587461	0.142	3	0.061	pCi/L	Jb	J	C, DNQ
Gross Beta	12587472	2.31	4	0.829	pCi/L	Jb	J	DNQ

Analysis Method 901.1

Sample Name Outfall 009 (composite) **Matrix Type:** WATER **Validation Level:** IV

Lab Sample Name: ITJ2060-02 **Sample Date:** 10/20/2010 3:15:00 AM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Cesium-137	10045973	ND	20	0.863	pCi/L	U	U	
Potassium-40	13966002	ND	25	12	pCi/L	U	U	

Analysis Method 903.1

Sample Name Outfall 009 (composite) **Matrix Type:** WATER **Validation Level:** IV

Lab Sample Name: ITJ2060-02 **Sample Date:** 10/20/2010 3:15:00 AM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Radium-226	13982633	0.026	1	0.671	pCi/L	U	U	

Analysis Method 904

Sample Name Outfall 009 (composite) **Matrix Type:** WATER **Validation Level:** IV

Lab Sample Name: ITJ2060-02 **Sample Date:** 10/20/2010 3:15:00 AM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Radium-228	15262201	-0.077	1	0.835	pCi/L	U	U	

Analysis Method 905

Sample Name Outfall 009 (composite) **Matrix Type:** WATER **Validation Level:** IV

Lab Sample Name: ITJ2060-02 **Sample Date:** 10/20/2010 3:15:00 AM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Strontium-90	10098972	0.102	2	1.28	pCi/L	U	U	

Analysis Method 906

Sample Name Outfall 009 (composite) **Matrix Type:** WATER **Validation Level:** IV

Lab Sample Name: ITJ2060-02 **Sample Date:** 10/20/2010 3:15:00 AM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Tritium	10028178	-17.9	200	267	pCi/L	U	U	

Analysis Method EPA 245.1

Sample Name Outfall 009 (composite) **Matrix Type:** Water **Validation Level:** IV

Lab Sample Name: ITJ2060-02 **Sample Date:** 10/20/2010 3:15:00 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	

Analysis Method EPA 245.1-Diss

Sample Name Outfall 009 (composite) **Matrix Type:** Water **Validation Level:** IV

Lab Sample Name: ITJ2060-02 **Sample Date:** 10/20/2010 3:15:00 AM

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

Analysis Method EPA-5 1613B

Sample Name Outfall 009 (composite) **Matrix Type:** WATER **Validation Level:** IV

Lab Sample Name: ITJ2060-02 **Sample Date:** 10/20/2010 3:15:00 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	0.00005	0.0000005	ug/L	J, B	U	B
1,2,3,4,6,7,8-HpCDF	67562-39-4	ND	0.00005	0.0000004	ug/L	J, Q, B	U	B
1,2,3,4,7,8,9-HpCDF	55673-89-7	0.000000	0.00005	0.0000006	ug/L	J, Q	UJ	*III
1,2,3,4,7,8-HxCDD	39227-28-6	ND	0.00005	0.0000005	ug/L	J, Q, B	U	B
1,2,3,4,7,8-HxCDF	70648-26-9	ND	0.00005	0.0000002	ug/L	J, Q, B	U	B
1,2,3,6,7,8-HxCDD	57653-85-7	ND	0.00005	0.0000004	ug/L	J, Q, B	U	B
1,2,3,6,7,8-HxCDF	57117-44-9	ND	0.00005	0.0000002	ug/L	J, Q, B	U	B
1,2,3,7,8,9-HxCDD	19408-74-3	ND	0.00005	0.0000004	ug/L	J, Q, B	U	B
1,2,3,7,8,9-HxCDF	72918-21-9	ND	0.00005	0.0000003	ug/L		U	
1,2,3,7,8-PeCDD	40321-76-4	ND	0.00005	0.0000005	ug/L		U	
1,2,3,7,8-PeCDF	57117-41-6	ND	0.00005	0.0000004	ug/L		U	
2,3,4,6,7,8-HxCDF	60851-34-5	ND	0.00005	0.0000002	ug/L	J, Q, B	U	B
2,3,4,7,8-PeCDF	57117-31-4	ND	0.00005	0.0000005	ug/L		U	
2,3,7,8-TCDD	1746-01-6	ND	0.00001	0.0000004	ug/L		U	
2,3,7,8-TCDF	51207-31-9	ND	0.00001	0.0000002	ug/L		U	
OCDD	3268-87-9	0.0002	0.0001	0.0000015	ug/L			
OCDF	39001-02-0	ND	0.0001	0.0000004	ug/L	J, B	U	B
Total HpCDD	37871-00-4	0.000034	0.00005	0.0000005	ug/L	J, B	J	B, DNQ
Total HpCDF	38998-75-3	0.000007	0.00005	0.0000004	ug/L	J, Q, B	J	B, DNQ, *III
Total HxCDD	34465-46-8	0.000003	0.00005	0.0000004	ug/L	J, Q, B	J	B, DNQ, *III
Total HxCDF	55684-94-1	0.000002	0.00005	0.0000002	ug/L	J, Q, B	J	B, DNQ, *III
Total PeCDD	36088-22-9	ND	0.00005	0.0000005	ug/L		U	
Total PeCDF	30402-15-4	ND	0.00005	0.0000004	ug/L		U	
Total TCDD	41903-57-5	ND	0.00001	0.0000004	ug/L		U	
Total TCDF	55722-27-5	ND	0.00001	0.0000002	ug/L		U	

Analysis Method SM 2540D

Sample Name Outfall 009 (composite) **Matrix Type:** Water **Validation Level:** IV

Lab Sample Name: ITJ2060-02 **Sample Date:** 10/20/2010 3:15:00 AM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Total Suspended Solids	TSS	22	10	1.0	mg/l			

APPENDIX G

Section 24

Outfall 009 – October 20, 2010

Test America Analytical Laboratory Report

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THE LEADER IN ENVIRONMENTAL TESTING

17461 Derian Avenue. Suite 100, Irvine, CA 92614 (949) 261-1022 Fax:(949) 260-3297

LABORATORY REPORT

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

Project: Routine Outfall 009 2010
Routine Outfall 009

Sampled: 10/20/10
Received: 10/20/10
Issued: 12/14/10 16:23

NELAP #01108CA California ELAP#2706 CSDLAC #10256 AZ #AZ0671 NV #CA01531

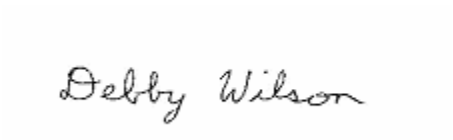
SAMPLE CROSS REFERENCE

SUBCONTRACTED: Refer to the last page for specific subcontract laboratory information included in this report.

LABORATORY ID	CLIENT ID	MATRIX
ITJ2060-01	Outfall 009 (grab)	Water
ITJ2060-02	Outfall 009 (composite)	Water

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.

Reviewed By:



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Debby Wilson
Project Manager

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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: Routine Outfall 009 2010
Routine Outfall 009
Report Number: ITJ2060

Sampled: 10/20/10
Received: 10/20/10

HEXANE EXTRACTABLE MATERIAL

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: ITJ2060-01 (Outfall 009 (grab) - Water)									
Reporting Units: mg/l									
Hexane Extractable Material (Oil & Grease)	EPA 1664A	10K0305	1.4	4.8	ND	1	BLP	11/03/10	

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Project Manager

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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: Routine Outfall 009 2010
Routine Outfall 009
Report Number: ITJ2060

Sampled: 10/20/10
Received: 10/20/10

METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: ITJ2060-02 (Outfall 009 (composite) - Water)									
Reporting Units: ug/l									
Mercury	EPA 245.1	10J2549	0.10	0.20	ND	1	DB	10/22/10	
Antimony	EPA 200.8	10K0103	0.30	2.0	**0.50**	1	RDC	11/02/10	Ja
Cadmium	EPA 200.8	10K0103	0.10	1.0	ND	1	RDC	11/02/10	
Copper	EPA 200.8	10K0103	0.50	2.0	**3.9**	1	RDC	11/02/10	
Lead	EPA 200.8	10K0103	0.20	1.0	**0.95**	1	RDC	11/02/10	Ja
Thallium	EPA 200.8	10K0103	0.20	1.0	ND	1	RDC	11/02/10	

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Project Manager

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

Project ID: Routine Outfall 009 2010
Routine Outfall 009
Report Number: ITJ2060

Sampled: 10/20/10
Received: 10/20/10

DISSOLVED METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: ITJ2060-02 (Outfall 009 (composite) - Water) - cont.									
Reporting Units: ug/l									
Mercury	EPA 245.1-Diss	10J2952	0.10	0.20	ND	1	DB	10/25/10	
Antimony	EPA 200.8-Diss	10K0214	0.30	2.0	**0.50**	1	NH	11/03/10	Ja
Cadmium	EPA 200.8-Diss	10K0214	0.10	1.0	ND	1	NH	11/02/10	
Copper	EPA 200.8-Diss	10K0214	0.50	2.0	**2.6**	1	NH	11/02/10	
Lead	EPA 200.8-Diss	10K0214	0.20	1.0	**0.28**	1	RDC	11/03/10	Ja
Thallium	EPA 200.8-Diss	10K0214	0.20	1.0	ND	1	NH	11/02/10	C

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Project Manager

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

Project ID: Routine Outfall 009 2010
Routine Outfall 009
Report Number: ITJ2060

Sampled: 10/20/10
Received: 10/20/10

INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: ITJ2060-02 (Outfall 009 (composite) - Water) - cont.									
Reporting Units: mg/l									
Chloride	EPA 300.0	10J2282	0.25	0.50	**2.9**	1	NN	10/21/10	
Total Cyanide	SM4500CN-E	10J2526	0.0022	0.0050	ND	1	HH	10/21/10	
Nitrate/Nitrite-N	EPA 300.0	10J2282	0.15	0.26	**1.1**	1	NN	10/21/10	
Sulfate	EPA 300.0	10J2282	0.20	0.50	**7.3**	1	NN	10/21/10	
Total Dissolved Solids	SM2540C	10J2573	1.0	10	**120**	1	MC	10/22/10	
Total Suspended Solids	SM 2540D	10J3002	1.0	10	**22**	1	DC	10/25/10	

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Project Manager

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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
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Project ID: Routine Outfall 009 2010
Routine Outfall 009
Report Number: ITJ2060

Sampled: 10/20/10
Received: 10/20/10

8640

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: ITJ2060-02 (Outfall 009 (composite) - Water) - cont.									
Reporting Units: pCi/L									
Uranium, Total	8640	8640	0.02	1	**0.076**	1	CSS	11/10/10	Jb

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Project Manager

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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
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Project ID: Routine Outfall 009 2010
Routine Outfall 009
Report Number: ITJ2060

Sampled: 10/20/10
Received: 10/20/10

900

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: ITJ2060-02 (Outfall 009 (composite) - Water) - cont.									
Reporting Units: pCi/L									
Gross Alpha	900	8640	0.061	3	**0.142**	1	DVP	11/02/10	Jb
Gross Beta	900	8640	0.829	4	**2.31**	1	DVP	11/02/10	Jb

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

Project ID: Routine Outfall 009 2010
Routine Outfall 009
Report Number: ITJ2060

Sampled: 10/20/10
Received: 10/20/10

901.1

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: ITJ2060-02 (Outfall 009 (composite) - Water) - cont.									
Reporting Units: pCi/L									
Cesium-137	901.1	8640	0.863	20	ND	1	RFM	11/20/10	U
Potassium-40	901.1	8640	12	25	ND	1	RFM	11/20/10	U

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Project Manager

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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: Routine Outfall 009 2010
Routine Outfall 009
Report Number: ITJ2060

Sampled: 10/20/10
Received: 10/20/10

903.1

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: ITJ2060-02 (Outfall 009 (composite) - Water) - cont.									
Reporting Units: pCi/L									
Radium-226	903.1	8640	0.671	1	**0.026**	1	TM	11/10/10	U

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Project Manager

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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: Routine Outfall 009 2010
Routine Outfall 009
Report Number: ITJ2060

Sampled: 10/20/10
Received: 10/20/10

904

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: ITJ2060-02 (Outfall 009 (composite) - Water) - cont.									
Reporting Units: pCi/L									
Radium-228	904	8640	0.835	1	-0.077	1	ASM	11/04/10	U

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Project Manager

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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: Routine Outfall 009 2010
Routine Outfall 009
Report Number: ITJ2060

Sampled: 10/20/10
Received: 10/20/10

905

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: ITJ2060-02 (Outfall 009 (composite) - Water) - cont.									
Reporting Units: pCi/L									
Strontium-90	905	8640	1.28	2	**0.102**	1	AI	11/01/10	U

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Project Manager

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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: Routine Outfall 009 2010
Routine Outfall 009
Report Number: ITJ2060

Sampled: 10/20/10
Received: 10/20/10

906

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: ITJ2060-02 (Outfall 009 (composite) - Water) - cont.									
Reporting Units: pCi/L									
Tritium	906	8640	267	200	-17.9	1	JO	11/11/10	U

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Project Manager

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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: Routine Outfall 009 2010
Routine Outfall 009
Report Number: ITJ2060

Sampled: 10/20/10
Received: 10/20/10

EPA-5 1613Bx

Analyte	Method	Batch	MDL	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: ITJ2060-02 (Outfall 009 (composite) - Water) - cont.									
Reporting Units: ug/L									
1,2,3,4,6,7,8-HpCDD	EPA-5 1613B	301452	0.00000056	0.00005	**0.000014**	1.01	MO	11/02/10	J, B
1,2,3,4,6,7,8-HpCDF	EPA-5 1613B	301452	0.00000049	0.00005	**0.000003**	1.01	MO	11/02/10	J, Q, B
1,2,3,4,7,8,9-HpCDF	EPA-5 1613B	301452	0.00000067	0.00005	**0.00000071**	1.01	MO	11/02/10	J, Q
1,2,3,4,7,8-HxCDD	EPA-5 1613B	301452	0.00000054	0.00005	**0.00000062**	1.01	MO	11/02/10	J, Q, B
1,2,3,4,7,8-HxCDF	EPA-5 1613B	301452	0.00000029	0.00005	**0.00000033**	1.01	MO	11/02/10	J, Q, B
1,2,3,6,7,8-HxCDD	EPA-5 1613B	301452	0.00000046	0.00005	**0.00000055**	1.01	MO	11/02/10	J, Q, B
1,2,3,6,7,8-HxCDF	EPA-5 1613B	301452	0.00000026	0.00005	**0.00000055**	1.01	MO	11/02/10	J, Q, B
1,2,3,7,8,9-HxCDD	EPA-5 1613B	301452	0.00000048	0.00005	**0.00000065**	1.01	MO	11/02/10	J, Q, B
1,2,3,7,8,9-HxCDF	EPA-5 1613B	301452	0.00000031	0.00005	ND	1.01	MO	11/02/10	
1,2,3,7,8-PeCDD	EPA-5 1613B	301452	0.00000051	0.00005	ND	1.01	MO	11/02/10	
1,2,3,7,8-PeCDF	EPA-5 1613B	301452	0.00000044	0.00005	ND	1.01	MO	11/02/10	
2,3,4,6,7,8-HxCDF	EPA-5 1613B	301452	0.00000026	0.00005	**0.00000037**	1.01	MO	11/02/10	J, Q, B
2,3,4,7,8-PeCDF	EPA-5 1613B	301452	0.00000052	0.00005	ND	1.01	MO	11/02/10	
2,3,7,8-TCDD	EPA-5 1613B	301452	0.00000042	0.00001	ND	1.01	MO	11/02/10	
2,3,7,8-TCDF	EPA-5 1613B	301452	0.00000026	0.00001	ND	1.01	MO	11/02/10	
OCDD	EPA-5 1613B	301452	0.0000015	0.0001	**0.0002**	1.01	MO	11/02/10	B
OCDF	EPA-5 1613B	301452	0.00000041	0.0001	**0.00001**	1.01	MO	11/02/10	J, B
Total HpCDD	EPA-5 1613B	301452	0.00000056	0.00005	**0.000034**	1.01	MO	11/02/10	J, B
Total HpCDF	EPA-5 1613B	301452	0.00000049	0.00005	**0.0000078**	1.01	MO	11/02/10	J, Q, B
Total HxCDD	EPA-5 1613B	301452	0.00000046	0.00005	**0.0000037**	1.01	MO	11/02/10	J, Q, B
Total HxCDF	EPA-5 1613B	301452	0.00000026	0.00005	**0.0000028**	1.01	MO	11/02/10	J, Q, B
Total PeCDD	EPA-5 1613B	301452	0.00000051	0.00005	ND	1.01	MO	11/02/10	
Total PeCDF	EPA-5 1613B	301452	0.00000044	0.00005	ND	1.01	MO	11/02/10	
Total TCDD	EPA-5 1613B	301452	0.00000042	0.00001	ND	1.01	MO	11/02/10	
Total TCDF	EPA-5 1613B	301452	0.00000026	0.00001	ND	1.01	MO	11/02/10	
Surrogate: 13C-1,2,3,4,6,7,8-HpCDD (23-140%)					*99 %*				
Surrogate: 13C-1,2,3,4,6,7,8-HpCDF (28-143%)					*91 %*				
Surrogate: 13C-1,2,3,4,7,8,9-HpCDF (26-138%)					*91 %*				
Surrogate: 13C-1,2,3,4,7,8-HxCDD (32-141%)					*92 %*				
Surrogate: 13C-1,2,3,4,7,8-HxCDF (26-152%)					*89 %*				
Surrogate: 13C-1,2,3,6,7,8-HxCDD (28-130%)					*87 %*				
Surrogate: 13C-1,2,3,6,7,8-HxCDF (26-123%)					*85 %*				
Surrogate: 13C-1,2,3,7,8,9-HxCDF (29-147%)					*90 %*				
Surrogate: 13C-1,2,3,7,8-PeCDD (25-181%)					*94 %*				
Surrogate: 13C-1,2,3,7,8-PeCDF (24-185%)					*90 %*				
Surrogate: 13C-2,3,4,6,7,8-HxCDF (28-136%)					*88 %*				
Surrogate: 13C-2,3,4,7,8-PeCDF (21-178%)					*87 %*				
Surrogate: 13C-2,3,7,8-TCDD (25-164%)					*92 %*				
Surrogate: 13C-2,3,7,8-TCDF (24-169%)					*85 %*				
Surrogate: 13C-OCDD (17-157%)					*96 %*				
Surrogate: 37Cl4-2,3,7,8-TCDD (35-197%)					*94 %*				

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Debby Wilson
Project Manager

TestAmerica
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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: Routine Outfall 009 2010
Routine Outfall 009
Report Number: ITJ2060

Sampled: 10/20/10
Received: 10/20/10

SHORT HOLD TIME DETAIL REPORT

	Hold Time (in days)	Date/Time Sampled	Date/Time Received	Date/Time Extracted	Date/Time Analyzed
Sample ID: Outfall 009 (composite) (ITJ2060-02) - Water					
EPA 300.0	2	10/20/2010 03:15	10/20/2010 19:45	10/20/2010 22:00	10/21/2010 03:50
Filtration	1	10/20/2010 03:15	10/20/2010 19:45	10/21/2010 20:06	10/21/2010 20:08

