





# DATA VALIDATION REPORT

NPDES Monitoring Program  
Routine Outfall 018

ANALYSIS: DIOXINS/FURANS  
SAMPLE DELIVERY GROUP: IPD1228

Prepared by

MEC<sup>x</sup>, LLC  
12269 East Vassar Drive  
Aurora, CO 80014

## 1. INTRODUCTION

Task Order Title: NPDES  
Contract Task Order: 1261.001D.01  
Sample Delivery Group: IPD1228  
Project Manager: P. Costa  
Matrix: Water  
Analysis: Dioxins/Furans  
QC Level: Level IV  
No. of Samples: 1  
No. of Reanalyses/Dilutions: 0  
Reviewer: E. Wessling  
Date of Review: June 26, 2006

The samples listed in Table 1 were validated based on the guidelines outlined in the *MEC<sup>x</sup> Data Validation Procedure for Dioxins and Furans (DVP-19, Rev. 0)*, *USEPA Method 1613*, and the *National Functional Guidelines for Chlorinated Dioxin/Furan Data Review (8/02)*. Any deviations from these procedures and guidelines are documented herein. Qualifiers were applied in cases where the data did not meet the required QC criteria or where special consideration by the data user is required. Data qualifiers were placed on Form Is with the associated qualification codes. Analytes that were rejected for any reason are denoted on the Form I as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

**Table 1. Sample Identification**

Client ID	Laboratory ID (Del Mar)	Laboratory ID (Alta)	Matrix	COC Method
Outfall 018	IPD1228-01	27595-001	Water	1613

## 2. DATA VALIDATION FINDINGS

### 2.1 SAMPLE MANAGEMENT

Following are findings associated with sample management:

#### 2.1.1 Sample Preservation, Handling, and Transport

The sample in this SDG was received at Del Mar Analytical within the temperature limits of 4°C ±2°C. The sample was shipped to Alta for dioxin/furan analysis and was received below the temperature limits at 0°C. Although one sample container was broken during transport, the remaining sample container was not noted to be damaged or frozen nor was the other container needed for reanalysis. No qualifications were required. According to the case narrative and laboratory login sheet, the sample was received intact and in good condition at both laboratories. No qualifications were required.

#### 2.1.2 Chain of Custody

The COC and transfer COC were legible and signed by the appropriate field and laboratory personnel, and accounted for the analysis presented in this SDG. As the sample was couriered directly to Del Mar Analytical-Irvine, custody seals were not required. The Client ID was added to the sample result summary by the reviewer. No qualifications were required.

#### 2.1.3 Holding Times

The sample was extracted and analyzed within one year of collection. No qualifications were required.

### 2.2 INSTRUMENT PERFORMANCE

Following are findings associated with instrument performance:

#### 2.2.1 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 (see section 2.3.2). 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%. No qualifications were required.

## 2.2.2 Mass Spectrometer Performance

The mass spectrometer performance was acceptable with the static resolving power greater than 10,000. No qualifications were required.

## 2.3 CALIBRATION

### 2.3.1 Initial Calibration

The initial calibration was analyzed 03/22/2006 on instrument VG-5. The calibration consisted of six concentration level standards (CS0 through CS5) analyzed to verify instrument linearity. The initial calibrations were 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 QC limits listed in Method 1613 for all standards. A representative number of %RSDs were verified from the raw data, and no calculation or transcription errors were noted. No qualifications were required.

### 2.3.2 Continuing Calibration

Calibration verification (VER) consisted of a mid-level standard (CS3) analyzed at the beginning of each analytical sequence. The VER was 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. A representative number of %Ds were verified from the raw data, and no calculation or transcription errors were noted. No qualifications were required.

WDM and isomer specificity compounds were added to the VER standard instead of being analyzed separately, as noted in section 2.2.1 of this report. No adverse effect was observed with this practice.

## 2.4 BLANKS

One method blank (0-7951-MB001) was extracted and analyzed with the sample in this SDG. No target compounds were detected in the method blank. No qualifications were required. A review of the method blank raw data and chromatograms indicated no false negatives. No qualifications were required.

## 2.5 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

One blank spike (0-7951-OPR001) was extracted and analyzed with the sample in this SDG. All recoveries were within the acceptance criteria listed in Table 6 of Method 1613. A review of the raw data and chromatograms indicated no transcription or calculation errors. No qualifications were required.

## 2.6 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

MS/MSD analyses were not performed in this SDG. Evaluation of method accuracy was based on the OPR results. No qualifications were required.

## 2.7 FIELD QC SAMPLES

Following are findings associated with field QC:

### 2.7.1 Field Blanks and Equipment Rinsates

The sample in this SDG had no field blank or equipment rinsate identified. No qualification of the site sample was required.

### 2.7.2 Field Duplicates

No field duplicates were identified in association with the sample in this SDG.

## 2.8 INTERNAL STANDARDS

The labeled standard recoveries were within the acceptance criteria listed in Table 7 of Method 1613. No qualifications were required.

## 2.9 COMPOUND IDENTIFICATION

The laboratory analyzed for polychlorinated dioxins/furans by EPA Method 1613. The compound identifications were verified from the raw data and no false negatives or positives were noted. No qualifications were required.

## 2.10 COMPOUND QUANTIFICATION AND REPORTED DETECTION LIMITS

Compound quantitation was verified from the raw data. The laboratory calculated and reported compound-specific detection limits. The detects below the laboratory lower calibration level were qualified as estimated, "J." These "J" values were annotated with the qualification code of "DNQ" to comply with the reporting requirements of the NPDES permit. No further qualifications were required.

Sample ID: **IPD1228-01**

*Outfall 018*

**EPA Method 1613**

**Client Data**

Name: Del Mar Analytical, Irvine  
 Project: IPD1228  
 Date Collected: 11-Apr-06  
 Time Collected: 1018

**Sample Data**

Matrix: Aqueous  
 Sample Size: 1.01 L

**Laboratory Data**

Lab Sample: 27595-001 Date Received: 14-Apr-06  
 QC Batch No.: 7951 Date Extracted: 20-Apr-06  
 Date Analyzed DB-5: 24-Apr-06 Date Analyzed DB-225: NA

Analyte	Conc. (ug/L)	DL <sup>a</sup>	EMPC <sup>b</sup>	Qualifiers	Labeled Standard	%R	LCL-UCL <sup>d</sup>	Qualifiers
2,3,7,8-TCDD	ND	0.00000161			<u>IS</u> 13C-2,3,7,8-TCDD	69.3	25 - 164	
1,2,3,7,8-PeCDD	ND	0.00000144			13C-1,2,3,7,8-PeCDD	60.1	25 - 181	
1,2,3,4,7,8-HxCDD	ND	0.00000292			13C-1,2,3,4,7,8-HxCDD	66.8	32 - 141	
1,2,3,6,7,8-HxCDD	ND	0.00000275			13C-1,2,3,6,7,8-HxCDD	70.2	28 - 130	
1,2,3,7,8,9-HxCDD	ND	0.00000272			13C-1,2,3,4,6,7,8-HpCDD	63.7	23 - 140	
1,2,3,4,6,7,8-HpCDD	0.0000185			J	13C-OCDD	48.1	17 - 157	
OCDD	0.000158				13C-2,3,7,8-TCDF	71.1	24 - 169	
2,3,7,8-TCDF	ND	0.00000140			13C-1,2,3,7,8-PeCDF	64.5	24 - 185	
1,2,3,7,8-PeCDF	ND	0.00000172			13C-2,3,4,7,8-PeCDF	59.4	21 - 178	
2,3,4,7,8-PeCDF	ND	0.00000193			13C-1,2,3,4,7,8-HxCDF	69.2	26 - 152	
1,2,3,4,7,8-HxCDF	ND	0.00000102			13C-1,2,3,6,7,8-HxCDF	74.9	26 - 123	
1,2,3,6,7,8-HxCDF	ND	0.000000930			13C-2,3,4,6,7,8-HxCDF	70.3	28 - 136	
2,3,4,6,7,8-HxCDF	ND	0.00000110			13C-1,2,3,7,8,9-HxCDF	66.7	29 - 147	
1,2,3,7,8,9-HxCDF	ND	0.000000633			13C-1,2,3,4,6,7,8-HpCDF	60.3	28 - 143	
1,2,3,4,6,7,8-HpCDF	0.00000377			J	13C-1,2,3,4,7,8,9-HpCDF	55.5	26 - 138	
1,2,3,4,7,8,9-HpCDF	ND	0.00000147			13C-OCDF	44.5	17 - 157	
OCDF	0.0000121			J	<u>CRS</u> 37Cl-2,3,7,8-TCDD	81.1	35 - 197	

**Totals**

Total TCDD	ND	0.00000161		
Total PeCDD	ND	0.00000144		
Total HxCDD	ND	0.00000512		
Total HpCDD	0.0000389			
Total TCDF	0.00000286			
Total PeCDF	ND	0.00000182		
Total HxCDF	0.00000179			
Total HpCDF	0.00000901			

**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 27-Apr-2006 09:49

*Level IV*







# DATA VALIDATION REPORT

NPDES Monitoring Program  
Routine Outfall 018

ANALYSIS: VOLATILES

SAMPLE DELIVERY GROUP: IPD1228

Prepared by

MEC<sup>x</sup>, LLC  
12269 East Vassar Drive  
Aurora, CO 80014

## 1. INTRODUCTION

Task Order Title: NPDES  
MEC<sup>X</sup> Project Number: 1261.001D.01  
Sample Delivery Group: IPD1228  
Project Manager: P. Costa  
Matrix: Water  
Analysis: Volatiles  
QC Level: Level IV  
No. of Samples: 2  
No. of Reanalyses/Dilutions: 0  
Reviewer: L. Calvin  
Date of Review: June 25, 2006

The samples listed in Table 1 were validated based on the guidelines outlined in the MEC<sup>X</sup> *Data Validation Procedure for Volatile Organics (DVP-2, Rev. 0)*, *EPA Method 624*, and the *National Functional Guidelines for Organic Data Review (2/94)*. Any deviations from these procedures are documented herein. Qualifiers were applied in cases where the data did not meet the required QC criteria or where special consideration by the data user is required. Data qualifiers were placed on Form Is with the associated qualification codes. Analytes that were rejected for any reason are denoted on the Form I as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

**Table 1. Sample Identification**

Client ID	Laboratory ID	Matrix	COC Method
Outfall 018	IPD1228-01	Water	624
Trip Blank	IPD1228-02	Water	624

## 2. DATA VALIDATION FINDINGS

### 2.1 SAMPLE MANAGEMENT

The samples in this SDG were received at the laboratory within the temperature limits of 4°C  $\pm$ 2°C, at 3°C. According to the case narrative for this SDG, the samples were received intact, on ice, and properly preserved. Information regarding lack of headspace in the VOA vials was not provided. No qualifications were required.

#### 2.1.2 Chain of Custody

The COC was signed and dated by both field and laboratory personnel. As the samples were couriered directly to the laboratory, custody seals were not required. No qualifications were required.

#### 2.1.3 Holding Times

The preserved water samples were analyzed for all target compounds within 14 days of collection. No qualifications were required.

### 2.2 GC/MS TUNING

The BFB tune performed at the beginning of each daily analytical sequence met the abundance criteria specified in EPA Method 624. No qualifications were required.

### 2.3 CALIBRATION

One initial calibration was associated with the sample analyses, dated 03/28/06. The average RRFs were  $\geq 0.05$ , and the %RSDs were  $\leq 35\%$  or  $r^2$  values  $\geq 0.995$  for all target compounds listed on the sample result summary forms. The continuing calibration associated with the sample analyses was dated 04/17/06. The %Ds exceeded the QC limit of  $\leq 20\%$  for carbon tetrachloride, 1,2-dichloroethane, and trichlorofluoromethane. Nondetect results for the aforementioned compounds were qualified as estimated, "UJ," in sample Outfall 002. Sample Trip Blank was a field QC sample and required no qualification for the %D outliers. No further qualifications were required.

### 2.4 BLANKS

One method blank (6D17002-BLK1) was analyzed with this SDG. No target compounds were detected above the MDLs in the method blank. Review of the method blank raw data indicated no false negatives. No qualifications were required.

## 2.5 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

One blank spike (6D17002-BS1) was analyzed with this SDG. All recoveries were within the laboratory-established QC limits. No qualifications were required.

## 2.6 SURROGATE RECOVERY

Surrogate recoveries were within the laboratory QC limits of 80-120% for this SDG. No qualifications were required.

## 2.7 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

MS/MSD analyses were not performed on the sample of this SDG. Evaluation of method accuracy was based on the blank spike results. No qualifications were required.

## 2.8 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:

### 2.8.1 Trip Blanks

Sample Trip Blank was the trip blank associated with site sample Outfall 018. No target compounds were detected above the MDL in the trip blank. No qualifications were required.

### 2.8.2 Field Blanks and Equipment Rinsates

There were no field blank or equipment rinsate samples identified for this SDG. No qualifications were required.

### 2.8.3 Field Duplicates

There were no field duplicate samples identified for this SDG.

## 2.9 INTERNAL STANDARDS PERFORMANCE

The internal standard area counts and retention times were within the control limits established by the continuing calibration standard: -50%/+100% for internal standard areas and  $\pm 30$  seconds

for retention times. The internal standard areas were checked from the raw data, and no transcription or calculation errors were noted. No qualifications were required.

## 2.10 COMPOUND IDENTIFICATION

The laboratory analyzed for volatile target compounds by EPA Method 624. Review of the sample chromatograms, retention times, and spectra indicated no problems with target compound identification. No qualifications were required.

## 2.11 COMPOUND QUANTIFICATION AND REPORTED DETECTION LIMITS

Compound quantification is verified at a Level IV data validation. No calculation or transcription errors were found. The reporting limits were supported by the low point of the initial calibration and the laboratory MDLs. No qualifications were required.

## 2.12 TENTATIVELY IDENTIFIED COMPOUNDS

TICs were not reported by the laboratory for this SDG. No qualifications were required.

## 2.13 SYSTEM PERFORMANCE

Review of the raw data indicated no problems with system performance. No qualifications were required.



MWH-Pasadena/Boeing  
300 North Lake Avenue, Suite 1200  
Pasadena, CA 91101  
Attention: Bronwyn Kelly

Project ID: Routine Outfall 018

Report Number: IPD1228

Sampled: 04/11/06  
Received: 04/12/06

PURGEABLES BY GC/MS (EPA 624)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
<b>Sample ID: IPD1228-01 (Outfall 018 - Water)</b>									
Reporting Units: ug/l									
Benzene	EPA 624	6D17002	0.28	2.0	ND	1	04/17/06	04/17/06	u
Carbon tetrachloride	EPA 624	6D17002	0.28	5.0	ND	1	04/17/06	04/17/06	uT c
Chloroform	EPA 624	6D17002	0.33	2.0	ND	1	04/17/06	04/17/06	u
1,1-Dichloroethane	EPA 624	6D17002	0.27	2.0	ND	1	04/17/06	04/17/06	u
1,2-Dichloroethane	EPA 624	6D17002	0.28	2.0	ND	1	04/17/06	04/17/06	uT c
1,1-Dichloroethene	EPA 624	6D17002	0.42	3.0	ND	1	04/17/06	04/17/06	u
Ethylbenzene	EPA 624	6D17002	0.25	2.0	ND	1	04/17/06	04/17/06	u
Tetrachloroethene	EPA 624	6D17002	0.32	2.0	ND	1	04/17/06	04/17/06	u
Toluene	EPA 624	6D17002	0.36	2.0	ND	1	04/17/06	04/17/06	u
1,1,1-Trichloroethane	EPA 624	6D17002	0.30	2.0	ND	1	04/17/06	04/17/06	u
1,1,2-Trichloroethane	EPA 624	6D17002	0.30	2.0	ND	1	04/17/06	04/17/06	u
Trichloroethene	EPA 624	6D17002	0.26	5.0	ND	1	04/17/06	04/17/06	u
Trichlorofluoromethane	EPA 624	6D17002	0.34	5.0	ND	1	04/17/06	04/17/06	uT c
Vinyl chloride	EPA 624	6D17002	0.26	5.0	ND	1	04/17/06	04/17/06	u
Xylenes, Total	EPA 624	6D17002	0.90	4.0	ND	1	04/17/06	04/17/06	u
Surrogate: Dibromofluoromethane (80-120%)					107 %				
Surrogate: Toluene-d8 (80-120%)					106 %				
Surrogate: 4-Bromofluorobenzene (80-120%)					110 %				
<b>Sample ID: IPD1228-02 (Trip Blank - Water)</b>									
Reporting Units: ug/l									
Benzene	EPA 624	6D17002	0.28	2.0	ND	1	04/17/06	04/17/06	u
Carbon tetrachloride	EPA 624	6D17002	0.28	5.0	ND	1	04/17/06	04/17/06	u
Chloroform	EPA 624	6D17002	0.33	2.0	ND	1	04/17/06	04/17/06	u
1,1-Dichloroethane	EPA 624	6D17002	0.27	2.0	ND	1	04/17/06	04/17/06	u
1,2-Dichloroethane	EPA 624	6D17002	0.28	2.0	ND	1	04/17/06	04/17/06	u
1,1-Dichloroethene	EPA 624	6D17002	0.42	3.0	ND	1	04/17/06	04/17/06	u
Ethylbenzene	EPA 624	6D17002	0.25	2.0	ND	1	04/17/06	04/17/06	u
Tetrachloroethene	EPA 624	6D17002	0.32	2.0	ND	1	04/17/06	04/17/06	u
Toluene	EPA 624	6D17002	0.36	2.0	ND	1	04/17/06	04/17/06	u
1,1,1-Trichloroethane	EPA 624	6D17002	0.30	2.0	ND	1	04/17/06	04/17/06	u
1,1,2-Trichloroethane	EPA 624	6D17002	0.30	2.0	ND	1	04/17/06	04/17/06	u
Trichloroethene	EPA 624	6D17002	0.26	5.0	ND	1	04/17/06	04/17/06	u
Trichlorofluoromethane	EPA 624	6D17002	0.34	5.0	ND	1	04/17/06	04/17/06	u
Vinyl chloride	EPA 624	6D17002	0.26	5.0	ND	1	04/17/06	04/17/06	u
Xylenes, Total	EPA 624	6D17002	0.90	4.0	ND	1	04/17/06	04/17/06	u
Surrogate: Dibromofluoromethane (80-120%)					103 %				
Surrogate: Toluene-d8 (80-120%)					106 %				
Surrogate: 4-Bromofluorobenzene (80-120%)					110 %				

view qual code

Level IV

Del Mar Analytical - Irvine  
Michele Chamberlin  
Project Manager

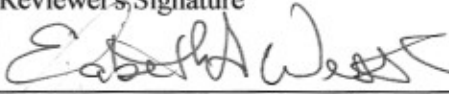


**CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA**

MECX, LLC  
 12260 East Vassar Drive  
 Suite 500  
 Lakewood, CO 80226

Package ID B4WC87  
 Task Order 1261.001D.01  
 SDG No. IPD1228  
 No. of Analyses 1

Laboratory Del Mar  
 Reviewer E. Wessling  
 Analysis/Method General Chemistry

Date: June 26, 2006  
 Reviewer's Signature  


ACTION ITEMS <sup>a</sup>	
1. Case Narrative Deficiencies	
2. Out of Scope Analyses	
3. Analyses Not Conducted	
4. Missing Hardcopy Deliverables	
5. Incorrect Hardcopy Deliverables	
6. Deviations from Analysis	<del>Qualifications were assigned for the following:</del>
Protocol, e.g.,	
Holding Times	
GC/MS Tune/Inst. Performance	
Calibration	
Method blanks	
Surrogates	
Matrix Spike/Dup LCS	
Field QC	
Internal Standard Performance	
Compound Identification	
Quantitation	
System Performance	
COMMENTS <sup>b</sup>	Acceptable as reviewed
<sup>a</sup> Subcontracted analytical laboratory is not meeting contract and/or method requirements. <sup>b</sup> Differences in protocol have been adopted by the laboratory but no action against the laboratory is required.	



# DATA VALIDATION REPORT

NPDES Sampling  
Outfall 018

ANALYSIS: GENERAL MINERALS

SAMPLE DELIVERY GROUP: IPD1228

Prepared by

MEC<sup>x</sup>, LLC  
12269 East Vassar Drive  
Aurora, CO 80014

## 1. INTRODUCTION

Task Order Title: NPDES Sampling  
MEC<sup>X</sup> Project Number: 1261.001D.01  
Sample Delivery Group: IPD1228  
Project Manager: P. Costa  
Matrix: Water  
Analysis: General Minerals  
QC Level: Level IV  
No. of Samples: 1  
No. of Reanalyses/Dilutions: 0  
Reviewer: E. Wessling  
Date of Review: June 26, 2006

The sample listed in Table 1 was validated based on the guidelines outlined in the *MEC<sup>X</sup> Data Validation Procedure for General Minerals (DVP-6, Rev. 0)*, *USEPA Methods for Chemical Analysis of Water and Wastes Methods 120.1, 180.1 and 350.2*, and validation guidelines outlined in the *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (2/94)*. Any deviations from these procedures and guidelines are documented herein. Qualifiers were applied in cases where the data did not meet the required QC criteria or where special consideration by the data user is required. Data qualifiers were placed on Form Is with the associated qualification codes. Analytes that were rejected for any reason are denoted on the Form Is as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

**Table 1. Sample Identification**

Client ID	Laboratory ID	Matrix	COC Method
Outfall 018	IPD1228-01	Water	General Minerals

## 2. DATA VALIDATION FINDINGS

### 2.1 SAMPLE MANAGEMENT

Following are findings associated with sample management:

#### 2.1.1 Sample Preservation, Handling, and Transport

The sample in this SDG was received at the laboratory within the temperature limits of  $4^{\circ}\text{C} \pm 2^{\circ}\text{C}$  at  $3^{\circ}\text{C}$ . No preservation problems were noted by the laboratory. No qualifications were required.

#### 2.1.2 Chain of Custody

The COC was signed and dated by field and laboratory personnel and accounted for the sample and all analyses presented in this SDG. As the sample was couriered directly from the field to the laboratory, custody seals were not necessary. No qualifications were required.

#### 2.1.3 Holding Times

The holding times were assessed by comparing the date of collection with the dates of analysis. All analyses were performed within the method-specified holding times. No qualifications were required.

### 2.2 CALIBRATION

For all applicable analyses, the initial calibration correlation coefficients were  $\geq 0.995$  and the ICV and CCV recoveries were within the control limits of 90-110%. For those methods requiring weight determinations, balance calibration logs were reviewed and found to be acceptable. For ammonia, no information regarding the standardization of the titrant was provided; therefore, the LCS recovery was evaluated to determine calibration compliance. As the LCS was within control, no qualifications were deemed necessary. No further qualifications were required.

### 2.3 BLANKS

There were no detects in the method blanks or CCBs associated with the sample analyses at levels sufficient to require site sample qualification. Raw data was reviewed to verify the blank data. No qualifications were required.

## 2.4 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

The reported LCS recoveries were within the laboratory-established control limits. No qualifications were required.

## 2.5 LABORATORY DUPLICATES

No MS/MSD or laboratory duplicate analyses were performed in association with the sample in this SDG; therefore, no assessment was made with respect to this criterion.

## 2.6 MATRIX SPIKES

No MS/MSD analyses were performed in association with the sample in this SDG; therefore, no assessment was made with respect to this criterion. Evaluation of all method accuracy was based on LCS results. No qualifications were required.

## 2.7 SAMPLE RESULT VERIFICATION

A Level IV review was performed for the sample in this data package. Calculations were verified, and the sample results reported on the Form Is were verified against the raw data. No qualifications were required.

## 2.8 FIELD QC SAMPLES

Field QC samples are evaluated, and if necessary, qualified based only on laboratory blanks. Any remaining detects are used to evaluate the associated sample. The following are findings associated with field QC samples:

### 2.8.1 Field Blanks and Equipment Rinsates

The sample in this SDG had no associated field QC samples. No qualifications were required.

### 2.8.2 Field Duplicates

There were no field duplicate pairs associated with this SDG.



# Del Mar Analytical

17461 Derian Ave., Suite 100, Irvine, CA 92614 (949) 261-1022 FAX (949) 260-3297  
 1014 E. Cooley Dr., Suite A, Colton, CA 92324 (909) 370-4667 FAX (909) 370-1046  
 9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851  
 2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

MWH-Pasadena/Boeing  
 300 North Lake Avenue, Suite 1200  
 Pasadena, CA 91101  
 Attention: Bronwyn Kelly

Project ID: Routine Outfall 018

Report Number: IPD1228

Sampled: 04/11/06  
 Received: 04/12/06

## INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IPD1228-01 (Outfall 018 - Water) - cont.									
Reporting Units: mg/l									
Ammonia-N (Distilled)	EPA 350.2	6D13122	0.30	0.50	ND	1	04/13/06	04/13/06	U
Biochemical Oxygen Demand	EPA 405.1	6D13078	0.59	2.0	3.2	1	04/13/06	04/18/06	*
Chloride	EPA 300.0	6D12138	0.15	0.50	20	1	04/12/06	04/13/06	*
Nitrate/Nitrite-N	EPA 300.0	6D12138	0.080	0.15	0.85	1	04/12/06	04/13/06	*
Oil & Grease	EPA 413.1	6D14054	0.89	4.7	ND	1	04/14/06	04/14/06	*
Sulfate	EPA 300.0	6D12138	0.45	0.50	58	1	04/12/06	04/13/06	*
Surfactants (MBAS)	EPA 425.1	6D13003	0.044	0.10	0.066	1	04/13/06	04/13/06	*
Total Dissolved Solids	EPA 160.1	6D13076	10	10	230	1	04/13/06	04/13/06	*
Total Suspended Solids	EPA 160.2	6D15045	10	10	ND	1	04/15/06	04/17/06	*
Sample ID: IPD1228-01 (Outfall 018 - Water)									
Reporting Units: ml/hr									
Total Settleable Solids	EPA 160.5	6D13058	0.10	0.10	ND	1	04/13/06	04/13/06	*
Sample ID: IPD1228-01 (Outfall 018 - Water)									
Reporting Units: NTU									
Turbidity	EPA 180.1	6D13084	0.040	1.0	5.7	1	04/13/06	04/13/06	
Sample ID: IPD1228-01 (Outfall 018 - Water)									
Reporting Units: ug/l									
Total Cyanide	EPA 335.2	6D17101	2.2	5.0	ND	1	04/17/06	04/17/06	*
Perchlorate	EPA 314.0	6D17066	0.80	4.0	ND	1	04/17/06	04/18/06	*
Sample ID: IPD1228-01 (Outfall 018 - Water)									
Reporting Units: umhos/cm									
Specific Conductance	EPA 120.1	6D13071	1.0	1.0	410	1	04/13/06	04/13/06	

*Raw and Calc*

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\* - analysis not validated

Del Mar Analytical - Irvine  
 Michele Chamberlin  
 Project Manager

# LEVEL I

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# **APPENDIX G**

## **Section 43**

Outfall 002, May 11, 2006

Del Mar Analytical Laboratory Report





**LABORATORY REPORT**

Prepared For: MWH-Pasadena/Boeing  
300 North Lake Avenue, Suite 1200  
Pasadena, CA 91101  
Attention: Bronwyn Kelly

Project: Routine Outfall 002

Sampled: 05/11/06  
Received: 05/11/06  
Issued: 06/18/06 14:12

NELAP #01108CA California ELAP#1197 CSDLAC #10117

*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 Del Mar Analytical and its client. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical. The Chain of Custody, 1 page, is included and is 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.

LABORATORY ID	CLIENT ID	MATRIX
IPE1134-01	Outfall 002	Water
IPE1134-02	Trip Blank	Water

Reviewed By:

**Del Mar Analytical - Irvine**  
Michele Chamberlin  
Project Manager



MWH-Pasadena/Boeing  
300 North Lake Avenue, Suite 1200  
Pasadena, CA 91101  
Attention: Bronwyn Kelly

Project ID: Routine Outfall 002

Report Number: IPE1134

Sampled: 05/11/06

Received: 05/11/06

**PURGEABLES BY GC/MS (EPA 624)**

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
<b>Sample ID: IPE1134-01 (Outfall 002 - Water)</b>									
<b>Reporting Units: ug/l</b>									
Benzene	EPA 624	6E21009	0.28	2.0	ND	1	05/21/06	05/21/06	
Carbon tetrachloride	EPA 624	6E21009	0.28	5.0	ND	1	05/21/06	05/21/06	
Chloroform	EPA 624	6E21009	0.33	2.0	ND	1	05/21/06	05/21/06	
1,1-Dichloroethane	EPA 624	6E21009	0.27	2.0	ND	1	05/21/06	05/21/06	
1,2-Dichloroethane	EPA 624	6E21009	0.28	2.0	ND	1	05/21/06	05/21/06	L, M1
1,1-Dichloroethene	EPA 624	6E21009	0.42	3.0	ND	1	05/21/06	05/21/06	
Ethylbenzene	EPA 624	6E21009	0.25	2.0	ND	1	05/21/06	05/21/06	
Tetrachloroethene	EPA 624	6E21009	0.32	2.0	ND	1	05/21/06	05/21/06	
Toluene	EPA 624	6E21009	0.36	2.0	ND	1	05/21/06	05/21/06	
1,1,1-Trichloroethane	EPA 624	6E21009	0.30	2.0	ND	1	05/21/06	05/21/06	
1,1,2-Trichloroethane	EPA 624	6E21009	0.30	2.0	ND	1	05/21/06	05/21/06	
Trichloroethene	EPA 624	6E21009	0.26	5.0	ND	1	05/21/06	05/21/06	
Trichlorofluoromethane	EPA 624	6E21009	0.34	5.0	ND	1	05/21/06	05/21/06	
Vinyl chloride	EPA 624	6E21009	0.26	5.0	ND	1	05/21/06	05/21/06	
Xylenes, Total	EPA 624	6E21009	0.90	4.0	ND	1	05/21/06	05/21/06	
<i>Surrogate: Dibromofluoromethane (80-120%)</i>					96 %				
<i>Surrogate: Toluene-d8 (80-120%)</i>					90 %				
<i>Surrogate: 4-Bromofluorobenzene (80-120%)</i>					92 %				

**Sample ID: IPE1134-02 (Trip Blank - Water)**

**Reporting Units: ug/l**

Benzene	EPA 624	6E21009	0.28	2.0	ND	1	05/21/06	05/21/06	
Carbon tetrachloride	EPA 624	6E21009	0.28	5.0	ND	1	05/21/06	05/21/06	
Chloroform	EPA 624	6E21009	0.33	2.0	ND	1	05/21/06	05/21/06	
1,1-Dichloroethane	EPA 624	6E21009	0.27	2.0	ND	1	05/21/06	05/21/06	
1,2-Dichloroethane	EPA 624	6E21009	0.28	2.0	ND	1	05/21/06	05/21/06	L
1,1-Dichloroethene	EPA 624	6E21009	0.42	3.0	ND	1	05/21/06	05/21/06	
Ethylbenzene	EPA 624	6E21009	0.25	2.0	ND	1	05/21/06	05/21/06	
Tetrachloroethene	EPA 624	6E21009	0.32	2.0	ND	1	05/21/06	05/21/06	
Toluene	EPA 624	6E21009	0.36	2.0	ND	1	05/21/06	05/21/06	
1,1,1-Trichloroethane	EPA 624	6E21009	0.30	2.0	ND	1	05/21/06	05/21/06	
1,1,2-Trichloroethane	EPA 624	6E21009	0.30	2.0	ND	1	05/21/06	05/21/06	
Trichloroethene	EPA 624	6E21009	0.26	5.0	ND	1	05/21/06	05/21/06	
Trichlorofluoromethane	EPA 624	6E21009	0.34	5.0	ND	1	05/21/06	05/21/06	
Vinyl chloride	EPA 624	6E21009	0.26	5.0	ND	1	05/21/06	05/21/06	
Xylenes, Total	EPA 624	6E21009	0.90	4.0	ND	1	05/21/06	05/21/06	
<i>Surrogate: Dibromofluoromethane (80-120%)</i>					91 %				
<i>Surrogate: Toluene-d8 (80-120%)</i>					89 %				
<i>Surrogate: 4-Bromofluorobenzene (80-120%)</i>					94 %				

**Del Mar Analytical - Irvine**  
Michele Chamberlin  
Project Manager



MWH-Pasadena/Boeing  
300 North Lake Avenue, Suite 1200  
Pasadena, CA 91101  
Attention: Bronwyn Kelly

Project ID: Routine Outfall 002

Report Number: IPE1134

Sampled: 05/11/06  
Received: 05/11/06

**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
<b>Sample ID: IPE1134-01 (Outfall 002 - Water)</b>									
<b>Reporting Units: ug/l</b>									
<b>Bis(2-ethylhexyl)phthalate</b>	EPA 625	6E16058	1.6	4.8	<b>2.0</b>	0.952	05/16/06	05/22/06	J
<b>2,4-Dinitrotoluene</b>	EPA 625	6E16058	0.19	8.6	<b>0.23</b>	0.952	05/16/06	05/22/06	J
N-Nitrosodimethylamine	EPA 625	6E16058	0.095	7.6	ND	0.952	05/16/06	05/22/06	
Pentachlorophenol	EPA 625	6E16058	0.095	7.6	ND	0.952	05/16/06	05/22/06	
2,4,6-Trichlorophenol	EPA 625	6E16058	0.095	5.7	ND	0.952	05/16/06	05/22/06	
Surrogate: 2-Fluorophenol (30-120%)					66 %				
Surrogate: Phenol-d6 (35-120%)					79 %				
Surrogate: 2,4,6-Tribromophenol (45-120%)					83 %				
Surrogate: Nitrobenzene-d5 (45-120%)					83 %				
Surrogate: 2-Fluorobiphenyl (45-120%)					93 %				
Surrogate: Terphenyl-d14 (45-120%)					85 %				

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Pasadena, CA 91101  
Attention: Bronwyn Kelly

Project ID: Routine Outfall 002

Report Number: IPE1134

Sampled: 05/11/06

Received: 05/11/06

**ORGANOCHLORINE PESTICIDES (EPA 608)**

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
<b>Sample ID: IPE1134-01 (Outfall 002 - Water) - cont.</b>									
<b>Reporting Units: ug/l</b>									
alpha-BHC	EPA 608	6E16049	0.00094	0.0094	ND	0.943	05/16/06	05/16/06	
<i>Surrogate: Decachlorobiphenyl (45-120%)</i>					79 %				
<i>Surrogate: Tetrachloro-m-xylene (35-115%)</i>					68 %				

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Sampled: 05/11/06

Received: 05/11/06

## METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
<b>Sample ID: IPE1134-01 (Outfall 002 - Water) - cont.</b>									
Reporting Units: mg/l									
Zinc	EPA 200.7	6E13046	0.015	0.020	ND	1	05/13/06	05/18/06	
<b>Sample ID: IPE1134-01 (Outfall 002 - Water)</b>									
Reporting Units: ug/l									
Cadmium	EPA 200.8	6E12070	0.025	1.0	ND	1	05/12/06	05/12/06	
Copper	EPA 200.8	6E12070	0.25	2.0	<b>1.2</b>	1	05/12/06	05/12/06	J
Lead	EPA 200.8	6E12070	0.040	1.0	<b>12</b>	1	05/12/06	05/12/06	
Mercury	EPA 245.1	6E12077	0.050	0.20	ND	1	05/12/06	05/12/06	
Selenium	EPA 200.8	6E12070	0.30	2.0	<b>0.32</b>	1	05/12/06	05/12/06	J
<b>Sample ID: IPE1134-01RE1 (Outfall 002 - Water)</b>									
Reporting Units: ug/l									
Lead	EPA 200.8	6E31131	0.040	1.0	<b>6.2</b>	1	05/31/06	06/01/06	

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300 North Lake Avenue, Suite 1200  
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Attention: Bronwyn Kelly

Project ID: Routine Outfall 002

Report Number: IPE1134

Sampled: 05/11/06

Received: 05/11/06

**INORGANICS**

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
<b>Sample ID: IPE1134-01 (Outfall 002 - Water) - cont.</b>									
Reporting Units: mg/l									
Ammonia-N (Distilled)	EPA 350.2	6E19092	0.30	0.50	<b>0.84</b>	1	05/19/06	05/19/06	
Biochemical Oxygen Demand	EPA 405.1	6E12090	0.59	2.0	<b>1.0</b>	1	05/12/06	05/17/06	J
Chloride	EPA 300.0	6E11111	3.0	10	<b>49</b>	20	05/11/06	05/12/06	
Nitrate-N	EPA 300.0	6E11111	0.080	0.15	ND	1	05/11/06	05/12/06	
Nitrite-N	EPA 300.0	6E11111	0.080	0.15	ND	1	05/11/06	05/12/06	
Nitrate/Nitrite-N	EPA 300.0	6E11111	0.080	0.15	ND	1	05/11/06	05/12/06	
Oil & Grease	EPA 413.1	6E15050	0.89	4.7	ND	1	05/15/06	05/15/06	
Sulfate	EPA 300.0	6E11111	9.0	10	<b>270</b>	20	05/11/06	05/12/06	
Surfactants (MBAS)	SM5540-C	6E11088	0.044	0.10	<b>0.048</b>	1	05/11/06	05/11/06	J
Total Dissolved Solids	SM2540C	6E17074	10	10	<b>700</b>	1	05/17/06	05/17/06	
Total Suspended Solids	EPA 160.2	6E17105	10	10	ND	1	05/17/06	05/17/06	
<b>Sample ID: IPE1134-01 (Outfall 002 - Water)</b>									
Reporting Units: ml/l/hr									
Total Settleable Solids	EPA 160.5	6E12116	0.10	0.10	ND	1	05/12/06	05/12/06	
<b>Sample ID: IPE1134-01 (Outfall 002 - Water)</b>									
Reporting Units: NTU									
Turbidity	EPA 180.1	6E12113	0.040	1.0	<b>0.57</b>	1	05/12/06	05/12/06	J
<b>Sample ID: IPE1134-01 (Outfall 002 - Water)</b>									
Reporting Units: ug/l									
Total Cyanide	EPA 335.2	6E12098	2.2	5.0	ND	1	05/12/06	05/12/06	
Perchlorate	EPA 314.0	6E19058	0.80	4.0	ND	1	05/19/06	05/19/06	
<b>Sample ID: IPE1134-01 (Outfall 002 - Water)</b>									
Reporting Units: umhos/cm									
Specific Conductance	EPA 120.1	6E17079	1.0	1.0	<b>1100</b>	1	05/17/06	05/17/06	

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Michele Chamberlin  
Project Manager

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MWH-Pasadena/Boeing  
300 North Lake Avenue, Suite 1200  
Pasadena, CA 91101  
Attention: Bronwyn Kelly

Project ID: Routine Outfall 002

Report Number: IPE1134

Sampled: 05/11/06

Received: 05/11/06

**SHORT HOLD TIME DETAIL REPORT**

Sample ID: Outfall 002 (IPE1134-01) - Water	Hold Time (in days)	Date/Time Sampled	Date/Time Received	Date/Time Extracted	Date/Time Analyzed
EPA 160.5	2	05/11/2006 13:22	05/11/2006 20:00	05/12/2006 14:00	05/12/2006 15:00
EPA 180.1	2	05/11/2006 13:22	05/11/2006 20:00	05/12/2006 13:30	05/12/2006 14:30
EPA 300.0	2	05/11/2006 13:22	05/11/2006 20:00	05/11/2006 23:30	05/12/2006 00:14
EPA 405.1	2	05/11/2006 13:22	05/11/2006 20:00	05/12/2006 12:00	05/17/2006 13:00
SM5540-C	2	05/11/2006 13:22	05/11/2006 20:00	05/11/2006 21:00	05/11/2006 22:19

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Attention: Bronwyn Kelly

Project ID: Routine Outfall 002

Report Number: IPE1134

Sampled: 05/11/06

Received: 05/11/06

**METHOD BLANK/QC DATA**
**PURGEABLES BY GC/MS (EPA 624)**

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	Limit	RPD	RPD Limit	Data Qualifiers
<b>Batch: 6E21009 Extracted: 05/21/06</b>											
<b>Blank Analyzed: 05/21/2006 (6E21009-BLK1)</b>											
Benzene	ND	2.0	0.28	ug/l							
Carbon tetrachloride	ND	5.0	0.28	ug/l							
Chloroform	ND	2.0	0.33	ug/l							
1,1-Dichloroethane	ND	2.0	0.27	ug/l							
1,2-Dichloroethane	ND	2.0	0.28	ug/l							
1,1-Dichloroethene	ND	3.0	0.42	ug/l							
Ethylbenzene	ND	2.0	0.25	ug/l							
Tetrachloroethene	ND	2.0	0.32	ug/l							
Toluene	ND	2.0	0.36	ug/l							
1,1,1-Trichloroethane	ND	2.0	0.30	ug/l							
1,1,2-Trichloroethane	ND	2.0	0.30	ug/l							
Trichloroethene	ND	5.0	0.26	ug/l							
Trichlorofluoromethane	ND	5.0	0.34	ug/l							
Vinyl chloride	ND	5.0	0.26	ug/l							
Xylenes, Total	ND	4.0	0.90	ug/l							
Surrogate: Dibromofluoromethane	22.5			ug/l	25.0		90	80-120			
Surrogate: Toluene-d8	22.6			ug/l	25.0		90	80-120			
Surrogate: 4-Bromofluorobenzene	23.3			ug/l	25.0		93	80-120			
<b>LCS Analyzed: 05/21/2006 (6E21009-BS1)</b>											
Benzene	23.5	2.0	0.28	ug/l	25.0		94	65-120			
Carbon tetrachloride	32.5	5.0	0.28	ug/l	25.0		130	65-140			
Chloroform	26.8	2.0	0.33	ug/l	25.0		107	65-130			
1,1-Dichloroethane	25.2	2.0	0.27	ug/l	25.0		101	65-130			
1,2-Dichloroethane	35.3	2.0	0.28	ug/l	25.0		141	60-140			L
1,1-Dichloroethene	22.3	3.0	0.42	ug/l	25.0		89	70-130			
Ethylbenzene	24.0	2.0	0.25	ug/l	25.0		96	70-125			
Tetrachloroethene	25.6	2.0	0.32	ug/l	25.0		102	65-125			
Toluene	24.0	2.0	0.36	ug/l	25.0		96	70-125			
1,1,1-Trichloroethane	29.0	2.0	0.30	ug/l	25.0		116	65-135			
1,1,2-Trichloroethane	25.9	2.0	0.30	ug/l	25.0		104	65-125			
Trichloroethene	24.7	5.0	0.26	ug/l	25.0		99	70-125			
Trichlorofluoromethane	27.7	5.0	0.34	ug/l	25.0		111	60-140			
Vinyl chloride	27.2	5.0	0.26	ug/l	25.0		109	50-130			
Surrogate: Dibromofluoromethane	25.2			ug/l	25.0		101	80-120			
Surrogate: Toluene-d8	23.4			ug/l	25.0		94	80-120			

**Del Mar Analytical - Irvine**  
Michele Chamberlin  
Project Manager





MWH-Pasadena/Boeing  
300 North Lake Avenue, Suite 1200  
Pasadena, CA 91101  
Attention: Bronwyn Kelly

Project ID: Routine Outfall 002

Report Number: IPE1134

Sampled: 05/11/06  
Received: 05/11/06

METHOD BLANK/QC DATA

PURGEABLES BY GC/MS (EPA 624)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
<b>Batch: 6E21009 Extracted: 05/21/06</b>											
<b>LCS Analyzed: 05/21/2006 (6E21009-BS1)</b>											
Surrogate: 4-Bromofluorobenzene	24.7			ug/l	25.0		99	80-120			
<b>Matrix Spike Analyzed: 05/21/2006 (6E21009-MS1) Source: IPE1134-01</b>											
Benzene	23.6	2.0	0.28	ug/l	25.0	ND	94	60-125			
Carbon tetrachloride	33.0	5.0	0.28	ug/l	25.0	ND	132	65-140			
Chloroform	28.0	2.0	0.33	ug/l	25.0	ND	112	65-135			
1,1-Dichloroethane	26.4	2.0	0.27	ug/l	25.0	ND	106	60-130			
1,2-Dichloroethane	37.7	2.0	0.28	ug/l	25.0	ND	151	60-140			MI
1,1-Dichloroethene	22.2	3.0	0.42	ug/l	25.0	ND	89	60-135			
Ethylbenzene	25.3	2.0	0.25	ug/l	25.0	ND	101	65-130			
Tetrachloroethene	25.7	2.0	0.32	ug/l	25.0	ND	103	60-130			
Toluene	24.6	2.0	0.36	ug/l	25.0	ND	98	65-125			
1,1,1-Trichloroethane	30.7	2.0	0.30	ug/l	25.0	ND	123	65-140			
1,1,2-Trichloroethane	25.7	2.0	0.30	ug/l	25.0	ND	103	60-130			
Trichloroethene	25.2	5.0	0.26	ug/l	25.0	ND	101	60-125			
Trichlorofluoromethane	28.3	5.0	0.34	ug/l	25.0	ND	113	55-145			
Vinyl chloride	28.2	5.0	0.26	ug/l	25.0	ND	113	40-135			
Surrogate: Dibromofluoromethane	25.8			ug/l	25.0		103	80-120			
Surrogate: Toluene-d8	22.4			ug/l	25.0		90	80-120			
Surrogate: 4-Bromofluorobenzene	25.4			ug/l	25.0		102	80-120			
<b>Matrix Spike Dup Analyzed: 05/21/2006 (6E21009-MSD1) Source: IPE1134-01</b>											
Benzene	24.9	2.0	0.28	ug/l	25.0	ND	100	60-125	5	20	
Carbon tetrachloride	33.8	5.0	0.28	ug/l	25.0	ND	135	65-140	2	25	
Chloroform	27.1	2.0	0.33	ug/l	25.0	ND	108	65-135	3	20	
1,1-Dichloroethane	25.9	2.0	0.27	ug/l	25.0	ND	104	60-130	2	20	
1,2-Dichloroethane	33.6	2.0	0.28	ug/l	25.0	ND	134	60-140	12	20	
1,1-Dichloroethene	23.0	3.0	0.42	ug/l	25.0	ND	92	60-135	4	20	
Ethylbenzene	25.4	2.0	0.25	ug/l	25.0	ND	102	65-130	0	20	
Tetrachloroethene	27.3	2.0	0.32	ug/l	25.0	ND	109	60-130	6	20	
Toluene	24.9	2.0	0.36	ug/l	25.0	ND	100	65-125	1	20	
1,1,1-Trichloroethane	30.3	2.0	0.30	ug/l	25.0	ND	121	65-140	1	20	
1,1,2-Trichloroethane	25.4	2.0	0.30	ug/l	25.0	ND	102	60-130	1	25	
Trichloroethene	25.6	5.0	0.26	ug/l	25.0	ND	102	60-125	2	20	
Trichlorofluoromethane	28.6	5.0	0.34	ug/l	25.0	ND	114	55-145	1	25	
Vinyl chloride	27.8	5.0	0.26	ug/l	25.0	ND	111	40-135	1	30	

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Michele Chamberlin  
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MWH-Pasadena/Boeing  
300 North Lake Avenue, Suite 1200  
Pasadena, CA 91101  
Attention: Bronwyn Kelly

Project ID: Routine Outfall 002

Report Number: IPE1134

Sampled: 05/11/06

Received: 05/11/06

**METHOD BLANK/QC DATA**

**PURGEABLES BY GC/MS (EPA 624)**

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
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**Batch: 6E21009 Extracted: 05/21/06**

**Matrix Spike Dup Analyzed: 05/21/2006 (6E21009-MSD1)**

**Source: IPE1134-01**

Surrogate: Dibromofluoromethane	23.8			ug/l	25.0		95	80-120			
Surrogate: Toluene-d8	22.7			ug/l	25.0		91	80-120			
Surrogate: 4-Bromofluorobenzene	24.1			ug/l	25.0		96	80-120			

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METHOD BLANK/QC DATA

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

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
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Batch: 6E16058 Extracted: 05/16/06

Blank Analyzed: 05/22/2006 (6E16058-BLK1)

Bis(2-ethylhexyl)phthalate	ND	5.0	1.7	ug/l							
2,4-Dinitrotoluene	ND	9.0	0.20	ug/l							
N-Nitrosodimethylamine	ND	8.0	0.10	ug/l							
Pentachlorophenol	ND	8.0	0.10	ug/l							
2,4,6-Trichlorophenol	ND	6.0	0.10	ug/l							
Surrogate: 2-Fluorophenol	13.6			ug/l	20.0		68	30-120			
Surrogate: Phenol-d6	14.8			ug/l	20.0		74	35-120			
Surrogate: 2,4,6-Tribromophenol	14.4			ug/l	20.0		72	45-120			
Surrogate: Nitrobenzene-d5	7.42			ug/l	10.0		74	45-120			
Surrogate: 2-Fluorobiphenyl	8.64			ug/l	10.0		86	45-120			
Surrogate: Terphenyl-d14	8.60			ug/l	10.0		86	45-120			

LCS Analyzed: 05/22/2006 (6E16058-BS1)

Bis(2-ethylhexyl)phthalate	9.68	5.0	1.7	ug/l	10.0		97	60-130			
2,4-Dinitrotoluene	7.80	9.0	0.20	ug/l	10.0		78	60-120			J
N-Nitrosodimethylamine	6.58	8.0	0.10	ug/l	10.0		66	40-120			J
Pentachlorophenol	10.4	8.0	0.10	ug/l	10.0		104	50-120			
2,4,6-Trichlorophenol	10.7	6.0	0.10	ug/l	10.0		107	60-120			
Surrogate: 2-Fluorophenol	14.1			ug/l	20.0		70	30-120			
Surrogate: Phenol-d6	15.7			ug/l	20.0		78	35-120			
Surrogate: 2,4,6-Tribromophenol	15.9			ug/l	20.0		80	45-120			
Surrogate: Nitrobenzene-d5	7.40			ug/l	10.0		74	45-120			
Surrogate: 2-Fluorobiphenyl	8.24			ug/l	10.0		82	45-120			
Surrogate: Terphenyl-d14	8.04			ug/l	10.0		80	45-120			

Matrix Spike Analyzed: 05/22/2006 (6E16058-MS1)

Source: IPE0954-01

Bis(2-ethylhexyl)phthalate	9.66	5.0	1.7	ug/l	10.0	2.3	74	60-130			
2,4-Dinitrotoluene	7.70	9.0	0.20	ug/l	10.0	ND	77	60-120			J
N-Nitrosodimethylamine	6.74	8.0	0.10	ug/l	10.0	ND	67	40-120			J
Pentachlorophenol	12.1	8.0	0.10	ug/l	10.0	ND	121	45-130			
2,4,6-Trichlorophenol	10.6	6.0	0.10	ug/l	10.0	ND	106	60-120			
Surrogate: 2-Fluorophenol	12.9			ug/l	20.0		64	30-120			
Surrogate: Phenol-d6	10.5			ug/l	20.0		52	35-120			
Surrogate: 2,4,6-Tribromophenol	17.0			ug/l	20.0		85	45-120			
Surrogate: Nitrobenzene-d5	7.18			ug/l	10.0		72	45-120			
Surrogate: 2-Fluorobiphenyl	7.36			ug/l	10.0		74	45-120			

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METHOD BLANK/QC DATA

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

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
<b>Batch: 6E16058 Extracted: 05/16/06</b>											
<b>Matrix Spike Analyzed: 05/22/2006 (6E16058-MS1)</b>						<b>Source: IPE0954-01</b>					
Surrogate: Terphenyl-d14	8.04			ug/l	10.0		80	45-120			
<b>Matrix Spike Dup Analyzed: 05/22/2006 (6E16058-MSD1)</b>						<b>Source: IPE0954-01</b>					
Bis(2-ethylhexyl)phthalate	10.5	5.0	1.7	ug/l	10.0	2.3	82	60-130	8	20	
2,4-Dinitrotoluene	8.04	9.0	0.20	ug/l	10.0	ND	80	60-120	4	25	J
N-Nitrosodimethylamine	6.54	8.0	0.10	ug/l	10.0	ND	65	40-120	3	20	J
Pentachlorophenol	12.2	8.0	0.10	ug/l	10.0	ND	122	45-130	1	25	
2,4,6-Trichlorophenol	11.1	6.0	0.10	ug/l	10.0	ND	111	60-120	5	20	
Surrogate: 2-Fluorophenol	12.5			ug/l	20.0		62	30-120			
Surrogate: Phenol-d6	13.5			ug/l	20.0		68	35-120			
Surrogate: 2,4,6-Tribromophenol	17.4			ug/l	20.0		87	45-120			
Surrogate: Nitrobenzene-d5	6.74			ug/l	10.0		67	45-120			
Surrogate: 2-Fluorobiphenyl	6.92			ug/l	10.0		69	45-120			
Surrogate: Terphenyl-d14	8.46			ug/l	10.0		85	45-120			

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METHOD BLANK/QC DATA

ORGANOCHLORINE PESTICIDES (EPA 608)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
<b>Batch: 6E16049 Extracted: 05/16/06</b>											
<b>Blank Analyzed: 05/16/2006 (6E16049-BLK1)</b>											
alpha-BHC	ND	0.010	0.0010	ug/l							
Surrogate: Decachlorobiphenyl	0.435			ug/l	0.500		87	45-120			
Surrogate: Tetrachloro-m-xylene	0.310			ug/l	0.500		62	35-115			
<b>LCS Analyzed: 05/16/2006 (6E16049-BS1)</b>											
alpha-BHC	0.369	0.010	0.0010	ug/l	0.500		74	45-120			M-NR1
Surrogate: Decachlorobiphenyl	0.420			ug/l	0.500		84	45-120			
Surrogate: Tetrachloro-m-xylene	0.330			ug/l	0.500		66	35-115			
<b>LCS Dup Analyzed: 05/16/2006 (6E16049-BSD1)</b>											
alpha-BHC	0.369	0.010	0.0010	ug/l	0.500		74	45-120	0	30	
Surrogate: Decachlorobiphenyl	0.427			ug/l	0.500		85	45-120			
Surrogate: Tetrachloro-m-xylene	0.335			ug/l	0.500		67	35-115			

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METHOD BLANK/QC DATA

METALS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	Limit	RPD	RPD Limit	Data Qualifiers
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**Batch: 6E12070 Extracted: 05/12/06**

**Blank Analyzed: 05/12/2006 (6E12070-BLK1)**

Cadmium	ND	1.0	0.025	ug/l							
Copper	ND	2.0	0.25	ug/l							
Lead	ND	1.0	0.040	ug/l							
Selenium	ND	2.0	0.30	ug/l							

**LCS Analyzed: 05/12/2006 (6E12070-BS1)**

Cadmium	81.3	1.0	0.025	ug/l	80.0		102	85-115			
Copper	83.0	2.0	0.25	ug/l	80.0		104	85-115			
Lead	82.4	1.0	0.040	ug/l	80.0		103	85-115			
Selenium	81.5	2.0	0.30	ug/l	80.0		102	85-115			

