



DATA VALIDATION REPORT

Boeing SSFL NPDES

SAMPLE DELIVERY GROUP: IRK2832

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: IRK2832
 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 010	IRK2832-01	D8K290110-001, F8L030243-001, 31222-001	Water	11/26/08 0915	245.1, 900.0, 901.1, 903.1, 904.0, 905.0, 906.0, 1613B, ASTM 5174-91

II. Sample Management

No anomalies were observed regarding sample management. The samples were received at TestAmerica-Irvine above the temperature limit; however, the sample had insufficient time to cool during transport. The samples were received at TestAmerica-Denver and Vista below the temperature limit; however, the samples were not noted to be damaged or frozen. The samples were received at TestAmerica-St. Louis within the temperature limits. According to the case narrative for this SDG, the samples were received intact at all laboratories; however a note on the TestAmerica-St. Louis sample receipt form indicated that the container leaked after receipt. The COCs were appropriately signed and dated by field and/or laboratory personnel. As the sample was couriered to TestAmerica-Irvine, custody seals were not required. Custody seals were intact upon arrival at TestAmerica-St. Louis, TestAmerica-Denver, and Vista. If necessary, the client ID was added to the sample result summary by the reviewer.

Data Qualifier Reference Table

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

Qualification Code Reference Table

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

Qualification Code Reference Table Cont.

D	The analysis with this flag should not be used because another more technically sound analysis is available.	The analysis with this flag should not be used because another more technically sound analysis is available.
P	Instrument performance for pesticides was poor.	Post Digestion Spike recovery was not within control limits.
DNQ	The reported result is above the method detection limit but is less than the reporting limit.	The reported result is above the method detection limit but is less than the reporting limit.
*II, *III	Unusual problems found with the data that have been described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found.	Unusual problems found with the data that have been described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found.

III. Method Analyses

A. EPA METHOD 1613—Dioxin/Furans

Reviewed By: E. Wessling

Date Reviewed: December 29, 2008

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

- Holding Times: Extraction and analytical holding times were met. The water sample was extracted and analyzed within one year of collection.
- Instrument Performance: Instrument performance criteria were met. Following are findings associated with instrument performance.
 - GC Column Performance: A Windows Defining Mix (WDM) containing the first and last eluting congeners of each descriptor and isomer specificity compounds was not analyzed prior to the initial calibration sequence or at the beginning of each analytical sequence; however, the first and last eluting congeners and isomer specificity compounds were added to the midpoint of the initial calibration and to the continuing calibration standards. The GC column performance in the calibrations was acceptable, with the height of the valley between the closely eluting isomers and 2,3,7,8-TCDD reported as less than 25%.
 - Mass Spectrometer Performance: The mass spectrometer performance was acceptable with the static resolving power greater than 10,000.
- Calibration: Calibration criteria were met.
 - Initial Calibration: Initial calibration criteria were met. The initial calibration was acceptable with %RSDs $\leq 20\%$ for the 16 native compounds (calibration by isotope dilution) and $\leq 35\%$ for the one native and all labeled compounds (calibration by internal standard). The relative retention times and ion abundance ratios were within the Method 1613 QC limits for all standards.
 - Continuing Calibration: Calibration verification (VER) consisted of a mid-level standard (CS3) analyzed at the beginning of each analytical sequence. The VERs were acceptable with the concentrations within the acceptance criteria listed in Table 6 of EPA Method 1613. The ion abundance ratios and relative retention times were within the method QC limits.
- Blanks: The method blank, MB-1751, had no target compound detects above the EDL which affected the site sample.

- Blank Spikes and Laboratory Control Samples: Recoveries were within the acceptance criteria listed in Table 6 of Method 1613 for the OPR-1751.
- Field QC Samples: Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:
 - Field Blanks and Equipment Rinsates: This SDG had no identified field blank or equipment rinsate samples.
 - Field Duplicates: There were no field duplicate samples identified for this SDG.
- Internal Standards Performance: The labeled standard recoveries were within the acceptance criteria listed in Table 7 of Method 1613.
- Compound Identification: Compound identification was verified. The laboratory analyzed for polychlorinated dioxins/furans by EPA Method 1613.
- Compound Quantification and Reported Detection Limits: Compound quantitation was verified by recalculating any sample detects and a representative number of blank spike concentrations. The laboratory calculated and reported compound-specific detection limits. Nondetects are valid to the estimated detection limit (EDL).

B. EPA METHOD 245.1—Metals and Mercury

Reviewed By: P. Meeks

Date Reviewed: December 12, 2008

The sample listed in Table 1 for this analysis 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 (10/04)*.

- Holding Times: The analytical holding time, 28 days for mercury, was met.
- Tuning: Not applicable to this method.
- Calibration: Calibration criteria were met. The mercury initial calibration r^2 value was ≥ 0.995 and all initial and continuing calibration recoveries were within 85-115%. The CRA and check standard was recovered below the control limit of 70-130%, at 68.5%; therefore, nondetected total and dissolved mercury in the sample were qualified as estimated, "UJ."
- Blanks: There were no applicable detects in the method blanks or CCBs.
- Interference Check Samples: Not applicable to this method.

- Blank Spikes and Laboratory Control Samples: The recovery was within the 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. Both recoveries and the RPD were within the laboratory-established control limits.
- 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 summaries were verified against the raw data. No transcription errors or calculation errors were noted. Detects reported below the reporting limit were qualified as estimated, "J," and coded with "DNQ," in order to comply with the NPDES permit. Reported nondetects are valid to the MDL.
- Field QC Samples: Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:
 - Field Blanks and Equipment Rinsates: This SDG had no identified field blank or equipment rinsate samples.
 - Field Duplicates: There were no field duplicate samples identified for this SDG.

C. VARIOUS EPA METHODS — Radionuclides

Reviewed By: P. Meeks

Date Reviewed: January 13, 2009

The sample listed in Table 1 for this analysis was validated based on the guidelines outlined in the *EPA Methods 900.0, 901.1, 903.1, 904.0, 905.0, and 906.0, ASTM Method D-5174, and the National Functional Guidelines for Inorganic Data Review (07/02)*.

- Holding Times: The tritium sample was analyzed within 180 days of collection. All remaining aliquots were prepared beyond the five-day holding time for unpreserved samples; therefore, results for all analytes except 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.

The gross alpha detector efficiency was less than 20%; therefore, gross alpha detected in the sample was qualified as estimated, "J." The radium-226 detector efficiency was marginally below 20% at 19%; however, as the detector passed the daily QC checks, no qualifications were required. The remaining detector efficiencies were greater than 20%.

The tritium aliquot was spiked for efficiency determination; therefore, no calibration was necessary. The strontium-90, radium-226 and radium-228 chemical yields were greater than 50% and considered acceptable. The gamma spectroscopy analytes were determined at the maximum photopeak energy. The kinetic phosphorescence analyzer (KPA) was calibrated immediately prior to the sample analysis. All KPA calibration check standard recoveries were within 90-110% and were deemed acceptable.

- Blanks: There were no analytes detected in the method blanks or KPA CCBs.
- Blank Spikes and Laboratory Control Samples: All recoveries and the radium-226, radium-228, and strontium-90 RPDs were within the laboratory-established control limits.
- Laboratory Duplicates: No laboratory duplicate analyses were performed on the sample in this SDG. Method precision was evaluated based on LCS/LCSD results for radium-226, radium-228, and strontium-90.
- Matrix Spike/Matrix Spike Duplicate: No matrix spike or MS/MSD analyses were performed on the sample in this SDG. The recovery was within the laboratory-established control limits. Method accuracy for the remaining analytes was evaluated based on LCS/LCSD 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. Detects reported below the reporting limit were qualified as estimated, "J," and coded with "DNQ," in order to comply with the NPDES permit. Reported nondetects are valid to the MDA.
- Field QC Samples: Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:
 - Field Blanks and Equipment Rinsates: This SDG had no identified field blank or equipment rinsate samples.
 - Field Duplicates: There were no field duplicate samples identified for this SDG.

Sample ID: IRK2832-01		Outfall 010		EPA Method 1613				
Client Data		Sample Data		Laboratory Data				
Name:	Test America-Irvine, CA	Matrix:	Aqueous	Lab Sample:	31222-001	Date Received:	29-Nov-08	
Project:	IRK2832	Sample Size:	1.03 L	QC Batch No.:	1751	Date Extracted:	9-Dec-08	
Date Collected:	26-Nov-08			Date Analyzed DB-5:	11-Dec-08	Date Analyzed DB-225:	NA	
Time Collected:	0915							
Analyte	Conc. (ug/L)	DL ^a	EMPC ^b	Qualifiers	Labeled Standard	%R	LCL-UCL ^d	Qualifiers
2,3,7,8-TCDD	ND	0.00000103			IS 13C-2,3,7,8-TCDD	67.5	25 - 164	
1,2,3,7,8-PeCDD	ND	0.00000483			13C-1,2,3,7,8-PeCDD	48.4	25 - 181	
1,2,3,4,7,8-HxCDD	ND	0.00000483			13C-1,2,3,4,7,8-HxCDD	45.3	32 - 141	
1,2,3,6,7,8-HxCDD	ND	0.00000433			13C-1,2,3,6,7,8-HxCDD	52.3	28 - 130	
1,2,3,7,8,9-HxCDD	ND	0.00000424			13C-1,2,3,4,6,7,8-HpCDD	46.4	23 - 140	
1,2,3,4,6,7,8-HpCDD	ND	0.00000122			13C-OCDD	35.2	17 - 157	
OCDD	0.0000686				13C-2,3,7,8-TCDF	72.0	24 - 169	
2,3,7,8-TCDF	ND	0.000000962			13C-1,2,3,7,8-PeCDF	49.4	24 - 185	
1,2,3,7,8-PeCDF	ND	0.00000250			13C-2,3,4,7,8-PeCDF	50.5	21 - 178	
2,3,4,7,8-PeCDF	ND	0.00000244			13C-1,2,3,4,7,8-HxCDF	44.9	26 - 152	
1,2,3,4,7,8-HxCDF	ND	0.00000117			13C-1,2,3,6,7,8-HxCDF	44.6	26 - 123	
1,2,3,6,7,8-HxCDF	ND	0.00000130			13C-2,3,4,6,7,8-HxCDF	46.9	28 - 136	
2,3,4,6,7,8-HxCDF	ND	0.00000149			13C-1,2,3,7,8,9-HxCDF	50.0	29 - 147	
1,2,3,7,8,9-HxCDF	ND	0.00000205			13C-1,2,3,4,6,7,8-HpCDF	42.0	28 - 143	
1,2,3,4,6,7,8-HpCDF	ND	0.00000485			13C-1,2,3,4,7,8,9-HpCDF	42.7	26 - 138	
1,2,3,4,7,8,9-HpCDF	ND	0.00000390			13C-OCDF	38.2	17 - 157	
OCDF	ND	0.0000211			CRS 37Cl-2,3,7,8-TCDD	93.3	35 - 197	
Totals								
Total TCDD	ND	0.00000103						
Total PeCDD	ND	0.00000483						
Total HxCDD	ND	0.00000446						
Total HpCDD	ND	0.0000122						
Total TCDF	ND	0.000000962						
Total PeCDF	ND	0.00000247						
Total HxCDF	ND	0.00000148						
Total HpCDF	ND	0.00000541						

