

APPENDIX G - VOLUME 6 (Part 5 of 7)
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APPENDIX G

Section 25

February Outfall 011 Continued

AMEC Data Validation Reports

Del Mar Analytical Laboratory Reports

CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

AMEC Earth & Environmental
 550 South Wadsworth Boulevard
 Suite 500
 Lakewood, CO 80226

Package ID T711DF28

Task Order 313150010

SDG No. Multiple

No. of Analyses 6

Laboratory Alta

Reviewer K. Shadowlight

Analysis/Method Dioxins

Date: March 7, 2005

Reviewer's Signature

K. Shadowlight

ACTION ITEMS^a

1. **Case Narrative**
Deficiencies

2. **Out of Scope**
Analyses

3. **Analyses Not Conducted**

4. **Missing Hardcopy**
Deliverables

5. **Incorrect Hardcopy**
Deliverables

6. **Deviations from Analysis**
Protocol, e.g.,
 Holding Times
 GC/MS Tune/Inst. Performance
 Calibration
 Method blanks
 Surrogates
 Matrix Spike/Dup LCS
 Field QC
 Internal Standard Performance
 Compound Identification and
 Quantitation
 System Performance

Qualifications were assigned for the following:

* EMPCs

* Detects below the lower method calibration level

* Diphenyl ether interference

COMMENTS^b

^a 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

ANALYSIS: DIOXINS/FURANS

SAMPLE DELIVERY GROUPS: Multiple SDGs

Prepared by

AMEC—Denver Operations
550 South Wadsworth Boulevard, Suite 500
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title: NPDES Monitoring
Contract Task Order #: 313150010
Sample Delivery Group #: Multiple SDGs
Project Manager: B. McIlvaine
Matrix: Water
Analysis: Dioxins/Furans
QC Level: Level IV
No. of Samples: 6
No. of Reanalyses/Dilutions: 0
Reviewer: K. Shadowlight
Date of Review: March 4, 2005

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

Table 1. Sample Identification

Client ID	Laboratory ID (Del Mar)	Laboratory ID (Alta)	Matrix	COC Method
Outfall 002	IOB1562-01	25779-001	water	1613
Outfall 003	IOB1571-01	25780-001	water	1613
Outfall 007	IOB1572-01	25782-001	water	1613
Outfall 008	IOB1573-01	25783-001	water	1613
Outfall 011	IOB1565-01	25781-001	water	1613
Outfall 018	IOB1570-01	25778-001	water	1613

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

Following are findings associated with sample management:

2.1.1 Sample Preservation, Handling, and Transport

All of the samples in these SDGs were received at Del Mar Analytical within the temperature limits of $4^{\circ}\text{C} \pm 2^{\circ}\text{C}$. The samples were shipped to Alta for dioxin/furan analyses and were received below the temperature limits at 0.8°C ; however, as none of the samples were noted to have been frozen or damaged, no qualifications were required. According to the laboratory login sheets, all samples were received intact and in good condition at both laboratories. No qualifications were required.

2.1.2 Chain of Custody

The COCs and transfer COCs were legible and signed by the appropriate field and laboratory personnel, and accounted for the analyses presented in these SDGs. As the samples were couriered directly to Del Mar Analytical, custody seals were not required. The coolers received by Alta had custody seals present and intact; however, custody seals were not present on the sample containers. The EPA IDs were added to the sample result summary report by the reviewer. No qualifications were required.

2.1.3 Holding Times

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

2.2 INSTRUMENT PERFORMANCE

Following are findings associated with instrument performance:

2.2.1 GC Column Performance

A Windows Defining Mix (WDM) containing the first and last eluting congeners of each descriptor and isomer specificity compounds was not analyzed prior to the initial calibration sequence or at the beginning of each analytical sequence; however, the first and last eluting congeners and isomer specificity compounds were added to the midpoint of the initial calibration and to the continuing calibration standards (see section 2.3.2). The GC column performance in the calibrations was acceptable, with the height of the valley between the closely eluting isomers and 2,3,7,8-TCDD reported as less than 25%. No qualifications were required.

2.2.2 Mass Spectrometer Performance

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

2.3 CALIBRATION

2.3.1 Initial Calibration

There were two initial calibrations, analyzed 08/30/04 and 10/04/04. The calibrations each 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 15 native compounds (calibration by isotope dilution) and $\leq 35\%$ for the two 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 VERs were acceptable with the concentrations within the acceptance criteria listed in Table 6 of EPA Method 1613. The ion abundance ratios and relative retention times were within the method QC limits. 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 standards 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 (6543-MB001) was extracted and analyzed with the samples in these SDGs. There were no detects reported 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 Ongoing Precision Recovery (OPR) sample (6543-OPR001) was extracted and analyzed with the samples in these SDGs. All recoveries were within the acceptance criteria listed in Table 6 of the Method 1613. No qualifications were required.

2.6 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

MS/MSD analyses were not performed in these SDGs. 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 samples in these SDGs had no associated field QC samples. No qualifications were required.

2.7.2 Field Duplicates

No field duplicate samples were identified for these SDGs.

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. Compounds flagged by the laboratory with a "D" qualifier indicated possible diphenylether interference and were qualified as estimated, "J." Any reported EMPC was qualified as an estimated nondetect, "UJ." Any detects below the lower method calibration level (MCL) were qualified as estimated, "J;" however, as Alta analyzed an additional calibration standard, not all results below the method calibration level were appropriately qualified by the laboratory. These results were qualified as estimated, "J," by the reviewer. No further qualifications were required.



Sample ID: IOB1565-01 Outfall oil

EPA Method 1613

Client Data		Sample Data		Laboratory Data	
Name:	Del Mar Analytical, Irvine	Matrix:	Aqueous	Lab Sample:	25781-001
Project:	IOB1565	Sample Size:	1.028 L	QC Batch No.:	6543
Date Collected:	18-Feb-05			Date Analyzed DB-5:	28-Feb-05
Time Collected:	1428			Date Analyzed DB-225:	NA
Analyte	Conc. (pg/L)	DL ^a	EMPC ^b	Labeled Standard	%R LCL-UCL ^d Qualifiers
2,3,7,8-TCDD	ND	0.748		IS 13C-2,3,7,8-TCDD	71.5 25 - 164
1,2,3,7,8-PeCDD	ND	2.26		13C-1,2,3,7,8-PeCDD	63.9 25 - 181
1,2,3,4,7,8-HxCDD	ND	2.07		13C-1,2,3,4,7,8-HxCDD	64.6 32 - 141
1,2,3,6,7,8-HxCDD	ND	4.09		13C-1,2,3,6,7,8-HxCDD	65.2 28 - 130
1,2,3,7,8,9-HxCDD	ND	2.63		13C-1,2,3,4,6,7,8-HpCDD	64.3 23 - 140
1,2,3,4,6,7,8-HpCDD	38.6			13C-OCDD	60.5 17 - 157
OCDD	418			13C-2,3,7,8-TCDF	71.2 24 - 169
2,3,7,8-TCDF	ND	1.06		13C-1,2,3,7,8-PeCDF	60.7 24 - 185
1,2,3,7,8-PeCDF	ND	1.99		13C-2,3,4,7,8-PeCDF	60.3 21 - 178
2,3,4,7,8-PeCDF	ND	1.94		13C-1,2,3,4,7,8-HxCDF	60.2 26 - 152
1,2,3,4,7,8-HxCDF	ND	1.16		13C-1,2,3,6,7,8-HxCDF	59.4 26 - 123
1,2,3,6,7,8-HxCDF	ND	2.06		13C-2,3,4,6,7,8-HxCDF	56.9 28 - 136
2,3,4,6,7,8-HxCDF	ND	0.942		13C-1,2,3,7,8,9-HxCDF	58.8 29 - 147
1,2,3,7,8,9-HxCDF	ND	0.760		13C-1,2,3,4,6,7,8-HpCDF	52.3 28 - 143
1,2,3,4,6,7,8-HpCDF	6.16			13C-1,2,3,4,7,8,9-HpCDF	60.2 26 - 138
1,2,3,4,7,8,9-HpCDF	ND	1.89		13C-OCDF	58.7 17 - 157
OCDF	15.9			CRS 37Cl-2,3,7,8-TCDD	93.4 35 - 197
Totals					
Total TCDD	ND	0.748			
Total PeCDD	ND	2.26			
Total HxCDD	8.49				
Total HpCDD	88.4				
Total TCDF	14.2				
Total PeCDF	5.58		6.82		
Total HxCDF	7.21				
Total HpCDF	18.9				

Footnotes

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

Analyst: MS

Approved By: William J. Luksenburg 01-Mar-2005 16:32

AMEC VALIDATED

Project 25781

EVERETT

CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

AMEC Earth & Environmental
 550 South Wadsworth Boulevard
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 Lakewood, CO 80226

Package ID T711MT68
 Task Order 313150010
 SDG No. IOB157, 59, 65


Laboratory Del Mar

Reviewer P. Meeks

Analysis/Method Metals

No. of Analyses 3

Date: 03/31/05

Reviewer's Signature


ACTION ITEMS^a

1. Case Narrative
 Deficiencies

2. Out of Scope
 Analyses

3. Analyses Not
 Conducted

4. Missing Hardcopy
 Deliverables

5. Incorrect Hardcopy
 Deliverables

6. Deviations from
 Analysis Protocol, e.g.,

Qualifications applied for:

1. Positive and negative CCB and method blank results

2. Reporting limit check standard recovery outliers

3. Detects below the reporting limit

4. Antimony MDL raised due to detects in the CCBs

Holding Times

GC/MS Tune/Inst.
 Performance

Calibrations

Blanks

Surrogates

Matrix Spike/Dup LCS

Field QC

Internal Standard

Performance

Compound Identification

and Quantitation

System Performance

COMMENTS^b

^a 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

ANALYSIS: METALS

SAMPLE DELIVERY GROUPS: IOB1557, IOB1559, & IOB1565

Prepared by

AMEC—Denver Operations
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Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title: NPDES Monitoring
Contract Task Order #: 313150010
SDG#: IOB1557, IOB1559,, IOB1565
Project Manager: B. McIlvaine
Matrix: Water
Analysis: Metals
QC Level: Level IV
No. of Samples: 3
No. of Reanalyses/Dilutions: 0
Reviewer: P. Meeks
Date of Review: March 31, 2005

The samples listed in Table 1 were validated based on the guidelines outlined in the *AMEC Data Validation Procedure for Levels III and IV ICP-MS Metals, (DVP-5-A, Rev.0)*, *AMEC Data Validation Procedure for Levels III and IV ICP Metals (DVP-5, Rev. 0)*, *SW-846 Method 6020B for Inductively Coupled Plasma – Mass Spectrometry*, *SW-846 Method 7471A for Mercury (Manual Cold-Vapor Technique)*, 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.

DATA VALIDATION REPORT

Project: NPDES
SDG No.: Multiple
Analysis: MET

Table 1. Sample identification

Client ID	EPA ID	Laboratory ID	Matrix	COC Method
Outfall 005	Outfall 005	IOB1557-01	water	ILM04
Outfall 006	Outfall 006	IOB1559-01	water	ILM04
Outfall 011	Outfall 011	IOB1565-01	water	ILM04

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

Following are findings associated with sample management:

2.1.1 Sample Preservation, Handling, and Transport

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

2.1.2 Chain of Custody

The COCs were signed and dated by field and laboratory personnel. The COCs accounted for the samples and analyses presented in these SDGs. Duplicate samples were submitted for the samples in these SDGs; however, duplicate analyses were not required. No sample qualifications were required.

2.1.3 Holding Times

The dates of collection recorded on the COCs 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 and ICP/MS metals, and 28 days for mercury. No qualifications were required.

2.2 ICP-MS TUNING

A precalibration routine must be completed prior to calibrating the instrument, which consists of analyzing a tuning solution to verify resolution, mass calibration, and thermal stability. The solution must be analyzed a minimum of five times and must contain isotopes representing all mass regions of interest. All %RSDs were less than 5%. The mass calibrations were within 0.1 amu of the true mass and the instrument resolutions were less than 0.75 amu at 5 percent peak height for all analytes in the tune solution. No site sample qualifications were required.

2.3 CALIBRATION

The ICV and CCV results showed acceptable recoveries, 90-110% for ICP/MS metals and 80-120% for mercury. The reporting limit check standards for silver were recovered below the control limit at 51% and 54%; therefore nondetected silver in Outfall 005 (see section 2.4) and Outfall 006 was qualified as estimated, "UJ." The reporting limit check standard for arsenic associated with the analysis of Outfall 005 was recovered below the control limit at 61%; therefore, nondetected arsenic in Outfall 005 was qualified as estimated, "UJ." The reporting limit check standard for selenium associated with the analysis of Outfall 006 was recovered above the control limit at 133%; therefore, selenium detected in

Outfall 006 was qualified as estimated, "J." The remaining reporting limit check standards were recovered within the AMEC control limits of 70-130%. No further sample qualifications were required.

2.4 BLANKS

Silver was detected in a CCB bracketing Outfall 005 at 0.0017 mg/L; therefore, silver detected in Outfall 005 was qualified as estimated, "UJ." Silver was reported in a CCB bracketing Outfall 006 at 3.0 µg/L; therefore, nondetected silver in Outfall 006 was qualified as estimated, "UJ." Zinc was detected in method blank 5B24093-BLK1 at 0.0078 mg/L; therefore, zinc detected in Outfall 005 was qualified as estimated, "UJ."

Antimony was detected in every CCB in the analytical sequence in which Outfall 006 was analyzed. The detects ranged from 0.523 to 1.26 µg/L and antimony was detected in Outfall 006 at a concentration well below these values, 0.31 µg/L. The CCB detects indicated the laboratory could not detect antimony at the reported MDL. The reviewer raised the antimony MDL for Outfall 006 to the highest level of interference reported, 1.3 µg/L and qualified the result as estimated, "UJ." No further qualifications were required due to the method and calibration blank results.

