MEC	CONTRACT COMPL X. LLC	JANCE SCREENING FORM FOR HARDCOPY DATA Package ID B4DF96
12260) East Vassar Drive	Task Order 1261.001D.01
Suite	500	SDG No. IPD1228
Lake	wood, CO 80226	No. of Analyses 1
State	Laboratory Alta Analy	tical Date: June 26, 2006
	Reviewer E. Wesslin	g Reviewer's Signature
	Analysis/Method Dioxins/Fu	irans ZaberhAllers
0		
CTI	ON ITEMS ^a	
	Case Narrative	
	Deficiencies	
2.	Out of Scope	
	Analyzaz	
	Analyses	
3.	Analyses Not Conducted	
4.	Missing Hardcopy	
	Deliverables	
5.	Incorrect Hardcopy	
	Deliverables	
6	Deviations from Analysis	Qualifications were assigned for the following:
0.	Deviations from Analysis	regulate between the BL and the MDL were actimated
	Protocol, e.g.,	- results between the KL and the MDL were estimated
	CCA IS Transformers	
	Ge/MS Tune/Inst. Performance	
	Cambration	
	Method blanks	
	Surrogates	
	Matrix Spike/Dup LCS	
	Field QC	
	Internal Standard Performance	
	Compound Identification	
	Quantitation	
	System Performance	
CON	IMENTS"	



DATA VALIDATION REPORT

NPDES Monitoring Program Routine Outfall 018

ANALYSIS: DIOXINS/FURANS SAMPLE DELIVERY GROUP: IPD1228

Prepared by

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

NPDES - 1002

	Project:	NPDES
	SDG:	IPD1228
DATA VALIDATION REPORT	Analysis:	D/F

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^X 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 gualification code since the data had already been rejected.

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

Table 1. Sample Identification

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 $4^{\circ}C$ ±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.

	SDG:	IPD1228
DATA VALIDATION REPORT	Analysis:	D/F

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.

	Project:	NPDES
	SDG:	IPD1228
DATA VALIDATION REPORT	Analysis:	D/F

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.

E.	Client Data Name: Del Project: IPD Date Collected: 11 Time Collected: 101	Mar Analytical, Irvine 01228 Apr-06 8		Sample Data Matrix: Sample Size:	Aqueous 1.01 L	Lab Lab QC Date	boratory Data 5 Sample: 1 Batch No.: 1 e Analyzed DB-5:	27595-001 7951 24-Apr-06	Date Ro Date E: Date Ar	eceived: stracted: nalyzed DB-225:	14-Apr-06 20-Apr-06 NA
d	Analyte	Conc. (ug/L)	DL ^a	EMPC ^b	Qualifiers		Labeled Stands	ard	%R	LCL-UCL ^d	Qualifiers
	2,3,7,8-TCDD	ND	0.000001	61		IS	13C-2,3,7,8-TCI	DD	69.3	25 - 164	
	1,2,3,7,8-PeCDD	ND	0.000001	44			13C-1,2,3,7,8-Pe	CDD	60.1	25 - 181	
	1,2,3,4,7,8-HxCDD	ND	0.000002	.92		100	13C-1,2,3,4,7,8-1	HxCDD	66.8	32 - 141	
	1,2,3,6,7,8-HxCDD	ND	0.000002	.75			13C-1,2,3,6,7,8-1	HxCDD	70.2	28 - 130	
	1,2,3,7,8,9-HxCDD	ND	0.000002	72			13C-1,2,3,4,6,7,8	3-HpCDD	63.7	23 - 140	
3	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-TCE	DF	71.1	24 - 169	
	2,3,7,8-TCDF	ND	0.000001	40			13C-1,2,3,7,8-Pe	CDF	64.5	24 - 185	
	1,2,3,7,8-PeCDF	ND	0.000001	72		102.0	13C-2,3,4,7,8-Pe	CDF	59.4	21 - 178	
	2,3,4,7,8-PeCDF	ND	0.000001	93			13C-1,2,3,4,7,8-H	HxCDF	69.2	26 - 152	
	1,2,3,4,7,8-HxCDF	ND	0.000001	02		1.16	13C-1,2,3,6,7,8-H	HxCDF	74.9	26 - 123	
	1,2,3,6,7,8-HxCDF	ND	0.000000	930			13C-2,3,4,6,7,8-H	HxCDF	70.3	28 - 136	
	2,3,4,6,7,8-HxCDF	ND	0.000001	10			13C-1,2,3,7,8,9-H	HxCDF	66.7	29 - 147	
	1,2,3,7,8,9-HxCDF	ND	0.000000	633			13C-1,2,3,4,6,7,8	-HpCDF	60.3	28 - 143	
	1,2,3,4,6,7,8-HpCDF	0.00000377			J	1.5	13C-1,2,3,4,7,8,9	-HpCDF	55.5	26 - 138	
	1,2,3,4,7,8,9-HpCDF	ND	0.0000014	47			13C-OCDF		44.5	17 - 157	
2	OCDF	0.0000121	1.1		J	CRS	37Cl-2,3,7,8-TCI	DD	81.1	35 - 197	
	Totals					Foo	otnotes				
[Total TCDD	ND	0.0000016	51		a. Sa	mple specific estimated	detection limit.			
	Total PeCDD	ND	0.0000014	14		b. Est	timated maximum possi	ible concentration.			
	Total HxCDD	ND	0.0000051	12		c. Me	ethod detection limit.				
	Total HpCDD	0.0000389				d. Lo	wer control limit - uppe	r control limit.			a state of the
	Total TCDF	0.00000286									
	Total PeCDF	ND	0.0000018	32							
	Total HxCDF	0.00000179									
	Total HpCDF	0.00000901									

Analyst: MAS

Approved By:

William J. Luksemburg 27-Apr-2006 09:49

Lovel IV

MEC	2 [×]		Package ID: B4VO61
122	69 East Vassar Drive		Task Order: 1261.001D.01
Auro	ora, CO 80014		SDG No.: IPD1228
			No. of Analyses: 2
	Laboratory: Del Mar A	nalytical-Invine	Date: June 25 2006
	Beviewer: L Calvin	andiyuodi-ii viito	Baviewer's Signature
	Analysis (Mathady) (alatilas I	Wethed 604	Keviever's Signature
	Analysis/ivietnod: Volatiles I	by Method 624	- Uncausur
ACT			
101	Case Nemetine		
•	Case Narrative		
	Deficiencies		
2.	Out of Scope Analyses		
	A		
3.	Analyses Not Conducted		
4.	Missing Hardcopy		
	Deliverables		
5.	Incorrect Hardcopy		
	Deliverables		
6.	Deviations from Analysis	Qualifications were as	signed for continuing calibration %D outliers.
	Protocol, e.g.,		
	Holding Times		
	GC/MS Tune/Inst. Performance		
	Calibration		
	Method blanks		
	Surrogates		
	Matrix Snike/Dun LCS		
	Field OC		
	Internal Standard Performance		
	Internal Standard Performance		
	Compound Identification		
	Quantitation		
	System Performance	Т	
co	MMENTS		

CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA



DATA VALIDATION REPORT

NPDES Monitoring Program Routine Outfall 018

ANALYSIS: VOLATILES

SAMPLE DELIVERY GROUP: IPD1228

Prepared by

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

DATA VALIDATION REPORT	Analysis:	VOCs
	SDG:	IPD1228
	Project:	NPDES

1. INTRODUCTION

Task Order Title:	NPDES
MEC [×] 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^{\times} 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.

1

	Project:	NPDES
	SDG:	IPD1228
DATA VALIDATION REPORT	Analysis:	VOCs

Table 1. Sar	nple Identification
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Client ID	Laboratory ID	Matrix	COC Method
Outfall 018	IPD1228-01	Water	624
Trip Blank	IPD1228-02	Water	624

DATA VALIDATION REPORT	Analysis:	VOCs
	SDG:	IPD1228
	Project:	NPDES

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

The samples in this SDG were received at the laboratory within the temperature limits of $4^{\circ}C$ $\pm 2^{\circ}C$, at $3^{\circ}C$. 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 ≥ 0.05 , and the %RSDs were $\leq 35\%$ or r² values ≥ 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.

	Project:	NPDES
	SDG:	IPD1228
DATA VALIDATION REPORT	Analysis:	VOCs

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 ±30 seconds

	Project:	NPDES
	SDG:	IPD1228
DATA VALIDATION REPORT	Analysis:	VOCs

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)

			MDL	Reporting	Sample	Dilution	Date	Date	Data
Analyte	Method	Batch	Limit	Limit	Result	Factor	Extracted	Analyzed Q	Qualifiers
Sample ID: IPD1228-01 (Outfall 018 - Wate	r)							Sel)	Jacke
Reporting Units: ug/l								"Is	190000
Benzene	EPA 624	6D17002	0.28	2.0	ND	1	04/17/06	04/17/06	
Carbon tetrachloride	EPA 624	6D17002	0.28	5.0	ND	1	04/17/06	04/17/06 14.	JC
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	
1,2-Dichloroethane	EPA 624	6D17002	0.28	2.0	ND	1	04/17/06	04/17/06 US	JC
1,1-Dichloroethene	EPA 624	6D17002	0.42	3.0	ND	1	04/17/06	04/17/06 以	
Ethylbenzene	EPA 624	6D17002	0.25	2.0	ND	1	04/17/06	04/17/06	
Tetrachloroethene	EPA 624	6D17002	0.32	2.0	ND	1	04/17/06	04/17/06	
Toluene	EPA 624	6D17002	0.36	2.0	ND	1	04/17/06	04/17/06	
1,1,1-Trichloroethane	EPA 624	6D17002	0.30	2.0	ND	1	04/17/06	04/17/06	1
1,1,2-Trichloroethane	EPA 624	6D17002	0.30	2.0	ND	1	04/17/06	04/17/06	
Trichloroethene	EPA 624	6D17002	0.26	5.0	ND	1	04/17/06	04/17/06	
Trichlorofluoromethane	EPA 624	6D17002	0.34	5.0	ND	1	04/17/06	04/17/06 UL	TC
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	
Surrogate: Dibromofluoromethane (80-120%))				107 %				
Surrogate: Toluene-d8 (80-120%)					106 %				
Surrogate: 4-Bromofluorobenzene (80-120%)					110 %				
Sample ID: IPD1228-02 (Trip Blank - Wate	r)								
Reporting Units: ug/l									
Benzene	EPA 624	6D17002	0.28	2.0	ND	1	04/17/06	04/17/06 以	
Carbon tetrachloride	EPA 624	6D17002	0.28	5.0	ND	1	04/17/06	04/17/06	
Chloroform	EPA 624	6D17002	0.33	2.0	ND	1	04/17/06	04/17/06	
1,1-Dichloroethane	EPA 624	6D17002	0.27	2.0	ND	1	04/17/06	04/17/06	
1,2-Dichloroethane	EPA 624	6D17002	0.28	2.0	ND	1	04/17/06	04/17/06	
1,1-Dichloroethene	EPA 624	6D17002	0.42	3.0	ND	1	04/17/06	04/17/06	
Ethylbenzene	EPA 624	6D17002	0.25	2.0	ND	1	04/17/06	04/17/06	
Tetrachloroethene	EPA 624	6D17002	0.32	2.0	ND	1	04/17/06	04/17/06	
Toluene	EPA 624	6D17002	0.36	2.0	ND	1	04/17/06	04/17/06	
1,1,1-Trichloroethane	EPA 624	6D17002	0.30	2.0	ND	1	04/17/06	04/17/06	
1,1,2-Trichloroethane	EPA 624	6D17002	0.30	2.0	ND	1	04/17/06	04/17/06	1
Trichloroethene	EPA 624	6D17002	0.26	5.0	ND	1	04/17/06	04/17/06	1
Trichlorofluoromethane	EPA 624	6D17002	0,34	5.0	ND	1	04/17/06	04/17/06	
Vinyl chloride	EPA 624	6D17002	0.26	5.0	ND	1	04/17/06	04/17/06	
Xylenes, Total	EPA 624	6D17002	0.90	4.0	ND	1	04/17/06	04/17/06	
Surrogate: Dibromofluoromethane (80-120%))				103 %				1
Surrogate: Toluene-d8 (80-120%)					106 %				
Surrogate: 4-Bromofluorobenzene (80-120%)					110 %				

Del Mar Analytical - Irvine

Michele Chamberlin Project Manager

LevelIV

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. IPD1228 <Page 2 of 22> - 1016

CONTRACT COMPLIANCE SCREEN	NING FORM FOR HARDCOPY DATA
MECX, LLC	Package ID B4WC87
12260 East Vassar Drive	Task Order 1261.001D.01
Suite 500	SDG No. IPD1228
Lakewood, CO 80226	No. of Analyses 1
Laboratory Del Mar	Date: June 26, 2006
Reviewer E. Wessling	Reviewer's Signature
Analysis/Method General Chemistry	Eaberthalwest
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AC	TION ITEMS"	
•	Case Narrative	
	Deficiencies	
2.	Out of Scope	
	Analyses	
3	Analyses Not Conducted	
2.	Thingsis Not Conducted	
4	Missing Handsony	
4.	Deliverables	
5.	Incorrect Hardcopy	
	Denverables	
6.	Deviations from Analysis	- Qualifications were assigned for the following:
	Protocol, e.g.,	
	Holding Times	
	Calibration	
	Method blanks	
	Surrogates	
	Matrix Spike/Dup LCS	
	Field QC	
	Internal Standard Performance	
	Compound Identification	
	Quantitation	
_	System Performance	
co	MMENTS ^b	Acceptable as reviewed



DATA VALIDATION REPORT

NPDES Sampling Outfall 018

ANALYSIS: GENERAL MINERALS

SAMPLE DELIVERY GROUP: IPD1228

Prepared by

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

	Project:	NPDES
	SDG:	IPD1228
DATA VALIDATION REPORT	Analysis:	Gen. Min.

1. INTRODUCTION

Task Order Title:	NPDES Sampling
MEC ^X 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[×] 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.

1

	Project:	NPDES
	SDG:	IPD1228
DATA VALIDATION REPORT	Analysis:	Gen. Min.

Table 1. Sample Identification

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

	Project:	NPDES
	SDG:	IPD1228
DATA VALIDATION REPORT	Analysis:	Gen. Min.

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 $4^{\circ}C \pm 2^{\circ}C$ at $3^{\circ}C$. 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 ≥ 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.

Project:	NPDES
SDG:	IPD1228
DATA VALIDATION REPORT Analysis:	Gen. Min.

2.4 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

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



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

		INO	RGA	NICS						
Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifier	rs
Sample ID: IPD1228-01 (Outfall 018 Reporting Units: mg/l	- Water) - cont							1	Revo	10
Ammonia-N (Distilled)	EPA 350.2	6D13122	0.30	0.50	ND	1	04/13/06	04/13/06	U	1
Biochemical Oxygen Demand	EPA 405.1	6D13078	0.59	2.0	3.2	1	04/13/06	04/18/06	*	1
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	* J	
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 01) Reporting Units: ml/l/hr	8 - Water)									
Total Settleable Solids	EPA 160.5	6D13058	0.10	0.10	ND	1	04/13/06	04/13/06	*	
Sample ID: IPD1228-01 (Outfall 01: Reporting Units: NTU	8 - Water)									
Turbidity	EPA 180.1	6D13084	0.040	1.0	5.7	1	04/13/06	04/13/06		1
Sample ID: IPD1228-01 (Outfall 01 Reporting Units: ug/l	8 - Water)									
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 01 Reporting Units: umbos/cm	8 - Water)									
Specific Conductance	EPA 120.1	6D13071	1.0	1.0	410	1	04/13/06	04/13/06		- 1

+ - analysis not validaled

LEVEL I

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. IPD1228 < Page Page 22 - 1023

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

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

Reviewed By:

Michele Chamberdin

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

PURGEABLES BY GC/MS (EPA 624)

Report Number: IPE1134

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

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IPE1134-01 (Outfall 002 - Wate	r)								
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, 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	
Surrogate: Dibromofluoromethane (80-120%)				96 %				
Surrogate: Toluene-d8 (80-120%)					90 %				
Surrogate: 4-Bromofluorobenzene (80-120%)					92 %				
Sample ID: IPE1134-02 (Trip Blank - Wate	r)								
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	
Surrogate: Dibromofluoromethane (80-120%)				91 %				
Surrogate: Toluene-d8 (80-120%)					89 %				

Surrogate: 4-Bromofluorobenzene (80-120%)

Del Mar Analytical - Irvine Michele Chamberlin

Project Manager

94 %



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

Data MDL Reporting Sample Dilution Date Date Method Qualifiers Analyte Batch Limit Limit Result Factor Extracted Analyzed Sample ID: IPE1134-01 (Outfall 002 - Water) Reporting Units: ug/l Bis(2-ethylhexyl)phthalate EPA 625 6E16058 1.6 4.8 2.0 0.952 05/16/06 05/22/06 J 2,4-Dinitrotoluene EPA 625 6E16058 0.19 8.6 0.23 0.952 05/16/06 05/22/06 J 6E16058 0.095 ND 0.952 05/22/06 N-Nitrosodimethylamine EPA 625 7.6 05/16/06 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 % 83 % Surrogate: 2,4,6-Tribromophenol (45-120%) Surrogate: Nitrobenzene-d5 (45-120%) 83% Surrogate: 2-Fluorobiphenyl (45-120%) 93% Surrogate: Terphenyl-d14 (45-120%) 85 %

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



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

ORGANOCHLORINE PESTICIDES (EPA 608)

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



MWH-Pasadena/Boeing	Project ID:	Routine Outfall 002		
300 North Lake Avenue, Suite 1200			Sampled:	05/11/06
Pasadena, CA 91101	Report Number:	IPE1134	Received:	05/11/06
Attention: Bronwyn Kelly				

METALS												
Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers			
Sample ID: IPE1134-01 (Outfall 00 Reporting Units: mg/l	2 - Water) - cont.											
Zinc	EPA 200.7	6E13046	0.015	0.020	ND	1	05/13/06	05/18/06				
Sample ID: IPE1134-01 (Outfall 00	2 - Water)											
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	1.2	1	05/12/06	05/12/06	J			
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			
Sample ID: IPE1134-01RE1 (Outfa	all 002 - Water)											
Reporting Units: ug/l												
Lead	EPA 200.8	6E31131	0.040	1.0	6.2	1	05/31/06	06/01/06				



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		
Sample ID: IPE1134-01 (Outfall 002	- Water) - cont.										
Reporting Units: mg/l											
Ammonia-N (Distilled)	EPA 350.2	6E19092	0.30	0.50	0.84	1	05/19/06	05/19/06			
Biochemical Oxygen Demand	EPA 405.1	6E12090	0.59	2.0	1.0	1	05/12/06	05/17/06	J		
Chloride	EPA 300.0	6E11111	3.0	10	49	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	270	20	05/11/06	05/12/06			
Surfactants (MBAS)	SM5540-C	6E11088	0.044	0.10	0.048	1	05/11/06	05/11/06	J		
Total Dissolved Solids	SM2540C	6E17074	10	10	700	1	05/17/06	05/17/06			
Total Suspended Solids	EPA 160.2	6E17105	10	10	ND	1	05/17/06	05/17/06			
Sample ID: IPE1134-01 (Outfall 002	- Water)										
Reporting Units: ml/l/hr											
Total Settleable Solids	EPA 160.5	6E12116	0.10	0.10	ND	1	05/12/06	05/12/06			
Sample ID: IPE1134-01 (Outfall 002	- Water)										
Reporting Units: NTU											
Turbidity	EPA 180.1	6E12113	0.040	1.0	0.57	1	05/12/06	05/12/06	J		
Sample ID: IPE1134-01 (Outfall 002	- Water)										
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			
Sample ID: IPE1134-01 (Outfall 002	- Water)										
Reporting Units: umhos/cm											
Specific Conductance	EPA 120.1	6E17079	1.0	1.0	1100	1	05/17/06	05/17/06			

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

SHORT HOLD TIME DETAIL REPORT

Hold Time (in days)	Date/Time Sampled	Date/Time Received	Date/Time Extracted	Date/Time Analyzed
2	05/11/2006 13:22	05/11/2006 20:00	05/12/2006 14:00	05/12/2006 15:00
2	05/11/2006 13:22	05/11/2006 20:00	05/12/2006 13:30	05/12/2006 14:30
2	05/11/2006 13:22	05/11/2006 20:00	05/11/2006 23:30	05/12/2006 00:14
2	05/11/2006 13:22	05/11/2006 20:00	05/12/2006 12:00	05/17/2006 13:00
2	05/11/2006 13:22	05/11/2006 20:00	05/11/2006 21:00	05/11/2006 22:19
	Hold Time (in days) 2 2 2 2 2 2 2	Hold Time (in days) Date/Time Sampled 2 05/11/2006 13:22 2 05/11/2006 13:22 2 05/11/2006 13:22 2 05/11/2006 13:22 2 05/11/2006 13:22 2 05/11/2006 13:22 2 05/11/2006 13:22 2 05/11/2006 13:22 2 05/11/2006 13:22	Hold Time (in days) Date/Time Sampled Date/Time Received 2 05/11/2006 13:22 05/11/2006 20:00 2 05/11/2006 13:22 05/11/2006 20:00 2 05/11/2006 13:22 05/11/2006 20:00 2 05/11/2006 13:22 05/11/2006 20:00 2 05/11/2006 13:22 05/11/2006 20:00 2 05/11/2006 13:22 05/11/2006 20:00 2 05/11/2006 13:22 05/11/2006 20:00 2 05/11/2006 13:22 05/11/2006 20:00	Hold Time (in days) Date/Time Sampled Date/Time Received Date/Time Extracted 2 05/11/2006 13:22 05/11/2006 20:00 05/12/2006 14:00 2 05/11/2006 13:22 05/11/2006 20:00 05/12/2006 13:30 2 05/11/2006 13:22 05/11/2006 20:00 05/11/2006 23:30 2 05/11/2006 13:22 05/11/2006 20:00 05/12/2006 12:00 2 05/11/2006 13:22 05/11/2006 20:00 05/12/2006 12:00 2 05/11/2006 13:22 05/11/2006 20:00 05/12/2006 12:00 2 05/11/2006 13:22 05/11/2006 20:00 05/12/2006 12:00 2 05/11/2006 13:22 05/11/2006 20:00 05/11/2006 21:00



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)

		Reporting				Source		%REC		RPD	Data
Analyte	Result	Limit	MDL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifiers
Batch: 6E21009 Extracted: 05/2	1/06										
Blank Analyzed: 05/21/2006 (6E210	09-BLK1)										
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			
LCS Analyzed: 05/21/2006 (6E2100)	9-BS1)										
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)

		Reporting			Spike	Source		%REC		RPD	Data
Analyte	Result	Limit	MDL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifiers
Batch: 6E21009 Extracted: 05/2	1/06										
LCS Analyzed: 05/21/2006 (6E21009	D-BS1)										
Surrogate: 4-Bromofluorobenzene	24.7			ug/l	25.0		99	80-120			
Matrix Spike Analyzed: 05/21/2006	(6E21009-MS1)				Sou	irce: IPE1	134-01				
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			<i>M1</i>
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			
Matrix Spike Dup Analyzed: 05/21/2	2006 (6E21009-M	SD1)			Sou	irce: IPE1	134-01				
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	

Del Mar Analytical - Irvine

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

Surrogate: 4-Bromofluorobenzene

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)

		Reporting			Spike	Source		%REC		RPD	Data
Analyte	Result	Limit	MDL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifiers
Batch: 6E21009 Extracted: 05/21	1/06										
Matrix Spike Dup Analyzed: 05/21/2	006 (6E21009-M	(SD1)			Sou	rce: IPE1	134-01				
Surrogate: Dibromofluoromethane	23.8			ug/l	25.0		95	80-120			
Surrogate: Toluene-d8	22.7			ug/l	25.0		91	80-120			

ug/l

25.0

96

80-120



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

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

		Reporting				Source	%REC			RPD	Data
Analyte	Result	Limit	MDL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifiers
Batch: 6E16058 Extracted: 05/1	6/06										
Blank Analyzed: 05/22/2006 (6E160	58-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	8-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)				Sou	irce: IPE(954-01				
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			

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

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

Analyte	Reporting				Spike	pike Source		%REC		RPD	Data
	Result	Limit	MDL	Units	Level	Result	%REC	Limits Rl	RPD) Limit	Qualifiers
Batch: 6E16058 Extracted: 05/10	6/06										
Matrix Spike Analyzed: 05/22/2006 (6E16058-MS1)				Source: IPE0954-01							
Surrogate: Terphenyl-d14	8.04			ug/l	10.0		80	45-120			
Matrix Spike Dup Analyzed: 05/22/2006 (6E16058-MSD1)				Source: IPE0954-01							
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)

		Reporting			Spike	Source		%REC		RPD	Data
Analyte	Result	Limit	MDL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifiers
Batch: 6E16049 Extracted: 05/1	6/06										
Blank Analyzed: 05/16/2006 (6E160	49-BLK1)										
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			
LCS Analyzed: 05/16/2006 (6E1604	9-BS1)										M-NR1
alpha-BHC	0.369	0.010	0.0010	ug/l	0.500		74	45-120			
Surrogate: Decachlorobiphenyl	0.420			ug/l	0.500		84	45-120			
Surrogate: Tetrachloro-m-xylene	0.330			ug/l	0.500		66	35-115			
LCS Dup Analyzed: 05/16/2006 (6E	16049-BSD1)										
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			



MWH-Pasadena/Boeing 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Attention: Bronwyn Kelly Project ID: Routine Outfall 002

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METHOD BLANK/QC DATA

METALS

		Reporting			Spike	Source		%REC		RPD	Data
Analyte	Result	Limit	MDL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifiers
Batch: 6E12070 Extracted: 05/12/06	-										
Blank Analyzed: 05/12/2006 (6E12070-Bl	L K1)										
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	l)										
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 (6E12	2070-MS1)				Sou	irce: IPE1	134-01				
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-N	ISD1)			Sou	irce: IPE1	134-01				
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-Bl	L K1)										
Mercury	ND	0.20	0.050	ug/l							



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

METHOD BLANK/QC DATA

METALS

Analyta	Dosult	Reporting	MDI	Unite	Spike Lovel	Source Bosult	%DFC	%REC	DDD	RPD Limit	Data Ouglifiors
Analyte	5/12/0/	Linnt	MDL	Units	Level	Kesun	/orec	Linnts	ΝD	Linnt	Quanners
Batch: 0E120// Extracted: 0	5/12/00										
LCS Analyzed: 05/12/2006 (6E12	2077-BS1)										
Mercury	8.13	0.20	0.050	ug/l	8.00		102	85-115			
Matrix Spike Analyzed: 05/12/20	006 (6E12077-MS1)				Sou	irce: IPE	1018-01				
Mercury	7.59	0.20	0.050	ug/l	8.00	ND	95	70-130			
Matrix Spike Dup Analyzed: 05/	12/2006 (6E12077-M	ISD1)			Sou	irce: IPE	1018-01				
Mercury	7.44	0.20	0.050	ug/l	8.00	ND	93	70-130	2	20	
Batch: 6E13046 Extracted: 0	5/13/06										
Blank Analyzed: 05/18/2006 (6E)	13046-BLK1)										
Zinc	ND	0.020	0.015	mg/l							
LCS Analyzed: 05/18/2006 (6E13	3046-BS1)										
Zinc	0.503	0.020	0.015	mg/l	0.500		101	85-115			
Matrix Spike Analyzed: 05/18/20	006 (6E13046-MS1)				Sou	irce: IPE()999-02				
Zinc	0.522	0.020	0.015	mg/l	0.500	ND	104	70-130			
Matrix Spike Dup Analyzed: 05/	18/2006 (6E13046-M	ISD1)			Sou	irce: IPE()999-02				
Zinc	0.528	0.020	0.015	mg/l	0.500	ND	106	70-130	1	20	
Batch: 6E31131 Extracted: 0	5/31/06										
Blank Analyzed: 06/01/2006 (6E3	31131-BLK1)										
Lead	ND	1.0	0.040	ug/l							



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Report Number: IPE1134

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

METHOD BLANK/QC DATA

METALS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 6E31131 Extracted: 05/31/06	-										
LCS Analyzed: 06/01/2006 (6E31131-BS)	l)										
Lead	78.1	1.0	0.040	ug/l	80.0		98	85-115			
Matrix Spike Analyzed: 06/01/2006 (6E3	1131-MS1)				Sou	rce: IPE1	134-01R	E1			
Lead	79.9	1.0	0.040	ug/l	80.0	6.2	92	70-130			
Matrix Spike Analyzed: 06/01/2006 (6E3	1131-MS2)				Sou	rce: IPE()588-01R	E1			
Lead	75.7	1.0	0.040	ug/l	80.0	0.079	95	70-130			
Matrix Spike Dup Analyzed: 06/01/2006 (6E31131-MSD1)					Sou	rce: IPE1	134-01R	E1			
Lead	82.3	1.0	0.040	ug/l	80.0	6.2	95	70-130	3	20	



MWH-Pasadena/Boeing 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Attention: Bronwyn Kelly Project ID: Routine Outfall 002

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METHOD BLANK/QC DATA

INORGANICS

		Reporting			Spike	Source		%REC		RPD	Data
Analyte	Result	Limit	MDL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifiers
Batch: 6E11088 Extracted: (05/11/06										
Blank Analyzed: 05/11/2006 (6E	11088-BLK1)										
Surfactants (MBAS)	ND	0.10	0.044	mg/l							
LCS Analyzed: 05/11/2006 (6E1	1088-BS1)										
Surfactants (MBAS)	0.243	0.10	0.044	mg/l	0.250		97	90-110			
Matrix Spike Analyzed: 05/11/2	006 (6E11088-MS1)				Sou	ırce: IPE(0997-01				
Surfactants (MBAS)	0.269	0.10	0.044	mg/l	0.250	0.089	72	50-125			
Matrix Spike Dup Analyzed: 05	/11/2006 (6E11088-M	ISD1)			Sou	ırce: IPE(0997-01				
Surfactants (MBAS)	0.288	0.10	0.044	mg/l	0.250	0.089	80	50-125	7	20	
Batch: 6E11111 Extracted: (05/11/06										
Blank Analyzed: 05/11/2006 (6E	11111-BLK1)										
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							
LCS Analyzed: 05/11/2006 (6E1	1111-BS1)										
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			
Matrix Spike Analyzed: 05/11/2	006 (6E11111-MS1)				Sou	irce: IPE	1118-03				
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			<i>M1</i>
Sulfate	65.2	1.0	0.90	mg/l	10.0	55	102	80-120			M-HA

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

		Reporting			Spike	Source		%REC		RPD	Data
Analyte	Result	Limit	MDL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifiers
Batch: 6E11111 Extracted: 05/1	1/06										
Matrix Spike Dup Analyzed: 05/11/2	2006 (6E11111-M	(SD1)			Sou	rce: IPE	1118-03				
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	<i>M1</i>
Sulfate	64.7	1.0	0.90	mg/l	10.0	55	97	80-120	1	20	M-HA
Batch: 6E12090 Extracted: 05/1	2/06										
Blank Analyzed: 05/17/2006 (6E120	90-BLK1)										
Biochemical Oxygen Demand	ND	2.0	0.59	mg/l							
LCS Analyzed: 05/17/2006 (6E1209	0-BS1)										
Biochemical Oxygen Demand	218	100	30	mg/l	198		110	85-115			
LCS Dup Analyzed: 05/17/2006 (6E	12090-BSD1)										
Biochemical Oxygen Demand	216	100	30	mg/l	198		109	85-115	1	20	
Batch: 6E12098 Extracted: 05/1	2/06										
Blank Analyzed: 05/12/2006 (6E120	98-BLK1)										
Total Cyanide	ND	5.0	2.2	ug/l							
LCS Analyzed: 05/12/2006 (6E12098	8-BS1)										
Total Cyanide	200	5.0	2.2	ug/l	200		100	90-110			
Matrix Spike Analyzed: 05/12/2006	(6E12098-MS1)				Sou	rce: IPE(0925-01				
Total Cyanide	192	5.0	2.2	ug/l	200	ND	96	70-115			



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

		Reporting			Spike	Source		%REC		RPD	Data
Analyte	Result	Limit	MDL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifiers
Batch: 6E12098 Extracted: 05/12/06	_										
Matrix Spike Dup Analyzed: 05/12/2006	(6E12098-1	MSD1)			Sou	rce: IPE(925-01				
Total Cyanide	192	5.0	2.2	ug/l	200	ND	96	70-115	0	15	
Batch: 6E12113 Extracted: 05/12/06	-										
Blank Analyzed: 05/12/2006 (6E12113-Bl	L K1)										
Turbidity	ND	1.0	0.040	NTU							
Duplicate Analyzed: 05/12/2006 (6E12113	3-DUP1)				Sou	rce: IPE1	138-01				
Turbidity	0.530	1.0	0.040	NTU		0.52			2	20	J
Batch: 6E15050 Extracted: 05/15/06	-										
Blank Analyzed: 05/15/2006 (6E15050-Bl	L K1)										
Oil & Grease	ND	5.0	0.94	mg/l							
LCS Analyzed: 05/15/2006 (6E15050-BS1	l)										M-NR1
Oil & Grease	18.6	5.0	0.94	mg/l	20.0		93	65-120			
LCS Dup Analyzed: 05/15/2006 (6E15050)-BSD1)										
Oil & Grease	18.5	5.0	0.94	mg/l	20.0		92	65-120	1	20	
Batch: 6E17074 Extracted: 05/17/06	_										
Blank Analyzed: 05/17/2006 (6E17074-Bl	L K1)										
Total Dissolved Solids	ND	10	10	mg/l							



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

		Reporting			Spike	Source		%REC		RPD	Data
Analyte	Result	Limit	MDL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifiers
Batch: 6E17074 Extracted: 05/17/06	-										
LCS Analyzed: 05/17/2006 (6E17074-BS)	l)										
Total Dissolved Solids	988	10	10	mg/l	1000		99	90-110			
Duplicate Analyzed: 05/17/2006 (6E1707-	4-DUP1)				Sou	rce: IPE1	132-01				
Total Dissolved Solids	1040	10	10	mg/l		1000			4	10	
Batch: 6E17079 Extracted: 05/17/06	_										
Duplicate Analyzed: 05/17/2006 (6E1707	9-DUP1)				Sou	rce: IPE1	134-01				
Specific Conductance	1110	1.0	1.0	umhos/cm		1100			1	5	
Batch: 6E17105 Extracted: 05/17/06	-										
Blank Analyzed: 05/17/2006 (6E17105-Bl	LK1)										
Total Suspended Solids	ND	10	10	mg/l							
LCS Analyzed: 05/17/2006 (6E17105-BS)	l)										
Total Suspended Solids	983	10	10	mg/l	1000		98	85-115			
Duplicate Analyzed: 05/17/2006 (6E1710)	5-DUP1)				Sou	rce: IPE1	262-01				
Total Suspended Solids	89.0	10	10	mg/l		95			7	10	
Batch: 6E19058 Extracted: 05/19/06	_										
Blank Analyzed: 05/19/2006 (6E19058-Bl	LK1)										
Perchlorate	ND	4.0	0.80	ug/l							



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

		Reporting			Spike	Source		%REC		RPD	Data
Analyte	Result	Limit	MDL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifiers
Batch: 6E19058 Extracted: 0	5/19/06										
LCS Analyzed: 05/19/2006 (6E19	9058-BS1)										
Perchlorate	48.4	4.0	0.80	ug/l	50.0		97	85-115			
Matrix Spike Analyzed: 05/19/20	006 (6E19058-MS1)				Sou	irce: IPE	1211-04				
Perchlorate	54.7	4.0	0.80	ug/l	50.0	1.5	106	80-120			
Matrix Spike Dup Analyzed: 05/	19/2006 (6E19058-M	(SD1)			Sou	irce: IPE	1211-04				
Perchlorate	50.4	4.0	0.80	ug/l	50.0	1.5	98	80-120	8	20	
Batch: 6E19092 Extracted: 0	5/19/06										
Blank Analyzed: 05/19/2006 (6E)	19092-BLK1)										
Ammonia-N (Distilled)	ND	0.50	0.30	mg/l							
LCS Analyzed: 05/19/2006 (6E19	9092-BS1)										
Ammonia-N (Distilled)	10.9	0.50	0.30	mg/l	10.0		109	80-115			
Matrix Spike Analyzed: 05/19/20	006 (6E19092-MS1)				Sou	irce: IPE	1134-01				
Ammonia-N (Distilled)	11.5	0.50	0.30	mg/l	10.0	0.84	107	70-120			
Matrix Spike Dup Analyzed: 05/	19/2006 (6E19092-M	(SD1)			Sou	irce: IPE	1134-01				
Ammonia-N (Distilled)	11.5	0.50	0.30	mg/l	10.0	0.84	107	70-120	0	15	



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.

						Compliance
LabNumber	Analysis	Analyte	Units	Result	MRL	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
IPE1134-01	Lead-200.8	Lead	ug/l	12	1.0	2.60
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
IPE1134-01RE1	Lead-200.8	Lead	ug/l	6.20	1.0	2.60
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



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

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.
 M1 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



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	Х	Х
EPA 160.2	Water	Х	Х
EPA 160.5	Water	Х	Х
EPA 180.1	Water	Х	Х
EPA 200.7	Water	Х	Х
EPA 200.8	Water	Х	Х
EPA 245.1	Water	Х	Х
EPA 300.0	Water	Х	Х
EPA 314.0	Water	N/A	Х
EPA 335.2	Water	Х	Х
EPA 350.2	Water		Х
EPA 405.1	Water	Х	Х
EPA 413.1	Water	Х	Х
EPA 608	Water	Х	Х
EPA 624	Water	Х	Х
EPA 625	Water	Х	Х
SM2540C	Water	Х	Х
SM5540-C	Water	Х	Х

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

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

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NPDES - 1049



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. Thank you for choosing Alta as part of your analytical support team.

Sincerely,

Marille More

Martha M. Maier Director of HRMS Services



Aita 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: 5/13/2006

Alta Lab. ID

Client Sample ID

27705-001

IPE1134-01

SECTION II

Sample Size: 1.00 I. Date FAurected: 22 -May-06 Date FAurected: 22 -May-06 Date FAurected: 22 -May-06 Date FAurected: 23.73 -PCDD Dut a EMPC b Qualifiers Date FAurected: 23.73 -PCDD Dut a EMPC b Qualifiers IS $2.3.73$ -PCDD ND 0.00000162 IS II III III III $IIII$ $IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII$		
Analyte Conc. (ug/L) DL EMPC Qualifiers IS 2.3.7,8-TCDD ND 0.0000162 IS	Analyzed DB-5: 23-May-06	Date Analyzed DB-225:
2.3.7.8-TCDD ND 0.00000162 IS 1.2.3.7.8-PECDD ND 0.00000133 IS 1.2.3.7.8-PECDD ND 0.00000159 IS 1.2.3.4.7.8-HxCDD ND 0.00000255 IS 1.2.3.4.7.8-HxCDD ND 0.00000256 IS 1.2.3.4.6.7.8-HxCDD ND 0.00000256 IS 1.2.3.4.6.7.8-HxCDD ND 0.00000265 IS 1.2.3.4.6.7.8-HxCDD ND 0.00000265 IS 1.2.3.4.6.7.8-HyCDD ND 0.00000103 IS 2.3.7.8-TCDF ND 0.00000103 IS 2.3.4.7.8-PeCDF ND 0.00000103 IS 2.3.4.7.8-HxCDF ND 0.00000103 IS 2.3.4.7.8-HxCDF ND 0.00000103 IS 1.2.3.4.6.7.8-HxCDF ND 0.000000221 IS 2.3.4.6.7.8-HxCDF ND 0.000000221 IS 2.3.4.6.7.8-HxCDF ND 0.000000223 IS 1.2.3.4.6.7.8-HyCDF ND 0.000000223 IS 1.2.3.4.6.7.8-HyCDF ND 0.00000009 IS	Labeled Standard	%R LCL-UCL ^d (
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[1,2,3,4,7,8-HxCDD ND 0.0000259 [1,2,3,4,7,8-HxCDD ND 0.0000255 [1,2,3,4,6,7,8-HyCDD ND 0.00000265 [1,2,3,4,6,7,8-HpCDD ND 0.00000265 [1,2,3,4,6,7,8-HpCDD ND 0.00000265 [1,2,3,7,8-FeCDF ND 0.00000103 [1,2,3,7,8-FeCDF ND 0.00000103 [1,2,3,4,7,8-FeCDF ND 0.00000059 [1,2,3,4,7,8-HxCDF ND 0.00000059 [1,2,3,4,7,8-HxCDF ND 0.00000059 [1,2,3,4,7,8-HxCDF ND 0.00000059 [1,2,3,4,7,8-HxCDF ND 0.00000053 [1,2,3,4,7,8-HxCDF ND 0.00000053 [1,2,3,4,7,8-HxCDF ND 0.00000053 [1,2,3,4,7,8,9-HpCDF ND 0.00000053 [1,2,3,4,6,7,8-HpCDF ND 0.00000053 [1,2,3,4,6,7,8-HpCDF ND 0.00000093 [1,2,3,4,6	13C-1,2,3,7,8-PeCDD	70.7 25 - 181
1.2.3.6.7.8-HxCDD ND 0.00000275 1.2.3.4.6.7.8-HxCDD ND 0.00000265 1.2.3.4.6.7.8-HpCDD ND 0.00000265 0.2.3.7.8-FCDF ND 0.00000265 0.2.3.7.8-FCDF ND 0.00000076 2.3.7.8-FCDF ND 0.00000103 1.2.3.7.8-FCDF ND 0.00000103 1.2.3.7.8-FCDF ND 0.00000103 1.2.3.7.8-FCDF ND 0.00000021 2.3.4.7.8-HxCDF ND 0.000000599 1.2.3.4.7.8-HxCDF ND 0.000000612 2.3.4.6,7.8-HxCDF ND 0.000000599 1.2.3.4,6,7.8-HxCDF ND 0.000000538 1.2.3,4,6,7.8-HxCDF ND 0.000000528 1.2.3,4,6,7,8-HxCDF ND 0.000000538 1.2.3,4,6,7,8-HpCDF ND 0.00000197 2.3,4,6,7,8-HpCDF ND 0.000000538 1.2.3,4,7,8,9-HpCDF ND 0.00000197 2.3,4,6,7,8-HpCDF ND 0.00000197 1.2.3,4,7,8,9-HpCDF ND	13C-1,2,3,4,7,8-HxCDD	74.1 32 - 141
1,2,3,7,8,9,HxCDD ND 0.0000265 1,2,3,4,6,7,8,HpCDD ND 0.00000265 2,3,7,8,TCDF ND 0.00000056 2,3,7,8,PeCDF ND 0.00000103 1,2,3,7,8,PeCDF ND 0.00000021 2,3,4,7,8-PeCDF ND 0.00000021 2,3,4,7,8-PeCDF ND 0.00000021 2,3,4,7,8-PeCDF ND 0.000000599 1,2,3,4,7,8-PeCDF ND 0.000000599 1,2,3,4,5,7,8-HxCDF ND 0.000000612 2,3,4,6,7,8-HxCDF ND 0.000000612 1,2,3,4,6,7,8-HxCDF ND 0.000000538 1,2,3,4,6,7,8-HpCDF ND 0.000000612 2,3,4,6,7,8-HpCDF ND 0.00000197 1,2,3,4,5,8,9-HpCDF ND 0.00000197 1,2,3,4,6,7,8,-HpCDF ND 0.00000197 <tr< td=""><td>13C-1,2,3,6,7,8-HxCDD</td><td>68.4 28 - 130</td></tr<>	13C-1,2,3,6,7,8-HxCDD	68.4 28 - 130
1,2,3,4,6,7,8-HpCDD ND 0.0000265 0,0000676 0.00000676 2,3,7,8-FCDF ND 0.00000103 1,2,3,7,8-PeCDF ND 0.00000221 2,3,4,7,8-PeCDF ND 0.00000599 1,2,3,4,7,8-PeCDF ND 0.000000599 1,2,3,4,7,8-PeCDF ND 0.000000599 1,2,3,4,7,8-PeCDF ND 0.000000599 1,2,3,4,7,8-PeCDF ND 0.00000059 1,2,3,4,7,8-PhCDF ND 0.00000058 1,2,3,4,5,7,8-PhCDF ND 0.00000012 1,2,3,4,6,7,8-HxCDF ND 0.00000058 1,2,3,4,	13C-1,2,3,4,6,7,8-HpCDD	65.8 23 - 140
OCDD ND 0.0000676 2.3,7,8-TCDF ND 0.0000103 2.3,7,8-TCDF ND 0.0000101 1,2,3,7,8-PeCDF ND 0.0000021 2,3,4,7,8-PeCDF ND 0.00000191 1,2,3,4,7,8-PeCDF ND 0.00000599 1,2,3,4,7,8-PixCDF ND 0.00000612 1,2,3,4,6,7,8-HixCDF ND 0.00000612 1,2,3,4,6,7,8-HixCDF ND 0.00000058 1,2,3,4,6,7,8-HixCDF ND 0.000000909 1,2,3,4,6,7,8-HixCDF ND 0.00000028 1,2,3,4,6,7,8-HixCDF ND 0.00000038 1,2,3,4,6,7,8-HixCDF ND 0.00000038 1,2,3,4,6,7,8-HixCDF ND 0.00000180 1,2,3,4,6,7,8-HixCDF ND 0.00000180 1,2,3,4,6,7,8-HixCDF ND 0.00000180 1,2,3,4,6,7,8-HixCDF ND 0.00000180 1,2,3,4,6,7,8,9-HixCDF ND 0.00000130 1,2,3,4,6,7,8,9-HixCDF ND 0.00000130 1,2,3,4,6,7,8,9-HixCDF ND 0.00000033 <td>13C-0CDD</td> <td>54.4 17 - 157</td>	13C-0CDD	54.4 17 - 157
2,3,7,8-TCDF ND 0.00000103 1,2,3,7,8-PeCDF ND 0.0000021 2,3,4,7,8-PeCDF ND 0.00000191 2,3,4,7,8-PeCDF ND 0.000000599 1,2,3,4,7,8-HxCDF ND 0.000000599 1,2,3,6,7,8-HxCDF ND 0.000000528 1,2,3,4,6,7,8-HxCDF ND 0.000000528 1,2,3,4,6,7,8-HxCDF ND 0.000000528 1,2,3,4,6,7,8-HpCDF ND 0.00000099 1,2,3,4,6,7,8-HpCDF ND 0.00000197 2,3,4,6,7,8-HpCDF ND 0.00000180 1,2,3,4,6,7,8-HpCDF ND 0.00000197 2,3,4,6,7,8-HpCDF ND 0.00000180 1,2,3,4,6,7,8-HpCDF ND 0.000000638 1,2,3,4,6,7,8-HpCDF ND 0.000000628 <td>13C-2,3,7,8-TCDF</td> <td>79.9 24 - 169</td>	13C-2,3,7,8-TCDF	79.9 24 - 169
1,2,3,7,8-PeCDF ND 0.00000221 2,3,4,7,8-PeCDF ND 0.00000191 1,2,3,4,7,8-HxCDF ND 0.000000599 1,2,3,4,7,8-HxCDF ND 0.000000612 1,2,3,4,7,8-HxCDF ND 0.000000612 2,3,4,6,7,8-HxCDF ND 0.000000628 1,2,3,4,6,7,8-HpCDF ND 0.000000909 1,2,3,4,6,7,8-HpCDF ND 0.00000197 2,3,4,6,7,8-HpCDF ND 0.00000197 1,2,3,4,7,8,9-HpCDF ND 0.00000137 1,2,3,4,7,8,9-HpCDF ND 0.00000137 1,2,3,4,7,8,9-HpCDF ND 0.00000133 1,2,3,4,7,8,9-HpCDF ND 0.00000133 1,2,3,4,7,8,9-HpCDF ND 0.00000162 1,2,3,4,7,8,9-HpCDF ND 0.00000163 1,2,3,4,7,8,9-HpCDF ND 0.00000162 1,2,3,4,7,8,9-HpCDF ND 0.000000162 <td>13C-1,2,3,7,8-PeCDF</td> <td>68.4 24 - 185</td>	13C-1,2,3,7,8-PeCDF	68.4 24 - 185
2,3,4,7,8-PeCDF ND 0.00000191 1,2,3,4,7,8-HxCDF ND 0.000006599 1,2,3,4,7,8-HxCDF ND 0.00000612 2,3,4,6,7,8-HxCDF ND 0.000000628 1,2,3,4,6,7,8-HxCDF ND 0.000000628 1,2,3,4,6,7,8-HxCDF ND 0.000000909 1,2,3,4,6,7,8-HpCDF ND 0.00000180 1,2,3,4,7,8,9-HpCDF ND 0.00000197 1,2,3,4,7,8,9-HpCDF ND 0.00000162 1,2,3,4,7,8,9-HpCDF ND 0.000000162 1,0,10,10 ND 0.000000264	13C-2,3,4,7,8-PeCDF	69.7 21 - 178
1,2,3,4,7,8-HxCDF ND 0.00000599 1,2,3,6,7,8-HxCDF ND 0.00000612 2,3,4,6,7,8-HxCDF ND 0.000000628 2,3,4,6,7,8-HxCDF ND 0.000000909 1,2,3,7,8,9-HxCDF ND 0.000000909 1,2,3,4,6,7,8-HpCDF ND 0.00000197 1,2,3,4,6,7,8-HpCDF ND 0.00000197 1,2,3,4,6,7,8-HpCDF ND 0.00000197 1,2,3,4,7,8,9-HpCDF ND 0.00000197 1,2,3,4,7,8,9-HpCDF ND 0.00000197 1,2,3,4,7,8,9-HpCDF ND 0.00000197 1,2,3,4,7,8,9-HpCDF ND 0.00000137 1,2,3,4,7,8,9-HpCDF ND 0.00000132 1,2,3,4,7,8,9-HpCDF ND 0.00000133 1,2,3,4,7,8,9-HpCDF ND 0.00000162 1,2,3,4,7,8,9-HpCDF ND 0.000000264 1,2,3,4,7,8,9-HpCDF ND 0.000002	13C-1,2,3,4,7,8-HxCDF	73.1 26 - 152
1,2,3,6,7,8-HxCDF ND 0.00000612 2,3,4,6,7,8-HxCDF ND 0.00000628 1,2,3,4,6,7,8-HpCDF ND 0.00000909 1,2,3,4,6,7,8-HpCDF ND 0.00000197 1,2,3,4,6,7,8-HpCDF ND 0.00000197 1,2,3,4,7,8,9-HpCDF ND 0.00000197 1,2,3,4,7,8,9-HpCDF ND 0.00000197 1,2,3,4,7,8,9-HpCDF ND 0.00000137 1,2,3,4,7,8,9-HpCDF ND 0.00000137 1,2,3,4,7,8,9-HpCDF ND 0.00000137 1,2,3,4,7,8,9-HpCDF ND 0.00000137 1,2,3,4,7,8,9-HpCDF ND 0.00000162 1,2,3,4,7,8,9-HpCDF ND 0.00000162 1,2,3,4,7,8,9-HpCDF ND 0.00000162 1,2,3,4,7,8,9-HpCDF ND 0.00000162 1,0tal FGDD ND 0.00000162 a San Total PeCDD ND 0.00000264 c. Me Total HxCDD ND 0.00000264 c. Me	13C-1,2,3,6,7,8-HxCDF	71.2 26 - 123
2,3,4,6,7,8-HxCDF ND 0.00000628 1,2,3,7,8,9-HxCDF ND 0.00000909 1,2,3,7,8,9-HpCDF ND 0.00000180 1,2,3,4,5,7,8,9-HpCDF ND 0.00000197 1,2,3,4,7,8,9-HpCDF ND 0.00000197 0,2,3,4,7,8,9-HpCDF ND 0.00000197 1,2,3,4,7,8,9-HpCDF ND 0.00000197 1,2,3,4,7,8,9-HpCDF ND 0.00000132 1,2,3,4,7,8,9-HpCDF ND 0.00000162 1,2,3,4,7,8,9-HpCDF ND 0.00000162 1,2,3,4,7,8,9-HpCDF ND 0.00000162	13C-2,3,4,6,7,8-HxCDF	71.8 28 - 136
1,2,3,7,8,9-HxCDF ND 0.00000909 1,2,3,4,6,7,8-HpCDF ND 0.00000180 1,2,3,4,7,8,9-HpCDF ND 0.00000197 1,2,3,4,7,8,9-HpCDF ND 0.00000197 0,2,3,4,7,8,9-HpCDF ND 0.00000197 1,2,3,4,7,8,9-HpCDF ND 0.00000132 OCDF ND 0.00000532 Total TCDD ND 0.00000162 a. San Total PCDD ND 0.00000162 a. San Total HxCDD ND 0.00000162 a. San Total HxCDD ND 0.00000264 c. Me	13C-1,2,3,7,8,9-HxCDF	69.6 29 - 147
1,2,3,4,6,7,8-HpCDF ND 0.00000180 CRS 1,2,3,4,7,8,9-HpCDF ND 0.00000197 CRS OCDF ND 0.00000532 CRS Totals ND 0.00000162 a San Total TCDD ND 0.00000162 a San Total PCDD ND 0.00000162 a CRS Total HxCDD ND 0.00000162 a CHe Total HxCDD ND 0.00000264 b. Est	13C-1,2,3,4,6,7,8-HpCDF	61.5 28 - 143
1,2,3,4,7,8,9-HpCDF ND 0.00000197 CRS OCDF ND 0.00000532 CRS Totals ND 0.00000162 a. sam Total TCDD ND 0.00000162 a. sam Total PeCDD ND 0.00000162 a. sam Total HxCDD ND 0.00000264 b. Est Total HpCDD ND 0.00000265 d. Londom	13C-1,2,3,4,7,8,9-HpCDF	67.1 26 - 138
OCDF ND 0.0000532 CRS Total Total CDD 0.00000162 a. San Total TCDD ND 0.00000162 a. San a. San Total TCDD ND 0.00000162 a. San b. Est Total HxCDD ND 0.00000264 b. Lot c. Me	13C-OCDF	56.2 17 - 157
Totals Foot Totals ND 0.00000162 a. San Total TCDD ND 0.00000133 b. Est Total PeCDD ND 0.00000133 b. Est Total HxCDD ND 0.00000264 c. Me Total HpCDD ND 0.00000265 d. Lov	37CI-2,3,7,8-TCDD	80.8 35 - 197
Total TCDD ND 0.00000162 a. San Total PeCDD ND 0.00000133 b. Est Total HxCDD ND 0.00000264 c. Me Total HpCDD ND 0.00000265 d. Lov	notes	
Total PeCDD ND 0.00000133 b. Est Total HxCDD ND 0.00000264 c. Me Total HpCDD ND 0.00000265 d. Lov	nple specific estimated detection limit.	
Total HxCDD ND 0.00000264 c. Me Total HpCDD 0.00000265 d. Lov	imated maximum possible concentration.	
Total HpCDD Total ApCDD Total ApCDD Total ApCDD Total ApCDD Total AppCDD Total AppCD Total A	thod detection limit.	
	wer control limit - upper control limit.	
Total TCDF ND 0.00000103		
Total PeCDF ND 0.00000205		
Total HxCDF ND 0.00000674		
Total HpCDF ND 0.00000188		