Footnotes
a. Sample specific estimated detection limit.
b. Estimated maximum possible concentration.
c. Method detection limit.
d. Lower control limit - upper control limit.

Analyst: MAS
Approved By: William J. Luksemburg 12-Dec-2008 10:49

LEVEL IV

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

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

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

Project ID: Semi-Annual Outfall 010

Report Number: IRK2832

Sampled: 11/26/08
Received: 11/26/08

MCAWW 245.1

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IRK2832-01 (Outfall 010 - Water) - cont.									
Reporting Units: ug/L									
Mercury	US / III	MCAWW 245.1	8336128	0.027	0.2	ND	1	12/01/08	12/01/08

LEVEL IV

TestAmerica Irvine

Joseph Doak
Project Manager

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

Project ID: Semi-Annual Outfall 010

Report Number: IRK2832

Sampled: 11/26/08

Received: 11/26/08

MCAWW 245.1 Diss

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IRK2832-01 (Outfall 010 - Water) - cont.									
Reporting Units: ug/L									
Mercury-diss	WJ/11/III	MCAWW 245.1 Diss 8336136	0.027	0.2	ND	1	12/01/08	12/01/08	

LEVEL IV

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Project Manager

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TestAmerica Irvine

Client Sample ID: IRK2832-01

Radiochemistry *outfall 010*

Lab Sample ID: F8L030243-001
 Work Order: K309X
 Matrix: WATER

Date Collected: 11/26/08 0915
 Date Received: 11/29/08 0915

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Gamma Cs-137 & Hits by EPA 901.1 MOD							
Cesium 137	<i>UJ/H</i> -1.1	U	9.5	20.0	17	12/09/08	12/21/08
Potassium 40	<i>↓ ↓</i> -100	U	710		290	12/09/08	12/21/08
Gross Alpha/Beta EPA 900							
Gross Alpha	<i>J/H,C</i> 2.4	J	1.3	3.0	1.5	12/04/08	12/07/08
Gross Beta	<i>J/H</i> 17.3		2.1	4.0	1.2	12/04/08	12/07/08
Radium 226 by EPA 903.0 MOD							
Radium (226)	<i>UJ/H</i> 0.083	U	0.086	1.00	0.13	12/03/08	12/26/08
Radium 228 by GFPC EPA 904 MOD							
Radium 228	<i>UJ/H</i> 0.52	U	0.79	1.00	1.3	12/03/08	12/24/08
TRITIUM (Distill) by EPA 906.0 MOD							
Tritium	<i>U</i> -90	U	160	500	290	12/17/08	12/19/08
SR-90 BY GFPC EPA-905 MOD							
Strontium 90	<i>UJ/H</i> -0.10	U	0.33	3.00	0.58	12/03/08	12/15/08
Total Uranium by KPA ASTM 5174-91							
Total Uranium	<i>J/H</i> 0.524	J	0.054	0.693	0.21	12/10/08	12/12/08

KKS 1/29/09

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.

Bold results are greater than the MDC.

J Result is greater than sample detection limit but less than stated reporting limit.

APPENDIX G

Section 15

Outfall 010, November 26, 2008

Test America Analytical Laboratory Report

LABORATORY REPORT

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

Project: Semi-Annual Outfall 010

Sampled: 11/26/08
Received: 11/26/08
Issued: 01/29/09 13:27

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

*The results listed within this Laboratory Report pertain only to the samples tested in the laboratory. The analyses contained in this report were performed in accordance with the applicable certifications as noted. All soil samples are reported on a wet weight basis unless otherwise noted in the report. This Laboratory Report is confidential and is intended for the sole use of TestAmerica and its client. This report shall not be reproduced, except in full, without written permission from TestAmerica. The Chain(s) of Custody, 2 pages, are included and are an integral part of this report.
This entire report was reviewed and approved for release.*

SAMPLE CROSS REFERENCE

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

ADDITIONAL INFORMATION: This report has been revised to correct the Total Uranium units to pCi/L per client request (the original incorrect report from TestAmerica St. Louis Laboratory has been removed).

LABORATORY ID
IRK2832-01

CLIENT ID
Outfall 010

MATRIX
Water

Reviewed By:



TestAmerica Irvine

Trupti Mistry For Joseph Doak
Project Manager

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

Project ID: Semi-Annual Outfall 010

Report Number: IRK2832

Sampled: 11/26/08

Received: 11/26/08

METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IRK2832-01 (Outfall 010 - Water)									
Reporting Units: ug/l									
Antimony	EPA 200.8	8L03086	0.20	2.0	0.67	1	12/03/08	12/06/08	J
Cadmium	EPA 200.8	8L03086	0.11	1.0	0.24	1	12/03/08	12/06/08	J
Copper	EPA 200.8	8L03086	0.75	2.0	5.8	1	12/03/08	12/06/08	B
Lead	EPA 200.8	8L03086	0.30	1.0	2.0	1	12/03/08	12/06/08	
Thallium	EPA 200.8	8L03086	0.20	1.0	ND	1	12/03/08	12/06/08	

TestAmerica Irvine

Trupti Mistry For Joseph Doak
 Project Manager

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

Project ID: Semi-Annual Outfall 010

Report Number: IRK2832

Sampled: 11/26/08

Received: 11/26/08

DISSOLVED METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IRK2832-01 (Outfall 010 - Water) - cont.									
Reporting Units: ug/l									
Antimony	EPA 200.8-Diss	8L03087	0.20	2.0	0.58	1	12/03/08	12/07/08	J
Cadmium	EPA 200.8-Diss	8L03087	0.11	1.0	0.12	1	12/03/08	12/07/08	J
Copper	EPA 200.8-Diss	8L03087	0.75	2.0	3.1	1	12/03/08	12/07/08	
Lead	EPA 200.8-Diss	8L03087	0.30	1.0	ND	1	12/03/08	12/07/08	
Thallium	EPA 200.8-Diss	8L03087	0.20	1.0	ND	1	12/03/08	12/07/08	

TestAmerica Irvine

Trupti Mistry For Joseph Doak
 Project Manager

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

Project ID: Semi-Annual Outfall 010

Report Number: IRK2832

Sampled: 11/26/08
 Received: 11/26/08

INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IRK2832-01 (Outfall 010 - Water) - cont.									
Reporting Units: mg/l									
Hexane Extractable Material (Oil & Grease)	EPA 1664A	8L09056	1.3	4.7	1.7	1	12/09/08	12/09/08	J
Chloride	EPA 300.0	8K26165	5.0	10	41	20	11/26/08	11/27/08	
Nitrate/Nitrite-N	EPA 300.0	8K26165	0.15	0.26	3.0	1	11/26/08	11/27/08	
Sulfate	EPA 300.0	8K26165	0.20	0.50	42	1	11/26/08	11/27/08	
Total Dissolved Solids	SM2540C	8L01069	10	10	310	1	12/01/08	12/01/08	
Sample ID: IRK2832-01 (Outfall 010 - Water)									
Reporting Units: ug/l									
Perchlorate	EPA 314.0	8L02046	0.90	4.0	ND	1	12/02/08	12/02/08	

TestAmerica Irvine

Trupti Mistry For Joseph Doak
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618 Michillinda Avenue, Suite 200
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Attention: Bronwyn Kelly