2.5 ICP INTERFERENCE CHECK SAMPLE (ICS A/AB)

ICSA and ICSAB analyses were included in the raw data for the ICP-MS analyses. Results were not provided for spiked interferents sulfur, phosphorus, carbon, and chloride, and antimony and lead were not spiked into the ICSAB solution. Copper was detected above the reporting limit in the ICSA. The results for sodium and potassium were above the calibration range of the instrument in the ICSA and ICSAB analyses; however, as sodium and potassium were not reported in the site samples, no qualifications were required. Aluminum was recovered below the control limit in the ICSA at 78% and above the calibration range in the ICSAB analyses. As aluminum in the site samples was not reported from the ICP/MS analyses, no qualifications were required. The validator reviewed the raw data for the site sample ICP/MS analyses for the level of reported interferents, Al, Ca, Fe, and Mg, and determined that the levels of reported interferents were not high enough to cause matrix effects. No assessment could be made with respect to possible interference from sulfur, phosphorus, carbon, and chloride.

ICSA and ICSAB analyses were included in the raw data for the ICP analyses, but were not run on the days the site samples were analyzed. The recoveries for the interferents and the other spiked analytes were within the control limits of 80-120%. In the ICSA analyses there were negative results for chromium and positive results for arsenic and zinc, the absolute values for which were above the applicable reporting limits. The validator reviewed the raw data for the site sample ICP analyses for the level of reported interferents, Al, Ca, Fe, and Mg, and determined that the level of reported interferents were not high enough to cause matrix effects. No qualifications were required.

2.6 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

The ICP/MS LCS sample was identified as 5B24099-BS1 and the mercury LCS sample was identified as 5B22063-BS1. The ICP LCS samples were identified as 5B28119-BS1 and 5B24093-BS1.

The LCS results on the summary forms and in the raw data were within the laboratory-established ICP, ICP/MS, and mercury control limits of 85-115%. No qualifications were required.

2.7 LABORATORY DUPLICATES

MS/MSD analyses were performed on Outfall 005 for the ICP/MS analytes only. The RPDs were within the control limit of 20% and no qualifications were required.

2.8 MATRIX SPIKE

MS/MSD analyses were performed on Outfall 005 for the ICP/MS analytes only. The recoveries were within the AMEC control limits of 75-125% and no qualifications were required. Method accuracy for the remaining analytes was evaluated based on LCS results.

2.9 FURNACE ATOMIC ABSORPTION QC

Furnace atomic absorption was not utilized for the analysis of these samples; therefore, furnace atomic absorption QC is not applicable.

2.10 ICP/MS AND ICP SERIAL DILUTION

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

2.11 INTERNAL STANDARDS PERFORMANCE

Scandium was recovered above the control limit in Outfall 006 and Outfall 011; however, as scandium was not the internal standard associated with the reported analytes, no qualifications were required. The remaining ICP-MS internal standard recoveries for the site samples and associated QC sample analyses were within the 60-125% control limits and no qualifications were required.

2.12 SAMPLE RESULT VERIFICATION

A Level IV review was performed for the samples in these data packages. Calculations were verified, and the sample results reported on the Form Is were verified against the raw data. No transcription errors or calculation errors were noted. Analytes detected below the reporting limit were qualified as estimated, "J." No further qualifications were required.

2.13 FIELD QC SAMPLES

DATA VALIDATION REPORT

Project: NPDES
SDG No.: Multiple
Analysis: MET

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

DATA VALIDATION REPORT

Project: NPDES
SDG No.: Multiple
Analysis: MET

2.13.1 Field Blanks and Equipment Rinsates

The samples in these SDGs had no associated field QC samples. No qualifications were required.

2.13.2 Field Duplicates

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



Del Mar Analytical

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 9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0
 2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3820 FAX (702) 798-36

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

Project ID: Routine Outfall 011
 Routine Outfall 011
 Report Number: IOB1565

Sampled: 02/18/05
 Received: 02/18/05

DRAFT: METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOB1565-01 (DRAFT: Outfall 011 - Water) - cont.									
Reporting Units: ug/l									
Copper	EPA 200.8	5B24099	0.49	2.0	6.7	1	02/24/05	02/25/05	Dev Qual
Lead	EPA 200.8	5B24099	0.13	1.0	2.7	1	02/24/05	02/25/05	Dev Qual
Mercury	EPA 245.1	5B22063	0.063	0.20	0.11	1	02/22/05	02/22/05	J J DN

AMEC VALIDATED

LEVEL 1

DRAFT REPORT
 DRAFT REPORT
 DATA SUBJECT TO CHANGE

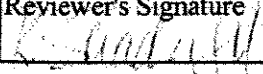
The results pertain only to the samples tested in the laboratory. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical.

CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

AMEC Earth & Environmental
 550 South Wadsworth Boulevard
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Package ID T711PP29
 Task Order 313150010
 SDG No. Multiple
 No. of Analyses 3

Laboratory Del Mar Analytical
 Reviewer K. Shadowlight
 Analysis/Method Pesticides

Date April 4, 2005
 Reviewer's Signature 

ACTION ITEMS ^a	
1. Case Narrative	
Deficiencies	
2. Out of Scope	
Analyses	
3. Analyses Not Conducted	
4. Missing Hardcopy	
Deliverables	
5. Incorrect Hardcopy	
Deliverables	
6. Deviations from Analysis Protocol, e.g.,	Qualifications were assigned for %D continuing calibration outliers
Holding Times	
GC/MS Tune/Inst. Perform	
Calibrations	
Blanks	
Surrogates	
Matrix Spike/Dup LCS	
Field QC	
Internal Standard Performance	
Compound Identification and	
Quantitation	
System Performance	
COMMENTS^b	
Acceptable as reviewed.	
^a 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

ANALYSIS: PESTICIDES/PCBs

SAMPLE DELIVERY GROUP: IOB1557, IOB1559,
IOB1565

Prepared by

AMEC Denver Operations
550 South Wadsworth Boulevard, Suite 500
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title: NPDES Monitoring
Contract Task Order #: 313150010
SDG#: IOB1557, IOB1559, IOB1565
Project Manager: B. McIlvaine
Matrix: Water
Analysis: Pesticides/PCBs
QC Level: Level IV
No. of Samples: 3
No. of Reanalyses/Dilutions: 0
Reviewer: K. Shadowlight
Date of Review: April 4, 2005

The samples listed in Table 1 were validated based on the general guidelines outlined in the *AMEC Data Validation Procedures (DVP-4, Rev.2)*, *EPA Method 608*, 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 summary form as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

Table 1. Sample identification

Client ID	EPA ID	Laboratory ID	Matrix	Method
Outfall 005	Outfall 005	IOB1557-01	water	608
Outfall 006	Outfall 006	IOB1559-01	water	608
Outfall 011	Outfall 011	IOB1565-01	water	608

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

The following are findings associated with sample management:

2.1.1 Sample Preservation, Handling, and Transport

The coolers were received at the laboratory within the temperature limits of $4^{\circ}\text{C} \pm 2^{\circ}\text{C}$. The analysis did not require preservation, and no preservation was noted in the field. The COCs noted that the samples were received intact. No qualifications were required.

2.1.2 Chain of Custody

The COCs were signed and dated by both field and laboratory personnel. The COCs accounted for the analyses presented in these SDGs. As the samples were couriered directly to the laboratory, custody seals were not required. No qualifications were required.

2.1.3 Holding Times

The water samples were extracted within seven days of sample collection and analyzed within 40 days of extraction. No qualifications were required.

2.2 PESTICIDES INSTRUMENT PERFORMANCE

No resolution check standards or breakdown check standards are required by Method 608 for pesticides, and according to the raw data provided, a resolution check standard was not analyzed by the laboratory. The laboratory did analyze a breakdown check standard with a breakdown of $\leq 20\%$ for individual components (4,4-DDT and endrin) and $\leq 30\%$ for the total, as suggested in the National Functional Guidelines. A review of the raw data indicated that the analytical run time was of sufficient length to provide adequate standard separation. The two analytical columns used in the analyses were within the guidelines specified in the methods.

According to the laboratory SOP and the initial calibration raw data, the retention time windows are ± 0.10 minutes for both surrogates and target compound calibration standards. A review of the raw data indicated that the laboratory retention time criteria were met for the surrogates and pesticide calibration standards. No qualifications were required.

2.3 CALIBRATION

2.3.1 Analytical Sequence

Based on the data provided, the analytical sequences were in accordance with the requirements of Method 608. No qualifications were required.

2.3.2 Initial Calibration

There were two initial calibrations dated 02/12/05 and 02/22/05 associated with the pesticide analyses of the samples in these SDGs, which consisted of six point calibrations for all pesticide target compounds on two analytical columns. The %RSDs were within the EPA Method 608 QC limit of $\leq 10\%$ or the r^2 values were ≥ 0.995 on both analytical columns. There was one initial calibration dated 02/11/05 associated with the PCB analyses of the samples in these SDGs which consisted of five points for Aroclor 1016 and Aroclor 1260. Single point calibrations for Aroclor 1242, Aroclor 1248, and Aroclor 1254 were also analyzed. The average %RSDs for the individual peaks of Aroclor 1016 and Aroclor 1260 were $\leq 10\%$ or the r^2 values were ≥ 0.995 on both analytical columns. An ICV was analyzed immediately following each of the initial calibrations. The %Ds for all target compounds were within the QC limits of 15% on both analytical columns. A representative number of %RSDs and ICV %Ds were recalculated from the raw data and no transcription or calculation errors were noted. No qualifications were required.

2.3.3 Continuing Calibration

Of the continuing calibrations associated with the pesticide analyses for the samples in these SDGs there were several %D outliers. The %Ds for heptachlor, endrin, and 4,4'-DDD in the continuing calibration analyzed 02/23/05 (GC54) exceeded 15% on the primary channel; therefore, the aforementioned target compounds were qualified as estimated, "UJ," in samples Outfall 005 and Outfall 006. The remaining applicable %Ds were within the Method QC limit of $\pm 15\%$ for the remaining calibrations. Each of the PCB analyses for the samples in these SDGs were bracketed by two CCVs and the %Ds for Aroclor 1016 and Aroclor 1260 were $\leq 15\%$. A representative number of %Ds were recalculated from the raw data and no transcription or calculation errors were noted.

No further qualifications were required.

2.4 BLANKS

2.4.1 Instrument Blanks

An instrument blank was analyzed at the beginning of each analytical sequence. Cross-contamination was not evident in the samples. No qualifications were necessary.

2.4.2 Method Blanks

One water method blank (5B22041-BLK1) was extracted and analyzed with these SDGs. There were no pesticide target compounds or Aroclors detected in the method blank. Review of the chromatograms showed no false negatives. No qualifications were required.

2.5 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

One blank spike/blank spike duplicate pair (5B22041-BS1/BSD1) were extracted and analyzed with these SDGs. The recoveries for all spiked pesticide target compounds and Aroclors were within the laboratory-established QC limits and the RPDs were $\leq 30\%$. A representative number of recoveries were checked from the raw data, and no calculation or transcription errors were noted. No qualifications were required.

2.6 SURROGATE RECOVERY

The sample and all QC samples were fortified with the surrogate compounds decachlorobiphenyl and tetrachloro-m-xylene. Surrogate recoveries for the pesticide and PCB analyses of the samples were within the laboratory-established. The recoveries were calculated from the raw data and no transcription or calculation errors were noted. No qualifications were required.

2.7 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

There were no MS/MSD analyses associated with these SDGs. Method accuracy and precision were assessed based on the blank spike/blank spike duplicate results. No qualifications were required.

2.8 SAMPLE CLEANUP PERFORMANCE

According to the laboratory extraction benchsheets, no cleanups were performed on the water samples. No qualifications were required.

2.9 FIELD QC SAMPLES

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

2.9.1 Field Blanks and Equipment Rinsates

There were no field QC samples associated with the samples in these SDGs. No qualifications were required.

2.9.2 Field Duplicates

There were no field duplicate samples associated with the sample in these SDGs.

2.10 COMPOUND IDENTIFICATION

The laboratory analyzed for pesticide target compounds and PCBs by EPA Method 608. Compound identification is verified at a Level IV validation. Review of chromatograms and retention times indicated no problems with compound identification for the samples in these SDGs. No qualifications were required.

2.11 COMPOUND QUANTIFICATION AND REPORTED DETECTION LIMITS

Compound quantification was verified for these SDGs; however, as there were no detects reported in the samples, quantitation was verified by recalculating a representative number of

DATA VALIDATION REPORT

Project: NPDES
SDG: Multiple
Analysis: Pest/PCB

blank spike and surrogate recoveries. Reporting limits were supported by the low level standard of the initial calibration and the laboratory MDL studies. The water reporting limits were not adjusted for sample amounts on the result summaries; however, the dilution factors listed on the summaries reflected the sample volumes extracted. Results were reported in ug/L (ppb). No qualifications were required.



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

Project ID: Routine Outfall 011
 Routine Outfall 011
 Report Number: IOB1565

Sampled: 02-18-05
 Received: 02-18-05

DRAFT: ORGANOCHLORINE PESTICIDES (EPA 608)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOB1565-01 (DRAFT: Outfall 011 - Water) - cont.									
Reporting Units: ug/l									
alpha-BHC	EPA 608	5B22041	0.0010	0.010	ND	0.99	02/22/05	02/23/05	U
Surrogate: Decachlorobiphenyl (45-120%)					85 %				
Surrogate: Tetrachloro-m-xylene (35-120%)					53 %				

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AMEC VALIDATED

DRAFT REPORT
 DRAFT REPORT
 DATA SUBJECT TO CHANGE

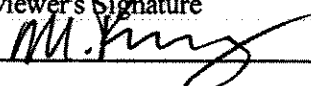
Test results presented only in the summary report to the laboratory. This report has been prepared for the client and is not intended for distribution outside the laboratory.

CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

AMEC Earth & Environmental
 550 South Wadsworth Boulevard
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Package ID T711SV46
 Task Order 313150010, 313150012
 SDG No. IOB1557, 1559, 1565
 No. of Analyses 3

Laboratory Del Mar
 Reviewer M. Pokorny
 Analysis/Method Semivolatiles

Date: April 4, 2005
 Reviewer's Signature


ACTION ITEMS*	
1. Case Narrative Deficiencies	
2. Out of Scope Analyses	
3. Analyses Not Conducted	
4. Missing Hardcopy Deliverables	
5. Incorrect Hardcopy Deliverables	
6. Deviations from Analysis	Qualifications were required for calibration, LCS, and internal standard outliers.
Protocol, e.g.,	
Holding Times	
GC/MS Tune/Inst. Perform.	
Calibrations	
Blanks	
Surrogates	
Matrix Spike/Dup LCS	
Field QC	
Internal Standard Performance	
Compound Identification and Quantitation	
System Performance	
COMMENTS ^b	

* 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

ANALYSIS: SEMIVOLATILES

SAMPLE DELIVERY GROUP: IOB1557, IOB1559,
IOB1565

Prepared by

AMEC Denver Operations
550 South Wadsworth Boulevard, Suite 500
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title: NPDES Monitoring
Contract Task Order #: 313150010
SDG#: IOB1557, IOB1559, IOB1565
Project Manager: B. McIlvaine
Matrix: Water
Analysis: Semivolatiles
QC Level: Level IV
No. of Samples: 3
No. of Reanalyses/Dilutions: 0
Reviewer: M. Pokorny
Date of Review: April 4, 2005

The samples listed in Table 1 were validated based on the guidelines outlined in the *AMEC Data Validation Procedure for Levels C and D Semivolatile Organics (DVP-3, Rev. 2)*, *EPA Method 625*, and the *National Functional Guidelines For Organic Data Review (2/94)*. Any deviations from these procedures are documented herein. Qualifiers were applied in cases where the data did not meet the required QC criteria or where special consideration by the data user is required. Data qualifiers were placed on Form Is with the associated qualification codes. Analytes that were rejected for any reason are denoted on the Form I as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

Table 1. Sample identification

Client ID	EPA ID	Lab No.	Matrix	Method
Outfall 005	Outfall 005	IOB1557-01	water	625
Outfall 006	Outfall 006	IOB1559-01	water	625
Outfall 011	Outfall 011	IOB1565-01	water	625

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

The samples in these SDGs were received at the laboratory within the temperature limits of $4^{\circ}\text{C} \pm 2^{\circ}\text{C}$. The analysis did not require preservation, and no preservation was noted in the field. The COCs noted that the samples were received intact. No qualifications were required.

2.1.2 Chain of Custody

The COCs were signed and dated by both field and laboratory personnel. The COCs accounted for the analyses presented in these SDGs. As the samples were couriered directly to the laboratory, custody seals were not required. No qualifications were required.

2.1.3 Holding Times

The water samples were extracted within seven days of collection and analyzed within 40 days of collection. No qualifications were required.

2.2 GC/MS TUNING

The DFTPP tunes met the criteria specified in Method 625, and the samples were analyzed within 12 hours of the DFTPP injection time. No qualifications were required.

2.3 CALIBRATION

The initial calibrations associated with this SDG were dated 02/24/05 and 02/25/05. For the initial calibration dated 02/25/05, the average RRFs for were ≥ 0.05 and the %RSDs were $\leq 35\%$ or $r^2 \geq 0.995$ for all target compounds except for the r^2 value for benzoic acid. Benzoic acid was qualified as an estimated nondetect, "UJ," in samples Outfall 005 and Outfall 006. For the initial calibration dated 02/24/05, the average RRFs for were ≥ 0.05 and the %RSDs were $\leq 35\%$ or $r^2 \geq 0.995$ for all target compounds. A representative number of average RRFs and %RSDs were checked from the raw data, and no calculation or transcription errors were noted.

The continuing calibration associated with the sample analyses were analyzed 02/24/05 and 02/25/05. For the continuing calibration dated 02/25/05, the RRFs for all target compounds were ≥ 0.05 , and the %Ds were $\leq 20\%$, except for the %Ds for 2,4-dinitrophenol and 4,6-dinitro-2-methylphenol. 2,4-dinitrophenol and 4,6-dinitro-2-methylphenol were qualified as estimated nondetects, "UJ," in samples Outfall 005 and Outfall 006. For the continuing calibration dated 02/24/05, the RRFs for all target compounds were ≥ 0.05 , and the %Ds were $\leq 20\%$. A representative number of RRFs and %Ds were checked from the raw data, and no calculation or transcription errors were noted. No further qualifications were required.

2.4 BLANKS

Two method blanks (5B22042-BLK1 and 5B22043-BLK1) were extracted and analyzed with these SDGs. No target compounds were detected in the method blanks. Review of the raw data indicated no reportable false negatives. No qualifications were required.

2.5 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

Two blank spike/ blank spike duplicate pairs (5B22042-BS1/BSD1 and 5B22043- BS1/BSD1) were extracted and analyzed with these SDGs. For blank spike/blank spike duplicate pairs, qualifications are applied, if necessary, to the associated samples based on those recoveries consistently outside of the laboratory-established QC limits in both the blank spike and blank spike duplicate. Results for those compounds with recoveries not consistent within the pair, with RPDs above the QC limit, are qualified as estimated, "UJ" for nondetects and "J" for detects, in the associated samples.

For the 5B22042-BS1/BSD1 pair, all percent recoveries and RPDs were within the laboratory QC limits except for the RPD for NDMA. Sample Outfall 011 had NDMA qualified as an estimated nondetect, "UJ."

For the 5B22043-BS1/BSD1 pair, all percent recoveries and RPDs were within the laboratory QC limits except for benzidine which was not recovered in the BSD and the RPD for benzidine. Samples Outfall 005 and Outfall 006 had benzidine qualified as estimated nondetects, "UJ."

A representative number of recoveries and RPDs were calculated from the raw data and no calculation or transcription errors were found. No further qualifications were required.

2.6 SURROGATE RECOVERY

The sample surrogate recoveries were within the laboratory QC limits. A representative number of recoveries were calculated from the raw data, and no transcription or calculation errors were noted. No qualifications were required.

2.7 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

No MS/MSD analyses were associated with these SDGs. Evaluation of method accuracy and precision was based on blank spike/blank spike duplicate 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 Field Blanks and Equipment Rinsates

There were no field QC samples associated with these SDGs. No qualifications were required.

2.8.2 Field Duplicates

There were no field duplicate samples associated with these SDGs. No qualifications were required.

2.9 INTERNAL STANDARDS PERFORMANCE

The internal standard area counts and retention times were within the control limits established by the continuing calibration standards: -50%/+100% for internal standard areas and ± 30 seconds for retention times except for the area counts for perylene-d12 for samples Outfall 005 and Outfall 006. Samples Outfall 005 and Outfall 006 had the target compounds associated with perylene-d12 qualified as estimated nondetects, "UJ." A representative number of recoveries were checked from the raw data, and no transcription or calculation errors were noted. No further qualifications were required.

2.10 COMPOUND IDENTIFICATION

The laboratory analyzed for the semivolatile target compounds by EPA Method 625. Review of the sample chromatogram, retention times, and spectra indicated no problems with target compound identification. No qualifications were required.

2.11 COMPOUND QUANTIFICATION AND REPORTED DETECTION LIMITS

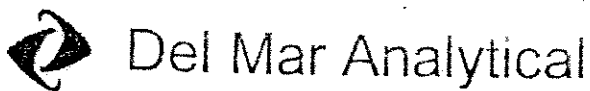
Compound quantification is verified at a Level IV data validation. No calculation or transcription errors were found. The reporting limits were supported by the low level of the initial calibration and the method detection limit study. No qualifications were required.

2.12 TENTATIVELY IDENTIFIED COMPOUNDS

TICs were not reported by the laboratory for these SDGs. No qualifications were required.

2.13 SYSTEM PERFORMANCE

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



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

Project ID: Routine Outfall 011
 Routine Outfall 011
 Report Number: IOB1565

Sampled: 02/18/05
 Received: 02/18/05

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

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOB1565-01 (DRAFT: Outfall 011 - Water)									
Reporting Units: ug/l									
Bis(2-ethylhexyl)phthalate	EPA 625	5B22042	1.1	5.0	ND	0.971	02/22/05	02/24/05	REV QUAL CODE
2,4-Dinitrotoluene	EPA 625	5B22042	0.23	9.0	ND	0.971	02/22/05	02/24/05	U
N-Nitrosodimethylamine	EPA 625	5B22042	0.22	8.0	ND	0.971	02/22/05	02/24/05	J *5
Pentachlorophenol	EPA 625	5B22042	0.78	8.0	ND	0.971	02/22/05	02/24/05	J
2,4,6-Trichlorophenol	EPA 625	5B22042	0.10	6.0	ND	0.971	02/22/05	02/24/05	J
Surrogate: 2-Fluorophenol (35-120%)									63 %
Surrogate: Phenol-d6 (45-120%)									63 %
Surrogate: 2,4,6-Tribromophenol (50-125%)									80 %
Surrogate: Nitrobenzene-d5 (45-120%)									66 %
Surrogate: 2-Fluorobiphenyl (45-120%)									65 %
Surrogate: Terphenyl-d14 (45-135%)									69 %

LEVEL IV

ALC VALIDATED

DRAFT REPORT
 DRAFT REPORT
 DATA SUBJECT TO CHANGE

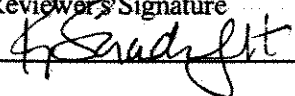
The results pertain only to the samples tested in the laboratory. This report shall not be reproduced except in full, without written permission from Del Mar Analytical.

CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

AMEC Earth & Environmental
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Package ID T711VO78
 Task Order 313150010
 SDG No. Multiple
 No. of Analyses 3

Laboratory Del Mar Analytical
 Reviewer K. Shadowlight
 Analysis/Method Volatiles by 624

Date April 4, 2005
 Reviewer's Signature


ACTION ITEMS ^a	
1. Case Narrative	
Deficiencies	
2. Out of Scope	
Analyses	
3. Analyses Not Conducted	
4. Missing Hardcopy	
Deliverables	
5. Incorrect Hardcopy	
Deliverables	
6. Deviations from Analysis	Qualifications were assigned for the following:
GC/MS Tune/Inst. Perform	* RRF values < 0.05
Calibrations	* Continuing calibration %D outliers
Blanks	* Trip blank contamination
Surrogates	
Matrix Spike/Dup LCS	
Field QC	
Internal Standard Performance	
Compound Identification and	
Quantitation	
System Performance	
COMMENTS^b	
^a 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

ANALYSIS: VOLATILES

SAMPLE DELIVERY GROUP: IOC1557, IOC1559, &
IOC1565

Prepared by

AMEC Denver Operations
550 South Wadsworth Boulevard, Suite 500
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title: NPDES Monitoring
Contract Task Order #: 313150010
SDG#: IOC1557, IOC1559, IOC1565
Project Manager: B. McIlvaine
Matrix: Water
Analysis: Volatiles
QC Level: Level IV
No. of Samples: 6
No. of Reanalyses/Dilutions: 0
Reviewer: K. Shadowlight
Date of Review: April 2, 2005

The samples listed in Table 1 were validated based on the guidelines outlined in the *AMEC Data Validation Procedure for Levels C and D Volatile Organics (DVP-2, Rev. 2)*, *EPA Method 624, SW846 Method 8260B*, 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 summary forms as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

Table 1. Sample identification

Client ID	EPA ID	Lab No.	Matrix	Method
Outfall 005	Outfall 005	IOB1557-01	water	624
Trip Blank	Trip Blank	IOB1557-02	water	624
Outfall 006	Outfall 006	IOB1559-01	water	624
Trip Blank	Trip Blank	IOB1559-02	water	624
Outfall 001	Outfall 011	IOB1565-01	water	624
Trip Blank	Trip Blank	IOB1565-02	water	624

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

The following are findings associated with sample management:

2.1.1 Sample Preservation, Handling, and Transport

The samples in these SDGs were received at the laboratory within the temperature limits of $4^{\circ}\text{C} \pm 2^{\circ}\text{C}$, at 4°C . The samples were properly preserved. The COCs noted that the samples were received intact; however, information regarding absence of headspace was not provided. No qualifications were required.

2.1.2 Chain of Custody

The COCs were signed and dated by both field and laboratory personnel. The COCs accounted for the analyses presented in these SDGs. As the samples were couriered directly to the laboratory from the field, custody seals were not required. No qualifications were required.

2.1.3 Holding Times

The samples were analyzed within seven days of collection. No qualifications were required.

2.2 GC/MS TUNING

The ion abundance windows shown on the quantitation reports were consistent with those specified in EPA Method 624, and all ion abundances were within the established windows. The samples and associated QC were analyzed within 12 hours of the BFB injection times. The Form Vs were verified from the raw data and no discrepancies between the summary forms and the raw data were noted. No qualifications were required.

2.3 CALIBRATION

Three initial calibrations dated 10/14/04 (acrolein and acrylonitrile only), 11/16/04, and 02/07/05 were associated with these SDGs. The average RRF for acrolein was <0.05 in the initial calibration dated 10/14/04; therefore, the nondetect results for acrolein were rejected, "R," in all associated samples. The average RRFs were ≥ 0.05 for all remaining compounds listed on the sample result summaries. The %RSDs were $\leq 35\%$ for all target compounds listed on the sample result summaries. There were three continuing calibrations dated 02/19/05, 02/21/05, and 02/22/05 associated with the sample analyses in these SDGs. The RRF for acrolein was <0.05 in all the continuing calibrations; therefore, the nondetect results for acrolein were rejected, "R," in all associated samples. The remaining RRFs were ≥ 0.05 in the continuing calibrations. The %Ds for acrolein and 1,1,1-trichloroethane exceeded 20% in the continuing calibration analyzed 02/19/05; therefore, the nondetects for acrolein and 1,1,1-trichloroethane were qualified as estimated, "UJ," in samples Outfall 005 and Outfall 006, unless otherwise rejected (see above). No qualifications were required for the Trip blank. The %D for 2-chloroethyl vinyl ether exceeded 20% in the continuing

calibration dated 02/22/05; however, associated sample Trip Blank (IOB1557) was not qualified for %D calibration outliers. The %Ds were $\leq 20\%$ for the remaining target compounds listed on the result summaries. A representative number of %RSDs and average RRFs from the initial calibrations, and %Ds and RRFs from the continuing calibrations were recalculated from the raw data, and no calculation or transcription errors were found. No further qualifications were required.

2.4 BLANKS

Three water method blanks (5B19020-BLK1, 5B21001-BLK1, and 5B22027-BLK1) were associated with the sample analyses. There were no detects above the MDLs for the target compounds listed on the sample result summaries. The method blank raw data showed no evidence of false negatives. No qualifications were required.

2.5 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

Three water blank spikes (5B19020-BS1, 5B21001-BS1, and 5B22027-BS1) were associated with the sample analyses. All recoveries were within the laboratory-established QC limits. A representative number of recoveries were recalculated from the raw data and no calculation or transcription errors were found. No qualifications were required.