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OPR Results						EPA	Method 1613	
Matrix: Aqueous		Ö	Batch No.:	8038	Lab Sample. 0-OPR001			
Sample Size 1.00 L		Dat	te Extracted:	22-May-06	Date Analyzed DB-5: 23-May-06	Date Analyzc	d DB-225: NA	
Analyte	Spike C	onc. Co	nc. (ng/mL)	OPR Limits	Labeled Standard	%R	TCL-UCL	
2,3,7,8-TCDD	10	0.	10.3	6.7 - 15.8	<u>IS</u> 13C-2,3,7,8-TCDD	69.0	25 - 164	
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-0CDD	50.7	17 - 157	
ocdD .	10	00 S	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	0.0	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	0.0	52.0	42 - 65	13C-2,3,4,6,7,8-HxCDF	68.0	28 - 136	
2,3,4,6,7,8-HxCDF	50	0.0	49.9	35 - 78	13C-1,2,3,7,8,9-HxCDF	63.7	29 - 147	
1,2,3,7,8,9-HxCDF	50	0.0	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	0.0	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	0.0	51.5	39 - 69	13C-OCDF	53.3	17 - 157	
OCDF	1(00	105	63 - 170	CRS 37CI-2,3,7,8-TCDD	84.6	35 - 197	
Analyst: MAS					Approved By: William J. L	uksemburg 24-	May-2006 11:17	

Analyst: MAS

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Sample ID: IPE11	34-01						EPA	Method 1613
Client Data Del M Name: Del M Project IPE11 Date Collected 1322 Time Collected: 1322	ar Analytical, Irvine 34 y-06		Sample Data Matrix: Sample Size:	Aqueous 0.999 L	Laboratory Data Lab Sample: 2770 QC Batch No 98038 Date Analyzed DB-5: 24-N	05-001 8 May-06	Date Received: Date Fistracted Date Analyzed DB-225.	13-May-06 22-May-06 NA
Analyte C	onc. (ug/L)	DF a	EMPC ^b	Qualifiers	Labeled Standard		%R LCL-UCL ^d	Qualifiers
2.3.7.8-TCDD	(IN	0.00000	16		<u>IS</u> 13C-2,3.7,8-TCDD		81.1 25 - 164	
1.2.3.7.8-PeCDD	ND	0.0000000	11		13C-1,2,3,7,8-PeCDD		72.9 25 - 181	
1.2.3.4.7.8-HxCDD	ND	0.000002	23		13C-1,2,3,4,7,8-HxCDE	0	83.9 32 - 141	
1,2,3,6,7,8-HxCDD	ND	0.000002	61		13C-1,2,3,6,7,8-HxCDD	0	75.4 28 - 130	
1,2,3,7,8,9-HxCDD	ND	0.000002	2		13C-1,2,3,4,6,7,8-HpCD	CD	74.7 23 - 140	
1,2,3,4,6,7,8-HpCDD	ND	0.0000047	76		13C-OCDD		66.8 17 - 157	
OCDD	0.00000395			ŗ	13C-2,3,7,8-TCDF		82.1 24 - 169	
2,3,7,8-TCDF	ND	0.000001	73		13C-1,2,3,7,8-PeCDF		73.2 24 - 185	
1,2,3,7,8-PeCDF	ND	0.000001	19		13C-2,3,4,7,8-PeCDF		72.2 21 - 178	
2,3,4,7.8-PeCDF	ND	0.0000014	16		13C-1,2,3,4,7,8-HxCDF	[7]	85.7 26 - 152	
1,2,3,4,7,8-HxCDF	ND	0.000000.0	779	а. Т	13C-1,2,3,6,7,8-HxCDF	TT	79.6 26 - 123	
1,2,3,6,7,8-HxCDF	ND	.000000.0	735		13C-2,3,4,6,7,8-HxCDF	17	79.6 28 - 136	
2,3,4,6,7,8-HxCDF	ND	0.000000	832		13C-1,2,3,7,8,9-HxCDF		78.9 29 - 147	
1,2,3,7,8,9-HxCDF	ND	0.000001	12		13C-1,2,3,4,6,7,8-HpCI	ЭF	76.9 28 - 143	
1,2,3,4,6,7,8-HpCDF	ND	0.000001	21		13C-1,2,3,4,7,8,9-HpCE	ЭF	75.9 26 - 138	
1,2,3,4,7,8,9-HpCDF	ND	0.000001	35		13C-OCDF		72.6 17 - 157	
OCDF	ND	0.000002	81		CRS 37CI-2,3,7,8-TCDD		89.3 35 - 197	
Totals					Footnotes			
Total TCDD	ND	0.000001	16		a. Sample specific estimated detection	on limit.		
Total PeCDD	QN	0.000000	917		b. Estimated maximum possible cond	centration.		
Total HxCDD	ND	0.000002	18		c. Method detection limit.			
Total HpCDD		0.000004	76		d. Lower control limit - upper contro	ol limit.		
Total TCDF	ND	0.000001	73					
Total PeCDF	ND CN	0.00000	48					
Total HxCDF	ND	0.00000	852					
Total HpCDF	ND	0.000001	28					
Analyst:					Approved By: Willi	iam J. Luks	emburg 24-May-20	06 11:17

Approved By:

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APPENDIX

DATA QUALIFIERS & ABBREVIATIONS

В	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.
Н	The signal-to-noise ratio is greater than 10:1.
	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	E 8777 7
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



2520 E. Sunset Rd., Suite #3, Las Veges, NV 89120 Ph (702) 798-3620 Fax (702) 798-3621

SUBCONTRACT ORDER - PROJECT # IPE1134

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

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 Nofication
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 (IPE1134-01	G)	
1 L Amber (IPE1134-01	H)	

		SAMPI	LE INTEGRITY:		
All containers intact:	Yes 🔲 No Yes 🔲 No	Sample labels/COC agree Samples Preserved Proper	: DY Yes D No hy: DY Yes D No	Samples Received On Ice:: Samples Received at (temp):	Yes No C. 20
Eduarde Thy Released By	S,	1:2/156 Date Time	Muchol Id	Ment 5/13/ Baie	06 1018 Time
Released By Project 27705	I	Date Time	Received By	Date	Time Page 10 of 231 Page 16 cf 231

SAMPLE LOG-IN CHECKLIST

Alta Project #: 27705								
Samples Arrival:	Date/Time 5/13/06	10/0	Initials	5: M	Locati Shelf/	ion:	. 2	
Date/TimeInitials:Location: $UR-2$ Logged In: $5/15/06$ 1545FEBShelf/Rack: $A-2$								
Delivered By:	FedEx	UPS	Cal	DHL	D	Hand elivered	Oth	ner
Preservation:	(Ice)	В	lue Ice	Dry I	се	N	one	
Temp °C 0.2° Time: 1945 Thermometer ID: DT-20								
					mmm	VER	NO	NIA
						VES	RU	NA
Adequate Sample	volume Rece						1	

Adequate Sample Volume Received?								
Holding Time Acceptable?								
Shipping Container(s) Intact?					V,			
Shipping Custody Seals Intact?					$\frac{V}{V}$			
Shipping Documentation Present?					<u></u>			
Airbill Trk # 79	27	4081 0	760			ļ		
Sample Container Intact?					$\overline{\mathcal{V}}$	<u> </u>		
Sample Custody Seals Intaci?								
Chain of Custody / Sample Documentation Present?					V	<u> </u>		
COC Anomaly/Sample Acceptance Form completed?					<u></u>			
It Oblesizeted or Drinking Water Samples Acceptable Preservation?							4	
If Chlorinated or Drinking Water Samples, Acceptable (1956) Vater Samples, Accepta					nple ainer	No	one	
Shipping Container	Alta	Client	Retain	Ret	urn	Dis	oose	

Comments:

I PE 1134

• *

APPENDIX G

Section 44

Outfall 002, May 11, 2006

MECX Data Validation Reports

ADO	CONTRACT COMPL	JANCE SCREENING FORM FOR HARDCOPY DATA
VIEU	CX, LLC	Package ID B4DF103
226	0 East Vassar Drive	Task Order <u>1261.001D.01</u>
Suite	e 500	SDG No. IPE1134
ake	ewood, CO 80226	No. of Analyses 1
	Laboratory Alta Analy	tical Date: July 24, 2006
	Reviewer E. Wessling	g Reviewer's Signature
	Analysis/Method Dioxins/Fu	rans tablet with
		Phi a
CT	TION ITEMS ^a	
	Case Narrative	
	Deficiencies	
2.	Out of Scope	
	Analyses	
3.	Analyses Not Conducted	
4	Missing Hardcony	
4.	Deliverables	
	Denverables	
5.	Incorrect Hardcopy	
	Deliverables	
	Demetricite	
6.	Deviations from Analysis	Qualifications were assigned for the following:
	Protocol, e.g.,	- the results between the RL and the MDL were estimated
	Holding Times	
	GC/MS Tune/Inst. Performance	
	Calibration	
	Method blanks	
	Method blanks Surrogates	
	Method blanks Surrogates Matrix Spike/Dup LCS	
	Method blanks Surrogates Matrix Spike/Dup LCS Field OC	
	Method blanks Surrogates Matrix Spike/Dup LCS Field QC Internal Standard Performance	
	Method blanks Surrogates Matrix Spike/Dup LCS Field QC Internal Standard Performance Compound Identification	
	Method blanks Surrogates Matrix Spike/Dup LCS Field QC Internal Standard Performance Compound Identification Ouantitation	
	Method blanks Surrogates Matrix Spike/Dup LCS Field QC Internal Standard Performance Compound Identification Quantitation System Performance	
<u>co</u>	Method blanks Surrogates Matrix Spike/Dup LCS Field QC Internal Standard Performance Compound Identification Quantitation System Performance	
СО	Method blanks Surrogates Matrix Spike/Dup LCS Field QC Internal Standard Performance Compound Identification Quantitation System Performance	
co	Method blanks Surrogates Matrix Spike/Dup LCS Field QC Internal Standard Performance Compound Identification Quantitation System Performance	
C0	Method blanks Surrogates Matrix Spike/Dup LCS Field QC Internal Standard Performance Compound Identification Quantitation System Performance	



DATA VALIDATION REPORT

NPDES Monitoring Program Routine Outfall 002

ANALYSIS: DIOXINS/FURANS SAMPLE DELIVERY GROUP: IPE1134

Prepared by

MEC^X, 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[×]* 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.

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

Table 1. Sample Identification

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 $4^{\circ}C \pm 2^{\circ}C$. 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.

	Project:	NPDES
	SDG:	IPE1134
DATA VALIDATION REPORT	Analysis:	D/F

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.

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	Project:	NPDES
	SDG:	IPE1134
DATA VALIDATION REPORT	Analysis:	D/F

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.

	Sample ID: IPE1134-01 Outload OOZ EPA Method 1613										
and	Client Data Name: Del Mar Analytical, Irvine Project: IPE1134 Date Collected: 11-May-06 Time Collected: 1322		p	Sample Data Matrix: Aqueous Sample Size: 0.999 L	Aqueous 0.999 L	Laboratory Data Lab Sample: 27705-001 QC Batch No.: 8038 Date Analyzed DB-5: 24-May-06		Date Received: Date Extracted: Date Analyzed DB-225:		13-May-06 22-May-06 NA	
00	Analyte	Conc. (ug/L)	DL ^a	EMPC ^b	Qualifiers		Labeled Stand	ard	%R	LCL-UCL ^d	Qualifiers
	2,3,7,8-TCDD	ND	0.000001	91		IS	13C-2,3,7,8-TCI	DD	81.1	25 - 164	
	1,2,3,7,8-PeCDD	ND	0.000000	917			13C-1,2,3,7,8-Pe	CDD	72.9	25 - 181	
	1,2,3,4,7,8-HxCDD	ND	0.000002	23			13C-1,2,3,4,7,8-	HxCDD	83.9	32 - 141	
	1,2,3,6,7,8-HxCDD	ND	0.000002	19			13C-1,2,3,6,7,8-	HxCDD	75.4	28 - 130	
	1,2,3,7,8,9-HxCDD	ND	0.000002	13			13C-1,2,3,4,6,7,	8-HpCDD	74.7	23 - 140	
	1,2,3,4,6,7,8-HpCDD	ND	0.000004	76			13C-OCDD		66.8	17 - 157	
Phys	OCDD	0.00000395			J		13C-2,3,7,8-TCI	DF	82.1	24 - 169	
	2,3,7,8-TCDF	ND	0.00000173			13C-1,2,3,7,8-Pe	CDF	73.2	24 - 185		
	1,2,3,7,8-PeCDF	ND	0.000001	49			13C-2,3,4,7,8-Pe	CDF	72.2	21 - 178	
	2,3,4,7,8-PeCDF	ND	0.000001	46			13C-1,2,3,4,7,8-1	HxCDF	85.7	26 - 152	
	1,2,3,4,7,8-HxCDF	ND	0.000000	779			13C-1,2,3,6,7,8-1	HxCDF	79.6	26 - 123	
	1,2,3,6,7,8-HxCDF	ND	0.000000	735			13C-2,3,4,6,7,8-1	HxCDF	79.6	28 - 136	
	2,3,4,6,7,8-HxCDF	ND	0.000000	832		100	13C-1,2,3,7,8,9-1	HxCDF	78.9	29 - 147	
	1,2,3,7,8,9-HxCDF	ND	0.000001	12			13C-1,2,3,4,6,7,8	-HpCDF	76.9	28 - 143	
	1,2,3,4,6,7,8-HpCDF	ND	0.0000012	21			13C-1,2,3,4,7,8,9	-HpCDF	75.9	26 - 138	
	1,2,3,4,7,8,9-HpCDF	ND	0.0000013	35			13C-OCDF		72.6	17 - 157	
	OCDF	ND	0.0000028	31		CRS	37Cl-2,3,7,8-TCI	DD	89.3	35 - 197	
	Totals					Foo	otnotes				
	Total TCDD	ND	0.0000019	01		a. Sa	mple specific estimated	detection limit.			
	Total PeCDD	ND	0.0000009	917		b. Es	timated maximum poss	ible concentration.			
	Total HxCDD	ND	0.0000021	8		c. M	ethod detection limit.				
	Total HpCDD	ND	0.0000047	6		d. Lo	wer control limit - uppe	r control limit.			
	Total TCDF	ND	0.0000017	3							
	Total PeCDF	ND	0.0000014	8							
	Total HxCDF	ND	0.000008	52							
	Total HpCDF	ND	0.0000012	8	2019 - B. 136 - S.	Spece					11. 12. 12.

Analyst:

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

Project 27705

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Approved By:

CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

MEC ^X	Package ID: B4VO71
12269 East Vassar Drive	Task Order: 1261.001D.01
Aurora, CO 80014	SDG No.: IPE1134
	No. of Analyses: 2
Laboratory: Del Mar Analytical-Irvine	Date: July 23, 2006
Reviewer: L. Calvin	Reviewer's Signature
Analysis/Method: Volatiles by Method 624	V. Meeks for L. Calvin

ام		
	Case Narrative	
	Deficiencies	
2.	Out of Scope Analyses	
3.	Analyses Not Conducted	
4.	Missing Hardcopy	
	Deliverables	
5.	Incorrect Hardcopy	
	Deliverables	
6.	Deviations from Analysis	Qualifications were assigned for continuing calibration %D outliers.
	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	
CC	MMENTS ^b	

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DATA VALIDATION REPORT

NPDES Monitoring Program Routine Outfall 002

ANALYSIS: VOLATILES

SAMPLE DELIVERY GROUP: IPE1134

Prepared by

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

	Project:	NPDES
	SDG:	IPE1134
DATA VALIDATION REPORT	Analysis:	VOCs

1. INTRODUCTION

Task Order Title:	NPDES
MEC ^X 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^{\times} 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.

1
	Project:	NPDES
	SDG:	IPE1134
DATA VALIDATION REPORT	Analysis:	VOCs

Table 1. Sample Identification

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

	Project:	NPDES
	SDG:	IPE1134
DATA VALIDATION REPORT	Analysis:	VOCs

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 $\pm 2^{\circ}$ 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 ≥ 0.05 , and the %RSDs were $\leq 35\%$ or r² values ≥ 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.

	Project:	NPDES
	SDG:	IPE1134
DATA VALIDATION REPORT	Analysis:	VOCs

2.5 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

One blank spike (6E21009-BS1) was analyzed with this SDG. The recovery for 1,2dichloroethane 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 gualifications were required.

2.7 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

MS/MSD analyses were performed on site sample Outfall 002. The recovery for 1,2dichloroethane 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.

	Project:	NPDES
	SDG:	IPE1134
DATA VALIDATION REPORT	Analysis:	VOCs

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 ±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.

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



Project ID: Routine Outfall 002

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

Report Number: IPE1134

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

PURGEABLES BY GC/MS (EPA 624)

			MDL	Reporting	Sample	Dilution	Date	Date	Data	
Analyte	Method	Batch	Limit	Limit	Result	Factor	Extracted	Analyzed	Qualifier	s
G L. ID. IDE1124 01 (Outfoll 002 Wate									Ker	qual
Sample ID: IPE1134-01 (Outlan 002 - Wate	r)								Qual	(ode
Reporting Units: ug/1	EPA 624	6E21009	0.28	2.0	ND	1	05/21/06	05/21/06	U	
Benzene Gestere tetresklaride	EPA 674	6E21009	0.28	5.0	ND	1	05/21/06	05/21/06	UT	9
Carbon tetracinonde	EPA 624	6E21009	0.33	2.0	ND	1	05/21/06	05/21/06	6	
	EPA 624	6E21009	0.27	2.0	ND	1	05/21/06	05/21/06	U	
1,1-Dichloroethane	EPA 624	6E21009	0.28	2.0	ND	1	05/21/06	05/21/06	UJ L, M1	C
1,2-Dichloroethane	EFA 624	6E21009	0.42	3.0	ND	1	05/21/06	05/21/06	U	
I,I-Dichloroethene	EFA 624	6E21009	0.12	2.0	ND	1	05/21/06	05/21/06		
Etnylbenzene	ETA 624	6E21009	0.32	2.0	ND	1	05/21/06	05/21/06		
Tetrachioroethene	ETA 624	6E21009	0.36	2.0	ND	1	05/21/06	05/21/06		
	EPA 624	6E21009	0.30	2.0	ND	1	05/21/06	05/21/06		
1,1,1-1 richloroethane	EIA 624	6E21009	0.30	2.0	ND	1	05/21/06	05/21/06		
1,1,2-1 richloroethane	EFA 024	6E21009	0.26	5.0	ND	1	05/21/06	05/21/06		
Trichloroethene	EFA 024	6521009	0.20	5.0	ND	1	05/21/06	05/21/06		
Trichlorofluoromethane	EPA 024	6E21009	0.34	5.0	ND	1	05/21/06	05/21/06		
Vinyl chloride	EPA 024	6E21009	0.20	4.0	ND	1	05/21/06	05/21/06	J,	
Xylenes, Total	EPA 024	0621009	0.90	4.0	96 %	x	00/21/00		Ň	
Surrogate: Dibromofluoromethane (80-120%)	<i>b)</i>				90%					
Surrogate: Toluene-d8 (80-120%)	`				92%					
Surrogate: 4-Bromofluorobenzene (80-120%))				12 10					
Sample ID: IPE1134-02 (Trip Blank - Wate	er)									
Reporting Units: ug/l	FDA (24	(E21000	0.78	2.0	ND	1	05/21/06	05/21/06	0	
Benzene	EPA 624	6E21009	0.20	2.0	ND	1	05/21/06	05/21/06	ĭ	
Carbon tetrachloride	EPA 624	6E21009	0.28	3.0	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		1	05/21/06	05/21/06	Т	
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	05/21/00	05/21/00		
Tetrachloroethene	EPA 624	6E21009	0.32	2.0	ND	1	05/21/00	05/21/00		
Toluene	EPA 624	6E21009	0.36	2.0	ND	1	05/21/00	05/21/00		
1,1,1-Trichloroethane	EPA 624	6E21009	0.30	2.0	ND	1	05/21/00	05/21/06		
1,1,2-Trichloroethane	EPA 624	6E21009	0.30	2.0	ND	1	05/21/00	05/21/00		
Trichloroethene	EPA 624	6E21009	0.26	5.0	ND	1	05/21/06	05/21/00		
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	\mathbf{V}	
Surrogate: Dibromofluoromethane (80-1209	%)				91 %					
Surrogate: Toluene-d8 (80-120%)					89 %					
Surrogate: 4-Bromofluorobenzene (80-120%	6)				94 %					

Del Mar Analytical - Irvine Michele Chamberlin Project Manager

LEVEL IV

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.

CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

MEC ^X	Package ID: B4MT88
12269 East Vassar Drive	Task Order: 1261.001D.01
Aurora, CO 80014	SDG No.: IPE 2104 -11공식
	No. of Analyses: 1
Laboratory: Del Ma	ar Analytical Date: July 21, 2006
Reviewer: P. Me	eks Reviewer's Signature
Analysis/Method: Metals	P. Muds
ACTION ITEMS ^a	
. Case Narrative	
Deficiencies	
2. Out of Scope Analyses	
3. Analyses Not Conducted	
4 Minging Hardsony	
4. Missing Hardcopy	
Deliverables	
5 Incorrect Hardcopy	
Deliverables	
Denverablee	
6. Deviations from Analysis	Qualification applied for detects below the reporting limit.
Protocol. e.g.,	Reanalysis result rejected in favor of original result.
Holding Times	
GC/MS Tune/Inst. Performance	e
Calibration	
Method blanks	
Surrogates	
Matrix Spike/Dup LCS	
Field QC	
Internal Standard Performance	3
Compound Identification	
Quantitation	
System Performance	·
COMMENTS ^b	
2	
 Subcontracted analytical laboratory is Differences in protocol have been addressed 	not meeting contract and/or method requirements.



DATA VALIDATION REPORT

NPDES Sampling Outfall 002

ANALYSIS: METALS

SAMPLE DELIVERY GROUP IPE1134

Prepared by

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

	Project:	NPDES
	SDG:	IPE1134
DATA VALIDATION REPORT	Analysis:	Metals

1. INTRODUCTION

Task Order Title:	NPDES Sampling
MEC ^x 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[×] 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.

1

DATA VALIDATION REPORT	Allalysis.	Wetais
DATA VALIDATION REPORT	Analysis	Motale
	SDG:	IPE1134
	Project:	NPDES

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 $\pm 2^{\circ}$ 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 reviewed 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.

B4MT88

	Project:	NPDES
	SDG:	IPE1134
DATA VALIDATION REPORT	Analysis:	Metals

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.

	Project:	NPDES
	SDG:	IPE1134
DATA VALIDATION REPORT	Analysis:	Metals

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.

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
 Project ID:
 Routine Outfall 002

 300 North Lake Avenue, Suite 1200
 Sampled:
 05/11/06

 Pasadena, CA 91101
 Report Number:
 IPE1134
 Received:
 05/11/06

 Attention:
 Bronwyn Kelly
 METALS
 METALS
 Image: Sampled:
 05/11/06

		-								
Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualific R.e.√	ers 1Qual
Sample ID: IPE1134-01 (Outfall 002	2 - Water) - cont.								Qual	Cole
Reporting Units: mg/l								100		
Zinc	EPA 200.7	6E13046	0.015	0.020	ND	1	05/13/06	05/18/06	*	
Sample ID: IPE1134-01 (Outfall 002	2 - Water)									
Reporting Units: ug/l										
Cadmium	EPA 200.8	6E12070	0.025	1.0	ND	1	05/12/06	05/12/06	U	- m
Copper	EPA 200.8	6E12070	0.25	2.0	1.2	1	05/12/06	05/12/06] l	DNG
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	\times	
Selenium	EPA 200.8	6E12070	0.30	2.0	0.32	1	05/12/06	05/12/06	1 l	DNQ
Sample ID: IPE1134-01RE1 (Outfal	ll 002 - Water)									
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



CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

MEC ^X	Package ID: B4WC92
12269 East Vassar Drive	Task Order: 1261.001D.01
Aurora, CO 80014	SDG No.: IPE1134
	No. of Analyses: 1
Laboratory: Del Mar Analytical	Date: July 24, 2006
Reviewer: P. Meeks	Reviewer's Signature
Analysis/Method: General Minerals	IP, MED

AC1	TION ITEMS ^a	
	Case Narrative	
	Deficiencies	
2	Out of Scope Analyses	
2	Analyses Not Conducted	
0.	Analyses not conducted	
Λ	Missing Hardcopy	
4.	Deliverables	
	Deliverables	
5	Incorrect Hardcony	
5.	Deliverables	
	Deliverables	
6	Doviations from Analysis	Qualification applied for a detect below the reporting limit.
0.	Deviations from Analysis	
	Protocol, e.g.,	
	Holding limes	
	GC/MS Tune/Inst. Performance	
	Calibration	
	Method blanks	
	Surrogates	
	Matrix Spike/Dup LCS	
	Field QC	
	Internal Standard Performance	
	Compound Identification	
	Quantitation	
	System Performance	
со	MMENTS ^b	
	and the second	
a	Subcontracted analytical laboratory is no	t meeting contract and/or method requirements.
b I	Differences in protocol have been adopte	d by the laboratory but no action against the laboratory is required.

٦



DATA VALIDATION REPORT

NPDES Sampling Outfall 002

ANALYSIS: GENERAL MINERALS

SAMPLE DELIVERY GROUP: IPE1134

Prepared by

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

1. INTRODUCTION

Task Order Title:	NPDES Sampling
MEC ^X 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[×] 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.

1

Table 1. Sample Identification

		Motrix	COC Method
Client ID	Laboratory ID	Maurix	
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 $4^{\circ}C \pm 2^{\circ}C$, at $4^{\circ}C$. 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 gualifications were required.

	Project:	NPDES
	SDG:	IPE1134
DATA VALIDATION REPORT	Analysis:	Gen. Min.

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 ≤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.



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 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	\$
Sample ID: IPE1134-01 (Outfall 002 -)	Water) - cont.									
Reporting Units: mg/l										
Ammonia-N (Distilled)	EPA 350.2	6E19092	0.30	0.50	0.84	1	05/19/06	05/19/06		
Biochemical Oxygen Demand	EPA 405.1	6E12090	0.59	2.0	1.0	1	05/12/06	05/17/06	¥ 1	
Chloride	EPA 300.0	6E11111	3.0	10	49	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	270	20	05/11/06	05/12/06		
Surfactants (MBAS)	SM5540-C	6E11088	0.044	0.10	0.048	1	05/11/06	05/11/06	J	
Total Dissolved Solids	SM2540C	6E17074	10	10	700	1	05/17/06	05/17/06		
Total Suspended Solids	EPA 160.2	6E17105	10	10	ND	1	05/17/06	05/17/06		
Sample ID: IPE1134-01 (Outfall 002 -	Water)									
Reporting Units: ml/l/hr								0.5/1.5/0.6		
Total Settleable Solids	EPA 160.5	6E12116	0.10	0.10	ND	1	05/12/06	05/12/06	\checkmark	
Sample ID: IPE1134-01 (Outfall 002 -	Water)									
Reporting Units: NTU	EDA 190 1	612113	0.040	1.0	0.57	1	05/12/06	05/12/06	TI	DNO
Iurdially	EFA 100.1	0E12115	0.040	1.0	0.57	1	05/12/00	05/12/00		010-
Sample ID: IPE1134-01 (Outfall 002 -	Water)									
Total Cuanida	EPA 335 2	6E12098	22	5.0	ND	1	05/12/06	05/12/06	×	
Dereklarata	EDA 314 0	6F19058	0.80	4.0	ND	1	05/19/06	05/19/06		
reremorate	EFA 314.0	0017030	0.00	-1.0			55/19/00	557 \$ 57 50	Y	
Sample ID: IPE1134-01 (Outfall 002 -	Water)									
Reporting Units: umhos/cm	EDA 120 1	CE17070	1.0	1.0	1100	1	05/17/06	05/17/06		
Specific Conductance	EPA 120.1	6E17079	1.0	1.0	1100	I	03/17/00	03/17/00		
									1	

LEVEL IV

IPE1134 <Paper Pope St > 1092

APPENDIX G

Section 45

Outfall 003, May 22, 2006

Del Mar Analytical Laboratory Report

Test America

ANALYTICAL TESTING CORPORATION

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

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

	LABORATORY ID	CLIENT ID	MATRIX
ADDITIONAL INFORMATION	: The bottles for total cubitainer and prese	recoverable metals were received empty. Water wa	as poured from the radiochemistry
SUBCONTRACT	TED: Refer to the last pag	e for specific subcontract laboratory information inc	cluded in this report.
COMMENTS:	Results that fall betw	ween the MDL and RL are 'J' flagged.	
QA/QC CRITER	IA: All analyses met me	ethod criteria, except as noted in the report with data	qualifiers.
PRESERVATIO	N: Samples requiring p	reservation were verified prior to sample analysis.	
HOLDING TIME	ES: All samples were an Analytical Sample A	halyzed within prescribed holding times and/or in ac Acceptance Policy unless otherwise noted in the rep	cordance with the Del Mar ort.
SAMPLE RECE	PT: Samples were receiv	ved intact, at 3°C, on ice and with chain of custody of	documentation.

IPE2095-01

Outfall 003

MATRIX Water

Reviewed By:

Michele Chamberdin

TestAmerica - Irvine, CA Michele Chamberlin Project Manager

Test Analytical testing corporation

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

MWH-Pasadena/Boeing	Project ID:	Routine Outfall 003		
300 North Lake Avenue, Suite 1200			Sampled:	05/22/06
Pasadena, CA 91101 Attention: Bronwyn Kelly	Report Number:	IPE2095	Received:	05/22/06

METALS									
Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IPE2095-01 (Outfall 00)3 - Water)								
Reporting Units: ug/l									
Antimony	EPA 200.8	6E24078	0.050	2.0	0.60	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	
Copper	EPA 200.8	6E24078	0.25	2.0	2.0	1	05/24/06	05/24/06	
Lead	EPA 200.8	6E24078	0.040	1.0	0.22	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	



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
Sample ID: IPE2095-01 (Outfall 003	- Water) - cont.								
Reporting Units: ug/l									
Antimony	EPA 200.8-Diss	6E23097	0.050	2.0	0.88	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	
Copper	EPA 200.8-Diss	6E23097	0.25	2.0	1.7	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	0.42	1	05/23/06	05/24/06	J

Test America

ANALYTICAL TESTING CORPORATION

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

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				
Sample ID: IPE2095-01 (Outfall 003 - '	Water) - cont.												
Reporting Units: mg/l													
Chloride	EPA 300.0	6E22053	0.15	0.50	14	1	05/22/06	05/22/06					
Nitrate/Nitrite-N	EPA 300.0	6E22053	0.080	0.15	0.32	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	23	1	05/22/06	05/22/06					
Total Dissolved Solids	SM2540C	6E23074	10	10	130	1	05/23/06	05/23/06					
Total Suspended Solids	EPA 160.2	6E24118	10	10	ND	1	05/24/06	05/24/06					



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

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



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

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

		Reporting			Spike	Source		%REC		RPD	Data
Analyte	Result	Limit	MDL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifiers
Batch: 6E24078 Extracted: 05/24/0	6										
Blank Analyzed: 05/24/2006 (6E24078-I	BLK1)										
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							
LCS Analyzed: 05/24/2006 (6E24078-BS	51)										
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			
Matrix Spike Analyzed: 05/24/2006 (6E	24078-MS1)				Sou	irce: IPE2	2095-01				
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			
Matrix Spike Dup Analyzed: 05/24/2000	6 (6E24078-N	ASD1)			Sou	irce: IPE2	2095-01				
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	

TestAmerica - Irvine, CA Michele Chamberlin Project Manager



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

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
Batch: 6E24083 Extracted: 05/24/06											
Blank Analyzed: 05/24/2006 (6E24083-Bl	LK1)										
Mercury	ND	0.20	0.050	ug/l							
LCS Analyzed: 05/24/2006 (6E24083-BS1	.)										
Mercury	8.31	0.20	0.050	ug/l	8.00		104	85-115			
Matrix Spike Analyzed: 05/24/2006 (6E24	4083-MS1)				Sou	rce: IPE2	2127-01				
Mercury	3.62	0.20	0.050	ug/l	8.00	ND	45	70-130			M2
Matrix Spike Dup Analyzed: 05/24/2006	(6E24083-M	ISD1)			Sou	rce: IPE2	2127-01				
Mercury	2.71	0.20	0.050	ug/l	8.00	ND	34	70-130	29	20	M2, R-3

TestAmerica - Irvine, CA Michele Chamberlin Project Manager



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Report Number: IPE2095

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

METHOD BLANK/QC DATA

DISSOLVED METALS

		Reporting			Spike	Source		%REC		RPD	Data
Analyte	Result	Limit	MDL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifiers
Batch: 6E23097 Extracted: 05/23/06	-										
Blank Analyzed: 05/23/2006 (6E23097-Bl	L K1)										
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							
LCS Analyzed: 05/23/2006-05/25/2006 (6)	E23097-BS1)									
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			
Matrix Spike Analyzed: 05/24/2006 (6E2.	3097-MS1)				Sou	irce: IPE2	2095-01				
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			
Matrix Spike Dup Analyzed: 05/24/2006	(6E23097-N	ISD1)			Sou	irce: IPE2	2095-01				
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	

TestAmerica - Irvine, CA Michele Chamberlin Project Manager



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

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

		Reporting			Spike	Source		%REC		RPD	Data
Analyte	Result	Limit	MDL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifiers
Batch: 6E24084 Extracted: 05/24/00	6										
Blank Analyzed: 05/24/2006 (6E24084-E	BLK1)										
Mercury	ND	0.20	0.050	ug/l							
LCS Analyzed: 05/24/2006 (6E24084-BS	51)										
Mercury	8.16	0.20	0.050	ug/l	8.00		102	85-115			
Matrix Spike Analyzed: 05/24/2006 (6E)	24084-MS1)				Sou	irce: IPE1	1552-01				
Mercury	8.33	0.20	0.050	ug/l	8.00	0.065	103	70-130			
Matrix Spike Dup Analyzed: 05/24/2006	6 (6E24084-N	MSD1)			Sou	irce: IPE1	1552-01				
Mercury	8.32	0.20	0.050	ug/l	8.00	0.065	103	70-130	0	20	



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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

METHOD BLANK/QC DATA

INORGANICS

		Reporting			Spike	Source		%REC		RPD	Data
Analyte	Result	Limit	MDL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifier
Batch: 6E22053 Extracted: 05/22/06	<u>.</u>										
Blank Analyzed: 05/22/2006 (6E22053-B	LK1)										
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							
LCS Analyzed: 05/22/2006 (6E22053-BS	1)										
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			
Matrix Spike Analyzed: 05/22/2006 (6E2	2053-MS1)				Soi	urce: IPE2	2083-01				
Sulfate	368	5.0	4.5	mg/l	100	290	78	80-120			M2
Matrix Spike Dup Analyzed: 05/22/2006	(6E22053-N	ASD1)			Sou	urce: IPE	2083-01				
Sulfate	366	5.0	4.5	mg/l	100	290	76	80-120	1	20	M2
Batch: 6E23074 Extracted: 05/23/06	<u>.</u>										
Blank Analyzed: 05/23/2006 (6E23074-B	LK1)										
Total Dissolved Solids	ND	10	10	mg/l							
LCS Analyzed: 05/23/2006 (6E23074-BS	1)										
Total Dissolved Solids	990	10	10	mg/l	1000		99	90-110			
Duplicate Analyzed: 05/23/2006 (6E2307	4-DUP1)				Soi	urce: IPE	2099-01				
Total Dissolved Solids	15600	10	10	mg/l		16000			3	10	
Batch: 6E24059 Extracted: 05/24/06	<u>.</u>										
Blank Analyzed: 05/24/2006 (6E24059-B	LK1)										
Oil & Grease	ND	5.0	0.94	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 003

Report Number: IPE2095

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

METHOD BLANK/QC DATA

INORGANICS

		Reporting			Spike	Source		%REC		RPD	Data
Analyte	Result	Limit	MDL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifiers
Batch: 6E24059 Extracted: 05	/24/06										
LCS Analyzed: 05/24/2006 (6E240	59-BS1)										M-NR1
Oil & Grease	18.2	5.0	0.94	mg/l	20.0		91	65-120			
LCS Dup Analyzed: 05/24/2006 (6	E24059-BSD1)										
Oil & Grease	18.4	5.0	0.94	mg/l	20.0		92	65-120	1	20	
Batch: 6E24118 Extracted: 05	/24/06										
Blank Analyzed: 05/24/2006 (6E24	118-BLK1)										
Total Suspended Solids	ND	10	10	mg/l							
LCS Analyzed: 05/24/2006 (6E241	18-BS1)										
Total Suspended Solids	985	10	10	mg/l	1000		98	85-115			
Duplicate Analyzed: 05/24/2006 (6	E24118-DUP1)				Sou	irce: IPE2	2102-01				
Total Suspended Solids	130	10	10	mg/l		130			0	10	



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

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.