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Project Manager

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MWH-Pasadena/Boeing
618 Michillinda Avenue, Suite 200
Arcadia, CA 91007
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Report Number: ITJ2060

Sampled: 10/20/10
Received: 10/20/10

METHOD BLANK/QC DATA

HEXANE EXTRACTABLE MATERIAL

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 10K0305 Extracted: 11/03/10										
Blank Analyzed: 11/03/2010 (10K0305-BLK1)										
Hexane Extractable Material (Oil & Grease)	ND	5.0	mg/l							
LCS Analyzed: 11/03/2010 (10K0305-BS1)										**MNR1**
Hexane Extractable Material (Oil & Grease)	18.3	5.0	mg/l	20.0		92	78-114			
LCS Dup Analyzed: 11/03/2010 (10K0305-BSD1)										
Hexane Extractable Material (Oil & Grease)	18.3	5.0	mg/l	20.0		92	78-114	0	11	

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MWH-Pasadena/Boeing
618 Michillinda Avenue, Suite 200
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Routine Outfall 009
Report Number: ITJ2060

Sampled: 10/20/10
Received: 10/20/10

METHOD BLANK/QC DATA

METALS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 10J2549 Extracted: 10/21/10										
Blank Analyzed: 10/22/2010 (10J2549-BLK1)										
Mercury	ND	0.20	ug/l							
LCS Analyzed: 10/22/2010 (10J2549-BS1)										
Mercury	8.51	0.20	ug/l	8.00		106	85-115			
Matrix Spike Analyzed: 10/22/2010 (10J2549-MS1)					**Source: ITJ1953-01**					
Mercury	8.38	0.20	ug/l	8.00	ND	105	70-130			
Matrix Spike Dup Analyzed: 10/22/2010 (10J2549-MSD1)					**Source: ITJ1953-01**					
Mercury	8.58	0.20	ug/l	8.00	ND	107	70-130	2	20	
Batch: 10K0103 Extracted: 11/01/10										
Blank Analyzed: 11/02/2010 (10K0103-BLK1)										
Antimony	ND	2.0	ug/l							
Cadmium	ND	1.0	ug/l							
Copper	ND	2.0	ug/l							
Lead	ND	1.0	ug/l							
Thallium	ND	1.0	ug/l							
LCS Analyzed: 11/02/2010 (10K0103-BS1)										
Antimony	79.0	2.0	ug/l	80.0		99	85-115			
Cadmium	79.8	1.0	ug/l	80.0		100	85-115			
Copper	75.6	2.0	ug/l	80.0		94	85-115			
Lead	73.3	1.0	ug/l	80.0		92	85-115			
Thallium	71.7	1.0	ug/l	80.0		90	85-115			

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Debby Wilson
Project Manager

TestAmerica
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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: Routine Outfall 009 2010
Routine Outfall 009
Report Number: ITJ2060

Sampled: 10/20/10
Received: 10/20/10

METHOD BLANK/QC DATA

METALS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 10K0103 Extracted: 11/01/10										
Matrix Spike Analyzed: 11/02/2010 (10K0103-MS1)					**Source: ITJ2326-01**					
Antimony	81.7	2.0	ug/l	80.0	ND	102	70-130			
Cadmium	79.4	1.0	ug/l	80.0	ND	99	70-130			
Copper	77.0	2.0	ug/l	80.0	6.61	88	70-130			
Lead	65.9	1.0	ug/l	80.0	1.45	81	70-130			
Thallium	64.9	1.0	ug/l	80.0	ND	81	70-130			
Matrix Spike Dup Analyzed: 11/02/2010 (10K0103-MSD1)					**Source: ITJ2326-01**					
Antimony	82.5	2.0	ug/l	80.0	ND	103	70-130	1	20	
Cadmium	79.6	1.0	ug/l	80.0	ND	99	70-130	0.2	20	
Copper	78.5	2.0	ug/l	80.0	6.61	90	70-130	2	20	
Lead	67.3	1.0	ug/l	80.0	1.45	82	70-130	2	20	
Thallium	66.6	1.0	ug/l	80.0	ND	83	70-130	3	20	

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Project Manager

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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
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METHOD BLANK/QC DATA

DISSOLVED METALS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 10J2952 Extracted: 10/25/10										
Blank Analyzed: 10/25/2010 (10J2952-BLK1)										
Mercury	ND	0.20	ug/l							
LCS Analyzed: 10/25/2010 (10J2952-BS1)										
Mercury	7.83	0.20	ug/l	8.00		98	85-115			
Matrix Spike Analyzed: 10/25/2010 (10J2952-MS1)					**Source: ITJ2060-02**					
Mercury	7.87	0.20	ug/l	8.00	ND	98	70-130			
Matrix Spike Dup Analyzed: 10/25/2010 (10J2952-MSD1)					**Source: ITJ2060-02**					
Mercury	7.77	0.20	ug/l	8.00	ND	97	70-130	1	20	
Batch: 10K0214 Extracted: 11/02/10										
Blank Analyzed: 11/02/2010-11/03/2010 (10K0214-BLK1)										
Antimony	ND	2.0	ug/l							
Cadmium	ND	1.0	ug/l							
Copper	ND	2.0	ug/l							
Lead	ND	1.0	ug/l							
Thallium	ND	1.0	ug/l							
LCS Analyzed: 11/02/2010-11/03/2010 (10K0214-BS1)										
Antimony	81.6	2.0	ug/l	80.0		102	85-115			
Cadmium	81.6	1.0	ug/l	80.0		102	85-115			
Copper	79.3	2.0	ug/l	80.0		99	85-115			
Lead	87.9	1.0	ug/l	80.0		110	85-115			
Thallium	84.1	1.0	ug/l	80.0		105	85-115			

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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
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METHOD BLANK/QC DATA

DISSOLVED METALS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 10K0214 Extracted: 11/02/10										
Matrix Spike Analyzed: 11/02/2010-11/03/2010 (10K0214-MS1)					**Source: ITJ2060-02**					
Antimony	81.6	2.0	ug/l	80.0	0.500	101	70-130			
Cadmium	81.2	1.0	ug/l	80.0	ND	101	70-130			
Copper	83.2	2.0	ug/l	80.0	2.58	101	70-130			
Lead	86.5	1.0	ug/l	80.0	0.285	108	70-130			
Thallium	84.2	1.0	ug/l	80.0	ND	105	70-130			
Matrix Spike Dup Analyzed: 11/02/2010-11/03/2010 (10K0214-MSD1)					**Source: ITJ2060-02**					
Antimony	81.6	2.0	ug/l	80.0	0.500	101	70-130	0.1	20	
Cadmium	81.0	1.0	ug/l	80.0	ND	101	70-130	0.2	20	
Copper	81.1	2.0	ug/l	80.0	2.58	98	70-130	2	20	
Lead	85.2	1.0	ug/l	80.0	0.285	106	70-130	2	20	
Thallium	84.3	1.0	ug/l	80.0	ND	105	70-130	0.09	20	

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Project Manager

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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
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METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 10J2282 Extracted: 10/20/10										
Blank Analyzed: 10/20/2010 (10J2282-BLK1)										
Chloride	ND	0.50	mg/l							
Nitrate/Nitrite-N	ND	0.26	mg/l							
Sulfate	ND	0.50	mg/l							
LCS Analyzed: 10/20/2010 (10J2282-BS1)										
Chloride	4.80	0.50	mg/l	5.00		96	90-110			*M-3*
Sulfate	9.84	0.50	mg/l	10.0		98	90-110			*M-3*
Matrix Spike Analyzed: 10/21/2010 (10J2282-MS2)					**Source: ITJ2044-01**					
Chloride	4.99	0.50	mg/l	5.00	0.435	91	80-120			
Sulfate	9.58	0.50	mg/l	10.0	0.472	91	80-120			
Batch: 10J2526 Extracted: 10/21/10										
Blank Analyzed: 10/21/2010 (10J2526-BLK1)										
Total Cyanide	ND	0.0050	mg/l							
LCS Analyzed: 10/21/2010 (10J2526-BS1)										
Total Cyanide	0.182	0.0050	mg/l	0.200		91	90-110			
Matrix Spike Analyzed: 10/21/2010 (10J2526-MS1)					**Source: ITJ2060-02**					
Total Cyanide	0.175	0.0050	mg/l	0.200	ND	88	70-115			
Matrix Spike Dup Analyzed: 10/21/2010 (10J2526-MSD1)					**Source: ITJ2060-02**					
Total Cyanide	0.177	0.0050	mg/l	0.200	ND	89	70-115	1	15	

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Project Manager

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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

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INORGANICS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 10J2573 Extracted: 10/22/10										
Blank Analyzed: 10/22/2010 (10J2573-BLK1)										
Total Dissolved Solids	ND	10	mg/l							
LCS Analyzed: 10/22/2010 (10J2573-BS1)										
Total Dissolved Solids	996	10	mg/l	1000		100	90-110			
Duplicate Analyzed: 10/22/2010 (10J2573-DUP1)					**Source: ITJ2008-01**					
Total Dissolved Solids	383	10	mg/l		389			2	10	
Batch: 10J3002 Extracted: 10/25/10										
Blank Analyzed: 10/25/2010 (10J3002-BLK1)										
Total Suspended Solids	ND	10	mg/l							
LCS Analyzed: 10/25/2010 (10J3002-BS1)										
Total Suspended Solids	1000	10	mg/l	1000		100	85-115			
Duplicate Analyzed: 10/25/2010 (10J3002-DUP1)					**Source: ITJ1990-03**					
Total Suspended Solids	17.0	10	mg/l		17.0			0	10	

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Project Manager

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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

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METHOD BLANK/QC DATA

8640

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 8640 Extracted: 11/10/10										
LCS Analyzed: 11/10/2010 (S010169-02)					**Source:**					
Uranium, Total	60.5	1	pCi/L	56.5		107	80-120			
Blank Analyzed: 11/10/2010 (S010169-03)					**Source:**					
Uranium, Total	0	1	pCi/L				-			*U*
Duplicate Analyzed: 11/10/2010 (S010169-04)					**Source: ITJ2060-02**					
Uranium, Total	0.07	1	pCi/L		0.076		-	8		*Jb*

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Debby Wilson
Project Manager

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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
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METHOD BLANK/QC DATA

900

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 8640 Extracted: 10/29/10										
LCS Analyzed: 11/03/2010 (S010169-02)					**Source:**					
Gross Alpha	47.2	3	pCi/L	40.4		117	70-130			
Gross Beta	35.2	4	pCi/L	35.2		100	70-130			
Blank Analyzed: 11/03/2010 (S010169-03)					**Source:**					
Gross Alpha	-0.16	3	pCi/L				-			*U*
Gross Beta	-0.287	4	pCi/L				-			*U*
Duplicate Analyzed: 11/03/2010 (S010169-04)					**Source: ITJ2060-02**					
Gross Alpha	0.358	3	pCi/L		0.142		-	86		*Jb*
Gross Beta	2.23	4	pCi/L		2.31		-	4		*Jb*

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Debby Wilson
Project Manager

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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
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METHOD BLANK/QC DATA

901.1

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 8640 Extracted: 10/28/10										
LCS Analyzed: 11/22/2010 (S010169-02)					**Source:**					
Cobalt-60	105	10	pCi/L	104		101	80-120			
Cesium-137	117	20	pCi/L	110		106	80-120			
Blank Analyzed: 11/22/2010 (S010169-03)					**Source:**					
Cesium-137	ND	20	pCi/L				-			*U*
Potassium-40	ND	25	pCi/L				-			*U*
Duplicate Analyzed: 11/22/2010 (S010169-04)					**Source: ITJ2060-02**					
Cesium-137	ND	20	pCi/L		0		-	0		*U*
Potassium-40	ND	25	pCi/L		0		-	0		*U*

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Project Manager

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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
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METHOD BLANK/QC DATA

903.1

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 8640 Extracted: 11/10/10										
LCS Analyzed: 11/10/2010 (S010169-02)					**Source:**					
Radium-226	55	1	pCi/L	55.7		99	80-120			
Blank Analyzed: 11/10/2010 (S010169-03)					**Source:**					
Radium-226	-0.02	1	pCi/L				-			*U*
Duplicate Analyzed: 11/10/2010 (S010169-04)					**Source: ITJ2060-02**					
Radium-226	0.046	1	pCi/L		0.026		-	0		*U*

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Project Manager

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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
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METHOD BLANK/QC DATA

904

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 8640 Extracted: 11/04/10										
LCS Analyzed: 11/04/2010 (S010169-02)					**Source:**					
Radium-228	4.97	1	pCi/L	4.75		105	60-140			
Blank Analyzed: 11/04/2010 (S010169-03)					**Source:**					
Radium-228	-0.108	1	pCi/L				-			*U*
Duplicate Analyzed: 11/04/2010 (S010169-04)					**Source: ITJ2060-02**					
Radium-228	0.188	1	pCi/L		-0.077		-	0		*U*

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Project Manager

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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
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METHOD BLANK/QC DATA

905

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 8640 Extracted: 11/01/10										
LCS Analyzed: 11/03/2010 (S010169-02)					**Source:**					
Strontium-90	14.6	2	pCi/L	17.6		83	80-120			
Blank Analyzed: 11/01/2010 (S010169-03)					**Source:**					
Strontium-90	0.12	2	pCi/L				-			*U*
Duplicate Analyzed: 11/01/2010 (S010169-04)					**Source: ITJ2060-02**					
Strontium-90	0.026	2	pCi/L		0.102		-	0		*U*

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Project Manager

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17461 Derian Avenue. Suite 100, Irvine, CA 92614 (949) 261-1022 Fax:(949) 260-3297

MWH-Pasadena/Boeing
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Arcadia, CA 91007
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METHOD BLANK/QC DATA

906

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 8640 Extracted: 11/11/10										
LCS Analyzed: 11/11/2010 (S010169-02)					**Source:**					
Tritium	2580	200	pCi/L	2570		100	80-120			
Blank Analyzed: 11/11/2010 (S010169-03)					**Source:**					
Tritium	-68.5	200	pCi/L				-			*U*
Duplicate Analyzed: 11/11/2010 (S010169-04)					**Source: ITJ2060-02**					
Tritium	-26.7	200	pCi/L		-17.9		-	0		*U*

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Project Manager

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17461 Derian Avenue. Suite 100, Irvine, CA 92614 (949) 261-1022 Fax:(949) 260-3297

MWH-Pasadena/Boeing
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Arcadia, CA 91007
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METHOD BLANK/QC DATA

EPA-5 1613Bx

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 301452 Extracted: 10/28/10										
Blank Analyzed: 11/02/2010 (G0J280000452B)					**Source:**					
1,2,3,4,6,7,8-HpCDD	1.1e-006	0.00005	ug/L				-			*J, Q*
1,2,3,4,6,7,8-HpCDF	8.8e-007	0.00005	ug/L				-			*J, Q*
1,2,3,4,7,8,9-HpCDF	ND	0.00005	ug/L				-			
1,2,3,4,7,8-HxCDD	5.1e-007	0.00005	ug/L				-			*J*
1,2,3,4,7,8-HxCDF	2.5e-007	0.00005	ug/L				-			*J, Q*
1,2,3,6,7,8-HxCDD	5.2e-007	0.00005	ug/L				-			*J, Q*
1,2,3,6,7,8-HxCDF	2.2e-007	0.00005	ug/L				-			*J, Q*
1,2,3,7,8,9-HxCDD	4.3e-007	0.00005	ug/L				-			*J, Q*
1,2,3,7,8,9-HxCDF	4e-007	0.00005	ug/L				-			*J, Q*
1,2,3,7,8-PeCDD	ND	0.00005	ug/L				-			
1,2,3,7,8-PeCDF	ND	0.00005	ug/L				-			
2,3,4,6,7,8-HxCDF	2e-007	0.00005	ug/L				-			*J, Q*
2,3,4,7,8-PeCDF	ND	0.00005	ug/L				-			
2,3,7,8-TCDD	ND	0.00001	ug/L				-			
2,3,7,8-TCDF	ND	0.00001	ug/L				-			
OCDD	5.9e-006	0.0001	ug/L				-			*J*
OCDF	1.3e-006	0.0001	ug/L				-			*J*
Total HpCDD	1.9e-006	0.00005	ug/L				-			
Total HpCDF	8.8e-007	0.00005	ug/L				-			
Total HxCDD	1.5e-006	0.00005	ug/L				-			
Total HxCDF	1.1e-006	0.00005	ug/L				-			
Total PeCDD	ND	0.00005	ug/L				-			
Total PeCDF	ND	0.00005	ug/L				-			
Total TCDD	ND	0.00001	ug/L				-			
Total TCDF	ND	0.00001	ug/L				-			
Surrogate: 13C-1,2,3,4,6,7,8-HpCDD	*0.002*		*ug/L*	*0.002*		*101*	*23-140*			
Surrogate: 13C-1,2,3,4,6,7,8-HpCDF	*0.0018*		*ug/L*	*0.002*		*89*	*28-143*			
Surrogate: 13C-1,2,3,4,7,8,9-HpCDF	*0.0019*		*ug/L*	*0.002*		*93*	*26-138*			
Surrogate: 13C-1,2,3,4,7,8-HxCDD	*0.0018*		*ug/L*	*0.002*		*90*	*32-141*			
Surrogate: 13C-1,2,3,4,7,8-HxCDF	*0.0017*		*ug/L*	*0.002*		*87*	*26-152*			
Surrogate: 13C-1,2,3,6,7,8-HxCDD	*0.0016*		*ug/L*	*0.002*		*82*	*28-130*			
Surrogate: 13C-1,2,3,6,7,8-HxCDF	*0.0017*		*ug/L*	*0.002*		*84*	*26-123*			
Surrogate: 13C-1,2,3,7,8,9-HxCDF	*0.0018*		*ug/L*	*0.002*		*91*	*29-147*			
Surrogate: 13C-1,2,3,7,8-PeCDD	*0.0017*		*ug/L*	*0.002*		*86*	*25-181*			
Surrogate: 13C-1,2,3,7,8-PeCDF	*0.0016*		*ug/L*	*0.002*		*81*	*24-185*			
Surrogate: 13C-2,3,4,6,7,8-HxCDF	*0.0017*		*ug/L*	*0.002*		*86*	*28-136*			

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Debby Wilson
Project Manager

TestAmerica
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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

