

APPENDIX G

Section 76

Outfall 011, February 3, 2008

MEC^X Data Validation Reports



DATA VALIDATION REPORT

Boeing SSFL NPDES

SAMPLE DELIVERY GROUP: IRB0154

Prepared by

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

I. INTRODUCTION

Task Order Title: Boeing SSFL NPDES
 Contract Task Order: 1261.100D.00
 Sample Delivery Group: IRB0154
 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 011	IRB0154-01	30225-001, 8020452-01, 973192, 8602-001	Water	02/03/08 1515	120.1, 160.5, 180.1, 200.7, 200.8, 245.1, 330.5, 415.1, 624, 625, 900.0, 901.1, 903.0, 904.0, 905.0, 906.0, 1613, 8315M, ASTM D-5174

II. Sample Management

No anomalies were observed regarding sample management. The samples in this SDG were received at TestAmerica-Irvine above the temperature limits; however, the samples had insufficient time to cool in transit. The samples were received at Eberline, and Truesdail within the temperature limits of 4°C ±2°C. The samples were received marginally below the temperature limit at Weck and Vista; however, the samples were not noted to be damaged or frozen. According to the case narrative for this SDG, the samples were received intact at all laboratories. The FedEx courier did not relinquish the samples to Eberline. The remaining COCs were appropriately signed and dated by field and/or laboratory personnel. As the samples were couriered to TestAmerica-Irvine, Truesdail, and Weck, custody seals were not required. Custody seals were intact upon arrival at Eberline 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: April 4, 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: OCDD was reported in the method blank at 0.00000899 μ /L. The detect for OCDD in the sample was greater than five times the concentration reported in the method blank

and required no qualification. The method blank had no other target compound detects above the EDL.

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

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

Reviewed By: P. Meeks

Date Reviewed: March 26, 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 Methods 200.7, 200.8, and 245.1*, and the *National Functional Guidelines for Inorganic Data Review (2/94)*.

- Holding Times: The analytical holding times, 6 months for metals and 28 days for mercury, were met.
- Tuning: The mass calibration and resolution checks criteria were met. All tuning solution %RSDs were $\leq 5\%$, and all masses of interest were calibrated to ≤ 0.1 amu and ≤ 0.9 amu at 10% peak height.

- Calibration: Calibration criteria were met. Mercury initial calibration r^2 values were ≥ 0.995 and all initial and continuing calibration recoveries were within 90-110% for the ICP-MS metals and 85-115% for mercury. All CRI/CRA and check standard recoveries were within the control limits of 70-130%
- Blanks: There were no applicable detects in the method blanks or CCBs.
- Interference Check Samples: ICSA/B analyses were performed in association with all analyses except total antimony. Recoveries were within the method-established control limits. Most analytes were reported in the ICSA solutions. No 6010 analytes required qualification as the concentrations of the interferents were not significant. For the 6020 analytes, the reviewer was not able to ascertain if the detections were indicative of matrix interference.
- Blank Spikes and Laboratory Control Samples: The recoveries were within laboratory-established QC limits.
- Laboratory Duplicates: No laboratory duplicate analyses were performed.
- Matrix Spike/Matrix Spike Duplicate: No MS/MSD analyses were performed on the sample in this SDG. Evaluation of method accuracy was based on LCS results.
- Serial Dilution: No serial dilution analyses were performed.
- Internal Standards Performance: All sample internal standard intensities were within 30-120% of the internal standard intensities measured in the initial calibration. The bracketing CCV and CCB internal standard intensities were within 80-120% of the internal standard intensities measured in the initial calibration.
- Sample Result Verification: Calculations were verified and the sample results reported on the sample result summary 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.

The reviewer noted that antimony was detected at a slightly higher concentration in the dissolved metals sample fraction. The difference between the antimony results is within the sensitivity limits of the analytical instrument and, therefore, the reviewer considered the two results to be equivalent.

- 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: March 28, 2008

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 (2/94)*.

- Holding Times: The tritium sample was analyzed within 180 days of collection. Aliquots for gross alpha and gross beta, were prepared within the five-day analytical holding time for unpreserved samples. Aliquots for radium-226, radium-228, strontium-90, total uranium, and gamma spectroscopy were prepared beyond the five-day holding time for unpreserved samples; therefore, results for these analytes 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 an estimated detect, "J." The gross beta detector efficiency was greater than 20%.

The tritium aliquot was spiked for efficiency determination; therefore, no calibration was necessary. The tritium detector efficiency for the sample was at least 20% and was considered acceptable. The strontium chemical yield was at least 70% and was considered acceptable. The strontium continuing calibration results were within the laboratory control limits. The radium-226 continuing calibration results were within the laboratory-established control limits. The radium-228 tracer, yttrium oxalate, yields were greater than 70%. The gamma spectroscopy analytes were determined at the maximum photopeak energy. The kinetic phosphorescence analyzer (KPA) was calibrated immediately prior to the sample analysis. All KPA calibration check standard recoveries were within 90-110% and were deemed acceptable.

- Blanks: There were no analytes detected in the method blanks.
- Blank Spikes and Laboratory Control Samples: The recoveries were within laboratory-established control 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 for the sample in this SDG. Method accuracy was evaluated based on the LCS results.
- Sample Result Verification: An EPA Level IV review was performed for the sample in this data package. The sample results and MDAs reported on the sample result form were verified against the raw data and no calculation or transcription errors were noted. 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.

D. EPA METHOD 625—Semivolatile Organic Compounds (SVOCs)

Reviewed By: L. Calvin

Date Reviewed: April 2, 2008

The sample listed in Table 1 for this analysis were validated based on the guidelines outlined in the *MEC^X Data Validation Procedure for Semivolatile Organics (DVP-3, Rev. 0)*, *EPA Method 625* and the *National Functional Guidelines for Organic Data Review (2/94)*.