						Compliance
LabNumber	Analysis	Analyte	Units	Result	MRL	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



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



ANALYTICAL TESTING CORPORATION

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

Report Number: IPE2095

Project ID: Routine Outfall 003

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	Х	Х
EPA 200.8-Diss	Water	Х	Х
EPA 200.8	Water	Х	Х
EPA 245.1-Diss	Water	Х	Х
EPA 245.1	Water	Х	Х
EPA 300.0	Water	Х	Х
EPA 413.1	Water	Х	Х
SM2540C	Water	Х	Х

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

Subcontracted Laboratories

Alta Analytical 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

S Page 1 of 1		Field readings: Temp = $\mathcal{C}\mathcal{A}^{\circ}$	nH- 7 6.	j 	Comments								unfiltered and unpreserved analysis	Filter w/in 24hr of receipt	atlab				ound Time: (check) rs 5 Days	rs 10 Days	orate Only 72 Hours	Only 72 yours	
209	NIRED		IT ,i	_с н ,	Cn' bp'	Cq'										 			24 Hour	48 Hou 72 Hou	Perchlo	Metals Sample Intact	
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ODY FC		Metals: g, TI,	əldı H	c ^{ci}	vcooal l€ ,uO ,bO	stoT dS,	×	×										6	- 7 - 1			\checkmark	B
CUSTO						Bottle *	1A	8	2A, 2B	3A, 3B	4A, 4B	5A, 5B	6A, 6B	~	•	 			Le to				
AIN OF		JPDES II 003 RMHF			10	Preservative	HNO3	HNO3	Norie	HCI	None	None	None						Received By	Received By	Receiged By	La	
1 04/28/06 CH/	Project:	Boeing-SSFL N Routine Outfa Stormwater at	Phone Number	(626) 568-6631	Fax Number: (626) 568-6515	Sampling Date/Time	5/22/0.							20/20/2	11.50				ate/Time: /22/c5	ate/Time:	ate/Time:		
Version		500	elly			# of Cont.	-	-	ŝ	2	5	0	-	-	-				ä v				
alytical	SS:	א ue, Suite 1	3ronwyn K		205	Container Tvpe	1L Poly	1L Poly	1L Amber	1L Amber	Poly-500 ml	Poly-500 ml	Poly-1 gal	Doly 11	1 UJ 1 F	 				L'	1 to	`	
ar Ana	ne/Addre:	asadena ake Aven CA 91101	inager: E	;	2:	Sample Matrix	N	3	M	M	3	3	3	WI I		 			1 By	By Le		.)	
Del Má	Client Nan	MWH-P6 300 North L Pasadena.	Project Ma		Sampler	Sample Description	Outfall 003	Outfall 003- Dup	Outfall 003	Outfall 003	Outfall 003	Outfall 003	Outfall 003						Relinquishe	Relinquishe	Relinquishe		
S Pare 1 of 1		Field readings: Temp = $\mathcal{L} \mathcal{A}^{*}$	97 =Hd	Comments						unfiltered and	Filter w/in 24hr of receipt	at 1a0			i around Time: (check) Iours 5 Days	lours 10 Days	Hours Normal	chlorate Only 72 Hours	a V On Ice: V				
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DY FORM		Metals: 3, Tl, geners) , 413.1) , 2-N	l Recoverable Cd, Cu, Fb, Hg D (and all con Grease (EPA Grease (EPA	Tota Sb, (Oil 8 Oil 8	×	; ;	×	×							 Date/Time:	Date/Time:		Date/Time:	\mathcal{P}				
F CUSTO				ive Bottle * #	1A	₽ ;	2A, 2D 3A, 3B	4A, 4B	5A, 5B	6A, 6B	7				By Ro Pares			L- M	200	Ð			
IAIN OI		_ NPDES If all 003 at RMHF	91 91 15	Preservat	HNO3	HNO3	HCI	None	None	None	None				 Received	Received		Received					
n 04/28/06 CF	Project:	Boeing-SSFI Routine Out Stormwater a	Phone Numt (626) 568-63 Fax Number (626) 568-65	Sampling Date/Time	5/22/00						solec/2	11	i i		tte/Time: /22/55	tte/Time:	0421	tte/Time:					
ical _{Versio}		uite 1200	yn Kelly	ainer # of pe Cont.	oly 1	oly 1	mber 2	500 2	500 2	1 gal 1	1L 1				a C		3 grd s						
r Analyt	;/Address:	adena ke Avenue, Si A 91101	ager: Bronv	Sample Cont Matrix Ty	N	W 1L P	M 1LA	W Poly. ml	W Poly. ml	W Poly-	W Poly-				 A.	A A	1 lenery	² A					
Del Ma	Client Name	MWH-Pas 300 North La Pasadena, C,	Project Man Samplet: 🤌	Sample Description	Outfall 003 Outfall 003-	Dup Outono	Outfall 003	Outfall 003	Outfall 003	Outfall 003	Outfall 003				Relinquished E	Relinquished	Z X	Relinquished E					

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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. Thank you for choosing Alta as part of your analytical support team.

Sincerely,

Martha M. Mater

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

Page 1 of 472 NPDES - 1110

Section I:	Sample	Inventory	Report
Date Receiv	ed:	5/24/2	006

Alta Lab. ID	<u>Client Sample ID</u>
27731-001	IPE2095-01
27731-002	IPE2095-01E (HCl)

SECTION II

Sample Size Lone Lettrated: $2eMayeth$ Date Analyzed D1-23 $2eMayeth$ Date Analyzed D1-23 Analyte Conc. (ug/l) DL a EMPC Date Analyzed D1-23 a <	Matrix: Aqueo	suc	QC Batch No.:	8052	Lab Sample: 0-MIB001	
Analytic Conc. (ag/1) D.1. ^a EMPC ^b Qualifiers Labeled Standard ∞_{aR} L(1), (C1) 2.3.7.8-TCDD ND 0.000006115 E 13-C.2.3.7.8-FCDD 87.0 25-161 1.2.3.7.8-FCDD ND 0.000006115 E 13-C.1.2.3.7.8-FCDD 87.0 25-161 1.2.3.7.8-FCDD ND 0.00000611 13-C.1.2.3.7.8-FCDD 61.9 28-130 1.2.3.4.7.8-HyCDD ND 0.0000061 13-C.1.2.3.7.8-HyCDD 61.9 28-130 1.2.3.4.6.7.8-HyCDD ND 0.0000067 13-C.1.2.3.7.8-HyCDD 61.9 28-160 1.2.3.7.8-FCDF ND 0.0000067 13-C.1.2.3.7.8-HyCDD 61.9 28-160 1.2.3.7.8-FCDF ND 0.0000062 13-C.1.2.3.7.8-HyCDD 61.9 28-160 1.2.3.7.8-FCDF ND 0.0000062 13-C.1.2.3.7.8-HyCDF 82.0 63 26-123 1.2.3.7.8-FCDF ND 0.0000062 13-C.1.2.3.7.8-HyCDF 63.2 26-123 1.2.3.7.8-FWCDF ND 0.00000626 <	Sample Size: 1.00	_1	Date Extracted:	26-May-06	Date Analyzed DB-5: 27-May-06	Date Analyzed DB-225: N
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	Analyte (Conc. (ug/L)	DL ^a EN	APC ^b Qualifiers	Labeled Standard	%R LCL-UCL ^d Qua
12.3.7.8-PeCDD ND 0.00000710 13.C-1.2.7.7.8-PeCDD 87.0 25-181 12.3.4.7.8-HXCDD ND 0.00000641 13.C-1.2.3.6.7.8-HXCDD 61.9 25-13.1 12.3.4.7.8-HXCDD ND 0.00000641 13.C-1.2.3.6.7.8-HXCDD 61.9 25-14.1 12.3.4.5.7.8-HXCDD ND 0.00000641 13.C-1.2.3.6.7.8-HYCDD 61.9 25-14.1 12.3.4.6.7.8-HYCDD ND 0.0000067 13.C-1.2.3.6.7.8-HYCDD 61.9 25-14.1 12.3.7.8-HYCDP ND 0.0000067 13.C-1.2.3.6.7.8-HYCDD 61.9 26-10.1 2.3.4.6.7.8-HYCDF ND 0.0000061 13.C-1.2.3.4.7.8-HYCDF 82.7 24-160 2.3.4.7.8-HXCDF ND 0.0000061 13.C-2.3.4.7.8-HXCDF 82.7 24-160 2.3.4.7.8-HXCDF ND 0.0000061 13.C-2.3.4.7.8-HXCDF 82.7 24-160 2.3.4.7.8-HXCDF ND 0.0000061 13.C-1.2.3.4.7.8-HXCDF 84.6 27-18.8 2.3.4.6.7.8-HXCDF ND 0.0000062 13.C-1.2.3.4.7.8-HXCDF 84.6 27-18.8	2.3.7.8-TCDD	QN	0.000000615		IS 13C-2.3.7.8-TCDD	75.1 25 - 164
123,47,8+1xCDD ND 0.0000061 13C-1,2,4,7,8+1xCDD 67.4 22-141 123,4,5,8+1xCDD ND 0.0000061 13C-1,2,4,5,7,8+1xCDD 61.9 28-130 12,3,4,6,7,8+1yCDD ND 0.0000061 13C-1,2,4,6,7,8+1yCDD 61.9 28-140 12,3,4,6,7,8+1yCDD ND 0.0000061 13C-1,2,7,4,6,7,8+1yCDD 61.9 28-140 12,3,4,6,7,8+1yCDD ND 0.0000061 13C-2,2,4,7,8+1yCDF 84.6 24-185 2,3,7,8+7CDF ND 0.0000062 13C-1,2,3,7,8+1xCDF 84.6 24-185 2,3,4,7,8+1xCDF ND 0.0000043 13C-1,2,3,4,6,7,8+1xCDF 86.9 21-178 2,3,4,6,7,8+1xCDF ND 0.0000043 13C-1,2,3,4,6,7,8+1xCDF 86.9 21-47 1,2,3,4,6,7,8+1xCDF ND 0.0000043 13C-1,2,3,4,6,7,8+1xCDF 86.9 21-17 1,2,3,4,6,7,8+1xCDF ND 0.0000043 13C-1,2,3,4,6,7,8+1xCDF 86.9 21-17 1,2,3,4,6,7,8+1xCDF ND 0.0000043 13C-1,2,3,4,6,7,8+1xCDF 73.3 24-147 <td>1,2,3,7,8-PeCDD</td> <td>ΟN</td> <td>0.000000710</td> <td></td> <td>13C-1.2,3,7,8-PeCDD</td> <td>87.0 25 - 181</td>	1,2,3,7,8-PeCDD	ΟN	0.000000710		13C-1.2,3,7,8-PeCDD	87.0 25 - 181
12.3.6.7.8.HxCDD ND 0.00000641 13C-12.3.6.7.8.HxCDD 61.9 28-130 12.3.4.6.7.8.HyCDD ND 0.00000671 13C-12.3.4.6.7.8.HyCDD 73.3 23-140 12.3.4.6.7.8.HyCDD ND 0.00000671 13C-12.3.4.6.7.8.HyCDD 73.3 23-140 0.23.7.8.FCDF ND 0.0000167 13C-12.3.4.7.8.PCDF 82.7 24-169 2.3.7.8.FCDF ND 0.0000052 13C-12.3.7.8.PCDF 84.7 24-169 2.3.7.8.FCDF ND 0.00000651 13C-12.3.7.8.PCDF 84.0 24-189 2.3.4.7.8.HxCDF ND 0.00000438 13C-12.3.4.7.8.HxCDF 86.9 21-178 2.3.4.6.7.8.HxCDF ND 0.00000438 13C-12.3.4.7.8.HxCDF 67.3 28-143 1.2.3.7.8.9.HxCDF ND 0.00000458 13C-12.3.4.7.8.HxCDF 67.3 28-143 1.2.3.7.8.HxCDF ND 0.00000458 13C-12.3.4.7.8.HxCDF 67.3 28-143 1.2.3.7.8.HxCDF ND 0.00000406 13C-12.3.4.7.8.HxCDF 67.3 28-143	1,2,3,4,7,8-HxCDD	DN N	0.00000579		13C-1,2,3,4,7,8-HxCDD	67.4 32 - 141
1,2,3,7,8,9,HACDDND $9,0000616$ $13C-1,2,3,4,5,7,8,HpCDD$ 73.5 $23-140$ $1,2,3,4,6,7,8,HpCDD$ ND $0,00000671$ $13C-2,2,7,8,FeCDF$ $81,5$ $17-157$ $2,2,7,8,FeCDF$ ND $0,00000521$ $13C-2,2,3,7,8,FeCDF$ $84,6$ $21-178$ $2,3,7,8,FeCDF$ ND $0,00000651$ $13C-1,2,3,7,8,FeCDF$ $84,6$ $21-178$ $2,3,7,8,FeCDF$ ND $0,00000651$ $13C-2,2,3,4,7,8,FeCDF$ $84,6$ $21-178$ $2,3,4,7,8,FeCDF$ ND $0,00000651$ $13C-1,2,3,7,8,FeCDF$ $86,9$ $21-178$ $1,2,3,4,7,8,FeCDF$ ND $0,00000620$ $13C-1,2,3,7,8,9,HxCDF$ $62,9$ $26-123$ $1,2,3,4,7,8,HxCDF$ ND $0,00000643$ $13C-1,2,3,7,8,9,HxCDF$ $73,5$ $28-136$ $1,2,3,4,7,8,HxCDF$ ND $0,00000620$ $13C-1,2,3,7,8,9,HxCDF$ $73,5$ $28-136$ $1,2,3,4,7,8,HxCDF$ ND $0,00000620$ $13C-1,2,3,7,8,9,HxCDF$ $73,5$ $28-136$ $1,2,3,4,7,8,HxCDF$ ND $0,00000620$ $13C-1,2,3,7,8,9,HxCDF$ $73,5$ $28-136$ $1,2,3,4,7,8,9,HyCDF$ ND $0,00000620$ $13C-1,2,3,7,8,9,HxCDF$ $73,5$ $28-147$ $1,2,3,4,7,8,9,HyCDF$ ND $0,00000600$ $13G-1,2,3,7,8,9,HxCDF$ $73,5$ $12-178$ $1,2,3,4,7,8,9,HyCDF$ ND $0,0000060$ $13C-1,2,3,4,7,8,9,HyCDF$ $81,6$ $26-138$ $1,2,3,4,7,8,9,HyCDF$ ND $0,00000060$ $12G-1,2,3,4,7,8,9,HyCDF$ $81,6$ $12-176$ $1,2,3,4,7,8,9,HyCDF$ ND $0,$	1,2,3,6,7,8-HxCDD	ND	0.000000641		13C-1,2,3,6,7,8-HxCDD	61.9 28 - 130
1.2.3,4.6.7,8-HpCDD ND 0.00000671 13C-OCDD 41.5 17-157 0.CDD ND 0.0000067 13C-2,3,7,8-FCDF 82.7 24-169 2.3.7,8-FCDF ND 0.00000651 13C-2,3,7,8-FCDF 82.7 24-169 2.3.7,8-FCDF ND 0.00000651 13C-2,3,4,7,8-FCDF 82.7 24-169 2.3.4,7,8-FCDF ND 0.00000651 13C-1,2,3,7,8-FCDF 84.6 24-180 1.2.3,4,7,8-FCDF ND 0.00000652 13C-1,2,3,4,7,8-FCDF 84.6 24-180 1.2.3,4,7,8-FCDF ND 0.00000453 13C-1,2,3,4,6,7,8-HACDF 62.9 26-133 1.2.3,4,6,7,8-HACDF ND 0.00000445 13C-1,2,3,4,6,7,8-HACDF 67.5 28-136 1.2.3,4,6,7,8-HACDF ND 0.00000445 13C-1,2,3,4,6,7,8-HACDF 67.5 28-136 1.2.3,4,6,7,8-HACDF ND 0.000000620 13C-1,2,3,4,6,7,8-HACDF 67.5 28-136 1.2.3,4,6,7,8-HACDF ND 0.00000060 13C-1,2,3,4,6,7,8-HACDF 67.6 58-143 1.	1,2,3,7,8,9-HxCDD	<u>a</u> N	0.000000616		13C-1,2,3,4,6,7,8-HpCDD	73.5 23 - 140
OCDDND 0.0000167 $13C-2.3,7.8-\GammaCDF$ $8.2.7$ $24-169$ $2.3,7.8-\GammaCDF$ ND 0.00000522 $13C-1.2,3,7.8-\GammaCDF$ 84.6 $24-185$ $1.2,3,7.8-\GammaCDF$ ND 0.00000651 $13C-1.2,3,7.8-\GammaCDF$ 84.6 $24-185$ $1.2,3,7.8-\GammaCDF$ ND 0.00000622 $13C-1.2,3,7.8-\GammaCDF$ 84.6 $24-185$ $1.2,3,7.8+\GammaCDF$ ND 0.00000623 $13C-1,2,3,7.8-\GammaCDF$ 84.6 $24-125$ $1.2,3,7.8+\GammaCDF$ ND 0.00000438 $13C-1,2,3,4.7,8-\GammaCDF$ 54.1 $26-123$ $1.2,3,4,6,7,8+\GammaCDF$ ND 0.00000445 $13C-1,2,3,4.7,8-\GammaCDF$ 54.1 $26-123$ $1.2,3,4,6,7,8+\GammaCDF$ ND 0.00000269 $13C-1,2,3,4,7,8-\GammaCDD$ 88.7 $35-197$ $1.2,3,4,6,7,8+\GammaCDD$ ND 0.00000200 $13C-1,2,3,4,7,8-\GammaCDD$ 88.7 $35-197$ $1.2,3,4,7,8,9+\GammaCDD$ ND 0.0000016 CRS $31C-1,2,3,4,7,8,9+\GammaCDF$ 59.8 $17-157$ $1.2,3,4,7,8,9+\GammaCDD$ ND 0.0000010 $13C-1,2,3,4,7,8,9+\GammaCDD$ 88.7 $35-197$ $1.2,3,4,7,8,9+\GammaCDD$ ND 0.00000016 a a a a a $1.2,3,4,7,8,9+\GammaCDD$ ND 0.00000016 CRS $31C-1,2,3,4,7,8,9+\GammaCDD$ 88.7 $35-197$ $1.2,3,4,7,8,9+\GammaCDD$ ND 0.0000016 CRS $31C-1,2,3,4,7,8,9+\GammaCDD$ 88.7 $35-197$ $1.2,3,4,7,8,9+\GammaCDD$ ND 0.00000016 a a a a a a $1.2,3,4,7,8,9+\GammaCDD$ ND </td <td>1,2,3,4,6,7,8-HpCDD</td> <td>ND</td> <td>0.000000671</td> <td></td> <td>13C-OCDD</td> <td>41.5 17 - 157</td>	1,2,3,4,6,7,8-HpCDD	ND	0.000000671		13C-OCDD	41.5 17 - 157
2.3.7.8-TCDFND 0.00000522 $13C-1.2.3.7.8$ -PeCDF 84.6 $24-185$ $1.2.3.7.8$ -PeCDFND 0.00000651 $13C-2.3.4.7.8$ -PeCDF 86.9 $21-178$ $2.3.4.7.8$ -PeCDFND 0.00000043 $13C-2.3.4.7.8$ -PeCDF 86.9 $21-178$ $2.3.4.7.8$ -PeCDFND 0.00000438 $13C-1.2.3.4.7.8$ -PeCDF 86.9 $21-178$ $2.3.4.7.8$ -PeCDFND 0.00000438 $13C-1.2.3.4.7.8$ -PeCDF 54.1 $26-123$ $1.2.3.4.7.8$ -HACDFND 0.00000445 $13C-1.2.3.4.7.8$ -PiCDF 59.8 $29-147$ $1.2.3.4.6.7.8$ -HACDFND 0.00000445 $13C-1.2.3.4.7.8$ -PiCDF 59.8 $28-138$ $1.2.3.4.6.7.8$ -HACDFND 0.000000445 $13C-1.2.3.4.7.8$ -PiCDF 59.8 $28-138$ $1.2.3.4.7.89$ -HPCDFND 0.00000069 $13C-0.2.3.4.7.8$ -PiPCDF 81.6 $26-138$ $1.2.3.4.7.89$ -HPCDFND 0.0000016 CBS $31C-1.2.3.4.7.8$ -PiPCDF 59.8 $28-137$ $1.2.3.4.7.89$ -HPCDFND 0.0000016 CBS $31C-1.2.3.4.7.8$ -PiPCDF 81.6 $26-138$ $1.2.3.4.7.89$ -HPCDFND 0.0000016 CBS $31C-1.2.3.4.7.8$ -PiPCDF 88.7 $35-197$ $1.2.3.4.7.89$ -HPCDFND 0.0000016 CBS $31C-1.2.3.7.8$ -PiPCDF 88.7 $35-197$ $1.2.3.4.7.89$ -HPCDFND 0.0000016 CBS $31C-1.2.3.7.8$ -PiPCDF 88.7 $35-197$ Total HACDDND 0.00000010 $a.8mpte specific estimated detection limit70.$	OCDD	ND	0.00000167		13C-2,3,7,8-TCDF	82.7 24 - 169
1,2,3,7,8-PeCDF ND 0.00000651 13C-2,3,4,7,8-PeCDF 86.9 21-178 2,3,4,7,8-PeCDF ND 0.00000622 13C-1,2,3,4,7,8-IbCDF 86.9 21-178 2,3,4,7,8-PeCDF ND 0.00000638 13C-1,2,3,4,7,8-IbCDF 54.1 26-123 1,2,3,4,7,8-HxCDF ND 0.00000438 13C-1,2,3,4,7,8-HxCDF 54.1 26-123 1,2,3,4,7,8-HxCDF ND 0.0000045 13C-1,2,3,4,6,7,8-HxCDF 54.1 26-138 2,3,4,6,7,8-HxCDF ND 0.00000620 13C-1,2,3,4,6,7,8-HxCDF 67.3 28-136 2,3,4,6,7,8-HxCDF ND 0.00000600 13C-1,2,3,4,7,8,9-HyCDF 67.3 28-143 1,2,3,4,6,7,8-HxCDF ND 0.0000016 13C-1,2,3,4,7,8,9-HyCDF 67.3 28-143 1,2,3,4,6,7,8-HyCDF ND 0.0000016 13C-1,2,3,4,7,8,9-HyCDF 67.3 28-143 1,2,3,4,6,7,8-HyCDF ND 0.0000016 13C-1,2,3,4,7,8,9-HyCDF 81.6 26-138 1,2,3,4,7,8,9-HyCDF ND 0.0000016 13C-1,2,3,4,7,8,9-HyCDF 88.7 <td< td=""><td>2,3,7,8-TCDF</td><td>ND</td><td>0.000000522</td><td></td><td>13C-1,2,3,7,8-PeCDF</td><td>84.6 24 - 185</td></td<>	2,3,7,8-TCDF	ND	0.000000522		13C-1,2,3,7,8-PeCDF	84.6 24 - 185
23,4,7,8-PeCDFND 0.00000622 $13C-1,2,3,4,7,8$ -HxCDF 62.9 $26-152$ $1,2,3,4,7,8$ -HxCDFND 0.00000438 $13C-1,2,3,6,7,8$ -HxCDF 54.1 $26-123$ $1,2,3,6,7,8$ -HxCDFND 0.00000458 $13C-1,2,3,6,7,8$ -HxCDF 54.1 $26-123$ $2,3,4,6,7,8$ -HxCDFND 0.00000458 $13C-1,2,3,6,7,8$ -HxCDF 59.8 $28-143$ $2,3,4,6,7,8$ -HxCDFND 0.00000620 $13C-1,2,3,7,8,9$ -HxCDF 70.3 $29-147$ $1,2,3,4,6,7,8$ -HyCDFND 0.00000269 $13C-1,2,3,4,6,7,8$ -HyCDF 59.8 $28-143$ $1,2,3,4,6,7,8$ -HyCDFND 0.00000269 $13C-1,2,3,4,6,7,8$ -HyCDF 59.8 $28-143$ $1,2,3,4,6,7,8$ -HyCDFND 0.00000269 $13C-1,2,3,4,7,8,9$ -HyCDF 81.6 $26-138$ $1,2,3,4,7,8,9$ -HyCDFND 0.00000269 $13C-1,2,3,4,7,8,9$ -HyCDF 81.6 $26-138$ $1,2,3,4,7,8,9$ -HyCDFND 0.00000269 $13C-1,2,3,4,7,8,9$ -HyCDF 81.6 $26-138$ $1,2,3,4,7,8,9$ -HyCDFND 0.00000200 $13C-1,2,3,4,7,8,9$ -HyCDF 81.6 $26-138$ $1,2,3,4,7,8,9$ -HyCDFND 0.00000200 $13C-1,2,3,4,7,8,9$ -HyCDF 81.6 $26-138$ $1,2,3,4,7,8,9$ -HyCDFND 0.00000200 $13C-1,2,3,4,7,8,9$ -HyCDF 81.6 $26-138$ $1,2,3,4,7,8,9$ -HyCDFND $0.00000000000000000000000000000000000$	1,2,3,7,8-PeCDF	ND	0.000000651		13C-2,3,4,7,8-PeCDF	86.9 21 - 178
1.2.3.4.7.8-HxCDFND 0.00000438 $13C-1.2.3,6.7,8$ -HxCDF 54.1 $26-123$ $1.2.3,6.7,8$ -HxCDFND 0.00000458 $13C-2.3,4,6.7,8$ -HxCDF 67.5 $28-136$ $2.3,4,6.7,8$ -HxCDFND 0.000000458 $13C-2.3,4,6.7,8$ -HxCDF 67.5 $28-138$ $2.3,4,6.7,8$ -HxCDFND 0.00000620 $13C-1,2.3,4,6.7,8$ -HxCDF 59.8 $28-143$ $1.2.3,4,6.7,8$ -HyCDFND 0.00000269 $13C-1,2.3,4,6.7,8$ -HyCDF 59.8 $28-143$ $1.2.3,4,7,8,9$ -HyCDFND 0.00000200 $13C-1,2.3,4,7,8,9$ -HyCDF 59.8 $28-143$ $1.2.3,4,7,8,9$ -HyCDFND 0.00000200 $13C-1,2.3,4,7,8,9$ -HyCDF 81.6 $26-138$ $1.2.3,4,7,8,9$ -HyCDFND 0.00000200 $13C-1,2,3,4,7,8,9$ -HyCDF 81.6 $26-138$ $1.2.3,4,7,8,9$ -HyCDFND 0.0000016 CKS $37C-2,3,7,8,-TCDD$ 88.7 $35-197$ Total PCDDND 0.00000012 CKS $37C-2,3,7,8,-TCDD$ 88.7 $35-197$ Total PCDDND 0.00000012 $13C-1,2,3,7,8,-TCDD$ 88.7 $35-197$ <t< td=""><td>2,3,4,7,8-PeCDF</td><td>ND</td><td>0.00000622</td><td></td><td>13C-1,2,3,4,7,8-HxCDF</td><td>62.9 26 - 152</td></t<>	2,3,4,7,8-PeCDF	ND	0.00000622		13C-1,2,3,4,7,8-HxCDF	62.9 26 - 152
	1,2,3,4,7,8-HxCDF	ŊŊ	0.000000438		13C-1,2,3,6,7,8-HxCDF	54.1 26 - 123
$ \begin{array}{lclcrcl} 23,4,6,7,8,+HxCDF & ND & 0.00000445 & 13C-1,2,3,7,8,9,+HxCDF & 70.3 & 29-147 \\ 1,2,3,4,6,7,8,+HpCDF & ND & 0.00000269 & 13C-1,2,3,4,7,8,9,+HpCDF & 59.8 & 28-143 \\ 1,2,3,4,7,8,9,+HpCDF & ND & 0.0000200 & 13C-1,2,3,4,7,8,9,+HpCDF & 81.6 & 26-138 \\ 1,2,3,4,7,8,9,+HpCDF & ND & 0.00000116 & 13C-0,23,7,8,9,+HpCDF & 81.6 & 26-138 \\ 1,2,3,4,7,8,9,+HpCDF & ND & 0.00000116 & 13C-0,23,7,8,9,+HpCDF & 81.6 & 26-138 \\ 1,2,3,4,7,8,9,+HpCDF & ND & 0.00000116 & 13C-0,23,7,8,9,+HpCDF & 81.6 & 26-138 \\ 1,2,3,4,7,8,9,+HpCDF & ND & 0.00000116 & 13C-0,23,7,8,9,+HpCDF & 81.6 & 26-138 \\ 1,2,3,4,7,8,9,+HpCDF & ND & 0.00000116 & 13C-0,23,7,8,9,+HpCDF & 81.6 & 26-138 \\ 1,2,3,4,7,8,9,+HpCDF & ND & 0.00000615 & a sample specific estimated detection limit \\ Total TCDD & ND & 0.00000615 & a sample specific estimated detection limit \\ Total HxCDD & ND & 0.00000612 & a sample specific estimated detection limit \\ Total HxCDD & ND & 0.00000612 & a Lower control limit - upper control limit \\ Total HxCDF & ND & 0.00000636 & concontration. \\ Total HxCDF & ND & 0.00000636 & concontration. \\ Total HxCDF & ND & 0.00000636 & concontration. \\ Total HxCDF & ND & 0.00000636 & concontration. \\ Total HxCDF & ND & 0.00000636 & concontration. \\ Total HxCDF & ND & 0.00000636 & concontration. \\ Total HxCDF & ND & 0.00000636 & concontration. \\ Total HxCDF & ND & 0.00000636 & concontration. \\ Total HxCDF & ND & 0.00000636 & concontration. \\ Total HxCDF & ND & 0.00000636 & concontration. \\ Total HxCDF & ND & 0.00000340 & concontration. \\ Total HxCDF & ND & 0.00000340 & concontration. \\ Total HxCDF & ND & 0.00000340 & concontration. \\ Total HxCDF & ND & 0.00000340 & concontration. \\ Total HxCDF & ND & 0.00000340 & concontration. \\ Total HxCDF & ND & 0.00000340 & concontration. \\ Total HxCDF & ND & 0.00000340 & concontration. \\ Total HxCDF & ND & 0.000000340 & concontration. \\ Total HxCDF & ND & 0.000000340 & concontration. \\ Total HxCDF & ND & 0.000000340 & concontration. \\ Total HxCDF & ND & 0.00000000000000000000 & concontration. \\ Total HxCDF & ND $	1,2,3,6,7,8-HxCDF	ND	0.000000458		13C-2,3,4,6,7,8-HxCDF	67.5 28 - 136
1.2.3.7,8,9-HxCDF ND 0.00000620 13C-1,2,3,4,5,7,8-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-0,2,3,4,7,8,9-HpCDF 81.6 26-138 1.2,3,4,7,8,9-HpCDF ND 0.0000116 26 27.3,5,197 35.197 OCDF ND 0.0000116 26 27.3,5,17,8,9-HpCDF 88.7 35-197 OCDF ND 0.00000116 26 28.7 35-197 35-197 Total Total ND 0.00000116 88.7 35-197 35-197 Total PCDD ND 0.00000615 a Sample specific estimated detection limit. 35-197 Total PCDD ND 0.00000612 a Sample specific estimated detection limit. 4.17-157 Total PCDD ND 0.00000612 b Simple specific estimated detection limit. Total PCDD ND 0.00000612 c Method detection limit. Total PCDF ND 0.00000612 c Method detection limit. <td>2,3,4,6,7,8-HxCDF</td> <td>ND ND</td> <td>0.000000445</td> <td></td> <td>13C-1,2,3,7,8,9-HxCDF</td> <td>70.3 29 - 147</td>	2,3,4,6,7,8-HxCDF	ND ND	0.000000445		13C-1,2,3,7,8,9-HxCDF	70.3 29 - 147
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 0.00000106 33.8 17 - 157 OCDF ND 0.00000116 53.8 17 - 157 OCDF ND 0.00000116 53.8 17 - 157 OCDF ND 0.00000116 88.7 35 - 197 Total TCDD ND 0.00000615 8.7 35 - 197 Total TCDD ND 0.00000615 a. Sample specific estimated detection limit Total HxCDD ND 0.00000612 a. Sample specific estimated detection limit 5.6 Total HxCDD ND 0.00000612 b. Estimated maximum possible concentration. c. Method detection limit Total HxCDD ND 0.00000612 c. Method detection limit 1.7 - User Total HxCDF ND 0.00000612 d. Lower control limit. 0.00000636 Total HxCDF ND 0.00000636 c. Method detection limit 0.00000636 Total HxCDF ND 0.00000636 c. Method detection limit 0.000000636 Total HxCDF </td <td>1,2,3,7,8,9-HxCDF</td> <td>ND</td> <td>0.000000620</td> <td></td> <td>13C-1,2,3,4,6,7,8-HpCDF</td> <td>59.8 28 - 143</td>	1,2,3,7,8,9-HxCDF	ND	0.000000620		13C-1,2,3,4,6,7,8-HpCDF	59.8 28 - 143
1,2,3,4,7,8,9-HpCDF ND 0.00000200 13C-OCDF 53.8 17-157 OCDF ND 0.00000116 88.7 35-197 Totals Total ND 0.00000116 88.7 35-197 Total ND 0.00000015 8.7 35-197 Total TCDD ND 0.00000015 8.7 35-197 Total TCDD ND 0.00000012 8.7 35-197 Total HxCDD ND 0.00000012 a. Sample specific estimated detection limit. Total HxCDD ND 0.00000612 c. Method detection limit. Total HxCDF ND 0.00000652 c. Method detection limit. Total HxCDF ND 0.00000652 c. Method detection limit. Total HxCDF ND 0.00000636 c. Method detection limit. Total HxCDF ND 0.00000636 c. Method detection limit. Total HxCDF ND 0.00000636 c. Method detection limit.	1,2,3,4,6,7,8-HpCDF		0.00000269		13C-1,2,3,4,7,8,9-HpCDF	81.6 26 - 138
OCDF ND 0.00000116 CRS $37Cl-2,3,7,8-TCDD$ 88.7 $35-197$ Total Total ND 0.00000615 Eootnotes 88.7 $35-197$ Total TCDD ND 0.00000615 a. Sample specific estimated detection limit 88.7 $35-197$ Total TCDD ND 0.00000615 a. Sample specific estimated detection limit 5.5 Total HxCDD ND 0.00000612 b. Estimated maximum possible concentration. $c. Method detection limit Total HxCDD ND 0.00000612 c. Method detection limit c. Method detection limit c. Method detection limit Total HpCDD ND 0.00000632 d. Lower control limit - upper control limit c. Method detection limit Total HxCDF ND 0.00000636 d. Lower control limit d. Lower control limit Total HxCDF ND 0.00000636 d. Lower control limit d. Lower control limit Total HxCDF ND 0.00000636 d. Lower control limit d. Lower control limit Total HxCDF ND 0.00000636 $	1,2,3,4,7,8,9-HpCDF	ND	0.00000200		13C-OCDF	53.8 17 - 157
TotalsFootnotesTotal TCDDND0.00000615a. Sample specific estimated detection limit.Total TCDDND0.000000612b. Estimated maximum possible concentration.Total HxCDDND0.000000612c. Method detection limit.Total HpCDDND0.00000671c. Method detection limit.Total HpCDDND0.00000671d. Lower control limit.Total PCDFND0.00000636d. Lower control limit.Total PCDFND0.00000636d. Lower control limit.Total HxCDFND0.00000636d. Lower control limit.Total HxCDFND0.00000636d. Lower control limit.	OCDF	ND	0.00000116		CRS 37CI-2,3,7,8-TCDD	88.7 35 - 197
Total TCDDND0.00000615a. Sample specific estimated detection limit.Total PeCDDND0.00000710b. Estimated maximum possible concentration.Total HxCDDND0.00000612c. Method detection limit.Total HxCDDND0.00000671d. Lower control limit.Total HpCDDND0.00000671d. Lower control limit.Total PeCDFND0.00000636d. Lower control limit.Total PeCDFND0.00000636d. Lower control limit.Total HxCDFND0.00000636d. Lower control limit.	Totals				Footnotes	
Total PeCDD ND 0.00000710 b. Estimated maximum possible concentration. Total HxCDD ND 0.00000612 c. Method detection limit Total HxCDD ND 0.00000671 d. Lower control limit Total HxCDF ND 0.00000671 d. Lower control limit Total HxCDF ND 0.00000632 d. Lower control limit. Total PeCDF ND 0.00000636 h.Comer control limit. Total HxCDF ND 0.00000636 h.Comer control limit.	Total TCDD	DN	0.000000615		a. Sample specific estimated detection limit.	
Total HxCDD ND 0.00000612 c. Method detection limit Total HxCDD ND 0.00000671 d. Lower control limit - upper control limit. Total TCDF ND 0.00000652 d. Lower control limit. Total PeCDF ND 0.00000636 d. Lower control limit. Total PeCDF ND 0.00000636 d. Lower control limit.	Total PeCDD	DN	0.000000710		b. Estimated maximum possible concentration.	
Total HpCDD ND 0.00000671 d. Lower control limit - upper control limit. Total TCDF ND 0.000000522 1 Total PeCDF ND 0.000000636 1 Total HxCDF ND 0.000000490 1 Total HxCDF ND 0.00000234 1	Total HxCDD	ND	0.000000612		c. Method detection limit	
Total TCDF ND 0.00000522 Total PeCDF ND 0.00000636 Total HxCDF ND 0.000000490 Total HxCDF ND 0.00000234	Total HpCDD	ND	0.00000671		d. Lower control limit - upper control limit.	
Total PeCDF ND 0.00000636 Total HxCDF ND 0.00000490 Total HxCDF ND 0.0000034	Total TCDF	ND	0.000000522			
Total HxCDF ND 0.00000490 Total HxCDF ND 0.0000034	Total PeCDF	ŊN	0.000000636			
Total HarchE ND 0 0000234	Total HxCDF	ND	0.000000490			
	Total HpCDF	ND	0.00000234			

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Method Blank					EPA Method 1613
Matrix: Aqueous		QC Batch No.:	8124	Lab Sample: 0-MB001	
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 ^a H	ZMPC ^b Qualifiers	Labeled Standard %R	LCL-UCL ^d Qualifiers
2.3,7,8-TCDD NI		0.000000511		IS 13C-2.3.7.8-TCDD 76	7 25 - 164
1,2,3,7,8-PeCDD	0	0.000000638		13C-1,2.3,7.8-PeCDD 69	.8 25 - 181
1,2,3,4,7,8-HxCDD NI	0	0.000000616		13C-1,2,3,4,7,8-HxCDD 85	.1 32 - 141
1.2.3.6.7,8-HxCDD NI	0	0.000000653		13C-1,2,3.6,7,8-HxCDD 78	.1 28 - 130
1,2,3,7,8,9-HxCDD NI	0	0.000000639		[3C-1,2,3,4,6,7,8-HpCDD 78	.9 23 - 140
1,2,3,4,6,7,8-HpCDD NI	0	0.000000706		13C-OCDD 56	.3 17-157
OCDD NI	0		0.00000964	13C-2,3,7,8-TCDF	.7 24 - 169
2.3.7.8-TCDF		0.000000671		13C-1,2,3,7,8-PeCDF 69	.1 24 - 185
1,2,3,7,8-PeCDF	0	0.000000592		13C-2,3,4,7,8-PeCDF 70	.0 21 - 178
2,3,4,7,8-PeCDF NI	0	0.000000547		13C-1,2,3,4,7,8-HxCDF 90	.3 26 - 152
1,2,3,4,7,8-HxCDF		0.000000447		13C-1,2,3,6,7,8-HxCDF	.6 26 - 123
1.2,3,6,7.8-HxCDF NI	0	0.000000422		13C-2,3,4,6,7,8-HxCDF 83	.6 28 - 136
2,3,4,6,7,8-HxCDF NI	0	0.000000486		13C-1,2,3,7,8,9-HxCDF 75	.8 29 - 147
1,2,3,7,8,9-HxCDF	0	0.000000751		13C-1,2,3,4,6,7,8-HpCDF 76	.5 28 - 143
1.2.3.4.6.7.8-HpCDF	0		0.00000156	13C-1,2,3,4,7,8,9-HpCDF 86	.4 26 - 138
1,2,3,4,7,8,9-HpCDF NI		0.00000107		13C-OCDF 52	.6 17 - 157
0CDF NI	0	0.0000122		CRS 37CI-2,3,7,8-TCDD 74	.5 35 - 197
Totals				Footnotes	
Total TCDD NI	0	0.000000511		a. Sample specific estimated detection limit.	
Total PeCDD NI	0		0.0000118	b. Estimated maximum possible concentration.	
Total HxCDD NI	0	0.000000636		c. Method detection limit.	,
Total HpCDD		0.000000706		d. Lower control limit - upper control limit.	
Total TCDF NI		0.000000671			
Total PeCDF NI	0		0.00000345		
Total HxCDF NI	0	0.000000526			
Total HpCDF NI		-	0.00000156		
Analyst: JMH				Approved By: William J. Luksembu	rg 29-Jun-2006 12:01

HML Analyst:

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Analyst: Analyst: Project 27731

OPR Results					EPA	Method 1613
Matrix: Aqueous sample Size 1.00 L		QC Batch No.: Date Extracted	8052 26-May-06	Lab Sample: 0-OPR001 Date Analyzed DB-5: 27-May-96	Date Analyze	d 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	<u>IS</u> 13C-2,3,7,8-TCDD	0.17	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
ÓCDF	100	126	63 - 170	CRS 37CI-2,3,7,8-TCDD	86.9	35 - 197
Analyst: JMH				Approved By: Martha M. M	aier 28-Jun-20	06 08:33

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OPR Results					EPA	Method 1613	
Matrix. Aqueous Sample Size 1.00 L		QC Batch No.: Date Feuracted	8124 23-Jun-06	Lab Sample. 0-OPR001 Date Analyzed DB-5: 26-Jun-06	Date Analyze	d DB-225: NA	
Analyte	Spike Conc.	Conc. (ng/mL)	OPR Limits	Labeled Standard	%R	TCT-flCT	
2.3.7.8-TCDD	0.01	9.78	6.7 - 15.8	15 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	I3C-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-I1xCDF	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 37CI-2,3,7,8-TCDD	75.5	35 - 197	
Analyst: JMH				Approved By: Martha M. Ma	aier 28-Jun-20	06 08:33	