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METHOD BLANK/QC DATA

EPA-5 1613Bx

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 301452 Extracted: 10/28/10										
Blank Analyzed: 11/02/2010 (G0J280000452B)					**Source:**					
Surrogate: 13C-2,3,4,7,8-PeCDF	*0.0016*		*ug/L*	*0.002*		*80*	*21-178*			
Surrogate: 13C-2,3,7,8-TCDD	*0.0016*		*ug/L*	*0.002*		*78*	*25-164*			
Surrogate: 13C-2,3,7,8-TCDF	*0.0015*		*ug/L*	*0.002*		*75*	*24-169*			
Surrogate: 13C-OCDD	*0.004*		*ug/L*	*0.004*		*100*	*17-157*			
Surrogate: 37Cl4-2,3,7,8-TCDD	*0.00073*		*ug/L*	*0.0008*		*92*	*35-197*			
LCS Analyzed: 11/02/2010 (G0J280000452C)					**Source:**					
1,2,3,4,6,7,8-HpCDD	0.00103	0.00005	ug/L	0.001		103	70-140			*B*
1,2,3,4,6,7,8-HpCDF	0.000977	0.00005	ug/L	0.001		98	82-122			*B*
1,2,3,4,7,8,9-HpCDF	0.00099	0.00005	ug/L	0.001		99	78-138			
1,2,3,4,7,8-HxCDD	0.00111	0.00005	ug/L	0.001		111	70-164			*B*
1,2,3,4,7,8-HxCDF	0.00101	0.00005	ug/L	0.001		101	72-134			*B*
1,2,3,6,7,8-HxCDD	0.00105	0.00005	ug/L	0.001		105	76-134			*B*
1,2,3,6,7,8-HxCDF	0.00104	0.00005	ug/L	0.001		104	84-130			*B*
1,2,3,7,8,9-HxCDD	0.00109	0.00005	ug/L	0.001		109	64-162			*B*
1,2,3,7,8,9-HxCDF	0.00103	0.00005	ug/L	0.001		103	78-130			*B*
1,2,3,7,8-PeCDD	0.00102	0.00005	ug/L	0.001		102	70-142			
1,2,3,7,8-PeCDF	0.001	0.00005	ug/L	0.001		100	80-134			
2,3,4,6,7,8-HxCDF	0.000991	0.00005	ug/L	0.001		99	70-156			*B*
2,3,4,7,8-PeCDF	0.00103	0.00005	ug/L	0.001		103	68-160			
2,3,7,8-TCDD	0.000201	0.00001	ug/L	0.0002		101	67-158			
2,3,7,8-TCDF	0.000189	0.00001	ug/L	0.0002		95	75-158			
OCDD	0.00202	0.0001	ug/L	0.002		101	78-144			*B*
OCDF	0.00195	0.0001	ug/L	0.002		98	63-170			*B*
Surrogate: 13C-1,2,3,4,6,7,8-HpCDD	*0.00155*		*ug/L*	*0.002*		*77*	*26-166*			
Surrogate: 13C-1,2,3,4,6,7,8-HpCDF	*0.0015*		*ug/L*	*0.002*		*75*	*21-158*			
Surrogate: 13C-1,2,3,4,7,8,9-HpCDF	*0.00142*		*ug/L*	*0.002*		*71*	*20-186*			
Surrogate: 13C-1,2,3,4,7,8-HxCDD	*0.00161*		*ug/L*	*0.002*		*80*	*21-193*			
Surrogate: 13C-1,2,3,4,7,8-HxCDF	*0.00158*		*ug/L*	*0.002*		*79*	*19-202*			
Surrogate: 13C-1,2,3,6,7,8-HxCDD	*0.00154*		*ug/L*	*0.002*		*77*	*25-163*			
Surrogate: 13C-1,2,3,6,7,8-HxCDF	*0.00151*		*ug/L*	*0.002*		*75*	*21-159*			
Surrogate: 13C-1,2,3,7,8,9-HxCDF	*0.00156*		*ug/L*	*0.002*		*78*	*17-205*			
Surrogate: 13C-1,2,3,7,8-PeCDD	*0.00152*		*ug/L*	*0.002*		*76*	*21-227*			
Surrogate: 13C-1,2,3,7,8-PeCDF	*0.00145*		*ug/L*	*0.002*		*73*	*21-192*			
Surrogate: 13C-2,3,4,6,7,8-HxCDF	*0.00157*		*ug/L*	*0.002*		*78*	*22-176*			
Surrogate: 13C-2,3,4,7,8-PeCDF	*0.00142*		*ug/L*	*0.002*		*71*	*13-328*			

TestAmerica Irvine

Debby Wilson
Project Manager

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: Routine Outfall 009 2010
Routine Outfall 009
Report Number: ITJ2060

Sampled: 10/20/10
Received: 10/20/10

METHOD BLANK/QC DATA

EPA-5 1613Bx

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 301452 Extracted: 10/28/10										
LCS Analyzed: 11/02/2010 (G0J280000452C)					**Source:**					
Surrogate: 13C-2,3,7,8-TCDD	*0.00143*		*ug/L*	*0.002*		*72*	*20-175*			
Surrogate: 13C-2,3,7,8-TCDF	*0.00139*		*ug/L*	*0.002*		*69*	*22-152*			
Surrogate: 13C-OCDD	*0.00268*		*ug/L*	*0.004*		*67*	*13-199*			
Surrogate: 37Cl4-2,3,7,8-TCDD	*0.000696*		*ug/L*	*0.0008*		*87*	*31-191*			

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Routine Outfall 009
Report Number: ITJ2060

Sampled: 10/20/10
Received: 10/20/10

Compliance Check

The results obtained from the analytical testing of this data set were checked against compliance limits received from the client. Any results at or above the compliance limits appear in bold on this page.

LabNumber	Analysis	Analyte	Units	Result	MRL	Compliance Limit
ITJ2060-01	1664-HEM	Hexane Extractable Material (Oil & Greas	mg/l	0	4.8	15

Compliance Check

The results obtained from the analytical testing of this data set were checked against compliance limits received from the client. Any results at or above the compliance limits appear in bold on this page.

LabNumber	Analysis	Analyte	Units	Result	MRL	Compliance Limit
ITJ2060-02	Cadmium-200.8	Cadmium	ug/l	0.058	1.0	3.1
ITJ2060-02	Chloride - 300.0	Chloride	mg/l	2.88	0.50	150
ITJ2060-02	Copper-200.8	Copper	ug/l	3.88	2.0	14
ITJ2060-02	Lead-200.8	Lead	ug/l	0.95	1.0	5.2
ITJ2060-02	Nitrogen, NO3+NO2 -N EPA 300.0	Nitrate/Nitrite-N	mg/l	1.08	0.26	8
ITJ2060-02	Sulfate-300.0	Sulfate	mg/l	7.34	0.50	300
ITJ2060-02	TDS - SM2540C	Total Dissolved Solids	mg/l	115	10	950

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Attention: Bronwyn Kelly

Project ID: Routine Outfall 009 2010
Routine Outfall 009
Report Number: ITJ2060

Sampled: 10/20/10
Received: 10/20/10

DATA QUALIFIERS AND DEFINITIONS

B	Method blank contamination. The associated method blank contains the target analyte at a reportable level.
C	Calibration Verification recovery was above the method control limit for this analyte. Analyte not detected, data not impacted.
J	Estimated result. Result is less than the reporting limit.
Ja	Estimated value. Analyte detected at a level less than the Reporting Limit (RL) and greater than or equal to the Method Detection Limit (MDL). The user of this data should be aware that this data is of limited reliability.
Jb	The RESULT is less than the RDL (Required Detection Limit) and no U qualifier is assigned.
M-3	Results exceeded the linear range in the MS/MSD and therefore are not available for reporting. The batch was accepted based on acceptable recovery in the Blank Spike (LCS).
MNR1	There was no MS/MSD analyzed with this batch due to insufficient sample volume. See Blank Spike/Blank Spike Duplicate.
Q	Estimated maximum possible concentration (EMPC).
U	The RESULT is less than the MDA (Minimum Detectable Activity). If the MDA is blank, the ERROR is used as the limit.
ND	Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified.
RPD	Relative Percent Difference

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Project ID: Routine Outfall 009 2010
Routine Outfall 009
Report Number: ITJ2060

Sampled: 10/20/10
Received: 10/20/10

Certification Summary

TestAmerica Irvine

Method	Matrix	Nelac	California
EDD + Level 4	Water	N/A	N/A
EPA 1664A	Water	X	X
EPA 200.8-Diss	Water	X	X
EPA 200.8	Water	X	X
EPA 245.1-Diss	Water	X	X
EPA 245.1	Water	X	X
EPA 300.0	Water	X	X
Filtration	Water	N/A	N/A
SM 2540D	Water	X	X
SM2540C	Water	X	
SM4500CN-E	Water	X	X

Nevada and NELAP provide analyte specific accreditations. Analyte specific information for TestAmerica may be obtained by contacting the laboratory or visiting our website at www.testamericainc.com

Subcontracted Laboratories

Aquatic Testing Laboratories-SUB *California Cert #1775*
4350 Transport Street, Unit 107 - Ventura, CA 93003
Analysis Performed: Bioassay-7 dy Chrnic
Samples: ITJ2060-02

TestAmerica Irvine

Debby Wilson
Project Manager

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

17461 Derian Avenue. Suite 100, Irvine, CA 92614 (949) 261-1022 Fax:(949) 260-3297

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Attention: Bronwyn Kelly

Project ID: Routine Outfall 009 2010
Routine Outfall 009
Report Number: ITJ2060

Sampled: 10/20/10
Received: 10/20/10

Eberline Services - SUB

2030 Wright Avenue - Richmond, CA 94804

Analysis Performed: Gamma Spec
Samples: ITJ2060-02

Analysis Performed: Gross Alpha
Samples: ITJ2060-02

Analysis Performed: Gross Beta
Samples: ITJ2060-02

Analysis Performed: Level 4 Data Package
Samples: ITJ2060-02

Analysis Performed: Radium, Combined
Samples: ITJ2060-02

Analysis Performed: Strontium 90
Samples: ITJ2060-02

Analysis Performed: Tritium
Samples: ITJ2060-02

Analysis Performed: Uranium, Combined
Samples: ITJ2060-02

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618 Michillinda Avenue, Suite 200
Arcadia, CA 91007
Attention: Bronwyn Kelly

Project ID: Routine Outfall 009 2010
Routine Outfall 009
Report Number: ITJ2060

Sampled: 10/20/10
Received: 10/20/10

TestAmerica Buffalo

10 Hazelwood Drive, Suite 106 - Amherst, NY 14228

Method Performed: 8640
Samples: ITJ2060-02

Method Performed: 900
Samples: ITJ2060-02

Method Performed: 901.1
Samples: ITJ2060-02

Method Performed: 903.1
Samples: ITJ2060-02

Method Performed: 904
Samples: ITJ2060-02

Method Performed: 905
Samples: ITJ2060-02

Method Performed: 906
Samples: ITJ2060-02

TestAmerica West Sacramento *NELAC Cert #1119CA, Nevada Cert #CA44*

880 Riverside Parkway - West Sacramento, CA 95605

Method Performed: EPA-5 1613B
Samples: ITJ2060-02

TestAmerica Irvine

Debby Wilson
Project Manager

Test America Version ~~6/29/09~~ 7/19/2010

CHAIN OF CUSTODY FORM

ITJ2060

Client Name/Address:	Project:
MWH-Arcadia 618 Michillinda Ave, Suite 200 Arcadia, CA 91007 Test America Contact: Debby Wilson	Boeing-SSFL NPDES **Routine Outfall 009** **GRAB** Stormwater at SW-13
Project Manager: Bronwyn Kelly Sampler: E. WALKER	Phone Number: (626) 568-6691 Fax Number: (626) 568-6515

Sample Description	Sample Matrix	Container Type	# of Cont.	Sampling Date/Time	Preservative	Bottle #	ANALYSIS REQUIRED: Oil & Grease (1664-HEM)
Outfall 009	W	1L Amber	2		HCl	1A, 1B	X

Field readings:
(Log in and include in report Temp and pH)

Temp °F = 58.1

pH = 7.0

Time of readings = 0800

Comments

22:05
10/20/10
VP

These Samples are the Grab Portion of Outfall 009 for this storm event. Composite samples will follow and are to be added to this work order.

Relinquished By	Date/Time:	Received By	Date/Time:
	10/20/10	Vina Padilla	10/20/10 15:35
Relinquished By	Date/Time:	Received By	Date/Time:
Vina Padilla	10/20/10		
Relinquished By	Date/Time:	Received By	Date/Time:
			10/20/10 1445

Turn-around time: (Check)
24 Hour: _____ 72 Hour: _____ 10 Day: _____
48 Hour: _____ 5 Day: _____ Normal: X

Sample Integrity: (Check)
Intact: _____ On Ice: X

Data Requirements: (Check)
No Level IV: _____ All Level IV: _____ NPDES Level IV: X

3 Ice

20-VP-01

Test America Version ~~6/30/09~~ 7/19/2010

CHAIN OF CUSTODY FORM

ITJ2060

Client Name/Address:
MWH-Arcadia
618 Michillinda Ave, Suite 200
Arcadia, CA 91007

Test America Contact: Debby Wilson

Project:
Boeing-SSFL NPDES
Routine Outfall 009
COMPOSITE
Stormwater at SW-13

Project Manager: Bronwyn Kelly

Sampler: RICK BANAGA, JENNY HUANG

Phone Number:
(626) 568-6691
Fax Number:
(626) 568-6515

Sample Description	Sample Matrix	Container Type	# of Cont.	Sampling Date/Time	Preservative	Bottle #	Total Recoverable Metals: Sb, Cd, Cu, Pb, Hg, Tl	TCDD (and all congeners)	Cl; SO_4; NO_3+NO_2-N	TDS, TSS	Total Dissolved Metals: Sb, Cd, Cu, Pb, Hg, Tl	Gross Alpha(900.0), Gross Beta(900.0), Tritium (H-3) (906.0), Sr-90 (905.0), Total Combined Radium 226 (903.0 or 903.1) & Radium 228 (904.0), Uranium (908.0), K-40, CS-137 (901.0 or 901.1)	Chronic Toxicity	Cyanide							Comments
Outfall 009	W	1L Poly	1	10-20-2010 03:15	HNO_3	2A	X														
Outfall 009 Dup	W	1L Poly	1		HNO_3	2B	X														
Outfall 009	W	1L Amber	2		None	3A, 3B		X													
Outfall 009	W	500 mL Poly	2		None	4A, 4B			X												
Outfall 009	W	500 mL Poly	1		None	5				X											
Outfall 009	W	1L Poly	1		None	6					X										Filter w/in 24hrs of receipt at lab
Outfall 009	W	2.5 Gal Cube	1		None	7A						X									Unfiltered and unpreserved analysis
		500 mL Amber	1		None	7B															
Outfall 009	W	1 Gal Poly	1		None	8							X								**Only test if first or second rain events of the year**
Outfall 009	W	500 mL Poly	1	10-20-2010 03:15	NaOH	9								X							

COC Page 2 of 2 list the Composite Samples for Outfall 009 for this storm event.

These must be added to the same work order for COC Page 1 of 2 for Outfall 009 for the same event.

Relinquished By	Date/Time:	Received By	Date/Time:
[signature]	10-20-2010 15:30	[signature]	10/20/10 1535
[signature]	10/20/10		
[signature]		[signature]	10/20/10 1645

Turn-around time: (Check)
24 Hour: ____ 72 Hour: ____ 10 Day: ____
48 Hour: ____ 5 Day: ____ Normal: X

Sample Integrity: (Check)
Intact: ____ On Ice: X

Data Requirements: (Check)
No Level IV: ____ All Level IV: ____ NPDES Level IV: X

20-VP-02 2/coolers

LABORATORY REPORT

Aquatic Testing Laboratories

"dedicated to providing quality aquatic toxicity testing"

4350 Transport Street, Unit 107
Ventura, CA 93003
(805) 650-0546 FAX (805) 650-0756
CA DOHS ELAP Cert. No.: 1775

Date: October 27, 2010

Client: TestAmerica, Irvine
17461 Derian Ave., Suite 100
Irvine, CA 92614
Attn: Debby Wilson

Laboratory No.: A-10102104-001
Sample I.D.: ITJ2060-02 (Outfall 009)

Sample Control: The sample was received by ATL within the recommended hold time, chilled and with the chain of custody record attached. Testing conducted on only one sample per client instruction (rain runoff sample).

Date Sampled:	10/20/10 - composite
Date Received:	10/21/10
Temp. Received:	2.2°C
Chlorine (TRC):	0.0 mg/l
Date Tested:	10/21/10 to 10/27/10

Sample Analysis: The following analyses were performed on your sample:

Ceriodaphnia dubia Survival and Reproduction Test (EPA Method 1002).

Attached are the test data generated from the analysis of your sample.

Result Summary:

	NOEC	TUc
Ceriodaphnia Survival:	100%	1.0
Ceriodaphnia Reproduction:	100%	1.0

Quality Control: Reviewed and approved by:

Joseph A. LeMay
Laboratory Director

CERIODAPHNIA CHRONIC BIOASSAY
EPA METHOD 1002.0

Aquatic Testing Laboratories

Lab No.: A-10102104-001
Client/ID: Test America - ITJ2060-02 (Outfall 009)

Date Tested: 10/21/10 to 10/27/10

TEST SUMMARY

Test type: Daily static-renewal.
Species: *Ceriodaphnia dubia*.
Age: < 24 hrs; all released within 8 hrs.
Test vessel size: 30 ml.
Number of test organisms per vessel: 1.
Temperature: 25 +/- 1°C.
Dilution water: Mod. hard reconstituted (MHRW).
QA/QC Batch No.: RT-101007.

Endpoints: Survival and Reproduction.
Source: In-laboratory culture.
Food: .1 ml YTC, algae per day.
Test solution volume: 15 ml.
Number of replicates: 10.
Photoperiod: 16/8 hrs. light/dark cycle.
Test duration: 6 days.
Statistics: ToxCalc computer program.

RESULTS SUMMARY

Sample Concentration	Percent Survival	Mean Number of Young Per Female
Control	100%	21.9
100% Sample	100%	23.9
* Sample not statistically significantly less than Control.		