- Holding Times: Extraction and analytical holding times were met. The water sample was extracted within seven days of collection and analyzed within 40 days of extraction.
- GC/MS Tuning: The DFTPP tunes met the method abundance criteria. Samples were analyzed within 12 hours of the DFTPP injection time.
- Calibration: Calibration criteria were met. Initial calibration average RRFs were ≥ 0.05 and %RSDs $\leq 35\%$ or $r^2 > 0.995$ for all target compounds. The sample was analyzed immediately following the initial calibration. The midpoint of the initial calibration, processed as a continuing calibration, had a %D $> 20\%$ for hexachlorocyclopentadiene. The nondetect for hexachlorocyclopentadiene was qualified as estimated, "UJ," in the sample.
- Blanks: The method blank had detects between the MDL and the RL for bis(2-ethylhexyl)phthalate at 2.82 $\mu\text{g/L}$, butyl benzyl phthalate at 2.46 $\mu\text{g/L}$, and diethyl phthalate at 0.160 $\mu\text{g/L}$. Sample detects between the MDL and the RL for bis(2-ethylhexyl)phthalate and butyl benzyl phthalate were qualified as nondetects, "U," at the reporting limit.

- Blank Spikes and Laboratory Control Samples: Benzidine was recovered below the QC limits but $\geq 10\%$ in the LCS only, and the RPD for benzidine exceeded the QC limit. The nondetect for benzidine was qualified as estimated, "UJ," in the sample for the RPD outlier. Remaining recoveries and RPDs were within laboratory-established QC limits.
- Surrogate Recovery: Recoveries were within laboratory-established QC limits.
- Matrix Spike/Matrix Spike Duplicate: MS/MSD analyses were not performed on the sample of this SDG. Evaluation of method accuracy and precision was based on LSC/LSCD results.
- Field QC Samples: Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:
 - Field Blanks and Equipment Rinsates: This SDG had no identified field blank or equipment rinsate samples.
 - Field Duplicates: There were no field duplicate samples identified for this SDG.
- Internal Standards Performance: The internal standard area counts and retention times were within the control limits established by the continuing calibration standards: $-50\%/+100\%$ for internal standard areas and ± 30 seconds for retention times.
- Compound Identification: Compound identification was verified. The laboratory analyzed for semivolatiles by EPA Method 625. Review of the sample chromatogram, retention times, and spectra indicated no problems with target compound identification.
- Compound Quantification and Reported Detection Limits: Compound quantification was verified. The reporting limits were supported by the low point of the initial calibration and the laboratory MDLs. Any results reported between the MDL and the reporting limit were qualified as estimated, "J," and coded with "DNQ," in order to comply with the NPDES permit. Reported nondetects are valid to the reporting limit.
- Tentatively Identified Compounds: TICs were not reported by the laboratory for this SDG.
- System Performance: Review of the raw data indicated no problems with system performance.

E. EPA METHOD 624—Volatile Organic Compounds (VOCs)

Reviewed By: L. Calvin

Date Reviewed: April 2, 2008

The samples listed in Table 1 for this analysis were validated based on the guidelines outlined in the *MEC^X Data Validation Procedure for Volatile Organics (DVP-2, Rev. 0)*, *EPA Method 8260B*, and the *National Functional Guidelines for Organic Data Review (2/94)*.

- **Holding Times:** Analytical holding times were met. The preserved water samples were analyzed within 14 days of collection, and the unpreserved aliquots were analyzed within seven days of collection.
- **GC/MS Tuning:** The BFB tunes met the method abundance criteria. Samples were analyzed within 12 hours of the BFB injection time.
- **Calibration:** For applicable target compounds, initial calibration average RRFs were ≥ 0.05 , with the exception of the average RRF for acrolein. Nondetect results for acrolein were rejected, "R," in both samples. Initial calibration %RSDs were $\leq 35\%$. Continuing calibration RRFs were ≥ 0.05 and %Ds $\leq 20\%$, with the exception of %Ds for trichlorofluoromethane, and acrolein. As acrolein was previously rejected for the initial calibration average RRF, it was not further qualified for the %D outlier. The nondetect result for trichlorofluoromethane was qualified as estimated, "UJ," in site sample Outfall 011. Sample Trip Blank was identified as field QC and required no qualification for the %D outliers.
- **Blanks:** Methylene chloride was detected above the reporting limit at 1.11 $\mu\text{g/L}$ in the method blank associated with site sample Outfall 011; therefore, the sample result, also above the reporting limit, was qualified as an estimated nondetect, "UJ," at the level of contamination. The method blanks had no other target compound detects above the MDL.
- **Blank Spikes and Laboratory Control Samples:** Recoveries were within laboratory-established QC limits. The reviewer noted that acrolein and acrylonitrile were not included in the LCSs.
- **Surrogate Recovery:** Recoveries were within laboratory-established QC limits.
- **Matrix Spike/Matrix Spike Duplicate:** MS/MSD analyses were not performed on the site sample in this SDG. Evaluation of method accuracy was based on the LCS results.
- **Field QC Samples:** Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:

- Trip Blanks: Sample Trip Blank was the trip blank associated with site sample Outfall 011. Chlorobenzene was detected above the reporting limit in the trip blank at 1.0 µg/L; however, chlorobenzene was not detected in sample Outfall 011. The trip blank had no other target compound detects above the MDL.
- Field Blanks and Equipment Rinsates: This SDG had no identified field blank or equipment rinsate samples.
- Field Duplicates: There were no field duplicate samples identified for this SDG.
- Internal Standards Performance: The internal standard area counts and retention times were within the control limits established by the continuing calibration standards: -50%/+100% for internal standard areas and ±30 seconds for retention times.
- Compound Identification: Compound identification was verified. The laboratory analyzed for volatile target compounds by EPA Method 624. Target compounds cyclohexane and 1,2-dichloro-1,1,2-trifluoroethane were searched for only as TICs; therefore, the nondetects for both compounds were qualified as estimated, "UJ." Review of the sample chromatogram, retention times, and spectra indicated no problems with target compound identification.
- Compound Quantification and Reported Detection Limits: Compound quantification was verified. The reporting limits were supported by the low point of the initial calibration and the laboratory MDLs. Any results reported between the MDL and the reporting limit were qualified as estimated, "J," and coded with "DNQ," in order to comply with the NPDES permit. Reported nondetects are valid to the reporting limit.
- Tentatively Identified Compounds: TICs were not reported by the laboratory for this SDG; however, the laboratory performed a TIC search for target compounds cyclohexane and 1,2-dichloro-1,1,2-trifluoroethane. Neither compound was detected as a TIC.
- System Performance: Review of the raw data indicated no problems with system performance.