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Client Data Name Sample Data Differ Lallocators Data (TEQ.NS) Lallocators Data (TEQ.NS) Lallocators Data (TEQ.NS) Z7May-06 Propertic 172.085 Sample Star 1,0,1,1 Det Analysical, 1,0,0 277,31-001 Dire of offection $22.3/38^{-1}$ (Group) DL, a EMPC ^b Qualifiers 1,3,7,8-PCDD 8,0,5,2 Analytic Contr. (ug/1) DL, a EMPC ^b Qualifiers 1,3,7,8-PCDD 8,0,5,2 2,3,7,8-PCDD ND 0,00000675 1,2,3,7,8-PCDD 8,0,5,3 4,0,7,8-H,0,0,0 1,2,3,7,8-HCDD ND 0,00000675 1,3,6,7,8-H,0,0,0 1,3,6,7,8-H,0,0,0 1,2,3,7,8-HCDP ND 0,00000675 1,3,6,7,8-H,0,0,0 1,3,6,7,8-H,0,0,0 1,2,3,7,8-HCDF ND 0,00000700 1,5,6,7,8-H,0,0,0 1,3,6,1,2,4,7,8,4,0,0,0 1,2,3,7,8-HCDF ND 0,00000700 1,5,6,7,8,4,4,0,0,0 1,3,6,1,2,4,6,7,8,4,4,0,0,0 1,2,3,7,8-HCDF ND 0,00000070 1,3,6,1,2,4,6,7,8,4,4,0,0,0 1,2,3,4,6,7,8,4,6,7,8,4,6,7,8,4,6,7,8,4,6,7,8,4,6,7,8,4,6,7,8,4,6,7,8,4,6,7,8,4,6,7,8,4,6,7,8,4,6,7,8,4,6,7,8,4,6,7,8,4,6,7,8,4,6,7,8,4,6,7,8,4,6,7	lient Data					-				
Name Def Mar Analytical, Irvine Matr. Aqueous I.ab Sample 27731-001 Page (1) (12.085 Sample Size 1.041. Or flacts M. 27731-001 Page (1) (12.085 Sample Size 1.041. Or flacts M. 207.31, 347.01 Page (offered: 11.00 0.000006673 Labeled Standard 207.33, 47.3-HCDD 2.3,7.8-FICDD ND 0.00000673 Labeled Standard 27.3, 47.3-HCDD 1.2.3,7.8-FICDD ND 0.00000673 Labeled Standard 27.3, 47.3-HCDD 1.2.3,7.8-FICDD ND 0.00000673 Labeled Standard 27.3, 47.3-HCDD 1.2.3,7.8-FICDD ND 0.00000673 Labeled Standard 27.3, 47.3-HCDD 1.2.3,7.8-FICDF ND 0.00000673 Labeled Standard 23.4, 7.3-HCDD 1.2.3,7.8-FICDF ND 0.00000673 Labeled Standard 25.4, 7.3-HCDD 1.2.3,7.8-FICDF ND 1.3C-1.2.3, 47.3-HCDD 1.3C-1.2.3, 4.7, 8-HCDD 2.3,7.8-FICDF ND 0.000000591 1.3C-1.2.3, 4.5, 7.8-HCDF 2.3,				Sample Data		Laboratory Data				
Tree of the distant distance distance distance distance distance distant distance din distance distance distance distance distance dist	lame: Del Ma	rr Analytical. Irvine 5		Matrix	Aqueous	Lab Sample:	27731-001	Date Recei	ived	24-May-
Aualyte Conc. (ug/l,) DL. ^a EMPC ^b Qualifiers Labelet Standard $2.3.7.8$ -FICDD ND 0.00000673 IS I3C-2.3.7.8-FICDD $1.2.3.7.8$ -FICDD ND 0.00000673 IS I3C-1.2.3.7.8-FICDD $1.2.3.7.8$ -FICDD ND 0.00000673 IS I3C-1.2.3.7.8-FICDD $1.2.3.7.8$ -FICDD ND 0.00000706 ISC-1.2.3.7.8-FICDD ISC-1.2.3.7.8-FICDD $1.2.3.7.8$ -FICDD ND 0.00000706 ISC-1.2.3.7.8-FICDD ISC-1.2.3.7.8-FICDD $1.2.3.7.8$ -FICDF ND 0.00000706 ISC-1.2.3.7.8-FICDD ISC-1.2.3.7.8-FICDD $1.2.3.7.8$ -FICDF ND 0.00000701 ISC-1.2.3.7.8-FICDD ISC-1.2.3.7.8-FICDD $0.2.3.7.8$ -FICDF ND 0.000000701 ISC-1.2.3.7.8-FICDF ISC-1.2.3.7.8-FICDF $2.3.7.8$ -FICDF ND 0.000000701 ISC-1.2.3.7.8-FICDF ISC-1.2.3.7.8-FICDF $2.3.7.8$ -FICDF ND 0.000000701 ISC-1.2.3.7.8-FICDF ISC-1.2.3.7.8-FICDF $2.3.4.6.7.8$ -HICDF ND 0.00000000 ISC-1.2.3.7.8-FICDF ISC-1.2.	rojeet: IPE208 bate Collected 22-May ime Collected 1100	-06		Sample Size.	1.041	QC Batch No Date Analyzed DB-5:	8052 27-Mav-06	Date Uktua Date Analy	icted. rzed DB-225.	26-May- NA
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	unalyte Co	nc. (ug/L)	DL ^a	EMPC ^b	Qualifiers	Labeled Stan	dard	%R L	CL-UCL ^d	Qualifiers
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $.3.7.8-TCDD	٩D	0.00000060	13		IS 13C-2,3,7,8-TC	GG.	69.2	25 - 164	
	,2,3,7,8-PeCDD N	4D	0.00000067	77		13C-1,2,3,7,8-1	PeCDD	74.6	25 - 181	
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $,2,3,4,7,8-HxCDD N	4D	0.00000067	75		13C-1,2,3,4,7,8	-HxCDD	68.8	32 - 141	
	,2,3,6,7,8-HxCDD	٨D	0.00000070	0(13C-1,2,3,6,7,8	3-HxCDD	65.6	28 - 130	
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $,2,3,7,8,9-HxCDD T	CD CD	0.00000065	.90		13C-1,2,3,4,6,7	7,8-HpCDD	72.9	23 - 140	
OCDD 0.0000642 $13C-2,3,7,8-\GammaCDF$ $2,3,7,8-\GammaCDF$ ND 0.00000821 $13C-1,2,3,7,8-PeCDF$ $1,2,3,7,8-PeCDF$ ND 0.00000591 $13C-1,2,3,4,7,8-PeCDF$ $1,2,3,4,7,8-PeCDF$ ND 0.00000500 $13C-1,2,3,4,7,8-PeCDF$ $2,3,4,7,8-PeCDF$ ND 0.00000476 $13C-1,2,3,4,7,8-PeCDF$ $1,2,3,4,7,8-PeCDF$ ND 0.00000476 $13C-1,2,3,4,7,8-PeCDF$ $1,2,3,4,7,8-PeCDF$ ND 0.00000465 $13C-1,2,3,4,7,8-PeCDF$ $1,2,3,4,6,7,8-PeCDF$ ND 0.00000465 $13C-1,2,3,4,5,8-PeCDF$ $1,2,3,4,6,7,8-PeCDF$ ND 0.00000465 $13C-1,2,3,4,5,8-PeCDF$ $1,2,3,4,6,7,8-PeCDF$ ND 0.0000004065 $13C-1,2,3,4,6,7,8-PeCDF$ $1,2,3,4,6,7,8-PeCDF$ ND 0.000000701 $13C-1,2,3,4,6,7,8-PeCDF$ $1,2,3,4,6,7,8-PeCDF$ ND 0.000000701 $13C-1,2,3,4,6,7,8-PeCDF$ $1,2,3,4,6,7,8-PeCDF$ ND 0.000000701 $13C-1,2,3,4,6,7,8-PeCDF$ $1,2,3,4,6,7,8-PeCDF$ ND 0.000000706 $13C-1,2,3,4,6,7,8-PeCDF$ $1,2,3,4,6,7,8-PeCDF$ ND 0.000000076 $13C-1,2,3,4,6,7,8-PeCDF$ $1,2,3,4,6,7,8-PeCDF$ ND 0.0000000076 $13C-1,2,3,4,6,7,8-PeCDF$ $1,2,3,4,6,7,8-PeCDF$ 0.000000000076 $13C-1,2,3,4,6,7,8,9-PeCDF$ $1,2,3,4,6,7,8-PeCDF$ $0.00000000000000000000000000000000000$,2,3,4,6,7,8-HpCDD N	ZD		0.000004	41	13C-OCDD		52.7	17 - 157	
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	CDD CDD C	0.000642				13C-2,3,7,8-TC	CDF	69.7	24 - 169	
	,3,7,8-TCDF	٨D	0.00000082	17		13C-1,2,3,7,8-1	PeCDF	68.5	24 - 185	
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$,2,3,7,8-PeCDF	ZD	0.00000055	16		13C-2,3,4,7,8-1	PeCDF	72.3	21 - 178	
1,2,3,4,7,8,HxCDF ND 0.00000476 13C-1,2,3,6,7,8,HxCDF 1,2,3,6,7,8,HxCDF ND 0.00000465 13C-1,2,3,6,7,8,HxCDF 2,3,4,6,7,8,HxCDF ND 0.00000496 13C-1,2,3,4,6,7,8,HxCDF 1,2,3,7,8,9,HxCDF ND 0.00000701 13C-1,2,3,4,6,7,8,HpCDF 1,2,3,7,8,9,HpCDF ND 0.00000701 13C-1,2,3,4,7,8,9-HpCDF 1,2,3,4,6,7,8,HpCDF ND 0.000000576 J 1,2,3,4,6,7,8,HpCDF ND 0.000000576 J 1,2,3,4,6,7,8,HpCDF ND 0.000000576 J 1,2,3,4,7,8,9-HpCDF ND 0.000000576 J 1,2,3,4,7,8,9-HpCDF ND 0.00000676 J 1,2,3,4,7,8,9-HpCDF ND 0.00000603 J 1,2,3,4,7,8,9-HpCDF ND 0.00000603 J 1,2,3,4,7,8,9-HpCDF ND 0.00000603 J 1,2,3,4,7,8,9-HpCDF ND J J 1,2,3,4,7,8,9-HpCDF J J J 1,2,3,4,7,8,9-HpCDF ND J L 1,2,3,4,7,8,9-HpCDF ND J L	,3,4,7,8-PeCDF	۲D	0.00000050	0(13C-1,2,3,4,7,8	3-HxCDF	67.1	26 - 152	
1,2,3,6,7,8-HxCDF ND 0.00000465 13C-2,3,4,6,7,8-HxCDF 2,3,4,6,7,8-HxCDF ND 0.00000496 13C-1,2,3,7,8,9-HxCDF 1,2,3,7,8,9-HxCDF ND 0.00000701 13C-1,2,3,7,8,9-HyCDF 1,2,3,7,8,9-HxCDF ND 0.000000701 13C-1,2,3,4,7,8,9-HpCDF 1,2,3,4,6,7,8-HpCDF ND 0.000000576 13C-1,2,3,4,7,8,9-HpCDF 1,2,3,4,5,7,8,9-HpCDF ND 0.000000576 13C-1,2,3,4,7,8,9-HpCDF 1,2,3,4,5,8,9-HpCDF ND 0.000000576 1 13C-1,2,3,4,7,8,9-HpCDF 1,2,3,4,6,7,8-HpCDF ND 0.000000576 1 13C-1,2,3,4,7,8,9-HpCDF 1,2,3,4,6,7,8-HpCDF ND 0.000000576 1 13C-1,2,3,7,8,-TCDD 1,2,3,4,7,8,9-HpCDF ND 0.00000603 1 13C-0,2,3,7,8,-TCDD Total TCDD ND 0.00000603 1 a Sample specific estimated detection limit. Total PeCDD ND 0.00000603 a Sample specific estimated detection limit. Total HpCDD ND 0.00000690 c. Method detection limit.	,2,3,4,7,8-HxCDF		0.00000047	1 ⁶		13C-1,2,3,6,7,8	8-HxCDF	59.9	26 - 123	
2.3,4,6,7,8-HxCDF ND 0.00000496 $13C-1,2,3,7,8,9-HxCDF$ 1,2,3,7,8,9-HxCDF ND 0.00000701 $13C-1,2,3,4,6,7,8-HpCDF$ 1,2,3,4,6,7,8-HpCDF ND 0.000000701 $13C-1,2,3,4,7,8,9-HpCDF$ 1,2,3,4,6,7,8-HpCDF ND 0.000000576 $13C-1,2,3,4,7,8,9-HpCDF$ 1,2,3,4,6,7,8-HpCDF ND 0.000000576 $13C-1,2,3,4,7,8,9-HpCDF$ 1,2,3,4,7,8,9-HpCDF ND 0.00000676 $13C-1,2,3,4,7,8,9-HpCDF$ 1,2,3,4,7,8,9-HpCDF ND 0.00000676 $13C-1,2,3,4,7,8,9-HpCDF$ 1,2,3,4,7,8,9-HpCDF ND 0.00000600 $13C-1,2,3,4,7,8,9-HpCDF$ 1,2,3,4,7,8,9-HpCDF ND 0.00000600 $13C-1,2,3,4,7,8,9-HpCDF$ 1,2,3,4,7,8,9-HpCDF ND 0.00000600 $13C-1,2,3,7,8,7CDD$ Cotal Total ND 0.00000600 $13C-1,2,3,7,8,7CDD$ Total TCDD ND 0.00000600 1 $13C-0,2,3,7,8,7CDD$ Total PCDD ND 0.00000600 1 1 Total PCDD ND 0.00000600 2 2 Total HpCDD ND 0.00000600 2	,2,3,6,7,8-HxCDF P	VD	0.00000040	55		13C-2,3,4,6,7,8	3-HxCDF	67.0	28 - 136	
1,2,3,7,8,9-HxCDF ND 0.00000701 13C-1,2,3,4,6,7,8-HpCDF 1,2,3,4,6,7,8-HpCDF ND 0.000000576 $1.2,3,4,7,8,9-HpCDF$ 1,2,3,4,6,7,8-HpCDF ND 0.00000576 $1.2,3,4,7,8,9-HpCDF$ 1,2,3,4,6,7,8-HpCDF ND 0.00000576 $1.2,3,4,7,8,9-HpCDF$ 1,2,3,4,7,8,9-HpCDF ND 0.00000576 $1.2,3,4,7,8,9-HpCDF$ 1,2,3,4,7,8,9-HpCDF ND 0.00000670 $1.2,2,3,7,8,7,8,9-HpCDF$ OCDF 0.00000402 0.00000603 $1.2,2,3,7,8-TCDD$ Total Total $TCDD$ ND 0.00000603 Total PeCDD ND 0.00000603 a a Sample specific estimated detection limit. Total HpCDD ND 0.00000600 $(a, 0.00000677)$ $(b, Estimated maximum possible concentration to the externation the externation the externation to the externation the externation to the $.3.4,6,7,8-HxCDF	ZD ZD	0.00000045	96		13C-1,2,3,7,8,5	9-HxCDF	73.0	29 - 147	
1,2,3,4,5,7,8-HpCDF ND 0.00000118 13C-1,2,3,4,7,8,9-HpCDF 1,2,3,4,7,8,9-HpCDF ND 0.0000060576 J ZCOCDF 1,2,3,4,7,8,9-HpCDF ND 0.00000602 J ZCOCDF 0,2,3,4,7,8,9-HpCDF ND 0.00000602 J ZCOCDF 1,2,3,4,7,8,9-HpCDF ND 0.00000602 J ZCOCDF 1,2,3,4,7,8,9-HpCDF ND 0.00000602 J ZCOCDF 1,2,3,4,7,8,9-HpCDF ND 0.00000603 J ZCOCDF Total TCDD ND 0.00000603 a. Sample specific estimated detection limit. Total PeCDD ND 0.00000609 c. Method detection limit. Total HpCDD ND 0.00000690 c. Method detection limit.	,2,3,7,8,9-HxCDF	ZD	0.00000070	1(13C-1,2,3,4,6,7	7,8-HpCDF	64.0	28 - 143	
1.2.3.4.7.8.9-HpCDFND 0.00000676 13C-OCDFOCDF 0.0000402 0.00000602 J CRS 37CI-2,3,7,8-TCDDTotalsTotal TCDDND 0.00000603 $Eootnotes$ Total PCDDND 0.00000603 a . Sample specific estimated detection limit. b. Estimated maximum possible concentration c. Method detection limit.Total HpCDDND 0.00000690 c . Method detection limit.Total HpCDDND 0.00000690 c . Method detection limit.	,2,3,4,6,7,8-HpCDF	ND		0.000001	18	13C-1,2,3,4,7,8	3,9-HpCDF	77.2	26 - 138	
OCDF0.00000402JCRS 37Cl-2,3,7,8-TCDDTotalsFootnotesFootnotesTotal TCDDND0.00000603a Sample specific estimated detection limit.Total HPCDDND0.00000677b. Estimated maximum possible concentrationTotal HPCDDND0.00000690c. Method detection limit.Total HPCDDND0.00000690c. Method detection limit.	,2,3,4,7,8,9-HpCDF	ND	0.00000057	94		13C-OCDF		62.3	17 - 157	
TotalsFootnotesTotal TCDDND0.00000603a. Sample specific estimated detection limit.Total PeCDDND0.00000677b. Estimated maximum possible concentrationTotal HxCDDND0.00000690c. Method detection limit.Total HpCDDND0.00000690d. Lower control limit.)CDF (0.0000402			ſ	CRS 37CI-2,3,7,8-T	CDD	84.1	35 - 197	
Total TCDDND0.00000603a. Sample specific estimated detection limit.Total PeCDDND0.00000677b. Estimated maximum possible concentrationTotal HxCDDND0.00000690c. Method detection limit.Total HpCDDND0.00000690d. Lower control limit.	otals					Footnotes				
Total PeCDDND0.00000677b. Estimated maximum possible concentrationTotal HxCDDND0.00000690c. Method detection limit.Total HpCDDND0.00000690d. Lower control limit.	otal TCDD	٨D	0.0000006)3		a. Sample specific estima	ted detection limit.			
Total HxCDD ND 0.00000690 c. Method detection limit. Total HpCDD ND 0.000016 d. Lower control limit - upper control limit.	otal PeCDD	DN	0.00000061	1 <i>7</i>		b. Estimated maximum pu	ossible concentration.			
Total HpCDD ND 0.0000116 d. Lower control limit - upper control limit.	otal HxCDD	ND	0.0000006	00		c. Method detection limit.				
	rotal HpCDD	ND		0.000011	9	d. Lower control limit - u	pper control limit.			
	Cotal TCDF	DN	0.00000082	12						
Total PeCDF ND 0.00000546	Total PeCDF	ND	0.00000054	16 -						
Total HxCDF ND 0.00000623	Cotal HxCDF	ND		0.000000	1623					
Total HpCDF ND 0.00000244	Cotal HpCDF	DN		0.000002	44					
Analyst: JMH Approved By: William J. L	Analyst: JMH					Approved By:	William J. Luks	semburg	29-Jun-2006	12:01

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Sample ID: IPE2()95-01E (HCI)							EPA N	1ethod 1613
Client Data Del N Name Del N Project. IPF20 Date Collected. 22-Mi Time Collected: 22-Mi	lar Analytical, Irvine 85 4y-06		Sample Data Matrix: Sample Size	Aqueous 1.01.1,	Laboratory Data Lab Sample: QC Batch No.: Date Analyzed DB-5:	27731-002 8124 26-Jun-06	Date Rec Date Ext Date Ana	teived: racted: dyzed DB-225.	20-Jun-06 23-Jun-06 NA
Analyte C	onc. (ug/L)	DL ^a	EMPC ^b	Qualifiers	Labeled Stand	ard	%R	p710(1-710/1	Qualifiers
7 3 7 8-TCDD	UN	0 000000	00		IS 13C-278-TC	uu	012	75 - 164	
1.2.3.7.8-PeCDD	ON	0.0000008	30		— 13C-1.2.3.7.8-P	eCDD	67.1	25 - 181	
1,2,3,4,7,8-HxCDD	ND	0.000000	66		13C-1,2,3,4,7,8-	HxCDD	81.2	32 - 141	
1.2.3,6,7,8-HxCDD	ND	0.0000007	07		13C-1.2,3.6.7,8-	HxCDD	75.8	28 - 130	
1,2,3,7,8,9-11xCDD	ND	0.0000000	08		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-TCI	DF	71.1	24 - 169	
2,3,7,8-TCDF	ND		0.000001	67	13C-1,2,3,7,8-P	aCDF	66.0	24 - 185	
1,2,3,7,8-PeCDF	ND	0.0000006	50		13C-2,3,4,7,8-P	eCDF	68.1	21 - 178	
2,3,4,7,8-PeCDF	ND	0.0000006	60		13C-1,2,3,4,7,8-	HxCDF	87.3	26 - 152	
1,2,3,4,7,8-HxCDF	ND	0.0000007	59		13C-1,2,3,6,7,8-	HxCDF	83.8	26 - 123	
1,2,3,6,7,8-HxCDF	ND	0.0000007	20		13C-2,3,4,6,7,8-	HxCDF	81.5	28 - 136	
2,3,4,6,7,8-HxCDF	DN	0.0000007	95		13C-1,2,3,7,8,9-	HxCDF	72.3	29 - 147	
1,2,3,7,8,9-HxCDF	ND	0.0000013	-		13C-1,2,3,4,6,7,	8-HpCDF	74.1	28 - 143	
1,2,3,4,6,7,8-HpCDF	0.0000404			ſ	13C-1,2,3,4,7,8,	9-HpCDF	85.3	26 - 138	
1,2,3,4,7,8,9-HpCDF	ND	0.0000005	54		13C-OCDF		48.9	17 - 157	 - :
OCDF	0.0000103			1	CRS 37CI-2,3,7,8-TC	DD	74.4	35 - 197	
Totals					Footnotes				
Total TCDD	ND	0.0000006	00		a. Sample specific estimate	d detection limit.			-
Total PeCDD	ND		0.000012	7	b. Estimated maximum pos	ssible concentration.			e da sec d
Total HxCDD	ND	0.0000007	05		c. Method detection limit.				
Total HpCDD	0.0000298				d. Lower control limit - up	per control limit.			
Total TCDF	0.00000139		0.000003	06					
Total PeCDF	ND		0.000003	64					
Total HxCDF	ND	0.0000008	96						
Total HpCDF	0.00000665								
Analyst: JMH					Approved By:	William J. Luks	semburg	29-Jun-2006	12:01

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APPENDIX

DATA QUALIFIERS & ABBREVIATIONS

В	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.
1	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, Invine, CA 92614
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 1014 E. Cooley Dr., Suite A, Colton, CA 92324
 Ph (909) 370-466

 9484 Chesapeake Drive, Suite 805, San Diego, CA 92123
 Ph (619) 505-959

 9830 South 51st Street, Suite B-120, Phoenix, AZ 85044
 Ph (480) 785-004

 2520 E. Sunset Rd., Suite #3, Las Vegas, NV 89120
 Ph (702) 796-3620

 Ph (549) 261-1022
 Fax (949) 261-1228

 Ph (509) 370-4667
 Fax (909) 370-1046

 Ph (619) 505-9556
 Fax (619) 505-9689

 Ph (480) 785-0043
 Fax (480) 785-0851

 Ph (702) 798-3620
 Fax (702) 798-3621

Initials:

SUBCONTRACT ORDER - PROJECT # IPE2095

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

Standard TAT is requested unless specific due date is requested => Due Date:____

 Analysis
 Expiration
 Comments

 Sample ID: IPE2095-01
 Water
 Sampled: 05/22/06 11:00
 J flags,17 congeners,no TEQ,ug/L,sub=Alta

 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 LvI IV

 Containers Supplied:
 I L Amber (IPE2095-01C)
 I L Amber (IPE2095-01D)

27	731
\mathcal{N}	r C

	/	SAN	PLE INTEGRIT	Y:		
Al' containers intact Custody Seals Present: Yes	Ng Sa No Sa	imple labels/COC as imples Preserved Pre-	gree: 🗹 Yes operly: 🖸 Yes	□ No □ No	Samples Received On Ice:: Samples Received at (temp):	Ø Yes □ No 1.0°C
	5/23/0	96 (Betten	i A.L	anderst 5/2	4/16 0845
Released By	Date	Time	Received By	<u> </u>	Date	Time
Released By	Date	Time	Received By		Date	Time
Project 27731				2		p. Page 2 of 177

NPDES - 1122

STANDARD OPERATING PROCEDURE

Attachment 10.B.4

Chain of Custody Anomaly/Sample Acceptance Form

Client: Dei Mar Analytical, Irvine	Project Number 27731
Contact: Michele Chamberlin	Date Received: <u>May 24 2006</u>
Fax Number: <u>949-2603297</u>	Documented by/date: Junus Bisho / 5:24.06
Please review the following information and com NELAC regulations, we must receive authorization Thank You. (Fax #916-673-0106)	plete the Client Authorization section. To comply with on before proceeding with sample analysis.
The following information or item is needed to p	roceed with analysis:
Complete Chain-of-Custody	Preservative Collector's Name
Test Method Requested	Sample Identification Sample Type
	Sample Collection Date / Time Sample Location
	Sample Concerton Date / Time Sample Excarton
The following anomalies were noted. Authorizati Temperature outside ±2°C range Samples Affect	ion is needed to proceed with the analysis.
Temperature outside°C	Ice present? Yes No
Sample ID Discrepancy Samples Affected	
Sample holding time missed Samples Affected	
Custody seals broken Samples Affected	
Insufficient Sample Size Samples Affected	
Sample Container(s) Broken Samples Affected	IPE2 A95-DID
Incorrect Container Type Samples Affected	
other Sample Continues Artected	
Uner Durtipic Contrainer Dioky	during shipment
	· · · · · · · · · · · · · · · · · · ·
Client Authorization	
Proceed With Analysis: YES NO	Signature and Date 1010 (0) 78/00
Chent Comments/Instructions:	
F	

SAMPLE LOG-IN CHECKLIST

Alta Project #:	2773	1	11. <u></u> 10.		<u></u>				
Samples Arrival:	Date/Time 5/22/06 0845			Initials:		Location: WR-2			
						Shelf/Rack:			
Date/Time					Initials:		Location: WR-2		
Logged In:	5/24/	1/06 1223		13	FEB		Shelf/Rack: A-2		-2
Delivered By:	FedEx	UF	PS		Cal	DHL	De	Hand elivered	Other
Preservation:	vation: Ice Blue			Blue	e Ice Dry I		Ice None		
Temp °C 1.0°C			Time: 0900			Thermometer ID: DT-20			

			<u>IIIIIII</u>	YES	NO	NA
Adequate Sample Volume Received	1	[
Holding Time Acceptable?				V		
Shipping Container(s) Intact?				V	L	
Shipping Custody Seals Intact?				\checkmark		
Shipping Documentation Present?			-	V		
Airbill Trk # 79		\checkmark				
Sample Container Intact?				\checkmark	Í	
Sample Custody Seals Intact?	<u></u>					4
Chain of Custody / Sample Documer	ntation Present?			1		
COC Anomaly/Sample Acceptance F	-orm completed?					
If Chlorinated or Drinking Water Sam	ples, Acceptable Pr	eservation?				L
Na ₂ S ₂ O ₃ Preservation Documented? COC Sample Container						
Shipping Container	Alta Client	Retain	Ret	urn	> Disp	ose

Comments:

IPE2095-01D * Sample broken during Shipment

APPENDIX G

Section 46

Outfall 003, May 22, 2006

MECX Data Validation Reports

	CONTRACT COMPL	IANCE SCREENING FORM FOR HARDCOPY DATA
MEC	CX, LLC	Package ID B4DF105
226	0 East Vassar Drive	Task Order <u>1261.001D.01</u>
Suite	e 500	SDG No. IPE2095
ake	ewood, CO 80226	No. of Analyses 7
	Laboratory Alta Analyt	tical Date: July 24, 2006
	Reviewer E. Wessling	Reviewer's Signature
	Analysis/Method Dioxins/Fu	rans the Ways
		73
ACT	TION ITEMS*	an tanàna mandritry mandritry amin'ny fisiana amin'ny tanàna mandritry dia mampina dia kaominina dia
	Case Narrative	
	Deficiencies	
	,	
2.	Out of Scope	
	Analyses	
	Analyses	
3.	Analyses Not Conducted	
4.	Missing Hardcopy	Traverent chamitarans to
	Deliverables	H-CDD + HOCDT
		he made derous
		52 de TPE2095-01
5	Incorrect Hardcopy	Complex
	Deliverables	
	Denterables	
6.	Deviations from Analysis	Qualifications were assigned for the following:
	Protocol, e.g.,	- the results between the RL and the MDL were estimated
	Holding Times	- EMPC values were qualified as estimated nondetects
	GC/MS Tune/Inst Performance	- recorducity rejected in favor of original result
	Calibration	- Tourierysis rejector in the of or Union room
	Mathad blanke	
	Sumoantar	
	Materia Selles/Due LCS	
	Martx Spike/Dup LCS	
	internal Standard Performance	
	Compound Identification	
	Quantitation	
-	System Performance	T
co	MMEN15	
	and the second	
-		



DATA VALIDATION REPORT

NPDES Monitoring Program Routine Outfall 003

ANALYSIS: DIOXINS/FURANS SAMPLE DELIVERY GROUP: IPE2095

Prepared by

MEC^X, 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[×]* 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.

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					

Table 1. Sample Identification

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 $4^{\circ}C$ $\pm 2^{\circ}C$. 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.

	Project:	NPDES
	SDG:	IPE2095
DATA VALIDATION REPORT	Analysis:	D/F

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 <20% for the 16 native compounds (calibration by isotope dilution) and ≤35% for the one native and all labeled compounds (calibration by internal standard). The relative retention times and ion abundance ratios were within the 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

	Project:	NPDES
	SDG:	IPE2095
DATA VALIDATION REPORT	Analysis:	D/F

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

.....

	Project:	NPDES
	SDG:	IPE2095
DATA VALIDATION REPORT	Analysis:	D/F

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.

1		a . m		100	a: 7						
-		Sample ID: IPE	2095-01 Clette	ALL O						EPA N	Aethod 1613
		Client Data			Sample Data		Laboratory Data	1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 -			
		Name: Del	Mar Analytical, Irvine		Matrix:	Aqueous	Lab Sample:	27731-001	Date Re	ceived:	24-May-06
	0	Project: IPE.	2085 May-06		Sample Size:	1.04 L	QC Batch No .:	8052	Date Ex	tracted:	26-May-06
ha	Sal	Time Collected: 1100)				Date Analyzed DB-5:	27-May-06	Date An	alyzed DB-225:	NA
Q.A	Cice	Analyte	Conc. (ug/L)	DL ^a	EMPC ^b	Qualifiers	Labeled Stand	ard	%R	lcl-ucl ^d	Qualifiers
4		2,3,7,8-TCDD	ND	0.0000006	03		IS 13C-2,3,7,8-TCI	DD	69.2	25 - 164	
11		1,2,3,7,8-PeCDD	ND	0.0000006	77		13C-1,2,3,7,8-Pe	CDD	74.6	25 - 181	
		1,2,3,4,7,8-HxCDD	ND	0.0000006	75		13C-1,2,3,4,7,8-	HxCDD	68.8	32 - 141	10.50
11		1,2,3,6,7,8-HxCDD	ND	0.0000007	00		13C-1,2,3,6,7,8-	HxCDD	65.6	28 - 130	
*		1,2,3,7,8,9-HxCDD	ND	0.0000006	96		13C-1,2,3,4,6,7,8	3-HpCDD	72.9	23 - 140	
45	*10	1,2,3,4,6,7,8-HpCDD	ND		0.000004	41	13C-OCDD		52.7	17 - 157	
		OCDD	0.0000642				13C-2,3,7,8-TCI	DF	69.7	24 - 169	
U		2,3,7,8-TCDF	ND	0.000008	21		13C-1,2,3,7,8-Pe	CDF	68.5	24 - 185	
1		1,2,3,7,8-PeCDF	ND	0.0000005	91		13C-2,3,4,7,8-Pe	CDF	72.3	21 - 178	
		2,3,4,7,8-PeCDF	ND	0.0000005	00		13C-1,2,3,4,7,8-1	HxCDF	67.1	26 - 152	
		1,2,3,4,7,8-HxCDF	ND	0.0000004	76		13C-1,2,3,6,7,8-1	HxCDF	59.9	26 - 123	
		1,2,3,6,7,8-HxCDF	ND	0.0000004	65		13C-2,3,4,6,7,8-1	HxCDF	67.0	28 - 136	
		2,3,4,6,7,8-HxCDF	ND	0.0000004	96		13C-1,2,3,7,8,9-1	HxCDF	73.0	29 - 147	
14		1,2,3,7,8,9-HxCDF	ND	0.0000007	01		13C-1,2,3,4,6,7,8	-HpCDF	64.0	28 - 143	
UD	× na	1,2,3,4,6,7,8-HpCDF	ND		0.000001	18	13C-1,2,3,4,7,8,9	-HpCDF	77.2	26 - 138	
u		1,2,3,4,7,8,9-HpCDF	ND	0.0000005	76		13C-OCDF		62.3	17 - 157	
Ĩ.	DNQ	OCDF	0.00000402			J	CRS 37C1-2,3,7,8-TCI	DD	84.1	35 - 197	
		Totals					Footnotes				
U		Total TCDD	ND	0.0000006	03		a. Sample specific estimated	detection limit.			
1		Total PeCDD	ND	0.0000006	77		b. Estimated maximum poss	ible concentration.			
		Total HxCDD	ND	0.0000006	90		c. Method detection limit.				
us	*10	Total HpCDD	ND		0.000011	6	d. Lower control limit - upp	er control limit.			
u		Total TCDF	ND	0.0000082	21						
al		Total PeCDF	ND	0.00000054	46						
42	*10	Total HxCDF	ND		0.000000	623					
us	×10	Total HpCDF	ND		0.0000024	44					

Analyst: JMH

Approved By:

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

level IX

Sample ID: IPE2	2095-01E (HCl) 🤇	Dattal	L003	RE					EPA I	Method 161
Client Data Name: Del 1 Project: IPE2 Date Collected: 22-N Time Collected: 22-N	Mar Analytical, Irvine 2085 May-06		Sample Data Matrix: Sample Size:	Aqueous 1.01 L	Lab Lab QC Date	oratory Data Sample: Batch No.: e Analyzed DB-5:	27731-002 8124 26-Jun-06	Date Re Date Ex Date An	cceived: tracted: alyzed DB-225:	20-Jun-0 23-Jun-0 NA
Analyte	Conc. (ug/L)	DL ^a	EMPC ^b	Qualifiers		Labeled Stand	lard	%R	LCL-UCLd	Qualifiers
2,3,7,8-TCDD	ND	0.0000006	500		IS	13C-2,3,7,8-TC	DD	71.9	25 - 164	
1,2,3,7,8-PeCDD	ND	0.0000008	30			13C-1,2,3,7,8-P	eCDD	67.1	25 - 181	
1,2,3,4,7,8-HxCDD	ND	0.0000006	99			13C-1,2,3,4,7,8-	HxCDD	81.2	32 - 141	
1,2,3,6,7,8-HxCDD	ND	0.0000007	07			13C-1,2,3,6,7,8-	HxCDD	75.8	28 - 130	
1,2,3,7,8,9-HxCDD	ND	0.0000007	08			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-TC	DF	71.1	24 - 169	
2.3.7.8-TCDF	ND		0.000001	167		13C-1,2,3,7,8-P	eCDF	66.0	24 - 185	
1.2.3.7.8-PeCDF	ND	0.0000006	50			13C-2,3,4,7,8-P	eCDF	68.1	21 - 178	
2.3.4.7.8-PeCDF	ND	0.0000006	09			13C-1,2,3,4,7,8-	HxCDF	87.3	26 - 152	
1.2,3,4,7,8-HxCDF	ND	0.0000007	59			13C-1,2,3,6,7,8-	HxCDF	83.8	26 - 123	
1,2,3,6,7,8-HxCDF	ND	0.0000007	20			13C-2,3,4,6,7,8-	HxCDF	81.5	28 - 136	
2,3,4,6,7,8-HxCDF	ND	0.0000007	95			13C-1,2,3,7,8,9-	HxCDF	72.3	29 - 147	
1,2,3,7,8,9-HxCDF	ND	0.0000013	1			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	0.0000005	54			13C-OCDF		48.9	17 - 157	
OCDF	0.0000103			J	CRS	37Cl-2,3,7,8-TC	DD	74.4	35 - 197	
Totals					Foo	tnotes				
Total TCDD	ND	0.0000006	00		a. Sa	mple specific estimate	d detection limit.			
Total PeCDD	ND		0.000012	27	b. Es	timated maximum pos	sible concentration.			
Total HxCDD	ND	0.0000007	05		c. Me	ethod detection limit.				
Total HpCDD	0.0000298				d. Lo	wer control limit - upp	per control limit.			
Total TCDF	0.00000139		0.000003	06						
Total PeCDF	ND		0.000003	64						
Total HxCDF	ND	0.0000008	96							
Total HpCDF	0.00000665									

Analyst: JMH

Approved By:

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

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Page 9 of 472

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:

Michele Chamberdin

Del Mar Analytical - Irvine Michele Chamberlin Project Manager



Sampled: 05/22/06

Received: 05/22/06

MWH-Pasadena/BoeingProject ID:Routine Outfall 004300 North Lake Avenue, Suite 1200Pasadena, CA 91101Report Number:IPE2104Attention:Bronwyn KellyIPE2104

METALS Data MDL Date Reporting Sample Dilution Date Method Qualifiers Analyte Batch Limit Limit Result Factor Extracted Analyzed 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 J Cadmium EPA 200.8 6E23079 0.025 1.0 0.093 1 05/23/06 05/23/06 J 6E23079 05/23/06 Copper EPA 200.8 0.25 2.0 4.4 05/23/06 1 Lead EPA 200.8 6E23079 0.040 1.0 0.52 1 05/23/06 05/23/06 J Mercury EPA 245.1 6E23075 0.050 0.20 0.058 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



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

									_	
Analyta	Mathad	Datah	MDL Limit	Reporting	Sample	Dilution	Date Extracted	Date A polyzod	Data Qualifiers	
Analyte	Ivietnou	Daten	Linnt	Linnt	Result	ractor	Extracted	Anaryzeu	Quanners	
Sample ID: IPE2104-01 (Outfall 0	04 - 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	J	
Cadmium	EPA 200.8-Diss	6E23097	0.025	1.0	0.12	1	05/23/06	05/25/06	J	
Copper	EPA 200.8-Diss	6E23097	0.25	2.0	1.6	1	05/23/06	05/24/06	J	
Lead	EPA 200.8-Diss	6E23097	0.040	1.0	0.14	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		

DISSOLVED METALS



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			
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			



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

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



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

	D L	Reporting	MDI	T T •4	Spike	Source	A/ DEC	%REC	DDD	RPD	Data
Analyte	Result	Limit	MDL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifiers
Batch: 6E23075 Extracted: 05/23/0)6										
Blank Analyzed: 05/23/2006 (6E23075-	BLK1)										
Mercury	ND	0.20	0.050	ug/l							
LCS Analyzed: 05/23/2006 (6E23075-B	S1)										
Mercury	8.69	0.20	0.050	ug/l	8.00		109	85-115			
Matrix Spike Analyzed: 05/23/2006 (6F	E23075-MS1)				Sou	rce: IPE1	1997-01				
Mercury	8.71	0.20	0.050	ug/l	8.00	ND	109	70-130			
Matrix Spike Dup Analyzed: 05/23/200	6 (6E23075-M	ISD1)			Sou	rce: IPE1	1997-01				
Mercury	8.72	0.20	0.050	ug/l	8.00	ND	109	70-130	0	20	
Batch: 6E23079 Extracted: 05/23/0)6										
Blank Analyzed: 05/23/2006 (6E23079-	BLK1)										
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							
LCS Analyzed: 05/23/2006 (6E23079-B	S1)										
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			



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

		Reporting			Spike	Source		%REC		RPD	Data
Analyte	Result	Limit	MDL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifiers
Batch: 6E23079 Extracte	ed: 05/23/06										
Matrix Spike Analyzed: 05/2	23/2006 (6E23079-MS1)				Sou	rce: IPE1	953-01				
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			
Matrix Spike Analyzed: 05/2	23/2006 (6E23079-MS2)				Sou	rce: IPE2	2007-01				
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			
Matrix Spike Dup Analyzed	: 05/23/2006 (6E23079-M	SD1)			Sou	rce: IPE1	953-01				
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	



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

		Reporting			Spike	Source		%REC		RPD	Data
Analyte	Result	Limit	MDL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifiers
Batch: 6E23097 Extracted: 05/23/00	<u>6</u>										
Blank Analyzed: 05/23/2006 (6E23097-E	BLK1)										
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							
LCS Analyzed: 05/23/2006-05/25/2006 (6E23097-BS	1)									
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			
Matrix Spike Analyzed: 05/24/2006 (6E2	23097-MS1)				Sou	irce: IPE	2095-01				
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			
Matrix Spike Dup Analyzed: 05/24/2006	5 (6E23097-N	ASD1)			Sou	irce: IPE2	2095-01				
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	


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

		Reporting			Spike	Source		%REC		RPD	Data
Analyte	Result	Limit	MDL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifiers
Batch: 6E24084 Extracted: 05/24/06	-										
Blank Analyzed: 05/24/2006 (6E24084-B	LK1)										
Mercury	ND	0.20	0.050	ug/l							
LCS Analyzed: 05/24/2006 (6E24084-BS	1)										
Mercury	8.16	0.20	0.050	ug/l	8.00		102	85-115			
Matrix Spike Analyzed: 05/24/2006 (6E2	4084-MS1)				Sou	irce: IPE1	1552-01				
Mercury	8.33	0.20	0.050	ug/l	8.00	0.065	103	70-130			
Matrix Spike Dup Analyzed: 05/24/2006	(6E24084-N	ASD1)			Sou	irce: IPE1	1552-01				
Mercury	8.32	0.20	0.050	ug/l	8.00	0.065	103	70-130	0	20	



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

INORGANICS

		Reporting			Spike	Source		%REC		RPD	Data
Analyte	Result	Limit	MDL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifiers
Batch: 6E22054 Extracted:	05/22/06										
Blank Analyzed: 05/22/2006 (6E	222054-BLK1)										
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							
LCS Analyzed: 05/22/2006 (6E2	2054-BS1)										
Chloride	4.85	0.50	0.15	mg/l	5.00		97	90-110			<i>M-3</i>
Sulfate	9.96	0.50	0.45	mg/l	10.0		100	90-110			
Matrix Spike Analyzed: 05/22/2	006 (6E22054-MS1)				Sou	irce: IPE	1848-02				
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
Matrix Spike Analyzed: 05/22/2	006 (6E22054-MS2)				Sou	irce: IPE	1848-17				
Sulfate	20.9	0.50	0.45	mg/l	20.0	ND	104	80-120			
Matrix Spike Dup Analyzed: 05	/22/2006 (6E22054-M	ISD1)			Sou	irce: IPE	1848-02				
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
Matrix Spike Dup Analyzed: 05	/22/2006 (6E22054-M	ISD2)			Sou	urce: IPE	1848-17				
Sulfate	20.9	0.50	0.45	mg/l	20.0	ND	104	80-120	0	20	
Batch: 6E23074 Extracted:	05/23/06										
Blank Analyzed: 05/23/2006 (6E	23074-BLK1)										
Total Dissolved Solids	ND	10	10	mg/l							

mg/l



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

INORGANICS

		Reporting			Spike	Source		%REC		RPD	Data
Analyte	Result	Limit	MDL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifiers
Batch: 6E23074 Extracted: 05/23/	<u>06</u>										
LCS Analyzed: 05/23/2006 (6E23074-I	BS1)										
Total Dissolved Solids	990	10	10	mg/l	1000		99	90-110			
Duplicate Analyzed: 05/23/2006 (6E23	074-DUP1)				Sou	irce: IPE2	2099-01				
Total Dissolved Solids	15600	10	10	mg/l		16000			3	10	
Batch: 6E24059 Extracted: 05/24/	<u>06</u>										
Blank Analyzed: 05/24/2006 (6E24059	-BLK1)										
Oil & Grease	ND	5.0	0.94	mg/l							
LCS Analyzed: 05/24/2006 (6E24059-I	BS1)										M-NR1
Oil & Grease	18.2	5.0	0.94	mg/l	20.0		91	65-120			
LCS Dup Analyzed: 05/24/2006 (6E24	059-BSD1)										
Oil & Grease	18.4	5.0	0.94	mg/l	20.0		92	65-120	1	20	
Batch: 6E24118 Extracted: 05/24/	<u>06</u>										
Blank Analyzed: 05/24/2006 (6E24118	-BLK1)										
Total Suspended Solids	ND	10	10	mg/l							
LCS Analyzed: 05/24/2006 (6E24118-I	BS1)										
Total Suspended Solids	985	10	10	mg/l	1000		98	85-115			
Duplicate Analyzed: 05/24/2006 (6E24	118-DUP1)				Sou	irce: IPE2	2102-01				
Total Suspended Solids	130	10	10	mg/l		130			0	10	



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

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.

						Compliance
LabNumber	Analysis	Analyte	Units	Result	MRL	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



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

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



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	Х	Х
EPA 200.8-Diss	Water	Х	Х
EPA 200.8	Water	Х	Х
EPA 245.1-Diss	Water	Х	Х
EPA 245.1	Water	Х	Х
EPA 300.0	Water	Х	Х
EPA 413.1	Water	Х	Х
SM2540C	Water	Х	Х

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

Subcontracted Laboratories

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

1104 Windfield Way - El Dorado Hills, CA 95762Analysis Performed: 1613-Dioxin-HR-Alta

Samples: IPE2104-01

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

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C	
2090	

Page 1 of 1		Field readings: Temp = λ	pH= / /		Comments							Filter w/in 24hr of receipt at lab				Time: (check) 5 Dayrs 10 Dave	Normal	Inly 72 Hours
ŅĊ	JIRED															Turn around 24 Hours 48 Hours	72 Hours	Perchlorate (Metals Only Sample In te
IR21	IALYSIS REQU	etals: Sb, I	M b∋ T, g⊢	vlossi I, Pb, I	Total Cd, C							×				D		840
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DY F	a M M	g Metals: g, TI	ap' H stable	Яесоvе 1, Си, Г	Sb, C		×											
CUSTC					Bottle *	# ₹	₽	2A, 2B	3A, 3B	4A, 4B	5A, 5B	g				Jan 1	Ø	K
AIN OF (VPDES II 004 SRE-1		- 10	Preservative	HNO3	HNO3	None	нсі	None	None	None				Received By	Received By	Received By
1 04/28/06 CH	Project:	Boeing-SSFL 1 Routine Outfa Stormwater at	Phone Number	(626) 568-651	Sampling	Date/Time	1317					13/20				te/Time: \$6 4/2&	te/Time:	te/Time:
		1200	Kelly		# of	- Cont	-	5	2	2	2	-				 Strat	Le Da	Da
lytica	is:	ie, Suite 1	ronwyn I	30,08	Container	1L Polv	1L Poly	1L Amber	1L Amber	Poly-500 ml	Poly-500 ml	Poly-1L					S.	
r Ana	e/Addres	sadena ke Aveni A 91101	lager: B	E puter	Sample	W	3	N	N	3	3	3				2) (
Del Ma	Client Name	MWH-Pa: 300 North La Pasadena, C	Project Mar	Sampler:	Sample	Description Outfall 004	Outfall 004- Dup	Outfall 004	Outfall 004	Outfall 004	Outfall 004	Outfall 004				Relinquished E	Relinquished E	Relinquished E



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. Thank you for choosing Alta as part of your analytical support team.