**Matrix Spike Analyzed: 05/12/2006 (6E12070-MS1)**

**Source: IPE1134-01**

Cadmium	75.7	1.0	0.025	ug/l	80.0	ND	95	70-130			
Copper	78.1	2.0	0.25	ug/l	80.0	1.2	96	70-130			
Lead	86.5	1.0	0.040	ug/l	80.0	12	93	70-130			
Selenium	78.2	2.0	0.30	ug/l	80.0	0.32	97	70-130			

**Matrix Spike Dup Analyzed: 05/12/2006 (6E12070-MSD1)**

**Source: IPE1134-01**

Cadmium	75.8	1.0	0.025	ug/l	80.0	ND	95	70-130	0	20	
Copper	78.4	2.0	0.25	ug/l	80.0	1.2	96	70-130	0	20	
Lead	84.1	1.0	0.040	ug/l	80.0	12	90	70-130	3	20	
Selenium	79.0	2.0	0.30	ug/l	80.0	0.32	98	70-130	1	20	

**Batch: 6E12077 Extracted: 05/12/06**

**Blank Analyzed: 05/12/2006 (6E12077-BLK1)**

Mercury	ND	0.20	0.050	ug/l							
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## METHOD BLANK/QC DATA

### METALS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
<b>Batch: 6E12077 Extracted: 05/12/06</b>											
<b>LCS Analyzed: 05/12/2006 (6E12077-BS1)</b>											
Mercury	8.13	0.20	0.050	ug/l	8.00		102	85-115			
<b>Matrix Spike Analyzed: 05/12/2006 (6E12077-MS1) Source: IPE1018-01</b>											
Mercury	7.59	0.20	0.050	ug/l	8.00	ND	95	70-130			
<b>Matrix Spike Dup Analyzed: 05/12/2006 (6E12077-MSD1) Source: IPE1018-01</b>											
Mercury	7.44	0.20	0.050	ug/l	8.00	ND	93	70-130	2	20	
<b>Batch: 6E13046 Extracted: 05/13/06</b>											
<b>Blank Analyzed: 05/18/2006 (6E13046-BLK1)</b>											
Zinc	ND	0.020	0.015	mg/l							
<b>LCS Analyzed: 05/18/2006 (6E13046-BS1)</b>											
Zinc	0.503	0.020	0.015	mg/l	0.500		101	85-115			
<b>Matrix Spike Analyzed: 05/18/2006 (6E13046-MS1) Source: IPE0999-02</b>											
Zinc	0.522	0.020	0.015	mg/l	0.500	ND	104	70-130			
<b>Matrix Spike Dup Analyzed: 05/18/2006 (6E13046-MSD1) Source: IPE0999-02</b>											
Zinc	0.528	0.020	0.015	mg/l	0.500	ND	106	70-130	1	20	
<b>Batch: 6E31131 Extracted: 05/31/06</b>											
<b>Blank Analyzed: 06/01/2006 (6E31131-BLK1)</b>											
Lead	ND	1.0	0.040	ug/l							

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## METHOD BLANK/QC DATA

### METALS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	Limit	RPD	RPD Limit	Data Qualifiers
<b>Batch: 6E31131 Extracted: 05/31/06</b>											
<b>LCS Analyzed: 06/01/2006 (6E31131-BS1)</b>											
Lead	78.1	1.0	0.040	ug/l	80.0		98	85-115			
<b>Matrix Spike Analyzed: 06/01/2006 (6E31131-MS1)</b>											
Lead	79.9	1.0	0.040	ug/l	80.0	6.2	92	70-130			
<b>Matrix Spike Analyzed: 06/01/2006 (6E31131-MS2)</b>											
Lead	75.7	1.0	0.040	ug/l	80.0	0.079	95	70-130			
<b>Matrix Spike Dup Analyzed: 06/01/2006 (6E31131-MSD1)</b>											
Lead	82.3	1.0	0.040	ug/l	80.0	6.2	95	70-130	3	20	

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## METHOD BLANK/QC DATA

### INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	RPD Limits	RPD RPD	RPD Limit	Data Qualifiers
<b>Batch: 6E11088 Extracted: 05/11/06</b>											
<b>Blank Analyzed: 05/11/2006 (6E11088-BLK1)</b>											
Surfactants (MBAS)	ND	0.10	0.044	mg/l							
<b>LCS Analyzed: 05/11/2006 (6E11088-BS1)</b>											
Surfactants (MBAS)	0.243	0.10	0.044	mg/l	0.250		97	90-110			
<b>Matrix Spike Analyzed: 05/11/2006 (6E11088-MS1)</b>											
						<b>Source: IPE0997-01</b>					
Surfactants (MBAS)	0.269	0.10	0.044	mg/l	0.250	0.089	72	50-125			
<b>Matrix Spike Dup Analyzed: 05/11/2006 (6E11088-MSD1)</b>											
						<b>Source: IPE0997-01</b>					
Surfactants (MBAS)	0.288	0.10	0.044	mg/l	0.250	0.089	80	50-125	7	20	
<b>Batch: 6E11111 Extracted: 05/11/06</b>											
<b>Blank Analyzed: 05/11/2006 (6E11111-BLK1)</b>											
Chloride	ND	0.50	0.15	mg/l							
Nitrate-N	ND	0.15	0.080	mg/l							
Nitrite-N	ND	0.15	0.080	mg/l							
Nitrate/Nitrite-N	ND	0.15	0.080	mg/l							
Sulfate	ND	0.50	0.45	mg/l							
<b>LCS Analyzed: 05/11/2006 (6E11111-BS1)</b>											
Chloride	4.88	0.50	0.15	mg/l	5.00		98	90-110			
Nitrate-N	1.12	0.15	0.080	mg/l	1.13		99	90-110			
Nitrite-N	1.48	0.15	0.080	mg/l	1.52		97	90-110			
Sulfate	9.93	0.50	0.45	mg/l	10.0		99	90-110			
<b>Matrix Spike Analyzed: 05/11/2006 (6E11111-MS1)</b>											
						<b>Source: IPE1118-03</b>					
Chloride	43.4	1.0	0.30	mg/l	5.00	39	88	80-120			M-HA
Nitrate-N	4.08	0.30	0.16	mg/l	1.13	2.9	104	80-120			
Nitrite-N	1.87	0.30	0.16	mg/l	1.52	ND	123	80-120			MI
Sulfate	65.2	1.0	0.90	mg/l	10.0	55	102	80-120			M-HA

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METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
<b>Batch: 6E11111 Extracted: 05/11/06</b>											
<b>Matrix Spike Dup Analyzed: 05/11/2006 (6E11111-MSD1)</b>						<b>Source: IPE1118-03</b>					
Chloride	42.7	1.0	0.30	mg/l	5.00	39	74	80-120	2	20	M-HA
Nitrate-N	4.02	0.30	0.16	mg/l	1.13	2.9	99	80-120	1	20	
Nitrite-N	1.84	0.30	0.16	mg/l	1.52	ND	121	80-120	2	20	MI
Sulfate	64.7	1.0	0.90	mg/l	10.0	55	97	80-120	1	20	M-HA

**Batch: 6E12090 Extracted: 05/12/06**

**Blank Analyzed: 05/17/2006 (6E12090-BLK1)**

Biochemical Oxygen Demand ND 2.0 0.59 mg/l

**LCS Analyzed: 05/17/2006 (6E12090-BS1)**

Biochemical Oxygen Demand 218 100 30 mg/l 198 110 85-115

**LCS Dup Analyzed: 05/17/2006 (6E12090-BSD1)**

Biochemical Oxygen Demand 216 100 30 mg/l 198 109 85-115 1 20

**Batch: 6E12098 Extracted: 05/12/06**

**Blank Analyzed: 05/12/2006 (6E12098-BLK1)**

Total Cyanide ND 5.0 2.2 ug/l

**LCS Analyzed: 05/12/2006 (6E12098-BS1)**

Total Cyanide 200 5.0 2.2 ug/l 200 100 90-110

**Matrix Spike Analyzed: 05/12/2006 (6E12098-MS1)**

Total Cyanide 192 5.0 2.2 ug/l 200 ND 96 70-115

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METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
<b>Batch: 6E12098 Extracted: 05/12/06</b>											
<b>Matrix Spike Dup Analyzed: 05/12/2006 (6E12098-MSD1)</b>						<b>Source: IPE0925-01</b>					
Total Cyanide	192	5.0	2.2	ug/l	200	ND	96	70-115	0	15	
<b>Batch: 6E12113 Extracted: 05/12/06</b>											
<b>Blank Analyzed: 05/12/2006 (6E12113-BLK1)</b>											
Turbidity	ND	1.0	0.040	NTU							
<b>Duplicate Analyzed: 05/12/2006 (6E12113-DUP1)</b>						<b>Source: IPE1138-01</b>					
Turbidity	0.530	1.0	0.040	NTU		0.52			2	20	J
<b>Batch: 6E15050 Extracted: 05/15/06</b>											
<b>Blank Analyzed: 05/15/2006 (6E15050-BLK1)</b>											
Oil & Grease	ND	5.0	0.94	mg/l							
<b>LCS Analyzed: 05/15/2006 (6E15050-BS1)</b>											
Oil & Grease	18.6	5.0	0.94	mg/l	20.0		93	65-120			M-NR1
<b>LCS Dup Analyzed: 05/15/2006 (6E15050-BSD1)</b>											
Oil & Grease	18.5	5.0	0.94	mg/l	20.0		92	65-120	1	20	
<b>Batch: 6E17074 Extracted: 05/17/06</b>											
<b>Blank Analyzed: 05/17/2006 (6E17074-BLK1)</b>											
Total Dissolved Solids	ND	10	10	mg/l							

Del Mar Analytical - Irvine  
Michele Chamberlin  
Project Manager



MWH-Pasadena/Boeing  
 300 North Lake Avenue, Suite 1200  
 Pasadena, CA 91101  
 Attention: Bronwyn Kelly

Project ID: Routine Outfall 002

Report Number: IPE1134

Sampled: 05/11/06  
 Received: 05/11/06

## METHOD BLANK/QC DATA

### INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	RPD RPD	RPD RPD	Data Qualifiers
<b><u>Batch: 6E17074 Extracted: 05/17/06</u></b>										
<b>LCS Analyzed: 05/17/2006 (6E17074-BS1)</b>										
Total Dissolved Solids	988	10	10	mg/l	1000		99	90-110		
<b>Duplicate Analyzed: 05/17/2006 (6E17074-DUP1)</b>										
Total Dissolved Solids	1040	10	10	mg/l		1000		4	10	Source: IPE1132-01
<b><u>Batch: 6E17079 Extracted: 05/17/06</u></b>										
<b>Duplicate Analyzed: 05/17/2006 (6E17079-DUP1)</b>										
Specific Conductance	1110	1.0	1.0	umhos/cm		1100		1	5	Source: IPE1134-01
<b><u>Batch: 6E17105 Extracted: 05/17/06</u></b>										
<b>Blank Analyzed: 05/17/2006 (6E17105-BLK1)</b>										
Total Suspended Solids	ND	10	10	mg/l						
<b>LCS Analyzed: 05/17/2006 (6E17105-BS1)</b>										
Total Suspended Solids	983	10	10	mg/l	1000		98	85-115		
<b>Duplicate Analyzed: 05/17/2006 (6E17105-DUP1)</b>										
Total Suspended Solids	89.0	10	10	mg/l		95		7	10	Source: IPE1262-01
<b><u>Batch: 6E19058 Extracted: 05/19/06</u></b>										
<b>Blank Analyzed: 05/19/2006 (6E19058-BLK1)</b>										
Perchlorate	ND	4.0	0.80	ug/l						

Del Mar Analytical - Irvine  
 Michele Chamberlin  
 Project Manager



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Report Number: IPE1134

Sampled: 05/11/06

Received: 05/11/06

METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
<b>Batch: 6E19058 Extracted: 05/19/06</b>											
<b>LCS Analyzed: 05/19/2006 (6E19058-BS1)</b>											
Perchlorate	48.4	4.0	0.80	ug/l	50.0		97	85-115			
<b>Matrix Spike Analyzed: 05/19/2006 (6E19058-MS1)</b>											
						<b>Source: IPE1211-04</b>					
Perchlorate	54.7	4.0	0.80	ug/l	50.0	1.5	106	80-120			
<b>Matrix Spike Dup Analyzed: 05/19/2006 (6E19058-MSD1)</b>											
						<b>Source: IPE1211-04</b>					
Perchlorate	50.4	4.0	0.80	ug/l	50.0	1.5	98	80-120	8	20	
<b>Batch: 6E19092 Extracted: 05/19/06</b>											
<b>Blank Analyzed: 05/19/2006 (6E19092-BLK1)</b>											
Ammonia-N (Distilled)	ND	0.50	0.30	mg/l							
<b>LCS Analyzed: 05/19/2006 (6E19092-BS1)</b>											
Ammonia-N (Distilled)	10.9	0.50	0.30	mg/l	10.0		109	80-115			
<b>Matrix Spike Analyzed: 05/19/2006 (6E19092-MS1)</b>											
						<b>Source: IPE1134-01</b>					
Ammonia-N (Distilled)	11.5	0.50	0.30	mg/l	10.0	0.84	107	70-120			
<b>Matrix Spike Dup Analyzed: 05/19/2006 (6E19092-MSD1)</b>											
						<b>Source: IPE1134-01</b>					
Ammonia-N (Distilled)	11.5	0.50	0.30	mg/l	10.0	0.84	107	70-120	0	15	

Del Mar Analytical - Irvine  
Michele Chamberlin  
Project Manager



MWH-Pasadena/Boeing  
 300 North Lake Avenue, Suite 1200  
 Pasadena, CA 91101  
 Attention: Bronwyn Kelly

Project ID: Routine Outfall 002

Report Number: IPE1134

Sampled: 05/11/06

Received: 05/11/06

## 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
IPE1134-01	413.1 Oil and Grease	Oil & Grease	mg/l	0	4.7	10.00
IPE1134-01	608-Pest Boeing 001/002 Q (LL)	alpha-BHC	ug/l	0	0.0094	0.0100
IPE1134-01	624-Boeing 001/002 Q (Fr113+X)	1,1-Dichloroethene	ug/l	0	3.0	3.20
IPE1134-01	624-Boeing 001/002 Q (Fr113+X)	Trichloroethene	ug/l	0	5.0	5.00
IPE1134-01	625-Boeing 001/002 Q-LL	2,4,6-Trichlorophenol	ug/l	0	5.7	6.50
IPE1134-01	625-Boeing 001/002 Q-LL	2,4-Dinitrotoluene	ug/l	0.23	8.6	9.10
IPE1134-01	625-Boeing 001/002 Q-LL	Bis(2-ethylhexyl)phthalate	ug/l	2.00	4.8	4.00
IPE1134-01	625-Boeing 001/002 Q-LL	N-Nitrosodimethylamine	ug/l	0	7.6	8.10
IPE1134-01	625-Boeing 001/002 Q-LL	Pentachlorophenol	ug/l	0	7.6	8.20
IPE1134-01	BOD	Biochemical Oxygen Demand	mg/l	1.00	2.0	20
IPE1134-01	Chloride - 300.0	Chloride	mg/l	49	10	150
IPE1134-01	Copper-200.8	Copper	ug/l	1.20	2.0	7.10
IPE1134-01	Cyanide-335.2 5ppb	Total Cyanide	ug/l	0.95	5.0	5.00
<b>IPE1134-01</b>	<b>Lead-200.8</b>	<b>Lead</b>	<b>ug/l</b>	<b>12</b>	<b>1.0</b>	<b>2.60</b>
IPE1134-01	MBAS - SM5540-C	Surfactants (MBAS)	mg/l	0.048	0.10	0.50
IPE1134-01	Mercury - 245.1	Mercury	ug/l	0.000028	0.20	0.20
IPE1134-01	Nitrogen, NO3+NO2 -N	Nitrate/Nitrite-N	mg/l	0	0.15	8.00
IPE1134-01	Perchlorate 314.0	Perchlorate	ug/l	0	4.0	6.00
IPE1134-01	Sulfate-300.0	Sulfate	mg/l	270	10	300
IPE1134-01	TDS - SM 2540C	Total Dissolved Solids	mg/l	700	10	950
<b>IPE1134-01RE1</b>	<b>Lead-200.8</b>	<b>Lead</b>	<b>ug/l</b>	<b>6.20</b>	<b>1.0</b>	<b>2.60</b>
IPE1134-02	624-Boeing 001/002 Q (Fr113+X)	1,1-Dichloroethene	ug/l	0	3.0	3.20
IPE1134-02	624-Boeing 001/002 Q (Fr113+X)	Trichloroethene	ug/l	0	5.0	5.00

**Del Mar Analytical - Irvine**  
 Michele Chamberlin  
 Project Manager



MWH-Pasadena/Boeing  
300 North Lake Avenue, Suite 1200  
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Project ID: Routine Outfall 002

Report Number: IPE1134

Sampled: 05/11/06  
Received: 05/11/06

### DATA QUALIFIERS AND DEFINITIONS

- 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.
- L** Laboratory Control Sample recovery was above the method control limits. Analyte not detected, data not impacted.
- MI** The MS and/or MSD were above the acceptance limits due to sample matrix interference. See Blank Spike (LCS).
- M-HA** Due to high levels of analyte in the sample, the MS/MSD calculation does not provide useful spike recovery information. See Blank Spike (LCS).
- M-NR1** 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

**Del Mar Analytical - Irvine**  
Michele Chamberlin  
Project Manager

*The results pertain only to the samples tested in the laboratory. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical.*

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MWH-Pasadena/Boeing  
 300 North Lake Avenue, Suite 1200  
 Pasadena, CA 91101  
 Attention: Bronwyn Kelly

Project ID: Routine Outfall 002

Report Number: IPE1134

Sampled: 05/11/06

Received: 05/11/06

## Certification Summary

### Del Mar Analytical - Irvine

Method	Matrix	Nelac	California
1613A/1613B	Water		
EDD + Level 4	Water		
EPA 120.1	Water	X	X
EPA 160.2	Water	X	X
EPA 160.5	Water	X	X
EPA 180.1	Water	X	X
EPA 200.7	Water	X	X
EPA 200.8	Water	X	X
EPA 245.1	Water	X	X
EPA 300.0	Water	X	X
EPA 314.0	Water	N/A	X
EPA 335.2	Water	X	X
EPA 350.2	Water		X
EPA 405.1	Water	X	X
EPA 413.1	Water	X	X
EPA 608	Water	X	X
EPA 624	Water	X	X
EPA 625	Water	X	X
SM2540C	Water	X	X
SM5540-C	Water	X	X

*Nevada and NELAP provide analyte specific accreditations. Analyte specific information for Del Mar Analytical may be obtained by contacting the laboratory or visiting our website at [www.testamericainc.com](http://www.testamericainc.com)*

### Subcontracted Laboratories

**Alta 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: IPE1134-01

Analysis Performed: EDD + Level 4

Samples: IPE1134-01

### Del Mar Analytical - Irvine

Michele Chamberlin

Project Manager



# Del Mar Analytical CHAIN OF CUSTODY FORM

Version 3/1/06

IRE 1134 Page 1 of 1

**Client Name/Address:**  
**MWH-Pasadena**  
 300 North Lake Avenue, Suite 1200  
 Pasadena, CA 91101

**Project:**  
 Boeing-SSFL NPDES  
**Routine Outfall 002**

**Project Manager:** Bronwyn Kelly

**Sampler:** *Birney, R*  
*Burris, R*

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

ANALYSIS REQUIRED		Total Recoverable Metals: Cu, Pb, Hg, Setttable Solids	VOCS 624 + xylenes	TCDD (and all congeners)	Oil & Grease (EPA 413.1)	Cyanide (total recoverable)	BOD5 (20 degrees C)	Surfactants (MBAS)	CF, SO4, NO3+NO2-N Perchlorate	Turbidity, TDS, TSS, Conductivity	Ammonia-N Alpha BHC (608)	2,4,6 Trichlorophenol, 2,4 Dinitrotoene, Bis(2- ethylhexyl)phthalate, NDMA, pentachlorophenol (EPA 625)	Field readings: Temp = 83° pH = 8.0	Comments
Outfall 002	W	1	1A	X										24 TAT
Outfall 002-Dup	W	1	1B	X										24 TAT
Outfall 002	W	1	2											
Outfall 002	W	3	3A, 3B, 3C	X										
Outfall 002	W	2	4A, 4B	X										
Outfall 002	W	2	5A, 5B	X										24 TAT
Outfall 002	W	1	6		X									24 TAT
Outfall 002	W	1	7			X								
Outfall 002	W	2	8A, 8B				X							
Outfall 002	W	2	9A, 9B					X						
Outfall 002	W	2	10A, 10B						X					
Outfall 002	W	1	11							X				
Outfall 002	W	2	12A, 12B								X			
Outfall 002	W	2	13A, 13B									X		
Trip Blank	W	3	14A, 14B, 14C		X									

**Relinquished By:** *Birney, R* Date/Time: *5/11/06 1600*

**Relinquished By:** *Burris, R* Date/Time: *5/11/06 2000*

**Relinquished By:** *Edwardo Puy* Date/Time: *5/11/06 2000*

**Received By:** *Burris, R* Date/Time: *5/11/06 1600*

**Received By:** *Edwardo Puy* Date/Time: *5/11/06 2000*

**Turn around Time: (check)**  
 24 Hours \_\_\_\_\_ 5 Days \_\_\_\_\_  
 48 Hours \_\_\_\_\_ 10 Days \_\_\_\_\_  
 72 Hours \_\_\_\_\_ Normal \_\_\_\_\_

**Perchlorate Only 72 Hours** \_\_\_\_\_

**Metals Only 72 Hours** \_\_\_\_\_

**Sample Integrity: (Check)** On Ice:  **4°C**

FR 2380

343



May 24, 2006

**Alta Project I.D.: 27705**

Ms. Michele Chamberlin  
Del Mar Analytical, Irvine  
17461 Derian Avenue, Suite 100  
Irvine, CA 92614

Dear Ms. Chamberlin,

Enclosed are the results for the one aqueous sample received at Alta Analytical Laboratory on May 15, 2006 under your Project Name "IPE1134". This sample was extracted and analyzed using EPA Method 1613 for tetra-through-octa chlorinated dioxins and furans. A standard turnaround time was provided for this work.

The following report consists of a Sample Inventory (Section I), Analytical Results (Section II) and the Appendix, which contains the chain-of-custody, a list of data qualifiers and abbreviations, Alta's current certifications, and copies of the raw data (if requested).

Alta Analytical Laboratory is committed to serving you effectively. If you require additional information, please contact me at 916-933-1640 or by email at [mmaier@altalab.com](mailto:mmaier@altalab.com). Thank you for choosing Alta as part of your analytical support team.

Sincerely,

Martha M. Maier  
Director of HRMS Services



*Alta Analytical Laboratory certifies that the report herein meets all the requirements set forth by NELAP for those applicable test methods. This report should not be reproduced except in full without the written approval of ALTA*



**Alta Analytical Laboratory Inc.**

1104 Windfield Way  
El Dorado Hills, CA 95762  
FAX (916) 673-0106  
(916) 933-1640

**Section I: Sample Inventory Report**

**Date Received: 5/13/2006**

Alta Lab. ID

Client Sample ID

27705-001

IPE1134-01

## SECTION II

Method Blank		EPA Method 1613						
Matrix:	Aqueous	QC Batch No.:	8038	Lab Sample:	0-MB001			
Sample Size:	1.00 L	Date Extracted:	22-May-06	Date Analyzed DB-5:	23-May-06			
				Date Analyzed DB-225:	NA			
Analyte	Conc. (ug/L)	DL <sup>a</sup>	EMPC <sup>b</sup>	Qualifiers	Labeled Standard	%R	LCL-UCL <sup>d</sup>	Qualifiers
2,3,7,8-TCDD	ND	0.00000162			IS 13C-2,3,7,8-TCDD	72.3	25 - 164	
1,2,3,7,8-PeCDD	ND	0.00000133			13C-1,2,3,7,8-PeCDD	70.7	25 - 181	
1,2,3,4,7,8-HxCDD	ND	0.00000259			13C-1,2,3,4,7,8-HxCDD	74.1	32 - 141	
1,2,3,6,7,8-HxCDD	ND	0.00000275			13C-1,2,3,6,7,8-HxCDD	68.4	28 - 130	
1,2,3,7,8,9-HxCDD	ND	0.00000258			13C-1,2,3,4,6,7,8-HpCDD	65.8	23 - 140	
1,2,3,4,6,7,8-HpCDD	ND	0.00000265			13C-OCDD	54.4	17 - 157	
OCDD	ND	0.00000676			13C-2,3,7,8-TCDF	79.9	24 - 169	
2,3,7,8-TCDF	ND	0.00000103			13C-1,2,3,7,8-PeCDF	68.4	24 - 185	
1,2,3,7,8-PeCDF	ND	0.00000221			13C-2,3,4,7,8-PeCDF	69.7	21 - 178	
2,3,4,7,8-PeCDF	ND	0.00000191			13C-1,2,3,4,7,8-HxCDF	73.1	26 - 152	
1,2,3,4,7,8-HxCDF	ND	0.000000599			13C-1,2,3,6,7,8-HxCDF	71.2	26 - 123	
1,2,3,6,7,8-HxCDF	ND	0.000000612			13C-2,3,4,6,7,8-HxCDF	71.8	28 - 136	
2,3,4,6,7,8-HxCDF	ND	0.000000628			13C-1,2,3,7,8,9-HxCDF	69.6	29 - 147	
1,2,3,7,8,9-HxCDF	ND	0.000000909			13C-1,2,3,4,6,7,8-HpCDF	61.5	28 - 143	
1,2,3,4,6,7,8-HpCDF	ND	0.00000180			13C-1,2,3,4,7,8,9-HpCDF	67.1	26 - 138	
1,2,3,4,7,8,9-HpCDF	ND	0.00000197			13C-OCDF	56.2	17 - 157	
OCDF	ND	0.00000532			CRS 37Cl-2,3,7,8-TCDD	80.8	35 - 197	
<b>Totals</b>					<b>Footnotes</b>			
Total TCDD	ND	0.00000162			a. Sample specific estimated detection limit.			
Total PeCDD	ND	0.00000133			b. Estimated maximum possible concentration.			
Total HxCDD	ND	0.00000264			c. Method detection limit.			
Total HpCDD	ND	0.00000265			d. Lower control limit - upper control limit.			
Total TCDF	ND	0.00000103						
Total PeCDF	ND	0.00000205						
Total HxCDF	ND	0.000000674						
Total HpCDF	ND	0.00000188						

Analyt:

Approved By: William J. Luksemburg 24-May-2006 11:17

OPR Results		EPA Method 1613				
Matrix:	Aqueous	QC Batch No.:	8038	Lab Sample:	0-OPR001	
Sample Size	1.00 L	Date Extracted:	22-May-06	Date Analyzed DB-5:	23-May-06	
				Date Analyzed DB-225:	NA	
Analyte	Spike Conc.	Conc. (ng/mL)	OPR Limits	Labeled Standard	%R	LCL-UCL
2,3,7,8-TCDD	10.0	10.3	6.7 - 15.8	IS 13C-2,3,7,8-TCDD	69.0	25 - 161
1,2,3,7,8-PeCDD	50.0	49.2	35 - 71	13C-1,2,3,7,8-PeCDD	63.8	25 - 181
1,2,3,4,7,8-HxCDD	50.0	48.5	35 - 82	13C-1,2,3,4,7,8-HxCDD	68.2	32 - 141
1,2,3,6,7,8-HxCDD	50.0	49.4	38 - 67	13C-1,2,3,6,7,8-HxCDD	62.9	28 - 130
1,2,3,7,8,9-HxCDD	50.0	45.8	32 - 81	13C-1,2,3,4,6,7,8-HpCDD	58.9	23 - 140
1,2,3,4,6,7,8-HpCDD	50.0	52.2	35 - 70	13C-OCDD	50.7	17 - 157
OCDD	100	97.0	78 - 144	13C-2,3,7,8-TCDF	75.2	24 - 169
2,3,7,8-TCDF	10.0	9.77	7.5 - 15.8	13C-1,2,3,7,8-PeCDF	62.5	24 - 185
1,2,3,7,8-PeCDF	50.0	51.1	40 - 67	13C-2,3,4,7,8-PeCDF	65.5	21 - 178
2,3,4,7,8-PeCDF	50.0	51.1	34 - 80	13C-1,2,3,4,7,8-HxCDF	69.8	26 - 152
1,2,3,4,7,8-HxCDF	50.0	51.1	36 - 67	13C-1,2,3,6,7,8-HxCDF	64.7	26 - 123
1,2,3,6,7,8-HxCDF	50.0	52.0	42 - 65	13C-2,3,4,6,7,8-HxCDF	68.0	28 - 136
2,3,4,6,7,8-HxCDF	50.0	49.9	35 - 78	13C-1,2,3,7,8,9-HxCDF	63.7	29 - 147
1,2,3,7,8,9-HxCDF	50.0	51.4	39 - 65	13C-1,2,3,4,6,7,8-HpCDF	58.2	28 - 143
1,2,3,4,6,7,8-HpCDF	50.0	51.9	41 - 61	13C-1,2,3,4,7,8,9-HpCDF	60.5	26 - 138
1,2,3,4,7,8,9-HpCDF	50.0	51.5	39 - 69	13C-OCDF	53.3	17 - 157
OCDF	100	105	63 - 170	CRS 37Cl-2,3,7,8-TCDD	84.6	35 - 197

Analyst: MAS

Approved By: William J. Luksemburg 24-May-2006 11:17

Sample ID: IPE1134-01		EPA Method 1613						
Client Data		Sample Data		Laboratory Data				
Name:	Del Mar Analytical, Irvine	Matrix:	Aqueous	Lab Sample:	27705-001			
Project:	IPE1134	Sample Size:	0.999 L	QC Batch No.:	8038			
Date Collected:	11-May-06			Date Analyzed DB-5:	24-May-06			
Time Collected:	1322			Date Analyzed DB-225:	NA			
Analyte	Conc. (ug/L)	DL <sup>a</sup>	EMPC <sup>b</sup>	Qualifiers	Labeled Standard	%R	LCL-UCL <sup>d</sup>	Qualifiers
2,3,7,8-TCDD	ND	0.00000191			IS 13C-2,3,7,8-TCDD	81.1	25 - 164	
1,2,3,7,8-PeCDD	ND	0.000000917			13C-1,2,3,7,8-PeCDD	72.9	25 - 181	
1,2,3,4,7,8-HxCDD	ND	0.00000223			13C-1,2,3,4,7,8-HxCDD	83.9	32 - 141	
1,2,3,6,7,8-HxCDD	ND	0.00000219			13C-1,2,3,6,7,8-HxCDD	75.4	28 - 130	
1,2,3,7,8,9-HxCDD	ND	0.00000213			13C-1,2,3,4,6,7,8-HpCDD	74.7	23 - 140	
1,2,3,4,6,7,8-HpCDD	ND	0.00000476			13C-OCDD	66.8	17 - 157	
OCDD	0.00000395			J	13C-2,3,7,8-TCDF	82.1	24 - 169	
2,3,7,8-TCDF	ND	0.00000173			13C-1,2,3,7,8-PeCDF	73.2	24 - 185	
1,2,3,7,8-PeCDF	ND	0.00000149			13C-2,3,4,7,8-PeCDF	72.2	21 - 178	
2,3,4,7,8-PeCDF	ND	0.00000146			13C-1,2,3,4,7,8-HxCDF	85.7	26 - 152	
1,2,3,4,7,8-HxCDF	ND	0.00000779			13C-1,2,3,6,7,8-HxCDF	79.6	26 - 123	
1,2,3,6,7,8-HxCDF	ND	0.00000735			13C-2,3,4,6,7,8-HxCDF	79.6	28 - 136	
2,3,4,6,7,8-HxCDF	ND	0.000000832			13C-1,2,3,7,8,9-HxCDF	78.9	29 - 147	
1,2,3,7,8,9-HxCDF	ND	0.00000112			13C-1,2,3,4,6,7,8-HpCDF	76.9	28 - 143	
1,2,3,4,6,7,8-HpCDF	ND	0.00000121			13C-1,2,3,4,7,8,9-HpCDF	75.9	26 - 138	
1,2,3,4,7,8,9-HpCDF	ND	0.00000135			13C-OCDF	72.6	17 - 157	
OCDF	ND	0.00000281			CRS 37Cl-2,3,7,8-TCDD	89.3	35 - 197	
<b>Totals</b>								
Total TCDD	ND	0.00000191						
Total PeCDD	ND	0.000000917						
Total HxCDD	ND	0.00000218						
Total HpCDD	ND	0.00000476						
Total TCDF	ND	0.00000173						
Total PeCDF	ND	0.00000148						
Total HxCDF	ND	0.000000852						
Total HpCDF	ND	0.00000128						
<b>Footnotes</b>								
a. Sample specific estimated detection limit.								
b. Estimated maximum possible concentration.								
c. Method detection limit.								
d. Lower control limit - upper control limit.								

Analyst: William J. Luksemburg 24-May-2006 11:17

## APPENDIX



## DATA QUALIFIERS & ABBREVIATIONS

B	This compound was also detected in the method blank.
D	The amount reported is the maximum possible concentration due to possible chlorinated diphenylether interference.
E	The reported value exceeds the calibration range of the instrument.
H	The signal-to-noise ratio is greater than 10:1.
I	Chemical interference
J	The amount detected is below the Lower Calibration Limit of the instrument.
*	See Cover Letter
Conc.	Concentration
DL	Sample-specific estimated Detection Limit
MDL	The minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero in the matrix tested.
EMPC	Estimated Maximum Possible Concentration
NA	Not applicable
RL	Reporting Limit -- concentrations that corresponds to low calibration point
ND	Not Detected
TEQ	Toxic Equivalency

Unless otherwise noted, solid sample results are reported in dry weight. Tissue samples are reported in wet weight.

**CERTIFICATIONS**

<b>Accrediting Authority</b>	<b>Certificate Number</b>
State of Alaska, DEC	CA413-02
State of Arizona	AZ0639
State of Arkansas, DEQ	05-013-0
State of Arkansas, DOH	Reciprocity through CA
State of California – NELAP Primary AA	02102CA
State of Colorado	
State of Connecticut	PH-0182
State of Florida, DEP	E87777
Commonwealth of Kentucky	90063
State of Louisiana, Health and Hospitals	LA050001
State of Louisiana, DEQ	01977
State of Maine	CA0413
State of Michigan	81178087
State of Mississippi	Reciprocity through CA
Naval Facilities Engineering Service Center	
State of Nevada	CA413
State of New Jersey	CA003
State of New Mexico	Reciprocity through CA
State of New York, DOH	11411
State of North Carolina	06700
State of North Dakota, DOH	R-078
State of Oklahoma	D9919
State of Oregon	CA200001-002
State of Pennsylvania	68-00490
State of South Carolina	87002001
State of Tennessee	02996
State of Texas	TX247-2005A
U.S. Army Corps of Engineers	
State of Utah	9169330940
Commonwealth of Virginia	00013
State of Washington	C1285
State of Wisconsin	998036160
State of Wyoming	8TMS-Q



27705 0.2c  
Del Mar Analytical

17461 Derian Ave. Suite 100, Irvine, CA 92614 Ph (949) 261-1022 Fax (949) 261-1228  
1014 E. Cooley Dr., Suite A, Cotton, CA 92324 Ph (909) 370-4667 Fax (909) 370-1046  
9484 Chesapeake Drive, Suite 805, San Diego, CA 92123 Ph (619) 505-9596 Fax (619) 505-9689  
9830 South 51st Street, Suite B-120, Phoenix, AZ 85044 Ph (480) 785-0043 Fax (480) 785-0851  
2520 E. Sunset Rd., Suite #3, Las Vegas, NV 89120 Ph (702) 796-3620 Fax (702) 796-3621

### SUBCONTRACT ORDER - PROJECT # IPE1134

<p align="center"><b>SENDING LABORATORY:</b></p> <p>Del Mar Analytical - Irvine 17461 Derian Avenue, Suite 100 Irvine, CA 92614 Phone: (949) 261-1022 Fax: (949) 261-1228 Project Manager: Michele Chamberlin</p>	<p align="center"><b>RECEIVING LABORATORY:</b></p> <p>Alta Analytical - SUB 1104 Windfield Way El Dorado Hills, CA 95762 Phone : (916) 933-1640 Fax: (916) 673-0106</p>
---	---

Standard TAT is requested unless specific due date is requested => Due Date: \_\_\_\_\_ Initials: \_\_\_\_\_

Analysis	Expiration	Comments
Sample ID: IPE1134-01 Water	Sampled: 05/11/06 13:22	Instant Notification
1613-Dioxin-HR-Alta	05/18/06 13:22	J flags, 17 congeners, no TEQ, ug/L, sub=Alta
EDD + Level 4	06/08/06 13:22	Excel EDD email to pm, Include Std logs for Lvl IV

**Containers Supplied:**  
1 L Amber (IPE1134-01G)  
1 L Amber (IPE1134-01H)

<b>SAMPLE INTEGRITY:</b>		
All containers intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Sample labels/COC agree: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Samples Received On Ice: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Custody Seals Present: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Samples Preserved Properly: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Samples Received at (temp): <u>0.2°</u>

<i>Edwardo Ruiz</i>	<i>5/12/06</i>	<i>Nichol Jallen</i>	<i>5/13/06</i>	<i>1010</i>
Released By	Date	Time	Received By	Date

Released By	Date	Time	Received By	Date	Time
-------------	------	------	-------------	------	------

Project 27705

### SAMPLE LOG-IN CHECKLIST

Alta Project #: 27705

Samples Arrival:	Date/Time <u>5/13/06 1010</u>	Initials: <u>[Signature]</u>	Location: <u>WR-2</u> Shelf/Rack: _____
Logged In:	Date/Time <u>5/15/06 1545</u>	Initials: <u>FEB</u>	Location: <u>WR-2</u> Shelf/Rack: <u>A-2</u>
Delivered By:	<input checked="" type="checkbox"/> FedEx	<input type="checkbox"/> UPS	<input type="checkbox"/> Cal
	<input type="checkbox"/> DHL	<input type="checkbox"/> Hand Delivered	<input type="checkbox"/> Other
Preservation:	<input checked="" type="checkbox"/> Ice	<input type="checkbox"/> Blue Ice	<input type="checkbox"/> Dry Ice
	<input type="checkbox"/> None		
Temp °C	<u>0.2°</u>	Time: <u>1045</u>	Thermometer ID: DT-20

	YES	NO	NA
Adequate Sample Volume Received?	✓		
Holding Time Acceptable?	✓		
Shipping Container(s) Intact?	✓		
Shipping Custody Seals Intact?	✓		
Shipping Documentation Present?	✓		
Airbill			
Trk # <u>7927 4081 0760</u>	✓		
Sample Container Intact?	✓		
Sample Custody Seals Intact?			✓
Chain of Custody / Sample Documentation Present?	✓		
COC Anomaly/Sample Acceptance Form completed?			✓
If Chlorinated or Drinking Water Samples, Acceptable Preservation?			✓
Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> Preservation Documented?	COC	Sample Container	<u>None</u>
Shipping Container	Alta	<u>Client</u>	Retain
		<u>Return</u>	Dispose

Comments:

IRPE1134

## **APPENDIX G**

### **Section 44**

Outfall 002, May 11, 2006

MEC<sup>X</sup> Data Validation Reports

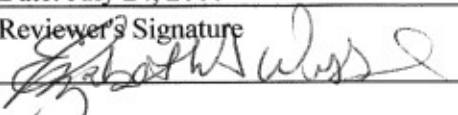
**CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA**

MECX, LLC  
 12260 East Vassar Drive  
 Suite 500  
 Lakewood, CO 80226

Package ID B4DF103  
 Task Order 1261.001D.01  
 SDG No. IPE1134

No. of Analyses 1

Laboratory Alta Analytical  
 Reviewer E. Wessling  
 Analysis/Method Dioxins/Furans

Date: July 24, 2006  
 Reviewer's Signature  


ACTION ITEMS <sup>a</sup>	
<b>1. Case Narrative Deficiencies</b>	<hr/> <hr/>
<b>2. Out of Scope Analyses</b>	<hr/> <hr/>
<b>3. Analyses Not Conducted</b>	<hr/> <hr/>
<b>4. Missing Hardcopy Deliverables</b>	<hr/> <hr/>
<b>5. Incorrect Hardcopy Deliverables</b>	<hr/> <hr/>
<b>6. Deviations from Analysis Protocol, e.g.,</b>	Qualifications were assigned for the following: - the results between the RL and the MDL were estimated <hr/> Holding Times <hr/> GC/MS Tune/Inst. Performance <hr/> Calibration <hr/> Method blanks <hr/> Surrogates <hr/> Matrix Spike/Dup LCS <hr/> Field QC <hr/> Internal Standard Performance <hr/> Compound Identification <hr/> Quantitation <hr/> System Performance <hr/>
COMMENTS <sup>b</sup>	
<hr/> <hr/> <hr/> <hr/>	
<sup>a</sup> Subcontracted analytical laboratory is not meeting contract and/or method requirements. <sup>b</sup> Differences in protocol have been adopted by the laboratory but no action against the laboratory is required.	



# DATA VALIDATION REPORT

NPDES Monitoring Program  
Routine Outfall 002

ANALYSIS: DIOXINS/FURANS  
SAMPLE DELIVERY GROUP: IPE1134

Prepared by  
MEC<sup>X</sup>, LLC  
12269 East Vassar Drive  
Aurora, CO 80014

## 1. INTRODUCTION

Task Order Title: NPDES  
Contract Task Order: 1261.001D.01  
Sample Delivery Group: IPE1134  
Project Manager: P. Costa  
Matrix: Water  
Analysis: Dioxins/Furans  
QC Level: Level IV  
No. of Samples: 1  
No. of Reanalyses/Dilutions: 0  
Reviewer: E. Wessling  
Date of Review: July 24, 2006

The sample listed in Table 1 was validated based on the guidelines outlined in the *MEC<sup>X</sup> Data Validation Procedure for Dioxins and Furans (DVP-19, Rev. 0)*, *USEPA Method 1613*, and the *National Functional Guidelines for Chlorinated Dioxin/Furan Data Review (8/02)*. Any deviations from these procedures and guidelines are documented herein. Qualifiers were applied in cases where the data did not meet the required QC criteria or where special consideration by the data user is required. Data qualifiers were placed on Form Is with the associated qualification codes. Analytes that were rejected for any reason are denoted on the Form I as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.



**Table 1. Sample Identification**

Client ID	Laboratory ID (Del Mar)	Laboratory ID (Alta)	Matrix	COC Method
Outfall 002	IPE1134-01	27705-001	Water	1613

## 2. DATA VALIDATION FINDINGS

### 2.1 SAMPLE MANAGEMENT

Following are findings associated with sample management:

#### 2.1.1 Sample Preservation, Handling, and Transport

The sample in this SDG was received at Del Mar Analytical within the temperature limits of 4°C ±2°C. The sample was shipped to Alta for dioxin/furan analysis and was received below the temperature limits at 0.2°C. The sample containers were not noted to be damaged or frozen during transportation; therefore, no qualifications were required. According to the case narrative and laboratory login sheet, the sample was received intact and in good condition at both laboratories. No qualifications were required.

#### 2.1.2 Chain of Custody

The COC and transfer COC were legible and signed by the appropriate field and laboratory personnel, and accounted for the analysis presented in this SDG. As the sample was couriered directly to Del Mar Analytical-Irvine, custody seals were not required. The Client ID was added to the sample result summary by the reviewer. No qualifications were required.

#### 2.1.3 Holding Times

The sample was extracted and analyzed within one year of collection. No qualifications were required.

### 2.2 INSTRUMENT PERFORMANCE

Following are findings associated with instrument performance:

#### 2.2.1 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 (see section 2.3.2). 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%. No qualifications were required.

## 2.2.2 Mass Spectrometer Performance

The mass spectrometer performance was acceptable with the static resolving power greater than 10,000. No qualifications were required.

## 2.3 CALIBRATION

### 2.3.1 Initial Calibration

The initial calibration was analyzed 03/22/2006 on instrument VG-5. The calibration consisted of six concentration level standards (CS0 through CS5) analyzed to verify instrument linearity. The initial calibrations were 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 QC limits listed in Method 1613 for all standards. A representative number of %RSDs were verified from the raw data, and no calculation or transcription errors were noted. No qualifications were required.

### 2.3.2 Continuing Calibration

Calibration verification (VER) consisted of a mid-level standard (CS3) analyzed at the beginning of each analytical sequence. The VER was 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. A representative number of %Ds were verified from the raw data, and no calculation or transcription errors were noted. No qualifications were required.

WDM and isomer specificity compounds were added to the VER standard instead of being analyzed separately, as noted in section 2.2.1 of this report. No adverse effect was observed with this practice.

## 2.4 BLANKS

One method blank (0-8038-MB001) was extracted and analyzed with the sample in this SDG. No target compounds were detected in the method blank. All labeled compound recoveries were within QC limits. A review of the method blank raw data and chromatograms indicated no false negatives. No qualifications were required.

## 2.5 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

One blank spike (0-8038-OPR001) was extracted and analyzed with the sample in this SDG. All recoveries were within the acceptance criteria listed in Table 6 of Method 1613. A review of the raw data and chromatograms indicated no transcription or calculation errors. No qualifications were required.

## 2.6 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

MS/MSD analyses were not performed in this SDG. Evaluation of method accuracy was based on the OPR results. No qualifications were required.

## 2.7 FIELD QC SAMPLES

Following are findings associated with field QC:

### 2.7.1 Field Blanks and Equipment Rinsates

The sample in this SDG had no field blank or equipment rinsate identified. No qualification of the site sample was required.

### 2.7.2 Field Duplicates

No field duplicates were identified in association with the sample in this SDG.

## 2.8 INTERNAL STANDARDS

The labeled standard recoveries were within the acceptance criteria listed in Table 7 of Method 1613. No qualifications were required.

## 2.9 COMPOUND IDENTIFICATION

The laboratory analyzed for polychlorinated dioxins/furans by EPA Method 1613. The compound identifications were verified from the raw data and no false negatives or positives were noted. No qualifications were required.

## 2.10 COMPOUND QUANTIFICATION AND REPORTED DETECTION LIMITS

Compound quantitation was verified from the raw data. The laboratory calculated and reported compound-specific detection limits. The detect below the laboratory lower calibration level was qualified as estimated, "J." This "J" value was annotated with the qualification code of "DNQ" to comply with the reporting requirements of the NPDES permit. No further qualifications were required.







# DATA VALIDATION REPORT

NPDES Monitoring Program  
Routine Outfall 002

ANALYSIS: VOLATILES

SAMPLE DELIVERY GROUP: IPE1134

Prepared by

MEC<sup>x</sup>, LLC  
12269 East Vassar Drive  
Aurora, CO 80014

## 1. INTRODUCTION

Task Order Title: NPDES  
MEC<sup>X</sup> Project Number: 1261.001D.01  
Sample Delivery Group: IPE1134  
Project Manager: P. Costa  
Matrix: Water  
Analysis: Volatiles  
QC Level: Level IV  
No. of Samples: 2  
No. of Reanalyses/Dilutions: 0  
Reviewer: L. Calvin  
Date of Review: July 23, 2006

The samples listed in Table 1 were validated based on the guidelines outlined in the *MEC<sup>X</sup> Data Validation Procedure for Volatile Organics (DVP-2, Rev. 0)*, *EPA Method 624*, and the *National Functional Guidelines for Organic Data Review (2/94)*. Any deviations from these procedures are documented herein. Qualifiers were applied in cases where the data did not meet the required QC criteria or where special consideration by the data user is required. Data qualifiers were placed on Form Is with the associated qualification codes. Analytes that were rejected for any reason are denoted on the Form I as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.



**Table 1. Sample Identification**

Client ID	Laboratory ID	Matrix	COC Method
Outfall 002	IPE1134-01	Water	624
Trip Blank	IPE1134-02	Water	624

## 2. DATA VALIDATION FINDINGS

### 2.1 SAMPLE MANAGEMENT

The samples in this SDG were received at the laboratory within the temperature limits of 4°C ±2°C, at 4°C. According to the case narrative for this SDG, the samples were received intact, on ice, and properly preserved. Information regarding lack of headspace in the VOA vials was not provided. No qualifications were required.

#### 2.1.2 Chain of Custody

The COC was signed and dated by both field and laboratory personnel. As the samples were couriered directly to the laboratory, custody seals were not required. No qualifications were required.

#### 2.1.3 Holding Times

The preserved water samples were analyzed for all target compounds within 14 days of collection. No qualifications were required.

### 2.2 GC/MS TUNING

The BFB tune performed at the beginning of each daily analytical sequence met the abundance criteria specified in EPA Method 624. No qualifications were required.

### 2.3 CALIBRATION

One initial calibration was associated with the sample analyses, dated 05/15/06. The average RRFs were  $\geq 0.05$ , and the %RSDs were  $\leq 35\%$  or  $r^2$  values  $\geq 0.995$  for all target compounds listed on the sample result summary forms. The continuing calibration associated with the sample analyses was dated 05/21/06. The %Ds for carbon tetrachloride and 1,2-dichloroethane exceeded the QC limit of  $\leq 20\%$ . Nondetect results for both compounds were qualified as estimated, "UJ," in site sample Outfall 002. Sample Trip Blank required no qualification for the %D outliers. The %Ds for all remaining target compounds were within the QC limits. No further qualifications were required.

### 2.4 BLANKS

One method blank (6E21009-BLK1) was analyzed with this SDG. No target compounds were detected above the MDL in the method blank. Review of the method blank raw data indicated no false negatives. No qualifications were required.

## 2.5 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

One blank spike (6E21009-BS1) was analyzed with this SDG. The recovery for 1,2-dichloroethane was above the laboratory-established QC limits; however, as 1,2-dichloroethane was not detected in the associated site sample, no qualification was necessary. All remaining recoveries were within the laboratory-established QC limits. No qualifications were required.

## 2.6 SURROGATE RECOVERY

Surrogate recoveries were within the laboratory QC limits of 80-120% for this SDG. No qualifications were required.

## 2.7 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

MS/MSD analyses were performed on site sample Outfall 002. The recovery for 1,2-dichloroethane was above the laboratory-established QC limits in the MS only. All remaining recoveries and all RPDs were within the laboratory-established QC limits. No qualifications were required.

## 2.8 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:

### 2.8.1 Trip Blanks

Sample Trip Blank was the trip blank associated with site sample Outfall 002. No target compounds were detected above the MDL in the trip blank. No qualifications were required.

### 2.8.2 Field Blanks and Equipment Rinsates

There were no field blank or equipment rinsate samples identified for this SDG. No qualifications were required.

### 2.8.3 Field Duplicates

There were no field duplicate samples identified for this SDG.

## 2.9 INTERNAL STANDARDS PERFORMANCE

The internal standard area counts and retention times were within the control limits established by the continuing calibration standard: -50%/+100% for internal standard areas and  $\pm 30$  seconds for retention times. The internal standard areas were checked from the raw data, and no transcription or calculation errors were noted. No qualifications were required.

## 2.10 COMPOUND IDENTIFICATION

The laboratory analyzed for volatile target compounds by EPA Method 624. Review of the sample chromatograms, retention times, and spectra indicated no problems with target compound identification. No qualifications were required.

## 2.11 COMPOUND QUANTIFICATION AND REPORTED DETECTION LIMITS

Compound quantification is verified at a Level IV data validation. No calculation or transcription errors were found. The reporting limits were supported by the low point of the initial calibration and the laboratory MDLs. No qualifications were required.

## 2.12 TENTATIVELY IDENTIFIED COMPOUNDS

TICs were not reported by the laboratory for this SDG. No qualifications were required.

## 2.13 SYSTEM PERFORMANCE

Review of the raw data indicated no problems with system performance. No qualifications were required.



MWH-Pasadena/Boeing  
 300 North Lake Avenue, Suite 1200  
 Pasadena, CA 91101  
 Attention: Bronwyn Kelly

Project ID: Routine Outfall 002

Report Number: IPE1134

Sampled: 05/11/06  
 Received: 05/11/06

**PURGEABLES BY GC/MS (EPA 624)**

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers	
									Rev Qual	Qual Code
<b>Sample ID: IPE1134-01 (Outfall 002 - Water)</b>										
Reporting Units: ug/l										
Benzene	EPA 624	6E21009	0.28	2.0	ND	1	05/21/06	05/21/06	U	
Carbon tetrachloride	EPA 624	6E21009	0.28	5.0	ND	1	05/21/06	05/21/06	U	C
Chloroform	EPA 624	6E21009	0.33	2.0	ND	1	05/21/06	05/21/06	U	
1,1-Dichloroethane	EPA 624	6E21009	0.27	2.0	ND	1	05/21/06	05/21/06	U	
1,2-Dichloroethane	EPA 624	6E21009	0.28	2.0	ND	1	05/21/06	05/21/06	U, L, MI	C
1,1-Dichloroethene	EPA 624	6E21009	0.42	3.0	ND	1	05/21/06	05/21/06	U	
Ethylbenzene	EPA 624	6E21009	0.25	2.0	ND	1	05/21/06	05/21/06		
Tetrachloroethene	EPA 624	6E21009	0.32	2.0	ND	1	05/21/06	05/21/06		
Toluene	EPA 624	6E21009	0.36	2.0	ND	1	05/21/06	05/21/06		
1,1,1-Trichloroethane	EPA 624	6E21009	0.30	2.0	ND	1	05/21/06	05/21/06		
1,1,2-Trichloroethane	EPA 624	6E21009	0.30	2.0	ND	1	05/21/06	05/21/06		
Trichloroethene	EPA 624	6E21009	0.26	5.0	ND	1	05/21/06	05/21/06		
Trichlorofluoromethane	EPA 624	6E21009	0.34	5.0	ND	1	05/21/06	05/21/06		
Vinyl chloride	EPA 624	6E21009	0.26	5.0	ND	1	05/21/06	05/21/06		
Xylenes, Total	EPA 624	6E21009	0.90	4.0	ND	1	05/21/06	05/21/06		
Surrogate: Dibromofluoromethane (80-120%)					96 %					
Surrogate: Toluene-d8 (80-120%)					90 %					
Surrogate: 4-Bromofluorobenzene (80-120%)					92 %					
<b>Sample ID: IPE1134-02 (Trip Blank - Water)</b>										
Reporting Units: ug/l										
Benzene	EPA 624	6E21009	0.28	2.0	ND	1	05/21/06	05/21/06	U	
Carbon tetrachloride	EPA 624	6E21009	0.28	5.0	ND	1	05/21/06	05/21/06		
Chloroform	EPA 624	6E21009	0.33	2.0	ND	1	05/21/06	05/21/06		
1,1-Dichloroethane	EPA 624	6E21009	0.27	2.0	ND	1	05/21/06	05/21/06		
1,2-Dichloroethane	EPA 624	6E21009	0.28	2.0	ND	1	05/21/06	05/21/06		L
1,1-Dichloroethene	EPA 624	6E21009	0.42	3.0	ND	1	05/21/06	05/21/06		
Ethylbenzene	EPA 624	6E21009	0.25	2.0	ND	1	05/21/06	05/21/06		
Tetrachloroethene	EPA 624	6E21009	0.32	2.0	ND	1	05/21/06	05/21/06		
Toluene	EPA 624	6E21009	0.36	2.0	ND	1	05/21/06	05/21/06		
1,1,1-Trichloroethane	EPA 624	6E21009	0.30	2.0	ND	1	05/21/06	05/21/06		
1,1,2-Trichloroethane	EPA 624	6E21009	0.30	2.0	ND	1	05/21/06	05/21/06		
Trichloroethene	EPA 624	6E21009	0.26	5.0	ND	1	05/21/06	05/21/06		
Trichlorofluoromethane	EPA 624	6E21009	0.34	5.0	ND	1	05/21/06	05/21/06		
Vinyl chloride	EPA 624	6E21009	0.26	5.0	ND	1	05/21/06	05/21/06		
Xylenes, Total	EPA 624	6E21009	0.90	4.0	ND	1	05/21/06	05/21/06		
Surrogate: Dibromofluoromethane (80-120%)					91 %					
Surrogate: Toluene-d8 (80-120%)					89 %					
Surrogate: 4-Bromofluorobenzene (80-120%)					94 %					

Del Mar Analytical - Irvine  
 Michele Chamberlin  
 Project Manager

LEVEL IV

**CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA**

MEC<sup>x</sup>  
 12269 East Vassar Drive  
 Aurora, CO 80014

Package ID: B4MT88  
 Task Order: 1261.001D.01  
 SDG No.: IPE2104-1134

No. of Analyses: 1

Laboratory: Del Mar Analytical  
 Reviewer: P. Meeks  
 Analysis/Method: Metals

Date: <u>July 21, 2006</u>
Reviewer's Signature <i>P. Meeks</i>

ACTION ITEMS <sup>a</sup>	
1. <b>Case Narrative</b>	
<b>Deficiencies</b>	
2. <b>Out of Scope Analyses</b>	
3. <b>Analyses Not Conducted</b>	
4. <b>Missing Hardcopy Deliverables</b>	
5. <b>Incorrect Hardcopy Deliverables</b>	
6. <b>Deviations from Analysis Protocol, e.g.,</b>	Qualification applied for detects below the reporting limit.
Holding Times	Reanalysis result rejected in favor of original result.
GC/MS Tune/Inst. Performance	
Calibration	
Method blanks	
Surrogates	
Matrix Spike/Dup LCS	
Field QC	
Internal Standard Performance	
Compound Identification	
Quantitation	
System Performance	
<b>COMMENTS<sup>b</sup></b>	
<sup>a</sup> Subcontracted analytical laboratory is not meeting contract and/or method requirements. <sup>b</sup> Differences in protocol have been adopted by the laboratory but no action against the laboratory is required.	