F. VARIOUS EPA METHODS—General Minerals

Reviewed By: P. Meeks

Date Reviewed: March 31, 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 General Minerals (DVP-6, Rev. 0)*, *EPA Methods 120.1, 160.5, 180.1, 330.5, 415.1, 8315M, Standard Method SM5540-C*, and the *National Functional Guidelines for Inorganic Data Review (2/94)*.

- Holding Times: Analytical holding times, 24 hours for conductivity and settleable solids, 48 hours for turbidity, and 28 days for TOC were met. The hydrazine aliquot was derivitized within three days of collection and analyzed within three days of derivitization. The holding time for residual chlorine is immediate; therefore, residual chlorine detected in the sample was qualified as an estimated detect, “J.”
- Calibration: The hydrazines and TOC initial calibration r^2 were ≥ 0.995 and the ICV and CCV recoveries and the hydrazines QCS recoveries were within the laboratory-established control limits. Check standard recoveries for the remaining applicable methods were acceptable. Calibration is not applicable to settleable solids.
- Blanks: Turbidity was detected in the method blank but not at a concentration sufficient to qualify the site sample. A bracketing TOC CCB was reported as the TOC method blank; however, a single standard cannot be reported as both a method blank and a CCB. As the method blank and CCB would have been prepared from the same high-purity water, the reviewer chose to report the standard as the CCB. Method blanks and CCBs had no other detects.
- Blank Spikes and Laboratory Control Samples: Recoveries were within laboratory-established QC limits. The LCS is not applicable to conductivity or turbidity. An LCS was not reported for residual chlorine; however, as the check standards were acceptably recovered, no qualifications were required. A bracketing TOC CCV was reported as the TOC LCS; however, a single standard cannot be reported as both a CCV and a LCS. As the LCS and CCV would have been prepared from the same high-purity water and stock solutions, the reviewer chose to report the standard as the CCV. LCS is not applicable to settleable solids.
- Laboratory Duplicates: No laboratory duplicate analyses were performed for the sample in this SDG.
- Matrix Spike/Matrix Spike Duplicate: No MS/MSD analyses were performed on the sample in this SDG. For the applicable methods, method accuracy was evaluated based on the LCS results.
- Sample Result Verification: Review is not applicable at a Level V validation. Detects reported below the reporting limit were qualified as estimated, “J,” and coded with “DNQ,” in order to comply with the NPDES permit. Nondetects are valid to the reporting limit. Turbidity was reported from a 5x dilution.
- 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 rinse samples.

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

Sample ID: **IRB0154-01** *Dutfield Oil* **EPA Method 1613**

Client Data
 Name: Test America-Irvine, CA
 Project: IRB0154
 Date Collected: 3-Feb-08
 Time Collected: 1515

Sample Data
 Matrix: Aqueous
 Sample Size: 1.00 L

Laboratory Data
 Lab Sample: 30238-001
 QC Batch No.: 9953
 Date Analyzed DB-5: 19-Feb-08
 Date Received: 5-Feb-08
 Date Extracted: 15-Feb-08
 Date Analyzed DB-225: NA

Analyte	Conc. (ug/L)	DL ^a	EMPC ^b	Qualifiers	Labeled Standard	%R	LCL-UCL ^d	Qualifiers
2,3,7,8-TCDD	ND	0.000000570			IS 13C-2,3,7,8-TCDD	85.1	25 - 164	
1,2,3,7,8-PeCDD	ND	0.000000574			13C-1,2,3,7,8-PeCDD	75.5	25 - 181	
1,2,3,4,7,8-HxCDD	ND	0.00000181			13C-1,2,3,4,7,8-HxCDD	76.4	32 - 141	
1,2,3,6,7,8-HxCDD	ND	0.00000185			13C-1,2,3,6,7,8-HxCDD	79.0	28 - 130	
1,2,3,7,8,9-HxCDD	ND	0.00000176		J	13C-1,2,3,4,6,7,8-HpCDD	81.8	23 - 140	
1,2,3,4,6,7,8-HpCDD	0.0000138				13C-OCDD	76.4	17 - 157	
OCDD	0.000131			B	13C-2,3,7,8-TCDF	88.2	24 - 169	
2,3,7,8-TCDF	ND	0.000000534			13C-1,2,3,7,8-PeCDF	75.0	24 - 185	
1,2,3,7,8-PeCDF	ND	0.000000710			13C-2,3,4,7,8-PeCDF	75.4	21 - 178	
2,3,4,7,8-PeCDF	ND	0.000000737			13C-1,2,3,4,7,8-HxCDF	73.3	26 - 152	
1,2,3,4,7,8-HxCDF	ND	0.000000616			13C-1,2,3,6,7,8-HxCDF	74.7	26 - 123	
1,2,3,6,7,8-HxCDF	ND	0.000000677			13C-2,3,4,6,7,8-HxCDF	74.1	28 - 136	
2,3,4,6,7,8-HxCDF	ND	0.000000737			13C-1,2,3,7,8,9-HxCDF	76.4	29 - 147	
1,2,3,7,8,9-HxCDF	ND	0.000000978			13C-1,2,3,4,6,7,8-HpCDF	75.9	28 - 143	
1,2,3,4,6,7,8-HpCDF	0.00000466			J	13C-1,2,3,4,7,8,9-HpCDF	77.6	26 - 138	
1,2,3,4,7,8,9-HpCDF	ND	0.00000118			13C-OCDF	80.0	17 - 157	
OCDF	0.00000854			J	CRS 37Cl-2,3,7,8-TCDD	86.8	35 - 197	

Totals

Total TCDD	ND	0.000000570		
Total PeCDD	ND	0.00000116		
Total HxCDD	0.00000265			
Total HpCDD	0.0000312			
Total TCDF	ND	0.000000534		
Total PeCDF	ND	0.000000723		
Total HxCDF	ND	0.00000131		
Total HpCDF	0.00000969			