Sincerely,

fauelonfor

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

Section I: Sample Inventory Report Date Received: 5/24/2006

<u>Alta Lab. ID</u>

Client Sample ID

27732-001

IPE2104-01

SECTION II

Method Blan	k									EPA Method 1613
Matrix:	Aqueous		QC Batch No.:	80)54	Lab S	Sample:	0-MB001		
Sample Size:	1.00 I		Date Extracted	3()-May-06	Date	Analyzed DB-5:	31-May-06	Date An	alvzed DB-225. NA
Sample Size.	1.00 L		Dute Extracted		<i>J-Widy-00</i>	Date	Analyzed DD-5.	51-Way-00	Date All	
Analyte	Conc. (u	ıg/L)	DL ^a	EMPC ^b	Qualifiers		Labeled Standa	rd	%R	LCL-UCL ^d Qualifiers
2,3,7,8-TCDD		ND	0.00000133			<u>IS</u>	13C-2,3,7,8-TCI	DD	61.1	25 - 164
1,2,3,7,8-PeCE	DD	ND	0.00000127				13C-1,2,3,7,8-Pe	CDD	66.5	25 - 181
1,2,3,4,7,8-Hx	CDD	ND	0.00000119				13C-1,2,3,4,7,8-I	HxCDD	64.5	32 - 141
1,2,3,6,7,8-Hx	CDD	ND	0.00000133				13C-1,2,3,6,7,8-1	HxCDD	61.0	28 - 130
1,2,3,7,8,9-Hx	CDD	ND	0.00000128				13C-1,2,3,4,6,7,8	3-HpCDD	60.2	23 - 140
1,2,3,4,6,7,8-H	IpCDD	ND	0.00000182				13C-OCDD		45.2	17 - 157
OCDD		ND	0.00000206				13C-2,3,7,8-TCE)F	64.1	24 - 169
2,3,7,8-TCDF		ND	0.00000172				13C-1,2,3,7,8-Pe	CDF	67.9	24 - 185
1,2,3,7,8-PeCE	D F	ND	0.000000749				13C-2,3,4,7,8-Pe	CDF	62.8	21 - 178
2,3,4,7,8-PeCE	D F	ND	0.000000758				13C-1,2,3,4,7,8-I	HxCDF	65.3	26 - 152
1,2,3,4,7,8-Hx	CDF	ND	0.000000621				13C-1,2,3,6,7,8-I	HxCDF	58.7	26 - 123
1,2,3,6,7,8-Hx	CDF	ND	0.000000584				13C-2,3,4,6,7,8-I	HxCDF	55.9	28 - 136
2,3,4,6,7,8-Hx	CDF	ND	0.000000778				13C-1,2,3,7,8,9-1	HxCDF	54.0	29 - 147
1,2,3,7,8,9-Hx	CDF	ND	0.00000116				13C-1,2,3,4,6,7,8	3-HpCDF	60.5	28 - 143
1,2,3,4,6,7,8-H	pCDF	ND	0.000000997				13C-1,2,3,4,7,8,9	-HpCDF	58.4	26 - 138
1,2,3,4,7,8,9-Н	pCDF	ND	0.00000107				13C-OCDF		52.2	17 - 157
OCDF		ND	0.00000249			CRS	37Cl-2,3,7,8-TC	DD	75.0	35 - 197
Totals						Foot	notes			
Total TCDD		ND	0.00000133			a. Sam	ple specific estimated of	letection limit.		
Total PeCDD		ND	0.00000127			b. Estin	mated maximum possib	le concentration.		
Total HxCDD		ND	0.00000127			c. Metl	nod detection limit.			
Total HpCDD		ND	0.00000182			d. Low	er 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

OPR Results						EPA]	Method 1613
Matrix: Sample Size:	Aqueous 1.00 L		QC Batch No.: Date Extracted:	8054 30-May-06	Lab Sample:0-OPR001Date Analyzed DB-5:31-May-06	Date Analyzed	1 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 - 164
1,2,3,7,8-PeCI	DD	50.0	49.2	35 - 71	13C-1,2,3,7,8-PeCDD	76.2	25 - 181
1,2,3,4,7,8-Hx	CDD	50.0	51.1	35 - 82	13C-1,2,3,4,7,8-HxCDD	69.2	32 - 141
1,2,3,6,7,8-Hx	CDD	50.0	49.4	38 - 67	13C-1,2,3,6,7,8-HxCDD	66.6	28 - 130
1,2,3,7,8,9-Hx	CDD	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-H	łpCDD	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-PeCI	DF	50.0	49.6	40 - 67	13C-2,3,4,7,8-PeCDF	78.3	21 - 178
2,3,4,7,8-PeCI	DF	50.0	49.0	34 - 80	13C-1,2,3,4,7,8-HxCDF	66.5	26 - 152
1,2,3,4,7,8-Hx	CDF	50.0	50.2	36 - 67	13C-1,2,3,6,7,8-HxCDF	60.0	26 - 123
1,2,3,6,7,8-Hx	CDF	50.0	48.5	42 - 65	13C-2,3,4,6,7,8-HxCDF	68.7	28 - 136
2,3,4,6,7,8-Hx	CDF	50.0	49.2	35 - 78	13C-1,2,3,7,8,9-HxCDF	68.9	29 - 147
1,2,3,7,8,9-Hx	CDF	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-H	IpCDF	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-H	IpCDF	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 11:49

Sample ID: IPE2	2104-01								EPA N	Aethod 1613
Client Data			Sample Data		Lab	oratory Data				
Name: Del	Mar, Irvine		Matrix:	Aqueous	Lab	Sample:	27732-001	Date Re	ceived:	24-May-06
Project: IPE2	2104 Лон 06		Sample Size:	1.00 L	QC	Batch No.:	8054	Date Ex	tracted:	30-May-06
Time Collected: 1315	lay-00				Date	Analyzed DB-5:	31-May-06	Date An	alyzed DB-225:	NA
Analyte	Conc. (ug/L)	DL ^a	EMPC ^b	Qualifiers		Labeled Standar	rd	%R	LCL-UCL ^d	Qualifiers
2,3,7,8-TCDD	ND	0.0000012	26		<u>IS</u>	13C-2,3,7,8-TCDI)	48.8	25 - 164	
1,2,3,7,8-PeCDD	ND	0.000001	67			13C-1,2,3,7,8-PeC	CDD	47.7	25 - 181	
1,2,3,4,7,8-HxCDD	ND	0.000001	10			13С-1,2,3,4,7,8-Н	xCDD	47.8	32 - 141	
1,2,3,6,7,8-HxCDD	ND	0.000001	15			13С-1,2,3,6,7,8-Н	xCDD	45.6	28 - 130	
1,2,3,7,8,9-HxCDD	ND	0.000001	13			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-TCDI	7	46.3	24 - 169	
2,3,7,8-TCDF	ND	0.000001	52			13C-1,2,3,7,8-PeC	CDF	48.6	24 - 185	
1,2,3,7,8-PeCDF	ND	0.000000	859			13C-2,3,4,7,8-PeC	CDF	44.9	21 - 178	
2,3,4,7,8-PeCDF	ND	0.000000	891			13С-1,2,3,4,7,8-Н	xCDF	48.5	26 - 152	
1,2,3,4,7,8-HxCDF	ND	0.000000	712			13С-1,2,3,6,7,8-Н	xCDF	42.5	26 - 123	
1,2,3,6,7,8-HxCDF	ND	0.000000	694			13С-2,3,4,6,7,8-Н	xCDF	44.2	28 - 136	
2,3,4,6,7,8-HxCDF	ND	0.000000	831			13С-1,2,3,7,8,9-Н	xCDF	48.7	29 - 147	
1,2,3,7,8,9-HxCDF	ND	0.000001	07			13C-1,2,3,4,6,7,8-	HpCDF	49.4	28 - 143	
1,2,3,4,6,7,8-HpCDF	ND		0.00000	245		13C-1,2,3,4,7,8,9-	HpCDF	50.0	26 - 138	
1,2,3,4,7,8,9-HpCDF	ND	0.000000	899			13C-OCDF		45.2	17 - 157	
OCDF	ND		0.00000	459	CRS	37Cl-2,3,7,8-TCD	D	91.9	35 - 197	
Totals					Foo	otnotes				
Total TCDD	ND	0.000001	26		a. Sa	mple specific estimated of	detection limit.			
Total PeCDD	ND	0.000001	67		b. Es	timated maximum possib	ole concentration.			
Total HxCDD	ND		0.00000	145	c. M	ethod detection limit.				
Total HpCDD	0.0000333				d. Lo	ower control limit - upper	control limit.			
Total TCDF	ND	0.000001	52							
Total PeCDF	ND	0.000000	875							
Total HxCDF	0.00000312									
Total HpCDF	0.00000665		0.00000	910						

Analyst: DMS

APPENDIX

DATA QUALIFIERS & ABBREVIATIONS

В	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.
Н	The signal-to-noise ratio is greater than 10:1.
Ι	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

SUBCONTRACT ORDER

Del Mar Analytical - Irvine

IPE2104

2-732

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: IPE2104-01	Water	Sampled:05/22/06 13:15	AND	· · ·
EDD + Level 4	06/01/06 12:0	00 06/19/06 13:15		Excel EDD email to pm,Include Std logs for Lvl IV
1613-Dioxin-HR-Alta Containers Supplied:	06/01/06 12:0	00 05/29/06 13:15		J flags,17 congeners,no TEQ,ug/L,sub=Alta
1 L Amber (C)	1 L Amber (L)		

Y. Bandiet 5/24/06 Date Released By Date Received By

Released By Project 27732

Received By

Date

SAMPLE LOG-IN CHECKLIST

Alta Project #: 27732

Alta Project #:	2773	2			_		
Samples Arrival:	Date/Time S / ၃.4 /	06 0845		s: KB	Locat Shelf/	ion: WR	1-2 1A
Logged In:	Date/Time S/み4/0し	Initial	s: FB	Location:(WR-J- Shelf/Rack: <u>A-J-</u>		Ъ Д	
Delivered By:	FedEx	UPS	Cal	DHL	D	Hand elivered	Other
Preservation:	lce	Blue	e Ice	Dry le	се	No	ne
Temp °C .	<u>م</u>	Time:)900)	Thern	nometer ID	: DT-20

					YES	NO	NA	
Adequate Sample Volume Receiv	ved?				$\overline{\mathcal{V}}$			
Holding Time Acceptable?					L			
Shipping Container(s) Intact?					4			
Shipping Custody Seals Intact?					u			
Shipping Documentation Present	?				$\boldsymbol{\mathcal{V}}$			
Airbill Trk #	7914 9	1223 4	<u>5500</u>		\sim			
Sample Container Intact?					\checkmark			
Sample Custody Seals Intact?							-	
Chain of Custody / Sample Docur	mentation P	resent?			\sim	-		
COC Anomaly/Sample Acceptance	ce Form con	npleted?			誕升		$ \mathbf{\nu} $	
If Chlorinated or Drinking Water S	amples, Ac	ceptable P	reservation?		·	_	4	
Na ₂ S ₂ O ₃ Preservation Documente	ed?		COC	Sam Conta	ple iner	No	n	
Shipping Container	Alta	Client	Retain	Retu		Disp	ose	
A								•

Comments:

APPENDIX G

Section 48

Outfall 004, May 22, 2006

MECX Data Validation Reports

CAT'	CONTRACT COMPL	LIANCE SCREENING FORM FOR HARDCOPY DATA
MEC	CX, LLC	Package ID B4DF104
1220 C:t	500 East Vassar Drive	SDG No IDE2104
Suite	awood CO 80226	No of Applyses 1
Lak	Laboratory Alta Analy	tical Date: July 25 2006
	Reviewer F. Wesslin	a Reviewer's Signature
	Analysis/Method Dioxins/Fu	irans the first weeks
	7 marysis moulou Dioxins 1 a	nans (per cer
ACT	TION ITEMS ^a	
	Case Narrative	
	Deficiencies	
2.	Out of Scope	
	Analyses	
3.	Analyses Not Conducted	
	19 19 19 19 19 19 19 19 19 19 19 19 19 1	
4.	Missing Hardcopy	
	Deliverables	
5.	Incorrect Hardcopy	
	Deliverables	
6.	Deviations from Analysis	Qualifications were assigned for the following:
	Protocol, e.g.,	- the result between the RL and the MDL was estimated
	Holding Times	- EMPC values were qualified as estimated nondetects
	GC/MS Tune/Inst. Performance	
	Calibration	
	Method blanks	
	Surrogates	
	Matrix Spike/Dup LCS	
	Field QC	
	Internal Standard Performance	
	Compound Identification	
	Quantitation	
00	System Performance	
co	MMENTS"	



DATA VALIDATION REPORT

NPDES Monitoring Program Routine Outfall 004

ANALYSIS: DIOXINS/FURANS SAMPLE DELIVERY GROUP: IPE2104

Prepared by

MEC[×], 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[×]* 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.

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

Table 1. Sample Identification

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 $4^{\circ}C \pm 2^{\circ}C$. 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.

	Project:	NPDES
	SDG:	IPE2104
DATA VALIDATION REPORT	Analysis:	D/F

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.

.....

	Project:	NPDES
	SDG:	IPE2104
DATA VALIDATION REPORT	Analysis:	D/F

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

.....

	Project:	NPDES
DATA VALIDATION REPORT	Analysis:	D/F

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

		Sample ID: IPE2	2104-01 Outf	all 0	04					EPA N	lethod 1613
Nor	Port of	Client Data Name: Del 1 Project: IPE2 Date Collected: 22-N Time Collected: 1315	Mar, Irvine 2104 May-06		Sample Data Matrix: Sample Size:	Aqueous 1.00 L	Laboratory Data Lab Sample: QC Batch No.: Date Analyzed DB-5:	27732-001 8054 31-May-06	Date Re Date Ex Date An	ceived: tracted: alyzed DB-225:	24-May-06 30-May-06 NA
. Os	C	Analyte	Conc. (ug/L)	DL ^a	EMPC ^b	Qualifiers	Labeled Standa	ard	%R	LCL-UCL ^d	Oualifiers
U	-	2,3,7,8-TCDD	ND	0.0000012	26		1S 13C-2,3,7,8-TCD	DD	48.8	25 - 164	
. 1		1,2,3,7,8-PeCDD	ND	0.0000016	57		13C-1,2,3,7,8-Pe	CDD	47.7	25 - 181	
		1,2,3,4,7,8-HxCDD	ND	0.0000011	0		13C-1,2,3,4,7,8-H	HxCDD	47.8	32 - 141	
		1,2,3,6,7,8-HxCDD	ND	0.0000011	5		13C-1,2,3,6,7,8-H	HxCDD	45.6	28 - 130	
1		1,2,3,7,8,9-HxCDD	ND	0.0000011	3		13C-1,2,3,4,6,7,8	-HpCDD	53.6	23 - 140	
1	DNQ	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-TCD	DF	46.3	24 - 169	
U		2,3,7,8-TCDF	ND	0.0000015	52		13C-1,2,3,7,8-Pe	CDF	48.6	24 - 185	
Ĩ		1,2,3,7,8-PeCDF	ND	0.0000008	159		13C-2,3,4,7,8-Pe	CDF	44.9	21 - 178	
		2,3,4,7,8-PeCDF	ND	0.0000008	91		13C-1,2,3,4,7,8-H	IxCDF	48.5	26 - 152	
		1,2,3,4,7,8-HxCDF	ND	0.0000007	/12		13C-1,2,3,6,7,8-H	AxCDF	42.5	26 - 123	
:		1,2,3,6,7,8-HxCDF	ND	0.0000006	94		13C-2,3,4,6,7,8-H	AxCDF	44.2	28 - 136	
1		2,3,4,6,7,8-HxCDF	ND	0.000008	31		13C-1,2,3,7,8,9-H	IxCDF	48.7	29 - 147	
. *		1,2,3,7,8,9-HxCDF	ND	0.0000010	7		13C-1,2,3,4,6,7,8	-HpCDF	49.4	28 - 143	
UJ	\$100	1,2,3,4,6,7,8-HpCDF	ND		0.000002	245	13C-1,2,3,4,7,8,9	-HpCDF	50.0	26 - 138	
14		1,2,3,4,7,8,9-HpCDF	ND	0.0000008	99		13C-OCDF		45.2	17 - 157	
US	\$10	OCDF	ND		0.000004	459	CRS 37C1-2,3,7,8-TCI	DD	91.9	35 - 197	
		Totals					Footnotes				
U		Total TCDD	ND	0.0000012	6		a. Sample specific estimated	detection limit.			
4		Total PeCDD	ND	0.0000016	7		b. Estimated maximum possi	ible concentration.			
41	+10	Total HxCDD	ND		0.000001	45	c. Method detection limit.				
		Total HpCDD	0.0000333				d. Lower control limit - uppe	er control limit.			
U		Total TCDF	ND	0.0000015	2						
. 14		Total PeCDF	ND	0.0000008	75						
24		Total HxCDF	0.00000312								
		Total HpCDF	0.00000665		0.000009	010					
	1	Analyst: DMS		i - Brande Politica Bara			Approved By:	Richard A. Spas	s 25-Ju	-2006 07:06	
	Project	27732			T.I	EV		/			NPDES Page 6 o
											NW 100 TO 8051 200

NPDES - 1172 Page 6 of 242

CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

	~X	Package ID: B4MT89
	Contract Verson Drives	Task Order: 1261 001D 01
122	69 East Vassar Drive	SDG No : IPE2104
Aur	ora, CO 80014	No. of Analyses: 2
	Laboratory DalMan	Dete: July 21, 2006
	Laboratory: Del Mar A	Analytical Date: July 21, 2000
	Reviewer: P. Meeks	Reviewer's Signature
	Analysis/Method: Metals	P. Met
ACT	TION ITEMS ^a	
	Case Narrative	
	Deficiencies	
2.	Out of Scope Analyses	
	An always Mat Constructed	
3.	Analyses Not Conducted	
4	Missing Hardoopy	
4.		
	Deliverables	
5	Incorrect Hardcony	
J.	Deliverables	
	Deliverables	
6.	Deviations from Analysis	Qualifications were applied for blank detects and detects below
	Protocol, e.g.,	the reporting limit.
	Holding Times	
	GC/MS Tune/Inst Performance	
	Calibration	
	Method blanks	
	Surrogates	
	Matrix Snike/Dun LCS	
	Field OC	
	Internal Standard Performance	
	System Performance	
<u> </u>	MENTS ^b	
ag	Subcontracted analytical laboratory is no	t meeting contract and/or method requirements.
b E	Differences in protocol have been adopte	d by the laboratory but no action against the laboratory is required.



DATA VALIDATION REPORT

NPDES Sampling Outfall 004

ANALYSIS: METALS

SAMPLE DELIVERY GROUP IPE2104

Prepared by

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

NPDES - 1174

	SDG:	IPE2104
DATA VALIDATION REPORT	Analysis:	Metals

1. INTRODUCTION

Task Order Title:	NPDES Sampling
MEC ^x 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^{\times} 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.

1

Pr	roject:	NPDES
SE	DG:	IPE2104
DATA VALIDATION REPORT Ar	nalysis:	Metals

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 $\pm 2^{\circ}$ 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.

DATA VALIDATION REPORT SDG: IPE210 Analysis: Meta		Project:	NPDES
DATA VALIDATION REPORT Analysis: Meta		SDG:	IPE2104
	DATA VALIDATION REPORT	Analysis:	Metals

2.4 BLANKS

Cadmium was reported in both method blanks, 6E23097 and 6E23079, at -0.0468 and -0.0448 μ g/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 μ g/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 μ g/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 where 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.

	Project:	NPDES
	SDG:	IPE2104
DATA VALIDATION REPORT	Analysis:	Metals

2.10 INTERNAL STANDARDS PERFORMANCE

For the target analytes analyzed by ICP-MS, the internal standards were within the methodspecified 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

Analyta	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Oualifie	:rs
Analyte Ostfo	11 004 Dissolut	2d	Linne	Chint	INCOULT	I actor	Danuetteu	1 xiiui y 2000	Rev	Qual
Sample ID: IPE2104-01 (Outfall	004 - Water) - cont.								Quel	Code
Reporting Units: ug/l									Contrast and the Children of C	
Antimony	EPA 200.8-Diss	6E23097	0.050	2.0	0.67	1	05/23/06	05/24/06	UJJ	В
Cadmium	EPA 200.8-Diss	6E23097	0.025	1.0	0.12	1	05/23/06	05/25/06	<u> </u>	B, DNQ
Copper	EPA 200.8-Diss	6E23097	0.25	2.0	1.6	1	05/23/06	05/24/06	21	DNQ
Lead	EPA 200.8-Diss	6E23097	0.040	1.0	0.14	1	05/23/06	05/24/06	2 l	B, DNQ
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	

Del Mar Analytical - Irvine Michele Chamberlin Project Manager

LEVEL (V

IPE2104 <PasNBDES> 1180


		METALS	
Attention: Bronwyn Kelly	Report Number.	1 62 10 1	
300 North Lake Avenue, Suite 1200	Report Number:	IPE2104	Sampled: 05/22/06 Received: 05/22/06
MWH-Pasadena/Boeing	Project ID:	Routine Outfall 004	

			MDL	Reporting	Sample	Dilution	Date	Date	Data	1 I
Analyte	tell out T Method	Batch	Limit	Limit	Result	Factor	Extracted	Analyzed	Qualifi	ers
	Tan out Iotal								Ker.	Qual
Sample ID: IPE2104-0	1 (Outfall 004 - Water)								Qual	code
Reporting Units:	ug/l							-		70
Antimony	EPA 200.8	6E23079	0.050	2.0	0.29	1	05/23/06	05/23/06	$\Omega 1$	В
Cadmium	EPA 200.8	6E23079	0.025	1.0	0.093	1	05/23/06	05/23/06	Jl	BIDNG
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	7 J	DNQ
Mercury	EPA 245.1	6E23075	0.050	0.20	0.058	1	05/23/06	05/23/06	21	DNQ
Thallium	EPA 200.8	6E23079	0.15	1.0	ND	1	05/23/06	05/23/06	U	

Del Mar Analytical - Irvine Michele Chamberlin Project Manager



CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

MEC ^x	Package ID: B4WC88
12269 East Vassar Drive	Task Order: 1261.001D.01
Aurora, CO 80014	SDG No.: IPE2104
	No. of Analyses: 1
Laboratory: Del Mar Analytical	Date: July 21, 2006
Reviewer: P. Meeks	Reviewer's Signature
Analysis/Method: General Minerals	P. MUS

AC	FION ITEMS ^a	
	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	
со	MMENTS ^b	Acceptable as reviewed.
	are an	
^a S	Subcontracted analytical laboratory is not	meeting contract and/or method requirements.
^b C	Differences in protocol have been adopte	d 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^X, LLC 12269 East Vassar Drive Aurora, CO 80014

	SDG	IPE2104
	000.	11 62104
DATA VALIDATION REPORT	Analysis:	Gen. Min.

1. INTRODUCTION

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

The sample listed in Table 1 was validated based on the guidelines outlined in the MEC[×] 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.

1

	Project:	NPDES
	SDG:	IPE2104
DATA VALIDATION REPORT	Analysis:	Gen. Min.

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 $4^{\circ}C \pm 2^{\circ}C$, at $3^{\circ}C$. 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 ≥ 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.

	Project:	NPDES
	SDG:	IPE2104
DATA VALIDATION REPORT	Analysis:	Gen. Min.

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

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

Report Number: IPE2104

INORGANICS										
Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifi	iers
Sample ID: IPE2104-01 (Outfall 004 - Wa	ter) - cont.							(qual	Code
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	0	
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	\cup	

Del Mar Analytical - Irvine Michele Chamberlin Project Manager



IPE2104 <PastPDES> 1188

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:

Michele Chamberdin

Del Mar Analytical - Irvine Michele Chamberlin Project Manager



Sampled: 05/22/06

Received: 05/22/06

MWH-Pasadena/BoeingProject ID:Routine Outfall 006300 North Lake Avenue, Suite 1200Pasadena, CA 91101Report Number:IPE2106Attention:Bronwyn KellyIPE2106IPE2106

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



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

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
		Daten	Linnt	Linnt	Kesuit	T actor	Extracted	Analyzeu	Quanners
Sample ID: IPE2106-01 (Outfall)	006 - Water) - cont.								
Reporting Units: ug/l									
Antimony	EPA 200.8-Diss	6E23097	0.050	2.0	0.84	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	
Copper	EPA 200.8-Diss	6E23097	0.25	2.0	1.2	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	



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
Sample ID: IPE2106-01 (Outfall 000	5 - Water) - cont.								
Reporting Units: mg/l									
Chloride	EPA 300.0	6E22053	0.15	0.50	12	1	05/22/06	05/22/06	
Nitrate/Nitrite-N	EPA 300.0	6E22053	0.080	0.15	3.7	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	15	1	05/22/06	05/22/06	
Total Dissolved Solids	SM2540C	6E23074	10	10	190	1	05/23/06	05/23/06	
Total Suspended Solids	EPA 160.2	6E24118	10	10	10	1	05/24/06	05/24/06	



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

SHORT HOLD TIME DETAIL REPORT

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



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

	D K	Reporting	MDI	T T • /	Spike	Source	A/ DEC	%REC	DDD	RPD	Data
Analyte	Result	Limit	MDL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifiers
Batch: 6E23075 Extracted: 05/23/0	6										
Blank Analyzed: 05/23/2006 (6E23075-	BLK1)										
Mercury	ND	0.20	0.050	ug/l							
LCS Analyzed: 05/23/2006 (6E23075-B	S1)										
Mercury	8.69	0.20	0.050	ug/l	8.00		109	85-115			
Matrix Spike Analyzed: 05/23/2006 (6E	23075-MS1)				Sou	rce: IPE1	1997-01				
Mercury	8.71	0.20	0.050	ug/l	8.00	ND	109	70-130			
Matrix Spike Dup Analyzed: 05/23/200	6 (6E23075-M	ISD1)			Sou	rce: IPE1	1997-01				
Mercury	8.72	0.20	0.050	ug/l	8.00	ND	109	70-130	0	20	
Batch: 6E23079 Extracted: 05/23/0	6										
Blank Analyzed: 05/23/2006 (6E23079-	BLK1)										
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							
LCS Analyzed: 05/23/2006 (6E23079-B	S1)										
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			



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

		Reporting			Spike	Source		%REC		RPD	Data
Analyte	Result	Limit	MDL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifiers
Batch: 6E23079 Extracto	ed: 05/23/06										
Matrix Spike Analyzed: 05/2	23/2006 (6E23079-MS1)				Sou	irce: IPE1	953-01				
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			
Matrix Spike Analyzed: 05/2	23/2006 (6E23079-MS2)				Sou	irce: IPE2	2007-01				
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			
Matrix Spike Dup Analyzed	l: 05/23/2006 (6E23079-M	SD1)			Sou	irce: IPE1	953-01				
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	



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

		Reporting			Spike	Source		%REC		RPD	Data
Analyte	Result	Limit	MDL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifiers
Batch: 6E23097 Extracted: 05/23/06	-										
Blank Analyzed: 05/23/2006 (6E23097-Bl	L K1)										
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							
LCS Analyzed: 05/23/2006-05/25/2006 (6	E23097-BS1	.)									
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			
Matrix Spike Analyzed: 05/24/2006 (6E2	3097-MS1)				Sou	irce: IPE2	2095-01				
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			
Matrix Spike Dup Analyzed: 05/24/2006	(6E23097-M	ISD1)			Sou	irce: IPE2	2095-01				
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	



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

		Reporting			Spike	Source		%REC		RPD	Data
Analyte	Result	Limit	MDL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifiers
Batch: 6E24084 Extracted: 05/24/06	-										
Blank Analyzed: 05/24/2006 (6E24084-B	LK1)										
Mercury	ND	0.20	0.050	ug/l							
LCS Analyzed: 05/24/2006 (6E24084-BS	1)										
Mercury	8.16	0.20	0.050	ug/l	8.00		102	85-115			
Matrix Spike Analyzed: 05/24/2006 (6E2	4084-MS1)				Sou	irce: IPE1	1552-01				
Mercury	8.33	0.20	0.050	ug/l	8.00	0.065	103	70-130			
Matrix Spike Dup Analyzed: 05/24/2006	(6E24084-N	ASD1)			Sou	irce: IPE1	1552-01				
Mercury	8.32	0.20	0.050	ug/l	8.00	0.065	103	70-130	0	20	



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

		Reporting			Spike	Source		%REC		RPD	Data
Analyte	Result	Limit	MDL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifiers
Batch: 6E22053 Extracted: 05/22/06	-										
Blank Analyzed: 05/22/2006 (6E22053-Bl	LK1)										
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							
LCS Analyzed: 05/22/2006 (6E22053-BS1	l)										
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			
Matrix Spike Analyzed: 05/22/2006 (6E2)	2053-MS1)				Sou	irce: IPE2	2083-01				
Sulfate	368	5.0	4.5	mg/l	100	290	78	80-120			M2
Matrix Spike Dup Analyzed: 05/22/2006	(6E22053-N	MSD1)			Sou	irce: IPE2	2083-01				
Sulfate	366	5.0	4.5	mg/l	100	290	76	80-120	1	20	M2
Batch: 6E23074 Extracted: 05/23/06	_										
Blank Analyzed: 05/23/2006 (6E23074-Bl	LK1)										
Total Dissolved Solids	ND	10	10	mg/l							
LCS Analyzed: 05/23/2006 (6E23074-BS1	0										
Total Dissolved Solids	990	10	10	mg/l	1000		99	90-110			
Duplicate Analyzed: 05/23/2006 (6E23074	4-DUP1)				Soi	irce: IPE2	2099-01				
Total Dissolved Solids	15600	10	10	mg/l		16000			3	10	
Batch: 6E24059 Extracted: 05/24/06	_										
Blank Analyzed: 05/24/2006 (6E24059-Bl	LK1)										
Oil & Grease	ND	5.0	0.94	mg/l							



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

		Reporting			Spike	Source		%REC		RPD	Data
Analyte	Result	Limit	MDL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifiers
Batch: 6E24059 Extracted: 05	5/24/06										
LCS Analyzed: 05/24/2006 (6E240)59-BS1)										M-NR1
Oil & Grease	18.2	5.0	0.94	mg/l	20.0		91	65-120			
LCS Dup Analyzed: 05/24/2006 (6	6E24059-BSD1)										
Oil & Grease	18.4	5.0	0.94	mg/l	20.0		92	65-120	1	20	
Batch: 6E24118 Extracted: 05	5/24/06										
Blank Analyzed: 05/24/2006 (6E24	4118-BLK1)										
Total Suspended Solids	ND	10	10	mg/l							
LCS Analyzed: 05/24/2006 (6E241	1 18-BS1)										
Total Suspended Solids	985	10	10	mg/l	1000		98	85-115			
Duplicate Analyzed: 05/24/2006 (6	5E24118-DUP1)				Sou	irce: IPE2	2102-01				
Total Suspended Solids	130	10	10	mg/l		130			0	10	



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

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



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



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	Х	Х
EPA 200.8-Diss	Water	Х	Х
EPA 200.8	Water	Х	Х
EPA 245.1-Diss	Water	Х	Х
EPA 245.1	Water	Х	Х
EPA 300.0	Water	Х	Х
EPA 413.1	Water	Х	Х
SM2540C	Water	Х	Х

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

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

Page 1 of 1		Field readings:	Temp = Temp	₩= 7.¥	Comments								Filter w/in 24hr of receipt at lab					im amind Time: (check)	Hours 5 Days	8 Hours 10 Days	Normal Normal	erchlorate Only 72 Hours	etais Only 72 Hours	
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1 04/28/06 CH/	Project:	Boeing-SSFL N Routine Outfa Stormwater at		Phone Number (626) 568-669	Fax Number: (626) 568-6515	Sampling Date/Time	Strates						5/22/2					ta/Time.	solec -	te/Time:	18-2	te/Time:		
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ar Aná	ne/Addre	asadené	CA 91101	anager: E	Barre	Sample Matrix	N	>	8	>	3	3	3					 	A A	A	freed	J. J.	2	
Del Má	Client Nar	MWH-P	Pasadena,	Project Mi	Sampler:	Sample Description	Outfall 006	Outfall 006- Dup	Outtall 006	Outfall 006	Outfall 006	Outfall 006	Outfall 006					Batinonichao	Berns	Relinquishec	NAX NAX	Relinquishec		

2050



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. Thank you for choosing Alta as part of your analytical support team.

Sincerely,

FUN Martha M. Marer

HRMS Services Director



Acta Analytical Laberatory 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

Project 27734

Section I: Sample Inventory Report Date Received: 5/24/2006

Alta Lab. ID

Client Sample ID

27734-001

IPE2106-01

SECTION II

Sample Size 1.01 Date Extracted. No.May:relation Date Analyzed DB-5. 31-May-of6 Date Name Analyre Conc. (ug/L) DL. ^{al} EMPC ^b Qualifiers Labeled Standard $\infty_{\rm eff}$ 2.3.7.8-FCDD ND 0.00000133 EMPC ^b Qualifiers Labeled Standard $\infty_{\rm eff}$ 2.3.7.8-FCDD ND 0.00000133 ES 1.3.7.8-FCDD 66.1 1.2.3.7.8-FCDD ND 0.00000133 ES 1.3.7.8-FCDD 66.1 1.2.3.7.8-FCDD ND 0.00000122 1.3.7.8-FCDD 66.1 1.3.7.8-FCDF 66.1 2.3.4.7.8-FCDF ND 0.00000122 1.3.7.8-FCDF 66.1 1.3.7.8-FCDF 66.1 2.3.4.7.8-FCDF ND 0.00000122 1.3.7.8-FCDF 66.1 1.3.7.8-FCDF 66.1 2.3.4.7.8-FCDF ND 0.00000122 1.3.6.7.8+FCDF 66.1 1.3.7.8-FCDF 66.1 2.3.4.7.8-FCDF ND 0.00000122 1.3.6.7.8+FCDF 66.1 1.3.6.7.8+FCDF 66.1 2.3	Matrix: A	Aqueous	QC Batch No	.: 805	4	Lab Sample: 0	-MB001		
Analyte Conc. (ug/L) DL a EMPC b Qualifiers Labelet Standard o R 23.7.8-TCDD ND 0.0000133 EMPC b Qualifiers Labelet Standard o R 23.7.8-TCDD ND 0.0000133 EMPC b Qualifiers Labelet Standard o R 12.3.7.8-FtCDD ND 0.0000113 13C-12.3.7.8-FtCDD 61.1 12.3.7.8-FtCDD ND 0.0000113 13C-12.3.7.8-FtCDD 61.1 12.3.7.8-FtCDD ND 0.0000122 13C-12.3.4.7.8-FtCDD 61.1 12.3.7.8-FtCDF ND 0.0000122 13C-12.3.4.7.8-FtCDD 61.1 12.3.7.8-FtCDF ND 0.0000122 13C-12.3.4.7.8-FtCDF 61.1 2.3.7.8-FtCDF ND 0.00000122 13C-12.3.4.7.8-FtCDF 61.5 2.3.7.8-FtCDF ND 0.00000122 13C-12.3.4.7.8-FtCDF 61.5 2.3.7.8-FtCDF ND 0.000000122 13C-12.3.4.7.8-FtCDF 61.5 12.3.4.6.7.8-HtCDF ND 0.000000122 13C-12.3.4.6.7.8-HtCDF <	Sample Size:	1.00 L	Date Extracte	d: 30-h	May-06	Date Analyzed DB-5: 3	81-May-06	Date Analy	yzed DB-225: N
23.7.8-TCDD ND 0.0000133 IS 1.32.3.7.8-TCDD 61.1 1.2.3.7.8-FCDD ND 0.0000127 IS 1.32.4.7.8-FCDD 66.1 1.2.3.7.8-FKCDD ND 0.0000133 IS 1.2.3.4.7.8-FKCDD 61.0 1.2.3.7.8-FKCDD ND 0.0000133 IS 1.2.3.6.7.8-FKCDD 61.0 1.2.3.7.8-FKCDD ND 0.0000128 IS 1.3.4.7.8-FFCDD 61.0 1.2.3.7.8-FKCDD ND 0.00000128 IS 1.3.4.7.8-FFCDD 61.0 1.2.3.7.8-FKCDF ND 0.00000128 IS 1.3.2.1.7.8-FFCDF 61.0 2.3.7.8-FKCDF ND 0.00000122 IS 1.3.5.1.7.8-FFCDF 63.1 2.3.7.8-FKCDF ND 0.00000122 IS IS 1.3.7.8-FFCDF 63.1 2.3.4.7.8-FKCDF ND 0.00000128 IS IS 1.3.7.8-FFCDF 63.1 1.2.3.4.7.8-FKCDF ND 0.00000073 IS IS 1.3.2.4.7.8-FFCDF 63.5 1.2.3.4.7.8-FFCDF ND 0.00000073 IS IS IS 2.3.4.7.8-FCDF 63.5 1.2.3.4.7.8-FFCDF ND 0.00000073 IS IS IS 2.3.4.7.8-FCDF 63.5 1.2.3.4.7.	Analyte	Conc. (ug/L) DF a	EMPC ^b	Qualifiers	Labeled Standard		%R 1	CL-UCL ^d Qua
12.3.7.8-PCDD ND 0.0000127 13C-1.2.3.7.8-PECDD 665 12.3.4.7.8-HxCDD ND 0.0000119 13C-1.2.3.7.8-PECDD 665 12.3.4.7.8-HxCDD ND 0.0000133 13C-1.2.3.4.7.8-HxCDD 665 12.3.4.7.8-HxCDD ND 0.0000128 13C-1.2.3.4.7.8-HxCDD 662 12.3.4.6.7.8-HyCDD ND 0.0000182 13C-1.2.3.4.6.7.8-HyCDD 662 12.3.4.6.7.8-HyCDD ND 0.0000182 13C-1.2.3.7.8-PECDF 663 12.3.4.6.7.8-HyCDD ND 0.00000172 13C-2.3.4.6.7.8-HyCDD 665 2.3.7.8-FCDF ND 0.00000172 13C-2.3.4.7.8-FCDF 673 2.3.4.7.8-FCDF ND 0.00000738 13C-1.2.3.7.8-FCDF 673 2.3.4.7.8-HxCDF ND 0.00000749 13C-1.2.3.4.8.4.7.8-HxCDF 673 2.3.4.7.8-HxCDF ND 0.0000078 13C-1.2.3.7.8-FCDF 673 2.3.4.7.8-HxCDF ND 0.00000078 13C-1.2.3.4.7.8-HxCDF 653 2.3.4.7.8-HxCDF ND 0.00000078 13C-1.2.3.7.8-FCDF	2.3.7.8-TCDD	N	0.00000133		and a manufacture of the second s	<u>1S</u> 13C-2,3,7,8-TCDD		61.1	25 - 164
12.3.4.7.8-HxCDD ND 0.0000119 13C-1.2.3.6.7.8-HxCDD 64.5 12.3.6.7.8-HxCDD ND 0.0000133 13C-1.2.3.6.7.8-HxCDD 61.0 12.3.5.7.8-HxCDD ND 0.0000128 13C-1.2.3.6.7.8-HxCDD 61.0 12.3.5.7.8-HxCDD ND 0.0000182 13C-1.2.3.6.7.8-HxCDD 61.0 12.3.5.7.8-FxCDF ND 0.00000122 13C-0.2.3.4.6.7.8-HxCDF 65.3 12.3.7.8-FCDF ND 0.00000749 13C-1.2.3.4.7.8-FCDF 65.1 2.3.7.8-FCDF ND 0.00000749 13C-1.2.3.4.7.8-FCDF 67.1 2.3.7.8-FCDF ND 0.00000749 13C-1.2.3.4.7.8-FCDF 67.2 2.3.4.7.8-FCDF ND 0.00000758 13C-1.2.3.7.8-FCDF 67.2 12.3.6.7.8-HpCDF ND 0.00000758 13C-1.2.3.7.8-FCDF 67.2 2.3.4.6.7.8-HpCDF ND 0.00000758 13C-1.2.3.7.8-FCDF 67.2 2.3.4.6.7.8-HpCDF ND 0.00000758 13C-1.2.3.7.8-FCDF 67.2 2.3.4.6.7.8-HpCDF ND 0.0000016 13C-1.2.3.4.7.8-HpCDF <td>1,2,3,7,8-PeCDD</td> <td>NL</td> <td>0.00000127</td> <td></td> <td></td> <td>13C-1,2,3,7,8-PeCD</td> <td>DC</td> <td>66.5</td> <td>25 - 181</td>	1,2,3,7,8-PeCDD	NL	0.00000127			13C-1,2,3,7,8-PeCD	DC	66.5	25 - 181
12.3.6.7.8-HxCDD ND 0.0000133 13C-1.2.3.6.7.8-HxCDD 61.0 1.2.3.7.8.5-HyCDD ND 0.0000182 13C-1.2.3.6.7.8-HyCDD 60.2 1.2.3.7.8.5-HyCDD ND 0.0000182 13C-1.2.3.6.7.8-HyCDD 60.2 1.2.3.7.8.5-HyCDD ND 0.00000172 13C-0.70.0 60.2 2.3.7.8-FCDF ND 0.00000738 13C-1.2.3.4.7.8-FCDF 64.1 2.3.7.8-FCDF ND 0.00000749 13C-1.2.3.4.7.8-FCDF 67.5 1.2.3.7.8-FCDF ND 0.00000758 13C-1.2.3.4.7.8-FCDF 67.5 1.2.3.4.7.8-FCDF ND 0.00000758 13C-1.2.3.4.7.8-FCDF 67.5 1.2.3.6.7.8-HxCDF ND 0.00000758 13C-1.2.3.4.6.7.8-HxCDF 67.5 1.2.3.6.7.8-HxCDF ND 0.00000778 13C-1.2.3.4.6.7.8-HxCDF 67.5 1.2.3.6.7.8-HxCDF ND 0.00000778 13C-1.2.3.4.6.7.8-HxCDF 67.5 2.3.4.6.7.8-HxCDF ND 0.00000778 13C-1.2.3.4.6.7.8-HxCDF 67.5 2.3.4.6.7.8-HxCDF ND 0.0000016 13C-1.2.3	1,2,3,4,7,8-HxCD	D NL	0.00000119			13C-1,2,3,4,7,8-Hx(CDD	64.5	32 - 141
1.2.3,7.8,9-HixCDD ND 0.0000182 13C-12,3,4,6,7,8-HpCDD 602 1.2.3,7.8,9-HixCDD ND 0.0000182 13C-0CDD 45.2 0.CDD ND 0.0000172 13C-2,3,7,8-FCDF 64.1 0.2.3,7,8-FCDF ND 0.00000749 45.2 0.2.3,7,8-FCDF ND 0.00000749 13C-1,2,3,4,7,8-FCDF 67.3 1.2.3,7,8-FCDF ND 0.00000758 13C-1,2,3,4,7,8-FCDF 67.3 1.2.3,7,8-FCDF ND 0.00000021 13C-1,2,3,4,7,8-FCDF 62.8 2.3,4,7,8-FCDF ND 0.00000021 13C-1,2,3,4,6,7,8-HxCDF 63.8 1.2.3,4,7,8-FCDF ND 0.00000021 13C-1,2,3,4,6,7,8-HxCDF 63.8 2.3,4,7,8-FCDF ND 0.00000077 13C-1,2,3,4,6,7,8-HxCDF 63.8 2.3,4,7,8,9-HxCDF ND 0.00000078 13C-1,2,3,4,6,7,8-HxCDF 63.8 2.3,4,7,8,9-HxCDF ND 0.00000079 13C-1,2,3,4,6,7,8-HxCDF 53.4,6,7,8-HxCDF 2.3,4,4,7,8,9-HxCDF ND 0.00000079 13C-1,2,3,4,6,7,8-HxCDF 53.2,4,6,7	1.2,3,6,7,8-HxCD	D NE	0.00000133			13C-1,2,3,6,7,8-Hx(CDD	61.0	28 - 130
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	1,2,3,7,8,9-HxCD	ID NE	0.00000128			13C-1,2,3,4,6,7,8-H	IPCDD	60.2	23 - 140
OCDD ND 0.00000206 13C-2,3,7,8-FCDF 64.1 2.3,7,8-FCDF ND 0.0000172 13C-1,2,3,7,8-FECDF 67.5 2.3,4,7,8-FECDF ND 0.00000749 13C-1,2,3,7,8-FECDF 65.2 1.2,3,7,8-FECDF ND 0.00000738 13C-1,2,3,4,7,8-FECDF 65.2 2.3,4,7,8-FECDF ND 0.00000021 13C-1,2,3,4,7,8-FECDF 65.2 1.2,3,4,7,8-FECDF ND 0.00000021 13C-1,2,3,4,7,8-FECDF 65.2 1.2,3,4,7,8-FECDF ND 0.000000284 13C-1,2,3,4,7,8-FECDF 65.2 1.2,3,4,6,7,8-HACDF ND 0.00000016 13C-1,2,3,4,7,8,9-HACDF 58.4 1.2,3,4,6,7,8-HACDF ND 0.00000107 13C-1,2,3,4,7,8,9-HACDF 58.4 1.2,3,4,7,8,9-HACDF ND 0.00000107	1.2,3,4,6,7,8-HpC	DD NE	0.00000182			13C-OCDD		45.2	17 - 157
23.7,8-TCDF ND 0.00000172 13C-1,2,3,7,8-PeCDF 675 12.3,7,8-PeCDF ND 0.00000738 13C-1,2,3,4,7,8-PeCDF 655 23,4,7,8-PeCDF ND 0.00000621 13C-1,2,3,4,7,8-PeCDF 655 12.3,4,7,8-PeCDF ND 0.00000584 13C-1,2,3,4,7,8-PeCDF 655 12.3,4,7,8-PeCDF ND 0.00000584 13C-1,2,3,4,7,8-PeCDF 655 12.3,4,7,8-PeCDF ND 0.0000078 13C-1,2,3,4,6,7,8-HxCDF 586 12.3,4,6,7,8-HxCDF ND 0.0000078 13C-1,2,3,4,6,7,8-HxCDF 586 12.3,4,6,7,8-HxCDF ND 0.00000077 13C-1,2,3,4,6,7,8-HxCDF 586 12.3,4,6,7,8-HxCDF ND 0.00000077 13C-1,2,3,4,6,7,8-HxCDF 586 12.3,4,6,7,8-HxCDF ND 0.00000077 13C-1,2,3,4,6,7,8-HyCDF 586 12.3,4,6,7,8-HxCDF ND 0.00000077 13C-1,2,3,4,6,7,8-HyCDF 586 12.3,4,6,7,8-HyCDF ND 0.00000077 13C-1,2,3,4,6,7,8-HyCDF 586 12.3,4,6,7,8-HyCDF ND 0.00000077 13C-1,2,3,4,6,7,8-HyCDF 586 12,3,4,7,8,9-HyCDF N	OCDD	NL	0.0000206			13C-2,3,7,8-TCDF		64.1	24 - 169
12.3,7,8-PeCDF ND 0.00000749 13C-2,3,4,7,8-PeCDF 628 2,3,4,7,8-PeCDF ND 0.00000584 13C-1,2,3,4,7,8-PeCDF 655 12,3,4,7,8-PeCDF ND 0.00000621 13C-1,2,3,4,7,8-PeCDF 655 12,3,4,7,8-PeCDF ND 0.00000584 13C-1,2,3,6,7,8-HxCDF 583 12,3,6,7,8-HxCDF ND 0.00000778 13C-1,2,3,6,7,8-HyCDF 584 12,3,4,6,7,8-HpCDF ND 0.00000116 13C-1,2,3,4,6,7,8-HpCDF 584 12,3,4,6,7,8-HpCDF ND 0.00000107 13C-1,2,3,4,7,8,9-HpCDF 584 12,3,4,7,8,9-HpCDF ND 0.00000107 13C-1,2,3,4,7,8,9-HpCDF 584 12,3,4,7,8,9-HpCDF ND 0.0000107 13C-1,2,3,4,7,8,9-HpCDF 584 12,3,4,7,8,9-HpCDF ND 0.0000107 13C-1,2,3,4,7,8,9-HpCDF 584 12,3,4,6,7,8-HpCDF ND 0.0000107 13C-1,2,3,4,7,8,9-HpCDF 584 12,3,4,6,7,8-HpCDF ND 0.00000107 13C-1,2,3,4,6,7,8-HpCDF 584 12,3,4,6,7,8-HpCDF ND 0.00000107 <td>2,3,7,8-TCDF</td> <td>NL</td> <td>0.00000172</td> <td></td> <td></td> <td>13C-1,2,3,7,8-PeCD</td> <td>ЭF</td> <td>67.9</td> <td>24 - 185</td>	2,3,7,8-TCDF	NL	0.00000172			13C-1,2,3,7,8-PeCD	ЭF	67.9	24 - 185
2,3,4,7,8-PeCDF ND 0.00000538 $13C-1,2,3,4,7,8$ -HxCDF 65.3 $1,2,3,4,7,8$ -HxCDF ND 0.00000621 $13C-1,2,3,6,7,8$ -HxCDF 58.7 $1,2,3,6,7,8$ -HxCDF ND 0.00000784 $13C-1,2,3,6,7,8$ -HxCDF 58.7 $2,3,4,6,7,8$ -HxCDF ND 0.00000784 $13C-1,2,3,4,7,8$ -HxCDF 58.7 $2,3,4,6,7,8$ -HpCDF ND 0.00000784 $13C-1,2,3,4,6,7,8$ -HyCDF 58.4 $1,2,3,4,6,7,8$ -HpCDF ND 0.000000778 $13C-1,2,3,4,7,8,9$ -HyCDF 54.6 $1,2,3,4,7,8,9$ -HpCDF ND 0.00000077 $13C-1,2,3,4,7,8,9$ -HyCDF 58.4 $1,2,3,4,7,8,9$ -HpCDF ND 0.00000107 $13C-1,2,3,4,7,8,9$ -HpCDF 58.4 $12,3,4,7,8,9$ -HpCDF ND 0.00000107 $13C-1,2,3,4,7,8,9$ -HpCDF 58.4 Total TCDD ND 0.0000010	1,2,3,7,8-PeCDF	NL	0.000000749			13C-2,3,4,7,8-PeCD	ЭF	62.8	21 - 178
1,2,3,4,7,8-HxCDF ND 0.00000621 13C-1,2,3,6,7,8-HxCDF 58.7 1,2,3,6,7,8-HxCDF ND 0.00000584 55.6 55.6 55.6 55.6 55.6 55.6 55.6 55.6 55.6 55.6 55.6 55.6 55.6 55.6 55.6 13C-1,2,3,7,8,9-HxCDF 55.6 55.6 13C-1,2,3,7,8,9-HxCDF 55.6 55.6 13C-1,2,3,7,8,9-HyCDF 54.0 55.6 13C-1,2,3,7,8,9-HyCDF 54.0 55.6 13C-1,2,3,7,8,9-HyCDF 54.0 55.6 12,3,4,6,7,8-HyCDF 54.0 55.6 13C-1,2,3,4,6,7,8-HyCDF 54.0 55.6 13C-1,2,3,4,6,7,8-HyCDF 54.0 55.2 54.6,7,8-HyCDF 54.0 55.6 13C-1,2,3,4,6,7,8-HyCDF 54.0 55.6 55.6 13C-1,2,3,4,6,7,8,9-HyCDF 54.6,7,8-HyCDF 55.6 13C-1,2,3,4,6,7,8,9-HyCDF 55.6 13C-1,2,3,4,6,7,8,9-HyCDF 56.6 55.6 13C-1,2,3,4,6,7,8,9-HyCDF 52.6 13C-1,2,3,4,6,7,8,9-HyCDF 52.6 13C-1,2,3,4,6,7,8,9-HyCDF 52.6 13C-1,2,3,4,6,7,8,9-HyCDF 52.6 13C-1,2,3,4,6,7,8,9-HyCDF 52.6 13C-1,2,3,4,6,7,8,9-HyCD	2,3,4,7,8-PeCDF	NL	0.000000758			13C-1,2,3,4,7,8-Hx(CDF	65.3	26 - 152
	1,2,3,4,7,8-HxCD	IF NL	0.000000621			13C-1,2,3,6,7,8-Hx0	CDF	58.7	26 - 123
2,3,4,6,7,8-HxCDF ND 0.00000778 13C-1,2,3,7,8,9-HxCDF 54.6 1,2,3,7,8,9-HxCDF ND 0.0000097 13C-1,2,3,4,6,7,8-HpCDF 60.5 1,2,3,4,6,7,8-HpCDF ND 0.0000016 13C-1,2,3,4,6,7,8-HpCDF 58.6 1,2,3,4,7,8,9-HpCDF ND 0.0000107 2.2,3,4,7,8,9-HpCDF 58.6 1,2,3,4,7,8,9-HpCDF ND 0.0000107 2.2,3,4,7,8,9-HpCDF 58.6 0,205 ND 0.0000107 2.2,3,4,7,8,9-HpCDF 58.6 0,201 ND 0.0000107 2.2,3,7,8,7,8,9-HpCDF 58.6 0,201 ND 0.0000107 2.2,3,7,8,7,8,9-HpCDF 58.6 1,2,3,4,7,8,9-HpCDF ND 0.0000127 2.2,3,7,8,7,7,8,9-HpCDF 58.6 1,2,3,4,7,8,9-HpCDF ND 0.0000127 2.2,3,7,8,7,7,8,7,7,8,7,8,9-HpCDF 58.6 1,2,3,4,7,8,9-HpCDF ND 0.00000127 2.2,3,7,8,7,7,8,9-HpCDF 58.2 1,2,3,4,7,8,9,4,7,8,9,4,7,8,9,4,7,8,9,4,7,8,9,4,7,8,9,4,7,8,7,8,9,4,7,8,7,8,9,4,7,8,7,8,7,8,7,8,7,8,7,8,7,8,7,8,7,8,7	1.2,3,6,7,8-HxCD	IF NL	0.00000584			13C-2,3,4,6,7,8-Hx(CDF	55.9	28 - 136
1,2,3,7,8,9-HxCDF ND 0.00000116 13C-1,2,3,4,6,7,8-HpCDF 60.5 1,2,3,4,6,7,8-HpCDF ND 0.0000097 13C-1,2,3,4,7,8,9-HpCDF 58.4 1,2,3,4,7,8,9-HpCDF ND 0.00000107 58.4 75.0 1,2,3,4,7,8,9-HpCDF ND 0.00000107 53.4 75.0 1,2,3,4,7,8,9-HpCDF ND 0.00000107 53.4 75.0 1,2,3,4,7,8,9-HpCDF ND 0.00000249 75.0 75.0 OCDF ND 0.00000123 75.0 75.0 75.0 Total TCDD ND 0.00000123 a Sample specific estimated detection limit 75.0 Total HzCDD ND 0.00000127 a Sample specific estimated detection limit 6.0.4 Total HzCDD ND 0.00000127 c. Method detection limit 6.1.0 Total HpCDD ND 0.00000127 c. Method detection limit 6.1.0 Total HzCDF ND 0.00000127 c. Method detection limit 6.1.0 Total HzCDF ND 0.00000127 c. Method specific estimated totaction. 6.1.0.0 Total TCDF ND 0.0	2,3,4,6,7,8-HxCD	JF NL	0.000000778			13C-1,2,3,7,8,9-Hx(CDF	54.0	29 - 147
1.2,3,4,6,7,8-HpCDF ND 0.0000097 13C-1,2,3,4,7,8,9-HpCDF 58.4 1,2,3,4,7,8,9-HpCDF ND 0.0000107 35.0 1,2,3,4,7,8,9-HpCDF ND 0.0000107 55.2 0CDF ND 0.00000249 75.0 1,2,3,4,7,8,9-HpCDF ND 0.00000249 75.0 0CDF ND 0.00000249 75.0 Total ND 0.0000127 a Sample specific estimated detection limit Total PCDD ND 0.00000127 a Sample specific estimated detection limit Total HxCDD ND 0.00000127 c. Method detection limit Total HxCDD ND 0.00000127 c. Method detection limit. Total HxCDF ND 0.00000127 c. Method detection limit.	1,2,3,7,8,9-HxCD	JF NC	0.00000116			13C-1,2,3,4,6,7,8-H	lpCDF	60.5	28 - 143
1,2,3,4,7,8,9-HpCDF ND 0.00000107 13C-OCDF 52.2 OCDF ND 0.00000249 75.0 Total Total CRS 37CI-2,3,7,8-TCDD 75.0 Total TCDD ND 0.0000133 a Sample specific estimated detection limit. 75.0 Total TCDD ND 0.0000127 a Sample specific estimated detection limit. 75.0 Total HxCDD ND 0.00000127 a Control fluit. 75.0 Total HxCDD ND 0.00000127 b. Estimated detection limit. 75.0 Total HxCDD ND 0.00000127 b. Estimated detection limit. 75.0 Total HxCDD ND 0.00000127 b. Estimated detection limit. 7.0 Total HxCDD ND 0.00000127 b. Estimated detection limit. 7.0 Total HxCDD ND 0.00000127 b. Estimated detection limit. 7.0 Total HxCDD ND 0.00000127 b. Estimated detection limit. 7.0 Total HxCDD ND 0.00000172 d. Lower control limit. 7.0 Total PeCDF ND 0.000000754 d. Lower cont	1,2,3,4,6,7,8-HpC	DF NE	0.0000000000000000000000000000000000000			13C-1,2,3,4,7,8,9-H	lpCDF	58.4	26 - 138
OCDFND 0.0000249 CRS $37CI-2.3,7,8-TCDD$ $75.CI-2.3,7,8-TCDD$ TotalsFootnotesFootnotes $75.CI-2.3,7,8-TCDD$ $75.CI-2.3,7,8-TCDD$ $75.CI-2.3,7,8-TCDD$ Total TCDDND 0.0000133 Rootnotes $75.CI-2.3,7,8-TCDD$ $75.CI-2.2$	1,2,3,4,7,8,9-HpC	DF NC	0.00000107			13C-OCDF		52.2	17 - 157
TotalsFootnotesTotal TCDDND0.00000133a Sample specific estimated detection limit.Total TCDDND0.00000127b. Estimated maximum possible concentration.Total HxCDDND0.00000127c. Method detection limit.Total HpCDDND0.00000127c. Method detection limit.Total HpCDDND0.00000182d. Lower control limit. upper control limit.Total PeCDFND0.00000754d. Lower control limit. upper control limit.	OCDF	NL	0.0000249			CRS 37CI-2,3,7,8-TCDD		75.0	35 - 197
Total TCDDND0.00000133a. Sample specific estimated detection limit.Total PeCDDND0.00000127b. Estimated maximum possible concentration.Total HxCDDND0.00000127c. Method detection limit.Total HpCDDND0.00000182d. Lower control limit - upper control limit.Total PeCDFND0.00000172d. Lower control limit - upper control limit.	Totals					Footnotes			
Total PeCDDND0.00000127b. Estimated maximum possible concentration.Total HxCDDND0.00000127c. Method detection limit.Total HpCDDND0.00000182d. Lower control limit - upper control limit.Total TCDFND0.00000172d. Lower control limit - upper control limit.Total PeCDFND0.00000754d. Lower control limit.	Total TCDD	N	0.00000133			a. Sample specific estimated detec	ction limit.		
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 d. Lower control limit. Total PeCDF ND 0.000000754 d. Lower control limit.	Total PeCDD	N	0.00000127			b. Estimated maximum possible c	concentration.		
Total HpCDDND0.00000182d. Lower control limit - upper control limit.Total TCDFND0.00000172Total PeCDFND0.000000754	Total HxCDD	N	0.00000127			c. Method detection limit.			
Total TCDF ND 0.00000172 Total PeCDF ND 0.000000754	Total HpCDD	N	0.00000182			d. Lower control limit - upper con	atrol limit.		
Total PeCDF ND 0.00000754	Total TCDF	N	0.00000172						
	Total PeCDF	N	0.000000754						
	Total HxCDF	N	0.000000786						
Total HpCDF ND 0.00000103	Total HpCDF	NL	0.00000103					-	