Project ID: Semi-Annual Outfall 010

Report Number: IRK2832

Sampled: 11/26/08

Received: 11/26/08

DIOXIN (EPA 1613)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IRK2832-01 (Outfall 010 - Water) - cont.									
Reporting Units: ug/L									
2,3,7,8-TCDD	1613-Dioxin-HR Alta	1751	0.000001030	0.00000486	ND	1	12/09/08	12/11/08	
1,2,3,7,8-PeCDD	1613-Dioxin-HR Alta	1751	0.000004830	0.0000243	ND	1	12/09/08	12/11/08	
1,2,3,4,7,8-HxCDD	1613-Dioxin-HR Alta	1751	0.000004830	0.0000243	ND	1	12/09/08	12/11/08	
1,2,3,6,7,8-HxCDD	1613-Dioxin-HR Alta	1751	0.000004330	0.0000243	ND	1	12/09/08	12/11/08	
1,2,3,7,8,9-HxCDD	1613-Dioxin-HR Alta	1751	0.000004240	0.0000243	ND	1	12/09/08	12/11/08	
1,2,3,4,6,7,8-HpCDD	1613-Dioxin-HR Alta	1751	0.0000122	0.0000243	ND	1	12/09/08	12/11/08	
OCDD	1613-Dioxin-HR Alta	1751	0.000002450	0.0000486	0.0000686	1	12/09/08	12/11/08	
2,3,7,8-TCDF	1613-Dioxin-HR Alta	1751	0.000000960	0.0000486	ND	1	12/09/08	12/11/08	
1,2,3,7,8-PeCDF	1613-Dioxin-HR Alta	1751	0.0000025	0.0000243	ND	1	12/09/08	12/11/08	
2,3,4,7,8-PeCDF	1613-Dioxin-HR Alta	1751	0.000002440	0.0000243	ND	1	12/09/08	12/11/08	
1,2,3,4,7,8-HxCDF	1613-Dioxin-HR Alta	1751	0.000001170	0.0000243	ND	1	12/09/08	12/11/08	
1,2,3,6,7,8-HxCDF	1613-Dioxin-HR Alta	1751	0.0000013	0.0000243	ND	1	12/09/08	12/11/08	
2,3,4,6,7,8-HxCDF	1613-Dioxin-HR Alta	1751	0.000001490	0.0000243	ND	1	12/09/08	12/11/08	
1,2,3,7,8,9-HxCDF	1613-Dioxin-HR Alta	1751	0.000002050	0.0000243	ND	1	12/09/08	12/11/08	
1,2,3,4,6,7,8-HpCDF	1613-Dioxin-HR Alta	1751	0.000004850	0.0000243	ND	1	12/09/08	12/11/08	
1,2,3,4,7,8,9-HpCDF	1613-Dioxin-HR Alta	1751	0.0000039	0.0000243	ND	1	12/09/08	12/11/08	
OCDF	1613-Dioxin-HR Alta	1751	0.0000211	0.0000486	ND	1	12/09/08	12/11/08	
Total TCDD	1613-Dioxin-HR Alta	1751	0.000001030	0.0000486	ND	1	12/09/08	12/11/08	
Total PeCDD	1613-Dioxin-HR Alta	1751	0.00000483	0.0000243	ND	1	12/09/08	12/11/08	
Total HxCDD	1613-Dioxin-HR Alta	1751	0.00000424	0.0000243	ND	1	12/09/08	12/11/08	
Total HpCDD	1613-Dioxin-HR Alta	1751	0.0000122	0.0000243	ND	1	12/09/08	12/11/08	
Total TCDF	1613-Dioxin-HR Alta	1751	0.000000960	0.0000486	ND	1	12/09/08	12/11/08	
Total PeCDF	1613-Dioxin-HR Alta	1751	0.00000244	0.0000243	ND	1	12/09/08	12/11/08	
Total HxCDF	1613-Dioxin-HR Alta	1751	0.00000117	0.0000243	ND	1	12/09/08	12/11/08	
Total HpCDF	1613-Dioxin-HR Alta	1751	0.0000039	0.0000243	ND	1	12/09/08	12/11/08	

Surrogate: 13C-2,3,7,8-TCDD (25-164%)	67.5 %
Surrogate: 13C-1,2,3,7,8-PeCDD (25-181%)	48.4 %
Surrogate: 13C-1,2,3,4,7,8-HxCDD (32-141%)	45.3 %
Surrogate: 13C-1,2,3,6,7,8-HxCDD (28-130%)	52.3 %
Surrogate: 13C-1,2,3,4,6,7,8-HpCDD (23-140%)	46.4 %
Surrogate: 13C-OCDD (17-157%)	35.2 %
Surrogate: 13C-2,3,7,8-TCDF (24-169%)	72 %
Surrogate: 13C-1,2,3,7,8-PeCDF (24-185%)	49.4 %
Surrogate: 13C-2,3,4,7,8-PeCDF (21-178%)	50.5 %
Surrogate: 13C-1,2,3,4,7,8-HxCDF (26-152%)	44.9 %
Surrogate: 13C-1,2,3,6,7,8-HxCDF (26-123%)	44.6 %
Surrogate: 13C-2,3,4,6,7,8-HxCDF (28-136%)	46.9 %
Surrogate: 13C-1,2,3,7,8,9-HxCDF (29-147%)	50 %
Surrogate: 13C-1,2,3,4,6,7,8-HpCDF (28-143%)	42 %
Surrogate: 13C-1,2,3,4,7,8,9-HpCDF (26-138%)	42.7 %
Surrogate: 13C-OCDF (17-157%)	38.2 %

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Project Manager

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

Project ID: Semi-Annual Outfall 010

Report Number: IRK2832

Sampled: 11/26/08

Received: 11/26/08

DIOXIN (EPA 1613)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IRK2832-01 (Outfall 010 - Water) - cont.									
Reporting Units: ug/L									
Surrogate: 37Cl-2,3,7,8-TCDD (35-197%)					93.3 %				

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Received: 11/26/08

MCAWW 245.1

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IRK2832-01 (Outfall 010 - Water) - cont.									
Reporting Units: ug/L									
Mercury	MCAWW 245.1	8336128	0.027	0.2	ND	1	12/01/08	12/01/08	

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Received: 11/26/08

MCAWW 245.1 Diss

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IRK2832-01 (Outfall 010 - Water) - cont.									
Reporting Units: ug/L									
Mercury-diss	MCAWW 245.1 Diss	8336136	0.027	0.2	ND	1	12/01/08	12/01/08	

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Sampled: 11/26/08

Received: 11/26/08

SHORT HOLD TIME DETAIL REPORT

	Hold Time (in days)	Date/Time Sampled	Date/Time Received	Date/Time Extracted	Date/Time Analyzed
Sample ID: Outfall 010 (IRK2832-01) - Water EPA 300.0	2	11/26/2008 09:15	11/26/2008 20:45	11/26/2008 22:00	11/27/2008 05:21

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Report Number: IRK2832

Sampled: 11/26/08
 Received: 11/26/08

METHOD BLANK/QC DATA

METALS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD RPD	RPD Limit	Data Qualifiers
Batch: 8L03086 Extracted: 12/03/08											
Blank Analyzed: 12/08/2008 (8L03086-BLK1)											
Antimony	ND	2.0	0.20	ug/l							
Cadmium	ND	1.0	0.11	ug/l							
Copper	1.45	2.0	0.75	ug/l							J
Lead	ND	1.0	0.30	ug/l							
Thallium	ND	1.0	0.20	ug/l							
LCS Analyzed: 12/06/2008-12/08/2008 (8L03086-BS1)											
Antimony	79.9	2.0	0.20	ug/l	80.0		100	85-115			
Cadmium	78.8	1.0	0.11	ug/l	80.0		98	85-115			
Copper	75.8	2.0	0.75	ug/l	80.0		95	85-115			
Lead	78.9	1.0	0.30	ug/l	80.0		99	85-115			
Thallium	79.4	1.0	0.20	ug/l	80.0		99	85-115			
Matrix Spike Analyzed: 12/06/2008 (8L03086-MS1)						Source: IRK2649-01					
Antimony	82.2	2.0	0.20	ug/l	80.0	0.520	102	70-130			
Cadmium	77.9	1.0	0.11	ug/l	80.0	ND	97	70-130			
Copper	81.1	2.0	0.75	ug/l	80.0	1.49	99	70-130			
Lead	76.8	1.0	0.30	ug/l	80.0	ND	96	70-130			
Thallium	78.4	1.0	0.20	ug/l	80.0	0.227	98	70-130			
Matrix Spike Analyzed: 12/06/2008 (8L03086-MS2)						Source: IRK2879-04					
Antimony	83.8	2.0	0.20	ug/l	80.0	0.362	104	70-130			
Cadmium	76.6	1.0	0.11	ug/l	80.0	0.791	95	70-130			
Copper	91.4	2.0	0.75	ug/l	80.0	3.23	110	70-130			
Lead	76.4	1.0	0.30	ug/l	80.0	2.29	93	70-130			
Thallium	76.6	1.0	0.20	ug/l	80.0	0.232	95	70-130			
Matrix Spike Dup Analyzed: 12/06/2008 (8L03086-MSD1)						Source: IRK2649-01					
Antimony	84.8	2.0	0.20	ug/l	80.0	0.520	105	70-130	3	20	
Cadmium	79.7	1.0	0.11	ug/l	80.0	ND	100	70-130	2	20	
Copper	81.0	2.0	0.75	ug/l	80.0	1.49	99	70-130	0	20	
Lead	77.2	1.0	0.30	ug/l	80.0	ND	97	70-130	1	20	
Thallium	78.8	1.0	0.20	ug/l	80.0	0.227	98	70-130	1	20	