# DATA VALIDATION REPORT

NPDES Sampling  
Outfall 002

ANALYSIS: METALS

SAMPLE DELIVERY GROUP IPE1134

Prepared by

MEC<sup>x</sup>, LLC  
12269 East Vassar Drive  
Aurora, CO 80014

## 1. INTRODUCTION

Task Order Title: NPDES Sampling  
MEC<sup>X</sup> Project Number: 1261.001D.01  
Sample Delivery Group: IPDE1134  
Project Manager: P. Costa  
Matrix: Water  
Analysis: Metals  
QC Level: Level IV  
No. of Samples: 1  
No. of Reanalyses/Dilutions: 0  
Reviewer: P. Meeks  
Date of Review: July 21, 2006

The samples listed in Table 1 were validated based on the guidelines outlined in the MEC<sup>X</sup> *Data Validation Procedure for ICP and ICP-MS Metals (DVP-5, Rev. 0)*, EPA Method 200.8, and validation guidelines outlined in the USEPA CLP National Functional Guidelines for Inorganic Data Review (2/94). Any deviations from these procedures and guidelines are documented herein. Qualifiers were applied in cases where the data did not meet the required QC criteria or where special consideration by the data user is required. Data qualifiers were placed on Form Is with the associated qualification codes. Analytes that were rejected for any reason are denoted on the Form I as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.



**Table 1. Sample Identification**

Client ID	Laboratory ID	Matrix	COC Method
Outfall 002	IPE1134-01	Water	200.8

## 2. DATA VALIDATION FINDINGS

### 2.1 SAMPLE MANAGEMENT

Following are findings associated with sample management:

#### 2.1.1 Sample Preservation, Handling, and Transport

The sample in this SDG was received at the laboratory within the temperature limits of 4°C ±2°C at 3°C. No sample preservation, handling, or transport problems were noted, and no qualifications were necessary.

#### 2.1.2 Chain of Custody

The COC was signed and dated by field and laboratory personnel and accounted for the sample and analyses presented in this SDG. Outfall 002 was reanalyzed for lead. As the laboratory did not append the MWH ID for the reanalysis with "RE1," the reviewer added this information to the Form I. No sample qualifications were required.

#### 2.1.3 Holding Times

The date of collection recorded on the COC and the dates of analyses recorded in the raw data documented that the sample analyses were performed within the method-specified holding time of six months for the ICP-MS metals. No qualifications were required.

### 2.2 ICP-MS TUNING

The method-specified tune criteria were met and no qualifications were required.

### 2.3 CALIBRATION

The ICV and CCV results showed acceptable recoveries, 90-110% for ICP-MS metals. The laboratory analyzed reporting limit check standards in association with the sample in this SDG. All recoveries were considered to be acceptable. No qualifications were required.

### 2.4 BLANKS

There were no detects in the method blanks or CCBs associated with the sample analyses. No qualifications were required.

## 2.5 ICP INTERFERENCE CHECK SAMPLE (ICS A/AB)

ICSA and ICSAB analyses were performed in association with the lead reanalysis only. All recoveries were within the control limits of 80-120% and no qualifications were required.

## 2.6 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

All recoveries were within the laboratory-established control limits of 85-115%. No qualifications were required.

## 2.7 LABORATORY DUPLICATES

No laboratory duplicate analyses were performed in association with the sample in this SDG; therefore, no assessment was made with respect to this criterion.

## 2.8 MATRIX SPIKES

MS/MSD analyses were performed on Outfall 002 for the ICP-MS analytes. MS/MSD analyses were also performed on Outfall 002 RE for lead only. All recoveries and all RPDs were within in control limits and no qualifications were required.

## 2.9 ICP/MS AND ICP SERIAL DILUTION

No serial dilution analyses were performed in association with the sample in this SDG; therefore, no assessment was made with respect to this criterion.

## 2.10 INTERNAL STANDARDS PERFORMANCE

For the target analytes analyzed by ICP-MS, the internal standards were within the method-specified control limits of 60-125%. No qualifications were required.

## 2.11 SAMPLE RESULT VERIFICATION

A Level IV review was performed for the samples in this data package. Calculations were verified and the sample results reported on the Form I were verified against the raw data. No transcription errors or calculation errors were noted. Sample results reported between the MDL and the reporting limit were qualified as estimated detects, "J." These qualifications were annotated with "DNQ" according to the NPDES program specifications.

Per a request from MWH personnel, the laboratory reanalyzed sample Outfall 002 for lead. The original analysis and the reanalysis results differed by a factor of two. The reviewer checked the reanalysis results for cadmium, copper, and selenium, and found them similar to the results reported from the original analysis. As both analytical sequences to be acceptable, the reviewer conservatively chose to report the original result. Therefore, the reanalysis, Outfall 002 RE1, was rejected, "R." No further qualifications were required.

## **2.12 FIELD QC SAMPLES**

Field QC samples are evaluated, and if necessary, qualified based only on laboratory blanks. Any remaining detects are used to evaluate the associated samples.

### **2.12.1 Field Blanks and Equipment Rinsates**

The samples in this SDG had no associated field QC samples. No qualifications were required.

### **2.12.2 Field Duplicates**

There were no field duplicate analyses performed in association with the site samples.



# Del Mar Analytical

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 9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851  
 2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

MWH-Pasadena/Boeing  
 300 North Lake Avenue, Suite 1200  
 Pasadena, CA 91101  
 Attention: Bronwyn Kelly

Project ID: Routine Outfall 002

Report Number: IPE1134

Sampled: 05/11/06

Received: 05/11/06

## METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers	
									Rev Qual	Qual Code
<b>Sample ID: IPE1134-01 (Outfall 002 - Water) - cont.</b>										
Reporting Units: mg/l										
Zinc	EPA 200.7	6E13046	0.015	0.020	ND	1	05/13/06	05/18/06	*	
<b>Sample ID: IPE1134-01 (Outfall 002 - Water)</b>										
Reporting Units: ug/l										
Cadmium	EPA 200.8	6E12070	0.025	1.0	ND	1	05/12/06	05/12/06	U	
Copper	EPA 200.8	6E12070	0.25	2.0	1.2	1	05/12/06	05/12/06	J J	DNQ
Lead	EPA 200.8	6E12070	0.040	1.0	12	1	05/12/06	05/12/06		
Mercury	EPA 245.1	6E12077	0.050	0.20	ND	1	05/12/06	05/12/06	*	
Selenium	EPA 200.8	6E12070	0.30	2.0	0.32	1	05/12/06	05/12/06	J J	DNQ
<b>Sample ID: IPE1134-01RE1 (Outfall 002 - Water)</b>										
Reporting Units: ug/l										
Lead	EPA 200.8	6E31131	0.040	1.0	6.2	1	05/31/06	06/01/06	R	D

Del Mar Analytical - Irvine  
 Michele Chamberlin  
 Project Manager

LEVEL IV

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## CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

MEC<sup>x</sup>  
 12269 East Vassar Drive  
 Aurora, CO 80014

Package ID: B4WC92  
 Task Order: 1261.001D.01  
 SDG No.: IPE1134

No. of Analyses: 1

Laboratory: Del Mar Analytical  
 Reviewer: P. Meeks  
 Analysis/Method: General Minerals

Date: <u>July 24, 2006</u>
Reviewer's Signature 

<b>ACTION ITEMS<sup>a</sup></b>	
<b>1. Case Narrative</b>	
<b>Deficiencies</b>	
<b>2. Out of Scope Analyses</b>	
<b>3. Analyses Not Conducted</b>	
<b>4. Missing Hardcopy Deliverables</b>	
<b>5. Incorrect Hardcopy Deliverables</b>	
<b>6. Deviations from Analysis Protocol, e.g.,</b>	Qualification applied for a detect below the reporting limit.
Holding Times	
GC/MS Tune/Inst. Performance	
Calibration	
Method blanks	
Surrogates	
Matrix Spike/Dup LCS	
Field QC	
Internal Standard Performance	
Compound Identification	
Quantitation	
System Performance	
<b>COMMENTS<sup>b</sup></b>	
<p><sup>a</sup> Subcontracted analytical laboratory is not meeting contract and/or method requirements.</p> <p><sup>b</sup> Differences in protocol have been adopted by the laboratory but no action against the laboratory is required.</p>	



# DATA VALIDATION REPORT

NPDES Sampling  
Outfall 002

ANALYSIS: GENERAL MINERALS

SAMPLE DELIVERY GROUP: IPE1134

Prepared by

MEC<sup>x</sup>, LLC  
12269 East Vassar Drive  
Aurora, CO 80014

## 1. INTRODUCTION

Task Order Title: NPDES Sampling  
MEC<sup>X</sup> Project Number: 1261.001D.01  
Sample Delivery Group: IPE1134  
Project Manager: P. Costa  
Matrix: Water  
Analysis: General Minerals  
QC Level: Level IV  
No. of Samples: 1  
No. of Reanalyses/Dilutions: 0  
Reviewer: P. Meeks  
Date of Review: July 24, 2006

The sample listed in Table 1 was validated based on the guidelines outlined in the *MEC<sup>X</sup> Data Validation Procedure for General Minerals (DVP-6, Rev. 0)*, *USEPA Methods for Chemical Analysis of Water and Wastes Methods 120.1, 180.1 and 350.2*, and validation guidelines outlined in the *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (2/94)*. Any deviations from these procedures and guidelines are documented herein. Qualifiers were applied in cases where the data did not meet the required QC criteria or where special consideration by the data user is required. Data qualifiers were placed on Form Is with the associated qualification codes. Analytes that were rejected for any reason are denoted on the Form Is as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.



**Table 1. Sample Identification**

Client ID	Laboratory ID	Matrix	COC Method
Outfall 002	IPE1134-01	Water	General Minerals

## 2. DATA VALIDATION FINDINGS

### 2.1 SAMPLE MANAGEMENT

Following are findings associated with sample management:

#### 2.1.1 Sample Preservation, Handling, and Transport

The sample in this SDG was received at the laboratory within the temperature limits of  $4^{\circ}\text{C} \pm 2^{\circ}\text{C}$ , at  $4^{\circ}\text{C}$ . No preservation problems were noted by the laboratory. No qualifications were required.

#### 2.1.2 Chain of Custody

The COC was signed and dated by field and laboratory personnel and accounted for the sample and all analyses presented in this SDG. As the sample was couriered directly from the field to the laboratory, custody seals were not necessary. No qualifications were required.

#### 2.1.3 Holding Times

The holding times were assessed by comparing the date of collection with the dates of analysis. All analyses were performed within the method-specified holding times. No qualifications were required.

### 2.2 CALIBRATION

For ammonia, no information regarding titrant standardization was provided; however, the as the LCS recovery was within the CCV control limits or 90-110%, no qualifications were required. The check standard recoveries for the remaining analyses were determined to be acceptable. No qualifications were required.

### 2.3 BLANKS

There were no detects in the method blanks associated with the sample analyses. Raw data was reviewed to verify the blank data. No qualifications were required.

### 2.4 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

The reported LCS recoveries were within the laboratory-established control limits. No qualifications were required.

## 2.5 LABORATORY DUPLICATES

Laboratory duplicate analyses were performed on Outfall 002 for conductivity only. The RPD was within the control limit of  $\leq 5\%$  and no qualifications were required.

## 2.6 MATRIX SPIKES

MS/MSD analyses were performed on Outfall 002 for ammonia only. The recoveries were within the control limits of 70-120% and the RPD was within the control limit of  $\leq 20\%$ . No qualifications were required.

## 2.7 SAMPLE RESULT VERIFICATION

A Level IV review was performed for the sample in this data package. Calculations were verified, and the sample results reported on the Form I were verified against the raw data. Turbidity detected below the reporting limit was qualified as estimated, "J," and annotated with the qualification code "DNQ," in accordance with the NPDES permit. No further qualifications were required.

## 2.8 FIELD QC SAMPLES

Field QC samples are evaluated, and if necessary, qualified based only on laboratory blanks. Any remaining detects are used to evaluate the associated sample. The following are findings associated with field QC samples:

### 2.8.1 Field Blanks and Equipment Rinsates

The sample in this SDG had no associated field QC samples. No qualifications were required.

### 2.8.2 Field Duplicates

There were no field duplicate pairs associated with this SDG.



MWH-Pasadena/Boeing  
 300 North Lake Avenue, Suite 1200  
 Pasadena, CA 91101  
 Attention: Bronwyn Kelly

Project ID: Routine Outfall 002

Report Number: IPE1134

Sampled: 05/11/06  
 Received: 05/11/06

### INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
<b>Sample ID: IPE1134-01 (Outfall 002 - Water) - cont.</b>									
Reporting Units: mg/l									
Ammonia-N (Distilled)	EPA 350.2	6E19092	0.30	0.50	<b>0.84</b>	1	05/19/06	05/19/06	
Biochemical Oxygen Demand	EPA 405.1	6E12090	0.59	2.0	<b>1.0</b>	1	05/12/06	05/17/06	* J
Chloride	EPA 300.0	6E11111	3.0	10	<b>49</b>	20	05/11/06	05/12/06	
Nitrate-N	EPA 300.0	6E11111	0.080	0.15	ND	1	05/11/06	05/12/06	
Nitrite-N	EPA 300.0	6E11111	0.080	0.15	ND	1	05/11/06	05/12/06	
Nitrate/Nitrite-N	EPA 300.0	6E11111	0.080	0.15	ND	1	05/11/06	05/12/06	
Oil & Grease	EPA 413.1	6E15050	0.89	4.7	ND	1	05/15/06	05/15/06	
Sulfate	EPA 300.0	6E11111	9.0	10	<b>270</b>	20	05/11/06	05/12/06	
Surfactants (MBAS)	SM5540-C	6E11088	0.044	0.10	<b>0.048</b>	1	05/11/06	05/11/06	J
Total Dissolved Solids	SM2540C	6E17074	10	10	<b>700</b>	1	05/17/06	05/17/06	
Total Suspended Solids	EPA 160.2	6E17105	10	10	ND	1	05/17/06	05/17/06	
<b>Sample ID: IPE1134-01 (Outfall 002 - Water)</b>									
Reporting Units: ml/hr									
Total Settleable Solids	EPA 160.5	6E12116	0.10	0.10	ND	1	05/12/06	05/12/06	
<b>Sample ID: IPE1134-01 (Outfall 002 - Water)</b>									
Reporting Units: NTU									
Turbidity	EPA 180.1	6E12113	0.040	1.0	<b>0.57</b>	1	05/12/06	05/12/06	J J DNG
<b>Sample ID: IPE1134-01 (Outfall 002 - Water)</b>									
Reporting Units: ug/l									
Total Cyanide	EPA 335.2	6E12098	2.2	5.0	ND	1	05/12/06	05/12/06	* J
Perchlorate	EPA 314.0	6E19058	0.80	4.0	ND	1	05/19/06	05/19/06	
<b>Sample ID: IPE1134-01 (Outfall 002 - Water)</b>									
Reporting Units: umhos/cm									
Specific Conductance	EPA 120.1	6E17079	1.0	1.0	<b>1100</b>	1	05/17/06	05/17/06	

Del Mar Analytical - Irvine  
 Michele Chamberlin  
 Project Manager

LEVEL IV

## **APPENDIX G**

### **Section 45**

Outfall 003, May 22, 2006

Del Mar Analytical Laboratory Report

**LABORATORY REPORT**

Prepared For: MWH-Pasadena/Boeing  
300 North Lake Avenue, Suite 1200  
Pasadena, CA 91101  
Attention: Bronwyn Kelly

Project: Routine Outfall 003

Sampled: 05/22/06  
Received: 05/22/06  
Issued: 07/25/06 10:38

NELAP #01108CA California ELAP#1197 CSDLAC #10117

*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.*

**CASE NARRATIVE**

**SAMPLE RECEIPT:** Samples were received intact, at 3°C, on ice and with chain of custody documentation.

**HOLDING TIMES:** All samples were analyzed within prescribed holding times and/or in accordance with the Del Mar Analytical Sample Acceptance Policy unless otherwise noted in the report.

**PRESERVATION:** Samples requiring preservation were verified prior to sample analysis.

**QA/QC CRITERIA:** All analyses met method criteria, except as noted in the report with data qualifiers.

**COMMENTS:** Results that fall between the MDL and RL are 'J' flagged.

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

**ADDITIONAL INFORMATION:** The bottles for total recoverable metals were received empty. Water was poured from the radiochemistry cubitainer and preserved for this analysis.

**LABORATORY ID**  
IPE2095-01

**CLIENT ID**  
Outfall 003

**MATRIX**  
Water

Reviewed By:



**TestAmerica - Irvine, CA**  
Michele Chamberlin  
Project Manager

MWH-Pasadena/Boeing  
 300 North Lake Avenue, Suite 1200  
 Pasadena, CA 91101  
 Attention: Bronwyn Kelly

Project ID: Routine Outfall 003

Report Number: IPE2095

Sampled: 05/22/06

Received: 05/22/06

## METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
<b>Sample ID: IPE2095-01 (Outfall 003 - Water)</b>									
<b>Reporting Units: ug/l</b>									
<b>Antimony</b>	EPA 200.8	6E24078	0.050	2.0	<b>0.60</b>	1	05/24/06	05/24/06	J
Cadmium	EPA 200.8	6E24078	0.025	1.0	ND	1	05/24/06	05/24/06	
<b>Copper</b>	EPA 200.8	6E24078	0.25	2.0	<b>2.0</b>	1	05/24/06	05/24/06	
<b>Lead</b>	EPA 200.8	6E24078	0.040	1.0	<b>0.22</b>	1	05/24/06	05/24/06	J
Mercury	EPA 245.1	6E24083	0.050	0.20	ND	1	05/24/06	05/24/06	
Thallium	EPA 200.8	6E24078	0.15	1.0	ND	1	05/24/06	05/24/06	

**TestAmerica - Irvine, CA**  
 Michele Chamberlin  
 Project Manager

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MWH-Pasadena/Boeing  
 300 North Lake Avenue, Suite 1200  
 Pasadena, CA 91101  
 Attention: Bronwyn Kelly

Project ID: Routine Outfall 003

Report Number: IPE2095

Sampled: 05/22/06

Received: 05/22/06

## DISSOLVED METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
<b>Sample ID: IPE2095-01 (Outfall 003 - Water) - cont.</b>									
<b>Reporting Units: ug/l</b>									
<b>Antimony</b>	EPA 200.8-Diss	6E23097	0.050	2.0	<b>0.88</b>	1	05/23/06	05/24/06	J
Cadmium	EPA 200.8-Diss	6E23097	0.025	1.0	ND	1	05/23/06	05/24/06	
<b>Copper</b>	EPA 200.8-Diss	6E23097	0.25	2.0	<b>1.7</b>	1	05/23/06	05/24/06	J
Lead	EPA 200.8-Diss	6E23097	0.040	1.0	ND	1	05/23/06	05/24/06	
Mercury	EPA 245.1-Diss	6E24084	0.050	0.20	ND	1	05/24/06	05/24/06	
<b>Thallium</b>	EPA 200.8-Diss	6E23097	0.15	1.0	<b>0.42</b>	1	05/23/06	05/24/06	J

TestAmerica - Irvine, CA  
 Michele Chamberlin  
 Project Manager



MWH-Pasadena/Boeing  
 300 North Lake Avenue, Suite 1200  
 Pasadena, CA 91101  
 Attention: Bronwyn Kelly

Project ID: Routine Outfall 003

Report Number: IPE2095

Sampled: 05/22/06

Received: 05/22/06

## INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
<b>Sample ID: IPE2095-01 (Outfall 003 - Water) - cont.</b>									
Reporting Units: mg/l									
Chloride	EPA 300.0	6E22053	0.15	0.50	<b>14</b>	1	05/22/06	05/22/06	
Nitrate/Nitrite-N	EPA 300.0	6E22053	0.080	0.15	<b>0.32</b>	1	05/22/06	05/22/06	
Oil & Grease	EPA 413.1	6E24059	0.89	4.7	ND	1	05/24/06	05/24/06	
Sulfate	EPA 300.0	6E22053	0.45	0.50	<b>23</b>	1	05/22/06	05/22/06	
Total Dissolved Solids	SM2540C	6E23074	10	10	<b>130</b>	1	05/23/06	05/23/06	
Total Suspended Solids	EPA 160.2	6E24118	10	10	ND	1	05/24/06	05/24/06	

TestAmerica - Irvine, CA  
 Michele Chamberlin  
 Project Manager

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MWH-Pasadena/Boeing  
300 North Lake Avenue, Suite 1200  
Pasadena, CA 91101  
Attention: Bronwyn Kelly

Project ID: Routine Outfall 003

Report Number: IPE2095

Sampled: 05/22/06

Received: 05/22/06

## SHORT HOLD TIME DETAIL REPORT

	<b>Hold Time (in days)</b>	<b>Date/Time Sampled</b>	<b>Date/Time Received</b>	<b>Date/Time Extracted</b>	<b>Date/Time Analyzed</b>
<b>Sample ID: Outfall 003 (IPE2095-01) - Water</b> EPA 300.0	2	05/22/2006 11:00	05/22/2006 18:40	05/22/2006 20:00	05/22/2006 22:46

**TestAmerica - Irvine, CA**  
Michele Chamberlin  
Project Manager

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**NPDES - 1098**  
IPE2095 <Page 5 of 14>

MWH-Pasadena/Boeing  
 300 North Lake Avenue, Suite 1200  
 Pasadena, CA 91101  
 Attention: Bronwyn Kelly

Project ID: Routine Outfall 003  
 Report Number: IPE2095

Sampled: 05/22/06  
 Received: 05/22/06

## METHOD BLANK/QC DATA

### METALS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	Limit	RPD	RPD Limit	Data Qualifiers
<b>Batch: 6E24078 Extracted: 05/24/06</b>											
<b>Blank Analyzed: 05/24/2006 (6E24078-BLK1)</b>											
Antimony	ND	2.0	0.050	ug/l							
Cadmium	ND	1.0	0.025	ug/l							
Copper	ND	2.0	0.25	ug/l							
Lead	ND	1.0	0.040	ug/l							
Thallium	ND	1.0	0.15	ug/l							
<b>LCS Analyzed: 05/24/2006 (6E24078-BS1)</b>											
Antimony	80.7	2.0	0.050	ug/l	80.0		101	85-115			
Cadmium	79.1	1.0	0.025	ug/l	80.0		99	85-115			
Copper	76.6	2.0	0.25	ug/l	80.0		96	85-115			
Lead	79.9	1.0	0.040	ug/l	80.0		100	85-115			
Thallium	72.8	1.0	0.15	ug/l	80.0		91	85-115			
<b>Matrix Spike Analyzed: 05/24/2006 (6E24078-MS1) Source: IPE2095-01</b>											
Antimony	81.1	2.0	0.050	ug/l	80.0	0.60	101	70-130			
Cadmium	76.6	1.0	0.025	ug/l	80.0	ND	96	70-130			
Copper	80.0	2.0	0.25	ug/l	80.0	2.0	98	70-130			
Lead	81.2	1.0	0.040	ug/l	80.0	0.22	101	70-130			
Thallium	73.9	1.0	0.15	ug/l	80.0	ND	92	70-130			
<b>Matrix Spike Dup Analyzed: 05/24/2006 (6E24078-MSD1) Source: IPE2095-01</b>											
Antimony	79.4	2.0	0.050	ug/l	80.0	0.60	98	70-130	2	20	
Cadmium	75.1	1.0	0.025	ug/l	80.0	ND	94	70-130	2	20	
Copper	78.0	2.0	0.25	ug/l	80.0	2.0	95	70-130	3	20	
Lead	80.2	1.0	0.040	ug/l	80.0	0.22	100	70-130	1	20	
Thallium	73.0	1.0	0.15	ug/l	80.0	ND	91	70-130	1	20	

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 Michele Chamberlin  
 Project Manager

MWH-Pasadena/Boeing  
 300 North Lake Avenue, Suite 1200  
 Pasadena, CA 91101  
 Attention: Bronwyn Kelly

Project ID: Routine Outfall 003  
 Report Number: IPE2095

Sampled: 05/22/06  
 Received: 05/22/06

## METHOD BLANK/QC DATA

### METALS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
<b>Batch: 6E24083 Extracted: 05/24/06</b>											
<b>Blank Analyzed: 05/24/2006 (6E24083-BLK1)</b>											
Mercury	ND	0.20	0.050	ug/l							
<b>LCS Analyzed: 05/24/2006 (6E24083-BS1)</b>											
Mercury	8.31	0.20	0.050	ug/l	8.00		104	85-115			
<b>Matrix Spike Analyzed: 05/24/2006 (6E24083-MS1)</b>											
						<b>Source: IPE2127-01</b>					
Mercury	3.62	0.20	0.050	ug/l	8.00	ND	45	70-130			M2
<b>Matrix Spike Dup Analyzed: 05/24/2006 (6E24083-MSD1)</b>											
						<b>Source: IPE2127-01</b>					
Mercury	2.71	0.20	0.050	ug/l	8.00	ND	34	70-130	29	20	M2, R-3

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 Attention: Bronwyn Kelly

Project ID: Routine Outfall 003  
 Report Number: IPE2095

Sampled: 05/22/06  
 Received: 05/22/06

## METHOD BLANK/QC DATA

### DISSOLVED METALS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	Limit	RPD	RPD Limit	Data Qualifiers
<b>Batch: 6E23097 Extracted: 05/23/06</b>											
<b>Blank Analyzed: 05/23/2006 (6E23097-BLK1)</b>											
Antimony	ND	2.0	0.050	ug/l							
Cadmium	ND	1.0	0.025	ug/l							
Copper	ND	2.0	0.25	ug/l							
Lead	ND	1.0	0.040	ug/l							
Thallium	ND	1.0	0.15	ug/l							
<b>LCS Analyzed: 05/23/2006-05/25/2006 (6E23097-BS1)</b>											
Antimony	82.0	2.0	0.050	ug/l	80.0		102	85-115			
Cadmium	82.1	1.0	0.025	ug/l	80.0		103	85-115			
Copper	81.8	2.0	0.25	ug/l	80.0		102	85-115			
Lead	85.9	1.0	0.040	ug/l	80.0		107	85-115			
Thallium	86.9	1.0	0.15	ug/l	80.0		109	85-115			
<b>Matrix Spike Analyzed: 05/24/2006 (6E23097-MS1) Source: IPE2095-01</b>											
Antimony	93.9	2.0	0.050	ug/l	80.0	0.88	116	70-130			
Cadmium	92.0	1.0	0.025	ug/l	80.0	ND	115	70-130			
Copper	78.6	2.0	0.25	ug/l	80.0	1.7	96	70-130			
Lead	82.8	1.0	0.040	ug/l	80.0	ND	104	70-130			
Thallium	84.9	1.0	0.15	ug/l	80.0	0.42	106	70-130			
<b>Matrix Spike Dup Analyzed: 05/24/2006 (6E23097-MSD1) Source: IPE2095-01</b>											
Antimony	93.9	2.0	0.050	ug/l	80.0	0.88	116	70-130	0	20	
Cadmium	94.0	1.0	0.025	ug/l	80.0	ND	118	70-130	2	20	
Copper	79.5	2.0	0.25	ug/l	80.0	1.7	97	70-130	1	20	
Lead	82.4	1.0	0.040	ug/l	80.0	ND	103	70-130	1	20	
Thallium	84.5	1.0	0.15	ug/l	80.0	0.42	105	70-130	1	20	

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 Michele Chamberlin  
 Project Manager

MWH-Pasadena/Boeing  
 300 North Lake Avenue, Suite 1200  
 Pasadena, CA 91101  
 Attention: Bronwyn Kelly

Project ID: Routine Outfall 003

Report Number: IPE2095

Sampled: 05/22/06

Received: 05/22/06

## METHOD BLANK/QC DATA

### DISSOLVED METALS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
<b>Batch: 6E24084 Extracted: 05/24/06</b>											
<b>Blank Analyzed: 05/24/2006 (6E24084-BLK1)</b>											
Mercury	ND	0.20	0.050	ug/l							
<b>LCS Analyzed: 05/24/2006 (6E24084-BS1)</b>											
Mercury	8.16	0.20	0.050	ug/l	8.00		102	85-115			
<b>Matrix Spike Analyzed: 05/24/2006 (6E24084-MS1)</b>											
						<b>Source: IPE1552-01</b>					
Mercury	8.33	0.20	0.050	ug/l	8.00	0.065	103	70-130			
<b>Matrix Spike Dup Analyzed: 05/24/2006 (6E24084-MSD1)</b>											
						<b>Source: IPE1552-01</b>					
Mercury	8.32	0.20	0.050	ug/l	8.00	0.065	103	70-130	0	20	

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 300 North Lake Avenue, Suite 1200  
 Pasadena, CA 91101  
 Attention: Bronwyn Kelly

Project ID: Routine Outfall 003  
 Report Number: IPE2095

Sampled: 05/22/06  
 Received: 05/22/06

## METHOD BLANK/QC DATA

### INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	Limit	RPD	RPD Limit	Data Qualifiers
<b>Batch: 6E22053 Extracted: 05/22/06</b>											
<b>Blank Analyzed: 05/22/2006 (6E22053-BLK1)</b>											
Chloride	ND	0.50	0.15	mg/l							
Nitrate/Nitrite-N	ND	0.15	0.080	mg/l							
Sulfate	ND	0.50	0.45	mg/l							
<b>LCS Analyzed: 05/22/2006 (6E22053-BS1)</b>											
Chloride	5.11	0.50	0.15	mg/l	5.00		102	90-110			M-3
Sulfate	10.1	0.50	0.45	mg/l	10.0		101	90-110			
<b>Matrix Spike Analyzed: 05/22/2006 (6E22053-MS1)</b>											
						<b>Source: IPE2083-01</b>					
Sulfate	368	5.0	4.5	mg/l	100	290	78	80-120			M2
<b>Matrix Spike Dup Analyzed: 05/22/2006 (6E22053-MSD1)</b>											
						<b>Source: IPE2083-01</b>					
Sulfate	366	5.0	4.5	mg/l	100	290	76	80-120	1	20	M2
<b>Batch: 6E23074 Extracted: 05/23/06</b>											
<b>Blank Analyzed: 05/23/2006 (6E23074-BLK1)</b>											
Total Dissolved Solids	ND	10	10	mg/l							
<b>LCS Analyzed: 05/23/2006 (6E23074-BS1)</b>											
Total Dissolved Solids	990	10	10	mg/l	1000		99	90-110			
<b>Duplicate Analyzed: 05/23/2006 (6E23074-DUP1)</b>											
						<b>Source: IPE2099-01</b>					
Total Dissolved Solids	15600	10	10	mg/l		16000			3	10	
<b>Batch: 6E24059 Extracted: 05/24/06</b>											
<b>Blank Analyzed: 05/24/2006 (6E24059-BLK1)</b>											
Oil & Grease	ND	5.0	0.94	mg/l							

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 300 North Lake Avenue, Suite 1200  
 Pasadena, CA 91101  
 Attention: Bronwyn Kelly

Project ID: Routine Outfall 003  
 Report Number: IPE2095

Sampled: 05/22/06  
 Received: 05/22/06

## METHOD BLANK/QC DATA

### INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	Limit	RPD	RPD Limit	Data Qualifiers
<b>Batch: 6E24059 Extracted: 05/24/06</b>											
<b>LCS Analyzed: 05/24/2006 (6E24059-BS1)</b>											
Oil & Grease	18.2	5.0	0.94	mg/l	20.0		91	65-120			M-NR1
<b>LCS Dup Analyzed: 05/24/2006 (6E24059-BSD1)</b>											
Oil & Grease	18.4	5.0	0.94	mg/l	20.0		92	65-120	1	20	
<b>Batch: 6E24118 Extracted: 05/24/06</b>											
<b>Blank Analyzed: 05/24/2006 (6E24118-BLK1)</b>											
Total Suspended Solids	ND	10	10	mg/l							
<b>LCS Analyzed: 05/24/2006 (6E24118-BS1)</b>											
Total Suspended Solids	985	10	10	mg/l	1000		98	85-115			
<b>Duplicate Analyzed: 05/24/2006 (6E24118-DUP1)</b>											
Total Suspended Solids	130	10	10	mg/l		Source: IPE2102-01			0	10	

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MWH-Pasadena/Boeing  
 300 North Lake Avenue, Suite 1200  
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 Attention: Bronwyn Kelly

Project ID: Routine Outfall 003

Report Number: IPE2095

Sampled: 05/22/06  
 Received: 05/22/06

## 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
IPE2095-01	413.1 Oil and Grease	Oil & Grease	mg/l	0	4.7	15
IPE2095-01	Antimony-200.8	Antimony	ug/l	0.60	2.0	6.00
IPE2095-01	Antimony-200.8, Diss	Antimony	ug/l	0.88	2.0	6.00
IPE2095-01	Cadmium-200.8	Cadmium	ug/l	0.016	1.0	4.00
IPE2095-01	Cadmium-200.8, Diss	Cadmium	ug/l	0	1.0	4.00
IPE2095-01	Chloride - 300.0	Chloride	mg/l	14	0.50	150
IPE2095-01	Copper-200.8	Copper	ug/l	2.00	2.0	14
IPE2095-01	Copper-200.8, Diss	Copper	ug/l	1.70	2.0	14
IPE2095-01	Lead-200.8	Lead	ug/l	0.22	1.0	5.20
IPE2095-01	Lead-200.8, Diss	Lead	ug/l	0.024	1.0	5.20
IPE2095-01	Mercury - 245.1	Mercury	ug/l	0.045	0.20	0.20
IPE2095-01	Mercury-245.1, Diss	Mercury	ug/l	0.023	0.20	0.20
IPE2095-01	Nitrogen, NO3+NO2 -N	Nitrate/Nitrite-N	mg/l	0.32	0.15	10.00
IPE2095-01	Sulfate-300.0	Sulfate	mg/l	23	0.50	250
IPE2095-01	TDS - SM 2540C	Total Dissolved Solids	mg/l	130	10	850
IPE2095-01	Thallium-200.8	Thallium	ug/l	0.074	1.0	2.00
IPE2095-01	Thallium-200.8, Diss	Thallium	ug/l	0.42	1.0	2.00

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 Project Manager

MWH-Pasadena/Boeing  
300 North Lake Avenue, Suite 1200  
Pasadena, CA 91101  
Attention: Bronwyn Kelly

Project ID: Routine Outfall 003

Report Number: IPE2095

Sampled: 05/22/06

Received: 05/22/06

## DATA QUALIFIERS AND DEFINITIONS

- 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.
- M2** The MS and/or MSD were below the acceptance limits due to sample matrix interference. See Blank Spike (LCS).
- M-3** Results exceeded the linear range in the MS/MSD and therefore are not available for reporting. The batch was accepted based on acceptable recovery in the Blank Spike (LCS).
- M-NR1** There was no MS/MSD analyzed with this batch due to insufficient sample volume. See Blank Spike/Blank Spike Duplicate.
- R-3** The RPD exceeded the method control limit due to sample matrix effects.
- ND** Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified.
- RPD** Relative Percent Difference

TestAmerica - Irvine, CA  
Michele Chamberlin  
Project Manager

*The results pertain only to the samples tested in the laboratory. This report shall not be reproduced, except in full, without written permission from TestAmerica.*

**NPDES - 1106**  
IPE2095 <Page 13 of 14>

MWH-Pasadena/Boeing  
 300 North Lake Avenue, Suite 1200  
 Pasadena, CA 91101  
 Attention: Bronwyn Kelly

Project ID: Routine Outfall 003

Report Number: IPE2095

Sampled: 05/22/06  
 Received: 05/22/06

## Certification Summary

### TestAmerica - Irvine, CA

Method	Matrix	Nelac	California
1613A/1613B	Water		
EDD + Level 4	Water		
EPA 160.2	Water	X	X
EPA 200.8-Diss	Water	X	X
EPA 200.8	Water	X	X
EPA 245.1-Diss	Water	X	X
EPA 245.1	Water	X	X
EPA 300.0	Water	X	X
EPA 413.1	Water	X	X
SM2540C	Water	X	X

*Nevada and NELAP provide analyte specific accreditations. Analyte specific information for TestAmerica may be obtained by contacting the laboratory or visiting our website at [www.testamericainc.com](http://www.testamericainc.com)*

### Subcontracted Laboratories

**Alta 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: IPE2095-01

Analysis Performed: EDD + Level 4  
 Samples: IPE2095-01

**TestAmerica - Irvine, CA**  
 Michele Chamberlin  
 Project Manager

17E20915

Client Name/Address:  
 MWH-Pasadena  
 300 North Lake Avenue, Suite 1200  
 Pasadena, CA 91101  
 Project Manager: Bronwyn Kelly  
 Project: Boeing-SSFL NPDES  
 Routine Outfall 003  
 Stormwater at RMHF  
 Phone Number: (626) 568-6691  
 Fax Number: (626) 568-6515  
 Sample: *Serrano, R*

Sample Description	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	ANALYSIS REQUIRED							Field readings: Temp = 64° pH = 7.6	Comments
						Total Recoverable Metals: Sb, Cd, Cu, Pb, Hg, TI	TCDD (and all congeners)	Oil & Grease (EPA 413.1)	Cl-, SO4, NO3+NO2-N	TDS, TSS	Sr-90 (90S.0)	Total Dissolved Metals: Sb, Cd, Cu, Pb, Hg, TI		
Outfall 003	W	1L Poly	1	HNO3	1A	X								
Outfall 003-Dup	W	1L Poly	1	HNO3	1B	X								
Outfall 003	W	1L Amber	2	None	2A, 2B		X							
Outfall 003	W	1L Amber	2	HCl	3A, 3B			X						
Outfall 003	W	Poly-500 ml	2	None	4A, 4B				X					
Outfall 003	W	Poly-500 ml	2	None	5A, 5B					X				
Outfall 003	W	Poly-1 gal	1	None	6A, 6B						X			unfiltered and unpreserved analysis
Outfall 003	W	Poly-1L	1	None	7							X		Filter w/in 24hr of receipt at lab

Relinquished By: *Bronwyn Kelly* Date/Time: 5/22/06 1420  
 Received By: *Bronwyn Kelly* Date/Time: 5/22/06 1420  
 Relinquished By: *Bronwyn Kelly* Date/Time: 5/22/06 1840  
 Received By: *Carl* Date/Time: 5-22-06 1840  
 Turn around Time: (check) 24 Hours \_\_\_\_\_ 5 Days \_\_\_\_\_ 48 Hours \_\_\_\_\_ 10 Days \_\_\_\_\_ 72 Hours \_\_\_\_\_ Normal \_\_\_\_\_  
 Perchlorate Only 72 Hours \_\_\_\_\_  
 Metals Only 72 Hours \_\_\_\_\_  
 Sample Integrity: (Check) Intact \_\_\_\_\_ On Ice:  3°

*(2) BSC*

1PE2095

Client Name/Address:		Project:		ANALYSIS REQUIRED							Field readings:					
MWH-Pasadena 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101		Boeing-SSFL NPDES Routine Outfall 003 Stormwater at RMHF		Total Recoverable Metals: Sb, Cd, Cu, Pb, Hg, Tl	TCDD (and all congeners)	Oil & Grease (EPA 413.1)	Cl-, SO4, NO3+NO2-N	TDS, TSS	Total Dissolved Metals: Sb, Cd, Cu, Pb, Hg, Tl	Temp = 64° pH = 7.6						
Sample Description	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	Sampling Date/Time	Preservative	1A	1B	2A, 2B	3A, 3B	4A, 4B	5A, 5B	6A, 6B	7	Comments
Outfall 003	W	1L Poly	1	HNO3	1A	5/22/06	HNO3	X								
Outfall 003-Dup	W	1L Poly	1	HNO3	1B		HNO3	X								
Outfall 003	W	1L Amber	2	None	2A, 2B		None									
Outfall 003	W	1L Amber	2	HCl	3A, 3B		HCl				X					
Outfall 003	W	Poly-500 ml	2	None	4A, 4B		None					X				
Outfall 003	W	Poly-500 ml	2	None	5A, 5B		None						X			
Outfall 003	W	Poly-1 gal	1	None	6A, 6B		None							X		unfiltered and unreserved analysis
Outfall 003	W	Poly-1L	1	None	7	5/22/06 11:38	None									Filter w/in 24hr of receipt at lab
Relinquished By	Date/Time: 5/22/06 1420		Received By		Date/Time: 5/22/06 1420		Turn around Time: (check)									
Relinquished By	Date/Time: 5/22/06 1840		Received By		Date/Time: 5/22/06 1840		24 Hours		48 Hours			72 Hours			Metals Only 72 Hours	
Relinquished By	Date/Time: 5/22/06 1840		Received By		Date/Time: 5/22/06 1840		Perchlorate Only 72 Hours		Sample Integrity: (Check)			Intact			On Ice: <input checked="" type="checkbox"/>	



June 29, 2006

**Alta Project I.D.: 27731**

Ms. Michele Chamberlin  
Del Mar Analytical, Irvine  
17461 Derian Avenue, Suite 100  
Irvine, CA 92614

Dear Ms. Chamberlin,

Enclosed are the results for the two analyses of separate aliquots of one aqueous sample received at Alta Analytical Laboratory on May 24, 2006 and June 20, 2006 under your Project Name "IPE2085". These samples were extracted and analyzed using EPA Method 1613 for tetra-through-octa chlorinated dioxins and furans. A standard turnaround time was provided for this work. The second sample bottle in the original shipment was received broken.

The second analysis was performed to confirm low OCDD/OCDF positives in the original analysis. The second analysis, performed using an aliquot that according to the chain-of-custody had been preserved with HCl, confirmed the low OCDD/OCDF concentrations, but may have had additional contamination from the HCl. Both sets of data are included in this report.

The following report consists of a Sample Inventory (Section I), Analytical Results (Section II) and the Appendix, which contains the chain-of-custody, a list of data qualifiers and abbreviations, Alta's current certifications, and copies of the raw data (if requested).

Alta Analytical Laboratory is committed to serving you effectively. If you require additional information, please contact me at 916-933-1640 or by email at [mmaier@altalab.com](mailto:mmaier@altalab.com). Thank you for choosing Alta as part of your analytical support team.

Sincerely,

  
Martha M. Maier  
Director of HRMS Services



*Alta Analytical Laboratory certifies that the report herein meets all the requirements set forth by NELAC for those applicable test methods. This report should not be reproduced except in full without the written approval of ALTA.*



**Alta Analytical Laboratory Inc.**

1104 Windfield Way  
El Dorado Hills, CA 95762  
FAX (916) 673-0106  
(916) 933-1640

**Section I: Sample Inventory Report**

**Date Received: 5/24/2006**

Alta Lab. ID

Client Sample ID

27731-001

IPE2095-01

27731-002

IPE2095-01E (HCl)

## SECTION II



Method Blank		EPA Method 1613					
Matrix:	Aqueous	QC Batch No.:	8052	Lab Sample:	0-MB001		
Sample Size:	1.00 L	Date Extracted:	26-May-06	Date Analyzed DB-5:	27-May-06		
				Date Analyzed DB-225:	NA		
Analyte	Conc. (ug/L)	DL <sup>a</sup>	EMPC <sup>b</sup>	Labeled Standard	%R	LCL-UCL <sup>d</sup>	Qualifiers
2,3,7,8-TCDD	ND	0.000000615		IS 13C-2,3,7,8-TCDD	75.1	25 - 164	
1,2,3,7,8-PeCDD	ND	0.000000710		13C-1,2,3,7,8-PeCDD	87.0	25 - 181	
1,2,3,4,7,8-HxCDD	ND	0.000000579		13C-1,2,3,4,7,8-HxCDD	67.4	32 - 141	
1,2,3,6,7,8-HxCDD	ND	0.000000641		13C-1,2,3,6,7,8-HxCDD	61.9	28 - 130	
1,2,3,7,8,9-HxCDD	ND	0.000000616		13C-1,2,3,4,6,7,8-HpCDD	73.5	23 - 140	
1,2,3,4,6,7,8-HpCDD	ND	0.000000671		13C-OCDD	41.5	17 - 157	
OCDD	ND	0.00000167		13C-2,3,7,8-TCDF	82.7	24 - 169	
2,3,7,8-TCDF	ND	0.000000522		13C-1,2,3,7,8-PeCDF	84.6	24 - 185	
1,2,3,7,8-PeCDF	ND	0.000000651		13C-2,3,4,7,8-PeCDF	86.9	21 - 178	
2,3,4,7,8-PeCDF	ND	0.000000622		13C-1,2,3,4,7,8-HxCDF	62.9	26 - 152	
1,2,3,4,7,8-HxCDF	ND	0.000000438		13C-1,2,3,6,7,8-HxCDF	54.1	26 - 123	
1,2,3,6,7,8-HxCDF	ND	0.000000458		13C-2,3,4,6,7,8-HxCDF	67.5	28 - 136	
2,3,4,6,7,8-HxCDF	ND	0.000000445		13C-1,2,3,7,8,9-HxCDF	70.3	29 - 147	
1,2,3,7,8,9-HxCDF	ND	0.000000620		13C-1,2,3,4,6,7,8-HpCDF	59.8	28 - 143	
1,2,3,4,6,7,8-HpCDF	ND	0.00000269		13C-1,2,3,4,7,8,9-HpCDF	81.6	26 - 138	
1,2,3,4,7,8,9-HpCDF	ND	0.00000200		13C-OCDF	53.8	17 - 157	
OCDF	ND	0.00000116		CRS 37Cl-2,3,7,8-TCDD	88.7	35 - 197	
<b>Totals</b>							
Total TCDD	ND	0.000000615					
Total PeCDD	ND	0.000000710					
Total HxCDD	ND	0.000000612					
Total HpCDD	ND	0.000000671					
Total TCDF	ND	0.000000522					
Total PeCDF	ND	0.000000636					
Total HxCDF	ND	0.000000490					
Total HpCDF	ND	0.00000234					
<b>Footnotes</b>							
a. Sample specific estimated detection limit.							
b. Estimated maximum possible concentration.							
c. Method detection limit							
d. Lower control limit - upper control limit.							

Analyst: JMH

Approved By:

William J. Luksemburg

29-Jun-2006 12:01

Method Blank				EPA Method 1613			
Matrix:	Aqueous	QC Batch No.:	8124	Lab Sample:	0-MB001	Date Analyzed DB-5:	26-Jun-06
Sample Size	1.00 L	Date Extracted:	23-Jun-06	Date Analyzed DB-5:	26-Jun-06	Date Analyzed DB-225:	NA
Analyte	Conc. (ug/L)	DL <sup>a</sup>	EMPC <sup>b</sup>	Qualifiers	Labeled Standard	%R	LCL-UCL <sup>d</sup> Qualifiers
2,3,7,8-TCDD	ND	0.000000511			IS 13C-2,3,7,8-TCDD	76.7	25 - 164
1,2,3,7,8-PeCDD	ND	0.000000638			13C-1,2,3,7,8-PeCDD	69.8	25 - 181
1,2,3,4,7,8-HxCDD	ND	0.000000616			13C-1,2,3,4,7,8-HxCDD	85.1	32 - 141
1,2,3,6,7,8-HxCDD	ND	0.000000653			13C-1,2,3,6,7,8-HxCDD	78.1	28 - 130
1,2,3,7,8,9-HxCDD	ND	0.000000639			13C-1,2,3,4,6,7,8-HpCDD	78.9	23 - 140
1,2,3,4,6,7,8-HpCDD	ND	0.000000706			13C-OCDD	56.3	17 - 157
OCDD	ND		0.000000964		13C-2,3,7,8-TCDF	70.7	24 - 169
2,3,7,8-TCDF	ND	0.000000671			13C-1,2,3,7,8-PeCDF	69.1	24 - 185
1,2,3,7,8-PeCDF	ND	0.000000592			13C-2,3,4,7,8-PeCDF	70.0	21 - 178
2,3,4,7,8-PeCDF	ND	0.000000547			13C-1,2,3,4,7,8-HxCDF	90.3	26 - 152
1,2,3,4,7,8-HxCDF	ND	0.000000447			13C-1,2,3,6,7,8-HxCDF	87.6	26 - 123
1,2,3,6,7,8-HxCDF	ND	0.000000422			13C-2,3,4,6,7,8-HxCDF	83.6	28 - 136
2,3,4,6,7,8-HxCDF	ND	0.000000486			13C-1,2,3,7,8,9-HxCDF	75.8	29 - 147
1,2,3,7,8,9-HxCDF	ND	0.000000751			13C-1,2,3,4,6,7,8-HpCDF	76.5	28 - 143
1,2,3,4,6,7,8-HpCDF	ND	0.00000107	0.00000156		13C-1,2,3,4,7,8,9-HpCDF	86.4	26 - 138
1,2,3,4,7,8,9-HpCDF	ND	0.0000122			13C-OCDF	52.6	17 - 157
OCDF	ND				CRS 37Cl-2,3,7,8-TCDD	74.5	35 - 197
<b>Totals</b>							
Total TCDD	ND	0.000000511					
Total PeCDD	ND		0.0000118				
Total HxCDD	ND	0.000000636					
Total HpCDD	ND	0.000000706					
Total TCDF	ND	0.000000671					
Total PeCDF	ND		0.00000345				
Total HxCDF	ND	0.000000526					
Total HpCDF	ND		0.00000156				
<b>Footnotes</b>							
a. Sample specific estimated detection limit.							
b. Estimated maximum possible concentration.							
c. Method detection limit.							
d. Lower control limit - upper control limit.							