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 25-Feb-2008 13:13

Handwritten signature

Dutfield Oil

Raw Data

DNQ

DNQ

DNQ

Handwritten initials

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

Project ID: Annual Outfall 011

Report Number: IRB0154

Sampled: 02/03/08
Received: 02/03/08

METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IRB0154-01 (Outfall 011 - Water) - cont.									
Reporting Units: mg/l									
Hardness as CaCO3	SM2340B	[CALC]	N/A	0.33	57	1	02/04/08	02/04/08	
Barium	EPA 200.7	8B04079	0.0060	0.010	0.014	1	02/04/08	02/04/08	
Boron	EPA 200.7	8B04079	0.020	0.050	0.059	1	02/04/08	02/04/08	
Calcium	EPA 200.7	8B04079	0.050	0.10	17	1	02/04/08	02/04/08	
Iron	EPA 200.7	8B04079	0.015	0.040	0.72	1	02/04/08	02/04/08	
Magnesium	EPA 200.7	8B04079	0.012	0.020	3.8	1	02/04/08	02/04/08	

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IRB0154 <Page 13 of 68>

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

Project ID: Annual Outfall 011

Report Number: IRB0154

Sampled: 02/03/08
 Received: 02/03/08

METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IRB0154-01 (Outfall 011 - Water) - cont.									
Reporting Units: ug/l									
Antimony	EPA 200.8	8B04080	0.20	2.0	0.72	1	02/04/08	02/05/08	J
Arsenic	EPA 200.7	8B04079	7.0	10	ND	1	02/04/08	02/04/08	
Beryllium	EPA 200.7	8B04079	0.90	2.0	ND	1	02/04/08	02/04/08	
Cadmium	EPA 200.8	8B04080	0.11	1.0	0.13	1	02/04/08	02/04/08	J
Chromium	EPA 200.7	8B04079	2.0	5.0	ND	1	02/04/08	02/04/08	
Cobalt	EPA 200.7	8B04079	2.0	10	ND	1	02/04/08	02/04/08	
Copper	EPA 200.8	8B04080	0.75	2.0	4.6	1	02/04/08	02/04/08	
Lead	EPA 200.8	8B04080	0.30	1.0	0.85	1	02/04/08	02/04/08	J
Manganese	EPA 200.7	8B04079	7.0	20	22	1	02/04/08	02/04/08	
Nickel	EPA 200.7	8B04079	2.0	10	2.0	1	02/04/08	02/04/08	J
Selenium	EPA 200.8	8B04080	0.30	2.0	ND	1	02/04/08	02/04/08	
Silver	EPA 200.8	8B04080	0.30	1.0	ND	1	02/04/08	02/04/08	
Thallium	EPA 200.8	8B04080	0.20	1.0	ND	1	02/04/08	02/04/08	
Vanadium	EPA 200.7	8B04079	3.0	10	ND	1	02/04/08	02/04/08	
Zinc	EPA 200.7	8B04079	6.0	20	12	1	02/04/08	02/04/08	J

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IRB0154 <Page 14 of 68>

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Arcadia, CA 91007
Attention: Bronwyn Kelly

Project ID: Annual Outfall 011

Report Number: IRB0154

Sampled: 02/03/08
Received: 02/03/08

DISSOLVED METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IRB0154-01 (Outfall 011 - Water) - cont.									
Reporting Units: mg/l									
Barium	EPA 200.7-Diss	8B04145	0.0060	0.010	0.014	1	02/04/08	02/05/08	
Boron <i>J/DNQ</i>	EPA 200.7-Diss	8B04145	0.020	0.050	0.040	1	02/04/08	02/05/08	J
Calcium	EPA 200.7-Diss	8B04145	0.050	0.10	17	1	02/04/08	02/05/08	
Iron	EPA 200.7-Diss	8B04145	0.015	0.040	0.073	1	02/04/08	02/05/08	
Magnesium	EPA 200.7-Diss	8B04145	0.012	0.020	3.7	1	02/04/08	02/05/08	
Hardness (as CaCO3)	SM2340B	8B04145	1.0	1.0	57	1	02/04/08	02/05/08	

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IRB0154 <Page 15 of 68>

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Arcadia, CA 91007
Attention: Bronwyn Kelly

Project ID: Annual Outfall 011

Report Number: IRB0154

Sampled: 02/03/08
Received: 02/03/08

DISSOLVED METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IRB0154-01 (Outfall 011 - Water) - cont.									
Reporting Units: ug/l									
Antimony	EPA 200.8-Diss	8B05112	0.20	2.0	0.73	1	02/05/08	02/05/08	J
Arsenic	EPA 200.7-Diss	8B04145	7.0	10	ND	1	02/04/08	02/05/08	
Beryllium	EPA 200.7-Diss	8B04145	0.90	2.0	ND	1	02/04/08	02/05/08	
Cadmium	EPA 200.8-Diss	8B05112	0.11	1.0	0.13	1	02/05/08	02/05/08	J
Chromium	EPA 200.7-Diss	8B04145	2.0	5.0	ND	1	02/04/08	02/05/08	
Cobalt	EPA 200.7-Diss	8B04145	2.0	10	ND	1	02/04/08	02/05/08	
Copper	EPA 200.8-Diss	8B05112	0.75	2.0	2.5	1	02/05/08	02/05/08	
Lead	EPA 200.8-Diss	8B05112	0.30	1.0	ND	1	02/05/08	02/05/08	
Manganese	EPA 200.7-Diss	8B04145	7.0	20	ND	1	02/04/08	02/05/08	
Nickel	EPA 200.7-Diss	8B04145	2.0	10	ND	1	02/04/08	02/05/08	
Selenium	EPA 200.8-Diss	8B05112	0.30	2.0	ND	1	02/05/08	02/05/08	
Silver	EPA 200.8-Diss	8B05112	0.30	1.0	ND	1	02/05/08	02/05/08	
Thallium	EPA 200.8-Diss	8B05112	0.20	1.0	ND	1	02/05/08	02/05/08	
Vanadium	EPA 200.7-Diss	8B04145	3.0	10	ND	1	02/04/08	02/05/08	
Zinc	EPA 200.7-Diss	8B04145	6.0	20	ND	1	02/04/08	02/05/08	

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IRB0154 <Page 16 of 68>

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

Project ID: Annual Outfall 011

Report Number: IRB0154

Sampled: 02/03/08
Received: 02/03/08

Metals by EPA 200 Series Methods

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IRB0154-01 (Outfall 011 - Water) - cont.									
Reporting Units: ug/l									
Mercury, Dissolved	EPA 245.1	W8B0147	0.050	0.20	ND	1	02/05/08	02/07/08	
Mercury, Total	EPA 245.1	W8B0147	0.050	0.20	ND	1	02/05/08	02/07/08	