2.6 SURROGATE RECOVERY

The surrogates were recovered within the QC limits of 80-120% in the samples and associated QC. A representative number of surrogate recoveries were recalculated from the raw data and no calculation or transcription errors were found. No qualifications were required.

2.7 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

There were no MS/MSD analyses associated with these SDGs. Evaluation of method accuracy was based on 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 sample. Following are findings associated with field QC samples:

2.8.1 Trip Blanks

Sample Trip Blank (IOB1557), Trip Blank (IOB1559), and Trip Blank (IOB1565) were the trip blanks associated with site samples Outfall 005, Outfall 006, and Outfall 011, respectively. Target compound methylene chloride was detected in Trip Blank (IOB1559) at 1.3ug/L and Outfall 006 at 1.3ug/L; therefore, the result for methylene chloride was qualified as a nondetect, "U," at the reporting limit in sample Outfall 006. It should also be noted that methylene chloride was reported

below the MDL in Trip Blank IOB1557. There were no other target compounds detected above the MDLs in the trip blanks. No further qualifications were required.

2.8.2 Field Blanks and Equipment Rinsates

There were no field QC samples associated with these SDGs. No qualifications were required.

2.8.3 Field Duplicates

There were no field duplicate samples associated with these SDGs.

2.9 INTERNAL STANDARDS PERFORMANCE

Internal standard area counts and retention times for the samples in these SDGs were within the control limits established by the continuing calibration standards: +100%/-50% for internal standard areas and ± 0.50 minutes for retention times. A representative number of internal standard areas and retention times were verified from the raw data, and no calculation or transcription errors were noted. No qualifications were required.

2.10 COMPOUND IDENTIFICATION

Target compound identification was verified at a Level IV data validation. The laboratory analyzed volatile target compounds by EPA Method 624. Chromatograms, retention times, and spectra for the samples and QC were examined and no target compound identification problems were noted. Detects reported between the MDL and the reporting limit were qualified as estimated, "J," by the laboratory. No further qualifications were required.

2.11 COMPOUND QUANTIFICATION AND REPORTED DETECTION LIMITS

Compound quantification is verified at a Level IV data validation. The reporting limits were supported by the lowest concentrations of the initial calibration standards and by the MDL study. Compound quantitation was verified by recalculating any sample detects and a representative number of blank spike and surrogate recoveries from the raw data. Results were reported in $\mu\text{g/L}$ (ppb). No calculation or transcription errors were noted. No qualifications were required.

2.12 TENTATIVELY IDENTIFIED COMPOUNDS

The laboratory did not provide TICs for these SDGs. No qualifications were required.

2.13 SYSTEM PERFORMANCE

A review of the chromatograms and other raw data showed no identifiable problems with system performance. No qualifications were required.

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 Pasadena, CA 91101
 Attention: Bronwyn Kelly

Project ID: Routine Outfall 011
 Routine Outfall 011
 Report Number: IOB1565

Sampled: 02/18/05
 Received: 02/18/05

DRAFT: PURGEABLES BY GC/MS (EPA 624)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOB1565-01 (DRAFT: Outfall 011 - Water)									
Reporting Units: ug/l									
Benzene	EPA 624	5B22027	0.28	2.0	ND	1	02/22/05	02/22/05	U
Carbon tetrachloride	EPA 624	5B22027	0.28	5.0	ND	1	02/22/05	02/22/05	U
Chloroform	EPA 624	5B22027	0.33	2.0	ND	1	02/22/05	02/22/05	U
1,1-Dichloroethane	EPA 624	5B22027	0.27	2.0	ND	1	02/22/05	02/22/05	U
1,2-Dichloroethane	EPA 624	5B22027	0.28	2.0	ND	1	02/22/05	02/22/05	U
1,1-Dichloroethene	EPA 624	5B22027	0.32	3.0	ND	1	02/22/05	02/22/05	U
Ethylbenzene	EPA 624	5B22027	0.25	2.0	ND	1	02/22/05	02/22/05	U
Tetrachloroethene	EPA 624	5B22027	0.32	2.0	ND	1	02/22/05	02/22/05	U
Toluene	EPA 624	5B22027	0.36	2.0	ND	1	02/22/05	02/22/05	U
1,1,1-Trichloroethane	EPA 624	5B22027	0.30	2.0	0.74	1	02/22/05	02/22/05	J U
1,1,2-Trichloroethane	EPA 624	5B22027	0.30	2.0	ND	1	02/22/05	02/22/05	J U
Trichloroethene	EPA 624	5B22027	0.26	5.0	0.47	1	02/22/05	02/22/05	J U
Trichlorofluoromethane	EPA 624	5B22027	0.34	5.0	ND	1	02/22/05	02/22/05	U
Vinyl chloride	EPA 624	5B22027	0.26	5.0	ND	1	02/22/05	02/22/05	U
Xylenes, Total	EPA 624	5B22027	0.52	4.0	ND	1	02/22/05	02/22/05	U
Surrogate: Dibromofluoromethane (80-120%)					96 %				
Surrogate: Toluene-d8 (80-120%)					90 %				
Surrogate: 4-Bromofluorobenzene (80-120%)					90 %				
Sample ID: IOB1565-02 (DRAFT: Trip Blank - Water)									
Reporting Units: ug/l									
Benzene	EPA 624	5B22027	0.28	2.0	ND	1	02/22/05	02/22/05	U
Carbon tetrachloride	EPA 624	5B22027	0.28	5.0	ND	1	02/22/05	02/22/05	U
Chloroform	EPA 624	5B22027	0.33	2.0	ND	1	02/22/05	02/22/05	U
1,1-Dichloroethane	EPA 624	5B22027	0.27	2.0	ND	1	02/22/05	02/22/05	U
1,2-Dichloroethane	EPA 624	5B22027	0.28	2.0	ND	1	02/22/05	02/22/05	U
1,1-Dichloroethene	EPA 624	5B22027	0.32	3.0	ND	1	02/22/05	02/22/05	U
Ethylbenzene	EPA 624	5B22027	0.25	2.0	ND	1	02/22/05	02/22/05	U
Tetrachloroethene	EPA 624	5B22027	0.32	2.0	ND	1	02/22/05	02/22/05	U
Toluene	EPA 624	5B22027	0.36	2.0	ND	1	02/22/05	02/22/05	U
1,1,1-Trichloroethane	EPA 624	5B22027	0.30	2.0	ND	1	02/22/05	02/22/05	U
1,1,2-Trichloroethane	EPA 624	5B22027	0.30	2.0	ND	1	02/22/05	02/22/05	U
Trichloroethene	EPA 624	5B22027	0.26	5.0	ND	1	02/22/05	02/22/05	U
Trichlorofluoromethane	EPA 624	5B22027	0.34	5.0	ND	1	02/22/05	02/22/05	U
Vinyl chloride	EPA 624	5B22027	0.26	5.0	ND	1	02/22/05	02/22/05	U
Xylenes, Total	EPA 624	5B22027	0.52	4.0	ND	1	02/22/05	02/22/05	U
Surrogate: Dibromofluoromethane (80-120%)					91 %				
Surrogate: Toluene-d8 (80-120%)					91 %				
Surrogate: 4-Bromofluorobenzene (80-120%)					89 %				

DMC VALIDATED

DRAFT REPORT
 DRAFT REPORT
 DATA SUBJECT TO CHANGE

LEVEL IV

The results presented in this report are preliminary and are subject to change. Do not use for legal or regulatory purposes.

CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

AMEC Earth & Environmental
 550 South Wadsworth Boulevard
 Suite 500
 Lakewood, CO 80226

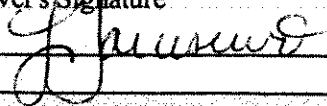
Package ID T711WC110
 Task Order 313150010
 SDG No. IOB1557/1559/1565

No. of Analyses 3

Laboratory Del Mar Analytical

Reviewer L. Jarusewic

Analysis/Method General Minerals

Date: 04/01/05
 Reviewer's Signature


ACTION ITEMS ^a	
1. Case Narrative Deficiencies	
2. Out of Scope Analyses	
3. Analyses Not Conducted	
4. Missing Hardcopy Deliverables	
5. Incorrect Hardcopy Deliverables	
6. Deviations from Analysis Protocol, e.g.,	Qualifications applied for:
Holding Times	1) Negative method blank result
GC/MS Tune/Inst. Performance	
Calibrations	
Blanks	
Surrogates	
Matrix Spike/Dup LCS	
Field QC	
Internal Standard Performance	
Compound Identification and Quantitation	
System Performance	
COMMENTS^b	
^a 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

ANALYSIS: GENERAL MINERALS

SAMPLE DELIVERY GROUPS: IOB1557, IOB1559, & IOB1565

Prepared by

AMEC—Denver Operations
550 South Wadsworth Boulevard, Suite 500
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title: NPDES Monitoring
Contract Task Order #: 313150010
Sample Delivery Group #: IOB1557, IOB1559, IOB1565
Project Manager: B. McIlvaine
Matrix: Water
Analysis: General Minerals
QC Level: Level IV
No. of Samples: 3
Reviewer: L. Jarusewic
Date of Review: April 1, 2005

The samples listed in Table 1 was validated based on the guidelines outlined in the AMEC *Data Validation Procedures SOP DVP-6, Rev. 2, USEPA Methods for Chemical Analysis of Water and Wastes Method 300.0, 405.1, 335.2, 160.2, 350.2, 160.5, 120.1, 413.1, and 180.1. Standard Methods for the Examination of Water and Wastewater Method SM5540-C and SM2540C*, 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 I as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

Table 1. Sample identification

Client ID	EPA ID	Laboratory ID	Matrix	COC Method
Outfall 005	Outfall 005	IOB1557-01	Water	General Minerals
Outfall 006	Outfall 006	IOB1559-01	Water	General Minerals
Outfall 011	Outfall 011	IOB1565-01	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 samples in these SDGs were received at the laboratory within the temperature limits of $4^{\circ}\text{C} \pm 2^{\circ}\text{C}$. No preservation problems were noted by the laboratory. No qualifications were required.

2.1.2 Chain of Custody

The COCs were signed and dated by field and laboratory personnel. The COCs accounted for the analyses and samples presented in these SDGs. No qualifications were required.

2.1.3 Holding Times

The holding times were assessed by comparing the date of collection with the dates of analyses. The 28-day analytical holding time for ammonia, chloride, sulfate, oil and grease, and conductivity, the 14-day holding time for cyanide, the seven-day holding time for total suspended solids and total dissolved solids, the 48-hour holding time for turbidity, total settleable solids, nitrate/nitrite, surfactants, and biological oxygen demand were met. No qualifications were required.

2.2 CALIBRATION

For the applicable analyses, the initial calibration correlation coefficients were ≥ 0.995 . The initial and continuing calibration verification information was acceptable with recoveries within the control limits of 90-110%. For BOD, no information regarding the calibration of the oxygen meter was provided; however, as the LCS recovery was within the CCV control limits, no qualifications were required. For ammonia, no information regarding the standardization of the titrant was provided; however, as the LCS recovery was within the CCV control limits, no qualifications were required. The cyanide, chloride, nitrate/nitrite, and sulfate reporting limit check standards were recovered within the control limits of 70-130%. Calibration is not applicable to total suspended solids, total dissolved solids, total settleable solids, or oil and grease. No qualifications were required.

2.3 BLANKS

Cyanide was reported in method blank 5B22061-BLK1 at -0.0039 mg/L; therefore, nondetected cyanide in sample Outfall 005 was qualified as estimated, "UJ." Turbidity was detected in method blank 5B19043-BLK1 at 0.050 NTU; however, the method blank result was insufficient to qualify the sample Outfall 011 result. Sulfate was detected in a bracketing CCB associated with Outfall 011 at 0.33 mg/L; however, the CCB result was insufficient to qualify the sample Outfall 011 result. The remaining method blank and CCB results reported on the summary forms and in the raw data for blank analyses associated with the samples were nondetects at the reporting limit. No further qualifications were required.

2.4 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

The laboratory control sample and laboratory control sample duplicate (BOD and oil and grease only) recoveries were within the laboratory-established control limits. The LCS is not applicable to turbidity, conductivity, or total settleable solids. No qualifications were required.

2.5 SURROGATES RECOVERY

Surrogate recovery is not applicable to the analyses presented in these SDGs.

2.6 LABORATORY DUPLICATES

MS/MSD analyses were performed on sample Outfall 005 for cyanide with an RPD within the control limits of $\leq 15\%$. No qualifications were required.

Laboratory duplicates were performed on samples Outfall 005 for total suspended solids and Outfall 011 for total dissolved solids and conductivity. RPDs were within method control limits and no qualifications were required.

2.7 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

MS/MSD analyses were performed on sample Outfall 005 for cyanide with recoveries within the laboratory-established control limits. No qualifications were required.

2.8 FURNACE ATOMIC ABSORPTION QC

Furnace atomic absorption was not utilized for the analyses of these samples; therefore, furnace atomic absorption QC is not applicable.

2.9 ICP SERIAL DILUTION

ICP serial dilution is not applicable to the analyses presented in this data validation report.

2.10 SAMPLE RESULT VERIFICATION

A Level IV review was performed for the samples in these data packages. Calculations were verified, and the sample results reported on the Form Is were verified against the raw data. No transcription errors or calculation errors were noted. No qualifications were required.

2.11 FIELD QC SAMPLES

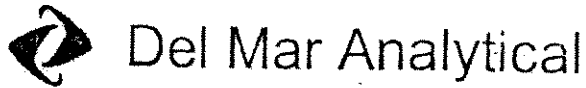
Field QC samples are evaluated, and if necessary, qualified based only on laboratory blanks. Any remaining detects are used to evaluate the associated samples. The following are findings associated with field QC samples:

2.11.1 Field Blanks and Equipment Rinsates

The samples in these SDGs had no associated field QC samples. No qualifications were required.

2.11.2 Field Duplicates

There were no field duplicate pairs associated with these SDGs.