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 Received: 11/26/08

METHOD BLANK/QC DATA

DISSOLVED METALS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	Limit	RPD	RPD Limit	Data Qualifiers
Batch: 8L03087 Extracted: 12/03/08											
Blank Analyzed: 12/06/2008 (8L03087-BLK1)											
Antimony	ND	2.0	0.20	ug/l							
Cadmium	ND	1.0	0.11	ug/l							
Copper	ND	2.0	0.75	ug/l							
Lead	ND	1.0	0.30	ug/l							
Thallium	ND	1.0	0.20	ug/l							
LCS Analyzed: 12/06/2008 (8L03087-BS1)											
Antimony	85.8	2.0	0.20	ug/l	80.0		107	85-115			
Cadmium	82.7	1.0	0.11	ug/l	80.0		103	85-115			
Copper	84.8	2.0	0.75	ug/l	80.0		106	85-115			
Lead	79.7	1.0	0.30	ug/l	80.0		100	85-115			
Thallium	82.4	1.0	0.20	ug/l	80.0		103	85-115			
Matrix Spike Analyzed: 12/06/2008 (8L03087-MS1) Source: IRK2490-02											
Antimony	84.7	2.0	0.20	ug/l	80.0	0.428	105	70-130			
Cadmium	79.2	1.0	0.11	ug/l	80.0	ND	99	70-130			
Copper	77.4	2.0	0.75	ug/l	80.0	1.01	95	70-130			
Lead	74.9	1.0	0.30	ug/l	80.0	ND	94	70-130			
Thallium	77.4	1.0	0.20	ug/l	80.0	0.201	96	70-130			
Matrix Spike Analyzed: 12/07/2008 (8L03087-MS2) Source: IRK2847-01											
Antimony	83.3	2.0	0.20	ug/l	80.0	0.347	104	70-130			
Cadmium	76.8	1.0	0.11	ug/l	80.0	ND	96	70-130			
Copper	76.9	2.0	0.75	ug/l	80.0	1.71	94	70-130			
Lead	71.2	1.0	0.30	ug/l	80.0	ND	89	70-130			
Thallium	73.9	1.0	0.20	ug/l	80.0	0.206	92	70-130			
Matrix Spike Dup Analyzed: 12/06/2008 (8L03087-MSD1) Source: IRK2490-02											
Antimony	96.7	2.0	0.20	ug/l	80.0	0.428	120	70-130	13	20	
Cadmium	89.9	1.0	0.11	ug/l	80.0	ND	112	70-130	13	20	
Copper	89.0	2.0	0.75	ug/l	80.0	1.01	110	70-130	14	20	
Lead	85.3	1.0	0.30	ug/l	80.0	ND	107	70-130	13	20	
Thallium	88.4	1.0	0.20	ug/l	80.0	0.201	110	70-130	13	20	

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Report Number: IRK2832

Sampled: 11/26/08
 Received: 11/26/08

METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	Limits	RPD	RPD Limit	Data Qualifiers
<u>Batch: 8K26165 Extracted: 11/26/08</u>											
Blank Analyzed: 11/27/2008 (8K26165-BLK1)											
Chloride	ND	0.50	0.25	mg/l							
Nitrate/Nitrite-N	ND	0.26	0.15	mg/l							
Sulfate	ND	0.50	0.20	mg/l							
LCS Analyzed: 11/27/2008 (8K26165-BS1)											
Chloride	4.60	0.50	0.25	mg/l	5.00		92	90-110			
Sulfate	9.39	0.50	0.20	mg/l	10.0		94	90-110			
Matrix Spike Analyzed: 11/27/2008 (8K26165-MS1) Source: IRK2828-01											
Chloride	89.3	10	5.0	mg/l	50.0	43.9	91	80-120			
Sulfate	135	10	4.0	mg/l	100	47.0	88	80-120			
Matrix Spike Analyzed: 11/27/2008 (8K26165-MS2) Source: IRK2848-01											
Chloride	60.1	10	5.0	mg/l	50.0	13.2	94	80-120			
Sulfate	105	10	4.0	mg/l	100	8.27	97	80-120			
Matrix Spike Dup Analyzed: 11/27/2008 (8K26165-MSD1) Source: IRK2828-01											
Chloride	88.7	10	5.0	mg/l	50.0	43.9	89	80-120	1	20	
Sulfate	139	10	4.0	mg/l	100	47.0	92	80-120	2	20	
<u>Batch: 8L01069 Extracted: 12/01/08</u>											
Blank Analyzed: 12/01/2008 (8L01069-BLK1)											
Total Dissolved Solids	ND	10	10	mg/l							
LCS Analyzed: 12/01/2008 (8L01069-BS1)											
Total Dissolved Solids	996	10	10	mg/l	1000		100	90-110			

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Report Number: IRK2832

Sampled: 11/26/08
 Received: 11/26/08

METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	Limit	RPD	RPD Limit	Data Qualifiers
Batch: 8L01069 Extracted: 12/01/08											
Duplicate Analyzed: 12/01/2008 (8L01069-DUP1)						Source: IRK2818-01					
Total Dissolved Solids	192	10	10	mg/l		195			2	10	
Batch: 8L02046 Extracted: 12/02/08											
Blank Analyzed: 12/02/2008 (8L02046-BLK1)											
Perchlorate	ND	4.0	0.90	ug/l							
LCS Analyzed: 12/02/2008 (8L02046-BS1)											
Perchlorate	26.8	4.0	0.90	ug/l	25.0		107	85-115			
Matrix Spike Analyzed: 12/02/2008 (8L02046-MS1)						Source: IRK2692-04					
Perchlorate	27.1	4.0	0.90	ug/l	25.0	ND	109	80-120			
Matrix Spike Dup Analyzed: 12/02/2008 (8L02046-MSD1)						Source: IRK2692-04					
Perchlorate	27.5	4.0	0.90	ug/l	25.0	ND	110	80-120	1	20	
Batch: 8L09056 Extracted: 12/09/08											
Blank Analyzed: 12/09/2008 (8L09056-BLK1)											
Hexane Extractable Material (Oil & Grease)	ND	5.0	1.4	mg/l							
LCS Analyzed: 12/09/2008 (8L09056-BS1)											
Hexane Extractable Material (Oil & Grease)	19.4	5.0	1.4	mg/l	20.2		96	78-114			MNR1
LCS Dup Analyzed: 12/09/2008 (8L09056-BSD1)											
Hexane Extractable Material (Oil & Grease)	19.4	5.0	1.4	mg/l	20.2		96	78-114	0	11	

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METHOD BLANK/QC DATA

DIOXIN (EPA 1613)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD RPD	RPD Limit	Data Qualifiers
Batch: 1751 Extracted: 12/09/08											
Blank Analyzed: 12/11/2008 (MB001)						Source:					
2,3,7,8-TCDD	ND	0.0000500	0.0000105	ug/L				50-150		25	
1,2,3,7,8-PeCDD	ND	0.0000250	0.0000167	ug/L				50-150		25	
1,2,3,4,7,8-HxCDD	ND	0.0000250	0.0000324	ug/L				50-150		25	
1,2,3,6,7,8-HxCDD	ND	0.0000250	0.0000316	ug/L				50-150		25	
1,2,3,7,8,9-HxCDD	ND	0.0000250	0.0000297	ug/L				50-150		25	
1,2,3,4,6,7,8-HpCDD	ND	0.0000250	0.0000531	ug/L				50-150		25	
OCDD	ND	0.0000500	0.0000127	ug/L				50-150		25	
2,3,7,8-TCDF	ND	0.0000500	0.0000080	ug/L				50-150		25	
1,2,3,7,8-PeCDF	ND	0.0000250	0.0000202	ug/L				50-150		25	
2,3,4,7,8-PeCDF	ND	0.0000250	0.0000222	ug/L				50-150		25	
1,2,3,4,7,8-HxCDF	ND	0.0000250	0.0000133	ug/L				50-150		25	
1,2,3,6,7,8-HxCDF	ND	0.0000250	0.0000143	ug/L				50-150		25	
2,3,4,6,7,8-HxCDF	ND	0.0000250	0.0000016	ug/L				50-150		25	
1,2,3,7,8,9-HxCDF	ND	0.0000250	0.0000216	ug/L				50-150		25	
1,2,3,4,6,7,8-HpCDF	ND	0.0000250	0.0000199	ug/L				50-150		25	
1,2,3,4,7,8,9-HpCDF	ND	0.0000250	0.0000024	ug/L				50-150		25	
OCDF	ND	0.0000500	0.0000046	ug/L				50-150		25	
Total TCDD	ND	0.0000500	0.0000105	ug/L				50-150		25	
Total PeCDD	ND	0.0000250	0.0000167	ug/L				50-150		25	
Total HxCDD	ND	0.0000250	0.0000297	ug/L				50-150		25	
Total HpCDD	ND	0.0000250	0.0000531	ug/L				50-150		25	
Total TCDF	ND	0.0000500	0.0000080	ug/L				50-150		25	
Total PeCDF	ND	0.0000250	0.0000202	ug/L				50-150		25	
Total HxCDF	ND	0.0000250	0.0000133	ug/L				50-150		25	
Total HpCDF	ND	0.0000250	0.0000199	ug/L				50-150		25	
Surrogate: 13C-2,3,7,8-TCDD	0.00163			ug/L	2000		82	50-150			
Surrogate: 13C-1,2,3,7,8-PeCDD	0.00144			ug/L	2000		72	50-150			
Surrogate: 13C-1,2,3,4,7,8-HxCDD	0.00146			ug/L	2000		73	50-150			
Surrogate: 13C-1,2,3,6,7,8-HxCDD	0.00161			ug/L	2000		80	50-150			
Surrogate: 13C-1,2,3,4,6,7,8-HpCDD	0.00154			ug/L	2000		77	50-150			
Surrogate: 13C-OCDD	0.00246			ug/L	4000		62	50-150			
Surrogate: 13C-2,3,7,8-TCDF	0.00170			ug/L	2000		85	50-150			
Surrogate: 13C-1,2,3,7,8-PeCDF	0.00141			ug/L	2000		71	50-150			
Surrogate: 13C-2,3,4,7,8-PeCDF	0.00148			ug/L	2000		74	50-150			
Surrogate: 13C-1,2,3,4,7,8-HxCDF	0.00136			ug/L	2000		68	50-150			