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IRB0154 <Page 22 of 68>

Eberline Services

ANALYSIS RESULTS

SDG <u>8602</u>	Client <u>TA IRVINE</u>
Work Order <u>R802048-01</u>	Contract <u>PROJECT# IRB0154</u>
Received Date <u>02/05/08</u>	Matrix <u>WATER</u>

Client	Lab	Sample ID	Collected	Analyzed	Nuclide	Results ± 2σ	Units	MDA
Client <u>Sample ID</u> Outfall 011 IRB0154-01		8602-001	02/03/08	02/26/08	GrossAlpha	0.830 ± 0.50	pCi/L	0.68 J/R
				02/26/08	Gross Beta	2.38 ± 0.59	pCi/L	0.88
				02/26/08	Ra-228	0.172 ± 0.21	pCi/L	0.38 UJ/H
				02/26/08	K-40 (G)	U	pCi/L	24 ↓
				02/26/08	Cs-137 (G)	U	pCi/L	0.91 ↓
				02/29/08	H-3	-22.0 ± 89	pCi/L	150 U ↓
				03/04/08	Ra-226	-0.001 ± 0.39	pCi/L	0.75 UJ/H ↓
				02/18/08	Sr-90	0.066 ± 0.36	pCi/L	0.81 ↓
				02/26/08	Total U	0.081 ± 0.013	pCi/L	0.022 J/H ↓

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Report Date <u>03/11/08</u>
Page 1

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

Project ID: Annual Outfall 011

Report Number: IRB0154

Sampled: 02/03/08
Received: 02/03/08

ACID & BASE/NEUTRALS BY GC/MS (EPA 625)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IRB0154-01 (Outfall 011 - Water)									
Reporting Units: ug/l									
1,2,4-Trichlorobenzene	EPA 625	8B03026	0.097	0.97	ND	0.966	02/03/08	02/07/08	
1,2-Dichlorobenzene	EPA 625	8B03026	0.097	0.48	ND	0.966	02/03/08	02/07/08	
1,2-Diphenylhydrazine/Azobenzene	EPA 625	8B03026	0.097	0.97	ND	0.966	02/03/08	02/07/08	
1,3-Dichlorobenzene	EPA 625	8B03026	0.097	0.48	ND	0.966	02/03/08	02/07/08	
1,4-Dichlorobenzene	EPA 625	8B03026	0.19	0.48	ND	0.966	02/03/08	02/07/08	
Acenaphthene	EPA 625	8B03026	0.097	0.48	ND	0.966	02/03/08	02/07/08	
Acenaphthylene	EPA 625	8B03026	0.097	0.48	ND	0.966	02/03/08	02/07/08	
Anthracene	EPA 625	8B03026	0.097	0.48	ND	0.966	02/03/08	02/07/08	
Benzidine	EPA 625	8B03026	0.97	4.8	ND	0.966	02/03/08	02/07/08	L6
Benzo(a)anthracene	EPA 625	8B03026	0.097	4.8	ND	0.966	02/03/08	02/07/08	
Hexachlorobutadiene	EPA 625	8B03026	0.19	1.9	ND	0.966	02/03/08	02/07/08	
Benzo(a)pyrene	EPA 625	8B03026	0.097	1.9	ND	0.966	02/03/08	02/07/08	
Naphthalene	EPA 625	8B03026	0.097	0.97	ND	0.966	02/03/08	02/07/08	
Benzo(b)fluoranthene	EPA 625	8B03026	0.097	1.9	ND	0.966	02/03/08	02/07/08	
Benzo(g,h,i)perylene	EPA 625	8B03026	0.097	4.8	ND	0.966	02/03/08	02/07/08	
Benzo(k)fluoranthene	EPA 625	8B03026	0.097	0.48	ND	0.966	02/03/08	02/07/08	
Bis(2-chloroethoxy)methane	EPA 625	8B03026	0.097	0.48	ND	0.966	02/03/08	02/07/08	
Bis(2-chloroethyl)ether	EPA 625	8B03026	0.097	0.48	ND	0.966	02/03/08	02/07/08	
Bis(2-chloroisopropyl)ether	EPA 625	8B03026	0.097	0.48	ND	0.966	02/03/08	02/07/08	
Bis(2-ethylhexyl)phthalate	EPA 625	8B03026	1.6	4.8	1.7	0.966	02/03/08	02/07/08	J, B, L1
4-Bromophenyl phenyl ether	EPA 625	8B03026	0.097	0.97	ND	0.966	02/03/08	02/07/08	
Butyl benzyl phthalate	EPA 625	8B03026	0.68	4.8	1.9	0.966	02/03/08	02/07/08	J, B
2-Chloronaphthalene	EPA 625	8B03026	0.097	0.48	ND	0.966	02/03/08	02/07/08	
4-Chlorophenyl phenyl ether	EPA 625	8B03026	0.097	0.48	ND	0.966	02/03/08	02/07/08	
Chrysene	EPA 625	8B03026	0.097	0.48	ND	0.966	02/03/08	02/07/08	
Dibenz(a,h)anthracene	EPA 625	8B03026	0.097	0.48	ND	0.966	02/03/08	02/07/08	
Di-n-butyl phthalate	EPA 625	8B03026	0.19	1.9	ND	0.966	02/03/08	02/07/08	
3,3-Dichlorobenzidine	EPA 625	8B03026	0.39	4.8	ND	0.966	02/03/08	02/07/08	
Diethyl phthalate	EPA 625	8B03026	0.097	0.97	ND	0.966	02/03/08	02/07/08	
Dimethyl phthalate	EPA 625	8B03026	0.097	0.48	ND	0.966	02/03/08	02/07/08	
2,4-Dinitrophenol	EPA 625	8B03026	0.87	4.8	ND	0.966	02/03/08	02/07/08	
2,4-Dinitrotoluene	EPA 625	8B03026	0.19	4.8	ND	0.966	02/03/08	02/07/08	
2,6-Dinitrotoluene	EPA 625	8B03026	0.097	4.8	ND	0.966	02/03/08	02/07/08	
Di-n-octyl phthalate	EPA 625	8B03026	0.097	4.8	ND	0.966	02/03/08	02/07/08	
Fluoranthene	EPA 625	8B03026	0.097	0.48	ND	0.966	02/03/08	02/07/08	
Fluorene	EPA 625	8B03026	0.097	0.48	ND	0.966	02/03/08	02/07/08	
Hexachlorobenzene	EPA 625	8B03026	0.097	0.97	ND	0.966	02/03/08	02/07/08	
Hexachlorocyclopentadiene	EPA 625	8B03026	0.097	4.8	ND	0.966	02/03/08	02/07/08	
Hexachloroethane	EPA 625	8B03026	0.19	2.9	ND	0.966	02/03/08	02/07/08	
Indeno(1,2,3-cd)pyrene	EPA 625	8B03026	0.097	1.9	ND	0.966	02/03/08	02/07/08	
Isophorone	EPA 625	8B03026	0.097	0.97	ND	0.966	02/03/08	02/07/08	