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 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 011
 Routine Outfall 011
 Report Number: IOB1565

Sampled: 02/18/05
 Received: 02/18/05

DRAFT: INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOB1565-01 (DRAFT: Outfall 011 - Water) - cont.									
Reporting Units: mg/l									
Ammonia-N (Distilled)	EPA 350.2	5B23079	0.30	0.50	ND	1	02/23/05	02/23/05	u
Biochemical Oxygen Demand	EPA 405.1	5B18080	0.59	2.0	2.7	1	02/18/05	02/23/05	
Chloride	EPA 300.0	5B18129	0.26	0.50	4.7	1	02/18/05	02/19/05	
Total Cyanide	EPA 335.2	5B23086	0.0022	0.0050	ND	1	02/23/05	02/25/05	u
Nitrate/Nitrite-N	EPA 300.0	5B18129	0.072	0.11	0.76	1	02/18/05	02/19/05	
Oil & Grease	EPA 413.1	5B23082	0.94	5.0	ND	1	02/23/05	02/23/05	u
Sulfate	EPA 300.0	5B18129	0.18	0.50	6.4	1	02/18/05	02/19/05	
Surfactants (MBAS)	SM5540-C	5B18136	0.088	0.20	ND	2	02/18/05	02/19/05	u RL
Total Dissolved Solids	SM2540C	5B24110	10	10	99	1	02/24/05	02/24/05	
Total Suspended Solids	EPA 160.2	5B25089	10	10	78	1	02/25/05	02/25/05	
Sample ID: IOB1565-01 (DRAFT: Outfall 011 - Water)									
Reporting Units: ml/hr									
Total Settleable Solids	EPA 160.5	5B18145	0.10	0.10	0.60	1	02/18/05	02/18/05	
Sample ID: IOB1565-01 (DRAFT: Outfall 011 - Water)									
Reporting Units: NTU									
Turbidity	EPA 180.1	5B19043	0.20	5.0	110	5	02/19/05	02/19/05	
Sample ID: IOB1565-01 (DRAFT: Outfall 011 - Water)									
Reporting Units: ug/l									
Perchlorate	EPA 314.0	5B25064	0.80	4.0	ND	1	02/25/05	02/26/05	*
Sample ID: IOB1565-01 (DRAFT: Outfall 011 - Water)									
Reporting Units: umhos/cm									
Specific Conductance	EPA 120.1	5B24133	1.0	1.0	100	1	02/24/05	02/24/05	

AMEC VALIDATED

LEVEL IV

Analysis Not Validated

DRAFT REPORT
 DRAFT REPORT
 DATA SUBJECT TO CHANGE

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

AMEC Earth & Environmental
 550 South Wadsworth Boulevard
 Suite 500
 Lakewood, CO 80226

Package ID T711WC111
 Task Order 313150010
 SDG No. IOB1565

No. of Analyses 1

Laboratory Del Mar Analytical

Reviewer L. Jarusewic

Analysis/Method Perchlorate

Date: 03/31/05

Reviewer's Signature 

ACTION ITEMS^a

1. Case Narrative Deficiencies
2. Out of Scope Analyses
3. Analyses Not Conducted
4. Missing Hardcopy Deliverables
5. Incorrect Hardcopy Deliverables
6. Deviations from Analysis Protocol, e.g.,
 - Holding Times
 - GC/MS Tune/Inst. Performance
 - Calibrations
 - Blanks
 - Surrogates
 - Matrix Spike/Dup LCS
 - Field QC
 - Internal Standard Performance
 - Compound Identification and Quantitation
 - System Performance

COMMENTS^b Acceptable as reviewed.

^a 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

ANALYSIS: PERCHLORATE

SAMPLE DELIVERY GROUP: IOB1565

Prepared by

AMEC—Denver Operations
550 South Wadsworth Boulevard, Suite 500
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title: NPDES Monitoring
Contract Task Order #: 313150010
Sample Delivery Group #: IOB1565
Project Manager: B. McIlvaine
Matrix: Water
Analysis: Perchlorate
QC Level: Level IV
No. of Samples: 1
Reviewer: L. Jarusewic
Date of Review: March 31, 2005

The samples listed in Table 1 was validated based on the guidelines outlined in the AMEC *Data Validation Procedures SOP DVP-6, Rev. 2*, USEPA *Methods for Chemical Analysis of Water and Wastes Method 314.0*, 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 I as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

Table 1. Sample identification

Client ID	EPA ID	Laboratory ID	Matrix	COC Method
Outfall 011	Outfall 011	IOB1565-01	Water	Perchlorate

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

Following are findings associated with sample management:

2.1.1 Sample Preservation, Handling, and Transport

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

2.1.3 Holding Times

The holding time was assessed by comparing the date of collection with the date of analysis. The 28-day analytical holding time for perchlorate was met, and no qualifications were required.

2.2 CALIBRATION

The initial calibration correlation coefficient was ≥ 0.995 . The IPC-MA recovery was within the control limits of 80-120%. The ICV, CCV, and IPC recoveries were within the control limits of 90-110%. No qualifications were required.

2.3 BLANKS

The method blank and CCB results reported on the summary forms and in the raw data for blank analyses associated with the sample were nondetects at the reporting limit. No qualifications were required.

2.4 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

The laboratory control sample recovery was within the method control limits of 85-115%. No qualifications were required.

2.5 SURROGATES RECOVERY

Surrogate recovery is not applicable to the analysis presented in this SDG.

2.6 LABORATORY DUPLICATES

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

2.7 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

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

2.8 FURNACE ATOMIC ABSORPTION QC

Furnace atomic absorption was not utilized for the analysis of this sample; therefore, furnace atomic absorption QC is not applicable.

2.9 ICP SERIAL DILUTION

ICP serial dilution is not applicable to the analysis presented in this data validation report.

2.10 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 was verified against the raw data. No transcription errors or calculation errors were noted. No qualifications were required.

2.11 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. The following are findings associated with field QC samples:

2.11.1 Field Blanks and Equipment Rinsates

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

2.11.2 Field Duplicates

There were no field duplicate pairs associated with this SDG.



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

Project ID: Routine Outfall 011
 Routine Outfall 011
 Report Number: IOB1565

Sampled: 02/18/05
 Received: 02/18/05

DRAFT: INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOB1565-01 (DRAFT: Outfall 011 - Water) - cont.									
Reporting Units: mg/l									
Ammonia-N (Distilled)	EPA 350.2	5B23079	0.30	0.50	ND	1	02/23/05	02/23/05	*
Biochemical Oxygen Demand	EPA 405.1	5B18080	0.59	2.0	2.7	1	02/18/05	02/23/05	*
Chloride	EPA 300.0	5B18129	0.26	0.50	4.7	1	02/18/05	02/19/05	
Total Cyanide	EPA 335.2	5B23086	0.0022	0.0050	ND	1	02/23/05	02/25/05	
Nitrate/Nitrite-N	EPA 300.0	5B18129	0.072	0.11	0.76	1	02/18/05	02/19/05	
Oil & Grease	EPA 413.1	5B23082	0.94	5.0	ND	1	02/23/05	02/23/05	
Sulfate	EPA 300.0	5B18129	0.18	0.50	6.4	1	02/18/05	02/19/05	
Surfactants (MBAS)	SM5540-C	5B18136	0.088	0.20	ND	2	02/18/05	02/19/05	
Total Dissolved Solids	SM2540C	5B24110	10	10	99	1	02/24/05	02/24/05	RI-1
Total Suspended Solids	EPA 160.2	5B25089	10	10	78	1	02/25/05	02/25/05	
Sample ID: IOB1565-01 (DRAFT: Outfall 011 - Water)									
Reporting Units: ml/l/hr									
Total Settleable Solids	EPA 160.5	5B18145	0.10	0.10	0.60	1	02/18/05	02/18/05	
Sample ID: IOB1565-01 (DRAFT: Outfall 011 - Water)									
Reporting Units: NTU									
Turbidity	EPA 180.1	5B19043	0.20	5.0	110	5	02/19/05	02/19/05	
Sample ID: IOB1565-01 (DRAFT: Outfall 011 - Water)									
Reporting Units: ug/l									
Perchlorate	EPA 314.0	5B25064	0.80	4.0	ND	1	02/25/05	02/26/05	u
Sample ID: IOB1565-01 (DRAFT: Outfall 011 - Water)									
Reporting Units: nmhos/cm									
Specific Conductance	EPA 120.1	5B24133	1.0	1.0	100	1	02/24/05	02/24/05	*

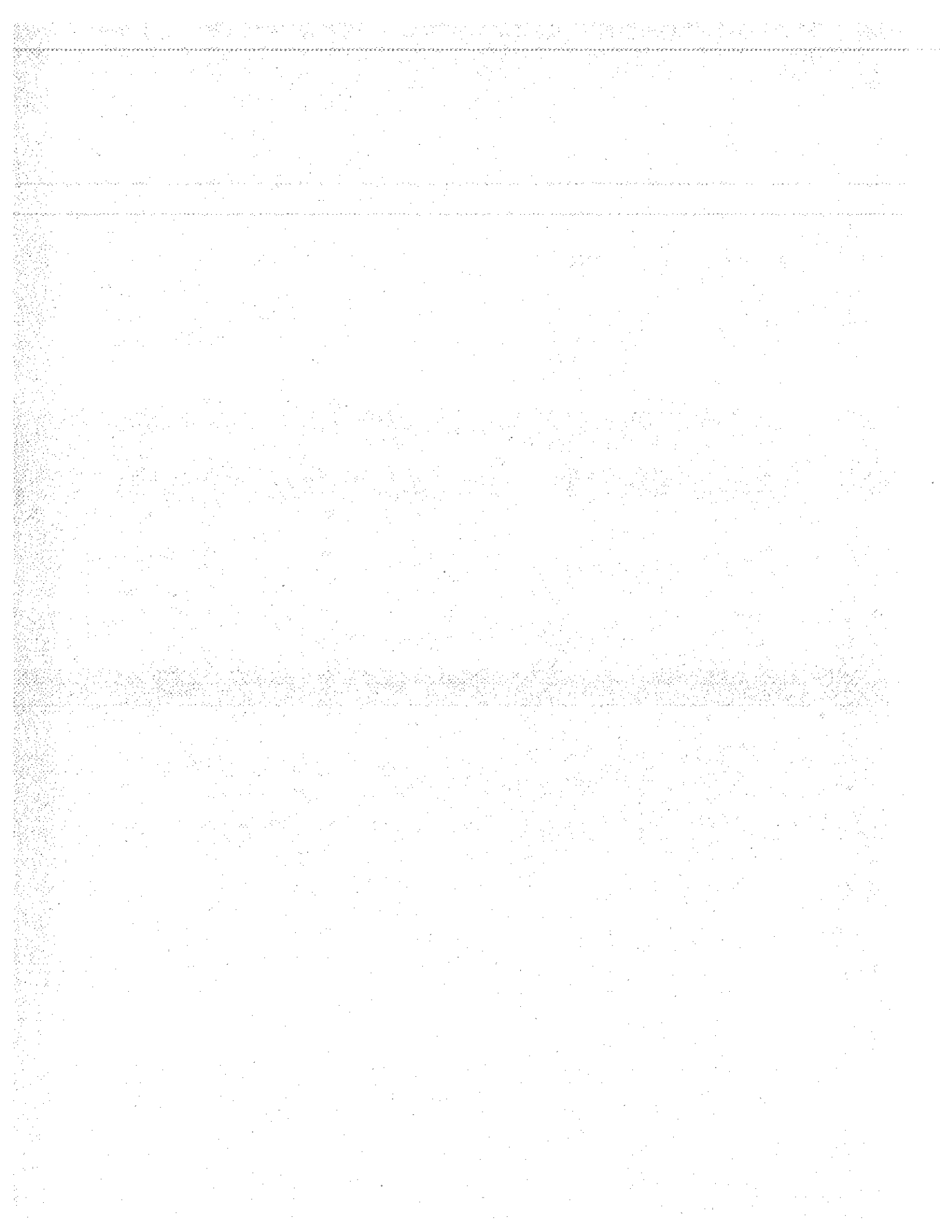
AMEC VALIDATED

LEVEL IV

Analysis Not Validated

DRAFT REPORT
 DRAFT REPORT
 DATA SUBJECT TO CHANGE

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LABORATORY REPORT

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

Project: Routine Outfall 011

Sampled: 02/18/05
Received: 02/18/05
Issued: 04/01/05 09:03

NELAP #01108CA California ELAP#1197 CSDLAC #10117

*The results listed within this Laboratory Report pertain only to the samples tested in the laboratory. The analyses contained in this report were performed in accordance with the applicable certifications as noted. All soil samples are reported on a wet weight basis unless otherwise noted in the report. This Laboratory Report is confidential and is intended for the sole use of Del Mar Analytical and its client. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical. The Chain of Custody, 1 page, is included and is an integral part of this report.
This entire report was reviewed and approved for release.*

SAMPLE CROSS REFERENCE

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

LABORATORY ID	CLIENT ID	MATRIX
IOB1565-01	Outfall 011	Water
IOB1565-02	Trip Blank	Water

Reviewed By:

Del Mar Analytical, Irvine
Wendy Kirkeeng For Michele Harper
Project Manager



Del Mar Analytical

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

Project ID: Routine Outfall 011

Report Number: IOB1565

Sampled: 02/18/05
 Received: 02/18/05

PURGEABLES BY GC/MS (EPA 624)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOB1565-01 (Outfall 011 - Water)									
Reporting Units: ug/l									
Benzene	EPA 624	5B22027	0.28	2.0	ND	1	02/22/05	02/22/05	
Carbon tetrachloride	EPA 624	5B22027	0.28	5.0	ND	1	02/22/05	02/22/05	
Chloroform	EPA 624	5B22027	0.33	2.0	ND	1	02/22/05	02/22/05	
1,1-Dichloroethane	EPA 624	5B22027	0.27	2.0	ND	1	02/22/05	02/22/05	
1,2-Dichloroethane	EPA 624	5B22027	0.28	2.0	ND	1	02/22/05	02/22/05	
1,1-Dichloroethene	EPA 624	5B22027	0.32	3.0	ND	1	02/22/05	02/22/05	
Ethylbenzene	EPA 624	5B22027	0.25	2.0	ND	1	02/22/05	02/22/05	
Tetrachloroethene	EPA 624	5B22027	0.32	2.0	ND	1	02/22/05	02/22/05	
Toluene	EPA 624	5B22027	0.36	2.0	ND	1	02/22/05	02/22/05	
1,1,1-Trichloroethane	EPA 624	5B22027	0.30	2.0	0.74	1	02/22/05	02/22/05	J
1,1,2-Trichloroethane	EPA 624	5B22027	0.30	2.0	ND	1	02/22/05	02/22/05	
Trichloroethene	EPA 624	5B22027	0.26	5.0	0.47	1	02/22/05	02/22/05	J
Trichlorofluoromethane	EPA 624	5B22027	0.34	5.0	ND	1	02/22/05	02/22/05	
Vinyl chloride	EPA 624	5B22027	0.26	5.0	ND	1	02/22/05	02/22/05	
Xylenes, Total	EPA 624	5B22027	0.52	4.0	ND	1	02/22/05	02/22/05	