CHRONIC TOXICITY

Survival NOEC	100%
Survival TUc	1.0
Reproduction NOEC	100%
Reproduction TUc	1.0

QA/QC TEST ACCEPTABILITY

Parameter	Result
Control survival ≥80%	Pass (100% survival)
≥15 young per surviving control female	Pass (21.9 young)
≥60% surviving controls had 3 broods	Pass (80% with 3 broods)
PMSD <47% for reproduction; if >47% and no toxicity at IWC, the test must be repeated	Pass (PMSD = 24.8%)
Statistically significantly different concentrations relative difference >13%	Pass (no concentration significantly different)
Concentration response relationship acceptable	Pass (no significant response at concentration tested)

Ceriodaphnia Survival and Reproduction Test-Survival Day 6

Start Date:	10/21/2010 15:00	Test ID:	10102104c	Sample ID:	ITJ2060
End Date:	10/27/2010 14:00	Lab ID:	CAATL-Aquatic Testing Labs	Sample Type:	EFF2-Industrial
Sample Date:	10/20/2010 03:15	Protocol:	FWCH EPA	Test Species:	CD-Ceriodaphnia dubia
Comments:					

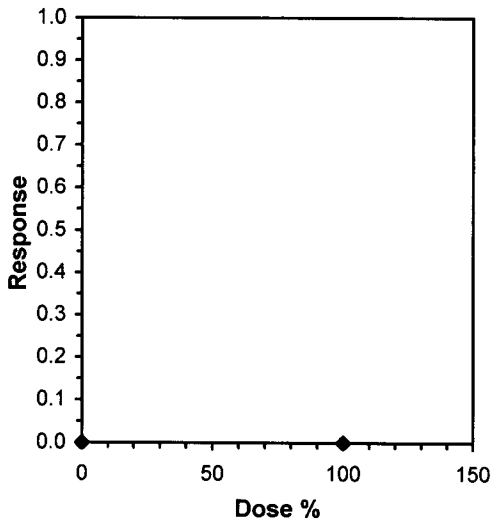
Conc-%	1	2	3	4	5	6	7	8	9	10
D-Control	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
100	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

Conc-%	Mean	N-Mean	Resp	Not Resp	Total	N	Fisher's Exact P	1-Tailed Critical	Isotonic Mean	Isotonic N-Mean
D-Control	1.0000	1.0000	0	10	10	10			1.0000	1.0000
100	1.0000	1.0000	0	10	10	10	1.0000	0.0500	1.0000	1.0000

Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU
Fisher's Exact Test	100	>100		1
Treatments vs D-Control				

Linear Interpolation (200 Resamples)

Point	%	SD	95% CL	Skew
IC05	>100			
IC10	>100			
IC15	>100			
IC20	>100			
IC25	>100			
IC40	>100			
IC50	>100			



Reviewed by:

Ceriodaphnia Survival and Reproduction Test-Reproduction

Start Date:	10/21/2010 15:00	Test ID:	10102104c	Sample ID:	ITJ2060
End Date:	10/27/2010 14:00	Lab ID:	CAATL-Aquatic Testing Labs	Sample Type:	EFF2-Industrial
Sample Date:	10/20/2010 03:15	Protocol:	FWCH EPA	Test Species:	CD-Ceriodaphnia dubia
Comments:					

Conc-%	1	2	3	4	5	6	7	8	9	10
D-Control	11.000	24.000	12.000	26.000	21.000	30.000	27.000	23.000	20.000	25.000
100	10.000	31.000	11.000	27.000	25.000	21.000	29.000	31.000	30.000	24.000

			Transform: Untransformed					Rank	1-Tailed	Isotonic	
Conc-%	Mean	N-Mean	Mean	Min	Max	CV%	N	Sum	Critical	Mean	N-Mean
D-Control	21.900	1.0000	21.900	11.000	30.000	28.267	10			22.900	1.0000
100	23.900	1.0913	23.900	10.000	31.000	32.497	10	118.00	82.00	22.900	1.0000

Auxiliary Tests	Statistic	Critical	Skew	Kurt
Shapiro-Wilk's Test indicates non-normal distribution (p <= 0.05)	0.87619	0.905	-0.9611	-0.1828
F-Test indicates equal variances (p = 0.51)	1.57408	6.54109		

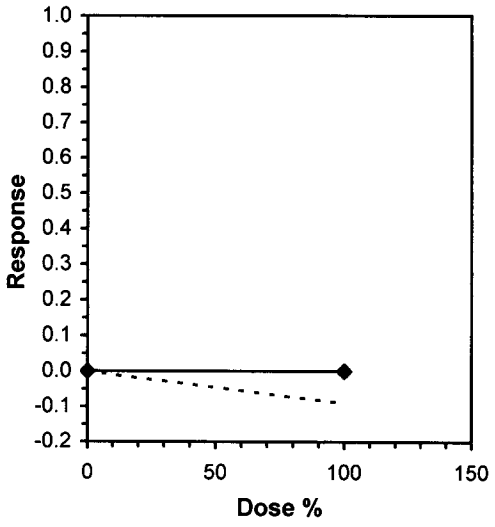
Hypothesis Test (1-tail, 0.05)

Wilcoxon Two-Sample Test indicates no significant differences

Treatments vs D-Control

Linear Interpolation (200 Resamples)

Point	%	SD	95% CL	Skew
IC05	>100			
IC10	>100			
IC15	>100			
IC20	>100			
IC25	>100			
IC40	>100			
IC50	>100			



CERIODAPHNIA DUBIA CHRONIC BIOASSAY
EPA METHOD 1002.0 Raw Data Sheet

Aquatic Testing Laboratories

Lab No.: A-10102104-001
Client ID: TestAmerica - ITJ2060-02 Outfall 009 Start Date: 10/21/2010

		DAY 1		DAY 2		DAY 3		DAY 4		DAY 5		DAY 6		DAY 7	
		0 hr	24hr	0 hr	24hr	0 hr	24hr	0 hr	24hr	0 hr	24hr	0 hr	24hr	0 hr	24hr
Analyst Initials:														—	—
Time of Readings:		1500	1500	1500	1600	1600	1440	1410	1500	1500	1500	1500	1440	—	—
Control	DO	9.5	8.6	8.3	8.3	8.4	8.1	8.3	7.7	8.0	7.6	8.7	7.9	—	—
	pH	7.9	8.1	8.0	8.0	8.0	7.9	8.0	7.8	7.9	7.9	7.9	7.8	—	—
	Temp	24.8	24.6	24.3	24.8	24.6	25.0	24.7	24.2	24.5	24.3	24.7	24.2	—	—
100%	DO	10.1	8.7	9.6	8.5	10.0	8.4	10.1	7.8	7.9	7.6	9.5	8.2	—	—
	pH	7.1	7.8	7.1	7.9	7.1	7.8	7.1	7.6	7.4	7.7	7.0	7.2	—	—
	Temp	24.4	24.8	24.5	24.9	25.1	25.0	25.0	24.2	24.6	24.3	24.4	24.4	—	—

Additional Parameters	Control	100% Sample
Conductivity (umohms)	310	140
Alkalinity (mg/l $CaCO_3$)	72	51
Hardness (mg/l $CaCO_3$)	93	47
Ammonia (mg/l NH_3-N)	<0.1	0.4

Source of Neonates

Replicate:	A	B	C	D	E	F	G	H	I	J
Brood ID:	5A	6B	4C	5C	5E	4F	4G	5H	6I	4J

Sample	Day	Number of Young Produced										Total Live Young	No. Live Adults	Analyst Initials
		A	B	C	D	E	F	G	H	I	J			
Control	1	0	0	0	0	0	0	0	0	0	0	0	10	
	2	0	0	0	0	0	0	0	0	0	0	0	10	
	3	0	3	0	0	0	4	0	3	0	0	10	10	
	4	4	0	4	3	4	0	4	0	2	3	24	10	
	5	7	7	8	7	7	8	7	8	8	9	76	10	
	6	0	14	0	16	14	18	16	12	10	13	109	10	
	7	—	—	—	—	—	—	—	—	—	—	—	—	
	Total	11	24	12	26	21	30	27	23	20	25	219	10	
100%	1	0	0	0	0	0	0	0	0	0	0	0	10	
	2	0	0	0	0	0	0	0	0	0	0	0	10	
	3	0	0	3	3	0	4	0	3	0	0	13	10	
	4	4	3	0	0	5	0	4	0	4	3	23	10	
	5	6	8	8	9	7	7	9	9	10	9	82	10	
	6	0	20	0	15	13	10	16	19	16	12	121	10	
	7	—	—	—	—	—	—	—	—	—	—	—	—	
	Total	10	31	11	27	25	21	29	31	30	24	239	10	

Circled fourth brood not used in statistical analysis.
7th day only used if <60% of the surviving control females have produced their third brood.

SUBCONTRACT ORDER
TestAmerica Irvine

ITJ2060

SENDING LABORATORY:

TestAmerica Irvine
17461 Derian Avenue. Suite 100
Irvine, CA 92614
Phone: (949) 261-1022
Fax: (949) 260-3297
Project Manager: Debby Wilson

RECEIVING LABORATORY:

Aquatic Testing Laboratories-SUB
4350 Transport Street, Unit 107
Ventura, CA 93003
Phone :(805) 650-0546
Fax: (805) 650-0756
Project Location: CA - CALIFORNIA
Receipt Temperature: 2.2 °C Ice: (Y) / N

Standard TAT is requested unless specific due date is requested. => Due Date: _____ Initials: _____

Analysis	Units	Expires	Comments
Sample ID: ITJ2060-02 (Outfall 009 (composite) - Water)		Sampled: 10/20/10 ~~15:15~~ 03	
Bioassay-7 dy Chrnic	N/A	~~10/22/10 03:15~~ 10/21/10 15:15	Cerio, EPA/821-R02-013, Sub to Aquatic testing
Containers Supplied: 1 gal Poly (L)			

Released By 10/21/10 0700 Date/Time
Received By 10/21/10 0700 Date/Time

Released By 10/21/10 Date/Time
Received By 10-21-10 1100 Date/Time

Aquatic
Testing
Laboratories

REFERENCE TOXICANT DATA

CERIODAPHNIA CHRONIC BIOASSAY
EPA METHOD 1002.0
REFERENCE TOXICANT - NaCl

Aquatic Testing Laboratories

QA/QC Batch No.: RT-101007

Date Tested: 10/07/10 to 10/13/10

TEST SUMMARY

Test type: Daily static-renewal.
Species: *Ceriodaphnia dubia*.
Age: <24 hrs; all released within 8 hrs.
Test vessel size: 30 ml.
Number of test organisms per vessel: 1.
Temperature: 25 +/- 1°C.
Dilution water: Mod. hard reconstituted (MHRW).
Reference Toxicant: Sodium chloride (NaCl).

Endpoints: Survival and Reproduction.
Source: In-laboratory culture.
Food: .1 ml YTC, algae per day.
Test solution volume: 20 ml.
Number of replicates: 10.
Photoperiod: 16/8 hrs. light/dark cycle.
Test duration: 6 days.
Statistics: ToxCalc computer program.

RESULTS SUMMARY

Sample Concentration	Percent Survival		Mean Number of Young Per Female	
Control	100%		21.4	
0.25 g/l	100%		22.3	
0.5 g/l	100%		22.1	
1.0 g/l	100%		13.1	*
2.0 g/l	90%		3.1	*
4.0 g/l	0%	*	0	**

* Statistically significantly less than control at P = 0.05 level
** Reproduction data from concentrations greater than survival NOEC are excluded from statistical analysis.

CHRONIC TOXICITY

Survival LC50	2.6 g/l
Reproduction IC25	0.81 mg/l

QA/QC TEST ACCEPTABILITY

Parameter	Result
Control survival ≥80%	Pass (100% Survival)
≥15 young per surviving control female	Pass (21.4 young)
≥60% surviving controls had 3 broods	Pass (100% with 3 broods)
PMSD <47% for reproduction	Pass (PMSD = 10.6%)
Stat. sig. diff. conc. relative difference >13%	Pass (Stat. sig. diff. conc. Relative difference= 38.8%)
Concentration response relationship acceptable	Pass (Response curve normal)

Ceriodaphnia Survival and Reproduction Test-Survival Day 6

Start Date:	10/7/2010 14:00	Test ID:	RT101007c	Sample ID:	REF-Ref Toxicant
End Date:	10/13/2010 13:00	Lab ID:	CAATL-Aquatic Testing Labs	Sample Type:	NACL-Sodium chloride
Sample Date:	10/7/2010	Protocol:	FWCH EPA	Test Species:	CD-Ceriodaphnia dubia
Comments:					

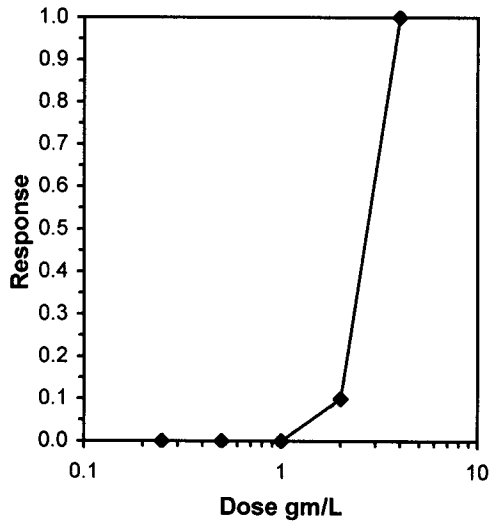
Conc-gm/L	1	2	3	4	5	6	7	8	9	10
D-Control	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
0.25	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
0.5	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
1	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
2	1.0000	1.0000	1.0000	1.0000	0.0000	1.0000	1.0000	1.0000	1.0000	1.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Conc-gm/L	Mean	N-Mean	Resp	Not Resp	Total	N	Fisher's Exact P	1-Tailed Critical	Number Resp	Total Number
D-Control	1.0000	1.0000	0	10	10	10			0	10
0.25	1.0000	1.0000	0	10	10	10	1.0000	0.0500	0	10
0.5	1.0000	1.0000	0	10	10	10	1.0000	0.0500	0	10
1	1.0000	1.0000	0	10	10	10	1.0000	0.0500	0	10
2	0.9000	0.9000	1	9	10	10	0.5000	0.0500	1	10
4	0.0000	0.0000	10	0	10	10			10	10

Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU
Fisher's Exact Test	2	4	2.82843	
Treatments vs D-Control				

Trimmed Spearman-Karber

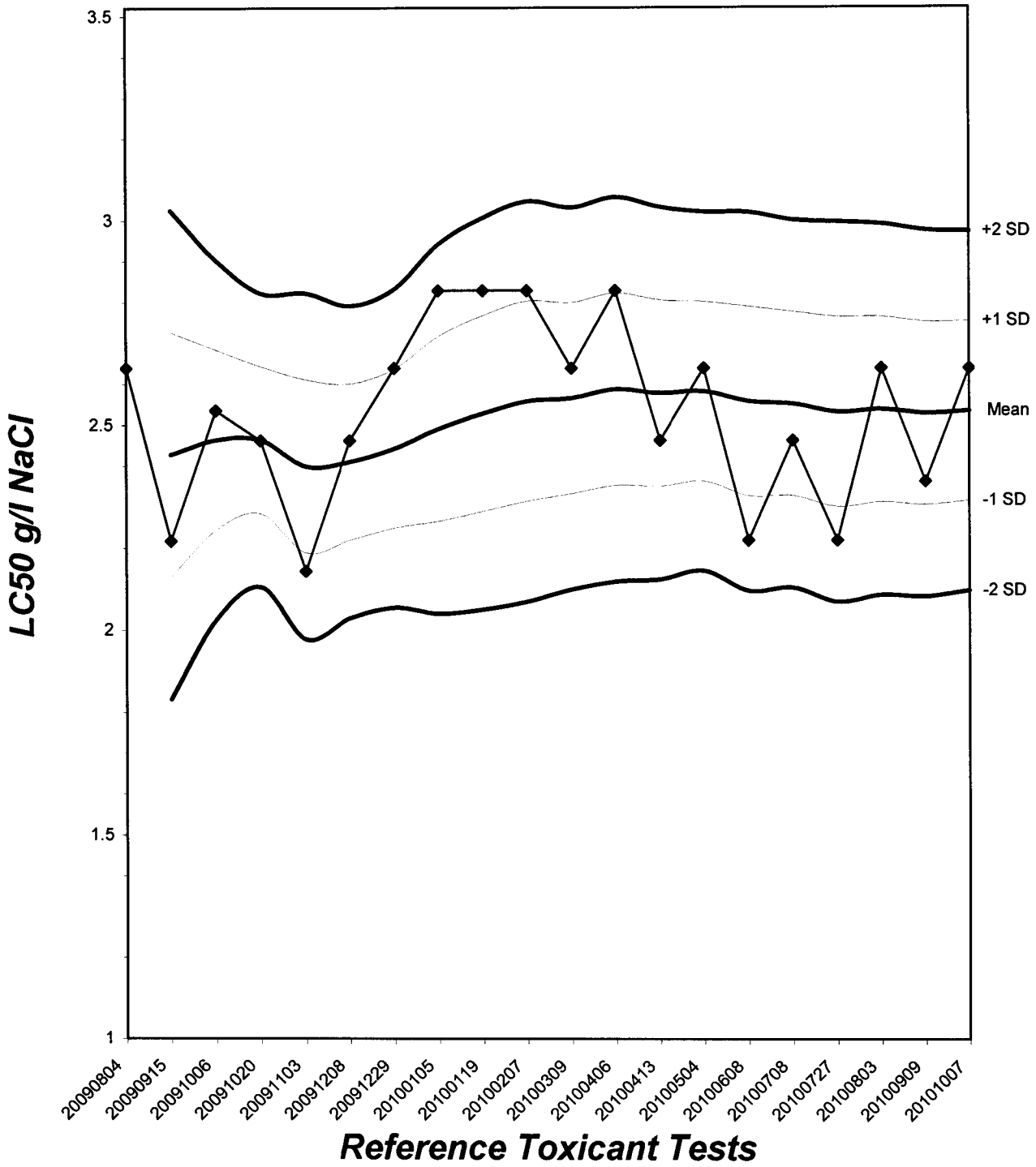
Trim Level	EC50	95% CL	
0.0%	2.6390	2.3138	3.0099
5.0%	2.6984	2.2899	3.1798
10.0%	2.7216	2.5094	2.9517
20.0%	2.7216	2.5094	2.9517
Auto-0.0%	2.6390	2.3138	3.0099



Reviewed by:

Ceriodaphnia Chronic Survival Laboratory Control Chart

CV% = 8.67



Ceriodaphnia Survival and Reproduction Test-Reproduction

Start Date:	10/7/2010 14:00	Test ID:	RT101007c	Sample ID:	REF-Ref Toxicant
End Date:	10/13/2010 13:00	Lab ID:	CAATL-Aquatic Testing Labs	Sample Type:	NACL-Sodium chloride
Sample Date:	10/7/2010	Protocol:	FWCH EPA	Test Species:	CD-Ceriodaphnia dubia
Comments:					

Conc-gm/L	1	2	3	4	5	6	7	8	9	10
D-Control	18.000	24.000	20.000	22.000	22.000	19.000	21.000	22.000	23.000	23.000
0.25	19.000	21.000	20.000	25.000	24.000	20.000	27.000	22.000	20.000	25.000
0.5	22.000	21.000	24.000	25.000	21.000	20.000	19.000	24.000	24.000	21.000
1	13.000	12.000	12.000	10.000	15.000	9.000	17.000	15.000	14.000	14.000
2	3.000	2.000	3.000	4.000	0.000	3.000	7.000	0.000	3.000	6.000
4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

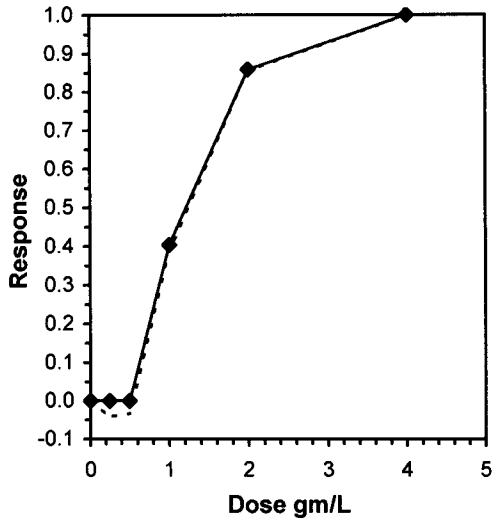
			Transform: Untransformed					1-Tailed			Isotonic	
Conc-gm/L	Mean	N-Mean	Mean	Min	Max	CV%	N	t-Stat	Critical	MSD	Mean	N-Mean
D-Control	21.400	1.0000	21.400	18.000	24.000	8.866	10				21.933	1.0000
0.25	22.300	1.0421	22.300	19.000	27.000	12.335	10	-0.880	2.223	2.273	21.933	1.0000
0.5	22.100	1.0327	22.100	19.000	25.000	9.162	10	-0.685	2.223	2.273	21.933	1.0000
*1	13.100	0.6121	13.100	9.000	17.000	18.507	10	8.118	2.223	2.273	13.100	0.5973
*2	3.100	0.1449	3.100	0.000	7.000	72.051	10	17.899	2.223	2.273	3.100	0.1413
4	0.000	0.0000	0.000	0.000	0.000	0.000	10				0.000	0.0000