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 Attention: Bronwyn Kelly

Project ID: Semi-Annual Outfall 010

Report Number: IRK2832

Sampled: 11/26/08
 Received: 11/26/08

METHOD BLANK/QC DATA

DIOXIN (EPA 1613)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	Limit	RPD	RPD Limit	Data Qualifiers
Batch: 1751 Extracted: 12/09/08											
Blank Analyzed: 12/11/2008 (MB001)											
						Source:					
Surrogate: 13C-1,2,3,6,7,8-HxCDF	0.00135			ug/L	2000		67	50-150			
Surrogate: 13C-2,3,4,6,7,8-HxCDF	0.00146			ug/L	2000		73	50-150			
Surrogate: 13C-1,2,3,7,8,9-HxCDF	0.00151			ug/L	2000		76	50-150			
Surrogate: 13C-1,2,3,4,6,7,8-HpCDF	0.00135			ug/L	2000		67	50-150			
Surrogate: 13C-1,2,3,4,7,8,9-HpCDF	0.00147			ug/L	2000		74	50-150			
Surrogate: 13C-OCDF	0.00243			ug/L	4000		61	50-150			
Surrogate: 37Cl-2,3,7,8-TCDD	0.000803			ug/L	800		100	50-150			
LCS Analyzed: 12/11/2008 (OPR001)											
						Source:					
2,3,7,8-TCDD	9.24	5.00	0.840	ug/L	10		92	50-150		25	
1,2,3,7,8-PeCDD	47.8	25.0	1.59	ug/L	50		96	50-150		25	
1,2,3,4,7,8-HxCDD	47.7	25.0	1.18	ug/L	50		95	50-150		25	
1,2,3,6,7,8-HxCDD	48.5	25.0	1.69	ug/L	50		97	50-150		25	
1,2,3,7,8,9-HxCDD	47.8	25.0	1.18	ug/L	50		96	50-150		25	
1,2,3,4,6,7,8-HpCDD	46.5	25.0	2.01	ug/L	50		93	50-150		25	
OCDD	94.5	50.0	2.45	ug/L	100		95	50-150		25	
2,3,7,8-TCDF	9.29	5.00	0.970	ug/L	10		93	50-150		25	
1,2,3,7,8-PeCDF	44.8	25.0	1.09	ug/L	50		90	50-150		25	
2,3,4,7,8-PeCDF	44.8	25.0	1.48	ug/L	50		90	50-150		25	
1,2,3,4,7,8-HxCDF	46.0	25.0	1.06	ug/L	50		92	50-150		25	
1,2,3,6,7,8-HxCDF	46.8	25.0	0.730	ug/L	50		94	50-150		25	
2,3,4,6,7,8-HxCDF	46.2	25.0	1.26	ug/L	50		92	50-150		25	
1,2,3,7,8,9-HxCDF	46.5	25.0	0.940	ug/L	50		93	50-150		25	
1,2,3,4,6,7,8-HpCDF	47.4	25.0	1.70	ug/L	50		95	50-150		25	
1,2,3,4,7,8,9-HpCDF	48.2	25.0	0.960	ug/L	50		96	50-150		25	
OCDF	84.1	50.0	3.66	ug/L	100		84	50-150		25	
Surrogate: 13C-2,3,7,8-TCDD	70.4			ug/L	100		70	50-150			
Surrogate: 13C-1,2,3,7,8-PeCDD	60.3			ug/L	100		60	50-150			
Surrogate: 13C-1,2,3,4,7,8-HxCDD	66.5			ug/L	100		67	50-150			
Surrogate: 13C-1,2,3,6,7,8-HxCDD	75.3			ug/L	100		75	50-150			
Surrogate: 13C-1,2,3,4,6,7,8-HpCDD	65.4			ug/L	100		65	50-150			
Surrogate: 13C-OCDD	89.0			ug/L	200		45	50-150			
Surrogate: 13C-2,3,7,8-TCDF	74.5			ug/L	100		75	50-150			
Surrogate: 13C-1,2,3,7,8-PeCDF	57.2			ug/L	100		57	50-150			
Surrogate: 13C-2,3,4,7,8-PeCDF	61.8			ug/L	100		62	50-150			
Surrogate: 13C-1,2,3,4,7,8-HxCDF	62.2			ug/L	100		62	50-150			

TestAmerica Irvine

Trupti Mistry For Joseph Doak
 Project Manager

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

Project ID: Semi-Annual Outfall 010

Report Number: IRK2832

Sampled: 11/26/08
 Received: 11/26/08

METHOD BLANK/QC DATA

DIOXIN (EPA 1613)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 1751 Extracted: 12/09/08											
LCS Analyzed: 12/11/2008 (OPR001)											
Surrogate: 13C-1,2,3,6,7,8-HxCDF	63.7			ug/L	100		64	50-150			
Surrogate: 13C-2,3,4,6,7,8-HxCDF	65.7			ug/L	100		66	50-150			
Surrogate: 13C-1,2,3,7,8,9-HxCDF	66.9			ug/L	100		67	50-150			
Surrogate: 13C-1,2,3,4,6,7,8-HpCDF	59.7			ug/L	100		60	50-150			
Surrogate: 13C-1,2,3,4,7,8,9-HpCDF	55.5			ug/L	100		56	50-150			
Surrogate: 13C-OCDF	83.9			ug/L	200		42	50-150			
Surrogate: 37Cl-2,3,7,8-TCDD	30.7			ug/L	40		77	50-150			

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Trupti Mistry For Joseph Doak
 Project Manager

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

Project ID: Semi-Annual Outfall 010

Report Number: IRK2832

Sampled: 11/26/08
 Received: 11/26/08

METHOD BLANK/QC DATA

MCAWW 245.1

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 8336128 Extracted: 12/01/08											
Matrix Spike Dup Analyzed: 12/01/2008 (D8K290110001D)						Source: IRK2832-01					
Mercury	5.41	0.2	0.027	ug/L	5	ND	108	90-110	0	10	
Matrix Spike Analyzed: 12/01/2008 (D8K290110001S)						Source: IRK2832-01					
Mercury	5.41	0.2	0.027	ug/L	5	ND	108	90-110	0	10	
Blank Analyzed: 12/01/2008 (D8L010000128B)						Source:					
Mercury	ND	0.2	0.027	ug/L				-			
LCS Analyzed: 12/01/2008 (D8L010000128C)						Source:					
Mercury	5.27	0.2	0.027	ug/L	5		105	90-110			

TestAmerica Irvine

Trupti Mistry For Joseph Doak
 Project Manager

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

Project ID: Semi-Annual Outfall 010

Report Number: IRK2832

Sampled: 11/26/08
 Received: 11/26/08

METHOD BLANK/QC DATA

MCAWW 245.1 Diss

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 8336136 Extracted: 12/01/08											
Matrix Spike Dup Analyzed: 12/01/2008 (D8K290110001D)						Source: IRK2832-01					
Mercury-diss	5.33	0.2	0.027	ug/L	5	ND	107	90-110	2	10	
Matrix Spike Analyzed: 12/01/2008 (D8K290110001S)						Source: IRK2832-01					
Mercury-diss	5.43	0.2	0.027	ug/L	5	ND	109	90-110	2	10	
Blank Analyzed: 12/01/2008 (D8L010000136B)						Source:					
Mercury-diss	ND	0.2	0.027	ug/L				-			
LCS Analyzed: 12/01/2008 (D8L010000136C)						Source:					
Mercury-diss	5.16	0.2	0.027	ug/L	5		103	90-110			

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Trupti Mistry For Joseph Doak
 Project Manager

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

Project ID: Semi-Annual Outfall 010

Report Number: IRK2832

Sampled: 11/26/08
 Received: 11/26/08

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
IRK2832-01	1664-HEM	Hexane Extractable Material (Oil & Greas	mg/l	1.71	4.7	15
IRK2832-01	Antimony-200.8	Antimony	ug/l	0.67	2.0	6
IRK2832-01	Cadmium-200.8	Cadmium	ug/l	0.24	1.0	4
IRK2832-01	Chloride - 300.0	Chloride	mg/l	41	10	150
IRK2832-01	Copper-200.8	Copper	ug/l	5.83	2.0	14
IRK2832-01	Lead-200.8	Lead	ug/l	2.00	1.0	5.2
IRK2832-01	Nitrogen, NO3+NO2 -N	Nitrate/Nitrite-N	mg/l	3.00	0.26	10
IRK2832-01	Perchlorate 314.0-DEFAULT	Perchlorate	ug/l	0	4.0	6
IRK2832-01	Sulfate-300.0	Sulfate	mg/l	42	0.50	250
IRK2832-01	TDS - SM 2540C	Total Dissolved Solids	mg/l	309	10	850
IRK2832-01	Thallium-200.8	Thallium	ug/l	0.063	1.0	2

TestAmerica Irvine

Trupti Mistry For Joseph Doak
 Project Manager

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

Project ID: Semi-Annual Outfall 010

Report Number: IRK2832

Sampled: 11/26/08
Received: 11/26/08

DATA QUALIFIERS AND DEFINITIONS

- B** Analyte was detected in the associated Method Blank.
- 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.
- MNR1** There was no MS/MSD analyzed with this batch due to insufficient sample volume. See Blank Spike/Blank Spike Duplicate.
- ND** Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified.
- RPD** Relative Percent Difference

TestAmerica Irvine

Trupti Mistry For Joseph Doak
Project Manager

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

Project ID: Semi-Annual Outfall 010

Report Number: IRK2832

Sampled: 11/26/08
Received: 11/26/08

Certification Summary

TestAmerica Irvine

Method	Matrix	Nelac	California
EPA 1664A	Water	X	X
EPA 200.8-Diss	Water	X	X
EPA 200.8	Water	X	X
EPA 300.0	Water	X	X
EPA 314.0	Water	X	X
SM2540C	Water	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

Alta Analytical Perspectives

2714 Exchange Drive - Wilmington, NC 28405

Method Performed: 1613-Dioxin-HR Alta
Samples: IRK2832-01

Aquatic Testing Laboratories-SUB *California Cert #1775*

4350 Transport Street, Unit 107 - Ventura, CA 93003

Analysis Performed: Bioassay-7 dy Chnric
Samples: IRK2832-01

TestAmerica Denver

4955 Yarrow Street - Arvada, CO 80002

Method Performed: MCAWW 245.1
Samples: IRK2832-01

Method Performed: MCAWW 245.1 Diss
Samples: IRK2832-01

TestAmerica Irvine

Trupti Mistry For Joseph Doak
Project Manager

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

Project ID: Semi-Annual Outfall 010

Report Number: IRK2832

Sampled: 11/26/08
Received: 11/26/08

TestAmerica St. Louis

13715 Rider Trail North - Earth City, MO 63045

Analysis Performed: Gamma Spec
Samples: IRK2832-01

Analysis Performed: Gross Alpha
Samples: IRK2832-01

Analysis Performed: Gross Beta
Samples: IRK2832-01

Analysis Performed: Radium, Combined
Samples: IRK2832-01

Analysis Performed: Strontium 90
Samples: IRK2832-01

Analysis Performed: Tritium
Samples: IRK2832-01

Analysis Performed: Uranium, Combined
Samples: IRK2832-01

Vista Analytical *NELAC Cert #02102CA, California Cert #1640, Nevada Cert #CA-413*