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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 Analyze	d DB-225: NA	
Analyte	Spike Conc.	Conc. (ng/mL)	OPR Limits	Labeled Standard		%R	PCD-UCL	
2,3,7,8-TCDD	10.0	10.3	6.7 - 15.8	IS 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-PeCD	D	76.2	25 - 181	
1,2,3,4,7,8-HxCDD	50.0	51.1	35 - 82	13C-1,2,3,4,7,8-HxC	CDD	69.2	32 - 141	
1,2,3,6,7,8-HxCDD	50.0	49.4	38 - 67	13C-1,2,3,6,7,8-HxC	CDD	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-H	pCDD	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	1
2,3,7,8-TCDF	10.0	9.84	7.5 - 15.8	13C-1,2,3,7,8-PeCD)F	78.4	24 - 185	
1,2,3,7,8-PeCDF	50.0	49.6	40 - 67	13C-2,3,4,7,8-PeCD)F	78.3	21 - 178	
2,3,4,7,8-PeCDF	50.0	49.0	34 - 80	13C-1,2,3,4,7,8-Hx(CDF	66.5	26 - 152	
1,2,3,4,7,8-HxCDF	50.0	50.2	36 - 67	13C-1,2,3,6,7,8-HxC	CDF	60.0	26 - 123	
1,2,3,6,7,8-HxCDF	50.0	48.5	42 - 65	13C-2,3,4,6,7,8-Hx0	CDF	68.7	28 - 136	
2,3,4,6,7,8-HxCDF	50.0	49.2	35 - 78	13C-1,2,3,7,8,9-Hx(CDF	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-H	pCDF	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-H	pCDF	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	CRS 37CI-2,3,7,8-TCDD		91.5	35 - 197	
Analyst: DMS				Approved By: W	/illiam J. Luk:	semburg 01-1	un-2006 13:50	

Sample (D: IPE210	6-01						EPA N	lethod 1613
Client Data Name: Del Mar	. Analytical, Irvine		<mark>Sample Data</mark> Matrix:	Aqueous	Laboratory Data 27734-0	01 Date Reco	oived:	24-May-06
Project In122100 Date Collected 22-May Time Collected: 1115	-06		Sample Size	0.989 L	QC Batch No 8054 Date Analyzed DB-5: 31-May	Date Extr -06 Date Anal	acted: yzed DB-225.	30-May-06 NA
Analyte Coi	nc. (ug/L)	DL ^a	EMPC ^b	Qualifiers	Labeled Standard	%R	LCL-UCL ^d	Qualifiers
2.3.7.8-TCDD N	D	0.000008	383		<u>IS</u> 13C-2,3.7,8-TCDD	67.2	25 - 164	
1,2,3,7,8-PeCDD N	D	0.0000010	11		13C-1,2,3.7.8-PeCDD	63.8	25 - 181	
1,2,3,4.7,8-HxCDD N	D	0.0000000	949		13C-1,2,3,4,7,8-HxCDD	58.1	32 - 141	
1,2,3,6,7,8-HxCDD N	D	0.0000016)3		13C-1.2,3.6,7,8-HxCDD	54.3	28 - 130	
1,2,3,7,8,9-HxCDD N	<u> </u>	0.0000010	0(13C-1,2,3,4,6,7,8-HpCDD	58.2	23 - 140	
1,2,3,4,6,7,8-HpCDD 0	.00000503			ſ	13C-OCDD	47.2	17 - 157	
OCDD 0	.0000775				13C-2,3,7,8-TCDF	69.2	24 - 169	
2,3,7,8-TCDF N	D	0.0000010	10		13C-1,2,3,7,8-PeCDF	63.3	24 - 185	
1,2,3,7,8-PeCDF N	D	0.000000	323		13C-2,3,4,7,8-PeCDF	64.6	21 - 178	
2,3,4,7,8-PeCDF N	D	0.0000007	763		13C-1,2,3,4,7,8-HxCDF	57.4	26 - 152	
1,2,3,4,7,8-HxCDF N	ID	0.0000004	-191		13C-1,2,3,6,7,8-HxCDF	50.9	26 - 123	
1,2,3,6,7,8-HxCDF N	Q	0.0000004	148		13C-2,3,4,6,7,8-HxCDF	55.6	28 - 136	
2,3,4,6,7,8-HxCDF N	D	0.000005	512		13C-1,2,3,7,8,9-HxCDF	58.3	29 - 147	
1,2,3,7,8,9-HxCDF N	D	0.000000	587		13C-1,2,3,4,6,7,8-HpCDF	55.1	28 - 143	
1,2,3,4,6,7,8-HpCDF 0	00000106			ſ	13C-1,2,3,4,7,8,9-HpCDF	56.0	26 - 138	·
1,2,3,4,7,8,9-HpCDF N	D	0.000000	069		13C-OCDF	48.1	17 - 157	
OCDF. N	D	0.0000020)3		CRS 37CI-2,3,7,8-TCDD	93.8	35 - 197	
Totals					Footnotes			
Total TCDD N	D	0.000008	383		a. Sample specific estimated detection lir	nit.		
Total PeCDD N	D	0.0000010)1		b. Estimated maximum possible concentr	ation.		
Total HxCDD N	D	0.000000	.		c. Method detection limit.			
Total HpCDD 0	.0000135				d. Lower control limit - upper control lin	ht.		
Total TCDF N	D	0.0000010	10					
Total PeCDF N	Q	0.000000	793	×.				
Total HxCDF N	ID	0.000000	527					
Total HpCDF 0	.00000250							
Analyst: DMS					Approved By: William	J. Luksemburg	01-Jun-2006	13:50

Analyst: Analyst: Project 27734

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APPENDIX

DATA QUALIFIERS & ABBREVIATIONS

В	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.
Н	The signal-to-noise ratio is greater than 10:1.
Ī	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	Recipiocity through CA ary AA 02102CA PH-0182 E87777 90063 90063 pitals LA050001 01977 CA0413 81178087 Reciprocity through CA re Center CA413 CA003 Reciprocity through CA re Center CA003 Reciprocity through CA 11411 06700 R-078 D9919 CA200001-002 68-00490 87002001 02996 TX247-2005A 9169330940 00013 C1285 998036160 8TMS-Q 8TMS-Q	
Commonwealth of Virginia	00013	
State of Washington	C1285	
State of Wisconsin	998036160	
State of Wyoming	8TMS-Q	

SUBCONTRACT ORDER

Del Mar Analytical - Irvine

IPE2106

734

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 Received By

. Conedict Date

Date

Receiveč By

Date

Released By Project 27734

SAMPLE LOG-IN CHECKLIST

Date/Time Initials: Location: UP2-2 Samples Arrival: 5/2A/00 084S ABB Shelf/Rack:	Alta Project #:	2773	4				-				
Date/Time Initials: Location: Log2-2 Logged In: Stat or 1301 FEB Shelf/Rack: A-2 Delivered By: FedE UPS Cal DHL Hand Delivered Other Preservation: Ice Blue ice Dry ice None Temp °C .0°C Time: QOO Thermometer ID: DT-20 Midding Time Acceptable? L Initials: L Initials: NO NA Adequate Sample Volume Received? L Initials: Initials: Initials: NO NA Adequate Sample Volume Received? L Initials: Initis: Initials: Initials:<	Date/Time Initials: Location: $WZ = 2$ Samples Arrival: $S/2A/06$ 0845 BB Shatt/Dealer							2			
Logged In: SAA 0 0 301 FEG Shelf/Rack: A-2 Delivered By: FedE UPS Cal DHL Hand Delivered Other Preservation: Ice Blue Ice Dry Ice None Temp °C .0 °C Time: 0 900 Thermometer ID: DT-20 Adequate Sample Volume Received? U VES NO NA Adequate Sample Volume Received? U Shipping Container(s) Intact? U Shipping Container(s) Intact? U Shipping Costody Seals Intact? U Sample Container Intact? U U Sample Costody Seals Intact? U U Sample Costody Seals Intact? U U U Sample Costody Seals Intact? U		Date/Time			Initials	:	Locat	ion:	<u>n.</u> 101	2-2	
Delivered By: FedE UPS Cal DHL Hand Delivered Other Preservation: Ice Blue Ice Dry Ice None None Temp °C .0°C Time: .900 Thermometer ID: DT-20 Madequate Sample Volume Received? V VES NO NA Adequate Sample Volume Received? V V VES NO NA Adequate Sample Volume Received? V	Logged In:	\$24/06	1301		FE	B	Shelf/	/Rac	k:	1-2	
Preservation: Ice Blue Ice Dry Ice None Temp °C .0 °C Time: .900 Thermometer ID: DT-20 Adequate Sample Volume Received? V VES NO NA Adequate Sample Volume Received? V V VES NO Holding Time Acceptable? V V V V Shipping Container(s) Intact? V V V V Shipping Documentation Present? V V V V Airbill Trk # 7914 9223 5500 V V V Sample Container Intact? V V V V V Sample Container Intact? V V V V V V Sample Costody Seals Intact? V <td< td=""><td>Delivered By:</td><td colspan="2">ct #: </td></td<>	Delivered By:	ct #:									
Temp °C . 0 °C Time: 0 900 Thermometer ID: DT-20 Adequate Sample Volume Received? V VES NO NA Adequate Sample Volume Received? V V V V Holding Time Acceptable? V V V V Shipping Container(s) Intact? V V V V Shipping Custody Seals Intact? V V V V Airbill Trk # 7914 9223 5500 V V V Sample Container Intact? V V V V V Sample Custody Seals Intact? V	Preservation:										
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Airbill Trk # 7914 9223 5500 Sample Container Intact? ////////////////////////////////////	Shipping Documentation Present?							V			
Project #: 277.34 mples Arrival: $5/24/06/084S$ Initials: Location: Lov2-2 gged In: $5/24/06/084S$ Initials: Location: Lov2-2 gged In: $5/24/06/084S$ Initials: Location: Lov2-2 ivered By: $5/24/06/084S$ Initials: Location: Lov2-2 livered By: FedE UPS Cal DHL Hand Delivered Other sservation: Ice Blue Ice Dry Ice None mp °C .0°C Time: 900 Thermometer ID: DT-20 equate Sample Volume Received?											
Sample Custody Seals Intact? Z Chain of Custody / Sample Documentation Present? Z COC Anomaly/Sample Acceptance Form completed? PCP Z If Chlorinated or Drinking Water Samples, Acceptable Preservation? Z Na ₂ S ₂ O ₂ Preservation Documented? COC											
Chain of Custody / Sample Documentation Present? If Chorinated or Drinking Water Samples, Acceptable Preservation? If Chlorinated or Drinking Water Samples, Acceptable Preservation? If Chlorinated or Drinking Water Samples, Acceptable Preservation?	Sample Custody Seals Intact?										
COC Anomaly/Sample Acceptance Form completed? Ptop If Chlorinated or Drinking Water Samples, Acceptable Preservation? 4 Na ₂ S ₂ O ₃ Preservation Documented? COC Sample	Chain of Custody / Sample Documentation Present?										
If Chlorinated or Drinking Water Samples, Acceptable Preservation? 4 Na ₂ S ₂ O ₃ Preservation Documented? COC Sample	COC Anomaly/Sample Acceptance Form completed?										
Na ₂ S ₂ O ₃ Preservation Documented? COC Sample None	If Chlorinated or Drinking Water Samples, Acceptable Preservation?										
Shipping Container Alta Client Retain Return Dispose	Shipping Containe	 Э г	Alta	a {	Client)	Retair	n	Ret	urn	Disp	oose

Comments:

APPENDIX G

Section 50

Outfall 006, May 22, 2006

MECX Data Validation Reports
	CONTRACT COMPL	LIANCE SCREENING FORM FOR HARDCOPY DATA
ME	CX, LLC	Package ID B4DF98
122	60 East Vassar Drive	Task Order1261.001D.01
Suit	e 500	SDG No. IPE2106
Lak	ewood, CO 80226	No. of Analyses 1
	Laboratory Alta Analy	/tical Date: July 7, 2006
	Reviewer E. Wesslin	Reviewer's Signature
	Analysis/Method Dioxins/Fu	urans goboltA(UM)
10	PLON PTEMC ^a	.0
AC	Case Narrative	
·	Deficiencies	
	Denciencies	
2.	Out of Scope	
	Analyses	
	Anaryses	
3.	Analyses Not Conducted	
4	Missing Hardsony	
4.	Deliverables	
	Deliverables	
5.	Incorrect Hardcopy	
586	Deliverables	
	Denverables	
6.	Deviations from Analysis	Qualifications were assigned for the following:
	Protocol, e.g.,	- the results between the RL and the MDL were estimated
	Holding Times	
	GC/MS Tune/Inst. Performance	
	Calibration	
	Method blanks	
	Surrogates	
	Matrix Spike/Dup LCS	
	Field OC	
	Internal Standard Performance	
	Compound Identification	
	Quantitation	
	System Performance	
CO	MMENTS	
a 5	subcontracted analytical laboratory is not	meeting contract and/or method requirements.
ь I	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 006

ANALYSIS: DIOXINS/FURANS SAMPLE DELIVERY GROUP: IPE2106

Prepared by

MEC[×], 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[×]* 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.

		eampie laonanoa		
Client ID	ent ID Laboratory ID Labo (Del Mar) (Matrix	COC Method
Outfall 006	IPE2106	27734-001	Water	1613

Table 1. Sample Identification

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 $\pm 2^{\circ}$ 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.

	Project:	NPDES
	SDG:	IPE2106
DATA VALIDATION REPORT	Analysis:	D/F

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.

.....

	Project:	NPDES
	SDG:	IPE2106
DATA VALIDATION REPORT	Analysis:	D/F

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.

.....

June -	Client Data Name: Del Mar Analytical, Irvine Project: IPE2106 Date Collected: 22-May-06 Time Collected: 1115		Sample Data Matrix: Sample Size:	Aqueous 0.989 L	Laboratory Data Lab Sample: 27734-001 QC Batch No.: 8054 Date Analyzed DB-5: 31-May-06		Date Re Date Ex Date An	24-May-06 30-May-06 NA		
6	Analyte	Conc. (ug/L)	DL ^a	EMPC ^b	Qualifiers	Labeled St	andard	%R	LCL-UCL ^d	Oualifiers
	2,3,7,8-TCDD	ND	0.000000	883		IS 13C-2,3,7,8	TCDD	67.2	25 - 164	
	1,2,3,7,8-PeCDD	ND	0.000001	01		13C-1,2,3,7,	8-PeCDD	63.8	25 - 181	
	1,2,3,4,7,8-HxCDD	ND	0.000000	949		13C-1,2,3,4,	7,8-HxCDD	58.1	32 - 141	
	1,2,3,6,7,8-HxCDD	ND	0.000001	03		13C-1,2,3,6,	7,8-HxCDD	54.3	28 - 130	
	1,2,3,7,8,9-HxCDD	ND	0.000001	00		13C-1,2,3,4,	6,7,8-HpCDD	58.2	23 - 140	
DAC	1,2,3,4,6,7,8-HpCD	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	0.000001	01		13C-1,2,3,7,	8-PeCDF	63.3	24 - 185	
	1,2,3,7,8-PeCDF	ND	0.000000	823		13C-2,3,4,7,	8-PeCDF	64.6	21 - 178	
	2,3,4,7,8-PeCDF	ND	0.000000	763		13C-1,2,3,4,	7,8-HxCDF	57.4	26 - 152	
	1,2,3,4,7,8-HxCDF	ND	0.000000	461		13C-1,2,3,6,	7,8-HxCDF	50.9	26 - 123	
	1,2,3,6,7,8-HxCDF	ND	0.000000	448		13C-2,3,4,6,	7,8-HxCDF	55.6	28 - 136	
	2,3,4,6,7,8-HxCDF	ND	0.000000	512		13C-1,2,3,7,	8,9-HxCDF	58.3	29 - 147	
	1,2,3,7,8,9-HxCDF	ND	0.000000	687		13C-1,2,3,4,	6,7,8-HpCDF	55.1	28 - 143	
DNQ	1,2,3,4,6,7,8-HpCDI	0.00000106			J	13C-1,2,3,4,	7,8,9-HpCDF	56.0	26 - 138	
	1,2,3,4,7,8,9-HpCDI	7 ND	0.000000	690		13C-OCDF		48.1	17 - 157	
	OCDF	ND	0.000002	03		CRS 37C1-2,3,7,8	-TCDD	93.8	35 - 197	
	Totals					Footnotes				
	Total TCDD	ND	0.000000	883		a. Sample specific estin	mated detection limit.			
	Total PeCDD	ND	0.000001	01		b. Estimated maximum	possible concentration.			
	Total HxCDD	ND	0.000000	993		c. Method detection lin	nit.			
	Total HpCDD	0.0000135				d. Lower control limit	- upper control limit.			
	Total TCDF	ND	0.000001	01						
	Total PeCDF	ND	0.000000	793						
	Total HxCDF	ND	0.000000	527						
	Total HpCDF	0.00000250								

LEVEL IV

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

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:

Michele Chamberdin

Del Mar Analytical - Irvine Michele Chamberlin Project Manager



MWH-Pasadena/BoeingProject ID: Routine Outfall 009300 North Lake Avenue, Suite 1200Pasadena, CA 91101Pasadena, CA 91101Report Number: IPE2109Attention: Bronwyn KellyPasadena Project ID: Routine Outfall 009

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

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IPE2109-01 (Outfall 009	- Water)								
Reporting Units: ug/l									
Antimony	EPA 200.8	6E23079	0.050	2.0	0.40	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	
Copper	EPA 200.8	6E23079	0.25	2.0	2.5	1	05/23/06	05/23/06	
Lead	EPA 200.8	6E23079	0.040	1.0	2.7	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	



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

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
		Daten	Linnt	Linnt	Kesutt	Factor	2	Anaryzeu	Quanners
Sample ID: IPE2109-01 (Outfall)	009 - Water) - cont.								
Reporting Units: ug/l									
Antimony	EPA 200.8-Diss	6E23097	0.050	2.0	0.50	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	
Copper	EPA 200.8-Diss	6E23097	0.25	2.0	2.0	1	05/23/06	05/24/06	
Lead	EPA 200.8-Diss	6E23097	0.040	1.0	0.041	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	

DISSOLVED METALS

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

INORGANICS										
Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers	
Sample ID: IPE2109-01 (Outfall 00	9 - Water) - cont.									
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		



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

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



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

	D K	Reporting	MDI	T T • /	Spike	Source	A/ DEC	%REC	DDD	RPD	Data
Analyte	Result	Limit	MDL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifiers
Batch: 6E23075 Extracted: 05/23/0	6										
Blank Analyzed: 05/23/2006 (6E23075-	BLK1)										
Mercury	ND	0.20	0.050	ug/l							
LCS Analyzed: 05/23/2006 (6E23075-B	S1)										
Mercury	8.69	0.20	0.050	ug/l	8.00		109	85-115			
Matrix Spike Analyzed: 05/23/2006 (6E	23075-MS1)				Sou	rce: IPE1	1997-01				
Mercury	8.71	0.20	0.050	ug/l	8.00	ND	109	70-130			
Matrix Spike Dup Analyzed: 05/23/200	6 (6E23075-M	ISD1)			Sou	rce: IPE1	1997-01				
Mercury	8.72	0.20	0.050	ug/l	8.00	ND	109	70-130	0	20	
Batch: 6E23079 Extracted: 05/23/0	6										
Blank Analyzed: 05/23/2006 (6E23079-	BLK1)										
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							
LCS Analyzed: 05/23/2006 (6E23079-B	S1)										
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			



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

		Reporting			Spike	Source		%REC		RPD	Data
Analyte	Result	Limit	MDL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifiers
Batch: 6E23079 Extracto	ed: 05/23/06										
Matrix Spike Analyzed: 05/23/2006 (6E23079-MS1)					Sou	irce: IPE1	953-01				
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			
Matrix Spike Analyzed: 05/2	23/2006 (6E23079-MS2)				Sou	irce: IPE2	2007-01				
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			
Matrix Spike Dup Analyzed	l: 05/23/2006 (6E23079-M	SD1)			Sou	irce: IPE1	953-01				
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	



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

		Reporting			Spike	Source		%REC		RPD	Data
Analyte	Result	Limit	MDL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifiers
Batch: 6E23097 Extracted: 05/23/06	-										
Blank Analyzed: 05/23/2006 (6E23097-B	LK1)										
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							
LCS Analyzed: 05/23/2006-05/25/2006 (6	E23097-BS1)									
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			
Matrix Spike Analyzed: 05/24/2006 (6E2	3097-MS1)				Sou	irce: IPE2	2095-01				
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			
Matrix Spike Dup Analyzed: 05/24/2006	(6E23097-M	ISD1)			Sou	irce: IPE2	2095-01				
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	



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

		Reporting			Spike	Source		%REC		RPD	Data
Analyte	Result	Limit	MDL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifiers
Batch: 6E24084 Extracted: 05/24/06	-										
Blank Analyzed: 05/24/2006 (6E24084-B	LK1)										
Mercury	ND	0.20	0.050	ug/l							
LCS Analyzed: 05/24/2006 (6E24084-BS	1)										
Mercury	8.16	0.20	0.050	ug/l	8.00		102	85-115			
Matrix Spike Analyzed: 05/24/2006 (6E2	4084-MS1)				Sou	irce: IPE1	1552-01				
Mercury	8.33	0.20	0.050	ug/l	8.00	0.065	103	70-130			
Matrix Spike Dup Analyzed: 05/24/2006	(6E24084-N	ASD1)			Sou	irce: IPE1	1552-01				
Mercury	8.32	0.20	0.050	ug/l	8.00	0.065	103	70-130	0	20	



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

		Reporting			Spike	Source		%REC		RPD	Data
Analyte	Result	Limit	MDL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifiers
Batch: 6E22054 Extracted:	05/22/06										
Blank Analyzed: 05/22/2006 (6E	222054-BLK1)										
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							
LCS Analyzed: 05/22/2006 (6E2	2054-BS1)										
Chloride	4.85	0.50	0.15	mg/l	5.00		97	90-110			<i>M-3</i>
Sulfate	9.96	0.50	0.45	mg/l	10.0		100	90-110			
Matrix Spike Analyzed: 05/22/2	006 (6E22054-MS1)				Sou	irce: IPE	1848-02				
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
Matrix Spike Analyzed: 05/22/2	006 (6E22054-MS2)				Sou	irce: IPE	1848-17				
Sulfate	20.9	0.50	0.45	mg/l	20.0	ND	104	80-120			
Matrix Spike Dup Analyzed: 05	/22/2006 (6E22054-M	(SD1)			Sou	irce: IPE	1848-02				
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
Matrix Spike Dup Analyzed: 05	/22/2006 (6E22054-M	(SD2)			Sou	irce: IPE	1848-17				
Sulfate	20.9	0.50	0.45	mg/l	20.0	ND	104	80-120	0	20	
Batch: 6E23074 Extracted:	05/23/06										
Blank Analyzed: 05/23/2006 (6E	23074-BLK1)										
Total Dissolved Solids	ND	10	10	mg/l							

mg/l



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

		Reporting			Spike	Source		%REC		RPD	Data
Analyte	Result	Limit	MDL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifiers
Batch: 6E23074 Extracted: 05/2	3/06										
LCS Analyzed: 05/23/2006 (6E23074	4-BS1)										
Total Dissolved Solids	990	10	10	mg/l	1000		99	90-110			
Duplicate Analyzed: 05/23/2006 (6E	23074-DUP1)				Sou	irce: IPE2	2099-01				
Total Dissolved Solids	15600	10	10	mg/l		16000			3	10	
Batch: 6E24059 Extracted: 05/2	4/06										
Blank Analyzed: 05/24/2006 (6E240	59-BLK1)										
Oil & Grease	ND	5.0	0.94	mg/l							
LCS Analyzed: 05/24/2006 (6E24059	9-BS1)										M-NR1
Oil & Grease	18.2	5.0	0.94	mg/l	20.0		91	65-120			
LCS Dup Analyzed: 05/24/2006 (6E)	24059-BSD1)										
Oil & Grease	18.4	5.0	0.94	mg/l	20.0		92	65-120	1	20	
Batch: 6E24118 Extracted: 05/2	4/06										
Blank Analyzed: 05/24/2006 (6E241	18-BLK1)										
Total Suspended Solids	ND	10	10	mg/l							
LCS Analyzed: 05/24/2006 (6E24118	8-BS1)										
Total Suspended Solids	985	10	10	mg/l	1000		98	85-115			
Duplicate Analyzed: 05/24/2006 (6E	24118-DUP1)				Sou	irce: IPE2	2102-01				
Total Suspended Solids	130	10	10	mg/l		130			0	10	



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

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



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



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	Х	Х
EPA 200.8-Diss	Water	Х	Х
EPA 200.8	Water	Х	Х
EPA 245.1-Diss	Water	Х	Х
EPA 245.1	Water	Х	Х
EPA 300.0	Water	Х	Х
EPA 413.1	Water	Х	Х
SM2540C	Water	Х	Х

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

Subcontracted Laboratories

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

1104 Windfield Way - El Dorado Hills, CA 95762Analysis Performed: 1613-Dioxin-HR-Alta

Samples: IPE2109-01

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

/ Page 1 of 1		Field readings: Temp = 61		pH= 🗸	Commente	2							Filter w/in 24hr of receint at lab		 		Time: (check)	5 Days	10 Days		Normal	Only 72 Hours	72 Hours	jrity: (Check) On Ice: VZc	
2F2109	REQUIRED																	24 Hours	48 Hours		72 Hours	Perchlorate (C & C Metals Only	Sample Intect	
H	ANALYSIS F	dS :sls	∏ Net⊴	L 'ɓ⊢ N pə, 	, TSS vlossid I I Dissolv, Pb, I	Cd, (Tota						×	×				 	ふつび	22/1			10-66-	5 C 0 P		
Z		5-N	7 ∀α)3+1/ (Eb	SO4, NC					×	×						ATime.	2 66	e/Time:		e/Time: 7	<u>,</u>	-		
рү ғон		Aetals: TI	ʻɓ⊢ ∖ əl	Pb, F	I Recove	stoT),d2	×	×										a c	Dat	1				\int	(\mathcal{D})
JSTO		<u> </u>				Bottle * #	1A	18	2A, 2B	3A, 3B	4A,4B	5A, 5B	9				1	K		,			•		209
N OF CI		4PDES 11 009 WS-13		· ·	10	Preservative	HNO3	HNO3	Norie	НСІ	None	None	None				Banaward Rv	N N	Received By	1	Received By))	
/28/06 CHAI	Project:	3oeing-SSFL N Routine Outfa Stormwater at '		² hone Number 626) 568-6691	ax Number: 626) 568-6515	Sampling Date/Time	5/22/64						5/22466				Time:		Time:	240	Time:				
Version 04		500 ·				# of Cont.		-	2	5	2	N	-				Dato/	2/5	Date/	56 16	Dafe/				
ytical	s:	ie, Suite 12		ronwyn K	N.	Container Tvpe	Poly-1L	Poly-1L	Amber-1L	Amber-1L	Poly-500 ml	Poly-500 ml	Poly-1L					N	, , , , , , , , , , , , , , , , , , ,	1-27/ 5					
r Anal	le/Addres	Isadena ake Avenu	CA 91101	inager: B	Sing	Sample Matrix	3	3	×	×	N	3	3		 					in the	B	5			
Del Ma	Client Nar	MWH-Pa 300 North L	Pasadena,	Project Ma	Sampler	Sample Description	Outfall 009	Outfall 009- Dup	Outfall 009	Outfall 009	Outfall 009	Outfall 009	Outfall 009				Balinguichad		Relinquished	1240	Relinquished				



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. Thank you for choosing Alta as part of your analytical support team.

Sincerely,

Waker Maior

Martha M. Maier Director of HRMS Services



Alta Analytical Laboratory certifies that the report herein neets 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 Section I: Sample Inventory Report Date Received: 5/24/2006

Alta Lab. ID

Client Sample ID

27733-001

IPE2109-01

SECTION II

Sample Size: 1.00.1. Date Extracted: 30-May-of Date Analyzed 101-5: 31-May-of D Analyte Conc. (ug/1) DL a EMPC ^b Qualifiers Labeled Standard γ 2.3.7.8-TCDD ND 0.0000127 E NT 2.3.7.8-TCDD γ 1.2.3.4.7.8-HCDD ND 0.0000127 E IT 2.3.7.8-HCDD γ 1.2.3.4.7.8-HCDD ND 0.0000123 E IT 2.3.7.8-HCDD γ 1.2.3.4.7.8-HCDF ND 0.00000123 E IT 2.3.4.5.7.8-HCDP γ 1.2.3.4.7.8-HCDF ND 0.00000122 E IT IT IT IT IT IT IT IT	Matrix: Aque	ous	QC Batch No.:	8054	Lab Sample: 0-MB001	
Analyte Conc. (ug/L) Dl. ^a EMPC ^b Qualifiers Labeled Standard γ 2.3.7.8-FCDD ND 0.0000133 13.C.1.2.3.7.8-FCDD 13.C.1.2.3.7.8-FCDD γ 2.3.7.8-FCDD ND 0.0000127 13.C.1.2.3.6.7.8-FKCDD 13.C.1.2.3.6.7.8-FKCDD γ 1.2.3.7.8-FCDD ND 0.0000133 13.C.1.2.3.6.7.8-FKCDD 13.C.1.2.3.6.7.8-FKCDD γ 1.2.3.4.6.7.8-FFCDD ND 0.0000132 13.C.1.2.3.6.7.8-FKCDD 13.C.1.2.3.6.7.8-FKCDD γ 1.2.3.4.6.7.8-FFCDD ND 0.00000132 13.C.1.2.3.6.7.8-FKCDF 13.C.1.2.3.6.7.8-FKCDF γ 1.2.3.4.6.7.8-FFCDF ND 0.00000122 13.C.1.2.3.6.7.8-FKCDF γ γ 1.2.3.4.6.7.8-FKCDF ND 0.00000122 13.C.1.2.3.4.7.8-FKCDF γ γ 1.2.3.4.6.7.8-FKCDF ND 0.00000122 13.C.1.2.3.4.6.7.8-FKCDF γ 1.2.3.4.7.8-FCDF ND 0.00000122 13.C.1.2.3.4.6.7.8-FKCDF γ 1.2.3.4.7.8-FCDF ND 0.000000122 13.C.1.2.3.4.6.7.8-FKCDF	Sample Size: 1.0	01	Date Extracted:	30-May-06	Date Analyzed DB-5: 31-May-06	Date Analyzed DB-225: N
2.3.7.8.TCDD ND 0.0000123 IS 1.3.7.3.8.TCDD 1.2.3.7.8.FCDD ND 0.0000127 IS 1.2.3.7.8.FCDD 1.2.3.7.8.FACDD ND 0.0000123 IS 1.2.3.7.8.FACDD 1.2.3.4.7.8.HACDD ND 0.0000123 IS 1.2.3.4.7.8.HACDD 1.2.3.4.6.7.8.HACDD ND 0.0000123 IS 1.2.3.4.7.8.HACDD 1.2.3.4.6.7.8.HACDD ND 0.0000123 IS IS 1.2.3.4.6.7.8.HACDD 1.2.3.7.8.PECDF ND 0.0000123 IS IS IS IS 1.2.3.7.8.PECDF ND 0.0000124 IS IS IS IS 2.3.7.8.PECDF ND 0.0000012 IS IS IS IS 2.3.7.8.PECDF ND 0.0000012 IS IS IS IS 2.3.4.5.8.HACDF ND 0.0000012 IS IS IS IS 2.3.4.5.8.HACDF ND 0.0000012 IS IS IS IS 2.3.7.8.PECDF ND 0.0000012 IS IS IS IS 2.3.4.5.8.HACDF ND 0.00000028 IS IS IS IS 2.3.4.5.8.HACDF ND 0.00000028	Analyte	Conc. (ug/L)	DL ^a EM	PC ^b Qualifiers	Labeled Standard	%R LCL-UCL ^d Qus
	2.3.7.8-TCDD	QN	0.00000133		<u>IS</u> 13C-2,3,7,8-TCDD	61:1 25 - 164
$ \begin{array}{llllllllllllllllllllllllllllllllllll$	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
1,2,3,7,8,9-HxCDD ND 0.0000182 13C-1,2,3,4,6,7,8-HpCDD 1,2,3,7,8,9-HxCDD ND 0.0000182 13C-0,2,3,7,8-FpCDF 0,2,3,7,8-FCDF ND 0.0000172 13C-0,2,3,7,8-FpCDF 0,3,7,8-FCDF ND 0.00000172 13C-2,3,7,8-FpCDF 0,3,7,8-FCDF ND 0.00000738 13C-2,3,7,8-FpCDF 0,3,4,7,8-FPCDF ND 0.00000738 13C-1,2,3,7,8-FPCDF 1,2,3,7,8-FPCDF ND 0.00000738 13C-1,2,3,7,8-FPCDF 1,2,3,4,7,8-FPCDF ND 0.00000738 13C-1,2,3,4,6,7,8-HxCDF 1,2,3,4,7,8-FPCDF ND 0.00000738 13C-1,2,3,4,6,7,8-HxCDF 1,2,3,4,7,8-FPCDF ND 0.00000738 13C-1,2,3,4,6,7,8-HxCDF 1,2,3,4,6,7,8-HxCDF ND 0.00000738 13C-1,2,3,4,6,7,8-HxCDF 1,2,3,4,6,7,8-HxCDF ND 0.00000738 13C-1,2,3,4,6,7,8-HxCDF 1,2,3,4,6,7,8-HxCDF ND 0.00000749 13C-1,2,3,4,6,7,8-HxCDF 1,2,3,4,6,7,8-HxCDF ND 0.0000016 13C-1,2,3,4,6,7,8-HxCDF 1,2,3,4,6,7,8-HxCDF ND 0.000	1.2,3,6,7,8-HxCDD	ND	0.00000133		13C-1,2,3,6,7,8-HxCDD	61.0 28 - 130
12.3.4.6.7.8-HpCDD ND 0.0000182 13C-OCDD 0CDD ND 0.0000172 13C-2.3.7.8-PeCDF 2.3.7.8-FCDF ND 0.00000172 13C-2.3.7.8-PeCDF 12.3.7.8-PECDF ND 0.00000172 13C-1.2.3.7.8-PeCDF 12.3.7.8-FCDF ND 0.00000749 13C-1.2.3.7.8-PeCDF 12.3.4.7.8-PECDF ND 0.00000051 13C-1.2.3.7.8-PECDF 12.3.4.7.8-PECDF ND 0.00000051 13C-1.2.3.7.8-PECDF 12.3.4.7.8-PECDF ND 0.00000051 13C-1.2.3.7.8-PECDF 12.3.4.7.8-PHXCDF ND 0.00000051 13C-1.2.3.7.8-PHXCDF 12.3.4.6.7.8-HXCDF ND 0.000000778 13C-1.2.3.7.8-PHXCDF 12.3.4.6.7.8-HXCDF ND 0.000000778 13C-1.2.3.7.8-PHXCDF 12.3.4.6.7.8-HXCDF ND 0.000000778 13C-1.2.3.7.8-PHXCDF 12.3.4.6.7.8-HXCDF ND 0.000000778 13C-1.2.3.7.8-PHXCDF 12.3.4.6.7.8-HXCDF ND 0.00000075 13C-1.2.3.7.8-PKCDF 12.3.4.6.7.8-HXCDF ND 0.0000017 13C-1.2.3.7.8-PKCDF 12.3.4.6.7.8-HXCDF ND 0.0000017 12C	1,2,3,7,8,9-HxCDD	ND	0.00000128		13C-1,2,3,4,6,7,8-HpCDD	60.2 23 - 140
OCDD ND 0.0000016 13C-2,3,7,8-FCDF 2,3,7,8-FCDF ND 0.0000172 13C-1,2,3,7,8-FCDF 1,2,3,7,8-FCDF ND 0.00000749 13C-1,2,3,7,8-FCDF 2,3,4,7,8-FCDF ND 0.00000758 13C-1,2,3,7,8-FCDF 2,3,4,7,8-FCDF ND 0.00000051 13C-1,2,3,4,7,8-FKDF 2,3,4,7,8-FKDF ND 0.00000054 13C-1,2,3,4,7,8-FKDF 1,2,3,4,7,8-FKDF ND 0.00000054 13C-1,2,3,4,7,8-FKDF 1,2,3,4,5,7,8-FKDF ND 0.00000078 13C-1,2,3,4,6,7,8-FKDF 2,3,4,6,7,8-FKDF ND 0.0000016 13C-1,2,3,4,6,7,8-FKDF 1,2,3,4,6,7,8-FKDF ND 0.0000017 13C-1,2,3,4,7,8,9-FKDF 1,2,3,4,6,7,8-FKDF ND 0.0000017 13C-1,2,3,4,6,7,8-FKDF 1,2,3,4,6,7,8-FKDF ND 0.0000017 13C-1,2,3,4,6,7,8-FKDF 1,2,3,4,6,7,8-FKDF ND 0.0000017 13C-1,2,3,4,7,8,9-FKDF 1,2,3,4,7,8,9-FKDF ND 0.0000017 13C-1,2,3,4,7,8,9-FKDF 1,2,3,4,7,8,9-FKDF ND 0.0000017 13C-1,2,3,	1,2,3,4,6,7,8-HpCDD	ND	0.00000182		13C-OCDD	45.2 17 - 157
23.7,8-TCDF ND 0.00000172 13C-1.2,3,7,8-PeCDF 12.3,7,8-PeCDF ND 0.00000758 13C-1.2,3,7,8-PeCDF 23,4,7,8-PeCDF ND 0.00000058 13C-2,3,4,7,8-PeCDF 23,4,7,8-PeCDF ND 0.00000621 13C-2,3,4,7,8-PeCDF 23,4,7,8-PeCDF ND 0.00000621 13C-1,2,3,4,7,8-PeCDF 1,2,3,6,7,8-HxCDF ND 0.000000584 13C-1,2,3,4,6,7,8-HxCDF 1,2,3,4,6,7,8-HpCDF ND 0.000000778 13C-1,2,3,4,6,7,8-HxCDF 1,2,3,4,6,7,8-HpCDF ND 0.000000778 13C-1,2,3,4,6,7,8-HxCDF 1,2,3,4,6,7,8-HpCDF ND 0.0000016 13C-1,2,3,4,6,7,8-HxCDF 1,2,3,4,6,7,8-HpCDF ND 0.0000017 13C-1,2,3,4,6,7,8-HxCDF 1,2,3,4,7,8,9-HpCDF ND 0.00000107 13C-1,2,3,4,6,7,8-HxCDF 1,2,3,4,6,7,8-HpCDF ND 0.00000107 13C-1,2,3,7,8,9-HpCDF 1,2,3,4,6,7,8-HpCDF ND 0.00000107 13C-1,2,3,7,8,9-HpCDF 1,2,3,4,7,8,9-HpCDF ND 0.00000107 13C-1,2,3,7,8,9-HpCDF 1,2,3,4,7,8,9-HpCDF ND 0.00000107 13C-1,2,3,7,8,9-HpCDF 1,2,3,4,7,8,9-H	OCDD		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
$ \begin{array}{llllllllllllllllllllllllllllllllllll$	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	DN	0.00000621		13C-1,2,3,6,7,8-HxCDF	58.7 26 - 123
$ \begin{array}{lclcrcl} 2,3,4,6,7,8-HxCDF & ND & 0.00000778 & 13C-1,2,3,7,8,9-HxCDF \\ 1,2,3,7,8,9-HxCDF & ND & 0.0000016 & 1.2,3,4,6,7,8,9-HpCDF \\ 1,2,3,4,7,8,9-HpCDF & ND & 0.00000107 & 1.3C-1,2,3,4,7,8,9-HpCDF \\ 1,2,3,4,7,8,9-HpCDF & ND & 0.00000107 & 1.3C-1,2,3,4,7,8,9-HpCDF \\ 1,2,3,4,7,8,9-HpCDF & ND & 0.00000107 & CKS 37C-1,2,3,4,7,8,9-HpCDF \\ 1,2,3,4,7,8,9-HpCDF & ND & 0.00000107 & CKS 37C-2,3,7,8-TCDD \\ \hline 1,2,3,4,7,8,9-HpCDF & ND & 0.0000107 & CKS 37C-2,3,7,8-TCDD \\ \hline 1,2,3,4,7,8,9-HpCDF & ND & 0.0000127 & CKS 37C-2,3,7,8-TCDD \\ \hline 1,2,3,4,7,8,9-HpCDF & ND & 0.0000127 & cKS 37C-2,3,7,8-TCDD \\ \hline 1,2,3,4,7,8,9-HpCDF & ND & 0.0000127 & cKS 37C-2,3,7,8-TCDD \\ \hline 1,2,3,4,7,8,9-HpCDF & ND & 0.0000127 & cKS 37C-2,3,7,8-TCDD \\ \hline 1,2,3,4,7,8,9-HpCDF & ND & 0.0000127 & cKS 37C-2,3,7,8-TCDD \\ \hline 1,2,3,4,7,8,9-HpCDF & ND & 0.0000127 & cKS 37C-2,3,7,8-TCDD \\ \hline 1,2,3,4,7,8,9-HpCDF & ND & 0.0000127 & cKS 37C-2,3,7,8-TCDD \\ \hline 1,2,3,4,7,8,9-HpCDF & ND & 0.0000127 & cKS 37C-2,3,7,8-TCDD \\ \hline 1,2,3,4,7,8,9-HpCDF & ND & 0.0000127 & cKS 37C-2,3,7,8-TCDD \\ \hline 1,2,3,4,7,8,9-HpCDF & ND & 0.0000127 & cKS 37C-2,3,7,8-TCDD \\ \hline 1,2,3,4,7,8,9-HpCDF & ND & 0.0000127 & cKS 37C-2,3,7,8-TCDD \\ \hline 1,2,3,4,7,8,9-HPCDF & ND & 0.0000127 & cKS 37C-2,3,7,8-TCDD \\ \hline 1,2,3,4,7,8,9-HPCDF & ND & 0.0000127 & cKS 37C-2,3,7,8-TCDD \\ \hline 1,2,3,4,7,8,9-HPCDF & ND & 0.00000127 & cKS 37C-2,3,7,8-TCDD \\ \hline 1,2,3,4,7,8,9-HPCDF & ND & 0.00000127 & cKS 37C-2,3,7,8-TCDD \\ \hline 1,2,3,4,7,8,9-HPCDF & ND & 0.00000127 & cKS 37C-2,3,7,8-TCDD \\ \hline 1,2,3,4,7,8,9-HPCDF & ND & 0.00000127 & cKS 37C-2,3,7,8-TCDD \\ \hline 1,2,3,4,7,8,9-HPC 32 & cKS 32000000000000000000000000000000000000$	1,2,3,6,7,8-HxCDF	ND	0.000000584		13C-2,3,4,6,7,8-HxCDF	55.9 28 - 136
1.2,3,7,8,9-HxCDFND 0.0000016 $1.2,3,4,7,8,9$ -HpCDF $1,2,3,4,7,8,9$ -HpCDFND 0.0000097 $1.2,3,4,7,8,9$ -HpCDF $1,2,3,4,7,8,9$ -HpCDFND 0.00000107 $1.2,3,4,7,8,9$ -HpCDF $1,2,3,4,7,8,9$ -HpCDFND 0.00000107 $1.2,3,4,7,8,9$ -HpCDF $1,2,3,4,7,8,9$ -HpCDFND 0.0000107 $1.2,3,4,7,8,9$ -HpCDF $1,2,3,4,7,8,9$ -HpCDFND 0.0000127 CKS $1,2,3,4,7,8,9$ -HpCDFND 0.0000127 CKS $1,2,3,4,7,8,9$ -HpCDFND 0.0000127 R $1,2,3,4,7,8,9$ -HpCDFND 0.0000127 R $1,2,3,4,7,8,9$ -HpCDFND 0.0000127 R $1,2,3,4,7,8,9$ -HpCDDND 0.0000127 R $1,2,3,4,7,8,9$ -HpCDDND 0.0000127 R $1,2,3,4,7,8,9$ -HpCDFND 0.0000127 R $1,2$ otal HpCDDND 0.0000127 R 1 otal HpCDDND 0.0000127 R 1 otal TCDFND 0.0000127 R 1 otal TCDFND 0.0000127 R 1 otal HpCDDND 0.0000127 R 1 otal PCDFND 0.00000127 R 1 otal PCDFND 0.00000724	2,3,4,6,7,8-HxCDF	ŊŊ	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
1,2,3,4,7,8,9-HpCDFND 0.00000107 $13C-OCDF$ $OCDF$ ND 0.0000249 $CRS_37CI-2,3,7,8-TCDD$ $Total$ TotalRo $237CI-2,3,7,8-TCDD$ $Total TCDD$ ND 0.0000133 $RoTotal PeCDDND0.0000127a Sample specific estimated detection limitTotal HxCDDND0.0000127b Estimated maximum possible concentration.Total HxCDDND0.0000127c Method detection limitTotal HxCDDND0.0000127c Method detection limitTotal TCDFND0.0000127c Method detection limitTotal TCDFND0.00000127c Method detection limitTotal PeCDFND0.00000127c Method detection limitTotal PeCDFND0.00000127c Method detection limitTotal PeCDFND0.00000172c Method detection limit$	1,2,3,4,6,7,8-HpCDF		0.00000097		13C-1,2,3,4,7,8,9-HpCDF	58.4 26 138
OCDFND0.0000249CRS 37Cl-2,3,7,8-TCDDTotalsFootnotesFootnotesTotal TCDDND0.0000133a Sample specific estimated detection limit.Total PeCDDND0.00000127b Estimated maximum possible concentration.Total HxCDDND0.00000127b Control fimit.Total HxCDDND0.00000127b Lestimated maximum possible concentration.Total HxCDDND0.00000127c Method detection limit.Total TCDFND0.00000172c Method detection limit.Total PeCDFND0.00000172c Method detection limit.	1,2,3,4,7,8,9-HpCDF	ND	0.00000107		13C-OCDF	52.2 17 - 157
TotalsFootnotesTotal TCDDND0.00000133a Sample specific estimated detection limit.Total PeCDDND0.00000127b. Estimated maximum possible concentration.Total HxCDDND0.00000127c. Method detection limit.Total HxCDDND0.00000127c. Method detection limit.Total HxCDDND0.00000127c. Method detection limit.Total HxCDDND0.00000127c. Method detection limit.Total TCDFND0.00000172d. Lower control limit - upper control limit.Total PeCDFND0.000000754d. Lower control limit - upper control limit.	OCDF	ŊD	0.00000249		CRS 37CI-2,3,7,8-TCDD	75.0 35 - 197
Total TCDDND0.00000133a Sample specific estimated detection limit.Total PeCDDND0.00000127b. Estimated maximum possible concentration.Total HxCDDND0.00000127c. Method detection limit.Total HxCDDND0.00000182d. Lower control limit - upper control limit.Total TCDFND0.00000172d. Lower control limit - upper control limit.Total PeCDFND0.00000172	Totals				Footnotes	
Total PeCDDND0.00000127b. Estimated maximum possible concentration.Total HxCDDND0.00000127c. Method detection limit.Total HxCDDND0.00000182d. Lower control limit - upper control limit.Total TCDFND0.00000172d. Lower control limit - upper control limit.Total PeCDFND0.00000172	Total TCDD	ND	0.00000133		a. Sample specific estimated detection limit.	
Total HxCDDND0.00000127c. Method detection limit.Total HpCDDND0.00000182d. Lower control limit - upper control limit - upper control limit.Total TCDFND0.00000172Total PeCDFND0.000000754	Total PeCDD	ND	0.00000127		b. Estimated maximum possible concentration.	
Total HpCDDND0.00000182d. Lower control limit - upper control limitTotal TCDFND0.00000172Total PeCDFND0.000000754	Total HxCDD	ND	0.00000127	:	c. Method detection limit.	
Total TCDF ND 0.00000172 Total PeCDF ND 0.00000754	Total HpCDD	and and an and an and an and an	0.00000182		d. Lower control limit - upper control limit.	
Total PeCDF	Total TCDF	ND	0.00000172			
	Total PeCDF	ND	0.000000754			
Total HxCDF ND 0.00000786	Total HxCDF	ND	0.000000786		•	
Total HpCDF ND 0.00000103	Total HpCDF	ND	0.00000103			