Auxiliary Tests	Statistic	Critical	Skew	Kurt
Shapiro-Wilk's Test indicates normal distribution (p > 0.05)	0.96438	0.947	0.08587	-0.8006
Bartlett's Test indicates equal variances (p = 0.83)	1.50628	13.2767		

Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU	MSDu	MSDp	MSB	MSE	F-Prob	df
Dunnett's Test Treatments vs D-Control	0.5	1	0.70711		2.27317	0.10622	700.2	5.22667	2.2E-24	4, 45

Linear Interpolation (200 Resamples)

Point	gm/L	SD	95% CL		Skew
IC05	0.5621	0.0442	0.4151	0.5733	-4.2243
IC10	0.6242	0.0252	0.5373	0.6466	-1.7522
IC15	0.6862	0.0254	0.6039	0.7200	-1.2089
IC20	0.7483	0.0270	0.6723	0.7933	-0.6359
IC25	0.8104	0.0296	0.7434	0.8683	-0.1929
IC40	0.9966	0.0501	0.9298	1.1143	0.4891
IC50	1.2133	0.0576	1.1011	1.3148	-0.3182

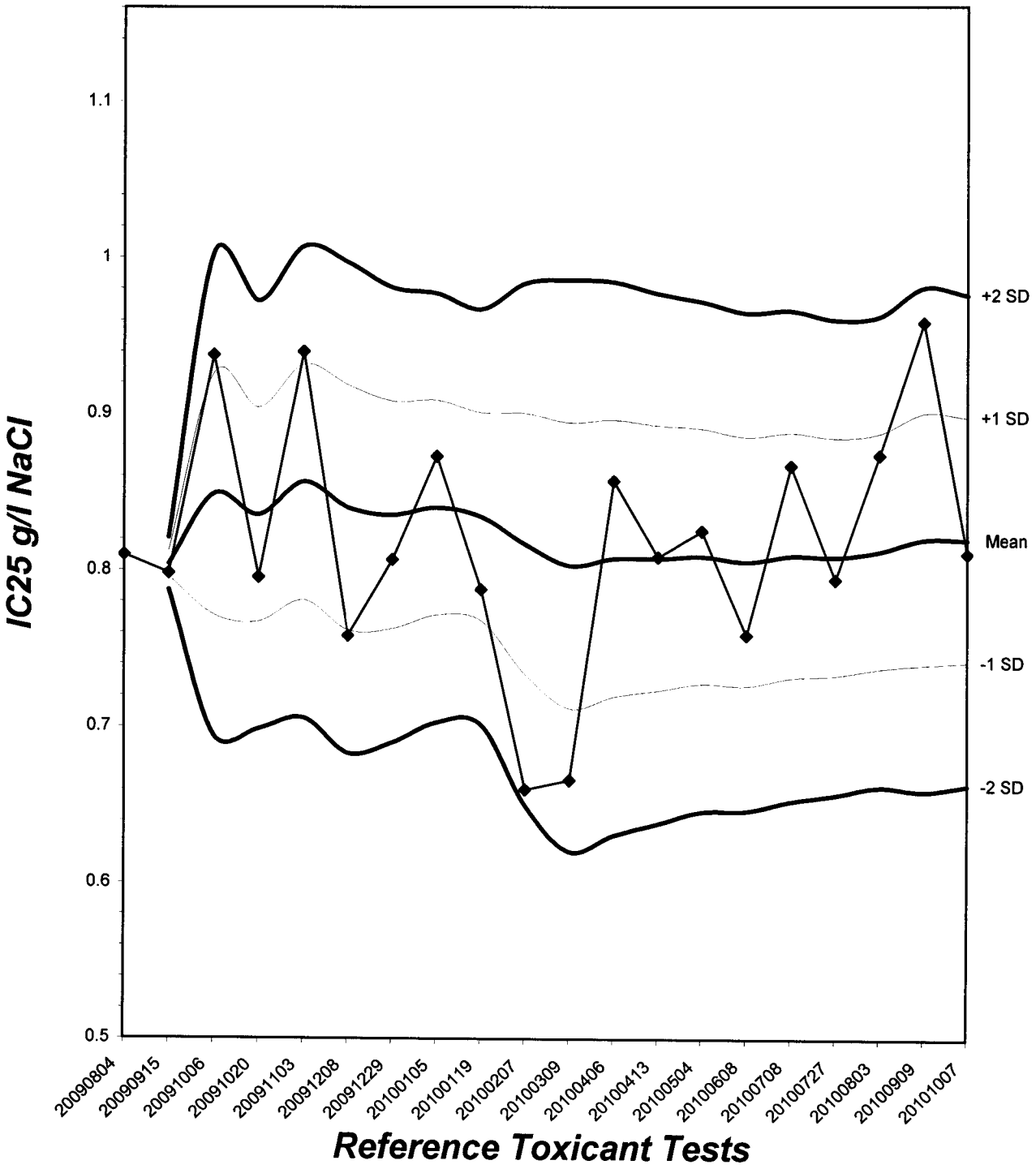


ToxCalc v5.0.23

Reviewed by:

Ceriodaphnia Chronic Reproduction Laboratory Control Chart

CV% = 9.58



CERIODAPHNIA DUBIA CHRONIC BIOASSAY
Reference Toxicant - NaCl
Reproduction and Survival Raw Data Sheet

Aquatic Testing Laboratories

QA/QC No.: RT-101007

Start Date:10/07/2010

Sample	Day	Number of Young Produced										Total Live Young	No. Live Adults	Analyst Initials
		A	B	C	D	E	F	G	H	I	J			
Control	1	0	0	0	0	0	0	0	0	0	0	0	10	
	2	0	0	0	0	0	0	0	0	0	0	0	10	
	3	0	0	0	0	4	0	0	3	3	0	10	10	
	4	3	4	3	3	0 ~~4~~	4	4	9 ~~4~~	0	5	26	10	
	5	6	8	6	7	8	7	8	6	6	8	70	10	
	6	9	12	11	12	10	8	9	13	14	10	108	10	
	7	–	–	–	–	–	–	–	–	–	–	–	–	–
	Total	18	24	20	22	22	19	21	22	23	23	214	10	
0.25 g/l	1	0	0	0	0	0	0	0	0	0	0	0	10	
	2	0	0	0	0	0	0	0	0	0	0	0	10	
	3	0	0	0	0	3	0	0	4	0	0	7	10	
	4	5	4	3	5	0	4	4	0	3	5	33	10	
	5	6	7	8	8	7	6	8	6	5	7	68	10	
	6	8	10	9	12	14	10	15	12	12	13	115	10	
	7	–	–	–	–	–	–	–	–	–	–	–	–	–
	Total	19	21	20	25	24	20	27	22	20	25	223	10	
0.5 g/l	1	0	0	0	0	0	0	0	0	0	0	0	10	
	2	0	0	0	0	0	0	0	0	0	0	0	10	
	3	0	0	0	0	4	0	0	0	0	3	7	10	
	4	3	3	4	5	0	5	3	4	4	0	31	10	
	5	7	8	7	6	7	7	8	6	7	7	70	10	
	6	12	10	13	14	10	8	8	14	13	11	113	10	
	7	–	–	–	–	–	–	–	–	–	–	–	–	–
	Total	22	21	24	25	21	20	19	24	24	21	221	10	

Circled fourth brood not used in statistical analysis.
7th day only used if <60% of the surviving control females have produced their third brood.

CERIODAPHNIA DUBIA CHRONIC BIOASSAY
Reference Toxicant - NaCl
Reproduction and Survival Raw Data Sheet

Aquatic Testing Laboratories

QA/QC No.: RT-101007

Start Date:10/07/2010

Sample	Day	Number of Young Produced										Total Live Young	No. Live Adults	Analyst Initials
		A	B	C	D	E	F	G	H	I	J			
1.0 g/l	1	0	0	0	0	0	0	0	0	0	0	0	10	
	2	0	0	0	0	0	0	0	0	0	0	0	10	
	3	0	0	0	0	0	0	0	3	2	0	5	10	
	4	3	2	3	0	3	4	3	C	C	3	21	10	
	5	6	4	4	5	4	5	5	6	7	4	50	10	
	6	4	6	5	5	8	0	9	6	5	7	55	10	
	7	–	–	–	–	–	–	–	–	–	–	–	–	–
	Total	13	12	12	10	15	9	17	15	14	14	131	10	
2.0 g/l	1	0	0	0	0	0	0	0	0	0	0	0	10	
	2	0	0	0	0	0	0	0	0	0	0	0	10	
	3	0	0	0	0	X	0	0	0	0	0	0	9	
	4	0	0	0	0	–	0	0	0	0	0	0	9	
	5	3	0	3	4	–	0	3	0	0	3	16	9	
	6	0	2	0	0	–	3	4	0	3	3	15	9	
	7	–	–	–	–	–	–	–	–	–	–	–	–	–
	Total	3	2	3	4	0	3	7	0	3	6	31	9	
4.0 g/l	1	X	X	X	X	X	X	X	X	X	X	0	0	
	2	–	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–	–
	4	–	–	–	–	–	–	–	–	–	–	–	–	–
	5	–	–	–	–	–	–	–	–	–	–	–	–	–
	6	–	–	–	–	–	–	–	–	–	–	–	–	–
	7	–	–	–	–	–	–	–	–	–	–	–	–	–
	Total	0	0	0	0	0	0	0	0	0	0	0	0	

Circled fourth brood not used in statistical analysis.
7th day only used if <60% of the surviving control females have produced their third brood.

CERIODAPHNIA DUBIA CHRONIC BIOASSAY
Reference Toxicant - NaCl
Water Chemistries Raw Data Sheet

Aquatic Testing Laboratories

QA/QC No.: RT-101007

Start Date:10/07/2010

		DAY 1		DAY 2		DAY 3		DAY 4		DAY 5		DAY 6		DAY 7	
		Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final
Analyst Initials:		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	—	—
Time of Readings:		1400	1300	1300	1300	1300	1400	1400	1430	1430	1330	1330	1300	—	—
Control	DO	8.3	8.6	9.0	8.5	8.1	7.8	8.0	7.7	8.0	7.7	7.9	7.9	—	—
	pH	8.1	8.2	8.0	8.1	8.1	7.9	8.1	8.0	7.9	7.7	8.0	7.8	—	—
	Temp	25.3	24.3	25.0	24.5	25.4	25.0	25.6	25.2	24.5	24.7	25.4	24.2	—	—
0.25 g/l	DO	8.3	8.6	9.0	8.4	8.1	7.8	7.9	7.7	7.9	7.9	7.9	7.7	—	—
	pH	8.1	8.2	8.0	8.1	8.1	7.9	8.1	8.0	8.0	7.8	8.0	7.6	—	—
	Temp	25.3	24.4	25.0	24.6	25.4	25.0	25.4	25.3	24.7	25.1	25.4	24.2	—	—
0.5 g/l	DO	8.3	8.7	9.0	8.5	8.1	8.0	7.9	7.8	8.1	7.7	8.0	8.0	—	—
	pH	8.1	8.2	8.0	8.1	8.1	8.1	8.1	7.9	8.1	7.6	7.9	8.0	—	—
	Temp	25.3	24.4	25.1	24.7	25.4	25.3	25.4	25.4	25.6	25.4	25.5	24.4	—	—
1.0 g/l	DO	8.3	8.6	9.1	8.4	8.1	7.9	8.0	7.8	8.1	7.7	8.0	8.0	—	—
	pH	8.1	8.2	8.0	8.1	8.1	8.0	8.2	8.1	8.1	7.6	7.9	7.8	—	—
	Temp	25.2	24.4	25.1	24.6	25.4	25.4	25.4	25.5	25.3	25.4	25.5	24.5	—	—
2.0 g/l	DO	8.4	8.5	9.1	8.6	8.2	8.0	8.1	7.6	8.0	8.0	7.9	8.0	—	—
	pH	8.2	8.2	8.0	8.1	8.1	7.9	8.2	8.1	8.1	7.7	7.9	7.9	—	—
	Temp	25.2	24.3	25.2	24.6	25.5	25.5	25.4	25.5	25.5	25.3	25.4	24.6	—	—
4.0 g/l	DO	8.4	8.7	—	—	—	—	—	—	—	—	—	—	—	—
	pH	8.2	8.2	—	—	—	—	—	—	—	—	—	—	—	—
	Temp	25.0	24.3	—	—	—	—	—	—	—	—	—	—	—	—

Dissolved Oxygen (DO) readings are in mg/l O_2; Temperature (Temp) readings are in °C.

Additional Parameters	Control			High Concentration		
	Day 1	Day 3	Day 5	Day 1	Day 3	Day 5
Conductivity (µS)	333	337	302	6440	3310	3302
Alkalinity (mg/l $CaCO_3$)	72	73	64	74	73	70
Hardness (mg/l $CaCO_3$)	94	94	90	97	95	91

Source of Neonates

Replicate:	A	B	C	D	E	F	G	H	I	J
Brood ID:	3A	2B	1C	3D	2E	2F	1G	2H	1I	3J

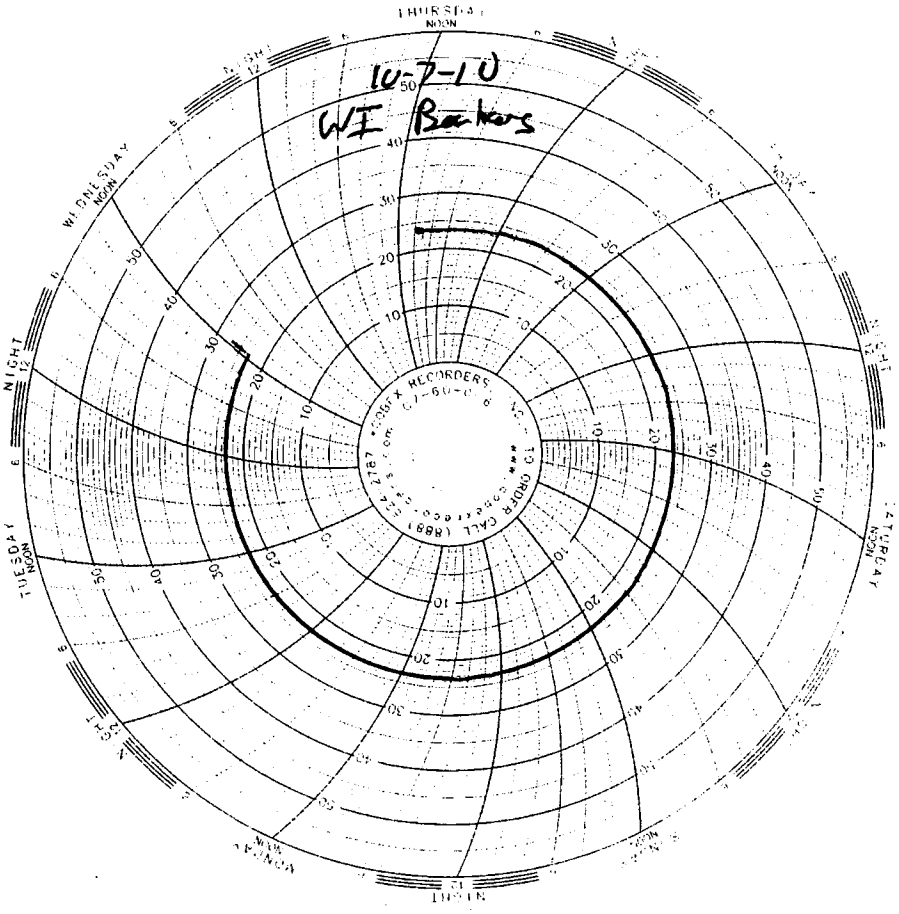
Aquatic Testing Laboratories

Test Temperature Chart

Test No: RT-101007

Date Tested: 10/07/10 to 10/13/10

Acceptable Range: 25+/- 1°C



EBERLINE SERVICES

EBERLINE ANALYTICAL CORPORATION
2030 Wright Avenue
Richmond, California 94804-3849
Phone (510) 235-2633 Fax (510) 235-0438
Toll Free (800) 841-5487
www.eberlineservices.com

December 14, 2010

Ms. Debby Wilson
Test America Irvine
17461 Derian Ave., Ste. 100
Irvine, CA 92614

Reference: **Test America-Irvine ITJ2060**
Eberline Analytical Report S010169-8640
Sample Delivery Group 8640

Dear Ms. Wilson:

Enclosed is a Level IV CLP-like data package (on CD) for one water sample received under Test America Job No. ITJ2060. The sample was received on October 22, 2010.

Please call me, if you have any questions concerning the enclosed report.

Sincerely,

N. Joseph Verville
Client Services Manager

NJV/ljb

Enclosure: Level IV CLP-like Data Package CD

1.0 General Comments

Sample delivery group 8640 consists of the analytical results and supporting documentation for one water sample. Sample ID's and reference dates/times are given in the Sample Summary section of the Summary Data report. The sample was received as stated on the chain-of-custody document. Any discrepancies are noted on the Eberline Analytical Sample Receipt Checklist. No holding times were exceeded.

Tritium and gamma analyses were performed on the sample as received i.e. the sample was not filtered. The analytical volumes for all other analyses were subjected to a full nitric acid/hydrofluoric acid dissolution, and analyses were performed on the dissolution volume.

2.0 Quality Control

Quality Control Samples consisted of laboratory control samples (LCS), method blanks, duplicate analyses and matrix spike analyses. Included in the data package are copies of the Eberline Analytical radiometrics data sheets. The radiometrics data sheets for the QC LCS and QC blank samples indicate Eberline Analytical's standard QC aliquot of 1.0 sample; results for those QC types are calculated as pCi/sample. The QC LCS and QC blank sample results reported in the Summary Data Section have been divided by the appropriate method specific aliquot (see the Lab Method Summaries for specific aliquots) in order to make the results comparable to the field sample results. All QC sample results were within required control limits.

3.0 Method Errors

The error for each result is an estimate of the significant random uncertainties incurred in the measurement process. These are propagated to each final result. They include the counting (Poisson) uncertainty, as well as those intrinsic errors due to carrier or tracer standardization, aliquoting, counter efficiencies, weights, or volumes. The following method errors were propagated to the count error to calculate the 2σerror (Total):

Analysis	Method Error
Gross alpha	20.6%
Gross beta	11.0%
Tritium	10.0%
Sr-90	10.4%
Ra-226	16.4%
Ra-228	10.4%
Uranium,Total	
Gamma Spec.	7.0%

4.0 Analysis Notes

4.1 Gross Alpha/Gross Beta Analysis – No problems were encountered during the processing of the samples. All quality control sample results were within required control limits.

4.2 Tritium Analysis – Due to a scheduling error, the samples were not counted for a sufficient time to meet the required detection limit of 200 pCi/L; the MDA's were 267 pCi/L and 266 pCi/L for the sample and duplicate, respectively. No other problems were encountered during the processing of the samples. All quality control sample results were within required control limits.

4.3 Strontium-90 Analysis - No problems were encountered during the processing of the samples. All quality control sample results were within required control limits.

4.4 Radium-226 Analysis - No problems were encountered during the processing of the samples. All quality control sample results were within required control limits

4.5 Radium-228 Analysis - No problems were encountered during the processing of the samples. All quality control sample results were within required control limits

4.6 Total Uranium Analysis - No problems were encountered during the processing of the samples. All quality control sample results were within required control limits.