1104 Windfield Way - El Dorado Hills, CA 95762

Analysis Performed: 1613-Dioxin-HR-Alta
Samples: IRK2832-01

TestAmerica Irvine

Trupti Mistry For Joseph Doak
Project Manager

CHAIN OF CUSTODY FORM

Test America Version 12/20/07

Client Name/Address:		Project:		ANALYSIS REQUIRED		Field readings:					
MWH-Arcadia 618 Michillinda Avenue, Suite 200 Arcadia, CA 91007 Test America Contact: Joseph Doak		Boeing-SSFL NPDES Semi-Annual Outfall 010 Stormwater at Building 203		Total Recoverable Metals: Sb, Cd, Cu, Pb, Hg, Tl		Temp = 16.30 = 61.0 F pH = 7.30 Time of readings = 9:15					
Project Manager: Bronwyn Kelly		Phone Number: (626) 568-6691 Fax Number: (626) 568-6515		Chronic Toxicity (901.0 or 901.1) (908.0), K-40, CS-137 228 (904.0), Uranium (903.0 or 903.1) & Radium (906.0), Sr-90 (905.0), Total Beta(900.0), Tritium (H-3) Gross Alpha(900.0), Gross Beta(900.0), Tritium (H-3)		Comments					
Sample Description	Sample Matrix	Container Type	# of Cont.	Sampling Date/Time	Preservative	Bottle #	TDS	Oil & Grease (1664-HEM)	CF, SO ₄ , NO ₃ +NO ₂ -N, Perchlorate	Total Dissolved Metals: Sb, Cd, Cu, Pb, Hg, Tl	
Outfall 010	W	1L Poly	1	11-26-08	HNO ₃	1A					
Outfall 010-Dup	W	1L Poly	1	09:15	HNO ₃	1B					
Outfall 010	W	1L Amber	2		None	2A, 2B		X			
Outfall 010	W	1L Amber	2		HCl	3A, 3B		X			
Outfall 010	W	500 ml Poly	2		None	4A, 4B		X			
Outfall 010	W	500 ml Poly	1		None	5	X				
Outfall 010	W	2.5 Gal Cube 500 ml Amber	1		None	6A 6B					
Outfall 010	W	1 Gal Poly	1		None	7					
Outfall 010	W	1L Poly	1		None	8					
Relinquished By				Date/Time: 11-26-08 1:00							
Received By				Date/Time: 11-26-08 1:40							
Relinquished By				Date/Time: 11-26-08 20:45							
Received By				Date/Time: 11-26-08 20:45							
Relinquished By				Date/Time:							
Received By				Date/Time:							
Turn around Time: (check)		5 Days		48 Hours		10 Days		72 Hours		Normal	
Sample Integrity: (check)		Intact		On Ice:		X		X		3.6 C	
Data Requirements: (check)		No Level IV		All Level IV		NPDES Level IV					

*DELIVERED 1 GAL CONTAINER TO ATC VENTURA - 8

CHAIN OF CUSTODY FORM

Client Name/Address:
MWH-Arcadia
 618 Michilinda Avenue, Suite 200
 Arcadia, CA 91007
 Test America Contact: Joseph Doak

Project:
**Boeing-SSFL NPDES
 Semi-Annual Outfall 010
 Stormwater at Building 203**

Project Manager: **Bronwyn Kelly**
 Phone Number: (626) 568-6691
 Fax Number: (626) 568-6515

Sampler: **J MARISSA
 L SANAGA**

Sample Description	Sample Matrix	Container Type	# of Cont.	Sampling Date/Time	Preservative	Bottle #
Outfall 010	W	1L Poly	1	11-26-08 09:15	HNO ₃	1A
Outfall 010-Dup	W	1L Poly	1		HNO ₃	1B
Outfall 010	W	1L Amber	2		None	2A, 2B
Outfall 010	W	1L Amber	2		HCl	3A, 3B
Outfall 010	W	500 ml Poly	2		None	4A, 4B
Outfall 010	W	500 ml Poly	1		None	5
Outfall 010	W	2.5 Gal Cube 500 ml Amber	1		None	6A
Outfall 010	W	1 Gal Poly	1		None	6B
Outfall 010	W	1L Poly	1		None	7
						8

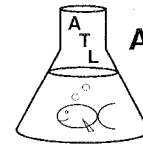
Relinquished By	Date/Time	Received By	Date/Time
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<i>[Signature]</i>	11-26-08 1730	<i>[Signature]</i>	11-26-08 1730

ANALYSIS REQUIRED

Total Recoverable Metals: Sb, Cd, Cu, Pb, Hg, Tl	TCDD (and all congeners)	Oil & Grease (1664-HEM)	Cl, SO ₄ , NO ₃ +NO ₂ -N, Perchlorate	TDS	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	Total Dissolved Metals: Sb, Cd, Cu, Pb, Hg, Tl	Field Readings:
X								Temp = 16.3°C = 61.0°F pH = 7.30 Time of readings = 915
	X							
		X						
			X					
				X				
					X			Unfiltered and unreserved analysis
						X		Test first and second rain event of the year
							X	Filter-w/in-24hrs of receipt at lab

Turn around Time: (check) 24 Hours _____ 5 Days _____	48 Hours _____ 10 Days _____	72 Hours _____ Normal <input checked="" type="checkbox"/>
Sample Integrity: (check) Intact _____ On Ice: _____	Data Requirements: (check) No Level IV _____ All Level IV _____	NPDES Level IV _____

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: December 5, 2008

Client: TestAmerica – Irvine
17461 Derian Ave., Suite 100
Irvine, CA 92614
Attn: Joseph Doak

Laboratory No.: A-08112608-001
Sample ID.: IRK2832-01 (Outfall 010)

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

Date Sampled: 11/26/08
Date Received: 11/26/08
Temp. Received: 6°C
Chlorine (TRC): 0.0 mg/l
Date Tested: 11/27/08 to 12/04/08

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

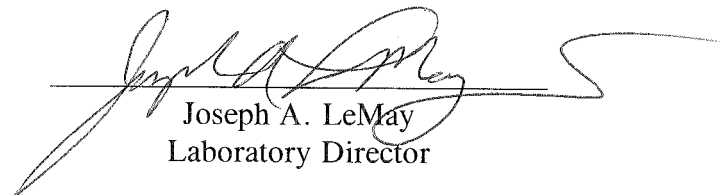
Ceriodaphnia dubia Survival and Reproduction Test (EPA Method 1002).

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

Result Summary:

Chronic:	<u>NOEC</u>	<u>TUc</u>
<i>Ceriodaphnia</i> Survival:	100%	1.0
<i>Ceriodaphnia</i> Reproduction:	100%	1.0

Quality Control: Reviewed and approved by:


Joseph A. LeMay
Laboratory Director

**CERIODAPHNIA CHRONIC BIOASSAY
EPA METHOD 1002.0**



Lab No.: A-08112608-001
Client/ID: Test America – IRK2832-01 (Outfall 010)

Date Tested: 11/27/08 to 12/04/08

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-081104.

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%	22.5
100% Sample	100%	25.8
Sample not statistically significantly less than Control for either endpoint.		

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 (22.5 young)
≥60% surviving controls had 3 broods	Pass (100% with 3 broods)
PMSD <47% for reproduction; if >47% and no toxicity at IWC, the test must be repeated	Pass (PMSD = 8.0%)
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

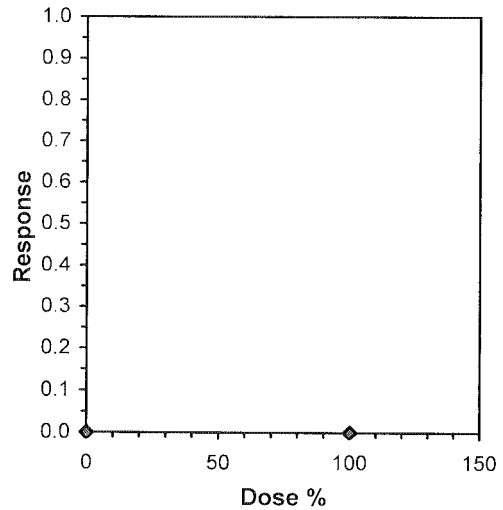
Start Date: 11/27/2008 15:00 Test ID: 8112608 Sample ID: Outfall 010
 End Date: 12/4/2008 16:00 Lab ID: CAATL-Aquatic Testing Labs Sample Type: EFF2-Industrial
 Sample Date: 11/26/2008 09:15 Protocol: FWCH 4TH-EPA-821-R-02-0 Test Species: CD-Ceriodaphnia dubia
 Comments:

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	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				

Point	%	SD	Linear Interpolation (200 Resamples)	
			95% CL	Skew
IC05	>100			
IC10	>100			
IC15	>100			
IC20	>100			
IC25	>100			
IC40	>100			
IC50	>100			