Surrogate: Dibromofluoromethane (80-120%)

96 %

Surrogate: Toluene-d8 (80-120%)

90 %

Surrogate: 4-Bromofluorobenzene (80-120%)

90 %

Sample ID: IOB1565-02 (Trip Blank - Water)

Reporting Units: ug/l

Benzene	EPA 624	5B22027	0.28	2.0	ND	1	02/22/05	02/22/05	
Carbon tetrachloride	EPA 624	5B22027	0.28	5.0	ND	1	02/22/05	02/22/05	
Chloroform	EPA 624	5B22027	0.33	2.0	ND	1	02/22/05	02/22/05	
1,1-Dichloroethane	EPA 624	5B22027	0.27	2.0	ND	1	02/22/05	02/22/05	
1,2-Dichloroethane	EPA 624	5B22027	0.28	2.0	ND	1	02/22/05	02/22/05	
1,1-Dichloroethene	EPA 624	5B22027	0.32	3.0	ND	1	02/22/05	02/22/05	
Ethylbenzene	EPA 624	5B22027	0.25	2.0	ND	1	02/22/05	02/22/05	
Tetrachloroethene	EPA 624	5B22027	0.32	2.0	ND	1	02/22/05	02/22/05	
Toluene	EPA 624	5B22027	0.36	2.0	ND	1	02/22/05	02/22/05	
1,1,1-Trichloroethane	EPA 624	5B22027	0.30	2.0	ND	1	02/22/05	02/22/05	
1,1,2-Trichloroethane	EPA 624	5B22027	0.30	2.0	ND	1	02/22/05	02/22/05	
Trichloroethene	EPA 624	5B22027	0.26	5.0	ND	1	02/22/05	02/22/05	
Trichlorofluoromethane	EPA 624	5B22027	0.34	5.0	ND	1	02/22/05	02/22/05	
Vinyl chloride	EPA 624	5B22027	0.26	5.0	ND	1	02/22/05	02/22/05	
Xylenes, Total	EPA 624	5B22027	0.52	4.0	ND	1	02/22/05	02/22/05	

Surrogate: Dibromofluoromethane (80-120%)

91 %

Surrogate: Toluene-d8 (80-120%)

91 %

Surrogate: 4-Bromofluorobenzene (80-120%)

89 %

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MWH-Pasadena/Boeing 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Attention: Bronwyn Kelly	Project ID: Routine Outfall 011 Report Number: IOB1565	Sampled: 02/18/05 Received: 02/18/05
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ACID & BASE/NEUTRALS BY GC/MS (EPA 625)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOB1565-01 (Outfall 011 - Water)									
Reporting Units: ug/l									
Bis(2-ethylhexyl)phthalate	EPA 625	5B22042	1.1	5.0	ND	0.971	02/22/05	02/24/05	
2,4-Dinitrotoluene	EPA 625	5B22042	0.23	9.0	ND	0.971	02/22/05	02/24/05	
N-Nitrosodimethylamine	EPA 625	5B22042	0.22	8.0	ND	0.971	02/22/05	02/24/05	
Pentachlorophenol	EPA 625	5B22042	0.78	8.0	ND	0.971	02/22/05	02/24/05	
2,4,6-Trichlorophenol	EPA 625	5B22042	0.10	6.0	ND	0.971	02/22/05	02/24/05	
Surrogate: 2-Fluorophenol (35-120%)					63 %				
Surrogate: Phenol-d6 (45-120%)					63 %				
Surrogate: 2,4,6-Tribromophenol (50-125%)					80 %				
Surrogate: Nitrobenzene-d5 (45-120%)					66 %				
Surrogate: 2-Fluorobiphenyl (45-120%)					65 %				
Surrogate: Terphenyl-d14 (45-135%)					69 %				

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MWH-Pasadena/Boeing 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Attention: Bronwyn Kelly	Project ID: Routine Outfall 011 Report Number: IOB1565	Sampled: 02/18/05 Received: 02/18/05
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ORGANOCHLORINE PESTICIDES (EPA 608)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOB1565-01 (Outfall 011 - Water) - cont.									
Reporting Units: ug/l									
alpha-BHC	EPA 608	5B22041	0.0010	0.010	ND	0.99	02/22/05	02/23/05	
Surrogate: Decachlorobiphenyl (45-120%)					85 %				
Surrogate: Tetrachloro-m-xylene (35-120%)					55 %				

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 Pasadena, CA 91101
 Attention: Bronwyn Kelly

Project ID: Routine Outfall 011

Report Number: IOB1565

Sampled: 02/18/05

Received: 02/18/05

METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOB1565-01 (Outfall 011 - Water) - cont.									
Reporting Units: ug/l									
Copper	EPA 200.8	5B24099	0.49	2.0	6.7	1	02/24/05	02/25/05	
Lead	EPA 200.8	5B24099	0.13	1.0	2.7	1	02/24/05	02/25/05	
Mercury	EPA 245.1	5B22063	0.063	0.20	0.11	1	02/22/05	02/22/05	J

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

Project ID: Routine Outfall 011

Report Number: IOB1565

Sampled: 02/18/05
 Received: 02/18/05

INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOB1565-01 (Outfall 011 - Water) - cont.									
Reporting Units: mg/l									
Ammonia-N (Distilled)	EPA 350.2	5B23079	0.30	0.50	ND	1	02/23/05	02/23/05	
Biochemical Oxygen Demand	EPA 405.1	5B18080	0.59	2.0	2.7	1	02/18/05	02/23/05	
Chloride	EPA 300.0	5B18129	0.26	0.50	4.7	1	02/18/05	02/19/05	
Total Cyanide	EPA 335.2	5B23086	0.0022	0.0050	ND	1	02/23/05	02/25/05	
Nitrate/Nitrite-N	EPA 300.0	5B18129	0.072	0.11	0.76	1	02/18/05	02/19/05	
Oil & Grease	EPA 413.1	5B23082	0.94	5.0	ND	1	02/23/05	02/23/05	
Sulfate	EPA 300.0	5B18129	0.18	0.50	6.4	1	02/18/05	02/19/05	
Surfactants (MBAS)	SM5540-C	5B18136	0.088	0.20	ND	2	02/18/05	02/19/05	RL-1
Total Dissolved Solids	SM2540C	5B24110	10	10	99	1	02/24/05	02/24/05	
Total Suspended Solids	EPA 160.2	5B25089	10	10	78	1	02/25/05	02/25/05	
Sample ID: IOB1565-01 (Outfall 011 - Water)									
Reporting Units: ml/hr									
Total Settleable Solids	EPA 160.5	5B18145	0.10	0.10	0.60	1	02/18/05	02/18/05	
Sample ID: IOB1565-01 (Outfall 011 - Water)									
Reporting Units: NTU									
Turbidity	EPA 180.1	5B19043	0.20	5.0	110	5	02/19/05	02/19/05	
Sample ID: IOB1565-01 (Outfall 011 - Water)									
Reporting Units: ug/l									
Perchlorate	EPA 314.0	5B25064	0.80	4.0	ND	1	02/25/05	02/26/05	
Sample ID: IOB1565-01 (Outfall 011 - Water)									
Reporting Units: umhos/cm									
Specific Conductance	EPA 120.1	5B24133	1.0	1.0	100	1	02/24/05	02/24/05	

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MWH-Pasadena/Boeing
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 Attention: Bronwyn Kelly

Project ID: Routine Outfall 011

Report Number: IOB1565

Sampled: 02/18/05

Received: 02/18/05

SHORT HOLD TIME DETAIL REPORT

Sample ID: Outfall 011 (IOB1565-01) - Water	Hold Time (in days)	Date/Time Sampled	Date/Time Received	Date/Time Extracted	Date/Time Analyzed
EPA 160.5	2	02/18/2005 14:28	02/18/2005 18:30	02/18/2005 22:00	02/18/2005 23:00
EPA 180.1	2	02/18/2005 14:28	02/18/2005 18:30	02/19/2005 08:00	02/19/2005 12:30
EPA 300.0	2	02/18/2005 14:28	02/18/2005 18:30	02/18/2005 22:00	02/19/2005 00:41
EPA 405.1	2	02/18/2005 14:28	02/18/2005 18:30	02/18/2005 21:15	02/23/2005 10:30
SM5540-C	2	02/18/2005 14:28	02/18/2005 18:30	02/18/2005 21:06	02/19/2005 12:04

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 Attention: Bronwyn Kelly

Project ID: Routine Outfall 011

Report Number: IOB1565

Sampled: 02/18/05
 Received: 02/18/05

METHOD BLANK/QC DATA

PURGEABLES BY GC/MS (EPA 624)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5B22027 Extracted: 02/22/05											
Blank Analyzed: 02/22/2005 (5B22027-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	0.32	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	0.52	ug/l							
Surrogate: Dibromofluoromethane	22.7			ug/l	25.0		91	80-120			
Surrogate: Toluene-d8	23.0			ug/l	25.0		92	80-120			
Surrogate: 4-Bromofluorobenzene	22.4			ug/l	25.0		90	80-120			
LCS Analyzed: 02/22/2005 (5B22027-BS1)											
Benzene	22.5	2.0	0.28	ug/l	25.0		90	70-120			
Carbon tetrachloride	25.9	5.0	0.28	ug/l	25.0		104	70-140			
Chloroform	24.1	2.0	0.33	ug/l	25.0		96	75-130			
1,1-Dichloroethane	23.4	2.0	0.27	ug/l	25.0		94	70-135			
1,2-Dichloroethane	24.3	2.0	0.28	ug/l	25.0		97	60-150			
1,1-Dichloroethene	24.0	3.0	0.32	ug/l	25.0		96	75-135			
Ethylbenzene	24.1	2.0	0.25	ug/l	25.0		96	80-120			
Tetrachloroethene	20.2	2.0	0.32	ug/l	25.0		81	75-125			
Toluene	23.3	2.0	0.36	ug/l	25.0		93	75-120			
1,1,1-Trichloroethane	25.7	2.0	0.30	ug/l	25.0		103	75-140			
1,1,2-Trichloroethane	23.7	2.0	0.30	ug/l	25.0		95	70-125			
Trichloroethene	22.0	5.0	0.26	ug/l	25.0		88	80-120			
Trichlorofluoromethane	22.6	5.0	0.34	ug/l	25.0		90	65-145			
Vinyl chloride	17.9	5.0	0.26	ug/l	25.0		72	50-130			
Surrogate: Dibromofluoromethane	22.8			ug/l	25.0		91	80-120			
Surrogate: Toluene-d8	23.3			ug/l	25.0		93	80-120			

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METHOD BLANK/QC DATA

PURGEABLES BY GC/MS (EPA 624)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
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Batch: 5B22027 Extracted: 02/22/05

LCS Analyzed: 02/22/2005 (5B22027-BS1)

Surrogate: 4-Bromofluorobenzene	24.0			ug/l	25.0		96	80-120			
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Matrix Spike Analyzed: 02/22/2005 (5B22027-MS1)

Source: IOB1356-01

Benzene	22.5	2.0	0.28	ug/l	25.0	ND	90	70-120			
Carbon tetrachloride	25.4	5.0	0.28	ug/l	25.0	ND	102	70-145			
Chloroform	24.1	2.0	0.33	ug/l	25.0	ND	96	70-135			
1,1-Dichloroethane	23.2	2.0	0.27	ug/l	25.0	ND	93	65-135			
1,2-Dichloroethane	25.8	2.0	0.28	ug/l	25.0	ND	103	60-150			
1,1-Dichloroethene	23.0	3.0	0.32	ug/l	25.0	ND	92	65-140			
Ethylbenzene	23.2	2.0	0.25	ug/l	25.0	ND	93	70-130			
Tetrachloroethene	19.6	2.0	0.32	ug/l	25.0	ND	78	70-130			
Toluene	23.2	2.0	0.36	ug/l	25.0	ND	93	70-120			
1,1,1-Trichloroethane	25.3	2.0	0.30	ug/l	25.0	ND	101	75-140			
1,1,2-Trichloroethane	25.6	2.0	0.30	ug/l	25.0	ND	102	60-135			
Trichloroethene	21.5	5.0	0.26	ug/l	25.0	ND	86	70-125			
Trichlorofluoromethane	21.4	5.0	0.34	ug/l	25.0	ND	86	55-145			
Vinyl chloride	16.5	5.0	0.26	ug/l	25.0	ND	66	40-135			
Surrogate: Dibromofluoromethane	24.0			ug/l	25.0		96	80-120			
Surrogate: Toluene-d8	23.2			ug/l	25.0		93	80-120			
Surrogate: 4-Bromofluorobenzene	24.0			ug/l	25.0		96	80-120			

Matrix Spike Dup Analyzed: 02/22/2005 (5B22027-MSD1)

Source: IOB1356-01

Benzene	22.8	2.0	0.28	ug/l	25.0	ND	91	70-120	1	20	
Carbon tetrachloride	25.5	5.0	0.28	ug/l	25.0	ND	102	70-145	0	25	
Chloroform	24.2	2.0	0.33	ug/l	25.0	ND	97	70-135	0	20	
1,1-Dichloroethane	23.2	2.0	0.27	ug/l	25.0	ND	93	65-135	0	20	
1,2-Dichloroethane	26.2	2.0	0.28	ug/l	25.0	ND	105	60-150	2	20	
1,1-Dichloroethene	21.3	3.0	0.32	ug/l	25.0	ND	85	65-140	8	20	
Ethylbenzene	23.2	2.0	0.25	ug/l	25.0	ND	93	70-130	0	20	
Tetrachloroethene	19.9	2.0	0.32	ug/l	25.0	ND	80	70-130	2	20	
Toluene	23.2	2.0	0.36	ug/l	25.0	ND	93	70-120	0	20	
1,1,1-Trichloroethane	25.4	2.0	0.30	ug/l	25.0	ND	102	75-140	0	20	
1,1,2-Trichloroethane	26.0	2.0	0.30	ug/l	25.0	ND	104	60-135	2	25	
Trichloroethene	21.8	5.0	0.26	ug/l	25.0	ND	87	70-125	1	20	
Trichlorofluoromethane	22.6	5.0	0.34	ug/l	25.0	ND	90	55-145	5	25	
Vinyl chloride	16.3	5.0	0.26	ug/l	25.0	ND	65	40-135	1	30	