4.7 Gamma Spectroscopy – No problems were encountered during the processing of the samples. All quality control sample results were within required control limits.

5.0 Case Narrative Certification Statement

"I certify that this data package is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data obtained in this hard copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature."

N. Joseph Verville — 12/14/10

N. Joseph Verville **Date**
Client Services Manager

EBERLINE ANALYTICAL
SDG 8640

SDG 8640
Contact N. Joseph Verville

Client Test America, Inc.
Contract ITJ2060

SUMMARY DATA SECTION

TABLE OF CONTENTS

Prepared by

Reviewed by

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-TOC
Version 3.06
Report date 12/14/10

EBERLINE ANALYTICAL

SDG 8640

SDG 8640
Contact N. Joseph Verville

REPORT GUIDE

Client Test America, Inc.
Contract ITJ2060

ABOUT THE DATA SUMMARY SECTION

The Data Summary Section of a Data Package has all data, in several useful orders, necessary for first level, routine review of the data package for a Sample Delivery Group (SDG). This section follows the Data Package Narrative, which has an overview of the data package and a discussion of special problems. It is followed by the Raw Data Section, which has full details.

The Data Summary Section has several groups of reports:

SAMPLE SUMMARIES

The Sample and QC Summary Reports show all samples, including QC samples, reported in one SDG. These reports cross-reference client and lab sample identifiers.

PREPARATION BATCH SUMMARY

The Preparation Batch Summary Report shows all preparation batches (lab groupings reflecting how work was organized) relevant to the reported SDG with information necessary to check the completeness and consistency of the SDG.

WORK SUMMARY

The Work Summary Report shows all samples and work done on them relevant to the reported SDG.

METHOD BLANKS

The Method Blank Reports, one for each Method Blank relevant to the SDG, show all results and primary supporting information for the blanks.

LAB CONTROL SAMPLES

The Lab Control Sample Reports, one for each Lab Control Sample relevant to the SDG, show all results, recoveries and primary supporting information for these QC samples.

DUPLICATES

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-RG
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SDG 8640
Contact N. Joseph Verville

GUIDE, cont.

Client Test America, Inc.
Contract ITJ2060

ABOUT THE DATA SUMMARY SECTION

The Duplicate Reports, one for each Duplicate and Original sample pair relevant to the SDG, show all results, differences and primary supporting information for these QC samples.

MATRIX SPIKES

The Matrix Spike Reports, one for each Spiked and Original sample pair relevant to the SDG, show all results, recoveries and primary supporting information for these QC samples.

DATA SHEETS

The Data Sheet Reports, one for each client sample in the SDG, show all results and primary supporting information for these samples.

METHOD SUMMARIES

The Method Summary Reports, one for each test used in the SDG, show all results, QC and method performance data for one analyte on one or two pages. (A test is a short code for the method used to do certain work to the client's specification.)

REPORT GUIDES

The Report Guides, one for each of the above groups of reports, have documentation on how to read the associated reports.

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-RG
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EBERLINE ANALYTICAL

SDG 8640

LAB SAMPLE SUMMARY

SDG 8640
Contact N. Joseph Verville

Client Test America, Inc.
Contract ITJ2060

LAB SAMPLE ID	CLIENT SAMPLE ID	LOCATION	MATRIX	LEVEL	SAS NO	CHAIN OF CUSTODY	COLLECTED
S010169-01	ITJ2060-02	Boeing-SSFL	WATER			ITJ2060	10/20/10 15:15
S010169-02	Lab Control Sample		WATER				
S010169-03	Method Blank		WATER				
S010169-04	Duplicate (S010169-01)	Boeing-SSFL	WATER				10/20/10 15:15

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-LS
Version 3.06
Report date 12/14/10

EBERLINE ANALYTICAL

SDG 8640

SDG 8640
Contact N. Joseph Verville

QC SUMMARY

Client Test America, Inc.
Contract ITJ2060

QC BATCH	CHAIN OF CUSTODY	CLIENT SAMPLE ID	MATRIX	% MOIST	SAMPLE AMOUNT	BASIS AMOUNT	DAYS RECEIVED	DAYS COLL	LAB SAMPLE ID	DEPARTMENT SAMPLE ID
8640	ITJ2060	ITJ2060-02	WATER		9.7 L		10/22/10	2	S010169-01	8640-001
		Method Blank	WATER						S010169-03	8640-003
		Lab Control Sample	WATER						S010169-02	8640-002
		Duplicate (S010169-01)	WATER		9.7 L		10/22/10	2	S010169-04	8640-004

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-QS
Version 3.06
Report date 12/14/10

EBERLINE ANALYTICAL

SDG 8640

PREP BATCH SUMMARY

SDG 8640
Contact N. Joseph Verville

Client Test America, Inc.
Contract ITJ2060

TEST	MATRIX	METHOD	PREPARATION BATCH	ERROR 2σ %	PLANCHETS ANALYZED CLIENT	MORE	RE	BLANK	LCS	DUP/ORIG	MS/ORIG	QUALIFIERS
Beta Counting												
AC	WATER	Radium-228 in Water	7258-129	10.4	1			1	1	1/1		
SR	WATER	Strontium-90 in Water	7258-129	10.4	1			1	1	1/1		
Gas Proportional Counting												
80A	WATER	Gross Alpha in Water	7258-129	20.6	1			1	1	1/1		
80B	WATER	Gross Beta in Water	7258-129	11.0	1			1	1	1/1		
Gamma Spectroscopy												
GAM	WATER	Gamma Emitters in Water	7258-129	7.0	1			1	1	1/1		
Kinetic Phosphorimetry, ug												
U_T	WATER	Uranium, Total	7258-129		1			1	1	1/1		
Liquid Scintillation Counting												
H	WATER	Tritium in Water	7258-129	10.0	1			1	1	1/1		
Radon Counting												
RA	WATER	Radium-226 in Water	7258-129	16.4	1			1	1	1/1		

Duplicates and Matrix Spikes are those with original (Client) sample in this Sample Delivery Group.
Blank and LCS planchets are those in the same preparation batch as some Client, Duplicate or Spike sample.

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-PBS
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Report date 12/14/10

EBERLINE ANALYTICAL

SDG 8640

LAB WORK SUMMARY

SDG 8640
Contact N. Joseph Verville

Client Test America, Inc.
Contract ITJ2060

LAB SAMPLE / COLLECTED / RECEIVED	CLIENT SAMPLE ID / LOCATION / CUSTODY	SAS no	MATRIX	PLANCHET	TEST	SUF-FIX	ANALYZED	REVIEWED	BY	METHOD
S010169-01	ITJ2060-02			8640-001	80A/80		11/02/10	11/04/10	BW	Gross Alpha in Water
10/20/10	Boeing-SSFL		WATER	8640-001	80B/80		11/02/10	11/04/10	BW	Gross Beta in Water
10/22/10	ITJ2060			8640-001	AC		11/04/10	11/05/10	BW	Radium-228 in Water
				8640-001	GAM		11/20/10	11/30/10	MWT	Gamma Emitters in Water
				8640-001	H		11/11/10	11/15/10	BW	Tritium in Water
				8640-001	RA		11/10/10	11/10/10	BW	Radium-226 in Water
				8640-001	SR		11/01/10	11/08/10	BW	Strontium-90 in Water
				8640-001	U_T		11/10/10	11/30/10	BW	Uranium, Total
S010169-02	Lab Control Sample			8640-002	80A/80		11/03/10	11/04/10	BW	Gross Alpha in Water
			WATER	8640-002	80B/80		11/03/10	11/04/10	BW	Gross Beta in Water
				8640-002	AC		11/04/10	11/05/10	BW	Radium-228 in Water
				8640-002	GAM		11/22/10	11/30/10	MWT	Gamma Emitters in Water
				8640-002	H		11/11/10	11/15/10	BW	Tritium in Water
				8640-002	RA		11/10/10	11/10/10	BW	Radium-226 in Water
				8640-002	SR		11/03/10	11/08/10	BW	Strontium-90 in Water
				8640-002	U_T		11/10/10	11/30/10	BW	Uranium, Total
S010169-03	Method Blank			8640-003	80A/80		11/03/10	11/04/10	BW	Gross Alpha in Water
			WATER	8640-003	80B/80		11/03/10	11/04/10	BW	Gross Beta in Water
				8640-003	AC		11/04/10	11/05/10	BW	Radium-228 in Water
				8640-003	GAM		11/22/10	11/30/10	MWT	Gamma Emitters in Water
				8640-003	H		11/11/10	11/15/10	BW	Tritium in Water
				8640-003	RA		11/10/10	11/10/10	BW	Radium-226 in Water
				8640-003	SR		11/01/10	11/08/10	BW	Strontium-90 in Water
				8640-003	U_T		11/10/10	11/30/10	BW	Uranium, Total
S010169-04	Duplicate (S010169-01)			8640-004	80A/80		11/03/10	11/04/10	BW	Gross Alpha in Water
10/20/10	Boeing-SSFL		WATER	8640-004	80B/80		11/03/10	11/04/10	BW	Gross Beta in Water
10/22/10				8640-004	AC		11/04/10	11/05/10	BW	Radium-228 in Water
				8640-004	GAM		11/22/10	11/30/10	MWT	Gamma Emitters in Water
				8640-004	H		11/11/10	11/15/10	BW	Tritium in Water
				8640-004	RA		11/10/10	11/10/10	BW	Radium-226 in Water
				8640-004	SR		11/01/10	11/08/10	BW	Strontium-90 in Water
				8640-004	U_T		11/10/10	11/30/10	BW	Uranium, Total

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-LWS
Version 3.06
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SDG 8640
Contact N. Joseph Verville

WORK SUMMARY, cont.

Client Test America, Inc.
Contract ITJ2060

COUNTS OF TESTS BY SAMPLE TYPE

TEST	SAS no	METHOD	REFERENCE	CLIENT	MORE	RE	BLANK	LCS	DUP SPIKE	TOTAL
80A/80		Gross Alpha in Water	900.0	1			1	1	1	4
80B/80		Gross Beta in Water	900.0	1			1	1	1	4
AC		Radium-228 in Water	904.0	1			1	1	1	4
GAM		Gamma Emitters in Water	901.1	1			1	1	1	4
H		Tritium in Water	906.0	1			1	1	1	4
RA		Radium-226 in Water	903.1	1			1	1	1	4
SR		Strontium-90 in Water	905.0	1			1	1	1	4
U_T		Uranium, Total	D5174	1			1	1	1	4
TOTALS				8			8	8	8	32

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-LWS
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EBERLINE ANALYTICAL

SDG 8640

8640-003

Method Blank

METHOD BLANK

SDG 8640 | Client Test America, Inc.
Contact N. Joseph Verville | Contract ITJ2060

Lab sample id S010169-03 | Client sample id Method Blank
Dept sample id 8640-003 | Material/Matrix WATER

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Gross Alpha	12587461	-0.160	0.34	0.686	3.00	U	80A
Gross Beta	12587472	-0.287	0.59	1.01	4.00	U	80B
Tritium	10028178	-68.5	150	273	200	U	H
Radium-226	13982633	-0.020	0.23	0.415	1.00	U	RA
Radium-228	15262201	-0.108	0.25	0.779	1.00	U	AC
Strontium-90	10098972	0.120	0.62	1.39	2.00	U	SR
Uranium, Total		0	0.008	0.020	1.00	U	U_T
Potassium-40	13966002	U		24.5	25.0	U	GAM
Cesium-137	10045973	U		1.16	20.0	U	GAM

QC-BLANK #75739

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-DS
Version 3.06
Report date 12/14/10

EBERLINE ANALYTICAL

SDG 8640

8640-002

Lab Control Sample

LAB CONTROL SAMPLE

SDG 8640
Contact N. Joseph Verville

Client Test America, Inc.
Contract ITJ2060

Lab sample id S010169-02
Dept sample id 8640-002

Client sample id Lab Control Sample
Material/Matrix WATER

ANALYTE	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST	ADDED pCi/L	2σ ERR pCi/L	REC %	2σ LMTS (TOTAL)	PROTOCOL LIMITS
Gross Alpha	47.2	2.6	0.613	3.00		80A	40.4	1.6	117	75-125	70-130
Gross Beta	35.2	1.4	0.988	4.00		80B	35.2	1.4	100	88-112	70-130
Tritium	2580	270	276	200		H	2570	100	100	85-115	80-120
Radium-226	55.0	1.6	0.374	1.00		RA	55.7	2.2	99	83-117	80-120
Radium-228	4.97	0.44	1.02	1.00		AC	4.75	0.19	105	85-115	60-140
Strontium-90	14.6	0.96	0.462	2.00		SR	17.6	0.70	83	89-111	80-120
Uranium, Total	60.5	7.3	0.196	1.00		U_T	56.5	2.3	107	86-114	80-120
Cobalt-60	105	3.3	1.53	10.0		GAM	104	4.2	101	91-109	80-120
Cesium-137	117	3.0	1.92	20.0		GAM	110	4.4	106	91-109	80-120

QC-LCS #75738

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-LCS
Version 3.06
Report date 12/14/10

EBERLINE ANALYTICAL

SDG 8640

8640-004

ITJ2060-02

DUPLICATE

SDG 8640
Contact N. Joseph Verville
Client Test America, Inc.
Contract ITJ2060

DUPLICATE
Lab sample id S010169-04
Dept sample id 8640-004

ORIGINAL
Lab sample id S010169-01
Dept sample id 8640-001
Received 10/22/10

Client sample id ITJ2060-02
Location/Matrix Boeing-SSFL WATER
Collected/Volume 10/20/10 15:15 9.7 L
Chain of custody id ITJ2060

ANALYTE	DUPLICATE pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST	ORIGINAL pCi/L	2σ ERR (COUNT)	MDA pCi/L	QUALI-FIERS	RPD %	3σ TOT	DER σ
Gross Alpha	0.358	0.24	0.304	3.00	J	80A	0.142	0.11	0.061	J	86	165	1.6
Gross Beta	2.23	0.57	0.825	4.00	J	80B	2.31	0.55	0.829	J	4	57	0.2
Tritium	-26.7	150	266	200	U	H	-17.9	150	267	U	-		0.1
Radium-226	0.046	0.23	0.424	1.00	U	RA	0.026	0.36	0.671	U	-		0.1
Radium-228	0.188	0.23	0.716	1.00	U	AC	-0.077	0.28	0.835	U	-		1.5
Strontium-90	0.026	0.62	1.15	2.00	U	SR	0.102	0.57	1.28	U	-		0.2
Uranium, Total	0.070	0.012	0.020	1.00	J	U_T	0.076	0.013	0.020	J	8	36	0.7
Potassium-40	U		14.7	25.0	U	GAM	U		12.0	U	-		0.3
Cesium-137	U		1.33	20.0	U	GAM	U		0.863	U	-		0.6

QC-DUP#1 75740

Lab id EAS
Protocol TA
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Version 3.06
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EBERLINE ANALYTICAL

SDG 8640

8640-001

ITJ2060-02

DATA SHEET

SDG 8640 Client Test America, Inc.
Contact N. Joseph Verville Contract ITJ2060

Lab sample id S010169-01 Client sample id ITJ2060-02
Dept sample id 8640-001 Location/Matrix Boeing-SSFL WATER
Received 10/22/10 Collected/Volume 10/20/10 15:15 9.7 L
Chain of custody id ITJ2060

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Gross Alpha	12587461	0.142	0.11	0.061	3.00	J	80A
Gross Beta	12587472	2.31	0.55	0.829	4.00	J	80B
Tritium	10028178	-17.9	150	267	200	U	H
Radium-226	13982633	0.026	0.36	0.671	1.00	U	RA
Radium-228	15262201	-0.077	0.28	0.835	1.00	U	AC
Strontium-90	10098972	0.102	0.57	1.28	2.00	U	SR
Uranium, Total		0.076	0.013	0.020	1.00	J	U_T
Potassium-40	13966002	U		12.0	25.0	U	GAM
Cesium-137	10045973	U		0.863	20.0	U	GAM

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-DS
Version 3.06
Report date 12/14/10

EBERLINE ANALYTICAL

SDG 8640

LAB METHOD SUMMARY

RADIUM-228 IN WATER

BETA COUNTING

Test AC Matrix WATER
SDG 8640
Contact N. Joseph Verville

Client Test America, Inc.
Contract ITJ2060

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Radium-228	
Preparation batch 7258-129						
S010169-01			8640-001	ITJ2060-02	U	
S010169-02			8640-002	Lab Control Sample	ok	
S010169-03			8640-003	Method Blank	U	
S010169-04			8640-004	Duplicate (S010169-01)	-	U
Nominal values and limits from method				RDLs (pCi/L)	1.00	

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/L	ALIQ L	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 7258-129 2σ prep error 10.4 % Reference Lab Notebook No. 7258 pg. 129																
S010169-01			ITJ2060-02	0.835	1.80			77		60			15	11/04/10	11/04	GRB-225
S010169-02			Lab Control Sample	1.02	1.80			77		60				11/04/10	11/04	GRB-226
S010169-03			Method Blank	0.779	1.80			82		60				11/04/10	11/04	GRB-227
S010169-04			Duplicate (S010169-01)	0.716	1.80			80		60			15	11/04/10	11/04	GRB-228
Nominal values and limits from method				1.00	1.80			30-105		50			180			

PROCEDURES REFERENCE 904.0
DWP-894 Sequential Separation of Actinium-228 and Radium-226 in Drinking Water (>1 Liter Aliquot), rev 5

AVERAGES ± 2 SD FOR 4 SAMPLES
MDA 0.838 ± 0.262
YIELD 79 ± 5

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 12/14/10

EBERLINE ANALYTICAL

SDG 8640

LAB METHOD SUMMARY

STRONTIUM-90 IN WATER

BETA COUNTING

Test SR Matrix WATER
SDG 8640
Contact N. Joseph Verville

Client Test America, Inc.
Contract ITJ2060

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Strontium-90
Preparation batch 7258-129					
S010169-01			8640-001	ITJ2060-02	U
S010169-02			8640-002	Lab Control Sample	ok
S010169-03			8640-003	Method Blank	U
S010169-04			8640-004	Duplicate (S010169-01)	- U
Nominal values and limits from method				RDLs (pCi/L)	2.00

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/L	ALIQ L	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 7258-129 2σ prep error 10.4 % Reference Lab Notebook No. 7258 pg. 129																
S010169-01			ITJ2060-02	1.28	0.500			55		50			12	11/01/10	11/01	GRB-229
S010169-02			Lab Control Sample	0.462	0.500			93		100				11/01/10	11/03	GRB-202
S010169-03			Method Blank	1.39	0.500			50		50				11/01/10	11/01	GRB-231
S010169-04			Duplicate (S010169-01)	1.15	0.500			56		74			12	11/01/10	11/01	GRB-226
Nominal values and limits from method				2.00	0.500			30-105		50			180			