Analyst: JMH

Approved By:

William J. Luksemburg

29-Jun-2006 12:01

OPR Results		EPA Method 1613				
Matrix:	Aqueous	QC Batch No.:	8052	Lab Sample:	0-OPR001	
Sample Size	1.00 L	Date Extracted	26-May-06	Date Analyzed DB-5:	27-May-06	
				Date Analyzed DB-225:	NA	
Analyte	Spike Conc.	Conc. (ng/mL)	OPR Limits	Labeled Standard	%R	LCL-UCL
2,3,7,8-TCDD	10.0	12.8	6.7 - 15.8	IS 13C-2,3,7,8-TCDD	74.0	25 - 164
1,2,3,7,8-PeCDD	50.0	64.2	35 - 71	13C-1,2,3,7,8-PeCDD	82.1	25 - 181
1,2,3,4,7,8-HxCDD	50.0	63.6	35 - 82	13C-1,2,3,4,7,8-HxCDD	68.6	32 - 141
1,2,3,6,7,8-HxCDD	50.0	63.0	38 - 67	13C-1,2,3,6,7,8-HxCDD	65.1	28 - 130
1,2,3,7,8,9-HxCDD	50.0	64.8	32 - 81	13C-1,2,3,4,6,7,8-HpCDD	85.5	23 - 140
1,2,3,4,6,7,8-HpCDD	50.0	63.7	35 - 70	13C-OCDD	58.2	17 - 157
OCDD	100	128	78 - 144	13C-2,3,7,8-TCDF	79.3	24 - 169
2,3,7,8-TCDF	10.0	12.3	7.5 - 15.8	13C-1,2,3,7,8-PeCDF	78.3	24 - 185
1,2,3,7,8-PeCDF	50.0	62.4	40 - 67	13C-2,3,4,7,8-PeCDF	83.5	21 - 178
2,3,4,7,8-PeCDF	50.0	60.1	34 - 80	13C-1,2,3,4,7,8-HxCDF	61.8	26 - 152
1,2,3,4,7,8-HxCDF	50.0	62.8	36 - 67	13C-1,2,3,6,7,8-HxCDF	56.8	26 - 123
1,2,3,6,7,8-HxCDF	50.0	61.4	42 - 65	13C-2,3,4,6,7,8-HxCDF	67.1	28 - 136
2,3,4,6,7,8-HxCDF	50.0	62.1	35 - 78	13C-1,2,3,7,8,9-HxCDF	79.2	29 - 147
1,2,3,7,8,9-HxCDF	50.0	62.2	39 - 65	13C-1,2,3,4,6,7,8-HpCDF	72.2	28 - 143
1,2,3,4,6,7,8-HpCDF	50.0	64.4	41 - 61	13C-1,2,3,4,7,8,9-HpCDF	94.7	26 - 138
1,2,3,4,7,8,9-HpCDF	50.0	63.9	39 - 69	13C-OCDF	68.5	17 - 157
OCDF	100	126	63 - 170	CRS 37Cl-2,3,7,8-TCDD	86.9	35 - 197

Analyst: JMH

Approved By: Martha M. Maier 28-Jun-2006 08:33

OPR Results		EPA Method 1613				
Matrix:	Aqueous	QC Batch No.:	8124	Lab Sample:	0-OPR001	
Sample Size	1.00 L	Date Extracted	23 Jun '06	Date Analyzed DB-5:	26-Jun-06	
				Date Analyzed DB-225:	NA	
Analyte	Spike Conc.	Conc. (ug/mL)	OPR Limits	Labeled Standard	%R	LCL-UCL
2,3,7,8-TCDD	10.0	9.78	6.7 - 15.8	IS 13C-2,3,7,8-TCDD	70.9	25 - 161
1,2,3,7,8-PeCDD	50.0	50.2	35 - 71	13C-1,2,3,7,8-PeCDD	64.7	25 - 181
1,2,3,4,7,8-HxCDD	50.0	49.5	35 - 82	13C-1,2,3,4,7,8-HxCDD	80.2	32 - 141
1,2,3,6,7,8-HxCDD	50.0	50.5	38 - 67	13C-1,2,3,6,7,8-HxCDD	67.6	28 - 130
1,2,3,7,8,9-HxCDD	50.0	51.6	32 - 81	13C-1,2,3,4,6,7,8-HpCDD	73.1	23 - 140
1,2,3,4,6,7,8-HpCDD	50.0	52.2	35 - 70	13C-OCDD	53.7	17 - 157
OCDD	100	101	78 - 144	13C-2,3,7,8-TCDF	70.6	24 - 169
2,3,7,8-TCDF	10.0	10.3	7.5 - 15.8	13C-1,2,3,7,8-PeCDF	65.3	24 - 185
1,2,3,7,8-PeCDF	50.0	49.3	40 - 67	13C-2,3,4,7,8-PeCDF	67.4	21 - 178
2,3,4,7,8-PeCDF	50.0	48.7	34 - 80	13C-1,2,3,4,7,8-HxCDF	81.4	26 - 152
1,2,3,4,7,8-HxCDF	50.0	50.5	36 - 67	13C-1,2,3,6,7,8-HxCDF	75.3	26 - 123
1,2,3,6,7,8-HxCDF	50.0	52.2	42 - 65	13C-2,3,4,6,7,8-HxCDF	77.5	28 - 136
2,3,4,6,7,8-HxCDF	50.0	48.4	35 - 78	13C-1,2,3,7,8,9-HxCDF	69.1	29 - 147
1,2,3,7,8,9-HxCDF	50.0	50.0	39 - 65	13C-1,2,3,4,6,7,8-HpCDF	70.6	28 - 143
1,2,3,4,6,7,8-HpCDF	50.0	49.9	41 - 61	13C-1,2,3,4,7,8,9-HpCDF	81.9	26 - 138
1,2,3,4,7,8,9-HpCDF	50.0	52.0	39 - 69	13C-OCDF	52.9	17 - 157
OCDF	100	101	63 - 170	CRS 37Cl-2,3,7,8-TCDD	75.5	35 - 197

Analyst: JMH

Approved By: Martha M. Mater 28-Jun-2006 08:33

Sample ID: IPE2095-01		EPA Method 1613					
Client Data		Sample Data		Laboratory Data			
Name:	Del Mar Analytical, Irvine	Matrix	Aqueous	Lab Sample:	27731-001		
Project:	IPE2085	Sample Size:	1.04 L	QC Batch No.:	8052		
Date Collected:	22-May-06			Date Analyzed DB-5:	27-May-06		
Time Collected:	1100			Date Analyzed DB-225:	N/A		
				Date Received:	24-May-06		
				Date Extracted:	26-May-06		
				Date Analyzed DB-225:	N/A		
Analyte	Conc. (ug/L)	DL <sup>a</sup>	EMPC <sup>b</sup>	Labeled Standard	%R	LCL-UCL <sup>d</sup>	Qualifiers
2,3,7,8-TCDD	ND	0.000000603		IS 13C-2,3,7,8-TCDD	69.2	25 - 164	
1,2,3,7,8-PeCDD	ND	0.000000677		13C-1,2,3,7,8-PeCDD	74.6	25 - 181	
1,2,3,4,7,8-HxCDD	ND	0.000000675		13C-1,2,3,4,7,8-HxCDD	68.8	32 - 141	
1,2,3,6,7,8-HxCDD	ND	0.000000700		13C-1,2,3,6,7,8-HxCDD	65.6	28 - 130	
1,2,3,7,8,9-HxCDD	ND	0.000000696		13C-1,2,3,4,6,7,8-HpCDD	72.9	23 - 140	
1,2,3,4,6,7,8-HpCDD	ND		0.000000441	13C-OCDD	52.7	17 - 157	
OCDD	0.00000642			13C-2,3,7,8-TCDF	69.7	24 - 169	
2,3,7,8-TCDF	ND	0.000000821		13C-1,2,3,7,8-PeCDF	68.5	24 - 185	
1,2,3,7,8-PeCDF	ND	0.000000591		13C-2,3,4,7,8-PeCDF	72.3	21 - 178	
2,3,4,7,8-PeCDF	ND	0.000000500		13C-1,2,3,4,7,8-HxCDF	67.1	26 - 152	
1,2,3,4,7,8-HxCDF	ND	0.000000476		13C-1,2,3,6,7,8-HxCDF	59.9	26 - 123	
1,2,3,6,7,8-HxCDF	ND	0.000000465		13C-2,3,4,6,7,8-HxCDF	67.0	28 - 136	
2,3,4,6,7,8-HxCDF	ND	0.000000496		13C-1,2,3,7,8,9-HxCDF	73.0	29 - 147	
1,2,3,7,8,9-HxCDF	ND	0.000000701		13C-1,2,3,4,6,7,8-HpCDF	64.0	28 - 143	
1,2,3,4,6,7,8-HpCDF	ND		0.00000118	13C-1,2,3,4,7,8,9-HpCDF	77.2	26 - 138	
1,2,3,4,7,8,9-HpCDF	ND	0.000000576		13C-OCDF	62.3	17 - 157	
OCDF	0.00000402			CRS 37Cl-2,3,7,8-TCDD	84.1	35 - 197	
<b>Totals</b>							
Total TCDD	ND	0.000000603					
Total PeCDD	ND	0.000000677					
Total HxCDD	ND	0.000000690					
Total HpCDD	ND		0.0000116				
Total TCDF	ND	0.000000821					
Total PeCDF	ND	0.000000546					
Total HxCDF	ND		0.000000623				
Total HpCDF	ND		0.00000244				
<b>Footnotes</b>							
a. Sample specific estimated detection limit.							
b. Estimated maximum possible concentration.							
c. Method detection limit.							
d. Lower control limit - upper control limit.							

Analyst: JMH

Approved By: William J. Luksemburg 29-Jun-2006 12:01

Sample ID: IPE2095-01E (HCl)				EPA Method 1613				
Client Data		Sample Data		Laboratory Data				
Name	Del Mar Analytical, Irvine	Matrix	Aqueous	Lab Sample:	27731-002	Date Received:	20-Jun-06	
Project	IPE2085	Sample Size	1.01 L	QC Batch No:	8124	Date Extracted:	23-Jun-06	
Date Collected	22-May-06			Date Analyzed DB-5:	26-Jun-06	Date Analyzed DB-225:	NA	
Time Collected:								
Analyte	Conc. (ug/L)	DL <sup>a</sup>	EMPC <sup>b</sup>	Qualifiers	Labeled Standard	%R	ICL-UCI <sup>d</sup>	Qualifiers
2,3,7,8-TCDD	ND	0.000000600			IS 13C-2,3,7,8-TCDD	71.9	25 - 164	
1,2,3,7,8-PeCDD	ND	0.000000830			13C-1,2,3,7,8-PeCDD	67.1	25 - 181	
1,2,3,4,7,8-HxCDD	ND	0.000000699			13C-1,2,3,4,7,8-HxCDD	81.2	32 - 141	
1,2,3,6,7,8-HxCDD	ND	0.000000707			13C-1,2,3,6,7,8-HxCDD	75.8	28 - 130	
1,2,3,7,8,9-HxCDD	ND	0.000000708			13C-1,2,3,4,6,7,8-HpCDD	71.6	23 - 140	
1,2,3,4,6,7,8-HpCDD	0.0000112			J	13C-OCDD	50.6	17 - 157	
OCDD	0.000103				13C-2,3,7,8-TCDF	71.1	24 - 169	
2,3,7,8-TCDF	ND		0.00000167		13C-1,2,3,7,8-PeCDF	66.0	24 - 185	
1,2,3,7,8-PeCDF	ND	0.000000650			13C-2,3,4,7,8-PeCDF	68.1	21 - 178	
2,3,4,7,8-PeCDF	ND	0.000000609			13C-1,2,3,4,7,8-HxCDF	87.3	26 - 152	
1,2,3,4,7,8-HxCDF	ND	0.000000759			13C-1,2,3,6,7,8-HxCDF	83.8	26 - 123	
1,2,3,6,7,8-HxCDF	ND	0.000000720			13C-2,3,4,6,7,8-HxCDF	81.5	28 - 136	
2,3,4,6,7,8-HxCDF	ND	0.000000795			13C-1,2,3,7,8,9-HxCDF	72.3	29 - 147	
1,2,3,7,8,9-HxCDF	ND	0.00000131			13C-1,2,3,4,6,7,8-HpCDF	74.1	28 - 143	
1,2,3,4,6,7,8-HpCDF	0.00000404			J	13C-1,2,3,4,7,8,9-HpCDF	85.3	26 - 138	
1,2,3,4,7,8,9-HpCDF	ND	0.00000554			13C-OCDF	48.9	17 - 157	
OCDF	0.0000103			J	CRS 37Cl-2,3,7,8-TCDD	74.4	35 - 197	
<b>Totals</b>								
Total TCDD	ND	0.000000600						
Total PeCDD	ND		0.0000127					
Total HxCDD	ND	0.000000705						
Total HpCDD	0.0000298							
Total TCDF	0.00000139		0.00000306					
Total PeCDF	ND		0.00000364					
Total HxCDF	ND	0.000000896						
Total HpCDF	0.00000665							
<b>Footnotes</b>								
a. Sample specific estimated detection limit.								
b. Estimated maximum possible concentration.								
c. Method detection limit.								
d. Lower control limit - upper control limit.								

Analyst: JMH

Approved By:

William J. Luksemburg 29-Jun-2006 12:01

## APPENDIX

## DATA QUALIFIERS & ABBREVIATIONS

B	This compound was also detected in the method blank.
D	The amount reported is the maximum possible concentration due to possible chlorinated diphenylether interference.
E	The reported value exceeds the calibration range of the instrument.
H	The signal-to-noise ratio is greater than 10:1.
I	Chemical interference
J	The amount detected is below the Lower Calibration Limit of the instrument.
*	See Cover Letter
Conc.	Concentration
DL	Sample-specific estimated Detection Limit
MDL	The minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero in the matrix tested.
EMPC	Estimated Maximum Possible Concentration
NA	Not applicable
RL	Reporting Limit – concentrations that corresponds to low calibration point
ND	Not Detected
TEQ	Toxic Equivalency

Unless otherwise noted, solid sample results are reported in dry weight. Tissue samples are reported in wet weight.



## CERTIFICATIONS

<b>Accrediting Authority</b>	<b>Certificate Number</b>
State of Alaska, DEC	CA413-02
State of Arizona	AZ0639
State of Arkansas, DEQ	05-013-0
State of Arkansas, DOH	Reciprocity through CA
State of California – NELAP Primary AA	02102CA
State of Colorado	
State of Connecticut	PH-0182
State of Florida, DEP	E87777
Commonwealth of Kentucky	90063
State of Louisiana, Health and Hospitals	LA050001
State of Louisiana, DEQ	01977
State of Maine	CA0413
State of Michigan	81178087
State of Mississippi	Reciprocity through CA
Naval Facilities Engineering Service Center	
State of Nevada	CA413
State of New Jersey	CA003
State of New Mexico	Reciprocity through CA
State of New York, DOH	11411
State of North Carolina	06700
State of North Dakota, DOH	R-078
State of Oklahoma	D9919
State of Oregon	CA200001-002
State of Pennsylvania	68-00490
State of South Carolina	87002001
State of Tennessee	02996
State of Texas	TX247-2005A
U.S. Army Corps of Engineers	
State of Utah	9169330940
Commonwealth of Virginia	00013
State of Washington	C1285
State of Wisconsin	998036160
State of Wyoming	8TMS-Q



17461 Derian Ave. Suite 100, Irvine, CA 92614 Ph (949) 261-1022 Fax (949) 261-1228  
 1014 E. Cooley Dr., Suite A, Colton, CA 92324 Ph (909) 370-4667 Fax (909) 370-1046  
 9484 Chesapeake Drive, Suite 805, San Diego, CA 92123 Ph (619) 505-9596 Fax (619) 505-9689  
 9830 South 51st Street, Suite B-120, Phoenix, AZ 85044 Ph (480) 785-0043 Fax (480) 785-0851  
 2520 E. Sunset Rd., Suite #3, Las Vegas, NV 89120 Ph (702) 796-3620 Fax (702) 796-3621

## SUBCONTRACT ORDER - PROJECT # IPE2095

<b>SENDING LABORATORY:</b> Del Mar Analytical - Irvine 17461 Derian Avenue, Suite 100 Irvine, CA 92614 Phone: (949) 261-1022 Fax: (949) 261-1228 Project Manager: Michele Chamberlin	<b>RECEIVING LABORATORY:</b> Alta Analytical - SUB 1104 Windfield Way El Dorado Hills, CA 95762 Phone: (916) 933-1640 Fax: (916) 673-0106
--	--

Standard TAT is requested unless specific due date is requested => Due Date: \_\_\_\_\_ Initials: \_\_\_\_\_

Analysis	Expiration	Comments
Sample ID: IPE2095-01 Water	Sampled: 05/22/06 11:00	
1613-Dioxin-HR-Alta	05/29/06 11:00	J flags, 17 congeners, no TEQ, ug/L, sub=Alta
EDD + Level 4	06/19/06 11:00	Excel EDD email to pm, Include Std logs for Lvl IV
<b>Containers Supplied:</b>		
1 L Amber (IPE2095-01C)		
1 L Amber (IPE2095-01D)		

27731

SAMPLE INTEGRITY:					
AI: containers intact: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Sample labels/COC agree: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Samples Received On Ice: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			
Custody Seals Present: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Samples Preserved Properly: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Samples Received at (temp): <u>1.0°C</u>			

Released By: [Signature] Date: 5/23/06 Time: \_\_\_\_\_ Received By: Bettina G. Benedict Date: 5/24/06 Time: 0845

Released By: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_ Received By: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

Chain of Custody Anomaly/Sample Acceptance Form

Client: Dei Mar Analytical, Irvine
Contact: Michele Chamberlin
Fax Number: 949-2603297

Project Number 27731
Date Received: May 24 2006
Documented by/date: [Signature] / 5.24.06

Please review the following information and complete the Client Authorization section. To comply with NELAC regulations, we must receive authorization before proceeding with sample analysis.

Thank You. ( Fax # 916-673-0106 )

The following information or item is needed to proceed with analysis:

- Complete Chain-of-Custody
Test Method Requested
Analyte List Requested
Preservative
Sample Identification
Sample Collection Date / Time
Collector's Name
Sample Type
Sample Location

The following anomalies were noted. Authorization is needed to proceed with the analysis.

Table with columns for anomaly type, temperature, samples affected, and ice present. Includes handwritten entries like 'Sample Container(s) Broken' and 'Sample Container Broken during shipment'.

Client Authorization section with fields for 'Proceed With Analysis' (YES), 'Signature and Date' (Handwritten), and 'Client Comments/Instructions'.

### SAMPLE LOG-IN CHECKLIST

Alta Project #: 27731

Samples Arrival:	Date/Time 5/24/06 0845	Initials: RUB	Location: WR-2			
			Shelf/Rack: _____			
Logged In:	Date/Time 5/24/06 1223	Initials: FEB	Location: WR-2			
			Shelf/Rack: A2			
Delivered By:	<input checked="" type="radio"/> FedEx	<input type="radio"/> UPS	<input type="radio"/> Cal	<input type="radio"/> DHL	<input type="radio"/> Hand Delivered	<input type="radio"/> Other
Preservation:	<input checked="" type="radio"/> Ice	<input type="radio"/> Blue Ice	<input type="radio"/> Dry Ice	<input type="radio"/> None		
Temp °C	1.0°C	Time: 0900	Thermometer ID: DT-20			

	YES	NO	NA		
Adequate Sample Volume Received?	✓				
Holding Time Acceptable?	✓				
Shipping Container(s) Intact?	✓				
Shipping Custody Seals Intact?	✓				
Shipping Documentation Present?	✓				
Airbill					
Trk #	7914 9223 5500				
Sample Container Intact?	✓				
Sample Custody Seals Intact?			✓		
Chain of Custody / Sample Documentation Present?	✓				
COC Anomaly/Sample Acceptance Form completed?	✓				
If Chlorinated or Drinking Water Samples, Acceptable Preservation?			✓		
Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> Preservation Documented?			<input checked="" type="radio"/> None		
Shipping Container	<input type="radio"/> Alta	<input checked="" type="radio"/> Client	<input type="radio"/> Retain	<input checked="" type="radio"/> Return	<input type="radio"/> Dispose

Comments:

1PE209S-01D  
\* Sample broken during shipment

## **APPENDIX G**

### **Section 46**

Outfall 003, May 22, 2006

MEC<sup>X</sup> Data Validation Reports

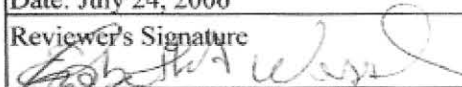
**CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA**

MECX, LLC  
 12260 East Vassar Drive  
 Suite 500  
 Lakewood, CO 80226

Package ID B4DF105  
 Task Order 1261.001D.01  
 SDG No. IPE2095

No. of Analyses 7

Laboratory Alta Analytical  
 Reviewer E. Wessling  
 Analysis/Method Dioxins/Furans

Date: July 24, 2006  
 Reviewer's Signature 

ACTION ITEMS <sup>a</sup>	
1. Case Narrative Deficiencies	
2. Out of Scope Analyses	
3. Analyses Not Conducted	
4. Missing Hardcopy Deliverables	<u>Incorrect chromatograms for Hx CDD + Hp CDD for m3001 OPR001 2 sample IPE2095-a1</u>
5. Incorrect Hardcopy Deliverables	
6. Deviations from Analysis Protocol, e.g., Holding Times GC/MS Tune/Inst. Performance Calibration Method blanks Surrogates Matrix Spike/Dup LCS Field QC Internal Standard Performance Compound Identification Quantitation System Performance	<u>Qualifications were assigned for the following: - the results between the RL and the MDL were estimated - EMPC values were qualified as estimated nondetects - reanalysis rejected in favor of original result</u>
COMMENTS <sup>b</sup>	

<sup>a</sup> Subcontracted analytical laboratory is not meeting contract and/or method requirements.  
<sup>b</sup> Differences in protocol have been adopted by the laboratory but no action against the laboratory is required.



# DATA VALIDATION REPORT

NPDES Monitoring Program  
Routine Outfall 003

ANALYSIS: DIOXINS/FURANS  
SAMPLE DELIVERY GROUP: IPE2095

Prepared by  
MEC<sup>X</sup>, LLC  
12269 East Vassar Drive  
Aurora, CO 80014

## 1. INTRODUCTION

Task Order Title: NPDES  
Contract Task Order: 1261.001D.01  
Sample Delivery Group: IPE2095  
Project Manager: P. Costa  
Matrix: Water  
Analysis: Dioxins/Furans  
QC Level: Level IV  
No. of Samples: 1  
No. of Reanalyses/Dilutions: 1  
Reviewer: E. Wessling  
Date of Review: July 24, 2006

The sample listed in Table 1 was validated based on the guidelines outlined in the *MEC<sup>X</sup> Data Validation Procedure for Dioxins and Furans (DVP-19, Rev. 0)*, *USEPA Method 1613*, and the *National Functional Guidelines for Chlorinated Dioxin/Furan Data Review (8/02)*. Any deviations from these procedures and guidelines are documented herein. Qualifiers were applied in cases where the data did not meet the required QC criteria or where special consideration by the data user is required. Data qualifiers were placed on Form Is with the associated qualification codes. Analytes that were rejected for any reason are denoted on the Form I as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.



**Table 1. Sample Identification**

Client ID	Laboratory ID (Del Mar)	Laboratory ID (Alta)	Matrix	COC Method
Outfall 003	IPE2095-01	27731-001	Water	1613
Outfall 003RE	IPE2095-01RE	27731-001RE	Water	1613

## 2. DATA VALIDATION FINDINGS

### 2.1 SAMPLE MANAGEMENT

Following are findings associated with sample management:

#### 2.1.1 Sample Preservation, Handling, and Transport

The sample in this SDG was received at Del Mar Analytical within the temperature limits of 4°C ±2°C. The sample was shipped to Alta for dioxin/furan analysis and was received below the temperature limits at 1.0°C. One sample container was not noted to be damaged or frozen during transportation; however, the second container was broken and was subsequently needed for analysis (see section 2.9). An additional container was shipped to Alta for confirmation analysis but was an HCl preserved container. As the results of the analysis of the improperly preserved aliquot were not retained (see section 2.9), no qualifications were required.

#### 2.1.2 Chain of Custody

The COC and transfer COC were legible and signed by the appropriate field and laboratory personnel, and accounted for the analysis presented in this SDG. As the sample was couriered directly to Del Mar Analytical-Irvine, custody seals were not required. The Client IDs were added to the sample result summaries by the reviewer. No qualifications were required.

#### 2.1.3 Holding Times

The samples were extracted and analyzed within one year of collection. No qualifications were required.

### 2.2 INSTRUMENT PERFORMANCE

Following are findings associated with instrument performance:

#### 2.2.1 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 (see section 2.3.2). 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%. No qualifications were required.

## 2.2.2 Mass Spectrometer Performance

The mass spectrometer performance was acceptable with the static resolving power greater than 10,000. No qualifications were required.

## 2.3 CALIBRATION

### 2.3.1 Initial Calibration

The initial calibration was analyzed 03/24/2006 on instrument VG-9. The calibration consisted of six concentration level standards (CS0 through CS5) analyzed to verify instrument linearity. The initial calibrations were 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 QC limits listed in Method 1613 for all standards. A representative number of %RSDs were verified from the raw data, and no calculation or transcription errors were noted. No qualifications were required.

### 2.3.2 Continuing Calibration

Calibration verification (VER) consisted of a mid-level standard (CS3) analyzed at the beginning of each analytical sequence. The VER was 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. A representative number of %Ds were verified from the raw data, and no calculation or transcription errors were noted. No qualifications were required.

WDM and isomer specificity compounds were added to the VER standard instead of being analyzed separately, as noted in section 2.2.1 of this report. No adverse effect was observed with this practice.

## 2.4 BLANKS

Two method blanks (0-8052-MB001 and 0-8124-MB001) were extracted and analyzed with the samples in this SDG. No target compounds were detected in the method blank associated with the retained sample analysis. The method blank associated with the rejected analysis had some low-level EMPC values but no qualifications were required as the associated site data was not retained. A review of the method blank raw data and chromatograms indicated no false negatives. No qualifications were required.

## 2.5 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

Two blank spikes (0-8052-OPR001 and 0-8124-OPR001) were extracted and analyzed with the sample in this SDG. All recoveries were within the acceptance criteria listed in Table 6 of Method

1613. A review of the raw data and chromatograms indicated no transcription or calculation errors. No qualifications were required.

## 2.6 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

MS/MSD analyses were not performed in this SDG. Evaluation of method accuracy was based on the OPR results. No qualifications were required.

## 2.7 FIELD QC SAMPLES

Following are findings associated with field QC:

### 2.7.1 Field Blanks and Equipment Rinsates

The sample in this SDG had no field blank or equipment rinsate identified. No qualification of the site sample was required.

### 2.7.2 Field Duplicates

No field duplicates were identified in association with the sample in this SDG.

## 2.8 INTERNAL STANDARDS

The labeled standard recoveries were within the acceptance criteria listed in Table 7 of Method 1613. No qualifications were required.

## 2.9 COMPOUND IDENTIFICATION

The laboratory analyzed for polychlorinated dioxins/furans by EPA Method 1613. The compound identifications were verified from the raw data and no false negatives or positives were noted. The lab was concerned that the low-level OCDD and OCDF detects may have been the result of analytical carryover from a highly contaminated sample. A reanalysis was performed which confirmed the low-level detects from the original analysis. As the reanalysis confirmed the original analysis, the reanalysis was rejected, "R," in favor of the analysis of the properly preserved aliquot (see section 2.1.1). No further qualifications were required.

## 2.10 COMPOUND QUANTIFICATION AND REPORTED DETECTION LIMITS

Compound quantitation was verified from the raw data. The laboratory calculated and reported compound-specific detection limits. The detect below the laboratory lower calibration level was qualified as estimated, "J." This "J" value was annotated with the qualification code of "DNQ" to

comply with the reporting requirements of the NPDES permit. Target compounds and total values reported as EMPC values were qualified as estimated nondetects, "UJ." No further qualifications were required.



Sample ID: IPE2095-01E (HCl) *Outfall 003 RE* EPA Method 1613

Client Data		Sample Data		Laboratory Data	
Name:	Del Mar Analytical, Irvine	Matrix:	Aqueous	Lab Sample:	27731-002
Project:	IPE2085	Sample Size:	1.01 L	QC Batch No.:	8124
Date Collected:	22-May-06			Date Analyzed DB-5:	26-Jun-06
Time Collected:				Date Received:	20-Jun-06
				Date Extracted:	23-Jun-06
				Date Analyzed DB-225:	NA

Analyte	Conc. (ug/L)	DL <sup>a</sup>	EMPC <sup>b</sup>	Qualifiers	Labeled Standard	%R	LCL-UCL <sup>d</sup>	Qualifiers
2,3,7,8-TCDD	ND	0.000000600			<u>IS</u> 13C-2,3,7,8-TCDD	71.9	25 - 164	
1,2,3,7,8-PeCDD	ND	0.000000830			13C-1,2,3,7,8-PeCDD	67.1	25 - 181	
1,2,3,4,7,8-HxCDD	ND	0.000000699			13C-1,2,3,4,7,8-HxCDD	81.2	32 - 141	
1,2,3,6,7,8-HxCDD	ND	0.000000707			13C-1,2,3,6,7,8-HxCDD	75.8	28 - 130	
1,2,3,7,8,9-HxCDD	ND	0.000000708			13C-1,2,3,4,6,7,8-HpCDD	71.6	23 - 140	
1,2,3,4,6,7,8-HpCDD	0.0000112			J	13C-OCDD	50.6	17 - 157	
OCDD	0.000103				13C-2,3,7,8-TCDF	71.1	24 - 169	
2,3,7,8-TCDF	ND		0.00000167		13C-1,2,3,7,8-PeCDF	66.0	24 - 185	
1,2,3,7,8-PeCDF	ND	0.000000650			13C-2,3,4,7,8-PeCDF	68.1	21 - 178	
2,3,4,7,8-PeCDF	ND	0.000000609			13C-1,2,3,4,7,8-HxCDF	87.3	26 - 152	
1,2,3,4,7,8-HxCDF	ND	0.000000759			13C-1,2,3,6,7,8-HxCDF	83.8	26 - 123	
1,2,3,6,7,8-HxCDF	ND	0.000000720			13C-2,3,4,6,7,8-HxCDF	81.5	28 - 136	
2,3,4,6,7,8-HxCDF	ND	0.000000795			13C-1,2,3,7,8,9-HxCDF	72.3	29 - 147	
1,2,3,7,8,9-HxCDF	ND	0.00000131			13C-1,2,3,4,6,7,8-HpCDF	74.1	28 - 143	
1,2,3,4,6,7,8-HpCDF	0.00000404			J	13C-1,2,3,4,7,8,9-HpCDF	85.3	26 - 138	
1,2,3,4,7,8,9-HpCDF	ND	0.000000554			13C-OCDF	48.9	17 - 157	
OCDF	0.0000103			J	<u>CRS</u> 37Cl-2,3,7,8-TCDD	74.4	35 - 197	

Totals				Footnotes	
Total TCDD	ND	0.000000600		a. Sample specific estimated detection limit.	
Total PeCDD	ND		0.0000127	b. Estimated maximum possible concentration.	
Total HxCDD	ND	0.000000705		c. Method detection limit.	
Total HpCDD	0.0000298			d. Lower control limit - upper control limit.	
Total TCDF	0.00000139		0.00000306		
Total PeCDF	ND		0.00000364		
Total HxCDF	ND	0.000000896			
Total HpCDF	0.00000665				

Analyst: JMH

Approved By: William J. Luksemburg 29-Jun-2006 12:01

*Level IV*

## **APPENDIX G**

### **Section 47**

Outfall 004, May 22, 2006

Del Mar Analytical Laboratory Report





**LABORATORY REPORT**

Prepared For: MWH-Pasadena/Boeing  
300 North Lake Avenue, Suite 1200  
Pasadena, CA 91101  
Attention: Bronwyn Kelly

Project: Routine Outfall 004

Sampled: 05/22/06  
Received: 05/22/06  
Issued: 06/18/06 13:50

NELAP #01108CA California ELAP#1197 CSDLAC #10117

*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 Del Mar Analytical and its client. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical. The Chain of Custody, 1 page, is included and is 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.

**LABORATORY ID**  
IPE2104-01

**CLIENT ID**  
Outfall 004

**MATRIX**  
Water

Reviewed By:

**Del Mar Analytical - Irvine**  
Michele Chamberlin  
Project Manager



MWH-Pasadena/Boeing  
300 North Lake Avenue, Suite 1200  
Pasadena, CA 91101  
Attention: Bronwyn Kelly

Project ID: Routine Outfall 004

Report Number: IPE2104

Sampled: 05/22/06

Received: 05/22/06

**METALS**

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
<b>Sample ID: IPE2104-01 (Outfall 004 - Water)</b>									
Reporting Units: ug/l									
Antimony	EPA 200.8	6E23079	0.050	2.0	<b>0.29</b>	1	05/23/06	05/23/06	J
Cadmium	EPA 200.8	6E23079	0.025	1.0	<b>0.093</b>	1	05/23/06	05/23/06	J
Copper	EPA 200.8	6E23079	0.25	2.0	<b>4.4</b>	1	05/23/06	05/23/06	
Lead	EPA 200.8	6E23079	0.040	1.0	<b>0.52</b>	1	05/23/06	05/23/06	J
Mercury	EPA 245.1	6E23075	0.050	0.20	<b>0.058</b>	1	05/23/06	05/23/06	J
Thallium	EPA 200.8	6E23079	0.15	1.0	ND	1	05/23/06	05/23/06	

**Del Mar Analytical - Irvine**  
Michele Chamberlin  
Project Manager

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MWH-Pasadena/Boeing  
300 North Lake Avenue, Suite 1200  
Pasadena, CA 91101  
Attention: Bronwyn Kelly

Project ID: Routine Outfall 004

Report Number: IPE2104

Sampled: 05/22/06

Received: 05/22/06

**DISSOLVED METALS**

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
<b>Sample ID: IPE2104-01 (Outfall 004 - Water) - cont.</b>									
<b>Reporting Units: ug/l</b>									
Antimony	EPA 200.8-Diss	6E23097	0.050	2.0	<b>0.67</b>	1	05/23/06	05/24/06	J
Cadmium	EPA 200.8-Diss	6E23097	0.025	1.0	<b>0.12</b>	1	05/23/06	05/25/06	J
Copper	EPA 200.8-Diss	6E23097	0.25	2.0	<b>1.6</b>	1	05/23/06	05/24/06	J
Lead	EPA 200.8-Diss	6E23097	0.040	1.0	<b>0.14</b>	1	05/23/06	05/24/06	J
Mercury	EPA 245.1-Diss	6E24084	0.050	0.20	ND	1	05/24/06	05/24/06	
Thallium	EPA 200.8-Diss	6E23097	0.15	1.0	ND	1	05/23/06	05/24/06	

Del Mar Analytical - Irvine  
Michele Chamberlin  
Project Manager

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MWH-Pasadena/Boeing  
300 North Lake Avenue, Suite 1200  
Pasadena, CA 91101  
Attention: Bronwyn Kelly

Project ID: Routine Outfall 004

Report Number: IPE2104

Sampled: 05/22/06

Received: 05/22/06

**INORGANICS**

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
<b>Sample ID: IPE2104-01 (Outfall 004 - Water) - cont.</b>									
<b>Reporting Units: mg/l</b>									
Chloride	EPA 300.0	6E22054	0.15	0.50	<b>20</b>	1	05/22/06	05/22/06	
Nitrate/Nitrite-N	EPA 300.0	6E22054	0.080	0.15	<b>0.79</b>	1	05/22/06	05/22/06	
Oil & Grease	EPA 413.1	6E24059	0.90	4.8	ND	1	05/24/06	05/24/06	
Sulfate	EPA 300.0	6E22054	0.45	0.50	<b>7.3</b>	1	05/22/06	05/22/06	
<b>Total Dissolved Solids</b>	SM2540C	6E23074	10	10	<b>140</b>	1	05/23/06	05/23/06	
Total Suspended Solids	EPA 160.2	6E24118	10	10	ND	1	05/24/06	05/24/06	

**Del Mar Analytical - Irvine**  
Michele Chamberlin  
Project Manager

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MWH-Pasadena/Boeing  
300 North Lake Avenue, Suite 1200  
Pasadena, CA 91101  
Attention: Bronwyn Kelly

Project ID: Routine Outfall 004

Report Number: IPE2104

Sampled: 05/22/06

Received: 05/22/06

**SHORT HOLD TIME DETAIL REPORT**

Sample ID: Outfall 004 (IPE2104-01) - Water EPA 300.0	Hold Time (in days)	Date/Time Sampled	Date/Time Received	Date/Time Extracted	Date/Time Analyzed
	2	05/22/2006 13:15	05/22/2006 18:40	05/22/2006 20:00	05/22/2006 20:46

**Del Mar Analytical - Irvine**  
Michele Chamberlin  
Project Manager

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MWH-Pasadena/Boeing  
300 North Lake Avenue, Suite 1200  
Pasadena, CA 91101  
Attention: Bronwyn Kelly

Project ID: Routine Outfall 004

Report Number: IPE2104

Sampled: 05/22/06

Received: 05/22/06

METHOD BLANK/QC DATA

METALS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
<b>Batch: 6E23075 Extracted: 05/23/06</b>											
<b>Blank Analyzed: 05/23/2006 (6E23075-BLK1)</b>											
Mercury	ND	0.20	0.050	ug/l							
<b>LCS Analyzed: 05/23/2006 (6E23075-BS1)</b>											
Mercury	8.69	0.20	0.050	ug/l	8.00		109	85-115			
<b>Matrix Spike Analyzed: 05/23/2006 (6E23075-MS1)</b>											
						<b>Source: IPE1997-01</b>					
Mercury	8.71	0.20	0.050	ug/l	8.00	ND	109	70-130			
<b>Matrix Spike Dup Analyzed: 05/23/2006 (6E23075-MSD1)</b>											
						<b>Source: IPE1997-01</b>					
Mercury	8.72	0.20	0.050	ug/l	8.00	ND	109	70-130	0	20	
<b>Batch: 6E23079 Extracted: 05/23/06</b>											
<b>Blank Analyzed: 05/23/2006 (6E23079-BLK1)</b>											
Antimony	ND	2.0	0.050	ug/l							
Cadmium	ND	1.0	0.025	ug/l							
Copper	ND	2.0	0.25	ug/l							
Lead	ND	1.0	0.040	ug/l							
Thallium	ND	1.0	0.15	ug/l							
<b>LCS Analyzed: 05/23/2006 (6E23079-BS1)</b>											
Antimony	79.0	2.0	0.050	ug/l	80.0		99	85-115			
Cadmium	79.5	1.0	0.025	ug/l	80.0		99	85-115			
Copper	80.1	2.0	0.25	ug/l	80.0		100	85-115			
Lead	77.6	1.0	0.040	ug/l	80.0		97	85-115			
Thallium	78.1	1.0	0.15	ug/l	80.0		98	85-115			

Del Mar Analytical - Irvine  
Michele Chamberlin  
Project Manager

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MWH-Pasadena/Boeing  
 300 North Lake Avenue, Suite 1200  
 Pasadena, CA 91101  
 Attention: Bronwyn Kelly

Project ID: Routine Outfall 004

Report Number: IPE2104

Sampled: 05/22/06  
 Received: 05/22/06

## METHOD BLANK/QC DATA

### METALS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
<b>Batch: 6E23079 Extracted: 05/23/06</b>											
<b>Matrix Spike Analyzed: 05/23/2006 (6E23079-MS1)</b>						<b>Source: IPE1953-01</b>					
Antimony	80.0	2.0	0.050	ug/l	80.0	0.33	100	70-130			
Cadmium	78.0	1.0	0.025	ug/l	80.0	ND	98	70-130			
Copper	77.2	2.0	0.25	ug/l	80.0	ND	96	70-130			
Lead	75.9	1.0	0.040	ug/l	80.0	0.074	95	70-130			
Thallium	76.2	1.0	0.15	ug/l	80.0	ND	95	70-130			
<b>Matrix Spike Analyzed: 05/23/2006 (6E23079-MS2)</b>						<b>Source: IPE2007-01</b>					
Antimony	79.9	2.0	0.050	ug/l	80.0	0.30	100	70-130			
Cadmium	77.9	1.0	0.025	ug/l	80.0	ND	97	70-130			
Copper	79.5	2.0	0.25	ug/l	80.0	4.0	94	70-130			
Lead	77.4	1.0	0.040	ug/l	80.0	0.33	96	70-130			
Thallium	77.7	1.0	0.15	ug/l	80.0	ND	97	70-130			
<b>Matrix Spike Dup Analyzed: 05/23/2006 (6E23079-MSD1)</b>						<b>Source: IPE1953-01</b>					
Antimony	82.7	2.0	0.050	ug/l	80.0	0.33	103	70-130	3	20	
Cadmium	80.8	1.0	0.025	ug/l	80.0	ND	101	70-130	4	20	
Copper	76.3	2.0	0.25	ug/l	80.0	ND	95	70-130	1	20	
Lead	75.3	1.0	0.040	ug/l	80.0	0.074	94	70-130	1	20	
Thallium	76.6	1.0	0.15	ug/l	80.0	ND	96	70-130	1	20	

**Del Mar Analytical - Irvine**  
 Michele Chamberlin  
 Project Manager



MWH-Pasadena/Boeing  
 300 North Lake Avenue, Suite 1200  
 Pasadena, CA 91101  
 Attention: Bronwyn Kelly

Project ID: Routine Outfall 004

Report Number: IPE2104

Sampled: 05/22/06  
 Received: 05/22/06

## METHOD BLANK/QC DATA

### DISSOLVED METALS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	RPD RPD	RPD Limit	Data Qualifiers
<b>Batch: 6E23097 Extracted: 05/23/06</b>										
<b>Blank Analyzed: 05/23/2006 (6E23097-BLK1)</b>										
Antimony	ND	2.0	0.050	ug/l						
Cadmium	ND	1.0	0.025	ug/l						
Copper	ND	2.0	0.25	ug/l						
Lead	ND	1.0	0.040	ug/l						
Thallium	ND	1.0	0.15	ug/l						
<b>LCS Analyzed: 05/23/2006-05/25/2006 (6E23097-BS1)</b>										
Antimony	82.0	2.0	0.050	ug/l	80.0		102		85-115	
Cadmium	82.1	1.0	0.025	ug/l	80.0		103		85-115	
Copper	81.8	2.0	0.25	ug/l	80.0		102		85-115	
Lead	85.9	1.0	0.040	ug/l	80.0		107		85-115	
Thallium	86.9	1.0	0.15	ug/l	80.0		109		85-115	
<b>Matrix Spike Analyzed: 05/24/2006 (6E23097-MS1) Source: IPE2095-01</b>										
Antimony	93.9	2.0	0.050	ug/l	80.0	0.88	116		70-130	
Cadmium	92.0	1.0	0.025	ug/l	80.0	ND	115		70-130	
Copper	78.6	2.0	0.25	ug/l	80.0	1.7	96		70-130	
Lead	82.8	1.0	0.040	ug/l	80.0	ND	104		70-130	
Thallium	84.9	1.0	0.15	ug/l	80.0	0.42	106		70-130	
<b>Matrix Spike Dup Analyzed: 05/24/2006 (6E23097-MSD1) Source: IPE2095-01</b>										
Antimony	93.9	2.0	0.050	ug/l	80.0	0.88	116	70-130	0	20
Cadmium	94.0	1.0	0.025	ug/l	80.0	ND	118	70-130	2	20
Copper	79.5	2.0	0.25	ug/l	80.0	1.7	97	70-130	1	20
Lead	82.4	1.0	0.040	ug/l	80.0	ND	103	70-130	1	20
Thallium	84.5	1.0	0.15	ug/l	80.0	0.42	105	70-130	1	20

**Del Mar Analytical - Irvine**  
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 Project Manager





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 Received: 05/22/06

## METHOD BLANK/QC DATA

### DISSOLVED METALS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	Limit	RPD	RPD Limit	Data Qualifiers
<b>Batch: 6E24084 Extracted: 05/24/06</b>											
<b>Blank Analyzed: 05/24/2006 (6E24084-BLK1)</b>											
Mercury	ND	0.20	0.050	ug/l							
<b>LCS Analyzed: 05/24/2006 (6E24084-BS1)</b>											
Mercury	8.16	0.20	0.050	ug/l	8.00		102	85-115			
<b>Matrix Spike Analyzed: 05/24/2006 (6E24084-MS1)</b>											
						<b>Source: IPE1552-01</b>					
Mercury	8.33	0.20	0.050	ug/l	8.00	0.065	103	70-130			
<b>Matrix Spike Dup Analyzed: 05/24/2006 (6E24084-MSD1)</b>											
						<b>Source: IPE1552-01</b>					
Mercury	8.32	0.20	0.050	ug/l	8.00	0.065	103	70-130	0	20	

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METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	RPD Limits	RPD RPD	RPD Limit	Data Qualifiers
<b>Batch: 6E22054 Extracted: 05/22/06</b>											
<b>Blank Analyzed: 05/22/2006 (6E22054-BLK1)</b>											
Chloride	ND	0.50	0.15	mg/l							
Nitrate/Nitrite-N	ND	0.15	0.080	mg/l							
Sulfate	ND	0.50	0.45	mg/l							
<b>LCS Analyzed: 05/22/2006 (6E22054-BS1)</b>											
Chloride	4.85	0.50	0.15	mg/l	5.00		97	90-110			M-3
Sulfate	9.96	0.50	0.45	mg/l	10.0		100	90-110			
<b>Matrix Spike Analyzed: 05/22/2006 (6E22054-MS1)</b>											
						<b>Source: IPE1848-02</b>					
Chloride	104	25	7.5	mg/l	50.0	69	70	80-120			M2
Sulfate	967	25	22	mg/l	100	940	27	80-120			M-HA
<b>Matrix Spike Analyzed: 05/22/2006 (6E22054-MS2)</b>											
						<b>Source: IPE1848-17</b>					
Sulfate	20.9	0.50	0.45	mg/l	20.0	ND	104	80-120			
<b>Matrix Spike Dup Analyzed: 05/22/2006 (6E22054-MSD1)</b>											
						<b>Source: IPE1848-02</b>					
Chloride	105	25	7.5	mg/l	50.0	69	72	80-120	1	20	M2
Sulfate	986	25	22	mg/l	100	940	46	80-120	2	20	M-HA
<b>Matrix Spike Dup Analyzed: 05/22/2006 (6E22054-MSD2)</b>											
						<b>Source: IPE1848-17</b>					
Sulfate	20.9	0.50	0.45	mg/l	20.0	ND	104	80-120	0	20	
<b>Batch: 6E23074 Extracted: 05/23/06</b>											
<b>Blank Analyzed: 05/23/2006 (6E23074-BLK1)</b>											
Total Dissolved Solids	ND	10	10	mg/l							

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Project ID: Routine Outfall 004

Report Number: IPE2104

Sampled: 05/22/06

Received: 05/22/06

METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	Limit	RPD	RPD Limit	Data Qualifiers
<b>Batch: 6E23074 Extracted: 05/23/06</b>											
<b>LCS Analyzed: 05/23/2006 (6E23074-BS1)</b>											
Total Dissolved Solids	990	10	10	mg/l	1000		99	90-110			
<b>Duplicate Analyzed: 05/23/2006 (6E23074-DUP1)</b>											
Total Dissolved Solids	15600	10	10	mg/l		16000			3	10	
<b>Batch: 6E24059 Extracted: 05/24/06</b>											
<b>Blank Analyzed: 05/24/2006 (6E24059-BLK1)</b>											
Oil & Grease	ND	5.0	0.94	mg/l							
<b>LCS Analyzed: 05/24/2006 (6E24059-BS1)</b>											
Oil & Grease	18.2	5.0	0.94	mg/l	20.0		91	65-120			M-NR1
<b>LCS Dup Analyzed: 05/24/2006 (6E24059-BSD1)</b>											
Oil & Grease	18.4	5.0	0.94	mg/l	20.0		92	65-120	1	20	
<b>Batch: 6E24118 Extracted: 05/24/06</b>											
<b>Blank Analyzed: 05/24/2006 (6E24118-BLK1)</b>											
Total Suspended Solids	ND	10	10	mg/l							
<b>LCS Analyzed: 05/24/2006 (6E24118-BS1)</b>											
Total Suspended Solids	985	10	10	mg/l	1000		98	85-115			
<b>Duplicate Analyzed: 05/24/2006 (6E24118-DUP1)</b>											
Total Suspended Solids	130	10	10	mg/l		130			0	10	

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 Attention: Bronwyn Kelly

Project ID: Routine Outfall 004

Report Number: IPE2104

Sampled: 05/22/06

Received: 05/22/06

## 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
IPE2104-01	413.1 Oil and Grease	Oil & Grease	mg/l	0	4.8	15
IPE2104-01	Antimony-200.8	Antimony	ug/l	0.29	2.0	6.00
IPE2104-01	Antimony-200.8, Diss	Antimony	ug/l	0.67	2.0	6.00
IPE2104-01	Cadmium-200.8	Cadmium	ug/l	0.093	1.0	4.00
IPE2104-01	Cadmium-200.8, Diss	Cadmium	ug/l	0.12	1.0	4.00
IPE2104-01	Chloride - 300.0	Chloride	mg/l	20	0.50	150
IPE2104-01	Copper-200.8	Copper	ug/l	4.40	2.0	14
IPE2104-01	Copper-200.8, Diss	Copper	ug/l	1.60	2.0	14
IPE2104-01	Lead-200.8	Lead	ug/l	0.52	1.0	5.20
IPE2104-01	Lead-200.8, Diss	Lead	ug/l	0.14	1.0	5.20
IPE2104-01	Mercury - 245.1	Mercury	ug/l	0.058	0.20	0.20
IPE2104-01	Mercury-245.1, Diss	Mercury	ug/l	0.032	0.20	0.20
IPE2104-01	Nitrogen, NO3+NO2 -N	Nitrate/Nitrite-N	mg/l	0.79	0.15	10.00
IPE2104-01	Sulfate-300.0	Sulfate	mg/l	7.30	0.50	250
IPE2104-01	TDS - SM 2540C	Total Dissolved Solids	mg/l	140	10	850
IPE2104-01	Thallium-200.8	Thallium	ug/l	0.015	1.0	2.00
IPE2104-01	Thallium-200.8, Diss	Thallium	ug/l	0.031	1.0	2.00

**Del Mar Analytical - Irvine**  
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Project ID: Routine Outfall 004

Report Number: IPE2104

Sampled: 05/22/06  
Received: 05/22/06

## DATA QUALIFIERS AND DEFINITIONS

- 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.
- M2** The MS and/or MSD were below the acceptance limits due to sample matrix interference. See Blank Spike (LCS).
- M-3** Results exceeded the linear range in the MS/MSD and therefore are not available for reporting. The batch was accepted based on acceptable recovery in the Blank Spike (LCS).
- M-HA** Due to high levels of analyte in the sample, the MS/MSD calculation does not provide useful spike recovery information. See Blank Spike (LCS).
- M-NR1** 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

**Del Mar Analytical - Irvine**  
Michele Chamberlin  
Project Manager

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IPE2104 <Page 13 of 14>



MWH-Pasadena/Boeing  
 300 North Lake Avenue, Suite 1200  
 Pasadena, CA 91101  
 Attention: Bronwyn Kelly

Project ID: Routine Outfall 004

Report Number: IPE2104

Sampled: 05/22/06  
 Received: 05/22/06

## Certification Summary

### Del Mar Analytical - Irvine

Method	Matrix	Nelac	California
1613A/1613B	Water		
EDD + Level 4	Water		
EPA 160.2	Water	X	X
EPA 200.8-Diss	Water	X	X
EPA 200.8	Water	X	X
EPA 245.1-Diss	Water	X	X
EPA 245.1	Water	X	X
EPA 300.0	Water	X	X
EPA 413.1	Water	X	X
SM2540C	Water	X	X

*Nevada and NELAP provide analyte specific accreditations. Analyte specific information for Del Mar Analytical may be obtained by contacting the laboratory or visiting our website at [www.testamericainc.com](http://www.testamericainc.com)*

### Subcontracted Laboratories

**Alta 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: IPE2104-01

Analysis Performed: EDD + Level 4  
 Samples: IPE2104-01

### Del Mar Analytical - Irvine

Michele Chamberlin  
 Project Manager

IR 2104

**CHAIN OF CUSTODY FORM**

Version 04/28/06

<b>Client Name/Address:</b> MWH-Pasadena 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Project Manager: Bronwyn Kelly Sampler: <i>Bronwyn Kelly</i>		<b>Project:</b> Boeing-SSFL NPDES Routine Outfall 004 Stormwater at SRE-1 Phone Number: (626) 568-6691 Fax Number: (626) 568-6515		<b>ANALYSIS REQUIRED</b>						Field readings: Temp = 72 pH = 7.1 Comments		
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 (EPA 413.1)	Cl-, SO4, NO3+NO2-N	TDS, TSS	Total Dissolved Metals: Sb, Cd, Cu, Pb, Hg, Tl
Outfall 004	W	1L Poly	1	5/22/06 13:30	HNO3	1A	X					
Outfall 004-Dup	W	1L Poly	1		HNO3	1B	X					
Outfall 004	W	1L Amber	2		None	2A, 2B		X				
Outfall 004	W	1L Amber	2		HCl	3A, 3B		X				
Outfall 004	W	Poly-500 ml	2		None	4A, 4B			X			
Outfall 004	W	Poly-500 ml	2		None	5A, 5B				X		
Outfall 004	W	Poly-1L	1	5/22/06 13:45	None	6					X	Filter w/in 24hr of receipt at lab
Relinquished By	Date/Time:		Date/Time:		Date/Time:		Date/Time:		Date/Time:		Date/Time:	
<i>Bronwyn Kelly</i>	5/22/06 14:20		5/22/06 14:20		5/22/06 14:20		5/22/06 14:20		5/22/06 14:20		5/22/06 14:20	
Relinquished By	Date/Time:		Date/Time:		Date/Time:		Date/Time:		Date/Time:		Date/Time:	
<i>Bronwyn Kelly</i>	5/22/06 18:40		5/22/06 18:40		5/22/06 18:40		5/22/06 18:40		5/22/06 18:40		5/22/06 18:40	
Relinquished By	Date/Time:		Date/Time:		Date/Time:		Date/Time:		Date/Time:		Date/Time:	
<i>W. Kelly</i>	5-22-06 18:40		5-22-06 18:40		5-22-06 18:40		5-22-06 18:40		5-22-06 18:40		5-22-06 18:40	
Turn around Time: (Check) 24 Hours _____ 5 Days _____ 48 Hours _____ 10 Days _____ 72 Hours _____ Normal _____ Perchlorate Only 72 Hours _____ Metals Only 72 Hours _____ Sample Integrity: (Check) Intact <input checked="" type="checkbox"/> On Ice <input checked="" type="checkbox"/>												

*PK*



July 25, 2006

**Alta Project I.D.: 27732**

Ms. Michele Chamberlin  
Del Mar, Irvine  
17461 Derian Avenue, Suite 100  
Irvine, CA 92614

Dear Ms. Chamberlin,

Enclosed are the amended results for the one aqueous sample received at Alta Analytical Laboratory on May 24, 2006 under your Project Name "IPE2104". This sample was extracted and analyzed using EPA Method 1613 for tetra-through-octa chlorinated dioxins and furans. A standard turnaround time was provided for this work.

The EMPC results were incorrectly included as positive concentrations in the original report.

The following report consists of a Sample Inventory (Section I), Analytical Results (Section II) and the Appendix, which contains the chain-of-custody, a list of data qualifiers and abbreviations, Alta's current certifications, and copies of the raw data (if requested).

Alta Analytical Laboratory is committed to serving you effectively. If you require additional information, please contact me at 916-933-1640 or by email at [mmaier@altalab.com](mailto:mmaier@altalab.com). Thank you for choosing Alta as part of your analytical support team.