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IRB0154 <Page 9 of 68>

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

Project ID: Annual Outfall 011

Report Number: IRB0154

Sampled: 02/03/08
Received: 02/03/08

ACID & BASE/NEUTRALS BY GC/MS (EPA 625)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IRB0154-01 (Outfall 011 - Water) - cont.									
Reporting Units: ug/l									
Nitrobenzene	EPA 625	8B03026	0.097	0.97	ND	0.966	02/03/08	02/07/08	
N-Nitrosodimethylamine	EPA 625	8B03026	0.097	1.9	ND	0.966	02/03/08	02/07/08	
N-Nitroso-di-n-propylamine	EPA 625	8B03026	0.097	1.9	ND	0.966	02/03/08	02/07/08	
N-Nitrosodiphenylamine	EPA 625	8B03026	0.097	0.97	ND	0.966	02/03/08	02/07/08	
Pentachlorophenol	EPA 625	8B03026	0.097	1.9	ND	0.966	02/03/08	02/07/08	
Phenanthrene	EPA 625	8B03026	0.097	0.48	ND	0.966	02/03/08	02/07/08	
Pyrene	EPA 625	8B03026	0.097	0.48	ND	0.966	02/03/08	02/07/08	
2,4,6-Trichlorophenol	EPA 625	8B03026	0.097	0.97	ND	0.966	02/03/08	02/07/08	
Surrogate: 2-Fluorophenol (30-120%)					70 %				
Surrogate: Phenol-d6 (35-120%)					81 %				
Surrogate: 2,4,6-Tribromophenol (40-120%)					108 %				
Surrogate: Nitrobenzene-d5 (45-120%)					81 %				
Surrogate: 2-Fluorobiphenyl (50-120%)					90 %				
Surrogate: Terphenyl-d14 (50-125%)					92 %				

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

Project ID: Annual Outfall 011

Report Number: IRB0154

Sampled: 02/03/08
Received: 02/03/08

PURGEABLES BY GC/MS (EPA 624)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IRB0154-01 (Outfall 011 - Water) - cont.									
Reporting Units: ug/l									
1,1,1-Trichloroethane	EPA 624	8B05039	0.30	0.50	ND	1	02/05/08	02/06/08	
1,1,2,2-Tetrachloroethane	EPA 624	8B05039	0.24	0.50	ND	1	02/05/08	02/06/08	
1,1,2-Trichloroethane	EPA 624	8B05039	0.30	0.50	ND	1	02/05/08	02/06/08	
1,1-Dichloroethane	EPA 624	8B05039	0.27	0.50	ND	1	02/05/08	02/06/08	
1,1-Dichloroethene	EPA 624	8B05039	0.42	0.50	ND	1	02/05/08	02/06/08	
1,2-Dichloroethane	EPA 624	8B05039	0.28	0.50	ND	1	02/05/08	02/06/08	
Benzene	EPA 624	8B05039	0.28	0.50	ND	1	02/05/08	02/06/08	
1,2-Dichlorobenzene	EPA 624	8B05039	0.32	0.50	ND	1	02/05/08	02/06/08	
Carbon tetrachloride	EPA 624	8B05039	0.28	0.50	ND	1	02/05/08	02/06/08	
1,2-Dichloropropane	EPA 624	8B05039	0.35	0.50	ND	1	02/05/08	02/06/08	
Chloroform	EPA 624	8B05039	0.33	0.50	ND	1	02/05/08	02/06/08	
1,3-Dichlorobenzene	EPA 624	8B05039	0.35	0.50	ND	1	02/05/08	02/06/08	
Ethylbenzene	EPA 624	8B05039	0.25	0.50	ND	1	02/05/08	02/06/08	
1,4-Dichlorobenzene	EPA 624	8B05039	0.37	0.50	ND	1	02/05/08	02/06/08	
Tetrachloroethene	EPA 624	8B05039	0.32	0.50	ND	1	02/05/08	02/06/08	
Toluene	EPA 624	8B05039	0.36	0.50	ND	1	02/05/08	02/06/08	
Bromodichloromethane	EPA 624	8B05039	0.30	0.50	ND	1	02/05/08	02/06/08	
Trichloroethene	EPA 624	8B05039	0.26	0.50	ND	1	02/05/08	02/06/08	
Bromoform	EPA 624	8B05039	0.40	0.50	ND	1	02/05/08	02/06/08	
Trichlorofluoromethane	EPA 624	8B05039	0.34	0.50	ND	1	02/05/08	02/06/08	
Bromomethane	EPA 624	8B05039	0.42	1.0	ND	1	02/05/08	02/06/08	
Trichlorotrifluoroethane (Freon 113)	EPA 624	8B05039	0.50	5.0	ND	1	02/05/08	02/06/08	
Vinyl chloride	EPA 624	8B05039	0.30	0.50	ND	1	02/05/08	02/06/08	
Chlorobenzene	EPA 624	8B05039	0.36	0.50	ND	1	02/05/08	02/06/08	
Xylenes, Total	EPA 624	8B05039	0.90	1.5	ND	1	02/05/08	02/06/08	
Chloroethane	EPA 624	8B05039	0.40	1.0	ND	1	02/05/08	02/06/08	
Chloromethane	EPA 624	8B05039	0.40	0.50	ND	1	02/05/08	02/06/08	
cis-1,3-Dichloropropene	EPA 624	8B05039	0.22	0.50	ND	1	02/05/08	02/06/08	
Dibromochloromethane	EPA 624	8B05039	0.28	0.50	ND	1	02/05/08	02/06/08	
Methylene chloride	EPA 624	8B05039	0.95	1.0	1.4	1	02/05/08	02/06/08	B
trans-1,2-Dichloroethene	EPA 624	8B05039	0.27	0.50	ND	1	02/05/08	02/06/08	
trans-1,3-Dichloropropene	EPA 624	8B05039	0.32	0.50	ND	1	02/05/08	02/06/08	
Surrogate: Dibromofluoromethane (80-120%)					111 %				
Surrogate: Toluene-d8 (80-120%)					103 %				
Surrogate: 4-Bromofluorobenzene (80-120%)					93 %				