PROCEDURES REFERENCE 905.0
DWP-380 Strontium in Drinking Water, rev 8

AVERAGES ± 2 SD FOR 4 SAMPLES
MDA 1.07 ± 0.835
YIELD 64 ± 40

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 12/14/10

EBERLINE ANALYTICAL

SDG 8640

LAB METHOD SUMMARY

GROSS ALPHA IN WATER

GAS PROPORTIONAL COUNTING

Test 80A Matrix WATER
SDG 8640
Contact N. Joseph Verville

Client Test America, Inc.
Contract ITJ2060

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Gross Alpha
Preparation batch 7258-129					
S010169-01	80		8640-001	ITJ2060-02	0.142 J
S010169-02	80		8640-002	Lab Control Sample	ok
S010169-03	80		8640-003	Method Blank	U
S010169-04	80		8640-004	Duplicate (S010169-01)	ok J
Nominal values and limits from method				RDLs (pCi/L)	3.00

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/L	ALIQ L	PREP FAC	DILU-TION	RESID mg	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 7258-129 2σ prep error 20.6 % Reference Lab Notebook No. 7258 pg. 129																
S010169-01	80		ITJ2060-02	0.061	0.300			24		400			13	10/29/10	11/02	GRB-216
S010169-02	80		Lab Control Sample	0.613	0.250			57		400				10/29/10	11/03	GRB-109
S010169-03	80		Method Blank	0.686	0.250			58		400				10/29/10	11/03	GRB-111
S010169-04	80		Duplicate (S010169-01)	0.304	0.300			23		400			14	10/29/10	11/03	GRB-112
Nominal values and limits from method				3.00	0.250			0-200		100			180			

PROCEDURES REFERENCE 900.0
DWP-121 Gross Alpha and Gross Beta in Drinking Water, rev 10

AVERAGES ± 2 SD FOR 4 SAMPLES
MDA 0.416 ± 0.578
RESIDUE 40 ± 39

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 12/14/10

EBERLINE ANALYTICAL

SDG 8640

LAB METHOD SUMMARY

GROSS BETA IN WATER

GAS PROPORTIONAL COUNTING

Test 80B Matrix WATER
SDG 8640
Contact N. Joseph Verville

Client Test America, Inc.
Contract ITJ2060

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Gross Beta	
Preparation batch 7258-129						
S010169-01	80		8640-001	ITJ2060-02	2.31	J
S010169-02	80		8640-002	Lab Control Sample	ok	
S010169-03	80		8640-003	Method Blank	U	
S010169-04	80		8640-004	Duplicate (S010169-01)	ok	J
Nominal values and limits from method				RDLs (pCi/L)	4.00	

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/L	ALIQ L	PREP FAC	DILU-TION	RESID mg	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 7258-129 2σ prep error 11.0 % Reference Lab Notebook No. 7258 pg. 129																
S010169-01	80		ITJ2060-02	0.829	0.300			24		400			13	10/29/10	11/02	GRB-216
S010169-02	80		Lab Control Sample	0.988	0.250			57		400				10/29/10	11/03	GRB-109
S010169-03	80		Method Blank	1.01	0.250			58		400				10/29/10	11/03	GRB-111
S010169-04	80		Duplicate (S010169-01)	0.825	0.300			23		400			14	10/29/10	11/03	GRB-112
Nominal values and limits from method				4.00	0.250			0-200		100			180			

PROCEDURES REFERENCE 900.0
DWP-121 Gross Alpha and Gross Beta in Drinking Water, rev 10

AVERAGES ± 2 SD FOR 4 SAMPLES
MDA 0.913 ± 0.199
RESIDUE 40 ± 39

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 12/14/10

EBERLINE ANALYTICAL

SDG 8640

Test GAM Matrix WATER
SDG 8640
Contact N. Joseph Verville

LAB METHOD SUMMARY

GAMMA EMITTERS IN WATER

GAMMA SPECTROSCOPY

Client Test America, Inc.
Contract ITJ2060

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Cobalt-60	Cesium-137	
Preparation batch 7258-129							
S010169-01			8640-001	ITJ2060-02		U	
S010169-02			8640-002	Lab Control Sample	ok	ok	
S010169-03			8640-003	Method Blank		U	
S010169-04			8640-004	Duplicate (S010169-01)		-	U
Nominal values and limits from method				RDLs (pCi/L)	10.0	20.0	

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/L	ALIQ L	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 7258-129 2σ prep error 7.0 % Reference Lab Notebook No. 7258 pg. 129																
S010169-01			ITJ2060-02		2.00					1040			31	10/28/10	11/20	MB,08,00
S010169-02			Lab Control Sample		2.00					885				10/28/10	11/22	MB,08,00
S010169-03			Method Blank		2.00					884				10/28/10	11/22	01,02,00
S010169-04			Duplicate (S010169-01)		2.00					884			33	10/28/10	11/22	01,01,00
Nominal values and limits from method				6.00	2.00					400			180			

PROCEDURES REFERENCE 901.1
DWP-100 Preparation of Drinking Water Samples for Gamma Spectroscopy, rev 5

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 12/14/10

EBERLINE ANALYTICAL

SDG 8640

LAB METHOD SUMMARY

URANIUM, TOTAL

KINETIC PHOSPHORIMETRY, UG

Test U T Matrix WATER
SDG 8640
Contact N. Joseph Verville

Client Test America, Inc.
Contract ITJ2060

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Uranium, Total
Preparation batch 7258-129					
S010169-01			8640-001	ITJ2060-02	0.076 J
S010169-02			8640-002	Lab Control Sample	ok
S010169-03			8640-003	Method Blank	U
S010169-04			8640-004	Duplicate (S010169-01)	ok J
Nominal values and limits from method				RDLs (pCi/L)	1.00

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/L	ALIQ L	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 7258-129			2σ prep error	Reference Lab Notebook No. 7258 pg. 129												
S010169-01			ITJ2060-02	0.020	0.0200								21	11/10/10	11/10	KPA-001
S010169-02			Lab Control Sample	0.196	0.0200									11/10/10	11/10	KPA-001
S010169-03			Method Blank	0.020	0.0200									11/10/10	11/10	KPA-001
S010169-04			Duplicate (S010169-01)	0.020	0.0200								21	11/10/10	11/10	KPA-001
Nominal values and limits from method				1.00	0.0200								180			

PROCEDURES REFERENCE D5174

AVERAGES ± 2 SD FOR 4 SAMPLES
MDA 0.064 ± 0.176
YIELD ____ ± ____

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 12/14/10

EBERLINE ANALYTICAL

SDG 8640

LAB METHOD SUMMARY

TRITIUM IN WATER

LIQUID SCINTILLATION COUNTING

Test H Matrix WATER
SDG 8640
Contact N. Joseph Verville

Client Test America, Inc.
Contract ITJ2060

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Tritium	
Preparation batch 7258-129						
S010169-01			8640-001	ITJ2060-02	U	
S010169-02			8640-002	Lab Control Sample	ok	
S010169-03			8640-003	Method Blank	U	
S010169-04			8640-004	Duplicate (S010169-01)	-	U
Nominal values and limits from method				RDLs (pCi/L)	200	

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/L	ALIQ L	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 7258-129			2σ prep error 10.0 %	Reference Lab Notebook No. 7258 pg. 129												
S010169-01			ITJ2060-02	267	0.0100			100		50			22	11/11/10	11/11	LSC-007
S010169-02			Lab Control Sample	276	0.100			10		50				11/11/10	11/11	LSC-007
S010169-03			Method Blank	273	0.100			10		50				11/11/10	11/11	LSC-007
S010169-04			Duplicate (S010169-01)	266	0.0100			100		50			22	11/11/10	11/11	LSC-007
Nominal values and limits from method				200	0.0100					100			180			

PROCEDURES REFERENCE 906.0
DWP-212 Tritium in Drinking Water by Distillation, rev 8

AVERAGES ± 2 SD FOR 4 SAMPLES
MDA 270 ± 9.59
YIELD 55 ± 104

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 12/14/10

EBERLINE ANALYTICAL

SDG 8640

LAB METHOD SUMMARY

RADIUM-226 IN WATER

RADON COUNTING

Test RA Matrix WATER
SDG 8640
Contact N. Joseph Verville

Client Test America, Inc.
Contract ITJ2060

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Radium-226	
Preparation batch 7258-129						
S010169-01			8640-001	ITJ2060-02	U	
S010169-02			8640-002	Lab Control Sample	ok	
S010169-03			8640-003	Method Blank	U	
S010169-04			8640-004	Duplicate (S010169-01)	-	U
Nominal values and limits from method				RDLs (pCi/L)	1.00	

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/L	ALIQ L	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 7258-129			2σ prep error 16.4 %	Reference Lab Notebook No. 7258 pg. 129												
S010169-01			ITJ2060-02	0.671	0.100			100		80			21	11/10/10	11/10	RN-015
S010169-02			Lab Control Sample	0.374	0.100			100		214				11/10/10	11/10	RN-011
S010169-03			Method Blank	0.415	0.100			100		214				11/10/10	11/10	RN-016
S010169-04			Duplicate (S010169-01)	0.424	0.100			100		124			21	11/10/10	11/10	RN-015
Nominal values and limits from method				1.00	0.100					100			180			

PROCEDURES REFERENCE 903.1
DWP-881A Ra-226 Screening in Drinking Water, rev 6

AVERAGES ± 2 SD FOR 4 SAMPLES
MDA 0.471 ± 0.270
YIELD 100 ± 0

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 12/14/10

SDG 8640
Contact N. Joseph Verville

REPORT GUIDE

Client Test America, Inc.
Contract ITJ2060

SAMPLE SUMMARY

The Sample and QC Summary Reports show all samples, including QC samples, reported in one Sample Delivery Group (SDG).

The Sample Summary Report fully identifies client samples and gives the corresponding lab sample identification. The QC Summary Report shows at the sample level how the lab organized the samples into batches and generated QC samples. The Preparation Batch and Method Summary Reports show this at the analysis level.

The following notes apply to these reports:

* LAB SAMPLE ID is the lab's primary identification for a sample.

* DEPARTMENT SAMPLE ID is an alternate lab id, for example one assigned by a radiochemistry department in a lab.

* CLIENT SAMPLE ID is the client's primary identification for a sample. It includes any sample preparation done by the client that is necessary to identify the sample.

* QC BATCH is a lab assigned code that groups samples to be processed and QCed together. These samples should have similar matrices.

  QC BATCH is not necessarily the same as SDG, which reflects samples received and reported together.

* All Lab Control Samples, Method Blanks, Duplicates and Matrix Spikes are shown that QC any of the samples. Due to possible reanalyses, not all results for all these QC samples may be relevant to the SDG. The Lab Control Sample, Method Blank, Duplicate, Matrix Spike and Method Summary Reports detail these relationships.

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Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 12/14/10

SDG 8640
Contact N. Joseph Verville

REPORT GUIDE

Client Test America, Inc.
Contract ITJ2060

PREPARATION BATCH SUMMARY

The Preparation Batch Summary Report shows all preparation batches in one Sample Delivery Group (SDG) with information necessary to check the completeness and consistency of the SDG.

The following notes apply to this report:

* The preparation batches are shown in the same order as the Method Summary Reports are printed.

* Only analyses of planchets relevant to the SDG are included.

* Each preparation batch should have at least one Method Blank and LCS in it to validate client sample results.

* The QUALIFIERS shown are all qualifiers other than U, J, B, L and H that occur on any analysis in the preparation batch. The Method Summary Report has these qualifiers on a per sample basis.

  These qualifiers should be reviewed as follows:

  X Some data has been manually entered or modified. Transcription errors are possible.

  P One or more results are 'preliminary'. The data is not ready for final reporting.

  2 There were two or more results for one analyte on one planchet imported at one time. The results in DVD may not be the same as on the raw data sheets.

  Other lab defined qualifiers may occur. In general, these should be addressed in the SDG narrative.

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Contact N. Joseph Verville

REPORT GUIDE

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Contract ITJ2060

WORK SUMMARY

The Work Summary Report shows all samples, including QC samples, and all relevant analyses in one Sample Delivery Group (SDG). This report is often useful as supporting documentation for an invoice.

The following notes apply to this report:

* TEST is a code for the method used to measure associated analytes. Results and related information for each analyte are on the Data Sheet Report. In special cases, a test code used in the summary data section is not the same as in associated raw data. In this case, both codes are shown on the Work Summary.

* SUFFIX is the lab's code to distinguish multiple analyses (recounts, reworks, reanalyses) of a fraction of the sample. The suffix indicates which result is being reported. An empty suffix normally identifies the first attempt to analyze the sample.

* The LAB SAMPLE ID, TEST and SUFFIX uniquely identify all supporting data for a result. The Method Summary Report for each TEST has method performance data, such as yield, for each lab sample id and suffix and procedures used in the method.

* PLANCHET is an alternate lab identifier for work done for one test. It, combined with the TEST and SUFFIX, may be the best link to raw data.

* For QC samples, only analyses that directly QC some regular sample are shown. The Lab Control Sample, Method Blank, Duplicate, Matrix Spike and Method Summary Reports detail these relationships.

* The SAS (Special Analytical Services) Number is a client or lab assigned code that reflects special processing for samples, such as rapid turn around. Counts of tests done are lists by SAS number since it is likely to affect prices.

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DATA SHEET

The Data Sheet Report shows all results and primary supporting information for one client sample or Method Blank. This report corresponds to both the CLP Inorganics and Organics Data Sheet.

The following notes apply to this report:

* TEST is a code for the method used to measure an analyte. If the TEST is empty, no data is available; the analyte was not analyzed for.

* The LAB SAMPLE ID and TEST uniquely identify work within the Summary Data Section of a Data Package. The Work Summary and Method Summary Reports further identify raw data that underlies this work.

  The Method Summary Report for each TEST has method performance data, such as yield, for each Lab Sample ID and a list of procedures used in the method.

* ERRORs can be labeled TOTAL or COUNT. TOTAL implies a preparation (non-counting method) error has been added, as square root of sum of squares, to the counting error denoted by COUNT. The preparation errors, which may vary by preparation batch, are shown on the Method Summary Report.

* A RESULT can be 'N.R.' (Not Reported). This means the lab did this work but chooses not to report it now, possibly because it was reported at another time.

* When reporting a Method Blank, a RESULT can be 'N.A.' (Not Applicable). This means there is no reported client sample work in the same preparation batch as the Blank's result. This is likely to occur when the Method Blank is associated with reanalyses of selected work for a few samples in the SDG.

The following qualifiers are defined by the DVD system:

U The RESULT is less than the MDA (Minimum Detectable Activity). If the MDA is blank, the ERROR is used as the limit.

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DATA SHEET

J The RESULT is less than the RDL (Required Detection Limit) and no U qualifier is assigned.

B A Method Blank associated with this sample had a result without a U flag and, after correcting for possibly different aliquots, that result is greater than or equal to the MDA for this sample.

Normally, B is not assigned if U is. When method blank subtraction is shown on this report, B flags are assigned based on the unsubtracted values while U's are assigned based on the subtracted ones. Both flags can be assigned in this case.

For each sample result, all Method Blank results in the same preparation batch are compared. The Method Summary Report documents this and other QC relationships.

L Some Lab Control Sample that QC's this sample had a low recovery. The lab can disable assignment of this qualifier.

H Similar to 'L' except the recovery was high.

P The RESULT is 'preliminary'.

X Some data necessary to compute the RESULT, ERROR or MDA was manually entered or modified.

2 There were two or more results available for this analyte. The reported result may not be the same as in the raw data.

Other qualifiers are lab defined. Definitions should be in the SDG narrative.

The following values are underlined to indicate possible problems:

* An MDA is underlined if it is bigger than its RDL.

* An ERROR is underlined if the 1.645 sigma counting error is bigger than both the MDA and the RESULT, implying that the MDA

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DATA SHEET

may not be a good estimate of the 'real' minimum detectable activity.

* A negative RESULT is underlined if it is less than the negative of its 2 sigma counting ERROR.

* When reporting a Method Blank, a RESULT is underlined if greater than its MDA. If the MDA is blank, the 2 sigma counting error is used in the comparison.

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LAB CONTROL SAMPLE

The Lab Control Sample Report shows all results, recoveries and primary supporting information for one Lab Control Sample.

The following notes apply to this report:

* All fields in common with the Data Sheet Report have similar usage. Refer to its Report Guide for details.

* An amount ADDED is the lab's value for the actual amount spiked into this sample with its ERROR an estimate of the error of this amount.

  An amount added is underlined if its ratio to the corresponding RDL is outside protocol specified limits.

* REC (Recovery) is RESULT divided by ADDED expressed as a percent.

* The first, computed limits for the recovery reflect:

  1. The error of RESULT, including that introduced by rounding the result prior to printing.

     If the limits are labeled (TOTAL), they include preparation error in the result. If labeled (COUNT), they do not.

  2. The error of ADDED.

  3. A lab specified, per analyte bias. The bias changes the center of the computed limits.

* The second limits are protocol defined upper and lower QC limits for the recovery.

* The recovery is underlined if it is outside either of these ranges.

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Contact N. Joseph Verville

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DUPLICATE

The Duplicate Report shows all results, differences and primary supporting information for one Duplicate and associated Original sample.

The following notes apply to this report:

* All fields in common with the Data Sheet Report have similar usage. This applies both to the Duplicate and Original sample data. Refer to the Data Sheet Report Guide for details.

  If the Duplicate has data for a TEST and the lab did not do this test to the Original, the Original's RESULTs are underlined.

* The RPD (Relative Percent Difference) is the absolute value of the difference of the RESULTs divided by their average expressed as a percent.

  If both RESULTs are less than their MDAs, no RPD is computed and a '-' is printed.

  For an analyte, if the lab did work for both samples but has data for only one, the MDA from the sample with data is used as the other's result in the RPD.

* The first, computed limit is the sum, as square root of sum of squares, of the errors of the results divided by the average result as a percent, hence the relative error of the difference rather than the error of the relative difference. The errors include those introduced by rounding the RESULTs prior to printing.

  If this limit is labeled TOT, it includes the preparation error in the RESULTs. If labeled CNT, it does not.

  This value reported for this limit is at most 999.

* The second limit for the RPD is the larger of:

  1. A fixed percentage specified in the protocol.

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DUPLICATE

2. A protocol factor (typically 2) times the average MDA as a percent of the average result. This limit applies when the results are close to the MDAs.

* The RPD is underlined if it is greater than either limit.

* If specified by the lab, the second limit column is replaced by the Difference Error Ratio (DER), which is the absolute value of the difference of the results divided by the quadratic sum of their one sigma errors, the same errors as used in the first limit.

  Except for differences due to rounding, the DER is the same as the RPD divided by the first RPD limit with the limit scaled to 1 sigma.

* The DER is underlined if it is greater than the sigma factor, typically 2 or 3, shown in the header for the first RPD limit.

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MATRIX SPIKE

The Matrix Spike Report shows all results, recoveries and primary supporting information for one Matrix Spike and associated Original sample.

The following notes apply to this report:

* All fields in common with the Data Sheet Report have similar usage. This applies both to the Spiked and Original sample data. Refer to the Data Sheet Report Guide for details.

  If the Spike has data for a TEST and the lab did not do this test to the Original, the Original's RESULTs are underlined.

* An amount ADDED is the lab's value for the actual amount spiked into the Spike sample with its ERROR an estimate of the error of this amount.

  An amount is underlined if its ratio to the corresponding RDL is outside protocol specified limits.

* REC (Recovery) is the Spike RESULT minus the Original RESULT divided by ADDED expressed as a percent.

* The first, computed limits for the recovery reflect:

  1. The errors of the two RESULTs, including those introduced by rounding them prior to printing.

     If the limits are labeled (TOTAL), they include preparation error in the result. If labeled (COUNT), they do not.