Sincerely,

Martha M. Maier  
HRMS Services Director



*Alta Analytical Laboratory certifies that the report herein meets all the requirements set forth by NELAC for those applicable test methods. This report should not be reproduced except in full without the written approval of ALTA.*



**Alta Analytical Laboratory, Inc.**

1104 Windfield Way  
El Dorado Hills, CA 95762

(916) 933-1640  
FAX (916) 673-0106

**NPDES - 1152**



**Section I: Sample Inventory Report**

**Date Received: 5/24/2006**

**Alta Lab. ID**

**Client Sample ID**

27732-001

IPE2104-01

## SECTION II

Method Blank					EPA Method 1613				
Matrix:	Aqueous	QC Batch No.:	8054	Lab Sample:	0-MB001	Date Analyzed DB-5:	31-May-06	Date Analyzed DB-225:	NA
Sample Size:	1.00 L	Date Extracted:	30-May-06						
Analyte	Conc. (ug/L)	DL <sup>a</sup>	EMPC <sup>b</sup>	Qualifiers	Labeled Standard	%R	LCL-UCL <sup>d</sup>	Qualifiers	
2,3,7,8-TCDD	ND	0.00000133			<b>IS</b> 13C-2,3,7,8-TCDD	61.1	25 - 164		
1,2,3,7,8-PeCDD	ND	0.00000127			13C-1,2,3,7,8-PeCDD	66.5	25 - 181		
1,2,3,4,7,8-HxCDD	ND	0.00000119			13C-1,2,3,4,7,8-HxCDD	64.5	32 - 141		
1,2,3,6,7,8-HxCDD	ND	0.00000133			13C-1,2,3,6,7,8-HxCDD	61.0	28 - 130		
1,2,3,7,8,9-HxCDD	ND	0.00000128			13C-1,2,3,4,6,7,8-HpCDD	60.2	23 - 140		
1,2,3,4,6,7,8-HpCDD	ND	0.00000182			13C-OCDD	45.2	17 - 157		
OCDD	ND	0.00000206			13C-2,3,7,8-TCDF	64.1	24 - 169		
2,3,7,8-TCDF	ND	0.00000172			13C-1,2,3,7,8-PeCDF	67.9	24 - 185		
1,2,3,7,8-PeCDF	ND	0.000000749			13C-2,3,4,7,8-PeCDF	62.8	21 - 178		
2,3,4,7,8-PeCDF	ND	0.000000758			13C-1,2,3,4,7,8-HxCDF	65.3	26 - 152		
1,2,3,4,7,8-HxCDF	ND	0.000000621			13C-1,2,3,6,7,8-HxCDF	58.7	26 - 123		
1,2,3,6,7,8-HxCDF	ND	0.000000584			13C-2,3,4,6,7,8-HxCDF	55.9	28 - 136		
2,3,4,6,7,8-HxCDF	ND	0.000000778			13C-1,2,3,7,8,9-HxCDF	54.0	29 - 147		
1,2,3,7,8,9-HxCDF	ND	0.00000116			13C-1,2,3,4,6,7,8-HpCDF	60.5	28 - 143		
1,2,3,4,6,7,8-HpCDF	ND	0.000000997			13C-1,2,3,4,7,8,9-HpCDF	58.4	26 - 138		
1,2,3,4,7,8,9-HpCDF	ND	0.00000107			13C-OCDF	52.2	17 - 157		
OCDF	ND	0.00000249			<b>CRS</b> 37Cl-2,3,7,8-TCDD	75.0	35 - 197		
Totals					Footnotes				
Total TCDD	ND	0.00000133			a. Sample specific estimated detection limit.				
Total PeCDD	ND	0.00000127			b. Estimated maximum possible concentration.				
Total HxCDD	ND	0.00000127			c. Method detection limit.				
Total HpCDD	ND	0.00000182			d. Lower control limit - upper control limit.				
Total TCDF	ND	0.00000172							
Total PeCDF	ND	0.000000754							
Total HxCDF	ND	0.000000786							
Total HpCDF	ND	0.00000103							

Analyst: DMS

Approved By: William J. Luksemburg 01-Jun-2006 11:49

NPDES - 1155

OPR Results				EPA Method 1613			
Matrix:	Aqueous	QC Batch No.:	8054	Lab Sample:	0-OPR001		
Sample Size:	1.00 L	Date Extracted:	30-May-06	Date Analyzed DB-5:	31-May-06	Date Analyzed DB-225:	NA
Analyte	Spike Conc.	Conc. (ng/mL)	OPR Limits	Labeled Standard	%R	LCL-UCL	
2,3,7,8-TCDD	10.0	10.3	6.7 - 15.8	<b>IS</b> 13C-2,3,7,8-TCDD	74.8	25 - 164	
1,2,3,7,8-PeCDD	50.0	49.2	35 - 71	13C-1,2,3,7,8-PeCDD	76.2	25 - 181	
1,2,3,4,7,8-HxCDD	50.0	51.1	35 - 82	13C-1,2,3,4,7,8-HxCDD	69.2	32 - 141	
1,2,3,6,7,8-HxCDD	50.0	49.4	38 - 67	13C-1,2,3,6,7,8-HxCDD	66.6	28 - 130	
1,2,3,7,8,9-HxCDD	50.0	50.8	32 - 81	13C-1,2,3,4,6,7,8-HpCDD	67.4	23 - 140	
1,2,3,4,6,7,8-HpCDD	50.0	51.8	35 - 70	13C-OCDD	55.2	17 - 157	
OCDD	100	101	78 - 144	13C-2,3,7,8-TCDF	84.6	24 - 169	
2,3,7,8-TCDF	10.0	9.84	7.5 - 15.8	13C-1,2,3,7,8-PeCDF	78.4	24 - 185	
1,2,3,7,8-PeCDF	50.0	49.6	40 - 67	13C-2,3,4,7,8-PeCDF	78.3	21 - 178	
2,3,4,7,8-PeCDF	50.0	49.0	34 - 80	13C-1,2,3,4,7,8-HxCDF	66.5	26 - 152	
1,2,3,4,7,8-HxCDF	50.0	50.2	36 - 67	13C-1,2,3,6,7,8-HxCDF	60.0	26 - 123	
1,2,3,6,7,8-HxCDF	50.0	48.5	42 - 65	13C-2,3,4,6,7,8-HxCDF	68.7	28 - 136	
2,3,4,6,7,8-HxCDF	50.0	49.2	35 - 78	13C-1,2,3,7,8,9-HxCDF	68.9	29 - 147	
1,2,3,7,8,9-HxCDF	50.0	50.1	39 - 65	13C-1,2,3,4,6,7,8-HpCDF	62.1	28 - 143	
1,2,3,4,6,7,8-HpCDF	50.0	51.6	41 - 61	13C-1,2,3,4,7,8,9-HpCDF	64.2	26 - 138	
1,2,3,4,7,8,9-HpCDF	50.0	50.6	39 - 69	13C-OCDF	57.1	17 - 157	
OCDF	100	97.0	63 - 170	<b>CRS</b> 37Cl-2,3,7,8-TCDD	91.5	35 - 197	

Analyst: DMS

Approved By: William J. Luksemburg 01-Jun-2006 11:49

Sample ID: IPE2104-01					EPA Method 1613			
Client Data			Sample Data		Laboratory Data			
Name:	Del Mar, Irvine		Matrix:	Aqueous	Lab Sample:	27732-001	Date Received:	24-May-06
Project:	IPE2104		Sample Size:	1.00 L	QC Batch No.:	8054	Date Extracted:	30-May-06
Date Collected:	22-May-06				Date Analyzed DB-5:	31-May-06	Date Analyzed DB-225:	NA
Time Collected:	1315							
Analyte	Conc. (ug/L)	DL <sup>a</sup>	EMPC <sup>b</sup>	Qualifiers	Labeled Standard	%R	LCL-UCL <sup>d</sup>	Qualifiers
2,3,7,8-TCDD	ND	0.00000126			<b>IS</b> 13C-2,3,7,8-TCDD	48.8	25 - 164	
1,2,3,7,8-PeCDD	ND	0.00000167			13C-1,2,3,7,8-PeCDD	47.7	25 - 181	
1,2,3,4,7,8-HxCDD	ND	0.00000110			13C-1,2,3,4,7,8-HxCDD	47.8	32 - 141	
1,2,3,6,7,8-HxCDD	ND	0.00000115			13C-1,2,3,6,7,8-HxCDD	45.6	28 - 130	
1,2,3,7,8,9-HxCDD	ND	0.00000113			13C-1,2,3,4,6,7,8-HpCDD	53.6	23 - 140	
1,2,3,4,6,7,8-HpCDD	0.0000167			J	13C-OCDD	46.4	17 - 157	
OCDD	0.000227				13C-2,3,7,8-TCDF	46.3	24 - 169	
2,3,7,8-TCDF	ND	0.00000152			13C-1,2,3,7,8-PeCDF	48.6	24 - 185	
1,2,3,7,8-PeCDF	ND	0.000000859			13C-2,3,4,7,8-PeCDF	44.9	21 - 178	
2,3,4,7,8-PeCDF	ND	0.000000891			13C-1,2,3,4,7,8-HxCDF	48.5	26 - 152	
1,2,3,4,7,8-HxCDF	ND	0.000000712			13C-1,2,3,6,7,8-HxCDF	42.5	26 - 123	
1,2,3,6,7,8-HxCDF	ND	0.000000694			13C-2,3,4,6,7,8-HxCDF	44.2	28 - 136	
2,3,4,6,7,8-HxCDF	ND	0.000000831			13C-1,2,3,7,8,9-HxCDF	48.7	29 - 147	
1,2,3,7,8,9-HxCDF	ND	0.00000107			13C-1,2,3,4,6,7,8-HpCDF	49.4	28 - 143	
1,2,3,4,6,7,8-HpCDF	ND		0.00000245		13C-1,2,3,4,7,8,9-HpCDF	50.0	26 - 138	
1,2,3,4,7,8,9-HpCDF	ND	0.000000899			13C-OCDF	45.2	17 - 157	
OCDF	ND		0.00000459		<b>CRS</b> 37Cl-2,3,7,8-TCDD	91.9	35 - 197	
Totals					Footnotes			
Total TCDD	ND	0.00000126			a. Sample specific estimated detection limit.			
Total PeCDD	ND	0.00000167			b. Estimated maximum possible concentration.			
Total HxCDD	ND		0.00000145		c. Method detection limit.			
Total HpCDD	0.0000333				d. Lower control limit - upper control limit.			
Total TCDF	ND	0.00000152						
Total PeCDF	ND	0.000000875						
Total HxCDF	0.00000312							
Total HpCDF	0.00000665		0.00000910					

Analyst: DMS

Approved By: Richard A. Spas 25-Jul-2006 07:06

NPDES - 1157

## APPENDIX

## DATA QUALIFIERS & ABBREVIATIONS

B	This compound was also detected in the method blank.
D	The amount reported is the maximum possible concentration due to possible chlorinated diphenylether interference.
E	The reported value exceeds the calibration range of the instrument.
H	The signal-to-noise ratio is greater than 10:1.
I	Chemical interference
J	The amount detected is below the Lower Calibration Limit of the instrument.
*	See Cover Letter
Conc.	Concentration
DL	Sample-specific estimated Detection Limit
MDL	The minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero in the matrix tested.
EMPC	Estimated Maximum Possible Concentration
NA	Not applicable
RL	Reporting Limit – concentrations that corresponds to low calibration point
ND	Not Detected
TEQ	Toxic Equivalency

Unless otherwise noted, solid sample results are reported in dry weight. Tissue samples are reported in wet weight.

## CERTIFICATIONS

<b>Accrediting Authority</b>	<b>Certificate Number</b>
State of Alaska, DEC	CA413-02
State of Arizona	AZ0639
State of Arkansas, DEQ	05-013-0
State of Arkansas, DOH	Reciprocity through CA
State of California – NELAP Primary AA	02102CA
State of Colorado	
State of Connecticut	PH-0182
State of Florida, DEP	E87777
Commonwealth of Kentucky	90063
State of Louisiana, Health and Hospitals	LA050001
State of Louisiana, DEQ	01977
State of Maine	CA0413
State of Michigan	81178087
State of Mississippi	Reciprocity through CA
Naval Facilities Engineering Service Center	
State of Nevada	CA413
State of New Jersey	CA003
State of New Mexico	Reciprocity through CA
State of New York, DOH	11411
State of North Carolina	06700
State of North Dakota, DOH	R-078
State of Oklahoma	D9919
State of Oregon	CA200001-002
State of Pennsylvania	68-00490
State of South Carolina	87002001
State of Tennessee	02996
State of Texas	TX247-2005A
U.S. Army Corps of Engineers	
State of Utah	9169330940
Commonwealth of Virginia	00013
State of Washington	C1285
State of Wisconsin	998036160
State of Wyoming	8TMS-Q



**SUBCONTRACT ORDER**

**Del Mar Analytical - Irvine**

**IPE2104**

27732

**SENDING LABORATORY:**

Del Mar Analytical - Irvine  
17461 Derian Avenue, Suite 100  
Irvine, CA 92614  
Phone: (949) 261-1022  
Fax: (949) 261-1228  
Project Manager: Michele Chamberlin

**RECEIVING LABORATORY:**

Alta Analytical - SUB  
1104 Windfield Way  
El Dorado Hills, CA 95762  
Phone : (916) 933-1640  
Fax: (916) 673-0106

Analysis	Due	Expires	Laboratory ID	Comments
<b>Sample ID: IPE2104-01</b>	<b>Water</b>	<b>Sampled:05/22/06 13:15</b>		
EDD + Level 4	06/01/06 12:00	06/19/06 13:15		Excel EDD email to pm, Include Std logs for Lvl IV
1613-Dioxin-HR-Alta	06/01/06 12:00	05/29/06 13:15		J flags, 17 congeners, no TEQ, ug/L, sub=Alta
<i>Containers Supplied:</i>				
1 L Amber (C)	1 L Amber (D)			

Released By  5/23/06 Date Received By  5/24/06 Date

### SAMPLE LOG-IN CHECKLIST

Alta Project #: 27732

Samples Arrival:	Date/Time S/24/06 0845	Initials: LJB	Location: WR-2
			Shelf/Rack: N/A
Logged In:	Date/Time S/24/06 1245	Initials: FEB	Location: WR-2
			Shelf/Rack: A-2
Delivered By:	<input checked="" type="checkbox"/> FedEx	<input type="checkbox"/> UPS	<input type="checkbox"/> Cal
		<input type="checkbox"/> DHL	<input type="checkbox"/> Hand Delivered
	<input type="checkbox"/> Other		
Preservation:	<input checked="" type="checkbox"/> Ice	<input type="checkbox"/> Blue Ice	<input type="checkbox"/> Dry Ice
		<input type="checkbox"/> None	
Temp °C	1.0°C	Time: 0900	Thermometer ID: DT-20

	YES	NO	NA
Adequate Sample Volume Received?	✓		
Holding Time Acceptable?	✓		
Shipping Container(s) Intact?	✓		
Shipping Custody Seals Intact?	✓		
Shipping Documentation Present?	✓		
Airbill	Trk # 7914 9223 5500		
Sample Container Intact?	✓		
Sample Custody Seals Intact?			✓
Chain of Custody / Sample Documentation Present?	✓		
COC Anomaly/Sample Acceptance Form completed?	FEB S/24/06 LH		✓
If Chlorinated or Drinking Water Samples, Acceptable Preservation?			✓
Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> Preservation Documented?	COC	Sample Container	<input checked="" type="radio"/> None
Shipping Container	Alta	<input checked="" type="radio"/> Client	Retain
		<input checked="" type="radio"/> Return	Dispose

Comments:

## **APPENDIX G**

### **Section 48**

Outfall 004, May 22, 2006

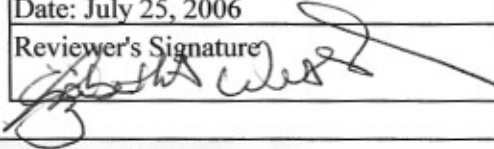
MEC<sup>X</sup> Data Validation Reports

**CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA**

MECX, LLC  
 12260 East Vassar Drive  
 Suite 500  
 Lakewood, CO 80226

Package ID B4DF104  
 Task Order 1261.001D.01  
 SDG No. IPE2104  
 No. of Analyses 1

Laboratory Alta Analytical  
 Reviewer E. Wessling  
 Analysis/Method Dioxins/Furans

Date: July 25, 2006  
 Reviewer's Signature 

ACTION ITEMS <sup>a</sup>	
1. Case Narrative Deficiencies	
2. Out of Scope Analyses	
3. Analyses Not Conducted	
4. Missing Hardcopy Deliverables	
5. Incorrect Hardcopy Deliverables	
6. Deviations from Analysis Protocol, e.g., Holding Times GC/MS Tune/Inst. Performance Calibration Method blanks Surrogates Matrix Spike/Dup LCS Field QC Internal Standard Performance Compound Identification Quantitation System Performance	Qualifications were assigned for the following: - the result between the RL and the MDL was estimated - EMPC values were qualified as estimated nondetects
COMMENTS <sup>b</sup>	
<sup>a</sup> Subcontracted analytical laboratory is not meeting contract and/or method requirements. <sup>b</sup> Differences in protocol have been adopted by the laboratory but no action against the laboratory is required.	



# DATA VALIDATION REPORT

NPDES Monitoring Program  
Routine Outfall 004

ANALYSIS: DIOXINS/FURANS  
SAMPLE DELIVERY GROUP: IPE2104

Prepared by  
MEC<sup>X</sup>, LLC  
12269 East Vassar Drive  
Aurora, CO 80014

## 1. INTRODUCTION

Task Order Title: NPDES  
Contract Task Order: 1261.001D.01  
Sample Delivery Group: IPE2104  
Project Manager: P. Costa  
Matrix: Water  
Analysis: Dioxins/Furans  
QC Level: Level IV  
No. of Samples: 1  
No. of Reanalyses/Dilutions: 0  
Reviewer: E. Wessling  
Date of Review: July 25, 2006

The sample listed in Table 1 was validated based on the guidelines outlined in the *MEC<sup>X</sup> Data Validation Procedure for Dioxins and Furans (DVP-19, Rev. 0)*, *USEPA Method 1613*, and the *National Functional Guidelines for Chlorinated Dioxin/Furan Data Review (8/02)*. Any deviations from these procedures and guidelines are documented herein. Qualifiers were applied in cases where the data did not meet the required QC criteria or where special consideration by the data user is required. Data qualifiers were placed on Form Is with the associated qualification codes. Analytes that were rejected for any reason are denoted on the Form I as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

**Table 1. Sample Identification**

Client ID	Laboratory ID (Del Mar)	Laboratory ID (Alta)	Matrix	COC Method
Outfall 004	IPE2104-01	27732-001	Water	1613

## 2. DATA VALIDATION FINDINGS

### 2.1 SAMPLE MANAGEMENT

Following are findings associated with sample management:

#### 2.1.1 Sample Preservation, Handling, and Transport

The sample in this SDG was received at Del Mar Analytical within the temperature limits of 4°C ±2°C. The sample was shipped to Alta for dioxin/furan analysis and was received below the temperature limits at 1.0°C. The sample containers were not noted to be damaged or frozen during transportation; therefore, no qualifications were required. According to the case narrative and laboratory login sheet, the sample was received intact and in good condition at both laboratories. No qualifications were required.

#### 2.1.2 Chain of Custody

The COC and transfer COC were legible and signed by the appropriate field and laboratory personnel, and accounted for the analysis presented in this SDG. As the sample was couriered directly to Del Mar Analytical-Irvine, custody seals were not required. The Client ID was added to the sample result summary by the reviewer. No qualifications were required.

#### 2.1.3 Holding Times

The sample was extracted and analyzed within one year of collection. No qualifications were required.

### 2.2 INSTRUMENT PERFORMANCE

Following are findings associated with instrument performance:

#### 2.2.1 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 (see section 2.3.2). 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%. No qualifications were required.



## 2.2.2 Mass Spectrometer Performance

The mass spectrometer performance was acceptable with the static resolving power greater than 10,000. No qualifications were required.

## 2.3 CALIBRATION

### 2.3.1 Initial Calibration

The initial calibration was analyzed 03/24/2006 on instrument VG-9. The calibration consisted of six concentration level standards (CS0 through CS5) analyzed to verify instrument linearity. The initial calibrations were 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 QC limits listed in Method 1613 for all standards. A representative number of %RSDs were verified from the raw data, and no calculation or transcription errors were noted. No qualifications were required.

### 2.3.2 Continuing Calibration

Calibration verification (VER) consisted of a mid-level standard (CS3) analyzed at the beginning of each analytical sequence. The VER was 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. A representative number of %Ds were verified from the raw data, and no calculation or transcription errors were noted. No qualifications were required.

WDM and isomer specificity compounds were added to the VER standard instead of being analyzed separately, as noted in section 2.2.1 of this report. No adverse effect was observed with this practice.

## 2.4 BLANKS

One method blank (0-8054-MB001) was extracted and analyzed with the sample in this SDG. No target compounds were detected in the method blank. All labeled recoveries were within QC limits. A review of the method blank raw data and chromatograms indicated no false negatives. No qualifications were required.

## 2.5 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

One blank spike (0-8054-OPR001) was extracted and analyzed with the sample in this SDG. All recoveries were within the acceptance criteria listed in Table 6 of Method 1613. A review of the raw data and chromatograms indicated no transcription or calculation errors. No qualifications were required.

## 2.6 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

MS/MSD analyses were not performed in this SDG. Evaluation of method accuracy was based on the OPR results. No qualifications were required.

## 2.7 FIELD QC SAMPLES

Following are findings associated with field QC:

### 2.7.1 Field Blanks and Equipment Rinsates

The sample in this SDG had no field blank or equipment rinsate identified. No qualification of the site sample was required.

### 2.7.2 Field Duplicates

No field duplicates were identified in association with the sample in this SDG.

## 2.8 INTERNAL STANDARDS

The labeled standard recoveries were within the acceptance criteria listed in Table 7 of Method 1613. No qualifications were required.

## 2.9 COMPOUND IDENTIFICATION

The laboratory analyzed for polychlorinated dioxins/furans by EPA Method 1613. The compound identifications were verified from the raw data and no false negatives or positives were noted. No qualifications were required.

## 2.10 COMPOUND QUANTIFICATION AND REPORTED DETECTION LIMITS

Compound quantitation was verified from the raw data. Although the laboratory incorrectly transcribed the sample volume incorrectly, (1.005 L used in the data calculations and 1.006 L from the raw data), the error was insignificant. The laboratory originally reported total EMPC values as detected total dioxin or furan isomers. These isomers were not actually detected and the error was determined to be within the software of the new instrument. The laboratory reissued the report with the correct total concentrations and EMPC values. EMPC values for 1,2,3,4,6,7,8-HpCDF, OCDF, total HxCDD were qualified as estimated nondetects, "UJ."

The laboratory calculated and reported compound-specific detection limits. The detect below the laboratory lower calibration level was qualified as estimated, "J." This "J" value was

annotated with the qualification code of “DNQ” to comply with the reporting requirements of the NPDES permit. No further qualifications were required.

Sample ID: IPE2104-01 *Outfall 004*

EPA Method 1613

Client Data		Sample Data		Laboratory Data			
Name:	Del Mar, Irvine	Matrix:	Aqueous	Lab Sample:	27732-001	Date Received:	24-May-06
Project:	IPE2104	Sample Size:	1.00 L	QC Batch No.:	8054	Date Extracted:	30-May-06
Date Collected:	22-May-06			Date Analyzed DB-5:	31-May-06	Date Analyzed DB-225:	NA
Time Collected:	1315						

Analyte	Conc. (ug/L)	DL <sup>a</sup>	EMPC <sup>b</sup>	Qualifiers	Labeled Standard	%R	LCL-UCL <sup>d</sup>	Qualifiers
2,3,7,8-TCDD	ND	0.00000126			<u>IS</u> 13C-2,3,7,8-TCDD	48.8	25 - 164	
1,2,3,7,8-PeCDD	ND	0.00000167			13C-1,2,3,7,8-PeCDD	47.7	25 - 181	
1,2,3,4,7,8-HxCDD	ND	0.00000110			13C-1,2,3,4,7,8-HxCDD	47.8	32 - 141	
1,2,3,6,7,8-HxCDD	ND	0.00000115			13C-1,2,3,6,7,8-HxCDD	45.6	28 - 130	
1,2,3,7,8,9-HxCDD	ND	0.00000113			13C-1,2,3,4,6,7,8-HpCDD	53.6	23 - 140	
1,2,3,4,6,7,8-HpCDD	0.0000167			J	13C-OCDD	46.4	17 - 157	
OCDD	0.000227				13C-2,3,7,8-TCDF	46.3	24 - 169	
2,3,7,8-TCDF	ND	0.00000152			13C-1,2,3,7,8-PeCDF	48.6	24 - 185	
1,2,3,7,8-PeCDF	ND	0.000000859			13C-2,3,4,7,8-PeCDF	44.9	21 - 178	
2,3,4,7,8-PeCDF	ND	0.000000891			13C-1,2,3,4,7,8-HxCDF	48.5	26 - 152	
1,2,3,4,7,8-HxCDF	ND	0.000000712			13C-1,2,3,6,7,8-HxCDF	42.5	26 - 123	
1,2,3,6,7,8-HxCDF	ND	0.000000694			13C-2,3,4,6,7,8-HxCDF	44.2	28 - 136	
2,3,4,6,7,8-HxCDF	ND	0.000000831			13C-1,2,3,7,8,9-HxCDF	48.7	29 - 147	
1,2,3,7,8,9-HxCDF	ND	0.00000107			13C-1,2,3,4,6,7,8-HpCDF	49.4	28 - 143	
1,2,3,4,6,7,8-HpCDF	ND		0.00000245		13C-1,2,3,4,7,8,9-HpCDF	50.0	26 - 138	
1,2,3,4,7,8,9-HpCDF	ND	0.000000899			13C-OCDF	45.2	17 - 157	
OCDF	ND		0.00000459		<u>CRS</u> 37Cl-2,3,7,8-TCDD	91.9	35 - 197	

Totals				Footnotes			
Total TCDD	ND	0.00000126		a. Sample specific estimated detection limit.			
Total PeCDD	ND	0.00000167		b. Estimated maximum possible concentration.			
Total HxCDD	ND		0.00000145	c. Method detection limit.			
Total HpCDD	0.0000333			d. Lower control limit - upper control limit.			
Total TCDF	ND	0.00000152					
Total PeCDF	ND	0.000000875					
Total HxCDF	0.00000312						
Total HpCDF	0.00000665		0.00000910				

Analyst: DMS

Approved By: Richard A. Spas 25-Jul-2006 07:06

**LEVEL IV**

NPDES - 1172

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## CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

MEC<sup>x</sup>  
 12269 East Vassar Drive  
 Aurora, CO 80014

Package ID: B4MT89  
 Task Order: 1261.001D.01  
 SDG No.: IPE2104

No. of Analyses: 2

Laboratory: Del Mar Analytical  
 Reviewer: P. Meeks  
 Analysis/Method: Metals

Date: <u>July 21, 2006</u>
Reviewer's Signature <i>P. Meeks</i>

<b>ACTION ITEMS<sup>a</sup></b>	
<b>1. Case Narrative</b>	
<b>Deficiencies</b>	
<b>2. Out of Scope Analyses</b>	
<b>3. Analyses Not Conducted</b>	
<b>4. Missing Hardcopy Deliverables</b>	
<b>5. Incorrect Hardcopy Deliverables</b>	
<b>6. Deviations from Analysis Protocol, e.g.,</b>	Qualifications were applied for blank detects and detects below the reporting limit.
Holding Times	
GC/MS Tune/Inst. Performance	
Calibration	
Method blanks	
Surrogates	
Matrix Spike/Dup LCS	
Field QC	
Internal Standard Performance	
Compound Identification	
Quantitation	
System Performance	
<b>COMMENTS<sup>b</sup></b>	
<p><sup>a</sup> Subcontracted analytical laboratory is not meeting contract and/or method requirements.</p> <p><sup>b</sup> Differences in protocol have been adopted by the laboratory but no action against the laboratory is required.</p>	



# DATA VALIDATION REPORT

NPDES Sampling  
Outfall 004

ANALYSIS: METALS

SAMPLE DELIVERY GROUP IPE2104

Prepared by

MEC<sup>x</sup>, LLC  
12269 East Vassar Drive  
Aurora, CO 80014

## 1. INTRODUCTION

Task Order Title: NPDES Sampling  
MEC<sup>X</sup> Project Number: 1261.001D.01  
Sample Delivery Group: IPDE2104  
Project Manager: P. Costa  
Matrix: Water  
Analysis: Metals  
QC Level: Level IV  
No. of Samples: 2  
No. of Reanalyses/Dilutions: 0  
Reviewer: P. Meeks  
Date of Review: July 21, 2006

The samples listed in Table 1 were validated based on the guidelines outlined in the *MEC<sup>X</sup> Data Validation Procedure for ICP and ICP-MS Metals (DVP-5, Rev. 0)*, *EPA Methods 200.8 and 245.1*, and validation guidelines outlined in the *USEPA CLP National Functional Guidelines for Inorganic Data Review (2/94)*. Any deviations from these procedures and guidelines are documented herein. Qualifiers were applied in cases where the data did not meet the required QC criteria or where special consideration by the data user is required. Data qualifiers were placed on Form Is with the associated qualification codes. Analytes that were rejected for any reason are denoted on the Form I as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

**Table 1. Sample Identification**

Client ID	Laboratory ID	Matrix	COC Method
Outfall 004 Dissolved	IPE2104-01	Water	200.8, 245.1
Outfall 004 total	IPE2104-01	Water	200.8, 245.1



## 2. DATA VALIDATION FINDINGS

### 2.1 SAMPLE MANAGEMENT

Following are findings associated with sample management:

#### 2.1.1 Sample Preservation, Handling, and Transport

The sample in this SDG was received at the laboratory within the temperature limits of 4°C  $\pm$ 2°C at 3°C. No sample preservation, handling, or transport problems were noted, and no qualifications were necessary.

#### 2.1.2 Chain of Custody

The COC was signed and dated by field and laboratory personnel and accounted for the sample and analyses presented in this SDG. Total and dissolved metals were requested on the COC. The laboratory reported both sets of results as Outfall 004. As it was difficult to discern which set of results were for dissolved metals and which results were for total metals, the reviewer hand-corrected the Form Is to include this information. No sample qualifications were required.

#### 2.1.3 Holding Times

The date of collection recorded on the COC and the dates of analyses recorded in the raw data documented that the sample analyses were performed within the specified holding times of six months for the ICP-MS metals and 28 days for mercury. No qualifications were required.

### 2.2 ICP-MS TUNING

The method-specified tune criteria were met and no qualifications were required.

### 2.3 CALIBRATION

The ICV and CCV results showed acceptable recoveries, 90-110% for ICP-MS metals and 85-115% for mercury, except for one thallium CCV result above the control limit at 113.7%. As thallium was not detected in the associated sample, no qualifications were required. The laboratory analyzed reporting limit check standards in association with the sample in this SDG. All recoveries were considered to be acceptable. No qualifications were required.

## 2.4 BLANKS

Cadmium was reported in both method blanks, 6E23097 and 6E23079, at -0.0468 and -0.0448 µg/L, respectively; therefore, cadmium detected in both Outfall 004 Total and Outfall 004 Dissolved was qualified as estimated, "J." Lead was reported in the method blank associated with the dissolved metals analyses, 6E23097, at -0.0517 µg/L; therefore, lead detected in Outfall 004 Dissolved was qualified as estimated, "J." Antimony was detected in all of the CCBs bracketing the sample analyses at 0.140, 0.218, 0.172, and 0.219 µg/L, respectively; therefore, antimony detected in Outfall 004 Total and Outfall 004 Dissolved was qualified as estimated and nondetected, "UJ." No further qualifications were required.

## 2.5 ICP INTERFERENCE CHECK SAMPLE (ICS A/AB)

ICSA and ICSAB analyses were performed in association with the samples in this SDG. Cadmium and copper were detected above the respective reporting limits in the ICSA analyses. The reviewer checked the raw data for the sample analyses and found that the concentrations of the potential interferants were insufficient to cause sample qualification. All recoveries were within the control limits of 80-120% and no qualifications were required.

## 2.6 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

All recoveries were within the laboratory-established control limits of 85-115%. No qualifications were required.

## 2.7 LABORATORY DUPLICATES

No laboratory duplicate analyses were performed in association with the samples in this SDG; therefore, no assessment was made with respect to this criterion.

## 2.8 MATRIX SPIKES

No MS/MSD analyses were performed in association with the samples in this SDG; therefore, no assessment was made with respect to this criterion. Method accuracy was evaluated based on the LCS results. No qualifications were required.

## 2.9 ICP/MS AND ICP SERIAL DILUTION

No serial dilution analyses were performed in association with the samples in this SDG; therefore, no assessment was made with respect to this criterion.

## 2.10 INTERNAL STANDARDS PERFORMANCE

For the target analytes analyzed by ICP-MS, the internal standards were within the method-specified control limits of 60-125%. No qualifications were required.

## 2.11 SAMPLE RESULT VERIFICATION

A Level IV review was performed for the samples in this data package. Calculations were verified and the sample results reported on the Form I were verified against the raw data. No transcription errors or calculation errors were noted. Sample results reported between the MDL and the reporting limit were qualified as estimated detects, "J." These qualifications were annotated with "DNQ" according to the NPDES program specifications. No further qualifications were required.

## 2.12 FIELD QC SAMPLES

Field QC samples are evaluated, and if necessary, qualified based only on laboratory blanks. Any remaining detects are used to evaluate the associated samples.

### 2.12.1 Field Blanks and Equipment Rinsates

The samples in this SDG had no associated field QC samples. No qualifications were required.

### 2.12.2 Field Duplicates

There were no field duplicate analyses performed in association with the site samples.



MWH-Pasadena/Boeing  
300 North Lake Avenue, Suite 1200  
Pasadena, CA 91101  
Attention: Bronwyn Kelly

Project ID: Routine Outfall 004

Report Number: IPE2104

Sampled: 05/22/06

Received: 05/22/06

DISSOLVED METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers	
									Rev Qual	Qual Code
Sample ID: IPE2104-01 (Outfall 004 - Water) - cont.										
Reporting Units: ug/l										
Antimony	EPA 200.8-Diss	6E23097	0.050	2.0	0.67	1	05/23/06	05/24/06	U J	J B
Cadmium	EPA 200.8-Diss	6E23097	0.025	1.0	0.12	1	05/23/06	05/25/06	J J	J B, DNG
Copper	EPA 200.8-Diss	6E23097	0.25	2.0	1.6	1	05/23/06	05/24/06	J J	J DNG
Lead	EPA 200.8-Diss	6E23097	0.040	1.0	0.14	1	05/23/06	05/24/06	J J	J B, DNG
Mercury	EPA 245.1-Diss	6E24084	0.050	0.20	ND	1	05/24/06	05/24/06	U	
Thallium	EPA 200.8-Diss	6E23097	0.15	1.0	ND	1	05/23/06	05/24/06	U	

Outfall 004 Dissolved

LEVEL IV

Del Mar Analytical - Irvine  
Michele Chamberlin  
Project Manager



# Del Mar Analytical

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 1014 E. Cooley Dr., Suite A, Colton, CA 92324 (909) 370-4667 FAX (909) 370-1046  
 9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851  
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MWH-Pasadena/Boeing  
 300 North Lake Avenue, Suite 1200  
 Pasadena, CA 91101  
 Attention: Bronwyn Kelly

Project ID: Routine Outfall 004

Report Number: IPE2104

Sampled: 05/22/06

Received: 05/22/06

## METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers	
									Raw Qual	Qual Code
Sample ID: IPE2104-01 (Outfall 004 - Water)										
Reporting Units: ug/l										
Antimony	EPA 200.8	6E23079	0.050	2.0	0.29	1	05/23/06	05/23/06	U J	J B
Cadmium	EPA 200.8	6E23079	0.025	1.0	0.093	1	05/23/06	05/23/06	J J	B, DNQ
Copper	EPA 200.8	6E23079	0.25	2.0	4.4	1	05/23/06	05/23/06		
Lead	EPA 200.8	6E23079	0.040	1.0	0.52	1	05/23/06	05/23/06	J J	J DNQ
Mercury	EPA 245.1	6E23075	0.050	0.20	0.058	1	05/23/06	05/23/06	J J	J DNQ
Thallium	EPA 200.8	6E23079	0.15	1.0	ND	1	05/23/06	05/23/06	U	

*Outfall 004 Total*

*LEVEL 1U*

Del Mar Analytical - Irvine  
 Michele Chamberlin  
 Project Manager

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**CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA**

MEC<sup>X</sup>  
 12269 East Vassar Drive  
 Aurora, CO 80014

Package ID: B4WC88  
 Task Order: 1261.001D.01  
 SDG No.: IPE2104

No. of Analyses: 1

Laboratory: Del Mar Analytical  
 Reviewer: P. Meeks  
 Analysis/Method: General Minerals

Date: <u>July 21, 2006</u>
Reviewer's Signature <i>P. Meeks</i>

<b>ACTION ITEMS<sup>a</sup></b>	
1. <b>Case Narrative Deficiencies</b>	  
2. <b>Out of Scope Analyses</b>	  
3. <b>Analyses Not Conducted</b>	  
4. <b>Missing Hardcopy Deliverables</b>	  
5. <b>Incorrect Hardcopy Deliverables</b>	  
6. <b>Deviations from Analysis Protocol, e.g.,</b>	
Holding Times	 
GC/MS Tune/Inst. Performance	 
Calibration	 
Method blanks	 
Surrogates	 
Matrix Spike/Dup LCS	 
Field QC	 
Internal Standard Performance	 
Compound Identification	 
Quantitation	 
System Performance	 
<b>COMMENTS<sup>b</sup></b>	Acceptable as reviewed.
<sup>a</sup> Subcontracted analytical laboratory is not meeting contract and/or method requirements. <sup>b</sup> Differences in protocol have been adopted by the laboratory but no action against the laboratory is required.	



# DATA VALIDATION REPORT

NPDES Sampling  
Outfall 004

ANALYSIS: GENERAL MINERALS

SAMPLE DELIVERY GROUP: IPE2104

Prepared by

MEC<sup>x</sup>, LLC  
12269 East Vassar Drive  
Aurora, CO 80014

## 1. INTRODUCTION

Task Order Title: NPDES Sampling  
MEC<sup>X</sup> Project Number: 1261.001D.01  
Sample Delivery Group: IPE2104  
Project Manager: P. Costa  
Matrix: Water  
Analysis: General Minerals  
QC Level: Level IV  
No. of Samples: 1  
No. of Reanalyses/Dilutions: 0  
Reviewer: P. Meeks  
Date of Review: July 21, 2006

The sample listed in Table 1 was validated based on the guidelines outlined in the *MEC<sup>X</sup> Data Validation Procedure for General Minerals (DVP-6, Rev. 0)*, *USEPA Methods for Chemical Analysis of Water and Wastes Methods 160.1, 160.2, 300.0, and 413.1*, and validation guidelines outlined in the *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (2/94)*. Any deviations from these procedures and guidelines are documented herein. Qualifiers were applied in cases where the data did not meet the required QC criteria or where special consideration by the data user is required. Data qualifiers were placed on Form Is with the associated qualification codes. Analytes that were rejected for any reason are denoted on the Form Is as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.



**Table 1. Sample Identification**

Client ID	Laboratory ID	Matrix	COC Method
Outfall 004	IPE2104-01	Water	General Minerals

## 2. DATA VALIDATION FINDINGS

### 2.1 SAMPLE MANAGEMENT

Following are findings associated with sample management:

#### 2.1.1 Sample Preservation, Handling, and Transport

The sample in this SDG was received at the laboratory within the temperature limits of  $4^{\circ}\text{C} \pm 2^{\circ}\text{C}$ , at  $3^{\circ}\text{C}$ . No preservation problems were noted by the laboratory. No qualifications were required.

#### 2.1.2 Chain of Custody

The COC was signed and dated by field and laboratory personnel and accounted for the sample and all analyses presented in this SDG. As the sample was couriered directly from the field to the laboratory, custody seals were not necessary. No qualifications were required.

#### 2.1.3 Holding Times

The holding times were assessed by comparing the date of collection with the dates of analysis. All analyses were performed within the method-specified holding times. No qualifications were required.

### 2.2 CALIBRATION

For the analytes determined by method 300.0, the  $r^2$  results were  $\geq 0.995$  and the ICV and CCV results were within the control limits of 90-110%. For the remaining analyses, balance calibration logs provided by the laboratory were reviewed and found to be acceptable. No qualifications were required.

### 2.3 BLANKS

There were no detects in the method blanks or CCBs associated with the sample analyses. Raw data was reviewed to verify the blank data. No qualifications were required.

### 2.4 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

The reported LCS recoveries were within the laboratory-established control limits. The laboratory did not report an LCS recovery for nitrate/nitrite; however, the reviewer checked the raw data and found this result to be acceptable. No qualifications were required.

## 2.5 LABORATORY DUPLICATES

No laboratory duplicate analyses were performed in association with the sample in this SDG; therefore, no assessment was made with respect to this criterion.

## 2.6 MATRIX SPIKES

No MS/MSD analyses were performed in association with the sample in this SDG; therefore, no assessment was made with respect to this criterion. Evaluation of method accuracy was based on the LCS results. No qualifications were required.

## 2.7 SAMPLE RESULT VERIFICATION

A Level IV review was performed for the sample in this data package. Calculations were verified, and the sample results reported on the Form I were verified against the raw data. No qualifications were required.

## 2.8 FIELD QC SAMPLES

Field QC samples are evaluated, and if necessary, qualified based only on laboratory blanks. Any remaining detects are used to evaluate the associated sample. The following are findings associated with field QC samples:

### 2.8.1 Field Blanks and Equipment Rinsates

The sample in this SDG had no associated field QC samples. No qualifications were required.

### 2.8.2 Field Duplicates

There were no field duplicate pairs associated with this SDG.



MWH-Pasadena/Boeing  
300 North Lake Avenue, Suite 1200  
Pasadena, CA 91101  
Attention: Bronwyn Kelly

Project ID: Routine Outfall 004  
Report Number: IPE2104

Sampled: 05/22/06  
Received: 05/22/06

INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data	
									Qualifiers	
Sample ID: IPE2104-01 (Outfall 004 - Water) - cont.										
Reporting Units: mg/l										
Chloride	EPA 300.0	6E22054	0.15	0.50	20	1	05/22/06	05/22/06		
Nitrate/Nitrite-N	EPA 300.0	6E22054	0.080	0.15	0.79	1	05/22/06	05/22/06		
Oil & Grease	EPA 413.1	6E24059	0.90	4.8	ND	1	05/24/06	05/24/06	U	
Sulfate	EPA 300.0	6E22054	0.45	0.50	7.3	1	05/22/06	05/22/06		
Total Dissolved Solids	SM2540C	6E23074	10	10	140	1	05/23/06	05/23/06		
Total Suspended Solids	EPA 160.2	6E24118	10	10	ND	1	05/24/06	05/24/06	U	

Raw Qual	Qual Code

Del Mar Analytical - Irvine  
Michele Chamberlin  
Project Manager

LEVEL IV

## **APPENDIX G**

### **Section 49**

Outfall 006, May 22, 2006

Del Mar Analytical Laboratory Report



**LABORATORY REPORT**

Prepared For: MWH-Pasadena/Boeing  
300 North Lake Avenue, Suite 1200  
Pasadena, CA 91101  
Attention: Bronwyn Kelly

Project: Routine Outfall 006

Sampled: 05/22/06  
Received: 05/22/06  
Issued: 06/18/06 13:20

NELAP #01108CA California ELAP#1197 CSDLAC #10117

*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 Del Mar Analytical and its client. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical. The Chain of Custody, 1 page, is included and is 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.

**LABORATORY ID**  
IPE2106-01

**CLIENT ID**  
Outfall 006

**MATRIX**  
Water

Reviewed By:

**Del Mar Analytical - Irvine**  
Michele Chamberlin  
Project Manager



MWH-Pasadena/Boeing  
300 North Lake Avenue, Suite 1200  
Pasadena, CA 91101  
Attention: Bronwyn Kelly

Project ID: Routine Outfall 006

Report Number: IPE2106

Sampled: 05/22/06

Received: 05/22/06

**METALS**

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
<b>Sample ID: IPE2106-01 (Outfall 006 - Water)</b>									
<b>Reporting Units: ug/l</b>									
<b>Antimony</b>	EPA 200.8	6E23079	0.050	2.0	<b>0.68</b>	1	05/23/06	05/23/06	J
Cadmium	EPA 200.8	6E23079	0.025	1.0	ND	1	05/23/06	05/23/06	
<b>Copper</b>	EPA 200.8	6E23079	0.25	2.0	<b>2.1</b>	1	05/23/06	05/23/06	
<b>Lead</b>	EPA 200.8	6E23079	0.040	1.0	<b>0.52</b>	1	05/23/06	05/23/06	J
Mercury	EPA 245.1	6E23075	0.050	0.20	ND	1	05/23/06	05/23/06	
Thallium	EPA 200.8	6E23079	0.15	1.0	ND	1	05/23/06	05/23/06	

**Del Mar Analytical - Irvine**  
Michele Chamberlin  
Project Manager

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300 North Lake Avenue, Suite 1200  
Pasadena, CA 91101  
Attention: Bronwyn Kelly

Project ID: Routine Outfall 006

Report Number: IPE2106

Sampled: 05/22/06

Received: 05/22/06

**DISSOLVED METALS**

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
<b>Sample ID: IPE2106-01 (Outfall 006 - Water) - cont.</b>									
<b>Reporting Units: ug/l</b>									
Antimony	EPA 200.8-Diss	6E23097	0.050	2.0	<b>0.84</b>	1	05/23/06	05/24/06	J
Cadmium	EPA 200.8-Diss	6E23097	0.025	1.0	ND	1	05/23/06	05/24/06	
<b>Copper</b>	EPA 200.8-Diss	6E23097	0.25	2.0	<b>1.2</b>	1	05/23/06	05/24/06	J
Lead	EPA 200.8-Diss	6E23097	0.040	1.0	ND	1	05/23/06	05/24/06	
Mercury	EPA 245.1-Diss	6E24084	0.050	0.20	ND	1	05/24/06	05/24/06	
Thallium	EPA 200.8-Diss	6E23097	0.15	1.0	ND	1	05/23/06	05/24/06	

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Michele Chamberlin  
Project Manager

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MWH-Pasadena/Boeing  
300 North Lake Avenue, Suite 1200  
Pasadena, CA 91101  
Attention: Bronwyn Kelly

Project ID: Routine Outfall 006

Report Number: IPE2106

Sampled: 05/22/06

Received: 05/22/06

**INORGANICS**

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
<b>Sample ID: IPE2106-01 (Outfall 006 - Water) - cont.</b>									
Reporting Units: mg/l									
Chloride	EPA 300.0	6E22053	0.15	0.50	<b>12</b>	1	05/22/06	05/22/06	
Nitrate/Nitrite-N	EPA 300.0	6E22053	0.080	0.15	<b>3.7</b>	1	05/22/06	05/22/06	
Oil & Grease	EPA 413.1	6E24059	0.90	4.8	ND	1	05/24/06	05/24/06	
Sulfate	EPA 300.0	6E22053	0.45	0.50	<b>15</b>	1	05/22/06	05/22/06	
Total Dissolved Solids	SM2540C	6E23074	10	10	<b>190</b>	1	05/23/06	05/23/06	
Total Suspended Solids	EPA 160.2	6E24118	10	10	<b>10</b>	1	05/24/06	05/24/06	

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Michele Chamberlin  
Project Manager

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300 North Lake Avenue, Suite 1200  
Pasadena, CA 91101  
Attention: Bronwyn Kelly

Project ID: Routine Outfall 006

Report Number: IPE2106

Sampled: 05/22/06

Received: 05/22/06

**SHORT HOLD TIME DETAIL REPORT**

Sample ID: Outfall 006 (IPE2106-01) - Water EPA 300.0	Hold Time (in days)	Date/Time Sampled	Date/Time Received	Date/Time Extracted	Date/Time Analyzed
	2	05/22/2006 11:15	05/22/2006 18:40	05/22/2006 21:30	05/22/2006 23:11

**Del Mar Analytical - Irvine**  
Michele Chamberlin  
Project Manager

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300 North Lake Avenue, Suite 1200  
Pasadena, CA 91101  
Attention: Bronwyn Kelly

Project ID: Routine Outfall 006

Report Number: IPE2106

Sampled: 05/22/06

Received: 05/22/06

METHOD BLANK/QC DATA

METALS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	RPD Limits	RPD RPD	RPD Limit	Data Qualifiers
<b>Batch: 6E23075 Extracted: 05/23/06</b>											
<b>Blank Analyzed: 05/23/2006 (6E23075-BLK1)</b>											
Mercury	ND	0.20	0.050	ug/l							
<b>LCS Analyzed: 05/23/2006 (6E23075-BS1)</b>											
Mercury	8.69	0.20	0.050	ug/l	8.00		109	85-115			
<b>Matrix Spike Analyzed: 05/23/2006 (6E23075-MS1)</b>											
						<b>Source: IPE1997-01</b>					
Mercury	8.71	0.20	0.050	ug/l	8.00	ND	109	70-130			
<b>Matrix Spike Dup Analyzed: 05/23/2006 (6E23075-MSD1)</b>											
						<b>Source: IPE1997-01</b>					
Mercury	8.72	0.20	0.050	ug/l	8.00	ND	109	70-130	0	20	
<b>Batch: 6E23079 Extracted: 05/23/06</b>											
<b>Blank Analyzed: 05/23/2006 (6E23079-BLK1)</b>											
Antimony	ND	2.0	0.050	ug/l							
Cadmium	ND	1.0	0.025	ug/l							
Copper	ND	2.0	0.25	ug/l							
Lead	ND	1.0	0.040	ug/l							
Thallium	ND	1.0	0.15	ug/l							
<b>LCS Analyzed: 05/23/2006 (6E23079-BS1)</b>											
Antimony	79.0	2.0	0.050	ug/l	80.0		99	85-115			
Cadmium	79.5	1.0	0.025	ug/l	80.0		99	85-115			
Copper	80.1	2.0	0.25	ug/l	80.0		100	85-115			
Lead	77.6	1.0	0.040	ug/l	80.0		97	85-115			
Thallium	78.1	1.0	0.15	ug/l	80.0		98	85-115			

Del Mar Analytical - Irvine  
Michele Chamberlin  
Project Manager



MWH-Pasadena/Boeing  
300 North Lake Avenue, Suite 1200  
Pasadena, CA 91101  
Attention: Bronwyn Kelly

Project ID: Routine Outfall 006

Report Number: IPE2106

Sampled: 05/22/06

Received: 05/22/06

METHOD BLANK/QC DATA

METALS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
<b>Batch: 6E23079 Extracted: 05/23/06</b>											
<b>Matrix Spike Analyzed: 05/23/2006 (6E23079-MS1)</b>						<b>Source: IPE1953-01</b>					
Antimony	80.0	2.0	0.050	ug/l	80.0	0.33	100	70-130			
Cadmium	78.0	1.0	0.025	ug/l	80.0	ND	98	70-130			
Copper	77.2	2.0	0.25	ug/l	80.0	ND	96	70-130			
Lead	75.9	1.0	0.040	ug/l	80.0	0.074	95	70-130			
Thallium	76.2	1.0	0.15	ug/l	80.0	ND	95	70-130			
<b>Matrix Spike Analyzed: 05/23/2006 (6E23079-MS2)</b>						<b>Source: IPE2007-01</b>					
Antimony	79.9	2.0	0.050	ug/l	80.0	0.30	100	70-130			
Cadmium	77.9	1.0	0.025	ug/l	80.0	ND	97	70-130			
Copper	79.5	2.0	0.25	ug/l	80.0	4.0	94	70-130			
Lead	77.4	1.0	0.040	ug/l	80.0	0.33	96	70-130			
Thallium	77.7	1.0	0.15	ug/l	80.0	ND	97	70-130			
<b>Matrix Spike Dup Analyzed: 05/23/2006 (6E23079-MSD1)</b>						<b>Source: IPE1953-01</b>					
Antimony	82.7	2.0	0.050	ug/l	80.0	0.33	103	70-130	3	20	
Cadmium	80.8	1.0	0.025	ug/l	80.0	ND	101	70-130	4	20	
Copper	76.3	2.0	0.25	ug/l	80.0	ND	95	70-130	1	20	
Lead	75.3	1.0	0.040	ug/l	80.0	0.074	94	70-130	1	20	
Thallium	76.6	1.0	0.15	ug/l	80.0	ND	96	70-130	1	20	

Del Mar Analytical - Irvine  
Michele Chamberlin  
Project Manager



MWH-Pasadena/Boeing  
300 North Lake Avenue, Suite 1200  
Pasadena, CA 91101  
Attention: Bronwyn Kelly

Project ID: Routine Outfall 006

Report Number: IPE2106

Sampled: 05/22/06

Received: 05/22/06

METHOD BLANK/QC DATA

DISSOLVED METALS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	RPD Limits	RPD RPD	RPD Limit	Data Qualifiers
<b>Batch: 6E23097 Extracted: 05/23/06</b>											
<b>Blank Analyzed: 05/23/2006 (6E23097-BLK1)</b>											
Antimony	ND	2.0	0.050	ug/l							
Cadmium	ND	1.0	0.025	ug/l							
Copper	ND	2.0	0.25	ug/l							
Lead	ND	1.0	0.040	ug/l							
Thallium	ND	1.0	0.15	ug/l							
<b>LCS Analyzed: 05/23/2006-05/25/2006 (6E23097-BS1)</b>											
Antimony	82.0	2.0	0.050	ug/l	80.0		102	85-115			
Cadmium	82.1	1.0	0.025	ug/l	80.0		103	85-115			
Copper	81.8	2.0	0.25	ug/l	80.0		102	85-115			
Lead	85.9	1.0	0.040	ug/l	80.0		107	85-115			
Thallium	86.9	1.0	0.15	ug/l	80.0		109	85-115			
<b>Matrix Spike Analyzed: 05/24/2006 (6E23097-MS1) Source: IPE2095-01</b>											
Antimony	93.9	2.0	0.050	ug/l	80.0	0.88	116	70-130			
Cadmium	92.0	1.0	0.025	ug/l	80.0	ND	115	70-130			
Copper	78.6	2.0	0.25	ug/l	80.0	1.7	96	70-130			
Lead	82.8	1.0	0.040	ug/l	80.0	ND	104	70-130			
Thallium	84.9	1.0	0.15	ug/l	80.0	0.42	106	70-130			
<b>Matrix Spike Dup Analyzed: 05/24/2006 (6E23097-MSD1) Source: IPE2095-01</b>											
Antimony	93.9	2.0	0.050	ug/l	80.0	0.88	116	70-130	0	20	
Cadmium	94.0	1.0	0.025	ug/l	80.0	ND	118	70-130	2	20	
Copper	79.5	2.0	0.25	ug/l	80.0	1.7	97	70-130	1	20	
Lead	82.4	1.0	0.040	ug/l	80.0	ND	103	70-130	1	20	
Thallium	84.5	1.0	0.15	ug/l	80.0	0.42	105	70-130	1	20	

Del Mar Analytical - Irvine  
Michele Chamberlin  
Project Manager



MWH-Pasadena/Boeing  
300 North Lake Avenue, Suite 1200  
Pasadena, CA 91101  
Attention: Bronwyn Kelly

Project ID: Routine Outfall 006

Report Number: IPE2106

Sampled: 05/22/06

Received: 05/22/06

**METHOD BLANK/QC DATA**

**DISSOLVED METALS**

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
<b>Batch: 6E24084 Extracted: 05/24/06</b>											
<b>Blank Analyzed: 05/24/2006 (6E24084-BLK1)</b>											
Mercury	ND	0.20	0.050	ug/l							
<b>LCS Analyzed: 05/24/2006 (6E24084-BS1)</b>											
Mercury	8.16	0.20	0.050	ug/l	8.00		102	85-115			
<b>Matrix Spike Analyzed: 05/24/2006 (6E24084-MS1)</b>											
						<b>Source: IPE1552-01</b>					
Mercury	8.33	0.20	0.050	ug/l	8.00	0.065	103	70-130			
<b>Matrix Spike Dup Analyzed: 05/24/2006 (6E24084-MSD1)</b>											
						<b>Source: IPE1552-01</b>					
Mercury	8.32	0.20	0.050	ug/l	8.00	0.065	103	70-130	0	20	

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Project Manager

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MWH-Pasadena/Boeing  
300 North Lake Avenue, Suite 1200  
Pasadena, CA 91101  
Attention: Bronwyn Kelly