Ceriodaphnia Survival and Reproduction Test-Reproduction

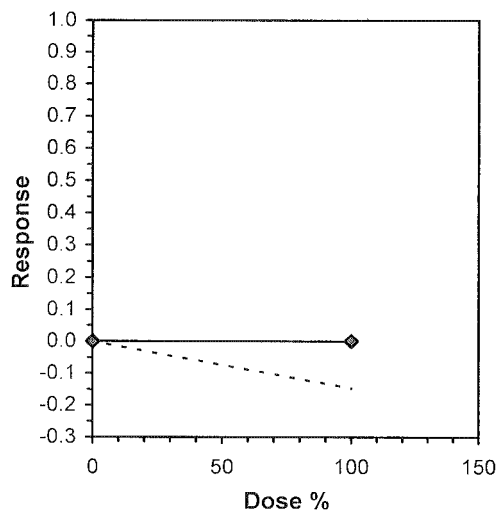
Start Date: 11/27/2008 15:00 Test ID: 8112608 Sample ID: Outfall 010
 End Date: 12/4/2008 16:00 Lab ID: CAATL-Aquatic Testing Labs Sample Type: EFF2-Industrial
 Sample Date: 11/26/2008 09:15 Protocol: FWCH 4TH-EPA-821-R-02-0 Test Species: CD-Ceriodaphnia dubia
 Comments:

Conc-%	1	2	3	4	5	6	7	8	9	10
D-Control	24.000	20.000	23.000	25.000	20.000	25.000	22.000	21.000	23.000	22.000
100	29.000	24.000	25.000	26.000	22.000	26.000	30.000	22.000	26.000	28.000

Conc-%	Mean	N-Mean	Transform: Untransformed					N	t-Stat	1-Tailed Critical	MSD	Isotonic	
			Mean	Min	Max	CV%	Mean					N-Mean	
D-Control	22.500	1.0000	22.500	20.000	25.000	8.182	10				24.150	1.0000	
100	25.800	1.1467	25.800	22.000	30.000	10.464	10	-3.194	1.734	1.792	24.150	1.0000	

Auxiliary Tests	Statistic	Critical	Skew	Kurt		
Shapiro-Wilk's Test indicates normal distribution ($p > 0.05$)	0.9724	0.905	0.0074	-0.6194		
F-Test indicates equal variances ($p = 0.27$)	2.15082	6.54109				
Hypothesis Test (1-tail, 0.05)	MSDu	MSDp	MSB	MSE	F-Prob	df
Homoscedastic t Test indicates no significant differences Treatments vs D-Control	1.79187	0.07964	54.45	5.33889	0.00503	1, 18

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**



Lab No.: A-08112608-001

Client ID: TestAmerica - IRK2832-01 Outfall 010

Start Date: 11/27/2008

		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:		R	R	R	R	R	R	R	R	R	R	R	R	R	R
Time of Readings:		1500	1400	1400	1200	1200	1430	1430	1500	1500	1520	1500	1400	1400	1600
Control	DO	8.4	8.3	8.8	8.6	8.8	8.7	8.8	8.6	8.9	9.0	9.0	9.2	8.8	8.6
	pH	7.7	7.5	7.5	7.7	7.6	7.6	7.6	7.6	7.4	7.5	7.5	7.6	7.2	7.4
	Temp	24.2	24.0	24.7	24.2	24.8	24.5	24.2	24.3	24.3	24.0	25.3	24.1	24.5	24.2
100%	DO	8.0	8.4	8.2	8.5	8.6	8.2	9.1	8.1	9.2	9.1	10.5	9.3	10.6	8.4
	pH	7.2	7.6	7.0	7.8	6.9	7.7	6.9	7.7	6.9	7.7	6.8	7.7	6.8	7.8
	Temp	24.1	24.0	24.8	24.0	24.9	24.1	24.8	24.2	24.0	24.4	25.3	24.5	25.1	24.2

Additional Parameters	Control	100% Sample
Conductivity (umohms)	300	375
Alkalinity (mg/l CaCO ₃)	65	68
Hardness (mg/l CaCO ₃)	96	71
Ammonia (mg/l NH ₃ -N)	<0.1	0.1

Source of Neonates											
Replicate:	A	B	C	D	E	F	G	H	I	J	
Brood ID:	6B	4A	6F	6E	5J	3B	2B	3C	2G	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	R
	2	0	0	0	0	0	0	0	0	0	0	0	10	R
	3	0	3	3	0	0	3	0	0	0	0	9	10	R
	4	4	0	0	3	4	0	5	4	3	4	27	10	R
	5	8	0	7	7	6	7	6	7	7	6	61	10	R
	6	0	7	0	0	0	15	0	0	0	0	22	10	R
	7	12	10	13	15	10	0	11	10	13	12	106	10	R
	Total	24	20	23	25	20	25	22	21	23	22	225	10	R
100%	1	0	0	0	0	0	0	0	0	0	0	0	10	R
	2	0	0	0	0	0	0	0	0	0	0	0	10	R
	3	3	0	0	2	0	0	0	3	0	0	8	10	R
	4	0	4	3	0	4	5	4	0	4	3	27	10	R
	5	7	8	6	6	8	7	7	6	8	7	70	10	R
	6	0	0	0	0	0	0	0	0	0	0	0	10	R
	7	19	12	16	18	10	14	19	13	14	18	153	10	R
	Total	29	24	25	26	27	26	30	22	26	28	256	10	R

Circled fourth brood not used in statistical analysis.

7th day only used if <60% of the surviving control females have produced their third brood.

TestAmerica Irvine

IRK2832


SENDING LABORATORY:

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

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: 6 °C Ice: Y N

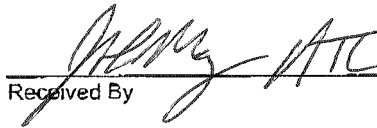
Analysis	Units	Due	Expires	Comments
Sample ID: IRK2832-01	Water		Sampled: 11/26/08 09:15	Instant Notification
Bioassay-7 dy Chmic	N/A	12/09/08	11/27/08 21:15	Cerio, EPA/821-R02-013, Sub to Aquatic testing
Containers Supplied: 1 gal Poly (L)				



Released By

11/26/08

Date/Time



Received By

11-26-08 17:30

Date/Time

Released By

Date/Time

Received By

Date/Time

Client Name/Address: MWH-Arcadia 618 Michillinda Avenue, Suite 200 Arcadia, CA 91007 Test America Contact: Joseph Doak		Project: Boeing-SSFL NPDES Semi-Annual Outfall 010 Stormwater at Building 203		ANALYSIS REQUIRED Total Recoverable Metals: Sb, Cd, Cu, Pb, Hg, Tl TCDD (and all congeners) Oil & Grease (1664-HEM) Cl, SO ₄ , NO ₃ +NO ₂ -N, Perchlorate TDS 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 Total Dissolved Metals: Sb, Cd, Cu, Pb, Hg, Tl										Field readings: Temp = <u>16.3</u> = 61.0 F pH = <u>7.30</u> Time of readings = <u>915</u>	
Project Manager: Bronwyn Kelly Sampler: <u>J MARISSA</u> <u>F BANAGA</u>		Phone Number: (626) 568-6691 Fax Number: (626) 568-6515		Total Recoverable Metals: Sb, Cd, Cu, Pb, Hg, Tl TCDD (and all congeners) Oil & Grease (1664-HEM) Cl, SO ₄ , NO ₃ +NO ₂ -N, Perchlorate TDS 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 Total Dissolved Metals: Sb, Cd, Cu, Pb, Hg, Tl										Turn around Time: (check) 24 Hours _____ 5 Days _____ 48 Hours _____ 10 Days _____ 72 Hours _____ Normal <input checked="" type="checkbox"/> _____ Sample Integrity: (check) Intact _____ On Ice: _____ Data Requirements: (check) No Level IV _____ All Level IV _____ NPDES Level IV _____	
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)	Oil & Grease (1664-HEM)	Cl, SO ₄ , NO ₃ +NO ₂ -N, Perchlorate	TDS	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	Total Dissolved Metals: Sb, Cd, Cu, Pb, Hg, Tl	Field readings:
Outfall 010	W	1L Poly	1	11-26-08 09:15	HNO ₃	1A	X								
Outfall 010-Dup	W	1L Poly	1		HNO ₃	1B	X								
Outfall 010	W	1L Amber	2		None	2A, 2B	X								
Outfall 010	W	1L Amber	2		HCl	3A, 3B	X								
Outfall 010	W	500 ml Poly	2		None	4A, 4B	X								
Outfall 010	W	500 ml Poly	1		None	5	X								
Outfall 010	W	2.5 Gal.Cube 500 ml Amber	1		None	6A					X				
Outfall 010	W	500 ml Amber	1		None	6B									
Outfall 010	W	1 Gal Poly	1		None	7									
Outfall 010	W	4L Poly	1		None	8									
Relinquished By <u>Joseph Doak</u>	Date/Time: 11-26-08 1400	Received By <u>Joseph Doak</u>	Date/Time: 11-26-08 1400	Turn around Time: (check) 24 Hours _____ 5 Days _____ 48 Hours _____ 10 Days _____ 72 Hours _____ Normal <input checked="" type="checkbox"/> _____ Sample Integrity: (check) Intact _____ On Ice: _____ Data Requirements: (check) No Level IV _____ All Level IV _____ NPDES Level IV _____											
Relinquished By <u>Joseph Doak</u>	Date/Time: 11-26-08 1730	Received By <u>Joseph Doak</u>	Date/Time: 11-26-08 1730	Turn around Time: (check) 24 Hours _____ 5 Days _____ 48 Hours _____ 10 Days _____ 72 Hours _____ Normal <input checked="" type="checkbox"/> _____ Sample Integrity: (check) Intact _____ On Ice: _____ Data Requirements: (check) No Level IV _____ All Level IV _____ NPDES Level IV _____											
Relinquished By <u>Joseph Doak</u>	Date/Time: 11-26-08 1730	Received By <u>Joseph Doak</u>	Date/Time: 11-26-08 1730	Turn around Time: (check) 24 Hours _____ 5 Days _____ 48 Hours _____ 10 Days _____ 72 Hours _____ Normal <input checked="" type="checkbox"/> _____ Sample Integrity: (check) Intact _____ On Ice: _____ Data Requirements: (check) No Level IV _____ All Level IV _____ NPDES Level IV _____											



***REFERENCE
TOXICANT
DATA***

CERIODAPHNIA CHRONIC BIOASSAY
EPA METHOD 1002.0
REFERENCE TOXICANT - NaCl



QA/QC Batch No.: RT-081104

Date Tested: 11/04/08 to 11/11/08

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: 7 days.
 Statistics: ToxCalc computer program.