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OPR Results					EPA	Method 1613	
Matrix: Aqueous Sample Size 1.00 L		QC Batch No.: Date Extracted	8054 30-May-06	Lab Sample. 0-OPR001 Date Analyzed DB-5: 31-May-06	Date Analyze	d DB-225: NA	
Analyte	Spike Conc.	Conc. (ng/mL)	OPR Limits	Labeled Standard	%R	TCP-ACL	
2.3.7,8-TCDD	10.0	10.3	6.7 - 15.8	<u>IS</u> 13C-2,3,7,8-TCDD	74.8	25 164	
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	2000
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	CRS 37CI-2,3,7,8-TCDD	91.5	35 - 197	100
Analyst: DMS				Approved By: William J. Luk	csemburg 01-	Jun-2006 11:31	

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$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	Client Data Name Del Mar Analyt Project Del Mar Analyt Project 11PE2109 Date Collected 1129 Analyte Conc. (ug									
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	Name Del Mar Analyti Project IPE2109 Date Collected 22-May-06 Time Collected: 1129 Analyte Conc. (ug			Sample Data		Laboratory Data				
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	Project ITT-Z109 Date Collected 22-May-06 Time Collected: 1129 Analyte Conc. (ug	tical, Irvine		Matrix:	Aqueous	Lab Sample:	27733-001	Date Rece	ived.	24-N
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	Analyte Conc. (ug			Sample Size:	0.987 L	QC Batch No.: Date Anafyzed DB-5.	8054 31-May-06	Date Extra Date Analy	ncted. vzed DB-225.	30-M NA
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	$ \begin{array}{c c c c c c c c c c c c c c c c c c c $		g/L)	DL ^a	EMPC ^b	Qualifiers	Labeled Sta	ndard	%R 1	CLL-UCL ^d	Qualifie
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	2,3,7,8-TCDD ND		0.0000075	56		<u>IS</u> 13C-2,3,7,8-T	CDD	72.8	25 - 164	
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	1,2,3,7,8-PeCDD ND		0.0000006	30		13C-1,2,3,7,8	-PeCDD	74.5	25 - 181	
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	1,2,3,4,7,8-HxCDD ND		0.00000070	50		13C-1,2,3,4,7	,8-HxCDD	69.2	32 - 141	
	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	1,2,3,6,7,8-HxCDD ND		0.0000008	10		13C-1.2,3.6,7	,8-HxCDD	66.1	28 - 130	
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	1,2,3,7,8,9-HxCDD ND		0.0000007	34		13C-1,2,3,4,6	,7,8-нрСDD	69.5	23 - 140	
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	OCDD 0.0000922 13C-2,3,7,8-TCDF 739 24-16 $2,3,7,8-TCDF$ ND 0.00000570 13C-1,2,3,7,8-FCDF 739 24-18 $1,2,3,7,8-FCDF$ ND 0.00000517 13C-1,2,3,7,8-FCDF 739 24-18 $1,2,3,7,8-FCDF$ ND 0.00000517 13C-1,2,3,7,8-FCDF 757 21-17 $2,3,4,7,8-FCDF$ ND 0.00000517 13C-1,2,3,4,7,8-FKCDF 661 26-15 $1,2,3,4,7,8+FKCDF$ ND 0.00000528 13C-1,2,3,4,7,8+FKCDF 601 26-13 $1,2,3,4,5,78+FKCDF$ ND 0.00000528 13C-1,2,3,4,7,8+FKCDF 601 26-13 $2,3,4,6,78+FKCDF$ ND 0.00000508 13C-1,2,3,7,8,9+FKCDF 601 26-13 $2,3,4,6,78+FKCDF$ ND 0.00000508 13C-1,2,3,7,8,9+FKCDF 601 26-13 $2,3,4,6,78+FKCDF$ ND 0.00000508 13C-1,2,3,7,8,9+FKCDF 67.1 28-13 $1,2,3,4,6,78+FCDF ND 0.00000508 13C-1,2,3,7,8,9+FKCDF 67.9 26-13 1,2,3,4,5,8+FCDF $	1,2,3,4,6,7,8-HpCDD 0.000008	851			ſ	13C-0CDD		45.8	17 - 157	
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	OCDD 0.000092	22				13C-2,3,7,8-T	CDF	79.9	24 - 169	
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$		2,3,7,8-TCDF ND		0.00000100	C		13C-1,2,3,7,8	-PeCDF	73.9	24 - 185	
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	2.3.4.7.8-PeCDF ND 0.000000517 13C-1.2.3.4.7.8-HxCDF 68.7 26-15 1.2.3.4.7.8-PeCDF ND 0.00000481 13C-1.2.3.6.7.8-HxCDF 60.1 26-13 1.2.3.6.7.8-HxCDF ND 0.00000483 13C-1.2.3.6.7.8-HxCDF 67.1 28-13 1.2.3.6.7.8-HxCDF ND 0.00000528 13C-1.2.3.6.7.8-HxCDF 67.1 28-13 1.2.3.6.7.8-HxCDF ND 0.00000508 1 13C-1.2.3.4.6.7.8-HpCDF 67.1 28-14 1.2.3.6.7.8-HxCDF ND 0.00000508 1 13C-1.2.3.4.6.7.8-HpCDF 67.1 28-13 1.2.3.7.8.9-HpCDF ND 0.00000508 1 13C-1.2.3.4.6.7.8-HpCDF 67.9 26-13 1.2.3.4.6.7.8-HpCDF ND 0.00000508 1 13C-1.2.3.4.6.7.8-HpCDF 67.9 26-13 1.2.3.4.6.7.8-HpCDF 0.00000050 1 13C-1.2.3.4.7.8-9-HpCDF 67.9 26-13 1.2.3.4.6.7.8-HpCDF 0.00000050 1 13C-1.2.3.4.7.8-9-HpCDF 67.9 26-13 1.2.3.4.6.7.8-HpCDF 0.00000050 1 13C-1.2.3.4.7.8-9-HpCDF 67.9 26-13 1.2.3.1.8-HpCDF	1,2,3,7,8-PeCDF ND		0.0000005	70		13C-2,3,4,7,8	- PeCDF	75.7	21 - 178	
	$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	2,3,4,7,8-PeCDF ND		0.0000005	17		13C-1,2,3,4,7	,8-HxCDF	68.7	26 - 152	
1.2.3,6/7,8-HxCDF ND 0.00000485 13C-2.3,4,6,7,8-HxCDF 67.1 28-136 2.3,4,6,7,8-HxCDF ND 0.00000528 13C-12,3,7,8,9-HxCDF 67.1 28-143 1.2.3,7,8,9-HxCDF ND 0.00000508 1 13C-12,3,7,8,9-HxCDF 67.9 29-147 1.2.3,7,8,9-HxCDF ND 0.0000050 1 13C-12,3,4,6,7,8-HpCDF 67.9 26-138 1.2.3,4,6,7,8-HpCDF ND 0.00000690 0.00000630 13C-12,3,4,7,8,9-HpCDF 67.9 26-138 1.2.3,4,7,8,9-HpCDF ND 0.00000630 CRS 37C-12,3,4,7,8,9-HpCDF 67.9 26-138 1.2.3,4,7,8,9-HpCDF ND 0.00000630 CRS 37C-12,3,4,7,8,9-HpCDF 67.9 26-138 1.2.3,4,7,8,9-HpCDF ND 0.00000633 CRS 37C-12,3,4,6,7,8-HpCDF 67.9 26-138 1.2.3,4,7,8,9-HpCDF ND 0.00000633 CRS 37C-12,3,4,6,7,8-HpCDF 67.9 26-138 1.2.3,4,7,8,9-HpCDF ND 0.00000633 CRS 37C-12,3,7,8-TCDD 91.8 35-197 1.04 Itelearce ND 0.000000580 a sample specife estimat		1,2,3,4,7,8-HxCDF ND		0.0000004	81		13C-1,2,3,6,7	,8-HxCDF	60.1	26 - 123	
2.3.4.6.7,8-HxCDF ND 0.00000528 J3C-1.2.3.7,8,9-HxCDF 70.9 29-147 1.2.3,7,8,9-HxCDF ND 0.00000698 J J J3C-1.2.3,4,5,8-HpCDF 62.8 28-143 1.2.3,4,6,7,8-HpCDF ND 0.00000690 J J3C-1,2.3,4,7,8-HpCDF 67.9 26-138 1.2.3,4,5,7,8-HpCDF ND 0.00000690 J3C-1,2.3,4,7,8,9-HpCDF 67.9 26-138 1.2.3,4,7,8,9-HpCDF ND 0.00000653 CRS 37C1-2,3,7,8,9-HpCDF 67.9 26-138 1.2.3,4,7,8,9-HpCDF ND 0.00000653 CRS 37C1-2,3,7,8,-HpCDF 67.9 26-138 1.2.3,4,7,8,9-HpCDF ND 0.00000653 CRS 37C1-2,3,7,8,-FPCDF 61.9 26-138 1.2.3,4,7,8,9-HpCDF ND 0.00000756 CRS 37C1-2,3,7,8,-FPCDF 61.8 35-197 Octal HxCDD ND 0.00000756 a sample specific estimated detection limit. 17-157 Total HxCDD ND 0.00000768 b Estimated maximum possible consentration. c Method detection limit. 17-157 Total HxCDF ND 0.00000170 0.000000869 <td< td=""><td>$\begin{array}{c c c c c c c c c c c c c c c c c c c$</td><td>1,2,3,6,7,8-HxCDF ND</td><td></td><td>0.0000004</td><td>85</td><td></td><td>13C-2,3,4,6,7</td><td>,8-HxCDF</td><td>67.1</td><td>28 - 136</td><td></td></td<>	$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	1,2,3,6,7,8-HxCDF ND		0.0000004	85		13C-2,3,4,6,7	,8-HxCDF	67.1	28 - 136	
$ \begin{array}{ [c c c c c c c c c c c c c c c c c c c$	1.2.3,7,8,9-HxCDF ND 0.00000698 J J3C-1,2,3,4,6,7,8-HpCDF 62.8 28-14 1.2,3,4,6,7,8-HpCDF ND 0.00000690 J J3C-1,2,3,4,7,8,9-HpCDF 67.9 26-13 1.2,3,4,6,7,8-HpCDF ND 0.00000690 0.00000653 J3C-1,2,3,4,7,8,9-HpCDF 67.9 26-13 1.2,3,4,6,7,8-HpCDF ND 0.00000653 CES 37C1-2,3,4,7,8,9-HpCDF 67.9 26-13 1.2,3,4,7,8,9-HpCDF ND 0.00000653 CES 37C1-2,3,4,7,8,9-HpCDF 67.9 26-13 1.2,3,4,7,8,9-HpCDF ND 0.00000653 CES 37C1-2,3,4,7,8,9-HpCDF 67.9 26-13 Total XCDD ND 0.00000756 a Sample specific estimated detection limit. 17-15 Total PCCDD ND 0.00000680 b Estimated maximum possible concentration. c. Method detection limit. Total HCCDD ND 0.000000788 0.000000699 d Lower control limit - upper control limit. Total HCCDF ND 0.000000769 d Lower control limit - upper control limit. f Lower control limit - upper control limit. Total HCCDF ND 0.000000769 d Lower control limit - upper control limit. <t< td=""><td>2,3,4,6,7,8-HxCDF ND</td><td></td><td>0.0000005</td><td>28</td><td></td><td>13C-1,2,3,7,8</td><td>,9-HxCDF</td><td>70.9</td><td>29 - 147</td><td></td></t<>	2,3,4,6,7,8-HxCDF ND		0.0000005	28		13C-1,2,3,7,8	,9-HxCDF	70.9	29 - 147	
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	J.2,3,4,6,7,8-HpCDF 0.00000276 J J3C-1,2,3,4,7,8,9-HpCDF 67,9 26-13 J.2,3,4,7,8,9-HpCDF ND 0.00000690 0.00000653 CRS 51,4 17-15 J.2,3,4,7,8,9-HpCDF ND 0.00000650 CRS 51,4 17-15 OCDF ND 0.00000653 CRS 37C1-2,3,7,8-TCDD 91,8 35-19 Total ND 0.00000756 a Sample specific estimated detection limit. 91,8 35-19 Total ND 0.00000756 a Sample specific estimated detection limit. 91,8 35-19 Total HxCDD ND 0.00000788 b Estimated maximum possible concentration. 6 0.18 17-15 Total HxCDD ND 0.00000788 b Listinated detection limit. 6 17-15 17-15 Total HxCDF ND 0.00000784 b Controtes 1.1.0per control limit. 17-15 Total HxCDF ND 0.00000764 b.000000544 1.1.0per control limit. 1.1.0per control limit. Total HxCDF ND 0.00000170 d. Lower control limit. 1.1.0per control limit. 1.1.0per control limit.	1,2,3,7,8,9-HxCDF ND		0.0000006	98		13C-1,2,3,4,6	,7,8-HpCDF	62.8	28 - 143	
1.2.3.4,7,8,9-HpCDF ND 0.00000690 13C-OCDF 51.4 17-157 OCDF ND 0.00000653 CRS 37C1-2,3,7,8-TCDD 91.8 35 - 197 Total ND 0.00000556 a Sample specific estimated detection limit 91.8 35 - 197 Total ND 0.00000756 a Sample specific estimated detection limit 91.8 35 - 197 Total ND 0.00000756 a Sample specific estimated detection limit 6.00000788 1.0.0000788 1.0.0000788 Total HxCDD ND 0.00000788 b. Estimated maximum possible concentration. 0.00000788 1.0.0000788 1.0.0000788 Total TCDF ND 0.00000788 0.00000788 0.00000788 0.00000788 1.0.0000788 1.0.00000788 1.0.0000788 1.0.0.000788 1.0.0.0000788 1.0.0.0000788 1.0.0.0000788 1.0.0.0000788 1.0.0.0000788 1.0.0.0000788 1.0.0.0000788 1.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0		1,2,3,4,6,7,8-HpCDF 0.000002	276			ſ	13C-1,2,3,4,7	,8,9-HpCDF	67.9	26 - 138	
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		Analyst: DMS					Approved By:	William J. Luk	ksemburg	07-Jul-2006	11:22

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APPENDIX

DATA QUALIFIERS & ABBREVIATIONS

В	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.
Н	The signal-to-noise ratio is greater than 10:1.
I	Chemical interference
Ì	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

SUBCONTRACT ORDER

Del Mar Analytical - Irvine

IPE2109

1733

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

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

RECEIVING LABORATORY:

Analysis	Due	Expires	Laboratory ID	Comments			
Sample ID: IPE2109-01	Water	Sampled:05/22/06 11:29		Instant Nofication			
EDD + Level 4	06/01/06 12:0	00 06/19/06 11:29		Excel EDD email to pm,Include Std logs for Lvl IV			
1613-Dioxin-HR-Alta	06/01/06 12:0	05/29/06 11:29		J flags,17 congeners,no TEQ,ug/L,sub=Alta			
1 L Amber (C)	1 L Amber (I))					

Binedia . 92 Released By Date

126 5/24 Date Received By

Project 27733

Released By

Date

Received By

Date

SAMPLE LOG-IN CHECKLIST

Alta Project #:	2773	3								<u>.</u>	
	Date/Time			Initials	Initials:		Location: WR-2				
Samples Arrival:	5/24/06 0845			GRB		Shelf/Rack:					
	Date/Time	Date/Time			Initials:		Location: WR-2				
Logged In:	5/24/0	5/24/06 125le		F	FEB		Shelf/Rack: A-2				
Delivered By:	FedEx	UF	rs 🛛	Cal	DHL	Hand Delivered			Other		
Preservation:	lce)	Blue	lce	Dry I	ce	None				
Temp °C .	0°C	Tim	e: ()900		Thermometer ID: DT-2				20	
L		· · · · · · · · · · · · · · · · · · ·									
						YE:	5 N	0	NA		
Adequate Sample Volume Received?					U						
Holding Time Acceptable?					L	-	•				
Shipping Container(s) Intact?					L	-					
Shipping Custody Seals Intact?					L	1					
							,				

Shipping Custody Seals Intact?		\square						
Shipping Documentation Present?		/_						
Airbill Trk # 7914 9223 5500								
Sample Container Intact?								
Sample Custody Seals Intact?							4	_
Chain of Custody / Sample Documer			-		_			
COC Anomaly/Sample Acceptance Form completed?						T	2	-
If Chlorinated or Drinking Water Samples, Acceptable Preservation?								
Na ₂ S ₂ O ₃ Preservation Documented?			COC	Sampl Contair	Sample Container			
Shipping Container	Alta	Client	Retain	Retur	n	Disp	ose	

Comments:

APPENDIX G

Section 52

Outfall 009, May 22, 2006

MECX Data Validation Reports
	CONTRACT COMPL	JANCE SCREENING FORM FOR HARDCOPY DATA
MEC	CX. LLC	Package ID B4DF99
226	0 East Vassar Drive	Task Order 1261.001D.01
Suite	500	SDG No. IPE2109
Lake	wood CO 80226	No. of Analyses 1
Lan	Laboratory Alta Analyt	Date: July 11, 2006
	Paviovar E Wessling	Reviewerk Signature
	Analysis/Mathod Dioving/Eu	61-Waller
	Analysis/Method Dioxins/Fu	rans least toost
ACT	TON ITEMS ^a	
aci	Coso Nerrativo	
•	Deficiencies	
	Denciencies	
2.	Out of Scope	
	Analyzas	
	Analyses	
3.	Analyses Not Conducted	
51		
4	Missing Hardcony	
т.	Deliverables	
	Denverables	
5	Incorrect Hardcony	
5.	Deliverables	
	Denverables	
6.	Deviations from Analysis	Qualifications were assigned for the following:
	Protocol, e.g.	- the results between the RL and the MDL were estimated
	Holding Times	- EMPC values were qualified as estimated nondetects
	CCA IS Transformer	- Livir C values were quantied as estimated nondetecto
	GC/MS Tune/Inst. Performance	
	Canoration	
	Method blanks	
	Surrogates	
	Matrix Spike/Dup LCS	
	Field QC	
	Internal Standard Performance	
	Compound Identification	
	Quantitation	
	System Performance	
CO	MMENTS^b	
-		1
а,	Subcontracted analytical laboratory is not	meeting contract and/or method requirements.
b	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 009

ANALYSIS: DIOXINS/FURANS SAMPLE DELIVERY GROUP: IPE2109

Prepared by

MEC[×], 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[×]* 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.

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

Table 1. Sample Identification

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 \pm 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.

	Project:	NPDES
	SDG:	IPE2109
DATA VALIDATION REPORT	Analysis:	D/F

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

.....

	Project:	NPDES
	SDG:	IPE2109
DATA VALIDATION REPORT	Analysis:	D/F

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.

.....

1. La	Client Data Name: Del Mar Analytical, Irvine Project: IPE2109 Date Collected: 22-May-06 Time Collected: 1129			Sample Data Matrix: Aqueous Sample Size: 0.987 L		Laboratory DataLab Sample:27733-001QC Batch No.:8054Date Analyzed DB-5:31-May-06			Date Received: Date Extracted: Date Analyzed DB-225:		24-May-06 30-May-06 NA
we	Analyte	Conc. (ug/L)	DL ^a	EMPC ^b	Qualifiers		Labeled Stands	ard	%R	LCL-UCL ^d	Qualifiers
	2,3,7,8-TCDD	ND	0.0000007	56		<u>1S</u>	13C-2,3,7,8-TCI	DD	72.8	25 - 164	
	1,2,3,7,8-PeCDD	ND	0.0000006	80			13C-1,2,3,7,8-Pe	CDD	74.5	25 - 181	
	1,2,3,4,7,8-HxCDD	ND	0.0000007	60			13C-1,2,3,4,7,8-1	HxCDD	69.2	32 - 141	
	1,2,3,6,7,8-HxCDD	ND	0.0000008	10			13C-1,2,3,6,7,8-1	HxCDD	66.1	28 - 130	
	1,2,3,7,8,9-HxCDD	ND	0.0000007	94			13C-1,2,3,4,6,7,8	8-HpCDD	69.5	23 - 140	
DNQ	1,2,3,4,6,7,8-HpCDD	0.00000851			J		13C-OCDD		45.8	17 - 157	
	OCDD	0.0000922					13C-2,3,7,8-TCI	DF	79.9	24 - 169	
	2,3,7,8-TCDF	ND	0.0000010	0			13C-1,2,3,7,8-Pe	CDF	73.9	24 - 185	
	1,2,3,7,8-PeCDF	ND	0.0000005	70			13C-2,3,4,7,8-Pe	CDF	75.7	21 - 178	
	2,3,4,7,8-PeCDF	ND	0.0000005	17			13C-1,2,3,4,7,8-1	HxCDF	68.7	26 - 152	
	1,2,3,4,7,8-HxCDF	ND	0.0000004	81			13C-1,2,3,6,7,8-1	HxCDF	60.1	26 - 123	
	1,2,3,6,7,8-HxCDF	ND	0.0000004	85			13C-2,3,4,6,7,8-1	HxCDF	67.1	28 - 136	
	2,3,4,6,7,8-HxCDF	ND	0.0000005	28			13C-1,2,3,7,8,9-1	HxCDF	70.9	29 - 147	
	1,2,3,7,8,9-HxCDF	ND	0.0000006	98			13C-1,2,3,4,6,7,8	-HpCDF	62.8	28 - 143	
DNG	1,2,3,4,6,7,8-HpCDF	0.00000276			J		13C-1,2,3,4,7,8,9	-HpCDF	67.9	26 - 138	
	1,2,3,4,7,8,9-HpCDF	ND	0.0000006	90			13C-OCDF		51.4	17 - 157	
*10	OCDF	ND		0.000006	53	CRS	37Cl-2,3,7,8-TCl	DD	91.8	35 - 197	
	Totals					Foo	otnotes				
	Total TCDD	ND	0.0000007	56		a. Sa	mple specific estimated	detection limit.			
	Total PeCDD	ND	0.0000006	80		b. Es	timated maximum poss	ible concentration.			
	Total HxCDD	ND	0.0000007	88		c. Me	ethod detection limit.				
	Total HpCDD	0.00000851		0.000017	0	d. Lo	ower control limit - upp	er control limit.			
	Total TCDF	ND	0.0000010	0							
	Total PeCDF	ND	0.00000054	44							
\$10	Total HxCDF	ND		0.000000	869						
	Total HpCDF	0.00000511									

Analyst: DMS

Rus U

Project 27733



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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:

Michele Chamberdin

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

PURGEABLES BY GC/MS (EPA 624)

Report Number: IPE1832

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

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IPE1832-01 (Outfall 018 - Wate	r)								
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	
Vinvl 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	
Surrogate: Dibromofluoromethane (80-120%))				90 %				
Surrogate: Toluene-d8 (80-120%)					92 %				
Surrogate: 4-Bromofluorobenzene (80-120%)					94 %				
Sample ID: IPE1832-02 (Trip Blank - Water	r)								
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	
Surrogate: Dibromofluoromethane (80-120%))				90 %				
Surrogate: Toluene-d8 (80-120%)					93 %				

Surrogate: 4-Bromofluorobenzene (80-120%)

Del Mar Analytical - Irvine Michele Chamberlin 93 %



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)

			MDL	Reporting	Sample	Dilution	Date	Date	Data
Analyte	Method	Batch	Limit	Limit	Result	Factor	Extracted	Analyzed	Qualifiers
Sample ID: IPE1832-01 (Outfall 018 - Water	r)								
Reporting Units: ug/l									
Bis(2-ethylhexyl)phthalate	EPA 625	6E22042	1.7	4.9	1.8	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 %				



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
Sample ID: IPE1832-01 (Outfall 018 - Water Reporting Units: ug/l	r) - cont.								
alpha-BHC Surrogate: Decachlorobiphenyl (45-120%) Surrogate: Tetrachloro-m-xylene (35-115%)	EPA 608	6E21001	0.00096	0.0096	ND 61 % 47 %	0.962	05/21/06	05/24/06	



 MWH-Pasadena/Boeing
 Project ID: Routine Outfall 018

 300 North Lake Avenue, Suite 1200
 Sampled: 05/17/06

 Pasadena, CA 91101
 Report Number: IPE1832
 Received: 05/18/06

 Attention: Bronwyn Kelly
 Output
 Output

METALS									
Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IPE1832-01 (Outfall (Reporting Units: mg/l	018 - Water) - cont.								
Iron	EPA 200.7	6E20050	0.015	0.040	0.23	1	05/20/06	05/20/06	
Sample ID: IPE1832-01 (Outfall ()18 - Water)								
Reporting Units: ug/l									
Cadmium	EPA 200.8	6E19073	0.025	1.0	0.053	1	05/19/06	05/19/06	J
Copper	EPA 200.8	6E19073	0.25	2.0	2.3	1	05/19/06	05/19/06	
Lead	EPA 200.8	6E19073	0.040	1.0	0.22	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	0.68	1	05/19/06	05/19/06	J
Zinc	EPA 200.7	6E19113	15	20	ND	1	05/19/06	05/19/06	



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
Sample ID: IPE1832-01 (Outfall 018 -	Water) - cont.								
Reporting Units: mg/l									
Iron	EPA 200.7-Diss	6E19104	0.015	0.040	ND	1	05/19/06	05/19/06	
Sample ID: IPE1832-01 (Outfall 018 -	Water)								
Reporting Units: ug/l									
Cadmium	EPA 200.8-Diss	6E19105	0.025	1.0	0.058	1	05/19/06	05/22/06	J
Copper	EPA 200.8-Diss	6E19105	0.25	2.0	1.3	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	0.42	1	05/19/06	05/22/06	J
Zinc	EPA 200.7-Diss	6E19104	15	20	ND	1	05/19/06	05/19/06	



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			
Sample ID: IPE1832-01 (Outfall 018	- Water) - cont.											
Reporting Units: mg/l												
Ammonia-N (Distilled)	EPA 350.2	6E19092	0.30	0.50	0.84	1	05/19/06	05/19/06				
Biochemical Oxygen Demand	EPA 405.1	6E19117	0.59	2.0	7.4	1	05/19/06	05/24/06				
Chloride	EPA 300.0	6E19053	0.75	2.5	36	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				
Sulfate	EPA 300.0	6E19053	2.2	2.5	74	5	05/19/06	05/19/06				
Surfactants (MBAS)	EPA 425.1	6E19129	0.044	0.10	0.052	1	05/19/06	05/19/06	J, H			
Total Dissolved Solids	EPA 160.1	6E19071	10	10	340	1	05/19/06	05/19/06				
Total Suspended Solids	EPA 160.2	6E23094	10	10	20	1	05/23/06	05/23/06				



MWH-Pasadena/Boeing	Project ID:	Routine Outfall 018		
300 North Lake Avenue, Suite 1200			Sampled:	05/17/06
Pasadena, CA 91101	Report Number:	IPE1832	Received:	05/18/06
Attention: Bronwyn Kelly				

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



MWH-Pasadena/Boeing	Project ID: Ro	outine Outfall 018		
300 North Lake Avenue, Suite 1200			Sampled:	05/17/06
Pasadena, CA 91101	Report Number: IP	'E1832	Received:	05/18/06
Attention: Bronwyn Kelly				

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



MWH-Pasadena/Boeing 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 R 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		
Sample ID: IPE1832-01 (Outfall 018 - Wat	er) - cont.										
Reporting Units: ug/l											
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			



MWH-Pasadena/Boeing	Project ID:	Routine Outfall 018		
300 North Lake Avenue, Suite 1200			Sampled:	05/17/06
Pasadena, CA 91101	Report Number:	IPE1832	Received:	05/18/06
Attention: Bronwyn Kelly				

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



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

SHORT HOLD TIME DETAIL REPORT

	Hold Time (in days)	Date/Time Sampled	Date/Time Received	Date/Time Extracted	Date/Time Analyzed
Sample ID: Outfall 018 (IPE1832-01) - Water					
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



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

METHOD BLANK/QC DATA

PURGEABLES BY GC/MS (EPA 624)

		Reporting			Spike	Source		%REC		RPD	Data
Analyte	Result	Limit	MDL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifiers
Batch: 6E24022 Extracted: 05/2	4/06										
Blank Analyzed: 05/24/2006 (6E240	22-BLK1)										
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 (6E2402)	2-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			

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

METHOD BLANK/QC DATA

PURGEABLES BY GC/MS (EPA 624)

		Reporting			Spike	Source		%REC		RPD	Data
Analyte	Result	Limit	MDL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifiers
Batch: 6E24022 Extracted: 05/2	<u>4/06</u>										
LCS Analyzed: 05/24/2006 (6E24022	2-BS1)										
Surrogate: 4-Bromofluorobenzene	24.3			ug/l	25.0		97	80-120			
Matrix Spike Analyzed: 05/24/2006	(6E24022-MS1)				Sou	irce: IPE1	832-01				
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			
Matrix Spike Dup Analyzed: 05/25/2	2006 (6E24022-M	SD1)			Sou	irce: IPE1	832-01				
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	

Del Mar Analytical - Irvine

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

Surrogate: 4-Bromofluorobenzene

Project ID: Routine Outfall 018

Report Number: IPE1832

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

METHOD BLANK/QC DATA

PURGEABLES BY GC/MS (EPA 624)

		Reporting			Spike	Source		%REC		RPD	Data
Analyte	Result	Limit	MDL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifiers
Batch: 6E24022 Extracted: 05/24	4/06	6									
Matrix Spike Dup Analyzed: 05/25/2	006 (6E24022-M	(SD1)			Sou	rce: IPE1	832-01				
Surrogate: Dibromofluoromethane	22.6			ug/l	25.0		90	80-120			
Surrogate: Toluene-d8	23.5			ug/l	25.0		94	80-120			

ug/l

25.0

91

80-120



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

Project ID: Routine Outfall 018

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METHOD BLANK/QC DATA

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

		Reporting			Spike	Source		%REC		RPD	Data
Analyte	Result	Limit	MDL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifiers
Batch: 6E22042 Extracted: 05/2	2/06										
Blank Analyzed: 05/24/2006 (6E220	42-BLK1)										
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			
LCS Analyzed: 05/24/2006 (6E2204	2-BS1)										M-NR1
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			
LCS Dup Analyzed: 05/24/2006 (6E	22042-BSD1)										
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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MWH-Pasadena/Boeing 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Attention: Bronwyn Kelly Project ID: Routine Outfall 018

Report Number: IPE1832

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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
Batch: 6E22042 Extracted: 05/22/06	-										
LCS Dup Analyzed: 05/24/2006 (6E22042	2-BSD1)										
Surrogate: Terphenyl-d14	9.02			ug/l	10.0		90	45-120			



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METHOD BLANK/QC DATA

ORGANOCHLORINE PESTICIDES (EPA 608)

		Reporting			Spike	Source		%REC		RPD	Data
Analyte	Result	Limit	MDL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifiers
Batch: 6E21001 Extracted: 05/2	21/06										
Blank Analyzed: 05/24/2006 (6E210	01-BLK1)										
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			
LCS Analyzed: 05/24/2006 (6E2100	1-BS1)										M-NR1
alpha-BHC	0.417	0.010	0.0010	ug/l	0.500		83	45-120			
Surrogate: Decachlorobiphenyl	0.440			ug/l	0.500		88	45-120			
Surrogate: Tetrachloro-m-xylene	0.368			ug/l	0.500		74	35-115			
LCS Dup Analyzed: 05/24/2006 (6E	21001-BSD1)										
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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METHOD BLANK/QC DATA

METALS

		Reporting			Spike	Source		%REC		RPD	Data
Analyte	Result	Limit	MDL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifiers
Batch: 6E19073 Extracted: 05/19/06											
Blank Analyzed: 05/19/2006 (6E19073-BI	LK1)										
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: 05/19/2006 (6E19073-BS1)										
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			
Matrix Spike Analyzed: 05/19/2006 (6E19	9073-MS1)				Sou	urce: IPE	1632-01				
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			
Matrix Spike Analyzed: 05/19/2006 (6E19	9073-MS2)				Sou	irce: IPE	1676-01				
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			
Matrix Spike Dup Analyzed: 05/19/2006	(6E19073-N	ASD1)			Sou	urce: IPE	1632-01				
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

		Reporting			Spike	Source		%REC		RPD	Data
Analyte	Result	Limit	MDL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifiers
Batch: 6E19091 Extracted: 05/19/06	-										
Blank Analyzed: 05/19/2006 (6E19091-B	LK1)										
Mercury	ND	0.20	0.050	ug/l							
LCS Analyzed: 05/19/2006 (6E19091-BS	1)										
Mercury	8.67	0.20	0.050	ug/l	8.00		108	85-115			
Matrix Spike Analyzed: 05/19/2006 (6E1	9091-MS1)				Sou	irce: IPE1	801-38				
Mercury	8.61	0.20	0.050	ug/l	8.00	ND	108	70-130			
Matrix Spike Dup Analyzed: 05/19/2006	(6E19091-N	ISD1)			Sou	irce: IPE1	801-38				
Mercury	8.56	0.20	0.050	ug/l	8.00	ND	107	70-130	1	20	
Batch: 6E19113 Extracted: 05/19/06	-										
Blank Analyzed: 05/19/2006 (6E19113-B	LK1)										
Zinc	ND	20	15	ug/l							
LCS Analyzed: 05/19/2006 (6E19113-BS	1)										
Zinc	485	20	15	ug/l	500		97	85-115			
Matrix Spike Analyzed: 05/19/2006 (6E1	9113-MS1)				Sou	irce: IPE1	882-01				
Zinc	651	20	15	ug/l	500	77	115	70-130			
Matrix Spike Dup Analyzed: 05/19/2006	(6E19113-N	ISD1)			Sou	irce: IPE	882-01				
Zinc	563	20	15	ug/l	500	77	97	70-130	14	20	
Batch: 6E20050 Extracted: 05/20/06	-										
Blank Analyzed: 05/20/2006 (6E20050-B	LK1)										
Iron	ND	0.040	0.015	mg/l							



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METALS

]	Reporting			Spike	Source		%REC		RPD	Data
Analyte	Result	Limit	MDL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifiers
Batch: 6E20050 Extracted: 05/20/06											
LCS Analyzed: 05/20/2006 (6E20050-BS1)										
Iron	0.489	0.040	0.015	mg/l	0.500		98	85-115			
Matrix Spike Analyzed: 05/20/2006 (6E20	050-MS1)				Sour	rce: IPE1	705-01				
Iron	1.21	0.040	0.015	mg/l	0.500	0.71	100	70-130			
Matrix Spike Dup Analyzed: 05/20/2006 (6E20050-MSI	D1)			Sour	rce: IPE1	705-01				
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

		Reporting			Spike	Source		%REC		RPD	Data
Analyte	Result	Limit	MDL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifiers
Batch: 6E19104 Extracted: 05/19/	06										
Blank Analyzed: 05/19/2006 (6E19104-	-BLK1)										
Iron	ND	0.040	0.015	mg/l							
Zinc	ND	20	15	ug/l							
LCS Analyzed: 05/19/2006 (6E19104-E	BS 1)										
Iron	0.935	0.040	0.015	mg/l	1.00		94	85-115			
Zinc	960	20	15	ug/l	1000		96	85-115			
Matrix Spike Analyzed: 05/19/2006 (61	E19104-MS1)				Sou	irce: IPE	1832-01				
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			
Matrix Spike Dup Analyzed: 05/19/200)6 (6E19104-N	MSD1)			Sou	irce: IPE	1832-01				
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	
Batch: 6E19105 Extracted: 05/19/0	06										
Blank Analyzed: 05/22/2006 (6E19105-	-BLK1)										
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							
LCS Analyzed: 05/19/2006 (6E19105-E	BS1)										
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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DISSOLVED METALS

		Reporting			Spike	Source		%REC		RPD	Data
Analyte	Result	Limit	MDL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifiers
Batch: 6E19105 Extracted	l: 05/19/06										
Matrix Spike Analyzed: 05/19	9/2006 (6E19105-MS1)				Sou	irce: IPE1	1832-01				
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			
Matrix Spike Dup Analyzed:	05/19/2006 (6E19105-M	ISD1)			Sou	irce: IPE1	832-01				
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	
Batch: 6E23072 Extracted	1: 05/23/06										
Blank Analyzed: 05/23/2006 (6E23072-BLK1)										
Mercury	ND	0.20	0.050	ug/l							
LCS Analyzed: 05/23/2006 (6	E23072-BS1)										
Mercury	8.58	0.20	0.050	ug/l	8.00		107	85-115			
Matrix Spike Analyzed: 05/23	3/2006 (6E23072-MS1)				Sou	irce: IPE1	1903-01				
Mercury	8.46	0.20	0.050	ug/l	8.00	ND	106	70-130			
Matrix Spike Dup Analyzed:	05/23/2006 (6E23072-M	ISD1)			Sou	irce: IPE1	1903-01				
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

		Reporting			Spike	Source		%REC		RPD	Data
Analyte	Result	Limit	MDL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifiers
Batch: 6E19041 Extracted: 05/19/06	<u>6</u>										
Blank Analyzed: 05/19/2006 (6E19041-B	BLK1)										
Oil & Grease	ND	5.0	0.94	mg/l							
LCS Analyzed: 05/19/2006 (6E19041-BS	51)										M-NR1
Oil & Grease	19.3	5.0	0.94	mg/l	20.0		96	65-120			
LCS Dup Analyzed: 05/19/2006 (6E1904	1-BSD1)										
Oil & Grease	19.2	5.0	0.94	mg/l	20.0		96	65-120	1	20	
Batch: 6E19053 Extracted: 05/19/06	<u>6</u>										
Blank Analyzed: 05/19/2006 (6E19053-B	BLK1)										
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							
LCS Analyzed: 05/19/2006 (6E19053-BS	51)										
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			
Matrix Spike Analyzed: 05/19/2006 (6E1	19053-MS1)				Sou	irce: IPE	837-12				
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			



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

METHOD BLANK/QC DATA

INORGANICS

		Reporting			Spike	Source		%REC		RPD	Data
Analyte	Result	Limit	MDL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifiers
Batch: 6E19053 Extracted: 05/19/0	<u>)6</u>										
Matrix Spike Dup Analyzed: 05/19/200	6 (6E19053-M	(SD1)			Sou	irce: IPE	1837-12				
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: 05/19/0	<u>)6</u>										
Blank Analyzed: 05/19/2006 (6E19071-	BLK1)										
Total Dissolved Solids	ND	10	10	mg/l							
LCS Analyzed: 05/19/2006 (6E19071-B	S1)										
Total Dissolved Solids	994	20	20	mg/l	1000		99	90-110			
Duplicate Analyzed: 05/19/2006 (6E190)71-DUP1)				Sou	irce: IPE1	1768-13				
Total Dissolved Solids	479	10	10	mg/l		470			2	10	
Batch: 6E19072 Extracted: 05/19/0)6										
Duplicate Analyzed: 05/19/2006 (6E190)72-DUP1)				Sou	irce: IPE1	1676-01				
Specific Conductance	846	1.0	1.0	umhos/cm		850			1	5	
Batch: 6E19083 Extracted: 05/19/0	<u>)6</u>										
Blank Analyzed: 05/19/2006 (6E19083-	BLK1)										
Turbidity	ND	1.0	0.040	NTU							



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

METHOD BLANK/QC DATA

INORGANICS

		Reporting			Spike	Source		%REC		RPD	Data
Analyte	Result	Limit	MDL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifiers
Batch: 6E19083 Extracted: 05/	19/06										
Duplicate Analyzed: 05/19/2006 (6	E19083-DUP1)				Sou	urce: IPE	1820-01				
Turbidity	0.160	1.0	0.040	NTU		0.15			6	20	J
Batch: 6E19092 Extracted: 05/	19/06										
Blank Analyzed: 05/19/2006 (6E19	092-BLK1)										
Ammonia-N (Distilled)	ND	0.50	0.30	mg/l							
LCS Analyzed: 05/19/2006 (6E1909	92-BS1)										
Ammonia-N (Distilled)	10.9	0.50	0.30	mg/l	10.0		109	80-115			
Matrix Spike Analyzed: 05/19/2000	5 (6E19092-MS1)				Sou	irce: IPE	1134-01				
Ammonia-N (Distilled)	11.5	0.50	0.30	mg/l	10.0	0.84	107	70-120			
Matrix Spike Dup Analyzed: 05/19	/2006 (6E19092-M	ISD1)			Sou	irce: IPE	1134-01				
Ammonia-N (Distilled)	11.5	0.50	0.30	mg/l	10.0	0.84	107	70-120	0	15	
Batch: 6E19117 Extracted: 05/	19/06										
Blank Analyzed: 05/24/2006 (6E19	117-BLK1)										
Biochemical Oxygen Demand	ND	2.0	0.59	mg/l							
LCS Analyzed: 05/24/2006 (6E191	17-BS1)										
Biochemical Oxygen Demand	192	100	30	mg/l	198		97	85-115			
LCS Dup Analyzed: 05/24/2006 (6)	E19117-BSD1)										
Biochemical Oxygen Demand	192	100	30	mg/l	198		97	85-115	0	20	



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

METHOD BLANK/QC DATA

INORGANICS

		Reporting			Spike	Source		%REC		RPD	Data
Analyte	Result	Limit	MDL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifier
Batch: 6E19129 Extracted:	05/19/06										
Blank Analyzed: 05/19/2006 (6	E19129-BLK1)										
Surfactants (MBAS)	ND	0.10	0.044	mg/l							
LCS Analyzed: 05/19/2006 (6E	19129-BS1)										
Surfactants (MBAS)	0.257	0.10	0.044	mg/l	0.250		103	90-110			
Matrix Spike Analyzed: 05/19/	2006 (6E19129-MS1)				Sou	irce: IPE	1894-01				
Surfactants (MBAS)	0.276	0.10	0.044	mg/l	0.250	ND	110	50-125			
Matrix Spike Dup Analyzed: 0	5/19/2006 (6E19129-M	SD1)			Sou	irce: IPE	1894-01				
Surfactants (MBAS)	0.273	0.10	0.044	mg/l	0.250	ND	109	50-125	1	20	
Batch: 6E19130 Extracted:	05/19/06										
Blank Analyzed: 05/19/2006 (6	E19130-BLK1)										
Total Cyanide	ND	5.0	2.2	ug/l							
LCS Analyzed: 05/19/2006 (6E	19130-BS1)										
Total Cyanide	190	5.0	2.2	ug/l	200		95	90-110			
Matrix Spike Analyzed: 05/19/	2006 (6E19130-MS1)				Sou	irce: IPE	1094-03				
Total Cyanide	142	5.0	2.2	ug/l	200	ND	71	70-115			
Matrix Spike Dup Analyzed: 0	5/19/2006 (6E19130-M	SD1)			Sou	irce: IPE	1094-03				
Total Cyanide	149	5.0	2.2	ug/l	200	ND	74	70-115	5	15	
Batch: 6E23082 Extracted:	05/23/06										
Blank Analyzed: 05/23/2006 (6	E23082-BLK1)										
Perchlorate	ND	4.0	0.80	ug/l							


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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

METHOD BLANK/QC DATA

INORGANICS

		Reporting			Spike	Source		%REC		RPD	Data
Analyte	Result	Limit	MDL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifiers
Batch: 6E23082 Extracted: 0	5/23/06										
LCS Analyzed: 05/23/2006 (6E23	082-BS1)										
Perchlorate	48.1	4.0	0.80	ug/l	50.0		96	85-115			
Matrix Spike Analyzed: 05/23/20	06 (6E23082-MS1)				Sou	irce: IPE1	1906-06				
Perchlorate	45.5	4.0	0.80	ug/l	50.0	ND	91	80-120			
Matrix Spike Dup Analyzed: 05/2	23/2006 (6E23082-M	ISD1)			Sou	irce: IPE1	1906-06				
Perchlorate	46.8	4.0	0.80	ug/l	50.0	ND	94	80-120	3	20	
Batch: 6E23094 Extracted: 0	5/23/06										
Blank Analyzed: 05/23/2006 (6E2	3094-BLK1)										
Total Suspended Solids	ND	10	10	mg/l							
LCS Analyzed: 05/23/2006 (6E23	094-BS1)										
Total Suspended Solids	975	10	10	mg/l	1000		98	85-115			
Duplicate Analyzed: 05/23/2006 (6E23094-DUP1)				Sou	irce: IPE1	1817-01				
Total Suspended Solids	6670	10	10	mg/l		6600			1	10	



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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

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.