Project ID: Routine Outfall 006

Report Number: IPE2106

Sampled: 05/22/06

Received: 05/22/06

**METHOD BLANK/QC DATA**

**INORGANICS**

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	RPD RPD	RPD Limit	Data Qualifiers
<b>Batch: 6E22053 Extracted: 05/22/06</b>										
<b>Blank Analyzed: 05/22/2006 (6E22053-BLK1)</b>										
Chloride	ND	0.50	0.15	mg/l						
Nitrate/Nitrite-N	ND	0.15	0.080	mg/l						
Sulfate	ND	0.50	0.45	mg/l						
<b>LCS Analyzed: 05/22/2006 (6E22053-BS1)</b>										
Chloride	5.11	0.50	0.15	mg/l	5.00		102		90-110	M-3
Sulfate	10.1	0.50	0.45	mg/l	10.0		101		90-110	
<b>Matrix Spike Analyzed: 05/22/2006 (6E22053-MS1) Source: IPE2083-01</b>										
Sulfate	368	5.0	4.5	mg/l	100	290	78		80-120	M2
<b>Matrix Spike Dup Analyzed: 05/22/2006 (6E22053-MSD1) Source: IPE2083-01</b>										
Sulfate	366	5.0	4.5	mg/l	100	290	76	1	80-120	20 M2
<b>Batch: 6E23074 Extracted: 05/23/06</b>										
<b>Blank Analyzed: 05/23/2006 (6E23074-BLK1)</b>										
Total Dissolved Solids	ND	10	10	mg/l						
<b>LCS Analyzed: 05/23/2006 (6E23074-BS1)</b>										
Total Dissolved Solids	990	10	10	mg/l	1000		99		90-110	
<b>Duplicate Analyzed: 05/23/2006 (6E23074-DUP1) Source: IPE2099-01</b>										
Total Dissolved Solids	15600	10	10	mg/l		16000		3		10
<b>Batch: 6E24059 Extracted: 05/24/06</b>										
<b>Blank Analyzed: 05/24/2006 (6E24059-BLK1)</b>										
Oil & Grease	ND	5.0	0.94	mg/l						

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MWH-Pasadena/Boeing  
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Pasadena, CA 91101  
Attention: Bronwyn Kelly

Project ID: Routine Outfall 006

Report Number: IPE2106

Sampled: 05/22/06

Received: 05/22/06

**METHOD BLANK/QC DATA**

**INORGANICS**

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
<b>Batch: 6E24059 Extracted: 05/24/06</b>											
<b>LCS Analyzed: 05/24/2006 (6E24059-BS1)</b>											
Oil & Grease	18.2	5.0	0.94	mg/l	20.0		91	65-120			M-NR1
<b>LCS Dup Analyzed: 05/24/2006 (6E24059-BSD1)</b>											
Oil & Grease	18.4	5.0	0.94	mg/l	20.0		92	65-120	1	20	
<b>Batch: 6E24118 Extracted: 05/24/06</b>											
<b>Blank Analyzed: 05/24/2006 (6E24118-BLK1)</b>											
Total Suspended Solids	ND	10	10	mg/l							
<b>LCS Analyzed: 05/24/2006 (6E24118-BS1)</b>											
Total Suspended Solids	985	10	10	mg/l	1000		98	85-115			
<b>Duplicate Analyzed: 05/24/2006 (6E24118-DUP1)</b>											
Total Suspended Solids	130	10	10	mg/l		Source: IPE2102-01			0	10	

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300 North Lake Avenue, Suite 1200  
Pasadena, CA 91101  
Attention: Bronwyn Kelly

Project ID: Routine Outfall 006

Report Number: IPE2106

Sampled: 05/22/06

Received: 05/22/06

### 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
IPE2106-01	413.1 Oil and Grease	Oil & Grease	mg/l	0	4.8	15
IPE2106-01	Antimony-200.8	Antimony	ug/l	0.68	2.0	6.00
IPE2106-01	Antimony-200.8, Diss	Antimony	ug/l	0.84	2.0	6.00
IPE2106-01	Cadmium-200.8	Cadmium	ug/l	0.0090	1.0	4.00
IPE2106-01	Cadmium-200.8, Diss	Cadmium	ug/l	0	1.0	4.00
IPE2106-01	Chloride - 300.0	Chloride	mg/l	12	0.50	150
IPE2106-01	Copper-200.8	Copper	ug/l	2.10	2.0	14
IPE2106-01	Copper-200.8, Diss	Copper	ug/l	1.20	2.0	14
IPE2106-01	Lead-200.8	Lead	ug/l	0.52	1.0	5.20
IPE2106-01	Lead-200.8, Diss	Lead	ug/l	0.026	1.0	5.20
IPE2106-01	Mercury - 245.1	Mercury	ug/l	0.036	0.20	0.20
IPE2106-01	Mercury-245.1, Diss	Mercury	ug/l	0.019	0.20	0.20
IPE2106-01	Nitrogen, NO3+NO2 -N	Nitrate/Nitrite-N	mg/l	3.70	0.15	10.00
IPE2106-01	Sulfate-300.0	Sulfate	mg/l	15	0.50	250
IPE2106-01	TDS - SM 2540C	Total Dissolved Solids	mg/l	190	10	850
IPE2106-01	Thallium-200.8	Thallium	ug/l	0	1.0	2.00
IPE2106-01	Thallium-200.8, Diss	Thallium	ug/l	0	1.0	2.00

Del Mar Analytical - Irvine  
Michele Chamberlin  
Project Manager

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MWH-Pasadena/Boeing  
300 North Lake Avenue, Suite 1200  
Pasadena, CA 91101  
Attention: Bronwyn Kelly

Project ID: Routine Outfall 006

Report Number: IPE2106

Sampled: 05/22/06  
Received: 05/22/06

### DATA QUALIFIERS AND DEFINITIONS

- 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.
- M2** The MS and/or MSD were below the acceptance limits due to sample matrix interference. See Blank Spike (LCS).
- M-3** Results exceeded the linear range in the MS/MSD and therefore are not available for reporting. The batch was accepted based on acceptable recovery in the Blank Spike (LCS).
- M-NR1** 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

**Del Mar Analytical - Irvine**  
Michele Chamberlin  
Project Manager

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**NPDES - 1202**  
IPE2106 <Page 13 of 14>



MWH-Pasadena/Boeing  
 300 North Lake Avenue, Suite 1200  
 Pasadena, CA 91101  
 Attention: Bronwyn Kelly

Project ID: Routine Outfall 006

Report Number: IPE2106

Sampled: 05/22/06

Received: 05/22/06

## Certification Summary

### Del Mar Analytical - Irvine

Method	Matrix	Nelac	California
1613A/1613B	Water		
EDD + Level 4	Water		
EPA 160.2	Water	X	X
EPA 200.8-Diss	Water	X	X
EPA 200.8	Water	X	X
EPA 245.1-Diss	Water	X	X
EPA 245.1	Water	X	X
EPA 300.0	Water	X	X
EPA 413.1	Water	X	X
SM2540C	Water	X	X

*Nevada and NELAP provide analyte specific accreditations. Analyte specific information for Del Mar Analytical may be obtained by contacting the laboratory or visiting our website at [www.testamericainc.com](http://www.testamericainc.com)*

### Subcontracted Laboratories

**Alta 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: IPE2106-01

Analysis Performed: EDD + Level 4

Samples: IPE2106-01

### Del Mar Analytical - Irvine

Michele Chamberlin

Project Manager

IPE2106

**CHAIN OF CUSTODY FORM**

Del Mar Analytical Version 04/28/06

Client Name/Address:				Project:				ANALYSIS REQUIRED						Field readings:	
MWH-Pasadena 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101				Boeing-SSFL NPDES <b>Routine Outfall 006</b> Stormwater at FSDF-2				Total Recoverable Metals: Sb, Cd, Cu, Pb, Hg, Tl TCDD (and all congeners) Oil & Grease (EPA 413.1) Cl-, SO4, NO3+NO2-N TDS, TSS Total Dissolved Metals: Sb, Cd, Cu, Pb, Hg, Tl						Temp = <u>6.5</u> pH = <u>7.7</u>	
Project Manager: Bronwyn Kelly				Phone Number: (626) 568-6691										Comments	
Sampler: <i>B. Kelly</i>				Fax Number: (626) 568-6515											
Sample Description	Sample Matrix	Container Type	# of Cont.	Sampling Date/Time	Preservative	Bottle #	Total Recoverable Metals: Sb, Cd, Cu, Pb, Hg, Tl	TCDD (and all congeners)	Oil & Grease (EPA 413.1)	Cl-, SO4, NO3+NO2-N	TDS, TSS	Total Dissolved Metals: Sb, Cd, Cu, Pb, Hg, Tl			
Outfall 006	W	1L Poly	1	5/22/06	HNO3	1A	X								
Outfall 006-Dup	W	1L Poly	1	5/22/06	HNO3	1B	X								
Outfall 006	W	1L Amber	2		None	2A, 2B		X							
Outfall 006	W	1L Amber	2		HCl	3A, 3B			X						
Outfall 006	W	Poly-500 ml	2		None	4A, 4B				X					
Outfall 006	W	Poly-500 ml	2		None	5A, 5B					X				
Outfall 006	W	Poly-1L	1	5/22/06	None	6						X		Filter w/in 24hr of receipt at lab	
Relinquished By <i>Bernard R.</i>	Date/Time: 5/22/06 1420	Received By <i>B. Kelly</i>	Date/Time: 5/22/06 1420												
Relinquished By <i>B. Kelly</i>	Date/Time: 5/22/06 1840	Received By <i>Colin</i>	Date/Time: 5-22-06 1840												
Relinquished By	Date/Time:	Received By	Date/Time:												

*Colin*

*Bernard R.*



June 01, 2006

**Alta Project I.D.: 27734**

Ms. Michele Chamberlin  
Del Mar Analytical, Irvine  
17461 Derian Avenue, Suite 100  
Irvine, CA 92614

Dear Ms. Chamberlin,

Enclosed are the results for the one aqueous sample received at Alta Analytical Laboratory on May 24, 2006 under your Project Name "IPE2106". This sample were extracted and analyzed using EPA Method 1613 for tetra-through-octa chlorinated dioxins and furans. A standard turnaround time was provided for this work.

The following report consists of a Sample Inventory (Section I), Analytical Results (Section II) and the Appendix, which contains the chain-of-custody, a list of data qualifiers and abbreviations, Alta's current certifications, and copies of the raw data (if requested).

Alta Analytical Laboratory is committed to serving you effectively. If you require additional information, please contact me at 916-933-1640 or by email at [mmaier@altalab.com](mailto:mmaier@altalab.com). Thank you for choosing Alta as part of your analytical support team.

Sincerely,

Martha M. Majer  
HRMS Services Director



*Alta Analytical Laboratory certifies that the report herein meets all the requirements set forth by NELAP for those applicable test methods. This report should not be reproduced except in full without the written approval of ALTA.*



**Alta Analytical Laboratory Inc.**

1104 Windfield Way  
El Dorado Hills, CA 95762

FAX (916) 673-0106  
(916) 933-1640

**Section I: Sample Inventory Report**

**Date Received: 5/24/2006**

Alta Lab. ID

Client Sample ID

27734-001

IPE2106-01

## SECTION II

Method Blank		EPA Method 1613					
Matrix:	Aqueous	QC Batch No.:	8054	Lab Sample:	0-MR001		
Sample Size:	1.00 L	Date Extracted:	30-May-06	Date Analyzed DB-5:	31-May-06		
				Date Analyzed DB-225:	NA		
Analyte	Conc. (ug/L)	DL <sup>a</sup>	EMPC <sup>b</sup>	Labeled Standard	%R	LCL-UCL <sup>d</sup>	Qualifiers
2,3,7,8-TCDD	ND	0.00000133		IS 13C-2,3,7,8-TCDD	61.1	25 - 164	
1,2,3,7,8-PeCDD	ND	0.00000127		13C-1,2,3,7,8-PeCDD	66.5	25 - 181	
1,2,3,4,7,8-HxCDD	ND	0.00000119		13C-1,2,3,4,7,8-HxCDD	64.5	32 - 141	
1,2,3,6,7,8-HxCDD	ND	0.00000133		13C-1,2,3,6,7,8-HxCDD	61.0	28 - 130	
1,2,3,7,8,9-HxCDD	ND	0.00000128		13C-1,2,3,4,6,7,8-HpCDD	60.2	23 - 140	
1,2,3,4,6,7,8-HpCDD	ND	0.00000182		13C-OCDD	45.2	17 - 157	
OCDD	ND	0.00000206		13C-2,3,7,8-TCDF	64.1	24 - 169	
2,3,7,8-TCDF	ND	0.00000172		13C-1,2,3,7,8-PeCDF	67.9	24 - 185	
1,2,3,7,8-PeCDF	ND	0.000000749		13C-2,3,4,7,8-PeCDF	62.8	21 - 178	
2,3,4,7,8-PeCDF	ND	0.000000758		13C-1,2,3,4,7,8-HxCDF	65.3	26 - 152	
1,2,3,4,7,8-HxCDF	ND	0.000000621		13C-1,2,3,6,7,8-HxCDF	58.7	26 - 123	
1,2,3,6,7,8-HxCDF	ND	0.000000584		13C-2,3,4,6,7,8-HxCDF	55.9	28 - 136	
2,3,4,6,7,8-HxCDF	ND	0.000000778		13C-1,2,3,7,8,9-HxCDF	54.0	29 - 147	
1,2,3,7,8,9-HxCDF	ND	0.00000116		13C-1,2,3,4,6,7,8-HpCDF	60.5	28 - 143	
1,2,3,4,6,7,8-HpCDF	ND	0.000000997		13C-1,2,3,4,7,8,9-HpCDF	58.4	26 - 138	
1,2,3,4,7,8,9-HpCDF	ND	0.00000107		13C-OCDF	52.2	17 - 157	
OCDF	ND	0.00000249		CRS 37Cl-2,3,7,8-TCDD	75.0	35 - 197	
<b>Totals</b>							
Total TCDD	ND	0.00000133					
Total PeCDD	ND	0.00000127					
Total HxCDD	ND	0.00000127					
Total HpCDD	ND	0.00000182					
Total TCDF	ND	0.00000172					
Total PeCDF	ND	0.000000754					
Total HxCDF	ND	0.000000786					
Total HpCDF	ND	0.00000103					
<b>Footnotes</b>							
a. Sample specific estimated detection limit.							
b. Estimated maximum possible concentration.							
c. Method detection limit.							
d. Lower control limit - upper control limit.							

Analyst: DMS

Approved By: William J. Luksemburg 01-Jun-2006 13:50



OPR Results		EPA Method 1613				
Matrix:	Aqueous	QC Batch No.:	8054	Lab Sample:	0-OPR001	
Sample Size:	1.00 L	Date Extracted:	30-May-06	Date Analyzed DB-5:	31-May-06	
				Date Analyzed DB-225:	NA	
Analyte	Spike Conc.	Conc. (ng/mL)	OPR Limits	Labeled Standard	%R	LCL-UCL
2,3,7,8-TCDD	10.0	10.3	6.7 - 15.8	<u>IS</u> 13C-2,3,7,8-TCDD	74.8	25 - 161
1,2,3,7,8-PeCDD	50.0	49.2	35 - 71	13C-1,2,3,7,8-PeCDD	76.2	25 - 181
1,2,3,4,7,8-HxCDD	50.0	51.1	35 - 82	13C-1,2,3,4,7,8-HxCDD	69.2	32 - 141
1,2,3,6,7,8-HxCDD	50.0	49.4	38 - 67	13C-1,2,3,6,7,8-HxCDD	66.6	28 - 130
1,2,3,7,8,9-HxCDD	50.0	50.8	32 - 81	13C-1,2,3,4,6,7,8-HpCDD	67.4	23 - 140
1,2,3,4,6,7,8-HpCDD	50.0	51.8	35 - 70	13C-OCDD	55.2	17 - 157
OCDD	100	101	78 - 144	13C-2,3,7,8-TCDF	84.6	24 - 169
2,3,7,8-TCDF	10.0	9.84	7.5 - 15.8	13C-1,2,3,7,8-PeCDF	78.4	24 - 185
1,2,3,7,8-PeCDF	50.0	49.6	40 - 67	13C-2,3,4,7,8-PeCDF	78.3	21 - 178
2,3,4,7,8-PeCDF	50.0	49.0	34 - 80	13C-1,2,3,4,7,8-HxCDF	66.5	26 - 152
1,2,3,4,7,8-HxCDF	50.0	50.2	36 - 67	13C-1,2,3,6,7,8-HxCDF	60.0	26 - 123
1,2,3,6,7,8-HxCDF	50.0	48.5	42 - 65	13C-2,3,4,6,7,8-HxCDF	68.7	28 - 136
2,3,4,6,7,8-HxCDF	50.0	49.2	35 - 78	13C-1,2,3,7,8,9-HxCDF	68.9	29 - 147
1,2,3,7,8,9-HxCDF	50.0	50.1	39 - 65	13C-1,2,3,4,6,7,8-HpCDF	62.1	28 - 143
1,2,3,4,6,7,8-HpCDF	50.0	51.6	41 - 61	13C-1,2,3,4,7,8,9-HpCDF	64.2	26 - 138
1,2,3,4,7,8,9-HpCDF	50.0	50.6	39 - 69	13C-OCDF	57.1	17 - 157
OCDF	100	97.0	63 - 170	<u>CRS</u> 37Cl-2,3,7,8-TCDD	91.5	35 - 197

Analyst: DMS

Approved By: William J. Luksemburg 01-Jun-2006 13:50

Sample ID: IPE2106-01				EPA Method 1613			
Client Data		Sample Data		Laboratory Data			
Name	Del Mar Analytical, Irvine	Matrix	Aqueous	Lab Sample	27734-001	Date Received	24-May-06
Project	IPE2106	Sample Size	0.989 L	QC Batch No.	8054	Date Extracted	30-May-06
Date Collected	22-May-06			Date Analyzed DB-5	31-May-06	Date Analyzed DB-225	NA
Time Collected	1115						
Analyte	Conc. (ug/L)	DL <sup>a</sup>	EMPC <sup>b</sup>	Qualifiers	Labeled Standard	%R	LCL-UCL <sup>d</sup> Qualifiers
2,3,7,8-TCDD	ND	0.000000883			IS 13C-2,3,7,8-TCDD	67.2	25 - 164
1,2,3,7,8-PeCDD	ND	0.00000101			13C-1,2,3,7,8-PeCDD	63.8	25 - 181
1,2,3,4,7,8-HxCDD	ND	0.000000949			13C-1,2,3,4,7,8-HxCDD	58.1	32 - 141
1,2,3,6,7,8-HxCDD	ND	0.00000103			13C-1,2,3,6,7,8-HxCDD	54.3	28 - 130
1,2,3,7,8,9-HxCDD	ND	0.00000100			13C-1,2,3,4,6,7,8-HpCDD	58.2	23 - 140
1,2,3,4,6,7,8-HpCDD	0.00000503			J	13C-OCDD	47.2	17 - 157
OCDD	0.0000775				13C-2,3,7,8-TCDF	69.2	24 - 169
2,3,7,8-TCDF	ND	0.00000101			13C-1,2,3,7,8-PeCDF	63.3	24 - 185
1,2,3,7,8-PeCDF	ND	0.000000823			13C-2,3,4,7,8-PeCDF	64.6	21 - 178
2,3,4,7,8-PeCDF	ND	0.000000763			13C-1,2,3,4,7,8-HxCDF	57.4	26 - 152
1,2,3,4,7,8-HxCDF	ND	0.000000461			13C-1,2,3,6,7,8-HxCDF	50.9	26 - 123
1,2,3,6,7,8-HxCDF	ND	0.000000448			13C-2,3,4,6,7,8-HxCDF	55.6	28 - 136
2,3,4,6,7,8-HxCDF	ND	0.000000512			13C-1,2,3,7,8,9-HxCDF	58.3	29 - 147
1,2,3,7,8,9-HxCDF	ND	0.000000687			13C-1,2,3,4,6,7,8-HpCDF	55.1	28 - 143
1,2,3,4,6,7,8-HpCDF	0.00000106			J	13C-1,2,3,4,7,8,9-HpCDF	56.0	26 - 138
1,2,3,4,7,8,9-HpCDF	ND	0.000000690			13C-OCDF	48.1	17 - 157
OCDF	ND	0.00000203			CRS 37Cl-2,3,7,8-TCDD	93.8	35 - 197
<b>Totals</b>							
Total TCDD	ND	0.000000883					
Total PeCDD	ND	0.00000101					
Total HxCDD	ND	0.000000993					
Total HpCDD	0.0000135						
Total TCDF	ND	0.00000101					
Total PeCDF	ND	0.000000793					
Total HxCDF	ND	0.000000527					
Total HpCDF	0.00000250						
<b>Footnotes</b>							
a. Sample specific estimated detection limit.							
b. Estimated maximum possible concentration.							
c. Method detection limit.							
d. Lower control limit - upper control limit.							

Analyst: DMS

Approved By: William J. Lutksenburg 01-Jun-2006 13:50

## APPENDIX

## DATA QUALIFIERS & ABBREVIATIONS

B	This compound was also detected in the method blank.
D	The amount reported is the maximum possible concentration due to possible chlorinated diphenylether interference.
E	The reported value exceeds the calibration range of the instrument.
H	The signal-to-noise ratio is greater than 10:1.
I	Chemical interference
J	The amount detected is below the Lower Calibration Limit of the instrument.
*	See Cover Letter
Conc.	Concentration
DL	Sample-specific estimated Detection Limit
MDL	The minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero in the matrix tested.
EMPC	Estimated Maximum Possible Concentration
NA	Not applicable
RL	Reporting Limit – concentrations that corresponds to low calibration point
ND	Not Detected
TEQ	Toxic Equivalency

Unless otherwise noted, solid sample results are reported in dry weight. Tissue samples are reported in wet weight.

## CERTIFICATIONS

<b>Accrediting Authority</b>	<b>Certificate Number</b>
State of Alaska, DEC	CA413-02
State of Arizona	AZ0639
State of Arkansas, DEQ	05-013-0
State of Arkansas, DOH	Reciprocity through CA
State of California – NELAP Primary AA	02102CA
State of Colorado	
State of Connecticut	PH-0182
State of Florida, DEP	E87777
Commonwealth of Kentucky	90063
State of Louisiana, Health and Hospitals	LA050001
State of Louisiana, DEQ	01977
State of Maine	CA0413
State of Michigan	81178087
State of Mississippi	Reciprocity through CA
Naval Facilities Engineering Service Center	
State of Nevada	CA413
State of New Jersey	CA003
State of New Mexico	Reciprocity through CA
State of New York, DOH	11411
State of North Carolina	06700
State of North Dakota, DOH	R-078
State of Oklahoma	D9919
State of Oregon	CA200001-002
State of Pennsylvania	68-00490
State of South Carolina	87002001
State of Tennessee	02996
State of Texas	TX247-2005A
U.S. Army Corps of Engineers	
State of Utah	9169330940
Commonwealth of Virginia	00013
State of Washington	C1285
State of Wisconsin	998036160
State of Wyoming	8TMS-Q

SUBCONTRACT ORDER

Del Mar Analytical - Irvine

IPE2106

27734

SENDING LABORATORY:

Del Mar Analytical - Irvine  
17461 Derian Avenue, Suite 100  
Irvine, CA 92614  
Phone: (949) 261-1022  
Fax: (949) 261-1228  
Project Manager: Michele Chamberlin

RECEIVING LABORATORY:

Alta Analytical - SUB  
1104 Windfield Way  
El Dorado Hills, CA 95762  
Phone : (916) 933-1640  
Fax: (916) 673-0106

Analysis	Due	Expires	Laboratory ID	Comments
Sample ID: IPE2106-01	Water	Sampled: 05/22/06 11:15		
EDD + Level 4	06/01/06 12:00	06/19/06 11:15		Excel EDD email to pm, Include Std logs for Lvl IV
1613-Dioxin-HR-Alta	06/01/06 12:00	05/29/06 11:15		J flags, 17 congeners, no TEQ, ug/L, sub=Alta
Containers Supplied:				
1 L Amber (C)	1 L Amber (D)			

Released By [Signature] Date 5/23/06 Received By Bettina J. Benedict Date 5/24/06

Released By \_\_\_\_\_ Date \_\_\_\_\_ Received By \_\_\_\_\_ Date \_\_\_\_\_

### SAMPLE LOG-IN CHECKLIST

Alta Project #: 27734

Samples Arrival:	Date/Time 5/24/06 0845	Initials: LWB	Location: WR-2		
Logged In:	Date/Time 5/24/06 1301	Initials: FEB	Location: WR-2		
Delivered By:	<input checked="" type="checkbox"/> FedEx	<input type="checkbox"/> UPS	<input type="checkbox"/> Cal	<input type="checkbox"/> DHL	<input type="checkbox"/> Hand Delivered
Preservation:	<input checked="" type="checkbox"/> Ice	<input type="checkbox"/> Blue Ice	<input type="checkbox"/> Dry Ice	<input type="checkbox"/> None	
Temp °C	0°C	Time:	0900		Thermometer ID: DT-20

	YES	NO	NA
Adequate Sample Volume Received?	✓		
Holding Time Acceptable?	✓		
Shipping Container(s) Intact?	✓		
Shipping Custody Seals Intact?	✓		
Shipping Documentation Present?	✓		
Airbill	Trk # 7914 9223 5500		
Sample Container Intact?	✓		
Sample Custody Seals Intact?			✓
Chain of Custody / Sample Documentation Present?	✓		
COC Anomaly/Sample Acceptance Form completed?		FEB 5/24/06	✓
If Chlorinated or Drinking Water Samples, Acceptable Preservation?			✓
Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> Preservation Documented?		COC	Sample Container <input checked="" type="radio"/> None
Shipping Container	Alta	<input checked="" type="radio"/> Client	Retain <input checked="" type="radio"/> Return <input type="radio"/> Dispose

Comments:

# **APPENDIX G**

## **Section 50**

Outfall 006, May 22, 2006

MEC<sup>X</sup> Data Validation Reports







# DATA VALIDATION REPORT

NPDES Monitoring Program  
Routine Outfall 006

ANALYSIS: DIOXINS/FURANS  
SAMPLE DELIVERY GROUP: IPE2106

Prepared by  
MEC<sup>X</sup>, LLC  
12269 East Vassar Drive  
Aurora, CO 80014

## 1. INTRODUCTION

Task Order Title: NPDES  
Contract Task Order: 1261.001D.01  
Sample Delivery Group: IPE2106  
Project Manager: P. Costa  
Matrix: Water  
Analysis: Dioxins/Furans  
QC Level: Level IV  
No. of Samples: 1  
No. of Reanalyses/Dilutions: 0  
Reviewer: E. Wessling  
Date of Review: July 7, 2006

The sample listed in Table 1 was validated based on the guidelines outlined in the *MEC<sup>X</sup> Data Validation Procedure for Dioxins and Furans (DVP-19, Rev. 0)*, *USEPA Method 1613*, and the *National Functional Guidelines for Chlorinated Dioxin/Furan Data Review (8/02)*. Any deviations from these procedures and guidelines are documented herein. Qualifiers were applied in cases where the data did not meet the required QC criteria or where special consideration by the data user is required. Data qualifiers were placed on Form Is with the associated qualification codes. Analytes that were rejected for any reason are denoted on the Form I as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

**Table 1. Sample Identification**

Client ID	Laboratory ID (Del Mar)	Laboratory ID (Alta)	Matrix	COC Method
Outfall 006	IPE2106	27734-001	Water	1613

## 2. DATA VALIDATION FINDINGS

### 2.1 SAMPLE MANAGEMENT

Following are findings associated with sample management:

#### 2.1.1 Sample Preservation, Handling, and Transport

The sample in this SDG was received at Del Mar Analytical within the temperature limits of 4°C ±2°C. The sample was shipped to Alta for dioxin/furan analysis and was received below the temperature limit at 1.0°C. The sample containers were not noted to be damaged or frozen during transportation; therefore, no qualifications were required. According to the case narrative and laboratory login sheet, the sample was received intact and in good condition at both laboratories. No qualifications were required.

#### 2.1.2 Chain of Custody

The COC and transfer COC were legible and signed by the appropriate field and laboratory personnel, and accounted for the analysis presented in this SDG. As the sample was couriered directly to Del Mar Analytical-Irvine, custody seals were not required. The Client ID was added to the sample result summary by the reviewer. No qualifications were required.

#### 2.1.3 Holding Times

The sample was extracted and analyzed within one year of collection. No qualifications were required.

### 2.2 INSTRUMENT PERFORMANCE

Following are findings associated with instrument performance:

#### 2.2.1 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 (see section 2.3.2). 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%. No qualifications were required.

## 2.2.2 Mass Spectrometer Performance

The mass spectrometer performance was acceptable with the static resolving power greater than 10,000. No qualifications were required.

## 2.3 CALIBRATION

### 2.3.1 Initial Calibration

The initial calibration was analyzed 04/11/2006 on instrument VG-9. The calibration consisted of six concentration level standards (CS0 through CS5) analyzed to verify instrument linearity. The initial calibrations were 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 QC limits listed in Method 1613 for all standards. A representative number of %RSDs were verified from the raw data, and no calculation or transcription errors were noted. No qualifications were required.

### 2.3.2 Continuing Calibration

Calibration verification (VER) consisted of a mid-level standard (CS3) analyzed at the beginning of each analytical sequence. The VER was 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. A representative number of %Ds were verified from the raw data, and no calculation or transcription errors were noted. No qualifications were required.

WDM and isomer specificity compounds were added to the VER standard instead of being analyzed separately, as noted in section 2.2.1 of this report. No adverse effect was observed with this practice.

## 2.4 BLANKS

One method blank (0-8054-MB001) was extracted and analyzed with the sample in this SDG. No target compounds were detected in the method blank. A review of the method blank raw data and chromatograms indicated no false negatives. No qualifications were required.

## 2.5 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

One blank spike (0-8054-OPR001) was extracted and analyzed with the sample in this SDG. All recoveries were within the acceptance criteria listed in Table 6 of Method 1613. A review of the raw data and chromatograms indicated no transcription or calculation errors. No qualifications were required.

## 2.6 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

MS/MSD analyses were not performed in this SDG. Evaluation of method accuracy was based on the OPR results. No qualifications were required.

## 2.7 FIELD QC SAMPLES

Following are findings associated with field QC:

### 2.7.1 Field Blanks and Equipment Rinsates

The sample in this SDG had no field blank or equipment rinsate identified. No qualification of the site sample was required.

### 2.7.2 Field Duplicates

No field duplicates were identified in association with the sample in this SDG.

## 2.8 INTERNAL STANDARDS

The labeled standard recoveries were within the acceptance criteria listed in Table 7 of Method 1613. No qualifications were required.

## 2.9 COMPOUND IDENTIFICATION

The laboratory analyzed for polychlorinated dioxins/furans by EPA Method 1613. The compound identifications were verified from the raw data and no false negatives or positives were noted. No qualifications were required.

## 2.10 COMPOUND QUANTIFICATION AND REPORTED DETECTION LIMITS

Compound quantitation was verified from the raw data. The laboratory calculated and reported compound-specific detection limits. The detects below the laboratory lower calibration level were qualified as estimated, "J." These "J" values were annotated with the qualification code of "DNQ" to comply with the reporting requirements of the NPDES permit. No further qualifications were required.





# **APPENDIX G**

## **Section 51**

Outfall 009, May 22, 2006

Del Mar Analytical Laboratory Report



### LABORATORY REPORT

Prepared For: MWH-Pasadena/Boeing  
300 North Lake Avenue, Suite 1200  
Pasadena, CA 91101  
Attention: Bronwyn Kelly

Project: Routine Outfall 009

Sampled: 05/22/06  
Received: 05/22/06  
Issued: 06/18/06 13:55

NELAP #01108CA California ELAP#1197 CSDLAC #10117

*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 Del Mar Analytical and its client. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical. The Chain of Custody, 1 page, is included and is 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.

**LABORATORY ID**  
IPE2109-01

**CLIENT ID**  
Outfall 009

**MATRIX**  
Water

Reviewed By:

**Del Mar Analytical - Irvine**  
Michele Chamberlin  
Project Manager



MWH-Pasadena/Boeing  
 300 North Lake Avenue, Suite 1200  
 Pasadena, CA 91101  
 Attention: Bronwyn Kelly

Project ID: Routine Outfall 009

Report Number: IPE2109

Sampled: 05/22/06

Received: 05/22/06

## METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
<b>Sample ID: IPE2109-01 (Outfall 009 - Water)</b>									
<b>Reporting Units: ug/l</b>									
<b>Antimony</b>	EPA 200.8	6E23079	0.050	2.0	<b>0.40</b>	1	05/23/06	05/23/06	J
Cadmium	EPA 200.8	6E23079	0.025	1.0	ND	1	05/23/06	05/23/06	
<b>Copper</b>	EPA 200.8	6E23079	0.25	2.0	<b>2.5</b>	1	05/23/06	05/23/06	
<b>Lead</b>	EPA 200.8	6E23079	0.040	1.0	<b>2.7</b>	1	05/23/06	05/23/06	
Mercury	EPA 245.1	6E23075	0.050	0.20	ND	1	05/23/06	05/23/06	
Thallium	EPA 200.8	6E23079	0.15	1.0	ND	1	05/23/06	05/23/06	

**Del Mar Analytical - Irvine**  
 Michele Chamberlin  
 Project Manager

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MWH-Pasadena/Boeing  
 300 North Lake Avenue, Suite 1200  
 Pasadena, CA 91101  
 Attention: Bronwyn Kelly

Project ID: Routine Outfall 009

Report Number: IPE2109

Sampled: 05/22/06

Received: 05/22/06

## DISSOLVED METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
<b>Sample ID: IPE2109-01 (Outfall 009 - Water) - cont.</b>									
<b>Reporting Units: ug/l</b>									
<b>Antimony</b>	EPA 200.8-Diss	6E23097	0.050	2.0	<b>0.50</b>	1	05/23/06	05/24/06	J
Cadmium	EPA 200.8-Diss	6E23097	0.025	1.0	ND	1	05/23/06	05/24/06	
<b>Copper</b>	EPA 200.8-Diss	6E23097	0.25	2.0	<b>2.0</b>	1	05/23/06	05/24/06	
<b>Lead</b>	EPA 200.8-Diss	6E23097	0.040	1.0	<b>0.041</b>	1	05/23/06	05/24/06	J
Mercury	EPA 245.1-Diss	6E24084	0.050	0.20	ND	1	05/24/06	05/24/06	
Thallium	EPA 200.8-Diss	6E23097	0.15	1.0	ND	1	05/23/06	05/24/06	

**Del Mar Analytical - Irvine**  
 Michele Chamberlin  
 Project Manager

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MWH-Pasadena/Boeing  
300 North Lake Avenue, Suite 1200  
Pasadena, CA 91101  
Attention: Bronwyn Kelly

Project ID: Routine Outfall 009

Report Number: IPE2109

Sampled: 05/22/06

Received: 05/22/06

**INORGANICS**

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
<b>Sample ID: IPE2109-01 (Outfall 009 - Water) - cont.</b>									
Reporting Units: mg/l									
Chloride	EPA 300.0	6E22054	0.15	0.50	16	1	05/22/06	05/22/06	
Nitrate/Nitrite-N	EPA 300.0	6E22054	0.080	0.15	0.72	1	05/22/06	05/22/06	
Oil & Grease	EPA 413.1	6E24059	0.90	4.8	ND	1	05/24/06	05/24/06	
Sulfate	EPA 300.0	6E22054	0.90	1.0	68	2	05/22/06	05/23/06	
Total Dissolved Solids	SM2540C	6E23074	10	10	290	1	05/23/06	05/23/06	
Total Suspended Solids	EPA 160.2	6E24118	10	10	ND	1	05/24/06	05/24/06	

Del Mar Analytical - Irvine  
Michele Chamberlin  
Project Manager

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MWH-Pasadena/Boeing  
300 North Lake Avenue, Suite 1200  
Pasadena, CA 91101  
Attention: Bronwyn Kelly

Project ID: Routine Outfall 009

Report Number: IPE2109

Sampled: 05/22/06

Received: 05/22/06

**SHORT HOLD TIME DETAIL REPORT**

Sample ID: Outfall 009 (IPE2109-01) - Water EPA 300.0	Hold Time (in days)	Date/Time Sampled	Date/Time Received	Date/Time Extracted	Date/Time Analyzed
	2	05/22/2006 11:29	05/22/2006 18:40	05/22/2006 20:00	05/22/2006 21:02

**Del Mar Analytical - Irvine**  
Michele Chamberlin  
Project Manager

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MWH-Pasadena/Boeing  
 300 North Lake Avenue, Suite 1200  
 Pasadena, CA 91101  
 Attention: Bronwyn Kelly

Project ID: Routine Outfall 009

Report Number: IPE2109

Sampled: 05/22/06

Received: 05/22/06

## METHOD BLANK/QC DATA

### METALS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
<b>Batch: 6E23075 Extracted: 05/23/06</b>											
<b>Blank Analyzed: 05/23/2006 (6E23075-BLK1)</b>											
Mercury	ND	0.20	0.050	ug/l							
<b>LCS Analyzed: 05/23/2006 (6E23075-BS1)</b>											
Mercury	8.69	0.20	0.050	ug/l	8.00		109	85-115			
<b>Matrix Spike Analyzed: 05/23/2006 (6E23075-MS1)</b>											
						<b>Source: IPE1997-01</b>					
Mercury	8.71	0.20	0.050	ug/l	8.00	ND	109	70-130			
<b>Matrix Spike Dup Analyzed: 05/23/2006 (6E23075-MSD1)</b>											
						<b>Source: IPE1997-01</b>					
Mercury	8.72	0.20	0.050	ug/l	8.00	ND	109	70-130	0	20	
<b>Batch: 6E23079 Extracted: 05/23/06</b>											
<b>Blank Analyzed: 05/23/2006 (6E23079-BLK1)</b>											
Antimony	ND	2.0	0.050	ug/l							
Cadmium	ND	1.0	0.025	ug/l							
Copper	ND	2.0	0.25	ug/l							
Lead	ND	1.0	0.040	ug/l							
Thallium	ND	1.0	0.15	ug/l							
<b>LCS Analyzed: 05/23/2006 (6E23079-BS1)</b>											
Antimony	79.0	2.0	0.050	ug/l	80.0		99	85-115			
Cadmium	79.5	1.0	0.025	ug/l	80.0		99	85-115			
Copper	80.1	2.0	0.25	ug/l	80.0		100	85-115			
Lead	77.6	1.0	0.040	ug/l	80.0		97	85-115			
Thallium	78.1	1.0	0.15	ug/l	80.0		98	85-115			

**Del Mar Analytical - Irvine**  
 Michele Chamberlin  
 Project Manager



MWH-Pasadena/Boeing  
 300 North Lake Avenue, Suite 1200  
 Pasadena, CA 91101  
 Attention: Bronwyn Kelly

Project ID: Routine Outfall 009

Report Number: IPE2109

Sampled: 05/22/06

Received: 05/22/06

## 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
<b>Batch: 6E23079 Extracted: 05/23/06</b>											
<b>Matrix Spike Analyzed: 05/23/2006 (6E23079-MS1)</b>						<b>Source: IPE1953-01</b>					
Antimony	80.0	2.0	0.050	ug/l	80.0	0.33	100	70-130			
Cadmium	78.0	1.0	0.025	ug/l	80.0	ND	98	70-130			
Copper	77.2	2.0	0.25	ug/l	80.0	ND	96	70-130			
Lead	75.9	1.0	0.040	ug/l	80.0	0.074	95	70-130			
Thallium	76.2	1.0	0.15	ug/l	80.0	ND	95	70-130			
<b>Matrix Spike Analyzed: 05/23/2006 (6E23079-MS2)</b>						<b>Source: IPE2007-01</b>					
Antimony	79.9	2.0	0.050	ug/l	80.0	0.30	100	70-130			
Cadmium	77.9	1.0	0.025	ug/l	80.0	ND	97	70-130			
Copper	79.5	2.0	0.25	ug/l	80.0	4.0	94	70-130			
Lead	77.4	1.0	0.040	ug/l	80.0	0.33	96	70-130			
Thallium	77.7	1.0	0.15	ug/l	80.0	ND	97	70-130			
<b>Matrix Spike Dup Analyzed: 05/23/2006 (6E23079-MSD1)</b>						<b>Source: IPE1953-01</b>					
Antimony	82.7	2.0	0.050	ug/l	80.0	0.33	103	70-130	3	20	
Cadmium	80.8	1.0	0.025	ug/l	80.0	ND	101	70-130	4	20	
Copper	76.3	2.0	0.25	ug/l	80.0	ND	95	70-130	1	20	
Lead	75.3	1.0	0.040	ug/l	80.0	0.074	94	70-130	1	20	
Thallium	76.6	1.0	0.15	ug/l	80.0	ND	96	70-130	1	20	

**Del Mar Analytical - Irvine**  
 Michele Chamberlin  
 Project Manager





MWH-Pasadena/Boeing  
 300 North Lake Avenue, Suite 1200  
 Pasadena, CA 91101  
 Attention: Bronwyn Kelly

Project ID: Routine Outfall 009

Report Number: IPE2109

Sampled: 05/22/06  
 Received: 05/22/06

## METHOD BLANK/QC DATA

### DISSOLVED METALS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	RPD RPD	RPD Limit	Data Qualifiers
<b>Batch: 6E23097 Extracted: 05/23/06</b>										
<b>Blank Analyzed: 05/23/2006 (6E23097-BLK1)</b>										
Antimony	ND	2.0	0.050	ug/l						
Cadmium	ND	1.0	0.025	ug/l						
Copper	ND	2.0	0.25	ug/l						
Lead	ND	1.0	0.040	ug/l						
Thallium	ND	1.0	0.15	ug/l						
<b>LCS Analyzed: 05/23/2006-05/25/2006 (6E23097-BS1)</b>										
Antimony	82.0	2.0	0.050	ug/l	80.0		102		85-115	
Cadmium	82.1	1.0	0.025	ug/l	80.0		103		85-115	
Copper	81.8	2.0	0.25	ug/l	80.0		102		85-115	
Lead	85.9	1.0	0.040	ug/l	80.0		107		85-115	
Thallium	86.9	1.0	0.15	ug/l	80.0		109		85-115	
<b>Matrix Spike Analyzed: 05/24/2006 (6E23097-MS1) Source: IPE2095-01</b>										
Antimony	93.9	2.0	0.050	ug/l	80.0	0.88	116		70-130	
Cadmium	92.0	1.0	0.025	ug/l	80.0	ND	115		70-130	
Copper	78.6	2.0	0.25	ug/l	80.0	1.7	96		70-130	
Lead	82.8	1.0	0.040	ug/l	80.0	ND	104		70-130	
Thallium	84.9	1.0	0.15	ug/l	80.0	0.42	106		70-130	
<b>Matrix Spike Dup Analyzed: 05/24/2006 (6E23097-MSD1) Source: IPE2095-01</b>										
Antimony	93.9	2.0	0.050	ug/l	80.0	0.88	116	70-130	0	20
Cadmium	94.0	1.0	0.025	ug/l	80.0	ND	118	70-130	2	20
Copper	79.5	2.0	0.25	ug/l	80.0	1.7	97	70-130	1	20
Lead	82.4	1.0	0.040	ug/l	80.0	ND	103	70-130	1	20
Thallium	84.5	1.0	0.15	ug/l	80.0	0.42	105	70-130	1	20

Del Mar Analytical - Irvine  
 Michele Chamberlin  
 Project Manager



MWH-Pasadena/Boeing  
300 North Lake Avenue, Suite 1200  
Pasadena, CA 91101  
Attention: Bronwyn Kelly

Project ID: Routine Outfall 009

Report Number: IPE2109

Sampled: 05/22/06

Received: 05/22/06

**METHOD BLANK/QC DATA**

**DISSOLVED METALS**

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
<b>Batch: 6E24084 Extracted: 05/24/06</b>											
<b>Blank Analyzed: 05/24/2006 (6E24084-BLK1)</b>											
Mercury	ND	0.20	0.050	ug/l							
<b>LCS Analyzed: 05/24/2006 (6E24084-BS1)</b>											
Mercury	8.16	0.20	0.050	ug/l	8.00		102	85-115			
<b>Matrix Spike Analyzed: 05/24/2006 (6E24084-MS1)</b>											
						<b>Source: IPE1552-01</b>					
Mercury	8.33	0.20	0.050	ug/l	8.00	0.065	103	70-130			
<b>Matrix Spike Dup Analyzed: 05/24/2006 (6E24084-MSD1)</b>											
						<b>Source: IPE1552-01</b>					
Mercury	8.32	0.20	0.050	ug/l	8.00	0.065	103	70-130	0	20	

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Michele Chamberlin  
Project Manager

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MWH-Pasadena/Boeing  
300 North Lake Avenue, Suite 1200  
Pasadena, CA 91101  
Attention: Bronwyn Kelly

Project ID: Routine Outfall 009

Report Number: IPE2109

Sampled: 05/22/06

Received: 05/22/06

METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	Limit	RPD	RPD Limit	Data Qualifiers
<b>Batch: 6E22054 Extracted: 05/22/06</b>											
<b>Blank Analyzed: 05/22/2006 (6E22054-BLK1)</b>											
Chloride	ND	0.50	0.15	mg/l							
Nitrate/Nitrite-N	ND	0.15	0.080	mg/l							
Sulfate	ND	0.50	0.45	mg/l							
<b>LCS Analyzed: 05/22/2006 (6E22054-BS1)</b>											
Chloride	4.85	0.50	0.15	mg/l	5.00		97	90-110			M-3
Sulfate	9.96	0.50	0.45	mg/l	10.0		100	90-110			
<b>Matrix Spike Analyzed: 05/22/2006 (6E22054-MS1)</b>											
						<b>Source: IPE1848-02</b>					
Chloride	104	25	7.5	mg/l	50.0	69	70	80-120			M2
Sulfate	967	25	22	mg/l	100	940	27	80-120			M-HA
<b>Matrix Spike Analyzed: 05/22/2006 (6E22054-MS2)</b>											
						<b>Source: IPE1848-17</b>					
Sulfate	20.9	0.50	0.45	mg/l	20.0	ND	104	80-120			
<b>Matrix Spike Dup Analyzed: 05/22/2006 (6E22054-MSD1)</b>											
						<b>Source: IPE1848-02</b>					
Chloride	105	25	7.5	mg/l	50.0	69	72	80-120	1	20	M2
Sulfate	986	25	22	mg/l	100	940	46	80-120	2	20	M-HA
<b>Matrix Spike Dup Analyzed: 05/22/2006 (6E22054-MSD2)</b>											
						<b>Source: IPE1848-17</b>					
Sulfate	20.9	0.50	0.45	mg/l	20.0	ND	104	80-120	0	20	
<b>Batch: 6E23074 Extracted: 05/23/06</b>											
<b>Blank Analyzed: 05/23/2006 (6E23074-BLK1)</b>											
Total Dissolved Solids	ND	10	10	mg/l							

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MWH-Pasadena/Boeing  
 300 North Lake Avenue, Suite 1200  
 Pasadena, CA 91101  
 Attention: Bronwyn Kelly

Project ID: Routine Outfall 009

Report Number: IPE2109

Sampled: 05/22/06

Received: 05/22/06

## METHOD BLANK/QC DATA

### INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	Limit	RPD	RPD Limit	Data Qualifiers
<b>Batch: 6E23074 Extracted: 05/23/06</b>											
<b>LCS Analyzed: 05/23/2006 (6E23074-BS1)</b>											
Total Dissolved Solids	990	10	10	mg/l	1000		99	90-110			
<b>Duplicate Analyzed: 05/23/2006 (6E23074-DUP1)</b>											
Total Dissolved Solids	15600	10	10	mg/l		16000			3	10	
<b>Batch: 6E24059 Extracted: 05/24/06</b>											
<b>Blank Analyzed: 05/24/2006 (6E24059-BLK1)</b>											
Oil & Grease	ND	5.0	0.94	mg/l							
<b>LCS Analyzed: 05/24/2006 (6E24059-BS1)</b>											
Oil & Grease	18.2	5.0	0.94	mg/l	20.0		91	65-120			M-NR1
<b>LCS Dup Analyzed: 05/24/2006 (6E24059-BSD1)</b>											
Oil & Grease	18.4	5.0	0.94	mg/l	20.0		92	65-120	1	20	
<b>Batch: 6E24118 Extracted: 05/24/06</b>											
<b>Blank Analyzed: 05/24/2006 (6E24118-BLK1)</b>											
Total Suspended Solids	ND	10	10	mg/l							
<b>LCS Analyzed: 05/24/2006 (6E24118-BS1)</b>											
Total Suspended Solids	985	10	10	mg/l	1000		98	85-115			
<b>Duplicate Analyzed: 05/24/2006 (6E24118-DUP1)</b>											
Total Suspended Solids	130	10	10	mg/l		130			0	10	

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 Michele Chamberlin  
 Project Manager



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 Pasadena, CA 91101  
 Attention: Bronwyn Kelly

Project ID: Routine Outfall 009

Report Number: IPE2109

Sampled: 05/22/06

Received: 05/22/06

## 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
IPE2109-01	413.1 Oil and Grease	Oil & Grease	mg/l	0	4.8	15
IPE2109-01	Antimony-200.8	Antimony	ug/l	0.40	2.0	6.00
IPE2109-01	Antimony-200.8, Diss	Antimony	ug/l	0.50	2.0	6.00
IPE2109-01	Cadmium-200.8	Cadmium	ug/l	0	1.0	4.00
IPE2109-01	Cadmium-200.8, Diss	Cadmium	ug/l	0	1.0	4.00
IPE2109-01	Chloride - 300.0	Chloride	mg/l	16	0.50	150
IPE2109-01	Copper-200.8	Copper	ug/l	2.50	2.0	14
IPE2109-01	Copper-200.8, Diss	Copper	ug/l	2.00	2.0	14
IPE2109-01	Lead-200.8	Lead	ug/l	2.70	1.0	5.20
IPE2109-01	Lead-200.8, Diss	Lead	ug/l	0.041	1.0	5.20
IPE2109-01	Mercury - 245.1	Mercury	ug/l	0.018	0.20	0.20
IPE2109-01	Mercury-245.1, Diss	Mercury	ug/l	0.021	0.20	0.20
IPE2109-01	Nitrogen, NO3+NO2 -N	Nitrate/Nitrite-N	mg/l	0.72	0.15	10.00
IPE2109-01	Sulfate-300.0	Sulfate	mg/l	68	1.0	250
IPE2109-01	TDS - SM 2540C	Total Dissolved Solids	mg/l	290	10	850
IPE2109-01	Thallium-200.8	Thallium	ug/l	0	1.0	2.00
IPE2109-01	Thallium-200.8, Diss	Thallium	ug/l	0	1.0	2.00

**Del Mar Analytical - Irvine**  
 Michele Chamberlin  
 Project Manager



MWH-Pasadena/Boeing  
300 North Lake Avenue, Suite 1200  
Pasadena, CA 91101  
Attention: Bronwyn Kelly

Project ID: Routine Outfall 009

Report Number: IPE2109

Sampled: 05/22/06  
Received: 05/22/06

### DATA QUALIFIERS AND DEFINITIONS

- 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.
- M2** The MS and/or MSD were below the acceptance limits due to sample matrix interference. See Blank Spike (LCS).
- M-3** Results exceeded the linear range in the MS/MSD and therefore are not available for reporting. The batch was accepted based on acceptable recovery in the Blank Spike (LCS).
- M-HA** Due to high levels of analyte in the sample, the MS/MSD calculation does not provide useful spike recovery information. See Blank Spike (LCS).
- M-NR1** 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

**Del Mar Analytical - Irvine**  
Michele Chamberlin  
Project Manager

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**NPDES - 1238**  
IPE2109 <Page 13 of 14>



MWH-Pasadena/Boeing  
 300 North Lake Avenue, Suite 1200  
 Pasadena, CA 91101  
 Attention: Bronwyn Kelly

Project ID: Routine Outfall 009

Report Number: IPE2109

Sampled: 05/22/06  
 Received: 05/22/06

## Certification Summary

### Del Mar Analytical - Irvine

Method	Matrix	Nelac	California
1613A/1613B	Water		
EDD + Level 4	Water		
EPA 160.2	Water	X	X
EPA 200.8-Diss	Water	X	X
EPA 200.8	Water	X	X
EPA 245.1-Diss	Water	X	X
EPA 245.1	Water	X	X
EPA 300.0	Water	X	X
EPA 413.1	Water	X	X
SM2540C	Water	X	X

*Nevada and NELAP provide analyte specific accreditations. Analyte specific information for Del Mar Analytical may be obtained by contacting the laboratory or visiting our website at [www.testamericainc.com](http://www.testamericainc.com)*

### Subcontracted Laboratories

**Alta 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: IPE2109-01

Analysis Performed: EDD + Level 4  
 Samples: IPE2109-01

### Del Mar Analytical - Irvine

Michele Chamberlin  
 Project Manager

IPE2109

Client Name/Address: <b>MWH-Pasadena</b> 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101		Project: Boeing-SSFL NPDES <b>Routine Outfall 009</b> Stormwater at WS-13		ANALYSIS REQUIRED		Field readings: Temp = 61° pH = 7.6							
Project Manager: Bronwyn Kelly Sampler: <i>Bronwyn Kelly</i>		Phone Number: (626) 568-6691 Fax Number: (626) 568-6515				Comments							
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 (EPA 413.1)	Cl-, SO4, NO3+NO2-N	TDS, TSS	Total Dissolved Metals: Sb, Cd, Cu, Pb, Hg, Tl	
Outfall 009	W	Poly-1L	1	5/22/06 11:27	HNO3	1A	X						
Outfall 009-Dup	W	Poly-1L	1	↓	HNO3	1B	X						
Outfall 009	W	Amber-1L	2			None	2A, 2B		X				
Outfall 009	W	Amber-1L	2		HCl	3A, 3B		X					
Outfall 009	W	Poly-500 ml	2		None	4A, 4B			X				
Outfall 009	W	Poly-500 ml	2	5/22-06 11:27	None	5A, 5B				X			
Outfall 009	W	Poly-1L	1		None	6						X	
Relinquished By: <i>Bronwyn Kelly</i>							Date/Time: 5/22/06 1420	Turn around Time: (check) 24 Hours _____ 5 Days _____					
Relinquished By: <i>John Kelly</i>							Date/Time: 5/22/06 1420	48 Hours _____ 10 Days _____					
Relinquished By: _____							Date/Time: _____	72 Hours _____ Normal <input checked="" type="checkbox"/>					
Perchlorate Only 72 Hours _____							Metals Only 72 Hours _____						
Sample Integrity: (Check) Intact <input checked="" type="checkbox"/> On Ice: <input checked="" type="checkbox"/>							5-22-06 1840						

R02 @





July 07, 2006

**Alta Project I.D.: 27733**

Ms. Michele Chamberlin  
Del Mar Analytical, Irvine  
17461 Derian Avenue, Suite 100  
Irvine, CA 92614

Dear Ms. Chamberlin,

Enclosed are the amended results for the one aqueous sample received at Alta Analytical Laboratory on May 24, 2006 under your Project Name "IPE2109". This sample was extracted and analyzed using EPA Method 1613 for tetra-through-octa chlorinated dioxins and furans. A standard turnaround time was provided for this work.