RESULTS SUMMARY

Sample Concentration	Percent Survival		Mean Number of Young Per Female	
Control	100%		22.5	
0.25 g/l	100%		23.0	
0.5 g/l	100%		21.9	
1.0 g/l	100%		15.8	*
2.0 g/l	100%		4.4	*
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	2.8 g/l
Reproduction IC25	0.90 g/l

QA/QC TEST ACCEPTABILITY

Parameter	Result
Control survival ≥ 80%	Pass (100% Survival)
≥ 15 young per surviving control female	Pass (22.5 young)
≥ 60% surviving controls had 3 broods	Pass (100% with 3 broods)
PMSD < 47% for reproduction	Pass (PMSD = 9.8%)
Stat. sig. diff. conc. relative difference > 13%	Pass (Stat. sig. diff. conc. relative difference = 29.8%)
Concentration response relationship acceptable	Pass (Response curve normal)

Ceriodaphnia Survival and Reproduction Test-7 Day Survival

Start Date: 11/4/2008 15:00 Test ID: RT-081104 Sample ID: REF-Ref Toxicant
 End Date: 11/11/2008 15:00 Lab ID: CAATL-Aquatic Testing Labs Sample Type: NACL-Sodium chloride
 Sample Date: 11/4/2008 Protocol: FWCH 4TH-EPA-821-R-02-0 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	1.0000	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	1.0000	1.0000	0	10	10	10	1.0000	0.0500	0	10
4	0.0000	0.0000	10	0	10	10			10	10

Hypothesis Test (1-tail, 0.05) NOEC LOEC ChV TU

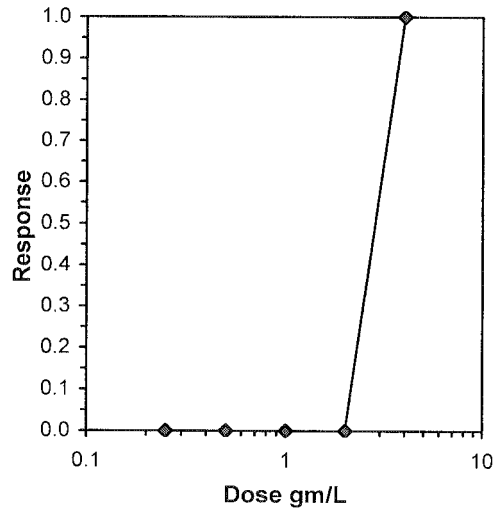
Fisher's Exact Test 2 4 2.82843

Treatments vs D-Control

Graphical Method

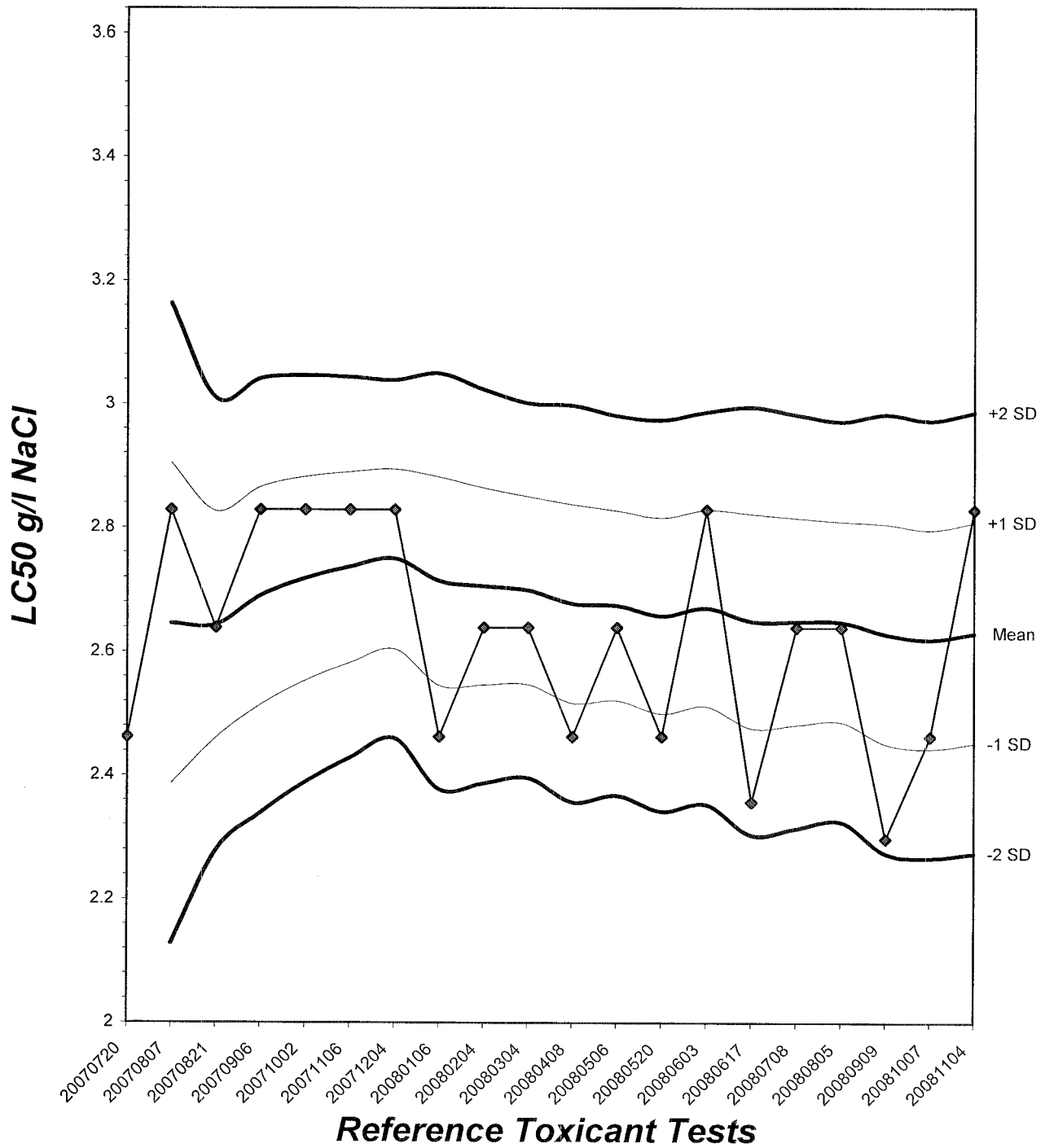
Trim Level **EC50**
 0.0% 2.8284

2.8284



Ceriodaphnia Chronic Survival Laboratory Control Chart

CV% = 6.77



Ceriodaphnia Survival and Reproduction Test-Reproduction

Start Date: 11/4/2008 15:00 Test ID: RT-081104 Sample ID: REF-Ref Toxicant
 End Date: 11/11/2008 15:00 Lab ID: CAATL-Aquatic Testing Labs Sample Type: NACL-Sodium chloride
 Sample Date: 11/4/2008 Protocol: FWCH 4TH-EPA-821-R-02-0 Test Species: CD-Ceriodaphnia dubia
 Comments:

Conc-gm/L	1	2	3	4	5	6	7	8	9	10
D-Control	23.000	20.000	23.000	22.000	23.000	22.000	26.000	21.000	22.000	23.000
0.25	19.000	23.000	22.000	25.000	25.000	22.000	25.000	23.000	24.000	22.000
0.5	21.000	24.000	20.000	25.000	18.000	23.000	22.000	20.000	22.000	24.000
1	9.000	15.000	18.000	10.000	18.000	17.000	16.000	19.000	19.000	17.000
2	2.000	4.000	6.000	5.000	6.000	4.000	5.000	4.000	4.000	4.000
4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Conc-gm/L	Transform: Untransformed							Rank Sum	1-Tailed Critical	Isotonic	
	Mean	N-Mean	Mean	Min	Max	CV%	N			Mean	N-Mean
D-Control	22.500	1.0000	22.500	20.000	26.000	7.027	10			22.750	1.0000
0.25	23.000	1.0222	23.000	19.000	25.000	8.198	10	115.50	76.00	22.750	1.0000
0.5	21.900	0.9733	21.900	18.000	25.000	9.969	10	98.50	76.00	21.900	0.9626
*1	15.800	0.7022	15.800	9.000	19.000	22.486	10	55.00	76.00	15.800	0.6945
*2	4.400	0.1956	4.400	2.000	6.000	26.677	10	55.00	76.00	4.400	0.1934
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 non-normal distribution (p <= 0.05)	0.93086	0.947	-1.0207	1.76892
Bartlett's Test indicates equal variances (p = 0.02)	12.1425	13.2767		
Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU
Steel's Many-One Rank Test	0.5	1	0.70711	
Treatments vs D-Control				

Linear Interpolation (200 Resamples)					
Point	gm/L	SD	95% CL		Skew
IC05	0.5236	0.0738	0.3349	0.6024	-1.1597
IC10	0.6168	0.0540	0.4824	0.7162	-0.7556
IC15	0.7100	0.0536	0.6133	0.8309	-0.1240
IC20	0.8033	0.0606	0.7087	0.9480	0.2967
IC25	0.8965	0.0688	0.7913	1.0519	0.2677
IC40	1.1886	0.0706	1.0517	1.3109	-0.5676
IC50	1.3882	0.0549	1.2688	1.4826	-0.6239