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Project Manager

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IRB0154 <Page 5 of 68>

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

Project ID: Annual Outfall 011

Report Number: IRB0154

Sampled: 02/03/08

Received: 02/03/08

PURGEABLES BY GC/MS (EPA 624)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IRB0154-02 (Trip Blank - Water)									
Reporting Units: ug/l									
1,1,1-Trichloroethane	EPA 624	8B04024	0.30	0.50	ND	1	02/04/08	02/05/08	
1,1,2,2-Tetrachloroethane	EPA 624	8B04024	0.24	0.50	ND	1	02/04/08	02/05/08	
1,1,2-Trichloroethane	EPA 624	8B04024	0.30	0.50	ND	1	02/04/08	02/05/08	
1,1-Dichloroethane	EPA 624	8B04024	0.27	0.50	ND	1	02/04/08	02/05/08	
1,1-Dichloroethene	EPA 624	8B04024	0.42	0.50	ND	1	02/04/08	02/05/08	
1,2-Dichloroethane	EPA 624	8B04024	0.28	0.50	ND	1	02/04/08	02/05/08	
Benzene	EPA 624	8B04024	0.28	0.50	ND	1	02/04/08	02/05/08	
1,2-Dichlorobenzene	EPA 624	8B04024	0.32	0.50	ND	1	02/04/08	02/05/08	
Carbon tetrachloride	EPA 624	8B04024	0.28	0.50	ND	1	02/04/08	02/05/08	
1,2-Dichloropropane	EPA 624	8B04024	0.35	0.50	ND	1	02/04/08	02/05/08	
Chloroform	EPA 624	8B04024	0.33	0.50	ND	1	02/04/08	02/05/08	
1,3-Dichlorobenzene	EPA 624	8B04024	0.35	0.50	ND	1	02/04/08	02/05/08	
Ethylbenzene	EPA 624	8B04024	0.25	0.50	ND	1	02/04/08	02/05/08	
1,4-Dichlorobenzene	EPA 624	8B04024	0.37	0.50	ND	1	02/04/08	02/05/08	
Tetrachloroethene	EPA 624	8B04024	0.32	0.50	ND	1	02/04/08	02/05/08	
Toluene	EPA 624	8B04024	0.36	0.50	ND	1	02/04/08	02/05/08	
Bromodichloromethane	EPA 624	8B04024	0.30	0.50	ND	1	02/04/08	02/05/08	
Trichloroethene	EPA 624	8B04024	0.26	0.50	ND	1	02/04/08	02/05/08	
Bromoform	EPA 624	8B04024	0.40	0.50	ND	1	02/04/08	02/05/08	
Trichlorofluoromethane	EPA 624	8B04024	0.34	0.50	ND	1	02/04/08	02/05/08	
Bromomethane	EPA 624	8B04024	0.42	1.0	ND	1	02/04/08	02/05/08	
Trichlorotrifluoroethane (Freon 113)	EPA 624	8B04024	0.50	5.0	ND	1	02/04/08	02/05/08	
Vinyl chloride	EPA 624	8B04024	0.30	0.50	ND	1	02/04/08	02/05/08	
Chlorobenzene	EPA 624	8B04024	0.36	0.50	1.0	1	02/04/08	02/05/08	
Xylenes, Total	EPA 624	8B04024	0.90	1.5	ND	1	02/04/08	02/05/08	
Chloroethane	EPA 624	8B04024	0.40	1.0	ND	1	02/04/08	02/05/08	
Chloromethane	EPA 624	8B04024	0.40	0.50	ND	1	02/04/08	02/05/08	
cis-1,3-Dichloropropene	EPA 624	8B04024	0.22	0.50	ND	1	02/04/08	02/05/08	
Dibromochloromethane	EPA 624	8B04024	0.28	0.50	ND	1	02/04/08	02/05/08	
Methylene chloride	EPA 624	8B04024	0.95	1.0	ND	1	02/04/08	02/05/08	
trans-1,2-Dichloroethene	EPA 624	8B04024	0.27	0.50	ND	1	02/04/08	02/05/08	
trans-1,3-Dichloropropene	EPA 624	8B04024	0.32	0.50	ND	1	02/04/08	02/05/08	
Surrogate: Dibromofluoromethane (80-120%)					112 %				
Surrogate: Toluene-d8 (80-120%)					102 %				
Surrogate: 4-Bromofluorobenzene (80-120%)					91 %				

Level IV

TestAmerica Irvine
Joseph Doak
Project Manager

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IRB0154 <Page 6 of 68>

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

Project ID: Annual Outfall 011

Report Number: IRB0154

Sampled: 02/03/08
 Received: 02/03/08

PURGEABLES-- GC/MS (EPA 624)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IRB0154-01 (Outfall 011 - Water)									
Reporting Units: ug/l									
Acrolein	EPA 624	8B05039	4.0	5.0	ND	1	02/05/08	02/06/08	
Acrylonitrile	EPA 624	8B05039	0.70	2.0	ND	1	02/05/08	02/06/08	
2-Chloroethyl vinyl ether	EPA 624	8B05039	1.8	5.0	ND	1	02/05/08	02/06/08	
Surrogate: Dibromofluoromethane (80-120%)					111 %				
Surrogate: Toluene-d8 (80-120%)					103 %				
Surrogate: 4-Bromofluorobenzene (80-120%)					93 %				
Sample ID: IRB0154-02 (Trip Blank - Water)									
Reporting Units: ug/l									
Acrolein	EPA 624	8B04024	4.0	5.0	ND	1	02/04/08	02/05/08	
Acrylonitrile	EPA 624	8B04024	0.70	2.0	ND	1	02/04/08	02/05/08	
2-Chloroethyl vinyl ether	EPA 624	8B04024	1.8	5.0	ND	1	02/04/08	02/05/08	
Surrogate: Dibromofluoromethane (80-120%)					112 %				
Surrogate: Toluene-d8 (80-120%)					102 %				
Surrogate: 4-Bromofluorobenzene (80-120%)					91 %				