The EMPC results were incorrectly included as positive concentrations in the original report.

The following report consists of a Sample Inventory (Section I), Analytical Results (Section II) and the Appendix, which contains the chain-of-custody, a list of data qualifiers and abbreviations, Alta's current certifications, and copies of the raw data (if requested).

Alta Analytical Laboratory is committed to serving you effectively. If you require additional information, please contact me at 916-933-1640 or by email at [mmaier@altalab.com](mailto:mmaier@altalab.com). Thank you for choosing Alta as part of your analytical support team.

Sincerely,

Martha M. Maier  
Director of HRMS Services



*Alta Analytical Laboratory certifies that the report herein meets all the requirements set forth by NELAP for those applicable test methods. This report should not be reproduced except in full without the written approval of ALTA.*



**Alta Analytical Laboratory, Inc.**

1104 Windfield Way  
El Dorado Hills, CA 95762  
(916) 933-1640  
FAX (916) 673-0106

**Section I: Sample Inventory Report**

**Date Received: 5/24/2006**

Alta Lab. ID

Client Sample ID

27733-001

IPE2109-01

**SECTION II**

Method Blank		EPA Method 1613					
Matrix:	Aqueous	QC Batch No.:	8054	Lab Sample:	0-MB001		
Sample Size:	1.00 L	Date Extracted:	30-May-06	Date Analyzed DB-5:	31-May-06		
				Date Analyzed DB-225:	NA		
Analyte	Conc. (ug/L)	DL <sup>a</sup>	EMPC <sup>b</sup>	Labeled Standard	%R	LCL-UCL <sup>d</sup>	Qualifiers
2,3,7,8-TCDD	ND	0.00000133		13C-2,3,7,8-TCDD	61.1	25 - 164	
1,2,3,7,8-PeCDD	ND	0.00000127		13C-1,2,3,7,8-PeCDD	66.5	25 - 181	
1,2,3,4,7,8-HxCDD	ND	0.00000119		13C-1,2,3,4,7,8-HxCDD	64.5	32 - 141	
1,2,3,6,7,8-HxCDD	ND	0.00000133		13C-1,2,3,6,7,8-HxCDD	61.0	28 - 130	
1,2,3,7,8,9-HxCDD	ND	0.00000128		13C-1,2,3,4,6,7,8-HpCDD	60.2	23 - 140	
1,2,3,4,6,7,8-HpCDD	ND	0.00000182		13C-OCDD	45.2	17 - 157	
OCDD	ND	0.00000206		13C-2,3,7,8-TCDF	64.1	24 - 169	
2,3,7,8-TCDF	ND	0.00000172		13C-1,2,3,7,8-PeCDF	67.9	24 - 185	
1,2,3,7,8-PeCDF	ND	0.000000749		13C-2,3,4,7,8-PeCDF	62.8	21 - 178	
2,3,4,7,8-PeCDF	ND	0.000000758		13C-1,2,3,4,7,8-HxCDF	65.3	26 - 152	
1,2,3,4,7,8-HxCDF	ND	0.000000621		13C-1,2,3,6,7,8-HxCDF	58.7	26 - 123	
1,2,3,6,7,8-HxCDF	ND	0.000000584		13C-2,3,4,6,7,8-HxCDF	55.9	28 - 136	
2,3,4,6,7,8-HxCDF	ND	0.000000778		13C-1,2,3,7,8,9-HxCDF	54.0	29 - 147	
1,2,3,7,8,9-HxCDF	ND	0.00000116		13C-1,2,3,4,6,7,8-HpCDF	60.5	28 - 143	
1,2,3,4,6,7,8-HpCDF	ND	0.000000997		13C-1,2,3,4,7,8,9-HpCDF	58.4	26 - 138	
1,2,3,4,7,8,9-HpCDF	ND	0.00000107		13C-OCDF	52.2	17 - 157	
OCDF	ND	0.00000249		CRS 37Cl-2,3,7,8-TCDD	75.0	35 - 197	
<b>Totals</b>							
Total TCDD	ND	0.00000133					
Total PeCDD	ND	0.00000127					
Total HxCDD	ND	0.00000127					
Total HpCDD	ND	0.00000182					
Total TCDF	ND	0.00000172					
Total PeCDF	ND	0.000000754					
Total HxCDF	ND	0.000000786					
Total HpCDF	ND	0.00000103					
<b>Footnotes</b>							
a. Sample specific estimated detection limit.							
b. Estimated maximum possible concentration.							
c. Method detection limit.							
d. Lower control limit - upper control limit.							

Analyst: DMS

Approved By: William J. Luksemburg 01-Jun-2006 11:31

OPR Results		EPA Method 1613				
Matrix:	Aqueous	QC Batch No.:	8054	Lab Sample:	0-OPR001	
Sample Size:	1.00 L	Date Extracted:	30-May-06	Date Analyzed DB-5:	31-May-06	
				Date Analyzed DB-225:	NA	
Analyte	Spike Conc.	Conc. (ng/mL)	OPR Limits	Labeled Standard	%R	LCL-UCL
2,3,7,8-TCDD	10.0	10.3	6.7 - 15.8	<u>IS</u> 13C-2,3,7,8-TCDD	74.8	25 - 161
1,2,3,7,8-PeCDD	50.0	49.2	35 - 71	13C-1,2,3,7,8-PeCDD	76.2	25 - 181
1,2,3,4,7,8-HxCDD	50.0	51.1	35 - 82	13C-1,2,3,4,7,8-HxCDD	69.2	32 - 141
1,2,3,6,7,8-HxCDD	50.0	49.4	38 - 67	13C-1,2,3,6,7,8-HxCDD	66.6	28 - 130
1,2,3,7,8,9-HxCDD	50.0	50.8	32 - 81	13C-1,2,3,4,6,7,8-HpCDD	67.4	23 - 140
1,2,3,4,6,7,8-HpCDD	50.0	51.8	35 - 70	13C-OCDD	55.2	17 - 157
OCDD	100	101	78 - 144	13C-2,3,7,8-TCDF	84.6	24 - 169
2,3,7,8-TCDF	10.0	9.84	7.5 - 15.8	13C-1,2,3,7,8-PeCDF	78.4	24 - 185
1,2,3,7,8-PeCDF	50.0	49.6	40 - 67	13C-2,3,4,7,8-PeCDF	78.3	21 - 178
2,3,4,7,8-PeCDF	50.0	49.0	34 - 80	13C-1,2,3,4,7,8-HxCDF	66.5	26 - 152
1,2,3,4,7,8-HxCDF	50.0	50.2	36 - 67	13C-1,2,3,6,7,8-HxCDF	60.0	26 - 123
1,2,3,6,7,8-HxCDF	50.0	48.5	42 - 65	13C-2,3,4,6,7,8-HxCDF	68.7	28 - 136
2,3,4,6,7,8-HxCDF	50.0	49.2	35 - 78	13C-1,2,3,7,8,9-HxCDF	68.9	29 - 147
1,2,3,7,8,9-HxCDF	50.0	50.1	39 - 65	13C-1,2,3,4,6,7,8-HpCDF	62.1	28 - 143
1,2,3,4,6,7,8-HpCDF	50.0	51.6	41 - 61	13C-1,2,3,4,7,8,9-HpCDF	64.2	26 - 138
1,2,3,4,7,8,9-HpCDF	50.0	50.6	39 - 69	13C-OCDF	57.1	17 - 157
OCDF	100	97.0	63 - 170	<u>CRS</u> 37Cl-2,3,7,8-TCDD	91.5	35 - 197

Analyst: DMS

Approved By:

William J. Luksemburg 01-Jun-2006 11:31

Sample ID: IPE2109-01		EPA Method 1613			
Client Data		Sample Data		Laboratory Data	
Name:	Del Mar Analytical, Irvine	Matrix:	Aqueous	Lab Sample:	27733-001
Project:	IPE2109	Sample Size:	0.987 L	QC Batch No.:	8054
Date Collected:	22-May-06			Date Analyzed DB-5:	31-May-06
Time Collected:	1129			Date Analyzed DB-225:	NA
Analyte	Conc. (ug/L)	DL <sup>a</sup>	EMPC <sup>b</sup>	%R	LCL-UCL <sup>d</sup> Qualifiers
2,3,7,8-TCDD	ND	0.000000756		72.8	25 - 164
1,2,3,7,8-PeCDD	ND	0.000000680		74.5	25 - 181
1,2,3,4,7,8-HxCDD	ND	0.000000760		69.2	32 - 141
1,2,3,6,7,8-HxCDD	ND	0.000000810		66.1	28 - 130
1,2,3,7,8,9-HxCDD	ND	0.000000794		69.5	23 - 140
1,2,3,4,6,7,8-HpCDD	0.00000851			45.8	17 - 157
OCDD	0.0000922			79.9	24 - 169
2,3,7,8-TCDF	ND	0.00000100		73.9	24 - 185
1,2,3,7,8-PeCDF	ND	0.000000570		75.7	21 - 178
2,3,4,7,8-PeCDF	ND	0.000000517		68.7	26 - 152
1,2,3,4,7,8-HxCDF	ND	0.000000481		60.1	26 - 123
1,2,3,6,7,8-HxCDF	ND	0.000000485		67.1	28 - 136
2,3,4,6,7,8-HxCDF	ND	0.000000528		70.9	29 - 147
1,2,3,7,8,9-HxCDF	ND	0.000000698		62.8	28 - 143
1,2,3,4,6,7,8-HpCDF	0.00000276			67.9	26 - 138
1,2,3,4,7,8,9-HpCDF	ND	0.000000690		51.4	17 - 157
OCDF	ND	0.00000653		91.8	35 - 197
<b>Totals</b>					
Total TCDD	ND	0.000000756			
Total PeCDD	ND	0.000000680			
Total HxCDD	ND	0.000000788			
Total HpCDD	0.00000851		0.0000170		
Total TCDF	ND	0.00000100			
Total PeCDF	ND	0.000000544			
Total HxCDF	ND		0.000000869		
Total HpCDF	0.00000511				
<b>Footnotes</b>					
a. Sample specific estimated detection limit.					
b. Estimated maximum possible concentration.					
c. Method detection limit.					
d. Lower control limit - upper control limit.					

Analyst: DMS

Approved By:

William J. Luksemburg 07-Jul-2006 11:22

## APPENDIX

## DATA QUALIFIERS & ABBREVIATIONS

B	This compound was also detected in the method blank.
D	The amount reported is the maximum possible concentration due to possible chlorinated diphenylether interference.
E	The reported value exceeds the calibration range of the instrument.
H	The signal-to-noise ratio is greater than 10:1.
I	Chemical interference
J	The amount detected is below the Lower Calibration Limit of the instrument.
*	See Cover Letter
Conc.	Concentration
DL	Sample-specific estimated Detection Limit
MDL	The minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero in the matrix tested.
EMPC	Estimated Maximum Possible Concentration
NA	Not applicable
RL	Reporting Limit – concentrations that corresponds to low calibration point
ND	Not Detected
TEQ	Toxic Equivalency

Unless otherwise noted, solid sample results are reported in dry weight. Tissue samples are reported in wet weight.



## CERTIFICATIONS

<b>Accrediting Authority</b>	<b>Certificate Number</b>
State of Alaska, DEC	CA413-02
State of Arizona	AZ0639
State of Arkansas, DEQ	05-013-0
State of Arkansas, DOH	Reciprocity through CA
State of California – NELAP Primary AA	02102CA
State of Colorado	
State of Connecticut	PH-0182
State of Florida, DEP	E87777
Commonwealth of Kentucky	90063
State of Louisiana, Health and Hospitals	LA050001
State of Louisiana, DEQ	01977
State of Maine	CA0413
State of Michigan	81178087
State of Mississippi	Reciprocity through CA
Naval Facilities Engineering Service Center	
State of Nevada	CA413
State of New Jersey	CA003
State of New Mexico	Reciprocity through CA
State of New York, DOH	11411
State of North Carolina	06700
State of North Dakota, DOH	R-078
State of Oklahoma	D9919
State of Oregon	CA200001-002
State of Pennsylvania	68-00490
State of South Carolina	87002001
State of Tennessee	02996
State of Texas	TX247-2005A
U.S. Army Corps of Engineers	
State of Utah	9169330940
Commonwealth of Virginia	00013
State of Washington	C1285
State of Wisconsin	998036160
State of Wyoming	8TMS-Q

SUBCONTRACT ORDER

Del Mar Analytical - Irvine

IPE2109

27733

SENDING LABORATORY:

Del Mar Analytical - Irvine  
17461 Derian Avenue, Suite 100  
Irvine, CA 92614  
Phone: (949) 261-1022  
Fax: (949) 261-1228  
Project Manager: Michele Chamberlin

RECEIVING LABORATORY:

Alta Analytical - SUB  
1104 Windfield Way  
El Dorado Hills, CA 95762  
Phone: (916) 933-1640  
Fax: (916) 673-0106

Analysis	Due	Expires	Laboratory ID	Comments
Sample ID: IPE2109-01	Water	Sampled: 05/22/06 11:29	[REDACTED]	Instant Notification
EDD + Level 4	06/01/06 12:00	06/19/06 11:29		Excel EDD email to pm, Include Std logs for Lvl IV
1613-Dioxin-HR-Alta	06/01/06 12:00	05/29/06 11:29		J flags, 17 congeners, no TEQ, ug/L, sub=Alta
<i>Containers Supplied:</i>				
1 L Amber (C)	1 L Amber (D)			

Released By  Date 5/23/06 Received By  Date 5/24/06

Released By \_\_\_\_\_ Date \_\_\_\_\_ Received By \_\_\_\_\_ Date \_\_\_\_\_

### SAMPLE LOG-IN CHECKLIST

Alta Project #: 27733

Samples Arrival:	Date/Time: <u>S/24/06 0845</u>	Initials: <u>WAB</u>	Location: <u>WR-2</u>
			Shelf/Rack: <u>N/A</u>
Logged In:	Date/Time: <u>S/24/06 1256</u>	Initials: <u>FEB</u>	Location: <u>WR-2</u>
			Shelf/Rack: <u>A-2</u>
Delivered By:	<input checked="" type="checkbox"/> FedEx	<input type="checkbox"/> UPS	<input type="checkbox"/> Cal
		<input type="checkbox"/> DHL	<input type="checkbox"/> Hand Delivered
	<input checked="" type="checkbox"/> Other		
Preservation:	<input checked="" type="checkbox"/> Ice	<input type="checkbox"/> Blue Ice	<input type="checkbox"/> Dry Ice
		<input type="checkbox"/> None	
Temp °C	<u>0°C</u>	Time: <u>0900</u>	Thermometer ID: <u>DT-20</u>

	YES	NO	NA
Adequate Sample Volume Received?	✓		
Holding Time Acceptable?	✓		
Shipping Container(s) Intact?	✓		
Shipping Custody Seals Intact?	✓		
Shipping Documentation Present?	✓		
Airbill			
Trk # <u>7914 9223 5500</u>	✓		
Sample Container Intact?	✓		
Sample Custody Seals Intact?			✓
Chain of Custody / Sample Documentation Present?	✓		
COC Anomaly/Sample Acceptance Form completed?			✓
			✓
If Chlorinated or Drinking Water Samples, Acceptable Preservation?			✓
Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> Preservation Documented?		COC	Sample Container
		None	
Shipping Container	Alta	Client	Return
		Retain	Dispose

Comments:

# **APPENDIX G**

## **Section 52**

Outfall 009, May 22, 2006

MEC<sup>X</sup> Data Validation Reports





# DATA VALIDATION REPORT

NPDES Monitoring Program  
Routine Outfall 009

ANALYSIS: DIOXINS/FURANS  
SAMPLE DELIVERY GROUP: IPE2109

Prepared by  
MEC<sup>X</sup>, LLC  
12269 East Vassar Drive  
Aurora, CO 80014

## 1. INTRODUCTION

Task Order Title: NPDES  
Contract Task Order: 1261.001D.01  
Sample Delivery Group: IPE2109  
Project Manager: P. Costa  
Matrix: Water  
Analysis: Dioxins/Furans  
QC Level: Level IV  
No. of Samples: 1  
No. of Reanalyses/Dilutions: 0  
Reviewer: E. Wessling  
Date of Review: July 11, 2006

The sample listed in Table 1 was validated based on the guidelines outlined in the *MEC<sup>X</sup> Data Validation Procedure for Dioxins and Furans (DVP-19, Rev. 0)*, *USEPA Method 1613*, and the *National Functional Guidelines for Chlorinated Dioxin/Furan Data Review (8/02)*. Any deviations from these procedures and guidelines are documented herein. Qualifiers were applied in cases where the data did not meet the required QC criteria or where special consideration by the data user is required. Data qualifiers were placed on Form Is with the associated qualification codes. Analytes that were rejected for any reason are denoted on the Form I as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

**Table 1. Sample Identification**

Client ID	Laboratory ID (Del Mar)	Laboratory ID (Alta)	Matrix	COC Method
Outfall 009	IPE2109-01	27733-001	Water	1613



## 2. DATA VALIDATION FINDINGS

### 2.1 SAMPLE MANAGEMENT

Following are findings associated with sample management:

#### 2.1.1 Sample Preservation, Handling, and Transport

The sample in this SDG was received at Del Mar Analytical within the temperature limits of 4°C ±2°C. The sample was shipped to Alta for dioxin/furan analysis and was received below the temperature limits at 1.0°C. As the sample was not noted to be damaged or frozen, no qualifications were required. According to the case narrative and laboratory login sheet, the sample was received intact and in good condition at both laboratories. No qualifications were required.

#### 2.1.2 Chain of Custody

The COC and transfer COC were legible and signed by the appropriate field and laboratory personnel, and accounted for the analysis presented in this SDG. As the sample was couriered directly to Del Mar Analytical-Irvine, custody seals were not required. The Client ID was added to the sample result summary by the reviewer. No qualifications were required.

#### 2.1.3 Holding Times

The sample was extracted and analyzed within one year of collection. No qualifications were required.

### 2.2 INSTRUMENT PERFORMANCE

Following are findings associated with instrument performance:

#### 2.2.1 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 (see section 2.3.2). 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%. No qualifications were required.

## 2.2.2 Mass Spectrometer Performance

The mass spectrometer performance was acceptable with the static resolving power greater than 10,000. No qualifications were required.

## 2.3 CALIBRATION

### 2.3.1 Initial Calibration

The initial calibration was analyzed 04/11/2006 on instrument VG-9. The calibration consisted of six concentration level standards (CS0 through CS5) analyzed to verify instrument linearity. The initial calibrations were 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 QC limits listed in Method 1613 for all standards. A representative number of %RSDs were verified from the raw data, and no calculation or transcription errors were noted. No qualifications were required.

### 2.3.2 Continuing Calibration

Calibration verification (VER) consisted of a mid-level standard (CS3) analyzed at the beginning of each analytical sequence. The VER was 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. A representative number of %Ds were verified from the raw data, and no calculation or transcription errors were noted. No qualifications were required.

WDM and isomer specificity compounds were added to the VER standard instead of being analyzed separately, as noted in section 2.2.1 of this report. No adverse effect was observed with this practice.

## 2.4 BLANKS

One method blank (0-8054-MB001) was extracted and analyzed with the sample in this SDG. No target compounds were detected in the method blank. A review of the method blank raw data and chromatograms indicated no false negatives. The laboratory had an issue reporting the method blank results due to new software on a new instrument, VG-9. This problem was corrected and the data was reissued by the laboratory. No qualifications were required.

## 2.5 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

One blank spike (0-8054-OPR001) was extracted and analyzed with the sample in this SDG. All recoveries were within the acceptance criteria listed in Table 6 of Method 1613. A review of the

raw data and chromatograms indicated no transcription or calculation errors. No qualifications were required.

## 2.6 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

MS/MSD analyses were not performed in this SDG. Evaluation of method accuracy was based on the OPR results. No qualifications were required.

## 2.7 FIELD QC SAMPLES

Following are findings associated with field QC:

### 2.7.1 Field Blanks and Equipment Rinsates

The sample in this SDG had no field blank or equipment rinsate identified. No qualification of the site sample was required.

### 2.7.2 Field Duplicates

No field duplicates were identified in association with the sample in this SDG.

## 2.8 INTERNAL STANDARDS

The labeled standard recoveries were within the acceptance criteria listed in Table 7 of Method 1613. No qualifications were required.

## 2.9 COMPOUND IDENTIFICATION

The laboratory analyzed for polychlorinated dioxins/furans by EPA Method 1613. The compound identifications were verified from the raw data and no false negatives or positives were noted. No qualifications were required.

## 2.10 COMPOUND QUANTIFICATION AND REPORTED DETECTION LIMITS

Compound quantitation was verified from the raw data. The laboratory calculated and reported compound-specific detection limits. Detects below the laboratory lower calibration level were qualified as estimated, "J." These "J" values were annotated with the qualification code of "DNQ" to comply with the reporting requirements of the NPDES permit. EMPC values for OCDF and total HxCDF were qualified as estimated nondetects, "UJ." The laboratory had an issue reporting the site sample results due to new software on a new instrument, VG-9. This problem was corrected and the data was reissued by the laboratory. No further qualifications were required.



# **APPENDIX G**

## **Section 53**

Outfall 018, May 17, 2006

Del Mar Analytical Laboratory Report



### LABORATORY REPORT

Prepared For: MWH-Pasadena/Boeing  
300 North Lake Avenue, Suite 1200  
Pasadena, CA 91101  
Attention: Bronwyn Kelly

Project: Routine Outfall 018

Sampled: 05/17/06  
Received: 05/18/06  
Issued: 06/18/06 14:33

NELAP #01108CA California ELAP#1197 CSDLAC #10117

*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 Del Mar Analytical and its client. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical. 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.*

### CASE NARRATIVE

- SAMPLE RECEIPT: Samples were received intact, at 3°C, on ice and with chain of custody documentation.
- HOLDING TIMES: All samples were analyzed within prescribed holding times and/or in accordance with the Del Mar Analytical Sample Acceptance Policy unless otherwise noted in the report. Due to laboratory oversight, the sample date was incorrectly entered into the database and consequently the hold times for MBAS and Settleable Solids were not met.
- PRESERVATION: Samples requiring preservation were verified prior to sample analysis.
- QA/QC CRITERIA: All analyses met method criteria, except as noted in the report with data qualifiers.
- COMMENTS: Results that fall between the MDL and RL are 'J' flagged.
- SUBCONTRACTED: Refer to the last page for specific subcontract laboratory information included in this report.

LABORATORY ID	CLIENT ID	MATRIX
IPE1832-01	Outfall 018	Water
IPE1832-02	Trip Blank	Water

Reviewed By:

**Del Mar Analytical - Irvine**  
Michele Chamberlin  
Project Manager



MWH-Pasadena/Boeing  
300 North Lake Avenue, Suite 1200  
Pasadena, CA 91101  
Attention: Bronwyn Kelly

Project ID: Routine Outfall 018

Report Number: IPE1832

Sampled: 05/17/06

Received: 05/18/06

**PURGEABLES BY GC/MS (EPA 624)**

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
<b>Sample ID: IPE1832-01 (Outfall 018 - Water)</b>									
<b>Reporting Units: ug/l</b>									
Benzene	EPA 624	6E24022	0.28	2.0	ND	1	05/24/06	05/24/06	
Carbon tetrachloride	EPA 624	6E24022	0.28	5.0	ND	1	05/24/06	05/24/06	
Chloroform	EPA 624	6E24022	0.33	2.0	ND	1	05/24/06	05/24/06	
1,1-Dichloroethane	EPA 624	6E24022	0.27	2.0	ND	1	05/24/06	05/24/06	
1,2-Dichloroethane	EPA 624	6E24022	0.28	2.0	ND	1	05/24/06	05/24/06	
1,1-Dichloroethene	EPA 624	6E24022	0.42	3.0	ND	1	05/24/06	05/24/06	
Ethylbenzene	EPA 624	6E24022	0.25	2.0	ND	1	05/24/06	05/24/06	
Tetrachloroethene	EPA 624	6E24022	0.32	2.0	ND	1	05/24/06	05/24/06	
Toluene	EPA 624	6E24022	0.36	2.0	ND	1	05/24/06	05/24/06	
1,1,1-Trichloroethane	EPA 624	6E24022	0.30	2.0	ND	1	05/24/06	05/24/06	
1,1,2-Trichloroethane	EPA 624	6E24022	0.30	2.0	ND	1	05/24/06	05/24/06	
Trichloroethene	EPA 624	6E24022	0.26	5.0	ND	1	05/24/06	05/24/06	
Trichlorofluoromethane	EPA 624	6E24022	0.34	5.0	ND	1	05/24/06	05/24/06	
Vinyl chloride	EPA 624	6E24022	0.26	5.0	ND	1	05/24/06	05/24/06	
Xylenes, Total	EPA 624	6E24022	0.90	4.0	ND	1	05/24/06	05/24/06	
<i>Surrogate: Dibromofluoromethane (80-120%)</i>					90 %				
<i>Surrogate: Toluene-d8 (80-120%)</i>					92 %				
<i>Surrogate: 4-Bromofluorobenzene (80-120%)</i>					94 %				

**Sample ID: IPE1832-02 (Trip Blank - Water)**

**Reporting Units: ug/l**

Benzene	EPA 624	6E24022	0.28	2.0	ND	1	05/24/06	05/24/06	
Carbon tetrachloride	EPA 624	6E24022	0.28	5.0	ND	1	05/24/06	05/24/06	
Chloroform	EPA 624	6E24022	0.33	2.0	ND	1	05/24/06	05/24/06	
1,1-Dichloroethane	EPA 624	6E24022	0.27	2.0	ND	1	05/24/06	05/24/06	
1,2-Dichloroethane	EPA 624	6E24022	0.28	2.0	ND	1	05/24/06	05/24/06	
1,1-Dichloroethene	EPA 624	6E24022	0.42	3.0	ND	1	05/24/06	05/24/06	
Ethylbenzene	EPA 624	6E24022	0.25	2.0	ND	1	05/24/06	05/24/06	
Tetrachloroethene	EPA 624	6E24022	0.32	2.0	ND	1	05/24/06	05/24/06	
Toluene	EPA 624	6E24022	0.36	2.0	ND	1	05/24/06	05/24/06	
1,1,1-Trichloroethane	EPA 624	6E24022	0.30	2.0	ND	1	05/24/06	05/24/06	
1,1,2-Trichloroethane	EPA 624	6E24022	0.30	2.0	ND	1	05/24/06	05/24/06	
Trichloroethene	EPA 624	6E24022	0.26	5.0	ND	1	05/24/06	05/24/06	
Trichlorofluoromethane	EPA 624	6E24022	0.34	5.0	ND	1	05/24/06	05/24/06	
Vinyl chloride	EPA 624	6E24022	0.26	5.0	ND	1	05/24/06	05/24/06	
Xylenes, Total	EPA 624	6E24022	0.90	4.0	ND	1	05/24/06	05/24/06	
<i>Surrogate: Dibromofluoromethane (80-120%)</i>					90 %				
<i>Surrogate: Toluene-d8 (80-120%)</i>					93 %				
<i>Surrogate: 4-Bromofluorobenzene (80-120%)</i>					93 %				

**Del Mar Analytical - Irvine**  
Michele Chamberlin  
Project Manager



MWH-Pasadena/Boeing  
 300 North Lake Avenue, Suite 1200  
 Pasadena, CA 91101  
 Attention: Bronwyn Kelly

Project ID: Routine Outfall 018

Report Number: IPE1832

Sampled: 05/17/06  
 Received: 05/18/06

### 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
<b>Sample ID: IPE1832-01 (Outfall 018 - Water)</b>									
<b>Reporting Units: ug/l</b>									
<b>Bis(2-ethylhexyl)phthalate</b>	EPA 625	6E22042	1.7	4.9	<b>1.8</b>	0.98	05/22/06	05/24/06	B, J
2,4-Dinitrotoluene	EPA 625	6E22042	0.20	8.8	ND	0.98	05/22/06	05/24/06	
N-Nitrosodimethylamine	EPA 625	6E22042	0.098	7.8	ND	0.98	05/22/06	05/24/06	
Pentachlorophenol	EPA 625	6E22042	0.098	7.8	ND	0.98	05/22/06	05/24/06	
2,4,6-Trichlorophenol	EPA 625	6E22042	0.098	5.9	ND	0.98	05/22/06	05/24/06	
Surrogate: 2-Fluorophenol (30-120%)					76 %				
Surrogate: Phenol-d6 (35-120%)					90 %				
Surrogate: 2,4,6-Tribromophenol (45-120%)					83 %				
Surrogate: Nitrobenzene-d5 (45-120%)					84 %				
Surrogate: 2-Fluorobiphenyl (45-120%)					86 %				
Surrogate: Terphenyl-d14 (45-120%)					99 %				

**Del Mar Analytical - Irvine**  
 Michele Chamberlin  
 Project Manager

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MWH-Pasadena/Boeing  
300 North Lake Avenue, Suite 1200  
Pasadena, CA 91101  
Attention: Bronwyn Kelly

Project ID: Routine Outfall 018

Report Number: IPE1832

Sampled: 05/17/06  
Received: 05/18/06

**ORGANOCHLORINE PESTICIDES (EPA 608)**

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
<b>Sample ID: IPE1832-01 (Outfall 018 - Water) - cont.</b>									
<b>Reporting Units: ug/l</b>									
alpha-BHC	EPA 608	6E21001	0.00096	0.0096	ND	0.962	05/21/06	05/24/06	
<i>Surrogate: Decachlorobiphenyl (45-120%)</i>					61 %				
<i>Surrogate: Tetrachloro-m-xylene (35-115%)</i>					47 %				

**Del Mar Analytical - Irvine**  
Michele Chamberlin  
Project Manager

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MWH-Pasadena/Boeing  
300 North Lake Avenue, Suite 1200  
Pasadena, CA 91101  
Attention: Bronwyn Kelly

Project ID: Routine Outfall 018

Report Number: IPE1832

Sampled: 05/17/06

Received: 05/18/06

**METALS**

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
<b>Sample ID: IPE1832-01 (Outfall 018 - Water) - cont.</b>									
Reporting Units: mg/l									
Iron	EPA 200.7	6E20050	0.015	0.040	<b>0.23</b>	1	05/20/06	05/20/06	
<b>Sample ID: IPE1832-01 (Outfall 018 - Water)</b>									
Reporting Units: ug/l									
Cadmium	EPA 200.8	6E19073	0.025	1.0	<b>0.053</b>	1	05/19/06	05/19/06	J
Copper	EPA 200.8	6E19073	0.25	2.0	<b>2.3</b>	1	05/19/06	05/19/06	
Lead	EPA 200.8	6E19073	0.040	1.0	<b>0.22</b>	1	05/19/06	05/19/06	J
Mercury	EPA 245.1	6E19091	0.050	0.20	ND	1	05/19/06	05/19/06	
Selenium	EPA 200.8	6E19073	0.30	2.0	<b>0.68</b>	1	05/19/06	05/19/06	J
Zinc	EPA 200.7	6E19113	15	20	ND	1	05/19/06	05/19/06	

**Del Mar Analytical - Irvine**  
Michele Chamberlin  
Project Manager

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MWH-Pasadena/Boeing  
300 North Lake Avenue, Suite 1200  
Pasadena, CA 91101  
Attention: Bronwyn Kelly

Project ID: Routine Outfall 018

Report Number: IPE1832

Sampled: 05/17/06

Received: 05/18/06

**DISSOLVED METALS**

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
<b>Sample ID: IPE1832-01 (Outfall 018 - Water) - cont.</b>									
Reporting Units: mg/l									
Iron	EPA 200.7-Diss	6E19104	0.015	0.040	ND	1	05/19/06	05/19/06	
<b>Sample ID: IPE1832-01 (Outfall 018 - Water)</b>									
Reporting Units: ug/l									
Cadmium	EPA 200.8-Diss	6E19105	0.025	1.0	<b>0.058</b>	1	05/19/06	05/22/06	J
Copper	EPA 200.8-Diss	6E19105	0.25	2.0	<b>1.3</b>	1	05/19/06	05/22/06	J
Lead	EPA 200.8-Diss	6E19105	0.040	1.0	ND	1	05/19/06	05/22/06	
Mercury	EPA 245.1-Diss	6E23072	0.050	0.20	ND	1	05/23/06	05/23/06	
Selenium	EPA 200.8-Diss	6E19105	0.30	2.0	<b>0.42</b>	1	05/19/06	05/22/06	J
Zinc	EPA 200.7-Diss	6E19104	15	20	ND	1	05/19/06	05/19/06	

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MWH-Pasadena/Boeing  
 300 North Lake Avenue, Suite 1200  
 Pasadena, CA 91101  
 Attention: Bronwyn Kelly

Project ID: Routine Outfall 018

Report Number: IPE1832

Sampled: 05/17/06  
 Received: 05/18/06

## INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
<b>Sample ID: IPE1832-01 (Outfall 018 - Water) - cont.</b>									
Reporting Units: mg/l									
<b>Ammonia-N (Distilled)</b>	EPA 350.2	6E19092	0.30	0.50	<b>0.84</b>	1	05/19/06	05/19/06	
<b>Biochemical Oxygen Demand</b>	EPA 405.1	6E19117	0.59	2.0	<b>7.4</b>	1	05/19/06	05/24/06	
<b>Chloride</b>	EPA 300.0	6E19053	0.75	2.5	<b>36</b>	5	05/19/06	05/19/06	
Nitrate-N	EPA 300.0	6E19053	0.080	0.15	ND	1	05/19/06	05/19/06	
Nitrite-N	EPA 300.0	6E19053	0.080	0.15	ND	1	05/19/06	05/19/06	
Nitrate/Nitrite-N	EPA 300.0	6E19053	0.080	0.15	ND	1	05/19/06	05/19/06	
Oil & Grease	EPA 413.1	6E19041	0.90	4.8	ND	1	05/19/06	05/19/06	
<b>Sulfate</b>	EPA 300.0	6E19053	2.2	2.5	<b>74</b>	5	05/19/06	05/19/06	
<b>Surfactants (MBAS)</b>	EPA 425.1	6E19129	0.044	0.10	<b>0.052</b>	1	05/19/06	05/19/06	J, H
<b>Total Dissolved Solids</b>	EPA 160.1	6E19071	10	10	<b>340</b>	1	05/19/06	05/19/06	
<b>Total Suspended Solids</b>	EPA 160.2	6E23094	10	10	<b>20</b>	1	05/23/06	05/23/06	

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**INORGANICS**

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
<b>Sample ID: IPE1832-01 (Outfall 018 - Water) - cont.</b>									
<b>Reporting Units: ml/l/hr</b>									
Total Settleable Solids	EPA 160.5	6E19126	0.10	0.10	ND	1	05/19/06	05/19/06	H

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**INORGANICS**

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
<b>Sample ID: IPE1832-01 (Outfall 018 - Water) - cont.</b>									
Reporting Units: NTU									
Turbidity	EPA 180.1	6E19083	0.040	1.0	14	1	05/19/06	05/19/06	

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**INORGANICS**

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
<b>Sample ID: IPE1832-01 (Outfall 018 - Water) - cont.</b>									
<b>Reporting Units: ug/l</b>									
Total Cyanide	EPA 335.2	6E19130	2.2	5.0	ND	1	05/19/06	05/19/06	
Perchlorate	EPA 314.0	6E23082	0.80	4.0	ND	1	05/23/06	05/24/06	

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**INORGANICS**

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
<b>Sample ID: IPE1832-01 (Outfall 018 - Water) - cont.</b>									
Reporting Units: umhos/cm									
Specific Conductance	EPA 120.1	6E19072	1.0	1.0	580	1	05/19/06	05/19/06	

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**SHORT HOLD TIME DETAIL REPORT**

Sample ID: Outfall 018 (IPE1832-01) - Water	Hold Time (in days)	Date/Time Sampled	Date/Time Received	Date/Time Extracted	Date/Time Analyzed
EPA 160.5	2	05/17/2006 13:15	05/18/2006 20:30	05/19/2006 16:00	05/19/2006 17:00
EPA 180.1	2	05/17/2006 13:15	05/18/2006 20:30	05/19/2006 09:00	05/19/2006 10:00
EPA 300.0	2	05/17/2006 13:15	05/18/2006 20:30	05/19/2006 08:30	05/19/2006 08:49
EPA 405.1	2	05/17/2006 13:15	05/18/2006 20:30	05/19/2006 13:00	05/24/2006 10:45
EPA 425.1	2	05/17/2006 13:15	05/18/2006 20:30	05/19/2006 20:00	05/19/2006 21:30
Filtration	1	05/17/2006 13:15	05/18/2006 20:30	05/19/2006 17:00	05/19/2006 17:00

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Received: 05/18/06

**METHOD BLANK/QC DATA**
**PURGEABLES BY GC/MS (EPA 624)**

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	RPD RPD	RPD Limit	Data Qualifiers
<b>Batch: 6E24022 Extracted: 05/24/06</b>										
<b>Blank Analyzed: 05/24/2006 (6E24022-BLK1)</b>										
Benzene	ND	2.0	0.28	ug/l						
Carbon tetrachloride	ND	5.0	0.28	ug/l						
Chloroform	ND	2.0	0.33	ug/l						
1,1-Dichloroethane	ND	2.0	0.27	ug/l						
1,2-Dichloroethane	ND	2.0	0.28	ug/l						
1,1-Dichloroethene	ND	3.0	0.42	ug/l						
Ethylbenzene	ND	2.0	0.25	ug/l						
Tetrachloroethene	ND	2.0	0.32	ug/l						
Toluene	ND	2.0	0.36	ug/l						
1,1,1-Trichloroethane	ND	2.0	0.30	ug/l						
1,1,2-Trichloroethane	ND	2.0	0.30	ug/l						
Trichloroethene	ND	5.0	0.26	ug/l						
Trichlorofluoromethane	ND	5.0	0.34	ug/l						
Vinyl chloride	ND	5.0	0.26	ug/l						
Xylenes, Total	ND	4.0	0.90	ug/l						
Surrogate: Dibromofluoromethane	21.6			ug/l	25.0		86		80-120	
Surrogate: Toluene-d8	23.6			ug/l	25.0		94		80-120	
Surrogate: 4-Bromofluorobenzene	23.0			ug/l	25.0		92		80-120	

**LCS Analyzed: 05/24/2006 (6E24022-BS1)**

Benzene	25.6	2.0	0.28	ug/l	25.0		102		65-120	
Carbon tetrachloride	26.3	5.0	0.28	ug/l	25.0		105		65-140	
Chloroform	25.6	2.0	0.33	ug/l	25.0		102		65-130	
1,1-Dichloroethane	25.6	2.0	0.27	ug/l	25.0		102		65-130	
1,2-Dichloroethane	26.4	2.0	0.28	ug/l	25.0		106		60-140	
1,1-Dichloroethene	23.7	3.0	0.42	ug/l	25.0		95		70-130	
Ethylbenzene	26.4	2.0	0.25	ug/l	25.0		106		70-125	
Tetrachloroethene	26.8	2.0	0.32	ug/l	25.0		107		65-125	
Toluene	25.9	2.0	0.36	ug/l	25.0		104		70-125	
1,1,1-Trichloroethane	26.1	2.0	0.30	ug/l	25.0		104		65-135	
1,1,2-Trichloroethane	25.8	2.0	0.30	ug/l	25.0		103		65-125	
Trichloroethene	26.5	5.0	0.26	ug/l	25.0		106		70-125	
Trichlorofluoromethane	27.2	5.0	0.34	ug/l	25.0		109		60-140	
Vinyl chloride	27.4	5.0	0.26	ug/l	25.0		110		50-130	
Surrogate: Dibromofluoromethane	23.9			ug/l	25.0		96		80-120	
Surrogate: Toluene-d8	23.7			ug/l	25.0		95		80-120	

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METHOD BLANK/QC DATA

PURGEABLES BY GC/MS (EPA 624)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
<b>Batch: 6E24022 Extracted: 05/24/06</b>											
<b>LCS Analyzed: 05/24/2006 (6E24022-BS1)</b>											
Surrogate: 4-Bromofluorobenzene	24.3			ug/l	25.0		97	80-120			
<b>Matrix Spike Analyzed: 05/24/2006 (6E24022-MS1) Source: IPE1832-01</b>											
Benzene	23.2	2.0	0.28	ug/l	25.0	ND	93	60-125			
Carbon tetrachloride	23.3	5.0	0.28	ug/l	25.0	ND	93	65-140			
Chloroform	22.3	2.0	0.33	ug/l	25.0	ND	89	65-135			
1,1-Dichloroethane	22.6	2.0	0.27	ug/l	25.0	ND	90	60-130			
1,2-Dichloroethane	23.6	2.0	0.28	ug/l	25.0	ND	94	60-140			
1,1-Dichloroethene	20.7	3.0	0.42	ug/l	25.0	ND	83	60-135			
Ethylbenzene	24.5	2.0	0.25	ug/l	25.0	ND	98	65-130			
Tetrachloroethene	24.9	2.0	0.32	ug/l	25.0	ND	100	60-130			
Toluene	22.9	2.0	0.36	ug/l	25.0	ND	92	65-125			
1,1,1-Trichloroethane	22.0	2.0	0.30	ug/l	25.0	ND	88	65-140			
1,1,2-Trichloroethane	23.9	2.0	0.30	ug/l	25.0	ND	96	60-130			
Trichloroethene	23.4	5.0	0.26	ug/l	25.0	ND	94	60-125			
Trichlorofluoromethane	23.6	5.0	0.34	ug/l	25.0	ND	94	55-145			
Vinyl chloride	23.6	5.0	0.26	ug/l	25.0	ND	94	40-135			
Surrogate: Dibromofluoromethane	22.9			ug/l	25.0		92	80-120			
Surrogate: Toluene-d8	23.6			ug/l	25.0		94	80-120			
Surrogate: 4-Bromofluorobenzene	24.7			ug/l	25.0		99	80-120			
<b>Matrix Spike Dup Analyzed: 05/25/2006 (6E24022-MSD1) Source: IPE1832-01</b>											
Benzene	22.7	2.0	0.28	ug/l	25.0	ND	91	60-125	2	20	
Carbon tetrachloride	21.9	5.0	0.28	ug/l	25.0	ND	88	65-140	6	25	
Chloroform	21.6	2.0	0.33	ug/l	25.0	ND	86	65-135	3	20	
1,1-Dichloroethane	21.8	2.0	0.27	ug/l	25.0	ND	87	60-130	4	20	
1,2-Dichloroethane	22.2	2.0	0.28	ug/l	25.0	ND	89	60-140	6	20	
1,1-Dichloroethene	19.9	3.0	0.42	ug/l	25.0	ND	80	60-135	4	20	
Ethylbenzene	22.3	2.0	0.25	ug/l	25.0	ND	89	65-130	9	20	
Tetrachloroethene	22.9	2.0	0.32	ug/l	25.0	ND	92	60-130	8	20	
Toluene	22.7	2.0	0.36	ug/l	25.0	ND	91	65-125	1	20	
1,1,1-Trichloroethane	20.7	2.0	0.30	ug/l	25.0	ND	83	65-140	6	20	
1,1,2-Trichloroethane	22.8	2.0	0.30	ug/l	25.0	ND	91	60-130	5	25	
Trichloroethene	22.2	5.0	0.26	ug/l	25.0	ND	89	60-125	5	20	
Trichlorofluoromethane	21.9	5.0	0.34	ug/l	25.0	ND	88	55-145	7	25	
Vinyl chloride	21.5	5.0	0.26	ug/l	25.0	ND	86	40-135	9	30	

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**METHOD BLANK/QC DATA**

**PURGEABLES BY GC/MS (EPA 624)**

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
<b>Batch: 6E24022 Extracted: 05/24/06</b>											
<b>Matrix Spike Dup Analyzed: 05/25/2006 (6E24022-MSD1)</b>						<b>Source: IPE1832-01</b>					
Surrogate: Dibromofluoromethane	22.6			ug/l	25.0		90	80-120			
Surrogate: Toluene-d8	23.5			ug/l	25.0		94	80-120			
Surrogate: 4-Bromofluorobenzene	22.8			ug/l	25.0		91	80-120			

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**METHOD BLANK/QC DATA**
**ACID & BASE/NEUTRALS BY GC/MS (EPA 625)**

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	RPD Limits	RPD RPD	RPD Limit	Data Qualifiers
<b>Batch: 6E22042 Extracted: 05/22/06</b>											
<b>Blank Analyzed: 05/24/2006 (6E22042-BLK1)</b>											
Bis(2-ethylhexyl)phthalate	1.90	5.0	1.7	ug/l							J
2,4-Dinitrotoluene	ND	9.0	0.20	ug/l							
N-Nitrosodimethylamine	ND	8.0	0.10	ug/l							
Pentachlorophenol	ND	8.0	0.10	ug/l							
2,4,6-Trichlorophenol	ND	6.0	0.10	ug/l							
Surrogate: 2-Fluorophenol	15.3			ug/l	20.0		76	30-120			
Surrogate: Phenol-d6	16.6			ug/l	20.0		83	35-120			
Surrogate: 2,4,6-Tribromophenol	16.1			ug/l	20.0		80	45-120			
Surrogate: Nitrobenzene-d5	8.04			ug/l	10.0		80	45-120			
Surrogate: 2-Fluorobiphenyl	8.62			ug/l	10.0		86	45-120			
Surrogate: Terphenyl-d14	9.90			ug/l	10.0		99	45-120			
<b>LCS Analyzed: 05/24/2006 (6E22042-BS1)</b>											
<b>M-NR1</b>											
Bis(2-ethylhexyl)phthalate	9.54	5.0	1.7	ug/l	10.0		95	60-130			
2,4-Dinitrotoluene	8.50	9.0	0.20	ug/l	10.0		85	60-120			J
N-Nitrosodimethylamine	7.40	8.0	0.10	ug/l	10.0		74	40-120			J
Pentachlorophenol	9.88	8.0	0.10	ug/l	10.0		99	50-120			
2,4,6-Trichlorophenol	8.58	6.0	0.10	ug/l	10.0		86	60-120			
Surrogate: 2-Fluorophenol	14.0			ug/l	20.0		70	30-120			
Surrogate: Phenol-d6	16.0			ug/l	20.0		80	35-120			
Surrogate: 2,4,6-Tribromophenol	16.7			ug/l	20.0		84	45-120			
Surrogate: Nitrobenzene-d5	7.46			ug/l	10.0		75	45-120			
Surrogate: 2-Fluorobiphenyl	8.04			ug/l	10.0		80	45-120			
Surrogate: Terphenyl-d14	9.34			ug/l	10.0		93	45-120			
<b>LCS Dup Analyzed: 05/24/2006 (6E22042-BSD1)</b>											
Bis(2-ethylhexyl)phthalate	9.50	5.0	1.7	ug/l	10.0		95	60-130	0	20	
2,4-Dinitrotoluene	8.38	9.0	0.20	ug/l	10.0		84	60-120	1	20	J
N-Nitrosodimethylamine	7.26	8.0	0.10	ug/l	10.0		73	40-120	2	20	J
Pentachlorophenol	9.28	8.0	0.10	ug/l	10.0		93	50-120	6	25	
2,4,6-Trichlorophenol	8.78	6.0	0.10	ug/l	10.0		88	60-120	2	20	
Surrogate: 2-Fluorophenol	13.9			ug/l	20.0		70	30-120			
Surrogate: Phenol-d6	16.1			ug/l	20.0		80	35-120			
Surrogate: 2,4,6-Tribromophenol	16.3			ug/l	20.0		82	45-120			
Surrogate: Nitrobenzene-d5	8.02			ug/l	10.0		80	45-120			
Surrogate: 2-Fluorobiphenyl	8.36			ug/l	10.0		84	45-120			

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**METHOD BLANK/QC DATA**

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

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
<b>Batch: 6E22042 Extracted: 05/22/06</b>											
<b>LCS Dup Analyzed: 05/24/2006 (6E22042-BSD1)</b>											
Surrogate: Terphenyl-d14	9.02			ug/l	10.0		90	45-120			

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METHOD BLANK/QC DATA

ORGANOCHLORINE PESTICIDES (EPA 608)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	Limit	RPD	RPD Limit	Data Qualifiers
<b>Batch: 6E21001 Extracted: 05/21/06</b>											
<b>Blank Analyzed: 05/24/2006 (6E21001-BLK1)</b>											
alpha-BHC	ND	0.010	0.0010	ug/l							
Surrogate: Decachlorobiphenyl	0.369			ug/l	0.500		74	45-120			
Surrogate: Tetrachloro-m-xylene	0.324			ug/l	0.500		65	35-115			
<b>LCS Analyzed: 05/24/2006 (6E21001-BS1)</b>											
alpha-BHC	0.417	0.010	0.0010	ug/l	0.500		83	45-120			M-NR1
Surrogate: Decachlorobiphenyl	0.440			ug/l	0.500		88	45-120			
Surrogate: Tetrachloro-m-xylene	0.368			ug/l	0.500		74	35-115			
<b>LCS Dup Analyzed: 05/24/2006 (6E21001-BSD1)</b>											
alpha-BHC	0.298	0.010	0.0010	ug/l	0.500		60	45-120	33	30	R-7
Surrogate: Decachlorobiphenyl	0.426			ug/l	0.500		85	45-120			
Surrogate: Tetrachloro-m-xylene	0.274			ug/l	0.500		55	35-115			

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300 North Lake Avenue, Suite 1200  
Pasadena, CA 91101  
Attention: Bronwyn Kelly

Project ID: Routine Outfall 018

Report Number: IPE1832

Sampled: 05/17/06  
Received: 05/18/06

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
<b>Batch: 6E19073 Extracted: 05/19/06</b>											
<b>Blank Analyzed: 05/19/2006 (6E19073-BLK1)</b>											
Cadmium	ND	1.0	0.025	ug/l							
Copper	ND	2.0	0.25	ug/l							
Lead	ND	1.0	0.040	ug/l							
Selenium	ND	2.0	0.30	ug/l							
<b>LCS Analyzed: 05/19/2006 (6E19073-BS1)</b>											
Cadmium	98.8	1.0	0.025	ug/l	100		99	85-115			
Copper	106	2.0	0.25	ug/l	100		106	85-115			
Lead	110	1.0	0.040	ug/l	100		110	85-115			
Selenium	100	2.0	0.30	ug/l	100		100	85-115			
<b>Matrix Spike Analyzed: 05/19/2006 (6E19073-MS1) Source: IPE1632-01</b>											
Cadmium	97.9	1.0	0.025	ug/l	100	ND	98	70-130			
Copper	107	2.0	0.25	ug/l	100	11	96	70-130			
Lead	96.6	1.0	0.040	ug/l	100	0.90	96	70-130			
Selenium	95.5	2.0	0.30	ug/l	100	0.35	95	70-130			
<b>Matrix Spike Analyzed: 05/19/2006 (6E19073-MS2) Source: IPE1676-01</b>											
Cadmium	101	1.0	0.025	ug/l	100	0.067	101	70-130			
Copper	100	2.0	0.25	ug/l	100	4.7	95	70-130			
Lead	97.0	1.0	0.040	ug/l	100	ND	97	70-130			
Selenium	97.5	2.0	0.30	ug/l	100	0.60	97	70-130			
<b>Matrix Spike Dup Analyzed: 05/19/2006 (6E19073-MSD1) Source: IPE1632-01</b>											
Cadmium	99.9	1.0	0.025	ug/l	100	ND	100	70-130	2	20	
Copper	107	2.0	0.25	ug/l	100	11	96	70-130	0	20	
Lead	97.3	1.0	0.040	ug/l	100	0.90	96	70-130	1	20	
Selenium	96.8	2.0	0.30	ug/l	100	0.35	96	70-130	1	20	

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**METHOD BLANK/QC DATA**

**METALS**

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
<b>Batch: 6E19091 Extracted: 05/19/06</b>											
<b>Blank Analyzed: 05/19/2006 (6E19091-BLK1)</b>											
Mercury	ND	0.20	0.050	ug/l							
<b>LCS Analyzed: 05/19/2006 (6E19091-BS1)</b>											
Mercury	8.67	0.20	0.050	ug/l	8.00		108	85-115			
<b>Matrix Spike Analyzed: 05/19/2006 (6E19091-MS1)</b>											
						<b>Source: IPE1801-38</b>					
Mercury	8.61	0.20	0.050	ug/l	8.00	ND	108	70-130			
<b>Matrix Spike Dup Analyzed: 05/19/2006 (6E19091-MSD1)</b>											
						<b>Source: IPE1801-38</b>					
Mercury	8.56	0.20	0.050	ug/l	8.00	ND	107	70-130	1	20	
<b>Batch: 6E19113 Extracted: 05/19/06</b>											
<b>Blank Analyzed: 05/19/2006 (6E19113-BLK1)</b>											
Zinc	ND	20	15	ug/l							
<b>LCS Analyzed: 05/19/2006 (6E19113-BS1)</b>											
Zinc	485	20	15	ug/l	500		97	85-115			
<b>Matrix Spike Analyzed: 05/19/2006 (6E19113-MS1)</b>											
						<b>Source: IPE1882-01</b>					
Zinc	651	20	15	ug/l	500	77	115	70-130			
<b>Matrix Spike Dup Analyzed: 05/19/2006 (6E19113-MSD1)</b>											
						<b>Source: IPE1882-01</b>					
Zinc	563	20	15	ug/l	500	77	97	70-130	14	20	
<b>Batch: 6E20050 Extracted: 05/20/06</b>											
<b>Blank Analyzed: 05/20/2006 (6E20050-BLK1)</b>											
Iron	ND	0.040	0.015	mg/l							

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## METHOD BLANK/QC DATA

### METALS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
<b>Batch: 6E20050 Extracted: 05/20/06</b>											
<b>LCS Analyzed: 05/20/2006 (6E20050-BS1)</b>											
Iron	0.489	0.040	0.015	mg/l	0.500		98	85-115			
<b>Matrix Spike Analyzed: 05/20/2006 (6E20050-MS1) Source: IPE1705-01</b>											
Iron	1.21	0.040	0.015	mg/l	0.500	0.71	100	70-130			
<b>Matrix Spike Dup Analyzed: 05/20/2006 (6E20050-MSD1) Source: IPE1705-01</b>											
Iron	1.22	0.040	0.015	mg/l	0.500	0.71	102	70-130	1	20	