  2. The error of ADDED.

  3. A lab specified, per analyte bias. The bias changes the center of the computed limits.

* The second limits are protocol defined upper and lower QC limits for the recovery.

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Contact N. Joseph Verville

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MATRIX SPIKE

These limits are left blank if the Original RESULT is more than a protocol defined factor (typically 4) times ADDED. This is a way of accounting for that when the spike is small compared to the amount in the original sample, the recovery is unreliable.

* The recovery is underlined (out of spec) if it is outside either of these ranges.

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Contact N. Joseph Verville

REPORT GUIDE

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Contract ITJ2060

METHOD SUMMARY

The Method Summary Report has two tables. One shows up to five results measured using one method. The other has performance data for the method. There is one report for each TEST, as used on the Data Sheet Report.

The following notes apply to this report:

* Each table is subdivided into sections, one for each preparation batch. A preparation batch is a group of aliquots prepared at roughly the same time in one work area of the lab using the same method.

  There should be Lab Control Sample and Method Blank results in each preparation batch since this close correspondence makes the QC meaningful. Depending on lab policy, Duplicates need not occur in each batch since they QC sample dependencies such as matrix effects.

* The RAW TEST column shows the test code used in the raw data to identify a particular analysis if it is different than the test code in the header of the report. This occurs in special cases due to method specific details about how the lab labels work.

  The Lab Sample or Planchet ID combined with the (Raw) Test Code and Suffix uniquely identify the raw data for each analysis.

* If a result is less than both its MDA and RDL, it is replaced by just 'U' on this report. If it is greater than or equal to the RDL but less than the MDA, the result is shown with a 'U' flag.

  The J and X flags are as on the data sheet.

* Non-U results for Method Blanks are underlined to indicate possible contamination of other samples in the preparation batch. The Method Blank Report has supporting data.

* Lab Control Sample and Matrix Spike results are shown as: ok, No data, LOW or HIGH, with the last two underlined. 'No data' means no amount ADDED was specified. 'LOW' and 'HIGH'

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correspond to when the recovery is underlined on the Lab Control Sample or Matrix Spike Report. See these reports for supporting data.

* Duplicate sample results are shown as: ok, No data, or OUT, with the last two underlined. 'No data' means there was no original sample data found for this duplicate. 'OUT' corresponds to when the RPD is underlined on the Duplicate Report. See this report for supporting data.

* If the MDA column is labeled 'MAX MDA', there was more than one result measured by the reported method and the MDA shown is the largest MDA. If not all these results have the same RDL, the MAX MDA reflects only those results with RDL equal to the smallest one.

  MDAs are underlined if greater than the printed RDL.

* Aliquots are underlined if less than the nominal value specified for the method.

* Prepareation factors are underlined if greater than the nominal value specified for the method.

* Dilution factors are underlined if greater than the nominal value specified for the method.

* Residues are underlined if outside the range specified for the method. Residues are not printed if yields are.

* Yields, which may be gravimetric, radiometric or some type of recovery depending on the method, are underlined if outside the range specified for the method.

* Efficiencies are underlined if outside the range specified for the method. Efficiencies are detector and geometry dependent so this test is only approximate.

* Count times are underlined if less than the nominal value

METHOD SUMMARY

specified for the method.

* Resolutions (as FWHM; Full Width at Half Max) are underlined if greater than the method specified limit.

* Tracer drifts are underlined if their absolute values are greater than the method specified limit. Tracer drifts are not printed if percent moistures are.

* Days Held are underlined if greater than the holding time specified in the protocol.

* Analysis dates are underlined if before their planchet's preparation date or, if a limit is specified, too far after it.

For some methods, ratios as percentages and error estimates for them are computed for pairs of results. A ratio column header like '1÷3' means the ratio of the first result column and the third result column.

Ratios are not computed for Lab Control Sample, Method Blank or Matrix Spike results since their matrices are not necessarily similar to client samples'.

The error estimate for a ratio of results from one planchet reflects only counting errors since other errors should be correlated. For a ratio involving different planchets, if QC limits are computed based on total errors, the error for the ratio allows for the preparation errors for the planchets.

The ratio is underlined (out of spec) if the absolute value of its difference from the nominal value is greater than its error estimate. If no nominal value is specified, this test is not done.

For Gross Alpha or Gross Beta results, there may be a column showing the sum of other Alpha or Beta emitters. This sum includes all relevant results in the DVD database, whether reported or not. Results in the sum are weighted by a particles/decay value specified by the lab for each relevant analyte. Results less than their MDA are not included.

SDG 8640
Contact N. Joseph Verville

GUIDE, cont.

Client Test America, Inc.
Contract ITJ2060

METHOD SUMMARY

No sums are computed for Lab Control, Method Blank or Matrix Spike samples since their various planchets may not be physically related.

If a ratio of total isotopic to Gross Alpha or Beta is shown, the error for the ratio reflects both the error in the Gross result and the sum, as square root of sum of squares, of the errors in the isotopic results.

For total elemental uranium or thorium results, there may be a column showing the total weight computed from associated isotopic results. Ignoring results less than their MDAs, this is a weighted sum of the isotopic results. The weights depend on the molecular weight and half-life of each isotope so as to convert activities (decays) to weight (atoms).

If a ratio of total computed to measured elemental uranium or thorium is shown, the error for the ratio reflects the errors in all the measurements.

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 12/14/10

SUBCONTRACT ORDER
TestAmerica Irvine

ITJ2060

SENDING LABORATORY:

TestAmerica Irvine
17461 Derian Avenue. Suite 100
Irvine, CA 92614
Phone: (949) 261-1022
Fax: (949) 260-3297
Project Manager: Debby Wilson

RECEIVING LABORATORY:

Eberline Services
2030 Wright Avenue
Richmond, CA 94804
Phone :(510) 235-2633
Fax: (510) 235-0438
Project Location: CA - CALIFORNIA
Receipt Temperature:_____°C Ice: Y / N

8640

Standard TAT is requested unless specific due date is requested. => Due Date: _____ Initials: _____

Analysis	Units	Expires	Comments
Sample ID: ITJ2060-02 (Outfall 009 (composite) - Water)		Sampled: 10/20/10 15:15	
Gamma Spec-O	~~mg/kg~~ pCi/L 9.10/26	10/20/11 15:15	Out Eberline, k-40 and cs-137 only, DO NOT FILTER!
Gross Alpha-O	pCi/L	04/18/11 15:15	Out Eberline, Boeing permit, DO NOT FILTER!
Gross Beta-O	pCi/L	04/18/11 15:15	Out Eberline Boeing permit, DO NOT FILTER!
Level 4 Data Package - Out	N/A	11/17/10 15:15	
Radium, Combined-O	pCi/L	10/20/11 15:15	Out Eberline Boeing permit, DO NOT FILTER!
Strontium 90-O	pCi/L	10/20/11 15:15	Out Eberline, Boeing permit, DO NOT FILTER!
Tritium-O	pCi/L	10/20/11 15:15	Out Eberline, Boeing permit, DO NOT FILTER!
Uranium, Combined-O	pCi/L	10/20/11 15:15	Out Eberline, Boeing permit, DO NOT FILTER!
Containers Supplied:			
2.5 gal Poly (J)	500 mL Amber (K)		

Released By	Date/Time	Received By	Date/Time
Released By	Date/Time	Received By	Date/Time

10/21/10 17:00 — FedEx — 10/21/10 17:00
FedEx — 10/22/10 0930

RICHMOND, CA LABORATORY

EBERLINE SERVICES

SAMPLE RECEIPT CHECKLIST

Client: TEST AMERICA City IRVINE State CA

Date/Time received 10/22/10 0930 CoC No. ITJ2060

Container I.D. No. [WE COTEST Requested TAT (Days) STD P.O. Received Yes [ ] No [ ]

INSPECTION

1. Custody seals on shipping container intact? Yes [X] No [ ] N/A [ ]
2. Custody seals on shipping container dated & signed? Yes [X] No [ ] N/A [ ]
3. Custody seals on sample containers intact? Yes [ ] No [ ] N/A [X]
4. Custody seals on sample containers dated & signed? Yes [ ] No [ ] N/A [X]
5. Packing material is: Wet [ ] Dry [X]
6. Number of samples in shipping container: 1 Sample Matrix W
7. Number of containers per sample: 2 (Or see CoC _____)
8. Samples are in correct container Yes [X] No [ ]
9. Paperwork agrees with samples? Yes [X] No [ ]
10. Samples have: Tape [ ] Hazard labels [ ] Rad labels [ ] Appropriate sample labels [X]
11. Samples are: In good condition [X] Leaking [ ] Broken Container [ ] Missing [ ]
12. Samples are: Preserved [ ] Not preserved [X] pH 6 Preservative _____
13. Describe any anomalies:

    _____

    _____

    _____
14. Was P.M. notified of any anomalies? Yes [ ] No [ ] Date _____
15. Inspected by _____ Date 10/22/10 Time: 1115

Customer Sample No.	Beta/Gamma cpm	Ion Chamber mR/hr	Wipe	Customer Sample No.	Beta/Gamma cpm	Ion Chamber mR/hr	wipe
ITJ2060-02	260						

Ion Chamber Ser. No. _____ Calibration date _____

Alpha Meter Ser. No. _____ Calibration date _____

Beta/Gamma Meter Ser. No. 100482 Calibration date 24 SEP 10

APPENDIX G

Section 25

Outfall 009 – November 20, 2010

MEC^X Data Validation Report

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DATA VALIDATION REPORT

Boeing SSFL NPDES

SAMPLE DELIVERY GROUP: ITK2126

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:	ITK2126
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	ITK2126-01	G0K230533-001, S011232-01	WATER	11/20/2010 12:45	245.1, 245.1 (Diss), ASTM 5174-91, 900.0 MOD, 901.1 MOD, 903.1 MOD, 904 MOD, 905 MOD, 906.0 MOD, 1613, SM2540D

II. Sample Management

No anomalies were observed regarding sample management. The samples in this SDG were received at TestAmerica-Sacramento marginally below the temperature limit, at 1°C; however, as the samples were not noted to be frozen or damaged, no qualifications were required. The samples in this SDG were received at the remaining laboratories 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.

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: January 3, 2011

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 analyzed with 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 16 native compounds (calibration by isotope dilution) and ≤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 detects between the EDL and the RL for most target compounds. Several target compounds were reported as EMPCs in the method blank; however, due to the extent of the method blank contamination, the reviewer considered it appropriate to use the EMPCs to qualify sample results. The method blank result for OCDD was insufficient to qualify the sample result. All other individual isomers detected in

the site sample were qualified as nondetected, "U" at the EDL, or at the level of contamination in the sample. Total TCDD and total HpCDD in the sample were comprised of the same peaks as the method blank totals, and were therefore qualified as nondetected, "U," at the level of contamination. All remaining sample totals containing one or more peaks detected in the method blank were qualified as estimated, "J."

- 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: Two internal standards were recovered marginally above the control limits in two standards associated with the sample; however, sample data quality was not affected. The labeled standard recoveries in 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 a representative number of reportable sample results. Any individual isomers reported as EMPCs previously qualified as nondetected for method blank contamination were not further qualified as EMPCs. Any totals including EMPC peaks were qualified as estimated, "J." Any detects reported between the estimated detection limit (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 METHOD 245.1—Mercury

Reviewed By: P. Meeks
Date Reviewed: January 3, 2011

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 Method 245.1*, and the *National Functional Guidelines for Inorganic Data Review* (7/02).

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

- Tuning: Not applicable to this method.

- Calibration: Calibration criteria were met. Mercury initial calibration r^2 values were ≥0.995 and all mercury initial and continuing calibration recoveries were within 85-115%. The mercury CRI recoveries were within the control limits of 70-130%.

- Blanks: Method blanks and CCBs had no applicable detects.

- Interference Check Samples: Not applicable to this analysis.

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

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

- Matrix Spike/Matrix Spike Duplicate: MS/MSD analyses were not 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: Not applicable to this method.

- 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: January 3, 2010

The sample 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 prepared beyond the five-day analytical holding time for unpreserved samples; therefore, all results, except for tritium, were qualified as estimated, "J," for detects and, "UJ," for nondetects.

- Calibration: The laboratory calibration information included the standard certificates and applicable preparation/dilutions logs for NIST-traceability. 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. All KPA 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 were within laboratory-established control limits.

- Laboratory Duplicates: Laboratory duplicate analyses were performed on the sample in this SDG. The RPDs were within the laboratory-established control limits or less than 2× the average MDA for results near the MDA.

- Matrix Spike/Matrix Spike Duplicate: No matrix spike or MS/MSD analyses were performed on the sample in this SDG. Method accuracy 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. 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: January 3, 2011

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), Standard Method 2540D*, and the *National Functional Guidelines for Inorganic Data Review* (7/02).

- Holding Times: The analytical holding time, seven days from collection, was met.

- Calibration: Balance calibration logs were provided and found to be acceptable.

- Blanks: TSS was not detected in the method blank.

- Blank Spikes and Laboratory Control Samples: The recovery was within laboratory-established QC limits.

- Laboratory Duplicates: No laboratory duplicate analysis was performed on the sample in this SDG.

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

- Sample Result Verification: Calculations were verified and the sample result reported on the sample result summary was 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 ITK2126

Analysis Method 900

Sample Name Outfall 009 **Matrix Type:** WATER **Validation Level:** IV

Lab Sample Name: ITK2126-01 **Sample Date:** 11/20/2010 12:45:00 PM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Gross Alpha	12587461	0.709	3	0.365	pCi/L	Jb	J	DNQ, H
Gross Beta	12587472	1.48	4	0.873	pCi/L	Jb	J	DNQ, H

Analysis Method 901.1

Sample Name Outfall 009 **Matrix Type:** WATER **Validation Level:** IV

Lab Sample Name: ITK2126-01 **Sample Date:** 11/20/2010 12:45:00 PM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Cesium-137	10045973	ND	20	1.25	pCi/L	U	UJ	H
Potassium-40	13966002	ND	25	16.5	pCi/L	U	UJ	H

Analysis Method 903.1

Sample Name Outfall 009 **Matrix Type:** WATER **Validation Level:** IV

Lab Sample Name: ITK2126-01 **Sample Date:** 11/20/2010 12:45:00 PM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Radium-226	13982633	0.047	1	0.732	pCi/L	U	UJ	H

Analysis Method 904

Sample Name Outfall 009 **Matrix Type:** WATER **Validation Level:** IV

Lab Sample Name: ITK2126-01 **Sample Date:** 11/20/2010 12:45:00 PM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Radium-228	15262201	-0.066	1	0.471	pCi/L	U	UJ	H

Analysis Method 905

Sample Name Outfall 009 **Matrix Type:** WATER **Validation Level:** IV

Lab Sample Name: ITK2126-01 **Sample Date:** 11/20/2010 12:45:00 PM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Strontium-90	10098972	0.089	2	1.39	pCi/L	U	UJ	H

Analysis Method 906

Sample Name Outfall 009 **Matrix Type:** WATER **Validation Level:** IV

Lab Sample Name: ITK2126-01 **Sample Date:** 11/20/2010 12:45:00 PM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Tritium	10028178	46.8	200	148	pCi/L	U	U	

Analysis Method ASTM 5174-91

Sample Name Outfall 009 **Matrix Type:** WATER **Validation Level:** IV

Lab Sample Name: ITK2126-01 **Sample Date:** 11/20/2010 12:45:00 PM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Uranium, Total	NA	0.046	1	0.019	pCi/L	Jb	J	DNQ,H

Analysis Method EPA 245.1

Sample Name Outfall 009 **Matrix Type:** Water **Validation Level:** IV

Lab Sample Name: ITK2126-01 **Sample Date:** 11/20/2010 12:45:00 PM

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	

Analysis Method EPA 245.1-Diss

Sample Name Outfall 009 **Matrix Type:** Water **Validation Level:** IV

Lab Sample Name: ITK2126-01 **Sample Date:** 11/20/2010 12:45:00 PM

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	

Analysis Method EPA-5 1613B

Sample Name Outfall 009 **Matrix Type:** WATER **Validation Level:** IV

Lab Sample Name: ITK2126-01 **Sample Date:** 11/20/2010 12:45:00 PM

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	0.00005	0.0000002	ug/L	J, B	U	B
1,2,3,4,6,7,8-HpCDF	67562-39-4	ND	0.00005	0.0000001	ug/L	J, Q, B	U	B
1,2,3,4,7,8,9-HpCDF	55673-89-7	ND	0.00005	0.0000002	ug/L	J, B	U	B
1,2,3,4,7,8-HxCDD	39227-28-6	ND	0.00005	0.0000002	ug/L	J, Q, B	U	B
1,2,3,4,7,8-HxCDF	70648-26-9	ND	0.00005	0.0000002	ug/L		U	
1,2,3,6,7,8-HxCDD	57653-85-7	ND	0.00005	0.0000001	ug/L	J, B	U	B
1,2,3,6,7,8-HxCDF	57117-44-9	ND	0.00005	0.0000001	ug/L		U	
1,2,3,7,8,9-HxCDD	19408-74-3	ND	0.00005	0.0000001	ug/L	J, B	U	B
1,2,3,7,8,9-HxCDF	72918-21-9	ND	0.00005	0.0000001	ug/L		U	
1,2,3,7,8-PeCDD	40321-76-4	ND	0.00005	0.0000004	ug/L		U	
1,2,3,7,8-PeCDF	57117-41-6	ND	0.00005	0.0000002	ug/L		U	
2,3,4,6,7,8-HxCDF	60851-34-5	ND	0.00005	0.0000002	ug/L		U	
2,3,4,7,8-PeCDF	57117-31-4	ND	0.00005	0.0000003	ug/L		U	
2,3,7,8-TCDD	1746-01-6	ND	0.00001	0.0000002	ug/L		U	
2,3,7,8-TCDF	51207-31-9	ND	0.00001	0.0000003	ug/L		U	
OCDD	3268-87-9	0.00016	0.0001	0.0000004	ug/L	B		
OCDF	39001-02-0	ND	0.0001	0.0000002	ug/L	J, B	U	B
Total HpCDD	37871-00-4	ND	0.00005	0.0000002	ug/L	J, B	U	B
Total HpCDF	38998-75-3	8e-006	0.00005	0.0000002	ug/L	J, Q, B	J	B, DNQ, *III
Total HxCDD	34465-46-8	4.8e-006	0.00005	0.0000001	ug/L	J, Q, B	J	B, DNQ, *III
Total HxCDF	55684-94-1	2e-006	0.00005	0.0000001	ug/L	J, Q, B	J	B, DNQ, *III
Total PeCDD	36088-22-9	ND	0.00005	0.0000004	ug/L		U	
Total PeCDF	30402-15-4	ND	0.00005	0.0000002	ug/L		U	
Total TCDD	41903-57-5	ND	0.00001	0.0000002	ug/L	J, Q, B	U	B
Total TCDF	55722-27-5	ND	0.00001	0.0000002	ug/L		U	

Analysis Method SM 2540D

Sample Name Outfall 009 **Matrix Type:** Water **Validation Level:** IV

Lab Sample Name: ITK2126-01 **Sample Date:** 11/20/2010 12:45:00 PM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Total Suspended Solids	TSS	6.0	10	1.0	mg/l	Ja	J	DNQ