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

Project ID: Routine Outfall 011

Report Number: IOB1565

Sampled: 02/18/05
 Received: 02/18/05

METHOD BLANK/QC DATA

PURGEABLES BY GC/MS (EPA 624)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5B22027 Extracted: 02/22/05											
Matrix Spike Dup Analyzed: 02/22/2005 (5B22027-MSD1)						Source: IOB1356-01					
Surrogate: Dibromofluoromethane	23.6			ug/l	25.0		94	80-120			
Surrogate: Toluene-d8	23.2			ug/l	25.0		93	80-120			
Surrogate: 4-Bromofluorobenzene	24.3			ug/l	25.0		97	80-120			

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METHOD BLANK/QC DATA

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

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5B22042 Extracted: 02/22/05										
Blank Analyzed: 02/24/2005 (5B22042-BLK1)										
Bis(2-ethylhexyl)phthalate	ND	5.0	1.1	ug/l						
2,4-Dinitrotoluene	ND	9.0	0.23	ug/l						
N-Nitrosodimethylamine	ND	8.0	0.22	ug/l						
Pentachlorophenol	ND	8.0	0.78	ug/l						
2,4,6-Trichlorophenol	ND	6.0	0.10	ug/l						
Surrogate: 2-Fluorophenol	13.0			ug/l	20.0		65 35-120			
Surrogate: Phenol-d6	13.6			ug/l	20.0		68 45-120			
Surrogate: 2,4,6-Tribromophenol	15.2			ug/l	20.0		76 50-125			
Surrogate: Nitrobenzene-d5	7.02			ug/l	10.0		70 45-120			
Surrogate: 2-Fluorobiphenyl	7.04			ug/l	10.0		70 45-120			
Surrogate: Terphenyl-d14	7.78			ug/l	10.0		78 45-135			
LCS Analyzed: 02/24/2005 (5B22042-BS1)										
Bis(2-ethylhexyl)phthalate	8.16	5.0	1.1	ug/l	10.0		82 65-125			M-NR1
2,4-Dinitrotoluene	7.46	9.0	0.23	ug/l	10.0		75 60-140			J
N-Nitrosodimethylamine	6.54	8.0	0.22	ug/l	10.0		65 40-120			J
Pentachlorophenol	7.80	8.0	0.78	ug/l	10.0		78 50-125			J
2,4,6-Trichlorophenol	7.92	6.0	0.10	ug/l	10.0		79 60-120			
Surrogate: 2-Fluorophenol	12.9			ug/l	20.0		64 35-120			
Surrogate: Phenol-d6	13.5			ug/l	20.0		68 45-120			
Surrogate: 2,4,6-Tribromophenol	16.1			ug/l	20.0		80 50-125			
Surrogate: Nitrobenzene-d5	6.86			ug/l	10.0		69 45-120			
Surrogate: 2-Fluorobiphenyl	7.12			ug/l	10.0		71 45-120			
Surrogate: Terphenyl-d14	7.40			ug/l	10.0		74 45-135			
LCS Dup Analyzed: 02/24/2005 (5B22042-BSD1)										
Bis(2-ethylhexyl)phthalate	8.52	5.0	1.1	ug/l	10.0		85 65-125	4	20	
2,4-Dinitrotoluene	6.96	9.0	0.23	ug/l	10.0		70 60-140	7	20	J
N-Nitrosodimethylamine	8.44	8.0	0.22	ug/l	10.0		84 40-120	25	20	R-7
Pentachlorophenol	8.40	8.0	0.78	ug/l	10.0		84 50-125	7	25	
2,4,6-Trichlorophenol	7.92	6.0	0.10	ug/l	10.0		79 60-120	0	20	
Surrogate: 2-Fluorophenol	13.3			ug/l	20.0		66 35-120			
Surrogate: Phenol-d6	14.4			ug/l	20.0		72 45-120			
Surrogate: 2,4,6-Tribromophenol	16.5			ug/l	20.0		82 50-125			
Surrogate: Nitrobenzene-d5	7.52			ug/l	10.0		75 45-120			
Surrogate: 2-Fluorobiphenyl	7.36			ug/l	10.0		74 45-120			

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METHOD BLANK/QC DATA

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

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5B22042 Extracted: 02/22/05											
LCS Dup Analyzed: 02/24/2005 (5B22042-BSD1)											
Surrogate: Terphenyl-d14	7.84			ug/l	10.0		78	45-135			

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METHOD BLANK/QC DATA

ORGANOCHLORINE PESTICIDES (EPA 608)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	Limit	RPD	RPD Limit	Data Qualifiers
Batch: 5B22041 Extracted: 02/22/05											
Blank Analyzed: 02/23/2005 (5B22041-BLK1)											
alpha-BHC	ND	0.010	0.00049	ug/l							
Surrogate: Decachlorobiphenyl	0.441			ug/l	0.500		88	45-120			
Surrogate: Tetrachloro-m-xylene	0.389			ug/l	0.500		78	35-120			
LCS Analyzed: 02/23/2005 (5B22041-BS1)											
alpha-BHC	0.450	0.010	0.00049	ug/l	0.500		90	45-115			M-NR1
Surrogate: Decachlorobiphenyl	0.440			ug/l	0.500		88	45-120			
Surrogate: Tetrachloro-m-xylene	0.381			ug/l	0.500		76	35-120			
LCS Dup Analyzed: 02/23/2005 (5B22041-BSD1)											
alpha-BHC	0.449	0.010	0.00049	ug/l	0.500		90	45-115	0	30	
Surrogate: Decachlorobiphenyl	0.442			ug/l	0.500		88	45-120			
Surrogate: Tetrachloro-m-xylene	0.384			ug/l	0.500		77	35-120			

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METHOD BLANK/QC DATA

METALS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5B22063 Extracted: 02/22/05											
Blank Analyzed: 02/22/2005 (5B22063-BLK1)											
Mercury	ND	0.20	0.063	ug/l							
LCS Analyzed: 02/22/2005 (5B22063-BS1)											
Mercury	8.32	0.20	0.063	ug/l	8.00		104	85-115			
Matrix Spike Analyzed: 02/22/2005 (5B22063-MS1)											
						Source: IOB1443-01					
Mercury	8.36	0.20	0.063	ug/l	8.00	0.074	104	70-130			
Matrix Spike Dup Analyzed: 02/22/2005 (5B22063-MSD1)											
						Source: IOB1443-01					
Mercury	8.38	0.20	0.063	ug/l	8.00	0.074	104	70-130	0	20	
Batch: 5B24099 Extracted: 02/24/05											
Blank Analyzed: 02/25/2005 (5B24099-BLK1)											
Copper	ND	2.0	0.49	ug/l							
Lead	ND	1.0	0.13	ug/l							
LCS Analyzed: 02/25/2005 (5B24099-BS1)											
Copper	84.0	2.0	0.49	ug/l	80.0		105	85-115			
Lead	80.3	1.0	0.13	ug/l	80.0		100	85-115			
Matrix Spike Analyzed: 02/25/2005 (5B24099-MS1)											
						Source: IOB1490-01					
Copper	82.5	2.0	0.49	ug/l	80.0	1.0	102	70-130			
Lead	77.6	1.0	0.13	ug/l	80.0	ND	97	70-130			
Matrix Spike Analyzed: 02/25/2005 (5B24099-MS2)											
						Source: IOB1557-01					
Copper	83.9	2.0	0.49	ug/l	80.0	ND	105	70-130			
Lead	77.7	1.0	0.13	ug/l	80.0	0.15	97	70-130			

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MWH-Pasadena/Boeing 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Attention: Bronwyn Kelly	Project ID: Routine Outfall 011 Report Number: IOB1565	Sampled: 02/18/05 Received: 02/18/05
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METHOD BLANK/QC DATA

METALS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5B24099 Extracted: 02/24/05											
Matrix Spike Dup Analyzed: 02/25/2005 (5B24099-MSD1)						Source: IOB1490-01					
Copper	81.2	2.0	0.49	ug/l	80.0	1.0	100	70-130	2	20	
Lead	76.3	1.0	0.13	ug/l	80.0	ND	95	70-130	2	20	

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METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	RPD RPD	RPD Limit	Data Qualifiers
Batch: 5B18080 Extracted: 02/18/05										
Blank Analyzed: 02/23/2005 (5B18080-BLK1)										
Biochemical Oxygen Demand	ND	2.0	0.59	mg/l						
LCS Analyzed: 02/23/2005 (5B18080-BS1)										
Biochemical Oxygen Demand	200	100	30	mg/l	198		101		85-115	
LCS Dup Analyzed: 02/23/2005 (5B18080-BSD1)										
Biochemical Oxygen Demand	196	100	30	mg/l	198		99		85-115	2 20
Batch: 5B18129 Extracted: 02/18/05										
Blank Analyzed: 02/18/2005 (5B18129-BLK1)										
Chloride	ND	0.50	0.26	mg/l						
Nitrate/Nitrite-N	ND	0.11	0.072	mg/l						
Sulfate	ND	0.50	0.18	mg/l						
LCS Analyzed: 02/18/2005 (5B18129-BS1)										
Chloride	5.11	0.50	0.26	mg/l	5.00		102		90-110	
Sulfate	10.6	0.50	0.18	mg/l	10.0		106		90-110	
Matrix Spike Analyzed: 02/18/2005 (5B18129-MS1) Source: IOB1556-01										
Chloride	7.47	0.50	0.26	mg/l	5.00	2.1	107		80-120	
Sulfate	15.3	0.50	0.18	mg/l	10.0	4.7	106		80-120	
Matrix Spike Dup Analyzed: 02/18/2005 (5B18129-MSD1) Source: IOB1556-01										
Chloride	7.43	0.50	0.26	mg/l	5.00	2.1	107		80-120	1 20
Sulfate	14.3	0.50	0.18	mg/l	10.0	4.7	96		80-120	7 20

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INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5B18136 Extracted: 02/18/05											
Blank Analyzed: 02/19/2005 (5B18136-BLK1)											
Surfactants (MBAS)	ND	0.10	0.044	mg/l							
LCS Analyzed: 02/19/2005 (5B18136-BS1)											
Surfactants (MBAS)	0.259	0.10	0.044	mg/l	0.250		104	90-110			
Matrix Spike Analyzed: 02/19/2005 (5B18136-MS1)											
						Source: IOB1570-01					
Surfactants (MBAS)	0.411	0.20	0.088	mg/l	0.500	ND	82	50-125			
Matrix Spike Dup Analyzed: 02/19/2005 (5B18136-MSD1)											
						Source: IOB1570-01					
Surfactants (MBAS)	0.404	0.20	0.088	mg/l	0.500	ND	81	50-125	2	20	
Batch: 5B19043 Extracted: 02/19/05											
Blank Analyzed: 02/19/2005 (5B19043-BLK1)											
Turbidity	0.0500	1.0	0.040	NTU							
Duplicate Analyzed: 02/19/2005 (5B19043-DUP1)											
						Source: IOB1562-01					
Turbidity	118	5.0	0.20	NTU		120			2	20	
Batch: 5B23079 Extracted: 02/23/05											
Blank Analyzed: 02/23/2005 (5B23079-BLK1)											
Ammonia-N (Distilled)	ND	0.50	0.30	mg/l							
LCS Analyzed: 02/23/2005 (5B23079-BS1)											
Ammonia-N (Distilled)	9.52	0.50	0.30	mg/l	10.0		95	80-115			

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INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	RPD Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5B23079 Extracted: 02/23/05											
Matrix Spike Analyzed: 02/23/2005 (5B23079-MS1)						Source: IOB1259-01					
Ammonia-N (Distilled)	12.9	0.50	0.30	mg/l	10.0	1.7	112	70-120			
Matrix Spike Dup Analyzed: 02/23/2005 (5B23079-MSD1)						Source: IOB1259-01					
Ammonia-N (Distilled)	12.3	0.50	0.30	mg/l	10.0	1.7	106	70-120	5	15	
Batch: 5B23082 Extracted: 02/23/05											
Blank Analyzed: 02/23/2005 (5B23082-BLK1)											
Oil & Grease	ND	5.0	0.94	mg/l							
LCS Analyzed: 02/23/2005 (5B23082-BS1)											
Oil & Grease	15.9	5.0	0.94	mg/l	20.0		80	65-120			M-NRI
LCS Dup Analyzed: 02/23/2005 (5B23082-BSD1)											
Oil & Grease	16.5	5.0	0.94	mg/l	20.0		82	65-120	4	20	
Batch: 5B23086 Extracted: 02/23/05											
Blank Analyzed: 02/25/2005 (5B23086-BLK1)											
Total Cyanide	ND	0.0050	0.0022	mg/l							
LCS Analyzed: 02/25/2005 (5B23086-BS1)											
Total Cyanide	0.197	0.0050	0.0022	mg/l	0.200		98	90-110			
Matrix Spike Analyzed: 02/25/2005 (5B23086-MS1)						Source: IOB1522-01					
Total Cyanide	0.206	0.0050	0.0022	mg/l	0.200	0.025	90	70-115			

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 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 011 Report Number: IOB1565	Sampled: 02/18/05 Received: 02/18/05
--	---	---

METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5B23086 Extracted: 02/23/05											
Matrix Spike Dup Analyzed: 02/25/2005 (5B23086-MSD1)						Source: IOB1522-01					
Total Cyanide	0.206	0.0050	0.0022	mg/l	0.200	0.025	90	70-115	0	15	
Batch: 5B24110 Extracted: 02/24/05											
Blank Analyzed: 02/24/2005 (5B24110-BLK1)											
Total Dissolved Solids	ND	10	10	mg/l							
LCS Analyzed: 02/24/2005 (5B24110-BS1)											
Total Dissolved Solids	1050	10	10	mg/l	1000		105	90-110			
Duplicate Analyzed: 02/24/2005 (5B24110-DUP1)						Source: IOB1565-01					
Total Dissolved Solids	98.0	10	10	mg/l		99			1	10	
Batch: 5B24133 Extracted: 02/24/05											
Duplicate Analyzed: 02/24/2005 (5B24133-DUP1)						Source: IOB1565-01					
Specific Conductance	105	1.0	1.0	umhos/cm		100			5	5	
Batch: 5B25064 Extracted: 02/25/05											
Blank Analyzed: 02/25/2005 (5B25064-BLK1)											
Perchlorate	ND	4.0	0.80	ug/l							
LCS Analyzed: 02/25/2005 (5B25064-BS1)											
Perchlorate	48.4	4.0	0.80	ug/l	50.0		97	85-115			