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## METHOD BLANK/QC DATA

### DISSOLVED METALS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	RPD Limits	RPD RPD	RPD Limit	Data Qualifiers
<b>Batch: 6E19104 Extracted: 05/19/06</b>											
<b>Blank Analyzed: 05/19/2006 (6E19104-BLK1)</b>											
Iron	ND	0.040	0.015	mg/l							
Zinc	ND	20	15	ug/l							
<b>LCS Analyzed: 05/19/2006 (6E19104-BS1)</b>											
Iron	0.935	0.040	0.015	mg/l	1.00		94	85-115			
Zinc	960	20	15	ug/l	1000		96	85-115			
<b>Matrix Spike Analyzed: 05/19/2006 (6E19104-MS1) Source: IPE1832-01</b>											
Iron	0.956	0.040	0.015	mg/l	1.00	ND	96	70-130			
Zinc	979	20	15	ug/l	1000	ND	98	70-130			
<b>Matrix Spike Dup Analyzed: 05/19/2006 (6E19104-MSD1) Source: IPE1832-01</b>											
Iron	0.943	0.040	0.015	mg/l	1.00	ND	94	70-130	1	20	
Zinc	966	20	15	ug/l	1000	ND	97	70-130	1	20	
<b>Batch: 6E19105 Extracted: 05/19/06</b>											
<b>Blank Analyzed: 05/22/2006 (6E19105-BLK1)</b>											
Cadmium	0.131	1.0	0.025	ug/l							J
Copper	ND	2.0	0.25	ug/l							
Lead	0.0500	1.0	0.040	ug/l							J
Selenium	ND	2.0	0.30	ug/l							
<b>LCS Analyzed: 05/19/2006 (6E19105-BS1)</b>											
Cadmium	80.1	1.0	0.025	ug/l	80.0		100	85-115			
Copper	78.4	2.0	0.25	ug/l	80.0		98	85-115			
Lead	81.0	1.0	0.040	ug/l	80.0		101	85-115			
Selenium	83.9	2.0	0.30	ug/l	80.0		105	85-115			

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## METHOD BLANK/QC DATA

### DISSOLVED METALS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
<b>Batch: 6E19105 Extracted: 05/19/06</b>											
<b>Matrix Spike Analyzed: 05/19/2006 (6E19105-MS1)</b>						<b>Source: IPE1832-01</b>					
Cadmium	84.7	1.0	0.025	ug/l	80.0	0.058	106	70-130			
Copper	78.1	2.0	0.25	ug/l	80.0	1.3	96	70-130			
Lead	78.8	1.0	0.040	ug/l	80.0	ND	98	70-130			
Selenium	98.4	2.0	0.30	ug/l	80.0	0.42	122	70-130			
<b>Matrix Spike Dup Analyzed: 05/19/2006 (6E19105-MSD1)</b>						<b>Source: IPE1832-01</b>					
Cadmium	84.5	1.0	0.025	ug/l	80.0	0.058	106	70-130	0	20	
Copper	78.1	2.0	0.25	ug/l	80.0	1.3	96	70-130	0	20	
Lead	79.2	1.0	0.040	ug/l	80.0	ND	99	70-130	1	20	
Selenium	98.9	2.0	0.30	ug/l	80.0	0.42	123	70-130	1	20	
<b>Batch: 6E23072 Extracted: 05/23/06</b>											
<b>Blank Analyzed: 05/23/2006 (6E23072-BLK1)</b>											
Mercury	ND	0.20	0.050	ug/l							
<b>LCS Analyzed: 05/23/2006 (6E23072-BS1)</b>											
Mercury	8.58	0.20	0.050	ug/l	8.00		107	85-115			
<b>Matrix Spike Analyzed: 05/23/2006 (6E23072-MS1)</b>						<b>Source: IPE1903-01</b>					
Mercury	8.46	0.20	0.050	ug/l	8.00	ND	106	70-130			
<b>Matrix Spike Dup Analyzed: 05/23/2006 (6E23072-MSD1)</b>						<b>Source: IPE1903-01</b>					
Mercury	8.54	0.20	0.050	ug/l	8.00	ND	107	70-130	1	20	

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METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	RPD Limits	RPD RPD	RPD Limit	Data Qualifiers
<b>Batch: 6E19041 Extracted: 05/19/06</b>											
<b>Blank Analyzed: 05/19/2006 (6E19041-BLK1)</b>											
Oil & Grease	ND	5.0	0.94	mg/l							
<b>LCS Analyzed: 05/19/2006 (6E19041-BS1)</b>											
Oil & Grease	19.3	5.0	0.94	mg/l	20.0		96	65-120			M-NR1
<b>LCS Dup Analyzed: 05/19/2006 (6E19041-BSD1)</b>											
Oil & Grease	19.2	5.0	0.94	mg/l	20.0		96	65-120	1	20	
<b>Batch: 6E19053 Extracted: 05/19/06</b>											
<b>Blank Analyzed: 05/19/2006 (6E19053-BLK1)</b>											
Chloride	ND	0.50	0.15	mg/l							
Nitrate-N	ND	0.15	0.080	mg/l							
Nitrite-N	ND	0.15	0.080	mg/l							
Nitrate/Nitrite-N	ND	0.15	0.080	mg/l							
Sulfate	ND	0.50	0.45	mg/l							
<b>LCS Analyzed: 05/19/2006 (6E19053-BS1)</b>											
Chloride	4.90	0.50	0.15	mg/l	5.00		98	90-110			M-3
Nitrate-N	1.12	0.15	0.080	mg/l	1.13		99	90-110			
Nitrite-N	1.50	0.15	0.080	mg/l	1.52		99	90-110			
Sulfate	9.89	0.50	0.45	mg/l	10.0		99	90-110			
<b>Matrix Spike Analyzed: 05/19/2006 (6E19053-MS1)</b>											
						<b>Source: IPE1837-12</b>					
Nitrate-N	4.25	0.15	0.080	mg/l	1.13	3.0	111	80-120			
Nitrite-N	1.64	0.15	0.080	mg/l	1.52	ND	108	80-120			
Sulfate	38.6	0.50	0.45	mg/l	10.0	27	116	80-120			

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**METHOD BLANK/QC DATA**

**INORGANICS**

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
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**Batch: 6E19053 Extracted: 05/19/06**

**Matrix Spike Dup Analyzed: 05/19/2006 (6E19053-MSD1)**

**Source: IPE1837-12**

Nitrate-N	4.27	0.15	0.080	mg/l	1.13	3.0	112	80-120	1	20	
Nitrite-N	1.65	0.15	0.080	mg/l	1.52	ND	109	80-120	1	20	
Sulfate	38.7	0.50	0.45	mg/l	10.0	27	117	80-120	0	20	

**Batch: 6E19071 Extracted: 05/19/06**

**Blank Analyzed: 05/19/2006 (6E19071-BLK1)**

Total Dissolved Solids	ND	10	10	mg/l							
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**LCS Analyzed: 05/19/2006 (6E19071-BS1)**

Total Dissolved Solids	994	20	20	mg/l	1000		99	90-110			
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**Duplicate Analyzed: 05/19/2006 (6E19071-DUP1)**

**Source: IPE1768-13**

Total Dissolved Solids	479	10	10	mg/l		470			2	10	
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**Batch: 6E19072 Extracted: 05/19/06**

**Duplicate Analyzed: 05/19/2006 (6E19072-DUP1)**

**Source: IPE1676-01**

Specific Conductance	846	1.0	1.0	umhos/cm		850			1	5	
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**Batch: 6E19083 Extracted: 05/19/06**

**Blank Analyzed: 05/19/2006 (6E19083-BLK1)**

Turbidity	ND	1.0	0.040	NTU							
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INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
<b>Batch: 6E19083 Extracted: 05/19/06</b>											
<b>Duplicate Analyzed: 05/19/2006 (6E19083-DUP1)</b>						<b>Source: IPE1820-01</b>					
Turbidity	0.160	1.0	0.040	NTU		0.15			6	20	J
<b>Batch: 6E19092 Extracted: 05/19/06</b>											
<b>Blank Analyzed: 05/19/2006 (6E19092-BLK1)</b>											
Ammonia-N (Distilled)	ND	0.50	0.30	mg/l							
<b>LCS Analyzed: 05/19/2006 (6E19092-BS1)</b>											
Ammonia-N (Distilled)	10.9	0.50	0.30	mg/l	10.0		109	80-115			
<b>Matrix Spike Analyzed: 05/19/2006 (6E19092-MS1)</b>						<b>Source: IPE1134-01</b>					
Ammonia-N (Distilled)	11.5	0.50	0.30	mg/l	10.0	0.84	107	70-120			
<b>Matrix Spike Dup Analyzed: 05/19/2006 (6E19092-MSD1)</b>						<b>Source: IPE1134-01</b>					
Ammonia-N (Distilled)	11.5	0.50	0.30	mg/l	10.0	0.84	107	70-120	0	15	
<b>Batch: 6E19117 Extracted: 05/19/06</b>											
<b>Blank Analyzed: 05/24/2006 (6E19117-BLK1)</b>											
Biochemical Oxygen Demand	ND	2.0	0.59	mg/l							
<b>LCS Analyzed: 05/24/2006 (6E19117-BS1)</b>											
Biochemical Oxygen Demand	192	100	30	mg/l	198		97	85-115			
<b>LCS Dup Analyzed: 05/24/2006 (6E19117-BSD1)</b>											
Biochemical Oxygen Demand	192	100	30	mg/l	198		97	85-115	0	20	

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Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
<b>Batch: 6E19129 Extracted: 05/19/06</b>											
<b>Blank Analyzed: 05/19/2006 (6E19129-BLK1)</b>											
Surfactants (MBAS)	ND	0.10	0.044	mg/l							
<b>LCS Analyzed: 05/19/2006 (6E19129-BS1)</b>											
Surfactants (MBAS)	0.257	0.10	0.044	mg/l	0.250		103	90-110			
<b>Matrix Spike Analyzed: 05/19/2006 (6E19129-MS1)</b>											
						<b>Source: IPE1894-01</b>					
Surfactants (MBAS)	0.276	0.10	0.044	mg/l	0.250	ND	110	50-125			
<b>Matrix Spike Dup Analyzed: 05/19/2006 (6E19129-MSD1)</b>											
						<b>Source: IPE1894-01</b>					
Surfactants (MBAS)	0.273	0.10	0.044	mg/l	0.250	ND	109	50-125	1	20	
<b>Batch: 6E19130 Extracted: 05/19/06</b>											
<b>Blank Analyzed: 05/19/2006 (6E19130-BLK1)</b>											
Total Cyanide	ND	5.0	2.2	ug/l							
<b>LCS Analyzed: 05/19/2006 (6E19130-BS1)</b>											
Total Cyanide	190	5.0	2.2	ug/l	200		95	90-110			
<b>Matrix Spike Analyzed: 05/19/2006 (6E19130-MS1)</b>											
						<b>Source: IPE1094-03</b>					
Total Cyanide	142	5.0	2.2	ug/l	200	ND	71	70-115			
<b>Matrix Spike Dup Analyzed: 05/19/2006 (6E19130-MSD1)</b>											
						<b>Source: IPE1094-03</b>					
Total Cyanide	149	5.0	2.2	ug/l	200	ND	74	70-115	5	15	
<b>Batch: 6E23082 Extracted: 05/23/06</b>											
<b>Blank Analyzed: 05/23/2006 (6E23082-BLK1)</b>											
Perchlorate	ND	4.0	0.80	ug/l							

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Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
<b>Batch: 6E23082 Extracted: 05/23/06</b>											
<b>LCS Analyzed: 05/23/2006 (6E23082-BS1)</b>											
Perchlorate	48.1	4.0	0.80	ug/l	50.0		96	85-115			
<b>Matrix Spike Analyzed: 05/23/2006 (6E23082-MS1)</b>											
						<b>Source: IPE1906-06</b>					
Perchlorate	45.5	4.0	0.80	ug/l	50.0	ND	91	80-120			
<b>Matrix Spike Dup Analyzed: 05/23/2006 (6E23082-MSD1)</b>											
						<b>Source: IPE1906-06</b>					
Perchlorate	46.8	4.0	0.80	ug/l	50.0	ND	94	80-120	3	20	
<b>Batch: 6E23094 Extracted: 05/23/06</b>											
<b>Blank Analyzed: 05/23/2006 (6E23094-BLK1)</b>											
Total Suspended Solids	ND	10	10	mg/l							
<b>LCS Analyzed: 05/23/2006 (6E23094-BS1)</b>											
Total Suspended Solids	975	10	10	mg/l	1000		98	85-115			
<b>Duplicate Analyzed: 05/23/2006 (6E23094-DUP1)</b>											
						<b>Source: IPE1817-01</b>					
Total Suspended Solids	6670	10	10	mg/l		6600			1	10	

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## Compliance Check

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

LabNumber	Analysis	Analyte	Units	Result	MRL	Compliance Limit
IPE1832-01	413.1 Oil and Grease	Oil & Grease	mg/l	0.096	4.8	10.00
IPE1832-01	608-Pest Boeing 001/002 Q (LL)	alpha-BHC	ug/l	0	0.0096	0.0100
IPE1832-01	624-Boeing 001/002 Q (Fr113+X)	1,1-Dichloroethene	ug/l	0	3.0	3.20
IPE1832-01	624-Boeing 001/002 Q (Fr113+X)	Trichloroethene	ug/l	0	5.0	5.00
IPE1832-01	625-Boeing 001/002 Q-LL	2,4,6-Trichlorophenol	ug/l	0	5.9	6.50
IPE1832-01	625-Boeing 001/002 Q-LL	2,4-Dinitrotoluene	ug/l	0	8.8	9.10
IPE1832-01	625-Boeing 001/002 Q-LL	Bis(2-ethylhexyl)phthalate	ug/l	1.80	4.9	4.00
IPE1832-01	625-Boeing 001/002 Q-LL	N-Nitrosodimethylamine	ug/l	0	7.8	8.10
IPE1832-01	625-Boeing 001/002 Q-LL	Pentachlorophenol	ug/l	0	7.8	8.20
IPE1832-01	BOD	Biochemical Oxygen Demand	mg/l	7.40	2.0	20
IPE1832-01	Cadmium-200.8	Cadmium	ug/l	0.053	1.0	2.00
IPE1832-01	Cadmium-200.8, Diss	Cadmium	ug/l	0.058	1.0	2.00
IPE1832-01	Chloride - 300.0	Chloride	mg/l	36	2.5	150
IPE1832-01	Copper-200.8	Copper	ug/l	2.30	2.0	7.10
IPE1832-01	Copper-200.8, Diss	Copper	ug/l	1.30	2.0	7.10
IPE1832-01	Cyanide-335.2 5ppb	Total Cyanide	ug/l	1.50	5.0	5.00
IPE1832-01	Lead-200.8	Lead	ug/l	0.22	1.0	2.60
IPE1832-01	Lead-200.8, Diss	Lead	ug/l	0.039	1.0	2.60
IPE1832-01	MBAS - 425.1	Surfactants (MBAS)	mg/l	0.052	0.10	0.50
IPE1832-01	Mercury - 245.1	Mercury	ug/l	0	0.20	0.20
IPE1832-01	Mercury-245.1, Diss	Mercury	ug/l	0	0.20	0.20
IPE1832-01	Nitrogen, NO3+NO2 -N	Nitrate/Nitrite-N	mg/l	0.017	0.15	8.00
IPE1832-01	Perchlorate 314.0	Perchlorate	ug/l	0	4.0	6.00
IPE1832-01	Selenium-200.8	Selenium	ug/l	0.68	2.0	4.10
IPE1832-01	Selenium-200.8, Diss	Selenium	ug/l	0.42	2.0	4.10
IPE1832-01	Sulfate-300.0	Sulfate	mg/l	74	2.5	300
IPE1832-01	TDS - EPA 160.1	Total Dissolved Solids	mg/l	340	10	950
IPE1832-01	Zinc-200.7	Zinc	ug/l	5.90	20	54
IPE1832-01	Zinc-200.7, Diss	Zinc	ug/l	-2	20	54
IPE1832-02	624-Boeing 001/002 Q (Fr113+X)	1,1-Dichloroethene	ug/l	0	3.0	3.20
IPE1832-02	624-Boeing 001/002 Q (Fr113+X)	Trichloroethene	ug/l	0	5.0	5.00

**Del Mar Analytical - Irvine**  
 Michele Chamberlin  
 Project Manager



MWH-Pasadena/Boeing  
300 North Lake Avenue, Suite 1200  
Pasadena, CA 91101  
Attention: Bronwyn Kelly

Project ID: Routine Outfall 018

Report Number: IPE1832

Sampled: 05/17/06  
Received: 05/18/06

### DATA QUALIFIERS AND DEFINITIONS

- B** Analyte was detected in the associated Method Blank.
- H** Sample analysis performed past method-specified holding time.
- 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.
- M-3** Results exceeded the linear range in the MS/MSD and therefore are not available for reporting. The batch was accepted based on acceptable recovery in the Blank Spike (LCS).
- M-NR1** There was no MS/MSD analyzed with this batch due to insufficient sample volume. See Blank Spike/Blank Spike Duplicate.
- R-7** LFB/LFBD RPD exceeded the method control limit. Recovery met acceptance criteria.
- ND** Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified.
- RPD** Relative Percent Difference

**Del Mar Analytical - Irvine**  
Michele Chamberlin  
Project Manager

*The results pertain only to the samples tested in the laboratory. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical.*

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IPE1832 <Page 30 of 31>



MWH-Pasadena/Boeing  
 300 North Lake Avenue, Suite 1200  
 Pasadena, CA 91101  
 Attention: Bronwyn Kelly

Project ID: Routine Outfall 018

Report Number: IPE1832

Sampled: 05/17/06  
 Received: 05/18/06

## Certification Summary

### Del Mar Analytical - Irvine

Method	Matrix	Nelac	California
1613A/1613B	Water		
EDD + Level 4	Water		
EPA 120.1	Water	X	X
EPA 160.1	Water	X	X
EPA 160.2	Water	X	X
EPA 160.5	Water	X	X
EPA 180.1	Water	X	X
EPA 200.7-Diss	Water	X	X
EPA 200.7	Water	X	X
EPA 200.8-Diss	Water	X	X
EPA 200.8	Water	X	X
EPA 245.1-Diss	Water	X	X
EPA 245.1	Water	X	X
EPA 300.0	Water	X	X
EPA 314.0	Water	N/A	X
EPA 335.2	Water	X	X
EPA 350.2	Water		X
EPA 405.1	Water	X	X
EPA 413.1	Water	X	X
EPA 425.1	Water	X	X
EPA 608	Water	X	X
EPA 624	Water	X	X
EPA 625	Water	X	X
Filtration	Water	N/A	N/A

*Nevada and NELAP provide analyte specific accreditations. Analyte specific information for Del Mar Analytical may be obtained by contacting the laboratory or visiting our website at [www.testamericainc.com](http://www.testamericainc.com)*

### Subcontracted Laboratories

**Alta 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: IPE1832-01

Analysis Performed: EDD + Level 4  
 Samples: IPE1832-01

### Del Mar Analytical - Irvine

Michele Chamberlin  
 Project Manager

#412 LPE(832)

Client Name/Address:		Project:		ANALYSIS REQUIRED										Field readings:								
MWH-Pasadena 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101		Boeing-SSFL NPDES Routine Outfall 018		Total Recoverable Metals: Cu, Pb, Hg, Cd, Se, Zn, Fe*	Settleable Solids	VOCS 624 + Xylores	TCDD (and all congeners)	Oil & Grease (EPA 413.1)	Cyanide (total recoverable)	BOD5(20 degrees C)	Surfactants (SAS)	Cl-, SO4, NO3+NO2-N, Perchlorate	Turbidity, TDS, TSS, Conductivity	Ammonia-N	Alpha BHC (605)	2,4,6 Trichlorophenol, 2,4 Dinitrotoleene, Bis(2-ethylhexyl)phthalate, NDMA, pentachlorophenol (EPA 625)	Nitrate-N, Nitrite-N	Temp = 80 pH = 8.0				
Sample Description	Sample Matrix	Container Type	# of Cont.	Sampling Date/Time	Preservative	Bottle #	Cu, Pb, Hg, Cd, Se, Zn, Fe*	Settleable Solids	VOCS 624 + Xylores	TCDD (and all congeners)	Oil & Grease (EPA 413.1)	Cyanide (total recoverable)	BOD5(20 degrees C)	Surfactants (SAS)	Cl-, SO4, NO3+NO2-N, Perchlorate	Turbidity, TDS, TSS, Conductivity	Ammonia-N	Alpha BHC (605)	2,4,6 Trichlorophenol, 2,4 Dinitrotoleene, Bis(2-ethylhexyl)phthalate, NDMA, pentachlorophenol (EPA 625)	Nitrate-N, Nitrite-N	Temp = 80 pH = 8.0	
Outfall 018	W	Poly-1L	1	5/17/06 1315	HNO3	1A	X															
Outfall 018-Dup	W	Poly-1L	1		HNO3	1B	X															
Outfall 018	W	Poly-1L	1		None	2		X														
Outfall 018	W	VOAs	3		HCl	3A, 3B, 3C			X													
Outfall 018	W	1L Amber	2		None	4A, 4B			X													
Outfall 018	W	1L Amber	2		HCl	5A, 5B				X											24 TAT	
Outfall 018	W	Poly-500 ml	1		NaOH	6															24 TAT	
Outfall 018	W	Poly-1L	1		None	7							X									
Outfall 018	W	Poly-500 ml	2		None	8A, 8B								X								
Outfall 018	W	Poly-500 ml	2		None	9A, 9B									X							
Outfall 018	W	Poly-500 ml	2		None	10A, 10B										X						
Outfall 018	W	Poly-500 ml	1		H2SO4	11																
Outfall 018	W	1L Amber	2		None	12A, 12B																
Outfall 018	W	1L Amber	2		None	13A, 13B																
Outfall 018	W	500ml Poly	1	5/17/06 1315	None	14																
Trip Blank	W	VOAs	3		HCl	15A, 15B, 15C																
Relinquished By				Date/Time:	Received		Date/Time:		Date/Time:		Date/Time:		Date/Time:		Date/Time:		Date/Time:		Date/Time:		Date/Time:	
Relinquished By				5/17/06	Received		5/10/06		1121		5/10/06		1121		5/10/06		1121		5/10/06		1121	
Relinquished By				5/18/06	Received		5/18/06		2030		5/18/06		2030		5/18/06		2030		5/18/06		2030	
Relinquished By					Received																	

SR  
5/18/06  
2155

Client Name/Address: <b>MWH-Pasadena</b> 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101		Project: <b>Boeing-SSFL NPDES</b> <b>Routine Outfall 018</b>		ANALYSIS REQUIRED																	
Del Mar Contact: Michele Harper Project Manager: Bronwyn Kelly		Phone Number: (626) 568-6691 Fax Number: (626) 568-6515		Comments																	
Sampler: <i>Bronwyn Kelly</i>		Total Dissolved Metals : Cu, Pb, Hg, Cd, Se, Zn, Fe*		Filter w/in 24hr of receipt at lab																	
Sample Description	Sample Matrix	Container Type	# of Cont.	Sampling Date/Time	Preservative	Bottle #															
Outfall 018	W	Poly-1L	1	5/17/06 1315	None	16															
Relinquished By				Date/Time:	Received <input checked="" type="checkbox"/> From Office <input type="checkbox"/>				Date/Time:	Turn around Time: (Check)							24 Hours		5 Days		
<i>Bronwyn Kelly</i>				5/17/06	<i>Cherie Ann DMAE</i>				5/18/06 1125								48 Hours		10 Days		
Relinquished By				Date/Time:	Received By				Date/Time:	72 Hours							Normal				
<i>Cherie Ann DMAE</i>				5/18/06 2030	<i>Cherie Ann DMAE</i>				5-18-06 2030	Perchlorate Only 72 Hours											
Relinquished By				Date/Time:	Received By				Date/Time:	Metals Only 72 Hours											
<i>Cherie Ann DMAE</i>				5/18/06 2030	<i>Cherie Ann DMAE</i>				5-18-06 2030	Sample Integrity: (Check)							Intact <input checked="" type="checkbox"/>				
										On Ice: <input checked="" type="checkbox"/>							VSC				



July 07, 2006

**Alta Project I.D.: 27721**

Ms. Michele Chamberlin  
Del Mar Analytical, Irvine  
17461 Derian Avenue, Suite 100  
Irvine, CA 92614

Dear Ms. Chamberlin,

Enclosed are the amended results for the one aqueous sample received at Alta Analytical Laboratory on May 31, 2006 under your Project Name "IPE1832". This sample was extracted and analyzed using EPA Method 1613 for tetra-through-octa chlorinated dioxins and furans. A standard turnaround time was provided for this work.

The EMPC results were incorrectly included as positive concentrations in the original report.

The following report consists of a Sample Inventory (Section I), Analytical Results (Section II) and the Appendix, which contains the chain-of-custody, a list of data qualifiers and abbreviations, Alta's current certifications, and copies of the raw data (if requested).

Alta Analytical Laboratory is committed to serving you effectively. If you require additional information, please contact me at 916-933-1640 or by email at [mmaier@altalab.com](mailto:mmaier@altalab.com). Thank you for choosing Alta as part of your analytical support team.

Sincerely,

Martha M. Maier  
Director of HRMS Services



*Alta Analytical Laboratory certifies that the report herein meets all the requirements set forth by NELAP for those applicable test methods. This report should not be reproduced except in full without the written approval of ALTA.*



**Alta Analytical Laboratory, Inc.**

1104 Windfield Way  
El Dorado Hills, CA 95762

(916) 933-1640  
FAX (916) 673-0106

**Section I: Sample Inventory Report**

**Date Received: 5/31/2006**

Alta Lab. ID

Client Sample ID

27721-001

IPE1832-01



## SECTION II

Method Blank		EPA Method 1613						
Matrix: Aqueous	QC Batch No.: 8064	Lab Sample: 0-MB001						
Sample Size: 1.00 L	Date Extracted: 4-Jun-06	Date Analyzed DB-5: 6-Jun-06	Date Analyzed DB-225: N/A					
Analyte	Conc. (ug/L)	DL <sup>a</sup>	EMPC <sup>b</sup>	Qualifiers	Labeled Standard	%R	LCL-UCL <sup>d</sup>	Qualifiers
2,3,7,8-TCDD	ND	0.000000640			13C-2,3,7,8-TCDD	75.3	25 - 164	
1,2,3,7,8-PeCDD	ND	0.000000903			13C-1,2,3,7,8-PeCDD	75.6	25 - 181	
1,2,3,4,7,8-HxCDD	ND	0.000000738			13C-1,2,3,4,7,8-HxCDD	73.7	32 - 141	
1,2,3,6,7,8-HxCDD	ND	0.000000735			13C-1,2,3,6,7,8-HxCDD	73.6	28 - 130	
1,2,3,7,8,9-HxCDD	ND	0.000000741			13C-1,2,3,4,6,7,8-HpCDD	73.2	23 - 140	
1,2,3,4,6,7,8-HpCDD	ND	0.000000435	0.00000133		13C-OCDD	55.0	17 - 157	
OCDD	0.000000435			J	13C-2,3,7,8-TCDF	76.5	24 - 169	
2,3,7,8-TCDF	ND	0.000000848			13C-1,2,3,7,8-PeCDF	72.3	24 - 185	
1,2,3,7,8-PeCDF	ND	0.000000595			13C-2,3,4,7,8-PeCDF	71.4	21 - 178	
2,3,4,7,8-PeCDF	ND	0.000000560			13C-1,2,3,4,7,8-HxCDF	75.6	26 - 152	
1,2,3,4,7,8-HxCDF	ND	0.00000067	0.00000101		13C-1,2,3,6,7,8-HxCDF	75.6	26 - 123	
1,2,3,6,7,8-HxCDF	0.00000067			J	13C-2,3,4,6,7,8-HxCDF	76.4	28 - 136	
2,3,4,6,7,8-HxCDF	0.00000080			J	13C-1,2,3,7,8,9-HxCDF	72.9	29 - 147	
1,2,3,7,8,9-HxCDF	ND	0.000000507			13C-1,2,3,4,6,7,8-HpCDF	70.4	28 - 143	
1,2,3,4,6,7,8-HpCDF	ND	0.000000614			13C-1,2,3,4,7,8,9-HpCDF	74.3	26 - 138	
1,2,3,4,7,8,9-HpCDF	ND	0.00000173	0.000000901		13C-OCDF	52.6	17 - 157	
OCDF	ND				CRS 37Cl-2,3,7,8-TCDD	79.6	35 - 197	
<b>Totals</b>					<b>Footnotes</b>			
Total TCDD	ND	0.000000640			a. Sample specific estimated detection limit.			
Total PeCDD	ND	0.000000903			b. Estimated maximum possible concentration.			
Total HxCDD	ND	0.000000738			c. Method detection limit.			
Total HpCDD	ND	0.000000735	0.00000133		d. Lower control limit - upper control limit.			
Total TCDF	ND	0.000000848						
Total PeCDF	ND	0.000000578						
Total HxCDF	0.00000148		0.00000249					
Total HpCDF	ND		0.000000901					

Analyst: JMH

Approved By:

William J. Luksemburg 07-Jul-2006 11:21

OPR Results		EPA Method 1613				
Matrix	Aqueous	QC Batch No.: 8064	Lab Sample: 0-OPR001	Date Analyzed DB-5: 6-Jun-06	Date Analyzed DB-225: NA	
Sample Size	1.00 L	Date Extracted: 4-Jun-06				
Analyte	Spike Conc.	Conc. (ng/mL)	OPR Limits	Labeled Standard	%R	LCL-UCL
2,3,7,8-TCDD	10.0	9.62	6.7 - 15.8	IS 13C-2,3,7,8-TCDD	74.1	25 - 161
1,2,3,7,8-PeCDD	50.0	48.5	35 - 71	13C-1,2,3,7,8-PeCDD	73.1	25 - 181
1,2,3,4,7,8-HxCDD	50.0	48.7	35 - 82	13C-1,2,3,4,7,8-HxCDD	77.9	32 - 141
1,2,3,6,7,8-HxCDD	50.0	47.1	38 - 67	13C-1,2,3,6,7,8-HxCDD	81.0	28 - 130
1,2,3,7,8,9-HxCDD	50.0	48.3	32 - 81	13C-1,2,3,4,6,7,8-HpCDD	81.8	23 - 140
1,2,3,4,6,7,8-HpCDD	50.0	49.6	35 - 70	13C-OCDD	59.8	17 - 157
OCDD	100	94.4	78 - 144	13C-2,3,7,8-TCDF	74.6	24 - 169
2,3,7,8-TCDF	10.0	9.48	7.5 - 15.8	13C-1,2,3,7,8-PeCDF	70.1	24 - 185
1,2,3,7,8-PeCDF	50.0	48.3	40 - 67	13C-2,3,4,7,8-PeCDF	71.4	21 - 178
2,3,4,7,8-PeCDF	50.0	48.0	34 - 80	13C-1,2,3,4,7,8-HxCDF	80.5	26 - 152
1,2,3,4,7,8-HxCDF	50.0	47.3	36 - 67	13C-1,2,3,6,7,8-HxCDF	79.8	26 - 123
1,2,3,6,7,8-HxCDF	50.0	48.3	42 - 65	13C-2,3,4,6,7,8-HxCDF	83.0	28 - 136
2,3,4,6,7,8-HxCDF	50.0	47.6	35 - 78	13C-1,2,3,7,8,9-HxCDF	78.2	29 - 147
1,2,3,7,8,9-HxCDF	50.0	49.7	39 - 65	13C-1,2,3,4,6,7,8-HpCDF	76.5	28 - 143
1,2,3,4,6,7,8-HpCDF	50.0	49.1	41 - 61	13C-1,2,3,4,7,8,9-HpCDF	84.3	26 - 138
1,2,3,4,7,8,9-HpCDF	50.0	48.3	39 - 69	13C-OCDF	59.0	17 - 157
OCDF	100	99.7	63 - 170	CRS 37Cl-2,3,7,8-TCDD	76.0	35 - 197

Analyst: JMH

Approved By: William J. Luksemburg 07-Jun-2006 14:29

Sample ID: IPE1832-01		EPA Method 1613						
Client Data		Sample Data		Laboratory Data				
Name	Del Mar Analytical, Irvine	Matrix	Aqueous	Lab Sample:	27721-001			
Project	IPE1832	Sample Size	1.02 L	QC Batch No.:	8064			
Date Collected:	17-May-06			Date Analyzed DB-5:	7-Jun-06			
Time Collected:	1315			Date Analyzed DB-225:	NA			
Analyte	Conc. (ug/L)	DL <sup>a</sup>	EMPC <sup>b</sup>	Qualifiers	Labeled Standard	%R	LCL-UCL <sup>d</sup>	Qualifiers
2,3,7,8-TCDD	ND	0.000000646			IS 13C-2,3,7,8-TCDD	69.7	25 - 164	
1,2,3,7,8-PeCDD	ND	0.000000539			13C-1,2,3,7,8-PeCDD	67.1	25 - 181	
1,2,3,4,7,8-HxCDD	ND	0.000000597			13C-1,2,3,4,7,8-HxCDD	69.4	32 - 141	
1,2,3,6,7,8-HxCDD	ND	0.000000611			13C-1,2,3,6,7,8-HxCDD	70.1	28 - 130	
1,2,3,7,8,9-HxCDD	ND	0.000000608			13C-1,2,3,4,6,7,8-HpCDD	70.9	23 - 140	
1,2,3,4,6,7,8-HpCDD	0.00000640			J	13C-OCDD	54.3	17 - 157	
OCDD	0.0000440			J,B	13C-2,3,7,8-TCDF	71.2	24 - 169	
2,3,7,8-TCDF	ND	0.000000753			13C-1,2,3,7,8-PeCDF	65.8	24 - 185	
1,2,3,7,8-PeCDF	ND	0.000000440			13C-2,3,4,7,8-PeCDF	66.3	21 - 178	
2,3,4,7,8-PeCDF	ND	0.000000406			13C-1,2,3,4,7,8-HxCDF	70.7	26 - 152	
1,2,3,4,7,8-HxCDF	ND	0.000000376			13C-1,2,3,6,7,8-HxCDF	69.2	26 - 123	
1,2,3,6,7,8-HxCDF	ND	0.000000332			13C-2,3,4,6,7,8-HxCDF	72.1	28 - 136	
2,3,4,6,7,8-HxCDF	ND	0.000000368			13C-1,2,3,7,8,9-HxCDF	70.3	29 - 147	
1,2,3,7,8,9-HxCDF	ND	0.000000569			13C-1,2,3,4,6,7,8-HpCDF	66.8	28 - 143	
1,2,3,4,6,7,8-HpCDF	0.00000124			J	13C-1,2,3,4,6,7,8,9-HpCDF	74.7	26 - 138	
1,2,3,4,7,8,9-HpCDF	ND	0.000000527			13C-OCDF	55.2	17 - 157	
OCDF	ND	0.00000246			CRS 37Cl-2,3,7,8-TCDD	81.5	35 - 197	
<b>Totals</b>								
Total TCDD	ND	0.000000646						
Total PeCDD	ND		0.00000179					
Total HxCDD	0.00000165							
Total HpCDD	0.0000134			B				
Total TCDF	ND	0.000000753						
Total PeCDF	ND	0.000000423						
Total HxCDF	ND	0.000000411						
Total HpCDF	0.00000274		0.00000327	B				

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

Analyst: JMH      Approved By: William J. Luksemburg      07-Jul-2006 11:21

## APPENDIX

## DATA QUALIFIERS & ABBREVIATIONS

B	This compound was also detected in the method blank.
D	The amount reported is the maximum possible concentration due to possible chlorinated diphenylether interference.
E	The reported value exceeds the calibration range of the instrument.
H	The signal-to-noise ratio is greater than 10:1.
I	Chemical interference
J	The amount detected is below the Lower Calibration Limit of the instrument.
*	See Cover Letter
Conc.	Concentration
DL	Sample-specific estimated Detection Limit
MDL	The minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero in the matrix tested.
EMPC	Estimated Maximum Possible Concentration
NA	Not applicable
RL	Reporting Limit – concentrations that corresponds to low calibration point
ND	Not Detected
TEQ	Toxic Equivalency

Unless otherwise noted, solid sample results are reported in dry weight. Tissue samples are reported in wet weight.

## CERTIFICATIONS

Accrediting Authority	Certificate Number
State of Alaska, DEC	CA413-02
State of Arizona	AZ0639
State of Arkansas, DEQ	05-013-0
State of Arkansas, DOH	Reciprocity through CA
State of California – NELAP Primary AA	02102CA
State of Colorado	
State of Connecticut	PH-0182
State of Florida, DEP	E87777
Commonwealth of Kentucky	90063
State of Louisiana, Health and Hospitals	LA050001
State of Louisiana, DEQ	01977
State of Maine	CA0413
State of Michigan	81178087
State of Mississippi	Reciprocity through CA
Naval Facilities Engineering Service Center	
State of Nevada	CA413
State of New Jersey	CA003
State of New Mexico	Reciprocity through CA
State of New York, DOH	11411
State of North Carolina	06700
State of North Dakota, DOH	R-078
State of Oklahoma	D9919
State of Oregon	CA200001-002
State of Pennsylvania	68-00490
State of South Carolina	87002001
State of Tennessee	02996
State of Texas	TX247-2005A
U.S. Army Corps of Engineers	
State of Utah	9169330940
Commonwealth of Virginia	00013
State of Washington	C1285
State of Wisconsin	998036160
State of Wyoming	8TMS-Q



17461 Derian Ave., Suite 100, Irvine, CA 92614 Ph (949) 261-1022 Fax (949) 261-1228  
 1014 E. Cooley Dr., Suite A, Colton, CA 92324 Ph (909) 370-4667 Fax (909) 370-1046  
 9484 Chesapeake Drive, Suite 805, San Diego, CA 92123 Ph (619) 505-9596 Fax (619) 505-9689  
 9830 South 51st Street, Suite B-120, Phoenix, AZ 85044 Ph (480) 785-0043 Fax (480) 785-0851  
 2520 E. Sunset Rd., Suite #3, Las Vegas, NV 89120 Ph (702) 798-3620 Fax (702) 798-3621

## SUBCONTRACT ORDER - PROJECT # IPE1832

SENDING LABORATORY:	RECEIVING LABORATORY:
Del Mar Analytical - Irvine 17461 Derian Avenue, Suite 100 Irvine, CA 92614 Phone: (949) 261-1022 Fax: (949) 261-1228 Project Manager: Michele Chamberlin	Alta Analytical - SUB 1104 Windfield Way El Dorado Hills, CA 95762 Phone : (916) 933-1640 Fax: (916) 673-0106 <div style="text-align: right; font-size: 1.5em; margin-top: 10px;">             27721              1.4°C           </div>

Standard TAT is requested unless specific due date is requested => **Due Date:** \_\_\_\_\_ **Initials:** \_\_\_\_\_

Analysis	Expiration	Comments	
<b>Sample ID: IPE1832-01</b>	<b>Water</b>	<b>Sampled: 05/18/06 13:15</b>	<b>Instant Notification</b>
1613-Dioxin-HR-Alta	05/25/06 13:15	J flags, 17 congeners, no TEQ, ug/L, sub=Alta	
EDD + Level 4	06/15/06 13:15	Excel EDD email to pm, Include Std logs for Lvl IV	
<b>Containers Supplied:</b>			
1 L Amber (IPE1832-01G)			
1 L Amber (IPE1832-01H)			

### SAMPLE INTEGRITY:

All containers intact:  Yes  No     
 Sample labels/COC agree:  Yes  No     
 Samples Received On Ice:  Yes  No  
 Custody Seals Present:  Yes  No     
 Samples Preserved Properly:  Yes  No     
 Samples Received at (temp): \_\_\_\_\_

Released By	Date	Time	Received By	Date	Time
			Fed - Ex	05-19-06	
			Christ Noel	5/20/06	0835



### SAMPLE LOG-IN CHECKLIST

Alta Project #: 27721

Samples Arrival:	Date/Time 5/20/06 0835	Initials: CW	Location: WR-2			
			Shelf/Rack: _____			
Logged In:	Date/Time 5/22/06 0915	Initials: BSB	Location: WR-2			
			Shelf/Rack: B-5			
Delivered By:	FedEx	UPS	Cal	DHL	Hand Delivered	Other
Preservation:	Ice	Blue Ice	Dry Ice		None	
Temp °C	1.4°	Time:	0840		Thermometer ID: DT-20	

	YES	NO	NA		
Adequate Sample Volume Received?	✓				
Holding Time Acceptable?	✓				
Shipping Container(s) Intact?	✓				
Shipping Custody Seals Intact?	✓				
Shipping Documentation Present?	✓				
Airbill	Trk # 7904 3711 2241				
* Sample Container Intact?	✓				
Sample Custody Seals Intact?			✓		
Chain of Custody / Sample Documentation Present?	✓				
COC Anomaly/Sample Acceptance Form completed?		✓			
If Chlorinated or Drinking Water Samples, Acceptable Preservation?			✓		
Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> Preservation Documented?		COC	Sample Container	None	
Shipping Container	Alta	Client	Retain	Return	Dispose

Comments:

\* Duplicate sample container broken.



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 9484 Chesapeake Drive, Suite 805, San Diego, CA 92123 Ph (619) 505-9596 Fax (619) 505-9689  
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 2520 E. Sunset Rd., Suite #3, Las Vegas, NV 89120 Ph (702) 798-3620 Fax (702) 798-3621

## SUBCONTRACT ORDER - PROJECT # IPE1832

**SENDING LABORATORY:**  
 Del Mar Analytical - Irvine  
 17461 Derian Avenue. Suite 100  
 Irvine, CA 92614  
 Phone: (949) 261-1022  
 Fax: (949) 261-1228  
 Project Manager: Michele Chamberlin

**RECEIVING LABORATORY:** *ASB*  
 Alta Analytical - SUB  
 1104 Windfield Way  
 El Dorado Hills, CA 95762  
 Phone : (916) 933-1640  
 Fax: (916) 673-0106  
*27731-27721*  
*0.1°C*

Standard TAT is requested unless specific due date is requested => **Due Date:** \_\_\_\_\_ **Initials:** \_\_\_\_\_

Analysis	Expiration	Comments
----------	------------	----------

Sample ID: IPE1832-01	Water	Sampled: 05/17/06 13:15
1613-Dioxin-HR-Alta	05/24/06 13:15	Instant Notification
EDD + Level 4	06/14/06 13:15	J flags, 17 congeners, no TEQ, ug/L, sub=Alta
		Excel EDD email to pm, Include Std logs for Lvl IV

**Containers Supplied:**  
~~1 L Amber (IPE1832-01G)~~  
~~1 L Amber (IPE1832-01H)~~  
 1 L Amber (IPE1832-01W)  
*Already Sent*

**SAMPLE INTEGRITY:**

All containers intact: <input type="checkbox"/> Yes <input type="checkbox"/> No	Sample labels/COC agree: <input type="checkbox"/> Yes <input type="checkbox"/> No	Samples Received On Ice: <input type="checkbox"/> Yes <input type="checkbox"/> No
Custody Seals Present: <input type="checkbox"/> Yes <input type="checkbox"/> No	Samples Preserved Properly: <input type="checkbox"/> Yes <input type="checkbox"/> No	Samples Received at (temp): _____

*V. Bank* *5/30/06* *Letitia G. Benedict* *5/31/06* *0935*  
 Released By \_\_\_\_\_ Date \_\_\_\_\_ Time \_\_\_\_\_ Received By \_\_\_\_\_ Date \_\_\_\_\_ Time \_\_\_\_\_

Released By \_\_\_\_\_ Date \_\_\_\_\_ Time \_\_\_\_\_ Received By \_\_\_\_\_ Date \_\_\_\_\_ Time \_\_\_\_\_  
 Project 27721

### SAMPLE LOG-IN CHECKLIST

Alta Project #: 27721

Samples Arrival:	Date/Time <u>5/31/06 0930</u>	Initials: <u>YBSB</u>	Location: <u>WR-2</u> Shelf/Rack: _____
Logged In:	Date/Time <u>5/31/06 0948</u>	Initials: <u>YBSB</u>	Location: <u>WR-2</u> Shelf/Rack: <u>A-2</u>
Delivered By:	<input checked="" type="checkbox"/> FedEx	<input type="checkbox"/> UPS	<input type="checkbox"/> Cal
	<input type="checkbox"/> DHL	<input type="checkbox"/> Hand Delivered	<input type="checkbox"/> Other
Preservation:	<input checked="" type="checkbox"/> Ice	<input type="checkbox"/> Blue Ice	<input type="checkbox"/> Dry Ice
	<input type="checkbox"/> None		
Temp °C <u>0.1°C</u>	Time: <u>0945</u>	Thermometer ID: DT-20	

	YES	NO	NA
Adequate Sample Volume Received?	✓		
Holding Time Acceptable?	✓		
Shipping Container(s) Intact?	✓		
Shipping Custody Seals Intact?	✓		
Shipping Documentation Present?	✓		
Airbill	✓		
Trk # <u>7914 9924 0503</u>	✓		
Sample Container Intact?	✓		
Sample Custody Seals Intact?			✓
Chain of Custody / Sample Documentation Present?	✓		
COC Anomaly/Sample Acceptance Form completed?			✓
If Chlorinated or Drinking Water Samples, Acceptable Preservation?			✓
Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> Preservation Documented?			None
Shipping Container	Alta	<input checked="" type="checkbox"/> Client	Retain
		<input checked="" type="checkbox"/> Return	Dispose

Comments:

# **APPENDIX G**

## **Section 54**

Outfall 018, May 17, 2006

MEC<sup>X</sup> Data Validation Reports





# DATA VALIDATION REPORT

NPDES Monitoring Program  
Routine Outfall 018

ANALYSIS: DIOXINS/FURANS  
SAMPLE DELIVERY GROUP: IPE1832

Prepared by  
MEC<sup>X</sup>, LLC  
12269 East Vassar Drive  
Aurora, CO 80014

## 1. INTRODUCTION

Task Order Title: NPDES  
Contract Task Order: 1261.001D.01  
Sample Delivery Group: IPE1832  
Project Manager: P. Costa  
Matrix: Water  
Analysis: Dioxins/Furans  
QC Level: Level IV  
No. of Samples: 1  
No. of Reanalyses/Dilutions: 0  
Reviewer: E. Wessling  
Date of Review: July 10, 2006

The sample listed in Table 1 was validated based on the guidelines outlined in the *MEC<sup>X</sup> Data Validation Procedure for Dioxins and Furans (DVP-19, Rev. 0)*, *USEPA Method 1613*, and the *National Functional Guidelines for Chlorinated Dioxin/Furan Data Review (8/02)*. Any deviations from these procedures and guidelines are documented herein. Qualifiers were applied in cases where the data did not meet the required QC criteria or where special consideration by the data user is required. Data qualifiers were placed on Form Is with the associated qualification codes. Analytes that were rejected for any reason are denoted on the Form I as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

**Table 1. Sample Identification**

Client ID	Laboratory ID (Del Mar)	Laboratory ID (Alta)	Matrix	COC Method
Outfall 018	IPE1832-01	27721-001	Water	1613



## 2. DATA VALIDATION FINDINGS

### 2.1 SAMPLE MANAGEMENT

Following are findings associated with sample management:

#### 2.1.1 Sample Preservation, Handling, and Transport

The sample in this SDG was received at Del Mar Analytical within the temperature limits of 4°C ±2°C. The sample was shipped to Alta for dioxin/furan analysis and was received below the temperature limits at 1.4°C. One sample container was noted to have been received broken. The laboratory did not report the data from the original analysis for QC issues. A subsequent sample aliquot was shipped by Del Mar to Alta in a separate shipment. It was noted as received intact and in good condition at Alta. No qualifications were required.

#### 2.1.2 Chain of Custody

The COC and transfer COCs were legible and signed by the appropriate field and laboratory personnel, and accounted for the analysis presented in this SDG. As the sample was couriered directly to Del Mar Analytical-Irvine, custody seals were not required. The Client ID was added to the sample result summary by the reviewer. No qualifications were required.

#### 2.1.3 Holding Times

The sample was extracted and analyzed within one year of collection. No qualifications were required.

### 2.2 INSTRUMENT PERFORMANCE

Following are findings associated with instrument performance:

#### 2.2.1 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 (see section 2.3.2). 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%. No qualifications were required.

## 2.2.2 Mass Spectrometer Performance

The mass spectrometer performance was acceptable with the static resolving power greater than 10,000. No qualifications were required.

## 2.3 CALIBRATION

### 2.3.1 Initial Calibration

The initial calibration was analyzed 04/11/2006 on instrument VG-9. The calibration consisted of six concentration level standards (CS0 through CS5) analyzed to verify instrument linearity. The initial calibrations were 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 QC limits listed in Method 1613 for all standards. A representative number of %RSDs were verified from the raw data, and no calculation or transcription errors were noted. No qualifications were required.

### 2.3.2 Continuing Calibration

Calibration verification (VER) consisted of a mid-level standard (CS3) analyzed at the beginning of each analytical sequence. The VER was 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. A representative number of %Ds were verified from the raw data, and no calculation or transcription errors were noted. No qualifications were required.

WDM and isomer specificity compounds were added to the VER standard instead of being analyzed separately, as noted in section 2.2.1 of this report. No adverse effect was observed with this practice.

## 2.4 BLANKS

One method blank (0-8064-MB001) was extracted and analyzed with the sample in this SDG. Target compounds OCDD, 1,2,3,6,7,8-HxCDF and 2,3,4,6,7,8-HxCDF were detected in the method blank. EMPC values for 1,2,3,4,6,7,8-HpCDD, 1,2,3,4,7,8-HxCDF and 1,2,3,4,7,8,9-HpCDF were also detected in the method blank. When detected in the site sample, these compounds were at concentrations greater than five times the amount in the method blank and no qualifications were required. A review of the method blank raw data and chromatograms indicated no false positives or false negatives. The laboratory had an issue reporting the method blank results due to new software on a new instrument, VG-9. This problem was corrected and the data was reissued by the laboratory. No qualifications were required.

## 2.5 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

One blank spike (0-8064-OPR001) was extracted and analyzed with the sample in this SDG. All recoveries were within the acceptance criteria listed in Table 6 of Method 1613. A review of the raw data and chromatograms indicated no transcription or calculation errors. No qualifications were required.

## 2.6 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

MS/MSD analyses were not performed in this SDG. Evaluation of method accuracy was based on the OPR results. No qualifications were required.

## 2.7 FIELD QC SAMPLES

Following are findings associated with field QC:

### 2.7.1 Field Blanks and Equipment Rinsates

The sample in this SDG had no field blank or equipment rinsate identified. No qualification of the site sample was required.

### 2.7.2 Field Duplicates

No field duplicates were identified in association with the sample in this SDG.

## 2.8 INTERNAL STANDARDS

The labeled standard recoveries were within the acceptance criteria listed in Table 7 of Method 1613. No qualifications were required.

## 2.9 COMPOUND IDENTIFICATION

The laboratory analyzed for polychlorinated dioxins/furans by EPA Method 1613. The compound identifications were verified from the raw data and no false negatives or positives were noted. No qualifications were required.

## 2.10 COMPOUND QUANTIFICATION AND REPORTED DETECTION LIMITS

Compound quantitation was verified from the raw data. The laboratory calculated and reported compound-specific detection limits. The detects below the laboratory lower calibration level were qualified as estimated, "J." These "J" values were annotated with the qualification code of

“DNQ” to comply with the reporting requirements of the NPDES permit. EMPC values for 1,2,3,4,6,7,8-HpCDF, OCDF and total PeCDD were qualified as estimated nondetects, “UJ.” The laboratory had an issue reporting the site sample results due to new software on a new instrument, VG-9. This problem was corrected and the data was reissued by the laboratory. No further qualifications were required.

Sample ID: IPE1832-01 *Outfall 018*

EPA Method 1613

Client Data		Sample Data		Laboratory Data	
Name:	Del Mar Analytical, Irvine	Matrix:	Aqueous	Lab Sample:	27721-001
Project:	IPE1832	Sample Size:	1.02 L	Date Received:	31-May-06
Date Collected:	17-May-06			QC Batch No.:	8064
Time Collected:	1315			Date Analyzed DB-5:	7-Jun-06
				Date Analyzed DB-225:	NA

*Real Anal Code*  
*u*  
*↓*  
*J DND*  
*J DND*  
*u*  
*↓*  
*J DND*  
*u*  
*u*  
*u*  
*u*

Analyte	Conc. (ug/L)	DL <sup>a</sup>	EMPC <sup>b</sup>	Qualifiers	Labeled Standard	%R	LCL-UCL <sup>d</sup>	Qualifiers
2,3,7,8-TCDD	ND	0.000000646			<b>IS</b> 13C-2,3,7,8-TCDD	69.7	25 - 164	
1,2,3,7,8-PeCDD	ND	0.000000539			13C-1,2,3,7,8-PeCDD	67.1	25 - 181	
1,2,3,4,7,8-HxCDD	ND	0.000000597			13C-1,2,3,4,7,8-HxCDD	69.4	32 - 141	
1,2,3,6,7,8-HxCDD	ND	0.000000611			13C-1,2,3,6,7,8-HxCDD	70.1	28 - 130	
1,2,3,7,8,9-HxCDD	ND	0.000000608			13C-1,2,3,4,6,7,8-HpCDD	70.9	23 - 140	
1,2,3,4,6,7,8-HpCDD	0.00000640			J	13C-OCDD	54.3	17 - 157	
OCDD	0.0000440			J,B	13C-2,3,7,8-TCDF	71.2	24 - 169	
2,3,7,8-TCDF	ND	0.000000753			13C-1,2,3,7,8-PeCDF	65.8	24 - 185	
1,2,3,7,8-PeCDF	ND	0.000000440			13C-2,3,4,7,8-PeCDF	66.3	21 - 178	
2,3,4,7,8-PeCDF	ND	0.000000406			13C-1,2,3,4,7,8-HxCDF	70.7	26 - 152	
1,2,3,4,7,8-HxCDF	ND	0.000000376			13C-1,2,3,6,7,8-HxCDF	69.2	26 - 123	
1,2,3,6,7,8-HxCDF	ND	0.000000332			13C-2,3,4,6,7,8-HxCDF	72.1	28 - 136	
2,3,4,6,7,8-HxCDF	ND	0.000000368			13C-1,2,3,7,8,9-HxCDF	70.3	29 - 147	
1,2,3,7,8,9-HxCDF	ND	0.000000569			13C-1,2,3,4,6,7,8-HpCDF	66.8	28 - 143	
1,2,3,4,6,7,8-HpCDF	0.00000124			J	13C-1,2,3,4,7,8,9-HpCDF	74.7	26 - 138	
1,2,3,4,7,8,9-HpCDF	ND		0.000000527		13C-OCDF	55.2	17 - 157	
OCDF	ND		0.00000246		<b>CRS</b> 37Cl-2,3,7,8-TCDD	81.5	35 - 197	

Totals					Footnotes			
Total TCDD	ND	0.000000646			a. Sample specific estimated detection limit.			
Total PeCDD	ND		0.00000179		b. Estimated maximum possible concentration.			
Total HxCDD	0.00000165				c. Method detection limit.			
Total HpCDD	0.0000134			B	d. Lower control limit - upper control limit.			
Total TCDF	ND	0.000000753						
Total PeCDF	ND	0.000000423						
Total HxCDF	ND	0.000000411						
Total HpCDF	0.00000274		0.00000327	B				

Analyst: JMH

Approved By: William J. Luksemburg 07-Jul-2006 11:21

**LEVEL IV**