						Compliance
LabNumber	Analysis	Analyte	Units	Result	MRL	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



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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

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



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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	Х	Х
EPA 160.1	Water	Х	Х
EPA 160.2	Water	Х	Х
EPA 160.5	Water	Х	Х
EPA 180.1	Water	Х	Х
EPA 200.7-Diss	Water	Х	Х
EPA 200.7	Water	Х	Х
EPA 200.8-Diss	Water	Х	Х
EPA 200.8	Water	Х	Х
EPA 245.1-Diss	Water	Х	Х
EPA 245.1	Water	Х	Х
EPA 300.0	Water	Х	Х
EPA 314.0	Water	N/A	Х
EPA 335.2	Water	Х	Х
EPA 350.2	Water		Х
EPA 405.1	Water	Х	Х
EPA 413.1	Water	Х	Х
EPA 425.1	Water	Х	Х
EPA 608	Water	Х	Х
EPA 624	Water	Х	Х
EPA 625	Water	Х	Х
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

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

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AIN OF		- NPDES fall 018		e: 01	- 0	15	Preservative	HNO3	HNO3	None	HCI	None	HCI	NaOH	None	None	None	None	H2SO4	None	None	None	HCI	Received	Received By	Received Rv		
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300 North Lake Pasadena, CA	Avenue 91101	, Suite 12(00	Routine Out	fall 018		ʻnO :						
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Outfall 018	N	Poly-1L	-	5/17/66	None	16	×					Filter w/in 24hr of receipt a	at lab
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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. Thank you for choosing Alta as part of your analytical support team.

Sincerely,

Malle Mare

Martha M. Maier Director of HRMS Services



Alto 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 Section I: Sample Inventory Report Date Received: 5/31/2006

Alta Lab. ID

Client Sample ID

27721-001

IPE1832-01

SECTION II

Sample Size:1.00 L.Date Extracted: 1.1 Jun-06 AnalyteConc. (ug/L)DL a EMPC bQualifiers2.3.7.8-PECDDND0.00000640 $1.2.3.7,8-\text{PeCDD}$ ND 0.000000738 1.2.3.6.7.8-HxCDDND0.000000738 $1.2.3.4,7,8-\text{HxCDD}$ ND 0.00000738 1.2.3.6.7.8-HxCDDND 0.00000738 $1.2.3.4,7,8-\text{HxCDD}$ ND 0.00000738 1.2.3.6.7.8-HxCDDND 0.00000738 $1.2.3.4,7,8-\text{HxCDD}$ ND 1.2.3.6.7.8-HxCDDND 0.00000738 $1.2.3,7,8-\text{HxCDD}$ $1.2.3,7,8-\text{HxCDD}$ 1.2.3.7.8-FCDFND 0.000000741 0.000000738 $1.2.3,7,8-\text{HxCDD}$ 2.3.7.8-FCDFND 0.000000748 $1.2.3,7,8-\text{HxCDF}$ ND 2.3.7.8-FCDFND 0.000000560 0.000000560 $1.2.3,7,8-\text{HxCDF}$ 2.3.4,6,7,8-HxCDFND 0.000000560 0.000000560 $1.2.3,7,8-\text{HxCDF}$ 1.2.3,7,8-HxCDFND 0.000000560 0.000000560 $1.2.3,4,6,7,8-\text{HxCDF}$ 2.3,4,6,7,8-HxCDFND 0.00000067 $1.2.3,4,6,7,8-\text{HyCDF}$ ND 1.2.3,7,8,9-HxCDFND 0.00000067 $1.2.3,4,6,7,8-\text{HyCDF}$ ND 2.3,4,6,7,8-HyCDFND 0.00000067 $1.2.3,7,8,9-\text{HxCDF}$ ND 2.3,4,6,7,8-HyCDFND 0.00000067 $1.2.3,7,8,9-\text{HxCDF}$ ND	Date Analyzed DB-5: 6-Jun-06 Labeled Standard Labeled Standard 13C-1,2,3,7,8-TCDD 13C-1,2,3,4,7,8-HxCDD 13C-1,2,3,4,7,8-HxCDD 13C-1,2,3,4,6,7,8-HxCDD 13C-1,2,3,7,8-TCDF 13C-1,2,3,7,8-PeCDF 13C-1,2,3,4,7,8-HxCDF 13C-1,2,3,4,7,8-HxCDF 13C-1,2,3,4,7,8-HxCDF 13C-1,2,3,4,7,8-HxCDF 13C-1,2,3,4,7,8-HxCDF 13C-1,2,3,6,7,8-HxCDF 13C-1,2,6,7,8-HxCDF 13C-1,2,7,	Date Analyzed DB-225. %R LCL-UCL^d 6 75.3 25 - 164 75.6 25 - 181 73.6 28 - 130 73.6 28 - 130 73.2 28 - 141 73.2 28 - 141 73.5 28 - 140 73.5 24 - 169 72.3 24 - 169 71.4 21 - 178
Analyte Conc. (ug/L) DL. ^a EMPC ^b Qualifiers 2.3.7,8-TCDD ND 0.00000640 2.3.7,8-PeCDD ND 0.00000033 1,2.3,7,8-PeCDD ND 0.000000738 0.000000738 0.000000735 1,2.3,7,8-PeCDD ND 0.000000735 0.000000735 0.000000735 1,2.3,7,8-PeCDD ND 0.000000735 0.000000735 0.000000735 1,2.3,4,6,7,8-HpCDD ND 0.000000741 0.000000133 0.000000133 1,2.3,4,6,7,8-HpCDD ND 0.000000648 0.000000133 J 2,3,4,7,8-PeCDF ND 0.000000595 0.000000595 J 2,3,4,7,8-HxCDF ND 0.000000595 J J 2,3,4,7,8-HxCDF ND 0.000000595 J J 2,3,4,6,7,8-HxCDF ND 0.000000595 J J 2,3,4,6,7,8-HpCDF ND 0.000000595 J J 2,3,4,6,7,8-HpCDF ND 0.00000067 J J 2,3,4,6,7,8-HpCDF	Labeled Standard Labeled Standard 13C-1,2,3,7,8-TCDD 13C-1,2,3,4,7,8-HxCDD 13C-1,2,3,6,7,8-HxCDD 13C-1,2,3,6,7,8-HxCDD 13C-1,2,3,4,6,7,8-HxCDD 13C-1,2,3,7,8-PeCDF 13C-1,2,3,4,7,8-PeCDF 13C-1,2,3,4,7,8-HxCDF 13C-1,2,3,6,7,8-HxCDF 13C-1,2,3,6,7,8-HxCDF	%-R LCL-UCL ^d C 75.3 25 164 75.4 25 181 75.6 25 181 73.7 32 141 73.6 28 130 73.6 28 130 73.2 28 130 73.2 28 130 73.2 28 130 73.2 28 130 73.2 23 140 73.2 23 140 73.2 24 169 71.4 71 71
2.3.7.8-TCDD ND 0.00000640 1.2.3.7.8-PECDD ND 0.00000033 1.2.3.7.8-HxCDD ND 0.000000738 1.2.3.7.8-HxCDD ND 0.000000735 1.2.3.6.7.8-HxCDD ND 0.000000735 1.2.3.6.7.8-HxCDD ND 0.000000735 1.2.3.6.7.8-HxCDD ND 0.000000735 1.2.3.6.7.8-HxCDD ND 0.000000735 1.2.3.7.8-HxCDD ND 0.000000735 1.2.3.4.6.7.8-HpCDD ND 0.00000035 2.3.7.8-FECDF ND 0.000000848 1.2.3.7.8-FECDF ND 0.000000595 2.3,4.7.8-FECDF ND 0.000000595 2.3,4.6.7.8-HxCDF ND 0.000000507 1.2.3.4.6.7.8-HxCDF ND 0.000000507 2.3,4.6.7.8-HxCDF ND 0.000000507 <t< th=""><th>LS 13C-2,3,7,8-TCDD 13C-1,2,3,4,7,8-HxCDD 13C-1,2,3,6,7,8-HxCDD 13C-1,2,3,6,7,8-HxCDD 13C-1,2,3,4,6,7,8-HpCDD 13C-1,2,3,4,6,7,8-HpCDD 13C-2,3,4,7,8-PeCDF 13C-1,2,3,4,7,8-PeCDF 13C-1,2,3,4,7,8-HxCDF 13C-1,2,3,4,7,8-HxCDF 13C-1,2,3,6,7,8-HxCDF</th><th>75.3 25 164 75.6 25 181 73.6 28 141 73.6 28 130 73.6 28 130 73.6 28 130 73.6 28 130 73.6 28 130 73.6 28 130 73.6 28 130 73.6 28 130 73.2 23 140 73.2 23 140 74.16 71 178 71.4 71 71</th></t<>	LS 13C-2,3,7,8-TCDD 13C-1,2,3,4,7,8-HxCDD 13C-1,2,3,6,7,8-HxCDD 13C-1,2,3,6,7,8-HxCDD 13C-1,2,3,4,6,7,8-HpCDD 13C-1,2,3,4,6,7,8-HpCDD 13C-2,3,4,7,8-PeCDF 13C-1,2,3,4,7,8-PeCDF 13C-1,2,3,4,7,8-HxCDF 13C-1,2,3,4,7,8-HxCDF 13C-1,2,3,6,7,8-HxCDF	75.3 25 164 75.6 25 181 73.6 28 141 73.6 28 130 73.6 28 130 73.6 28 130 73.6 28 130 73.6 28 130 73.6 28 130 73.6 28 130 73.6 28 130 73.2 23 140 73.2 23 140 74.16 71 178 71.4 71 71
1,2,3,7,8-PeCDD ND 0.00000903 1,2,3,4,7,8-HxCDD ND 0.00000735 1,2,3,4,7,8-HxCDD ND 0.00000735 1,2,3,4,7,8-HxCDD ND 0.00000735 1,2,3,4,7,8-HxCDD ND 0.00000735 1,2,3,4,6,7,8-HxCDD ND 0.00000741 1,2,3,4,6,7,8-HxCDD ND 0.00000735 1,2,3,4,6,7,8-HpCDD ND 0.00000848 1,2,3,4,6,7,8-HpCDF ND 0.00000848 2,3,4,7,8-PeCDF ND 0.000000560 2,3,4,7,8-PeCDF ND 0.000000560 1,2,3,4,6,7,8-HxCDF ND 0.000000560 1,2,3,4,6,7,8-HxCDF ND 0.00000067 1,2,3,4,6,7,8-HxCDF ND 0.00000067 1,2,3,4,6,7,8-HpCDF ND 0.00000067	13C-1,2,3,7,8-PeCDD 13C-1,2,3,4,7,8-HxCDD 13C-1,2,3,6,7,8-HxCDD 13C-1,2,3,4,6,7,8-HpCDD 13C-0CDD 13C-0,2,3,7,8-TCDF 13C-2,3,4,7,8-PeCDF 13C-1,2,3,4,7,8-PeCDF 13C-1,2,3,6,7,8-HxCDF 13C-1,2,3,6,7,8-HxCDF	75.6 25 - 181 73.7 32 - 141 73.6 28 - 130 73.2 23 - 140 55.0 17 - 157 76.5 24 - 169 72.3 24 - 185 71.4 21 - 178
1,2,3,4,7,8-HxCDD ND 0.000000738 1,2,3,6,7,8-HxCDD ND 0.000000735 1,2,3,7,8,9-HxCDD ND 0.000000735 1,2,3,7,8,9-HxCDD ND 0.000000735 1,2,3,7,8,9-HxCDD ND 0.000000735 1,2,3,4,6,7,8-HpCDD ND 0.00000035 0,2,3,7,8-PeCDF ND 0.000000595 2,3,4,7,8-PeCDF ND 0.000000560 1,2,3,4,6,7,8-HxCDF ND 0.000000560 2,3,4,5,7,8-HxCDF ND 0.000000560 1,2,3,4,6,7,8-HxCDF ND 0.000000560 1,2,3,4,6,7,8-HxCDF ND 0.00000057 1,2,3,4,6,7,8-HxCDF ND 0.00000050 1,2,3,4,6,7,8-HxCDF ND 0.00000050 1,2,3,4,6,7,8-HpCDF ND 0.00000061	13C-1,2,3,4,7,8-HxCDD 13C-1,2,3,6,7,8-HxCDD 13C-1,2,3,4,6,7,8-HpCDD 13C-0CDD 13C-0CDD 13C-2,3,7,8-PeCDF 13C-1,2,3,4,7,8-PeCDF 13C-1,2,3,4,7,8-HxCDF 13C-1,2,3,6,7,8-HxCDF	73.7 32 - 141 73.6 28 - 130 73.2 28 - 130 73.2 23 - 140 55.0 17 - 157 76.5 24 - 169 72.3 24 - 185 71.4 21 - 178
1.2.3.6.7,8-HxCDD ND 0.00000735 1.2.3.7,8,9-HxCDD ND 0.00000741 1.2.3.7,8,9-HxCDD ND 0.00000133 1.2.3,4,6,7,8-HpCDD ND 0.00000133 1.2.3,4,6,7,8-HpCDD ND 0.00000133 0.23,7,8-TCDF ND 0.00000848 2.3,7,8-TCDF ND 0.00000848 2,3,7,8-PeCDF ND 0.000000560 1,2,3,4,7,8-HxCDF ND 0.000000560 1,2,3,4,6,7,8-HxCDF ND 0.000000560 1,2,3,4,6,7,8-HxCDF ND 0.00000067 J 1,2,3,4,6,7,8-HxCDF ND 0.00000067 J J 1,2,3,4,6,7,8-HxCDF ND 0.00000067 J J 1,2,3,4,6,7,8-HxCDF ND 0.0000067 J J	13C-1,2,3,6,7,8-HxCDD 13C-1,2,3,4,6,7,8-HpCDD 13C-OCDD 13C-2,3,7,8-TCDF 13C-2,3,7,8-PeCDF 13C-1,2,3,4,7,8-PeCDF 13C-1,2,3,4,7,8-HxCDF 13C-1,2,3,6,7,8-HxCDF	73.6 28 - 130 73.2 23 - 140 55.0 17 - 157 76.5 24 - 169 72.3 24 - 185 71.4 21 - 178
1,2,3,7,8,9-HxCDU ND 0.00000741 1,2,3,4,6,7,8-HpCDD ND 0.00000133 1,2,3,4,6,7,8-HpCDD ND 0.00000135 0CDD 0.000000435 0.00000133 1,2,3,7,8-TCDF ND 0.000000848 1,2,3,7,8-PeCDF ND 0.000000560 2,3,4,7,8-PeCDF ND 0.000000560 1,2,3,4,7,8-HxCDF ND 0.000000560 1,2,3,4,7,8-HxCDF ND 0.00000067 1,2,3,4,6,7,8-HxCDF ND 0.00000067 1,2,3,4,6,7,8-HxCDF ND 0.00000067 1,2,3,4,6,7,8-HxCDF ND 0.00000067	13C-1,2,3,4,6,7,8-HpCDD 13C-OCDD 13C-2,3,7,8-TCDF 13C-1,2,3,7,8-PeCDF 13C-2,3,4,7,8-PeCDF 13C-1,2,3,6,7,8-HxCDF 13C-1,2,3,6,7,8-HxCDF	73.2 23 - 140 55.0 17 - 157 76.5 24 - 169 72.3 24 - 185 71.4 21 - 178
1,2,3,4,6,7,8-HpCDD ND 0.00000133 0,0000135 0.00000435 0.00000133 2,3,7,8-TCDF ND 0.000000848 2,3,7,8-PeCDF ND 0.000000595 2,3,4,7,8-HxCDF ND 0.00000560 2,3,4,7,8-HxCDF ND 0.00000560 1,2,3,4,7,8-HxCDF ND 0.000000560 1,2,3,4,6,7,8-HxCDF ND 0.00000057 1,2,3,4,6,7,8-HxCDF ND 0.00000067 1,2,3,4,6,7,8-HxCDF ND 0.00000067 1,2,3,4,6,7,8-HxCDF ND 0.00000067 1,2,3,4,6,7,8-HxCDF ND 0.00000067	13C-OCDD 13C-2,3,7,8-TCDF 13C-1,2,3,7,8-PeCDF 13C-2,3,4,7,8-PeCDF 13C-1,2,3,6,7,8-HxCDF 13C-1,2,3,6,7,8-HxCDF	55.0 17 - 157 76.5 24 - 169 72.3 24 - 185 71.4 21 - 178
OCDD 0.00000435 J 2,3,7,8-TCDF ND 0.00000848 J 2,3,7,8-PECDF ND 0.000000595 J 1,2,3,7,8-PECDF ND 0.000000560 J 2,3,4,7,8-PECDF ND 0.000000560 J 1,2,3,4,7,8-PECDF ND 0.000000560 J 1,2,3,4,7,8-HXCDF ND 0.00000067 J 1,2,3,6,7,8-HXCDF ND 0.00000067 J 2,3,4,6,7,8-HXCDF ND 0.00000067 J 1,2,3,4,6,7,8-HXCDF ND 0.00000067 J	13C-2,3,7,8-TCDF 13C-1,2,3,7,8-PeCDF 13C-2,3,4,7,8-PeCDF 13C-1,2,3,4,7,8-HxCDF 13C-1,2,3,6,7,8-HxCDF	72.3 24 - 169 72.3 24 - 185 71 4 21 - 178
2,3,7,8-TCDF ND 0.00000848 1,2,3,7,8-PeCDF ND 0.00000595 2,3,4,7,8-PeCDF ND 0.00000560 2,3,4,7,8-HxCDF ND 0.00000560 1,2,3,4,7,8-HxCDF ND 0.0000067 J 1,2,3,4,7,8-HxCDF ND 0.0000067 J 1,2,3,4,7,8-HxCDF ND 0.0000067 J 1,2,3,4,6,7,8-HxCDF ND 0.0000067 J 1,2,3,4,6,7,8-HxCDF ND 0.0000067 J 1,2,3,4,6,7,8-HxCDF ND 0.0000067 J 1,2,3,4,6,7,8-HxCDF ND 0.0000067 J	13C-1,2,3,7,8-PeCDF 13C-2,3,4,7,8-PeCDF 13C-1,2,3,4,7,8-HxCDF 13C-1,2,3,6,7,8-HxCDF	72.3 24 - 185 71 4 71 - 178
1,2,3,7,8-PeCDF ND 0.000000595 2,3,4,7,8-PeCDF ND 0.000000560 2,3,4,7,8-HxCDF ND 0.00000050 1,2,3,4,7,8-HxCDF ND 0.000000101 1,2,3,4,6,7,8-HxCDF 0.00000067 J 2,3,4,6,7,8-HxCDF 0.00000080 J 1,2,3,4,6,7,8-HxCDF 0.00000080 J 1,2,3,4,6,7,8-HpCDF ND 0.000000614	13C-2,3,4,7,8-PeCDF 13C-1,2,3,4,7,8-HxCDF 13C-1,2,3,6,7,8-HxCDF	714 71-178
2,3,4,7,8-PeCDF ND 0.000000560 1,2,3,4,7,8-HxCDF ND 0.00000050 J 1,2,3,6,7,8-HxCDF 0.00000067 J J 2,3,4,6,7,8-HxCDF 0.00000080 J J 1,2,3,4,6,7,8-HxCDF ND 0.0000067 J 1,2,3,4,6,7,8-HxCDF ND 0.00000614 J	13C-1,2,3,4,7,8-HxCDF 13C-1,2,3,6,7,8-HxCDF	
1,2,3,4,7,8-HxCDF ND 0.00000101 1,2,3,6,7,8-HxCDF 0.00000067 J 2,3,4,6,7,8-HxCDF 0.00000080 J 1,2,3,4,6,7,8-HxCDF ND 0.0000080 1,2,3,4,6,7,8-HpCDF ND 0.00000614	13C-1,2,3,6,7,8-HxCDF	75.6 26 - 152
1,2,3,6,7,8-HxCDF 0.0000067 J 2,3,4,6,7,8-HxCDF 0.0000080 J 1,2,3,7,8,9-HxCDF ND 0.000000507 1,2,3,4,6,7,8-HpCDF ND 0.000000614		75.6 26 - 123
2,3,4,6,7,8-HxCDF 0.0000080 1,2,3,7,8,9-HxCDF ND 0.00000507 1,2,3,4,6,7,8-HpCDF ND 0.00000614 0.000000614 0.0000001	13C-2,3,4,6,7,8-HxCDF	76.4 28 - 136
1,2,3,7,8,9-HxCDF ND 0.000000507 1,2,3,4,6,7,8-HpCDF ND 0.000000614 1,2,3,4,6,7,8-HpCDF ND 0.000000614	13C-1,2,3,7,8,9-HxCDF	72.9 29 - 147
1,2,3,4,6,7,8-HpCDF ND 0.00000614 0.000000614	13C-1,2,3,4,6,7,8-HpCDF	70.4 28 - 143
	13C-1,2,3,4,7,8,9-HpCDF	74.3 26 - 138
1,2,3,4,7,3,4,7,0,9-HPCUF ND	13C-OCDF	52.6 17 - 157
OCDF 0.00000173	CRS 37CI-2,3,7,8-TCDD	79.6 35 - 197
Totals	Footnotes	
Total TCDD ND 0.00000640	a. Sample specific estimated detection limit.	
Total PeCDD ND 0.00000903	b. Estimated maximum possible concentration.	
Total HxCDD ND 0.00000738	c. Method detection limit.	
Total HpCDD = 0.0000133	d. Lower control limit - upper control limit.	
Total TCDF ND 0.00000848		
Total PeCDF 0.00000578		
Total HxCDF 0.00000148 0.00000249		
Total HpCDF 0.00000901		

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OPR Results					EPA	Method 1613	
Matrix Aqueous Sample Size 1.00 L		ÇC Batch No.: Date Extracted.	8064 4-Jun-06	Lab Sauple. 0-OPR001 Date Analyzed DB-5: 6-Jun-06	Date Analyze	cd DB-225: NA	
Analyte	Spike Conc. C	onc. (ng/mL)	OPR Limits	Labeled Standard	%R	TCT-ACT	
2,3,7,8-TCDD	10.0	9.62	6.7 - 15.8	13 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	6.77	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	35 278	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 37CI-2,3,7,8-TCDD	76.0	35 - 197	
Analyst: JMH				Approved By: William J. L	uksemburg 07-	Jun-2006 14:29	

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$\begin{tabular}{ c c c c c c c c c c c c c c c c c c c$	8064Date Extract7-Jun-06Date Analyz	ted: 4-Ju ed DB-225 NA
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$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	D 69.7	25 - 164
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	CDD 67.1 2	25 - 181
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	HxCDD 69.4	32 - 141
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	HxCDD 70.1	28 - 130
	-HpCDD 70.9	23 - 140
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	54.3	17 - 157
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $)F 71.2	24 - 169
	CDF 65.8	24 - 185
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	CDF 66.3 5	21 - 178
	4xCDF 70.7	26 - 152
	HxCDF 69.2 5	26 - 123
	IxCDF 72.1	28 - 136
	HXCDF 70.3	29 - 147
	-HpCDF 66.8	28 - 143
1,2,3,4,7,8,9-HpCDFND0.0000052713C-OCDFOCDFND0.00000246CRS37Cl-2,3,7,8-TCDDTotalsTotalFootCRS37Cl-2,3,7,8-TCDDTotal TCDDND0.00000646a. Sample specific estimated detecTotal PeCDDND0.00000179a. Sample specific estimated detecTotal HxCDD0.0000165b. Estimated maximum possible cTotal HxCDD0.00000134b. ContootesTotal HpCDFND0.000000753Total PeCDFND0.000000423Total HpCDFND0.000000423Total HpCDFND0.000000411Total HpCDFND0.000000423Total HpCDFND0.000000423Total HpCDFND0.000000423	-HpCDF 74.7	26 - 138
OCDFND0.0000246CRS $37CI-2,37,8-TCDD$ TotalTotalFoot 0.00000646 $Eootnotes$ TotalND 0.00000646 $a. Sample specific estimated detectionTotalND0.00000165a. Sample specific estimated detectionTotalND0.00000165b. Estimated maximum possible cTotalND0.00000134b. CMethod detection limitTotalND0.00000753b. CMethod detection limitTotalND0.00000423b. CMethod letection limitTotalND0.00000423b. CMethod letection limitTotalND0.00000423b. CMethod letection limitTotalND0.00000423b. CMethod letection limitTotalND0.000000411b. CMethod letection limitTotalNDb. O00000423b. CMethod letection limitTotalPCDFNDb. O00000423TotalHpCDFNDb. O00000274TotalHpCDFb. O00000274b. O0000327TotalHpCDFb. O00000274b. O00000277$	55.2	17 - 157
TotalsFootnotesTotal TCDDND 0.00000646 a. Sample specific estimated detectorTotal PeCDDND 0.0000165 b. Estimated maximum possible orTotal HxCDD 0.0000134 b. Estimated maximum possible orTotal HxCDFND 0.00000733 b. Estimated maximum possible orTotal HxCDFND 0.00000423 d. Lower control limit - upper c	DD 81.5	35 - 197
	detection limit.	
Total HxCDD 0.0000165 c. Method detection limit. Total HpCDD 0.0000134 B d. Lower control limit - upper control limit - upper control limit - upper control limit - upper control HpCDF ND 0.00000753 d. Lower control limit - upper control HpCDF Total PeCDF ND 0.00000423 d. Lower control limit - upper control limi	tible concentration	
Total HpCDD 0.0000134 B d. Lower control limit - upper contrelimit - upper control limit - upper contrelimit - upper contrel		
Total TCDF ND 0.00000753 Total PeCDF ND 0.00000423 Total HxCDF ND 0.00000411 Total HpCDF 0.00000274 0.00000327	er control limit.	
Total PeCDF ND 0.000000423 Total HxCDF ND 0.000000411 Total HpCDF 0.00000274 0.00000327		
Total HxCDF ND 0.000000411 Total HpCDF 0.00000274 0.00000327 B		
Total HpCDF 0.00000274 0.00000327 B		
Analyst: JMH Approved By: Wi	William J. Luksemburg 0	07-Jul-2006 11:21

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APPENDIX

DATA QUALIFIERS & ABBREVIATIONS

В	This compound was also detected in the method blank.
D	The amount reported is the maximum possible concentration due to possible chlorinated diphenylether interference.
Е	The reported value exceeds the calibration range of the instrument.
Н	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
TEO	Toxic Equivalency

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

CERTIFICATIONS

	Cortificate Number
Accrediting Authority	
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 1014 E. Cooley Dr., Suite A, Colton, CA 92324 9484 Chesapeake Drive, Suite 805, San Diego, CA 92123 9830 South 51st Street, Suite 8-120, Phoenix, AZ 85044 2520 E. Sunset Rd., Suite #3, Las Vegas, NV 89120

 Ph (949) 261-1022
 Fax (949) 261-1228

 Ph (909) 370-4667
 Fax (909) 370-1046

 Ph (619) 505-9596
 Fax (619) 505-9639

 Ph (480) 785-0043
 Fax (480) 785-0851

 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 $\Im 7 7 \Im$ 1104 Windfield Way $\Im 7 7 \Im$ El Dorado Hills, CA 95762Phone :(916) 933-1640 $I. 4^{\circ}$ CFax: (916) 673-0106

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

Initials:

Analysis	Expiration	Comments
Sample ID: IPE1832-01 1613-Dioxin-HR-Alta EDD + Level 4	Water Sampled: 05/18/06 13:15 05/25/06 13:15 06/15/06 13:15	Instant Nofication J fiags,17 congeners,no TEQ,ug/L,sub=Alta Excel EDD email to pm,Include Std logs for Lvl IV
Containers Supplied: 1 L Amber (IPE1832-01) 1 L Amber (IPE1832-01)	G) H)	

		SAMPLE	E INTEGRI	TY:		
All containers intact: Custody Seais Present: Yes No	s	Sample labels/COC agree: Samples Preserved Properly:	YesYes	NoNo	Samples Received On Ice:: Samples Received at (temp):	Yes No
Aman			Fi	ed-E	- 7 05.19	06
	Date	Time	Received B	y to 1	vel S/Z	,06 0835
Released By	Date	Time	Received B	у	Date	Time
Project 27721						Pala de lo fa 14

NPDES - 1304

SAMPLE LOG-IN CHECKLIST

Alta Project #:	27721		· · · · · · · · · · · · · · · · · · ·		-			
Samples Arrival:	Date/Time 5/20/06 (1835	Initials (s: C	Locatio Shelf/F	on: 	-2-	<u> </u>
Logged In:	Date/Time 5/22/06	0915	Initials A	s: LB	Locati Shelf/F	on: W Rack: <u>E</u>	l-d 3-5	
Delivered By:	FedEx UI	PS	Cal	DHL	l H De	land livered	Otl	her
Preservation:	Ice	Biue		Dry lo	ce	No	one	
Temp °C [4°	Tim	ne: ()84	Ð		Therm	ometer IC): DT-	-20
						YES	NO	NA
Adequate Sample	Volume Received	?				V		
Halding Time Acc	eptable?							
Shipping Contain	er(s) Intact?							
Shipping Custody	Seals Intact?							
Shipping Docume	entation Present?						1	
Airbill	Trk # 7901	+ 371	122	41				
Sample Containe	r Intact?	,		•				
Sample Custody	Seals Intact?						/	V
Chain of Custody	/ Sample Docume	ntation Pre	esent?				ļ,-	
COC Anomaly/Sa	ample Acceptance	Form com	pleted?				V	
If Chlorinated or I	Drinking Water San	nples, Acc	eptable	Preservatio	on?			V
Na ₂ S ₂ O ₃ Preserv	ation Documented?	?		coc		Sample ontainer	N	one
Shipping Contain	er	Alta	Client	Retai	n A	Return	Disp	oose
Comments:								•

* Duplicate Sample Container broken.

NPDES - 1305



1014 E. Cooley Dr., Suite A. Colkor, CA 92324 Ph (909) 370-4667 Fax (909) 370-1046 9484 Chesapeake Drive, Suite 805, San Diego, CA 92123 Ph (619) 505-9596 9830 South 51st Street, Suite B-120, Phoenix, AZ 85044 Ph (480) 785-0043 2520 E. Sunset Rd., Suite #3, Las Vegas, NV 89120

17461 Derian Ave. Suite 100, Irvine, CA 92614 Ph (949) 261-1022 Fax (949) 261-1228 Fax (619) 505-9689 Fax (480) 785-0851 Fax (702) 798-3621 Ph (702) 798-3620

SUBCONTRACT ORDER - PROJECT # IPE1832

SI	ENDING LABORATORY:	RECEIVING LABORATORY:
Del Mar Analytical - I	livine	Alta Analytical - SUB 27731-2771
17461 Derian Avenue	. Suite 100	1104 Windheid Way
Irvine, CA 92614		El Dorado Hills, CA 95762
Phone: (949) 261-102	2	Phone :(916) 933-1640
Fax: (949) 261-1228		Fax: (916) 673-0106
Project Manager: Micl	nele Chamberlin	
Standard TAT is req Analysis	uested unless specific due dat Expiration	s requested => Due Date: Initials: Comments

Sample ID: IPE1832-01	Water	Sampled: 05/17/06 13:15	Instant Nofication
1613-Dioxin-HR-Alta	05/2	4/06 13:15	J flags,17 congeners,no TEQ,ug/L,sub=Alta
EDD + Level 4	06/1	4/06 13:15	Excel EDD email to pm,Include Std logs for Lvl IV
Containers Supplied:	~	0	
TL-Amber (IPE1832-01	G) Z ALI	read. Sout	
11 Amber (IPE1832-01	II) S		
1 L Amber (IPE1832-01	W)		

	S	SAMPLE INTEGRITY:		
All containers intact: Yes Nc Custody Seals Present: Yes Nc	Sample labels/CC Samples Preserve	DC agree: Yes No d Properly: Yes No	Samples Received On Ice:: Samples Received at (temp):	□ Yes □ No
Rejeased By	5/38/06 Date Time	Bittma J. J. Received By	Benedict 5/3/, Date	106 0935 Time
Released By Project 27721	Date Time	Received By	Date	Time Page 12 of 414 NPDES - 1306

SAMPLE LOG-IN CHECKLIST

	Date/Time	Initials	:	Location	:WR-	2	
Samples Arrival:	5/31/06 0930	B	1B	Shelf/Ra	ck:		
	Date/Time	Initials	:	Locatior	: WR	-2	
Logged In:	5/31/06 0948	Bo	B	Shelf/Ra	ick:	4-2	<u> </u>
Delivered By:	(FedEx UPS	Cal	DHL	Ha Deliv	nd rered	Ot	her
Preservation:	lice Blue	lce	Dry l	ce	No	one	
Temp °C (). °(Time:	745		Thermo	meter ID	: DT·	-20
				mmmm	NEO I	<u></u>	
					VES	NU	NA
Adequate Sample Volume Received?							
Holding Time Acce	ptable?				V		
Shipping Containe	r(s) Intact?	····					
Shipping Custody	Seals Intact?						
Shipping Documer	ntation Present?	0.10-					
Airbill	Trk# 7914 99	2405	<u>03</u>		V		
	Intact?						
Sample Container							V
Sample Container Sample Custody S	Seals Intact?					ļ	
Sample Container Sample Custody S Chain of Custody	Seals Intact? / Sample Documentation Pr	esent?			~		
Sample Container Sample Custody S Chain of Custody COC Anomaly/Sa	Seals Intact? / Sample Documentation Pr mple Acceptance Form com	esent? pleted?			V	V	
Sample Container Sample Custody S Chain of Custody COC Anomaly/Sa	Seals Intact? / Sample Documentation Pr mple Acceptance Form com	esent? pleted?	Preservati	on?		V	
Sample Container Sample Custody S Chain of Custody COC Anomaly/Sa If Chlorinated or D Na ₂ S ₂ O ₃ Preserva	Seals Intact? / Sample Documentation Pr mple Acceptance Form com rinking Water Samples, Acc tion Documented?	esent? pleted? ceptable l	Preservati	on? Sa Con	mple		one)

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بالتصاديم المدر

APPENDIX G

Section 54

Outfall 018, May 17, 2006

MECX Data Validation Reports

	CONTRACT COMPI	JANCE SCREENING FORM FOR HARDCOPY DATA
ME	CX, LLC	Package ID B4DF97
122	60 East Vassar Drive	Task Order 1261.001D.01
Suit	e 500	SDG No. IPE1832
Lak	ewood, CO 80226	No. of Analyses 1
	Laboratory Alta Analy	tical Date: July 10, 2006
	Reviewer E. Wesslin	g Reviewer's Signature
	Analysis/Method Dioxins/Fu	Irans Gaber WY, Arr
	/ mary sist free biox most e	
AC	TION ITEMS ^a	
AC	Cose Normative	
	Case Narrative	
	Denciencies	
2	Out of Same	
2.	Out of Scope	
	Analyses	
3.	Analyses Not Conducted	
4.	Missing Hardcopy	
	Deliverables	
5.	Incorrect Hardcopy	
	Deliverables	
6.	Deviations from Analysis	Qualifications were assigned for the following:
	Protocol, e.g.,	- the results between the RL and the MDL were estimated
	Holding Times	- EMPC values qualified as estimated nondetects
	GC/MS Tune/Inst. Performance	
	Calibration	
	Method blanks	
	Surrogates	
	Matrix Spike/Dup LCS	
	Field OC	
	Internal Standard Performance	
	Compound Identification	
	Quantitation	
	System Performance	
CO	MMENTS ^b	
		1
a	Subcontracted analytical laboratory is not	manting contract and/or mathod ecovironments
b	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 018

ANALYSIS: DIOXINS/FURANS SAMPLE DELIVERY GROUP: IPE1832

Prepared by

MEC[×], 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[×]* 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.

Client ID	Laboratory ID (Del Mar)	Laboratory ID (Alta)	Matrix	COC Method	
Outfall 018	IPE1832-01	27721-001	Water	1613	

Table 1. Sample Identification

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 $4^{\circ}C$ $\pm 2^{\circ}C$. 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.

	Project:	NPDES
	SDG:	IPE1832
DATA VALIDATION REPORT	Analysis:	D/F

- · ·

NDDEO

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.

	Project:	NPDES
	SDG:	IPE1832
DATA VALIDATION REPORT	Analysis:	D/F

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

	Project:	NPDES
	SDG:	IPE1832
DATA VALIDATION REPORT	Analysis:	D/F

"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.

Out	Client Data J Name: Del Mar Analytical, Irvine Project: IPE1832 Date Collected: 17-May-06 Time Collected: 1315			ample Data fatrix: A ample Size: 1	Aqueous 1.02 L	Laboratory DataLab Sample:27721-001QC Batch No.:8064Date Analyzed DB-5:7-Jun-06		Date Received: Date Extracted: Date Analyzed DB-225:		31-May-06 4-Jun-06 NA
3	Analyte	Conc. (ug/L)	DL ^a	EMPC ^b	Qualifiers	Labeled Stands	ard	%R	LCL-UCL ^d	Qualifiers
	2,3,7,8-TCDD	ND	0.0000006	46		18 13C-2,3,7,8-TCI	D	69.7	25 - 164	
	1,2,3,7,8-PeCDD	ND	0.0000005	39		13C-1,2,3,7,8-Pe	CDD	67.1	25 - 181	
	1,2,3,4,7,8-HxCDD ND		0.000000597			13C-1,2,3,4,7,8-1	-IxCDD	69.4	32 - 141	
	1,2,3,6,7,8-HxCDD	ND	0.0000006	11		13C-1,2,3,6,7,8-1	AxCDD	70.1	28 - 130	
	1,2,3,7,8,9-HxCDD	ND	0.0000006	08		13C-1,2,3,4,6,7,8	-HpCDD	70.9	23 - 140	
NQ	1,2,3,4,6,7,8-HpCDD	0.00000640			J	13C-OCDD		54.3	17 - 157	
PLA	OCDD	0.0000440			J,B	13C-2,3,7,8-TCE	F	71.2	24 - 169	
	2,3,7,8-TCDF	ND	0.0000007:	53		13C-1,2,3,7,8-Pe	CDF	65.8	24 - 185	
	1,2,3,7,8-PeCDF	ND	0.0000004	40		13C-2,3,4,7,8-Pe	CDF	66.3	21 - 178	
	2,3,4,7,8-PeCDF	ND	0.00000040	06		13C-1,2,3,4,7,8-H	IxCDF	70.7	26 - 152	
	1,2,3,4,7,8-HxCDF	ND	0.0000003	76		13C-1,2,3,6,7,8-H	IxCDF	69.2	26 - 123	
	1,2,3,6,7,8-HxCDF	ND	0.00000033	32		13C-2,3,4,6,7,8-H	IxCDF	72.1	28 - 136	
	2,3,4,6,7,8-HxCDF	ND	0.0000036	58		13C-1,2,3,7,8,9-H	IxCDF	70.3	29 - 147	
	1,2,3,7,8,9-HxCDF	ND	0.00000056	59		13C-1,2,3,4,6,7,8	-HpCDF	66.8	28 - 143	
DARD	1,2,3,4,6,7,8-HpCDF	0.00000124			J	13C-1,2,3,4,7,8,9	-HpCDF	74.7	26 - 138	
¥10	1,2,3,4,7,8,9-HpCDF	3,4,7,8,9-HpCDF ND 0.000000527		13C-OCDF		55.2	17 - 157			
>4610	OCDF	ND		0.0000024	6	CRS 37C1-2,3,7,8-TCI	D	81.5	35 - 197	
	Totals					Footnotes				
	Total TCDD	ND	0.00000646		a. Sample specific estimated detection limit.					
410	Total PeCDD	ND		0.0000017	9	b. Estimated maximum possi	ble concentration.			
	Total HxCDD	0.00000165				c. Method detection limit.				
	Total HpCDD	0.0000134			В	d. Lower control limit - uppe	r control limit.			
	Total TCDF	ND	0.00000075	53						
	Total PeCDF	ND	0.00000042	.3						
	Total HxCDF	ND	0.00000041	1						
L	Total HpCDF	0.00000274		0.0000032	7 В					