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IRB0154 <Page 7 of 68>

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

Project ID: Annual Outfall 011

Report Number: IRB0154

Sampled: 02/03/08
 Received: 02/03/08

PURGEABLES BY GC/MS, TENTATIVELY IDENTIFIED COMPOUNDS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IRB0154-01 (Outfall 011 - Water)									
Reporting Units: ug/l									
1,2-Dichloro-1,1,2-trifluoroethane	EPA 624 (MOD.)	8B05039	N/A	2.5	ND	1	02/05/08	02/06/08	
Cyclohexane	EPA 624 (MOD.)	8B05039	N/A	2.5	ND	1	02/05/08	02/06/08	
Sample ID: IRB0154-02 (Trip Blank - Water)									
Reporting Units: ug/l									
1,2-Dichloro-1,1,2-trifluoroethane	EPA 624 (MOD.)	8B04024	N/A	2.5	ND	1	02/04/08	02/05/08	
Cyclohexane	EPA 624 (MOD.)	8B04024	N/A	2.5	ND	1	02/04/08	02/05/08	

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IRB0154 <Page 8 of 68>

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

Project ID: Annual Outfall 011

Report Number: IRB0154

Sampled: 02/03/08

Received: 02/03/08

INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IRB0154-01 (Outfall 011 - Water) - cont.									
Reporting Units: mg/l									
Hexane Extractable Material (Oil & Grease) *	EPA 1664A	8B12074	1.3	4.8	4.0	1	02/12/08	02/12/08	J
Ammonia-N (Distilled)	EPA 350.2	8B07098	0.30	0.50	ND	1	02/07/08	02/08/08	
Biochemical Oxygen Demand	EPA 405.1	8B04070	0.59	2.0	1.2	1	02/04/08	02/09/08	J
Chloride	EPA 300.0	8B04043	0.25	0.50	9.9	1	02/04/08	02/04/08	
Fluoride	EPA 300.0	8B04043	0.15	0.50	0.28	1	02/04/08	02/04/08	J
Nitrate-N	EPA 300.0	8B04043	0.060	0.11	3.8	1	02/04/08	02/04/08	
Nitrite-N	EPA 300.0	8B04043	0.090	0.15	0.12	1	02/04/08	02/04/08	J
Nitrate/Nitrite-N	EPA 300.0	8B04043	0.15	0.26	3.9	1	02/04/08	02/04/08	
Residual Chlorine	EPA 330.5	8B04074	0.10	0.10	0.15	1	02/04/08	02/04/08	HFT
Sulfate *	EPA 300.0	8B04043	0.20	0.50	15	1	02/04/08	02/04/08	
Surfactants (MBAS)	SM5540-C	8B04097	0.044	0.10	0.049	1	02/04/08	02/04/08	J
Total Dissolved Solids	SM2540C	8B07123	10	10	130	1	02/07/08	02/07/08	
Total Organic Carbon	EPA 415.1	8B13116	0.50	1.0	9.1	1	02/13/08	02/13/08	
Total Suspended Solids *	EPA 160.2	8B05134	10	10	ND	1	02/05/08	02/05/08	

* Analysis not validated

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IRB0154 <Page 17 of 68>

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

Project ID: Annual Outfall 011
Report Number: IRB0154

Sampled: 02/03/08
Received: 02/03/08

INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IRB0154-01 (Outfall 011 - Water) - cont.									
Reporting Units: ml/l/hr									
Total Settleable Solids	EPA 160.5	8B04066	0.10	0.10	0.10	1	02/04/08	02/04/08	

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IRB0154 <Page 18 of 68>

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

Project ID: Annual Outfall 011

Report Number: IRB0154

Sampled: 02/03/08
Received: 02/03/08

INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IRB0154-01 (Outfall 011 - Water) - cont.									
Reporting Units: NTU									
Turbidity	EPA 180.1	8B04067	0.20	5.0	72	5	02/04/08	02/04/08	

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IRB0154 <Page 19 of 68>

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

Project ID: Annual Outfall 011

Report Number: IRB0154

Sampled: 02/03/08
Received: 02/03/08

INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IRB0154-01 (Outfall 011 - Water) - cont.									
Reporting Units: umhos/cm									
Specific Conductance	EPA 120.1	8B08056	1.0	1.0	170	1	02/07/08	02/07/08	

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IRB0154 <Page 21 of 68>



Client: TestAmerica Analytical-Irvine
17461 Derian Avenue, Suite 100
Irvine, CA 92614-5817

Attention: Joseph Doak
Sample: Water / 1 Sample
Project Name: IRB0154
P.O. Number: IRB0154
Method Number: 9315 (Modified)
Investigation: Hydrazines

REPORT

Laboratory No: 973192
Report Date: February 19, 2008
Sampling Date: February 3, 2008
Receiving Date: February 4, 2008
Extraction Date: February 5, 2008
Analysis Date: February 6, 2008
Units: µg/L
Reported By: JS

Analytical Results

Sample ID	Sample Descript	Sample Amount (mL)	Dilution Factor	Monomethyl Hydrazine	u-Dimethyl Hydrazine	Hydrazine	Qualifier Codes
707223-MB	* Method Blank	100	1	ND	ND	ND	None
973192	COFFEY OIL IRB0154-01	100	1	ND	ND	ND	None
MDL				0.56	0.32	0.15	
POL				5.0	5.0	1.00	
Sample Reporting Limits				5.0	5.0	1.00	

* Analysis not validated
LEVEL IV

[Signature]
Xuan Bang, Project Manager
Analytical Services, Truesdail Laboratories, Inc.

Note: Results based on detector #1 (UV=365nm) data.

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