Del Mar Analytical, Irvine
 Wendy Kirkeeng For Michele Harper
 Project Manager

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

Project ID: Routine Outfall 011

Report Number: IOB1565

Sampled: 02/18/05
 Received: 02/18/05

METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5B25064 Extracted: 02/25/05											
Matrix Spike Analyzed: 02/25/2005 (5B25064-MS1)						Source: IOB1976-13					
Perchlorate	51.3	4.0	0.80	ug/l	50.0	1.5	100	80-120			
Matrix Spike Dup Analyzed: 02/26/2005 (5B25064-MSD1)						Source: IOB1976-13					
Perchlorate	51.4	4.0	0.80	ug/l	50.0	1.5	100	80-120	0	20	
Batch: 5B25089 Extracted: 02/25/05											
Blank Analyzed: 02/25/2005 (5B25089-BLK1)											
Total Suspended Solids	ND	10	10	mg/l							
LCS Analyzed: 02/25/2005 (5B25089-BS1)											
Total Suspended Solids	956	10	10	mg/l	1000		96	85-115			
Duplicate Analyzed: 02/25/2005 (5B25089-DUP1)						Source: IOB1979-01					
Total Suspended Solids	ND	10	10	mg/l		ND				10	

Del Mar Analytical, Irvine
 Wendy Kirkeeng For Michele Harper
 Project Manager

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

Project ID: Routine Outfall 011

Report Number: IOB1565

Sampled: 02/18/05
Received: 02/18/05

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 unknown quality.
- 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.
- RL-1** Reporting limit raised 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

Del Mar Analytical, Irvine
Wendy Kirkeeng For Michele Harper
Project Manager

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IOB1565 <Page 21 of 22>



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

Project ID: Routine Outfall 011

Report Number: IOB1565

Sampled: 02/18/05
 Received: 02/18/05

Certification Summary

Del Mar Analytical, Irvine

Method	Matrix	Nelac	California
EPA 120.1	Water	X	X
EPA 160.2	Water	X	X
EPA 160.5	Water	X	X
EPA 180.1	Water	X	X
EPA 200.8	Water	X	X
EPA 245.1	Water	X	X
EPA 300.0	Water	X	X
EPA 314.0	Water	X	X
EPA 335.2	Water	X	X
EPA 350.2	Water	X	X
EPA 405.1	Water	X	X
EPA 413.1	Water	X	X
EPA 608	Water	X	X
EPA 624	Water	X	X
EPA 625	Water	X	X
SM2540C	Water	X	X
SM5540-C	Water	X	X

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

Subcontracted Laboratories

Alta Analytical California Cert #1640

1104 Windfield Way - El Dorado Hills, CA 95762

Analysis Performed: 1613-Dioxin-HR
 Samples: IOB1565-01

Analysis Performed: EDD + Level 4
 Samples: IOB1565-01

Del Mar Analytical, Irvine
 Wendy Kirkeeng For Michele Harper
 Project Manager

IOB1565

CHAIN OF CUSTODY FORM

Del Mar Analytical Version 5 8/12/04

Client Name/Address:

MWH-Pasadena
 300 North Lake Avenue, Suite 1200
 Pasadena, CA 91101
 Project Manager: Bronwyn Kelly
 Sampler: *Pollock*

Project:
Boeing-SSFL NPDES Routine Outfall 011
 Perimeter Pond
 Phone Number:
 (626) 568-6691
 Fax Number:
 (626) 568-6515

ANALYSIS REQUIRED

Sample Description	Sample Matrix	Container Type	# of Cont.	Sampling Date/Time	Preservative	Bottle #	Total Recoverable Metals: Cu, Pb, Hg	Settleable Solids	VOCs 624 + xylenes	TCDD (and all congeners)	Oil & Grease (EPA 413.1)	Cyanide (total recoverable)	BOD5 (20 degrees C)	Surfactants (MBAS)	Cl ⁻ , SO ₄ , NO ₃ +NO ₂ -N, Perchlorate	Turbidity, TDS, TSS, Conductivity	Ammonia-N	2,4,6 Trichlorophenol, 2,4-Dinitrotoluene, Bis(2-ethylhexyl)phthalate, NDMA, pentachlorophenol (EPA 625)	Field readings:	Comments
Outfall 011	W	Poly-1L	1	2-18-05 14:20	HNO3	1A	X												Temp = 55.2 pH = 7.1	
Outfall 011-Dup	W	Poly-1L	1		HNO3	1B	X													
Outfall 011	W	Poly-1L	1		None	2		X												
Outfall 011	W	VOAS	3		HCl	3A, 3B, 3C		X												
Outfall 011	W	1L Amber	2		None	4A, 4B			X											
Outfall 011	W	1L Amber	2		HCl	5A, 5B				X										
Outfall 011	W	Poly-500 ml	1		NaOH	6					X									
Outfall 011	W	Poly-1L	1		None	7						X								
Outfall 011	W	Poly-500 ml	2		None	8A, 8B							X							
Outfall 011	W	Poly-500 ml	2		None	9A, 9B								X						
Outfall 011	W	Poly-500 ml	2		None	10A, 10B										X				
Outfall 011	W	Poly-500 ml	1		H2SO4	11											X			
Outfall 011	W	1L Amber	2		None	12A, 12B														
Outfall 011	W	1L Amber	2		None	13A, 13B												X		
Trip Blank	W	VOAS	3		HCl	14A, 14B, 14C			X											

Relinquished By: *[Signature]* Date/Time: 2-18-05 1400
Received By: *[Signature]* Date/Time: 2-18-05 1450

Relinquished By: *[Signature]* Date/Time: 2-18-05 1830
Received By: *[Signature]* Date/Time: 2-18-05 1830

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

Perchlorate Only 72 Hours _____

Metals Only 72 Hours _____

Sample Integrity (Check): Intact On Ice



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March 23, 2005

MWH-Pasadena/ Boeing
300 North Lake Avenue, Suite 1200
Pasadena, CA 91101

Attention: Bronwyn Kelly
Project: Routine Outfall 011
Sampled: 02/18/05
Del Mar Analytical Number: IOB1565

Dear Ms. Kelly:

Alta Analytical Laboratory performed the EPA Method 1613 Dioxin analysis for the project referenced above. Please use the following cross-reference table when reviewing your results.

MWH ID	DEL MAR ID	Alta ID
Outfall 011	IOB1565-01	25781-001

Attached is the original report from the subcontract laboratory. If you have any questions or require further assistance, please do not hesitate to contact me at (949) 261-1022 at extension 215.

Sincerely yours,
DEL MAR ANALYTICAL


Michele Harper
Project Manager



March 01, 2005

Alta Project I.D.: 25781

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

Dear Ms. Harper,

Enclosed are the results for the one aqueous sample received at Alta Analytical Laboratory on February 24, 2005 under your Project Name "IOB1565". This sample was extracted and analyzed using EPA Method 1613 for tetra-through-octa chlorinated dioxins and furans. A rush 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,

Martha M. Maier
HRMS Services Director



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: 2/24/2005

Alta Lab. ID

Client Sample ID

25781-001

IOB1565-01

SECTION II



Method Blank				EPA Method 1613			
Matrix:	Aqueous	QC Batch No.:	6543	Lab Sample:	0-MB001	Date Analyzed DB-5:	28-Feb-05
Sample Size:	1.000 L	Date Extracted:	25-Feb-05	Date Analyzed DB-225:	NA		
Analyte	Conc. (pg/L)	DL ^a	EMPC ^b	Labeled Standard	%R	LCL-UCL ^d	Qualifiers
2,3,7,8-TCDD	ND	0.866		13C-2,3,7,8-TCDD	75.9	25 - 164	
1,2,3,7,8-PeCDD	ND	1.15		13C-1,2,3,7,8-PeCDD	73.9	25 - 181	
1,2,3,4,7,8-HxCDD	ND	1.88		13C-1,2,3,4,7,8-HxCDD	70.6	32 - 141	
1,2,3,6,7,8-HxCDD	ND	1.86		13C-1,2,3,6,7,8-HxCDD	73.4	28 - 130	
1,2,3,7,8,9-HxCDD	ND	1.84		13C-1,2,3,4,6,7,8-HpCDD	67.4	23 - 140	
1,2,3,4,6,7,8-HpCDD	ND	3.38		13C-OCDD	56.3	17 - 157	
OCDD	ND	8.88		13C-2,3,7,8-TCDF	78.7	24 - 169	
2,3,7,8-TCDF	ND	0.545		13C-1,2,3,7,8-PeCDF	68.1	24 - 185	
1,2,3,7,8-PeCDF	ND	1.62		13C-2,3,4,7,8-PeCDF	73.3	21 - 178	
2,3,4,7,8-PeCDF	ND	1.45		13C-1,2,3,4,7,8-HxCDF	60.2	26 - 152	
1,2,3,4,7,8-HxCDF	ND	1.24		13C-1,2,3,6,7,8-HxCDF	64.3	26 - 123	
1,2,3,6,7,8-HxCDF	ND	0.869		13C-2,3,4,6,7,8-HxCDF	63.5	28 - 136	
2,3,4,6,7,8-HxCDF	ND	0.958		13C-1,2,3,7,8,9-HxCDF	65.2	29 - 147	
1,2,3,7,8,9-HxCDF	ND	1.55		13C-1,2,3,4,6,7,8-HpCDF	54.3	28 - 143	
1,2,3,4,6,7,8-HpCDF	ND	2.22		13C-1,2,3,4,7,8,9-HpCDF	59.8	26 - 138	
1,2,3,4,7,8,9-HpCDF	ND	1.68		13C-OCDF	54.9	17 - 157	
OCDF	ND	4.49		CRS 37Cl-2,3,7,8-TCDD	77.4	35 - 197	
Totals				Footnotes			
Total TCDD	ND	0.866		a. Sample specific estimated detection limit.			
Total PeCDD	ND	1.15		b. Estimated maximum possible concentration.			
Total HxCDD	ND	1.86		c. Method detection limit.			
Total HpCDD	ND	3.38		d. Lower control limit - upper control limit.			
Total TCDF	ND	0.545					
Total PeCDF	ND	1.54					
Total HxCDF	ND	1.37					
Total HpCDF	ND	2.38					

Analyst: MS

Approved By: William J. Luksemburg 01-Mar-2005 16:32



OPR Results		EPA Method 1613				
Matrix:	Aqueous	QC Batch No.:	6543			
Sample Size:	1.000 L	Date Extracted:	25-Feb-05			
Lab Sample:	0-OPR001	Date Analyzed DB-5:	28-Feb-05			
		Date Analyzed DB-225:	NA			
Analyte	Spike Conc.	Conc. (ng/mL)	OPR Limits	Labeled Standard	%R	LCL-UCL
2,3,7,8-TCDD	10.0	8.67	6.7 - 15.8	IS 13C-2,3,7,8-TCDD	67.4	25 - 164
1,2,3,7,8-PeCDD	50.0	43.8	35 - 71	13C-1,2,3,7,8-PeCDD	64.0	25 - 181
1,2,3,4,7,8-HxCDD	50.0	42.5	35 - 82	13C-1,2,3,4,7,8-HxCDD	58.2	32 - 141
1,2,3,6,7,8-HxCDD	50.0	43.5	38 - 67	13C-1,2,3,6,7,8-HxCDD	62.5	28 - 130
1,2,3,7,8,9-HxCDD	50.0	43.7	32 - 81	13C-1,2,3,4,6,7,8-HpCDD	57.2	23 - 140
1,2,3,4,6,7,8-HpCDD	50.0	42.5	35 - 70	13C-OCDD	51.4	17 - 157
OCDD	100	87.0	78 - 144	13C-2,3,7,8-TCDF	72.5	24 - 169
2,3,7,8-TCDF	10.0	7.98	7.5 - 15.8	13C-1,2,3,7,8-PeCDF	59.4	24 - 185
1,2,3,7,8-PeCDF	50.0	41.4	40 - 67	13C-2,3,4,7,8-PeCDF	64.8	21 - 178
2,3,4,7,8-PeCDF	50.0	42.3	34 - 80	13C-1,2,3,4,7,8-HxCDF	49.4	26 - 152
1,2,3,4,7,8-HxCDF	50.0	42.0	36 - 67	13C-1,2,3,6,7,8-HxCDF	52.7	26 - 123
1,2,3,6,7,8-HxCDF	50.0	43.0	42 - 65	13C-2,3,4,6,7,8-HxCDF	55.2	28 - 136
2,3,4,6,7,8-HxCDF	50.0	42.3	35 - 78	13C-1,2,3,7,8,9-HxCDF	53.4	29 - 147
1,2,3,7,8,9-HxCDF	50.0	43.5	39 - 65	13C-1,2,3,4,6,7,8-HpCDF	45.6	28 - 143
1,2,3,4,6,7,8-HpCDF	50.0	41.8	41 - 61	13C-1,2,3,4,7,8,9-HpCDF	49.6	26 - 138
1,2,3,4,7,8,9-HpCDF	50.0	42.7	39 - 69	13C-OCDF	49.0	17 - 157
OCDF	100	88.8	63 - 170	CRS 37Cl-2,3,7,8-TCDD	76.2	35 - 197

Analyst: MS

Approved By: William J. Luksemburg 01-Mar-2005 16:32



Sample ID: IOB1565-01		EPA Method 1613						
Client Data		Sample Data		Laboratory Data				
Name: Del Mar Analytical, Irvine	Matrix: Aqueous	Lab Sample: 25781-001	Date Received: 24-Feb-05					
Project: IOB1565	Sample Size: 1.028 L	QC Batch No.: 6543	Date Extracted: 25-Feb-05					
Date Collected: 18-Feb-05		Date Analyzed DB-5: 28-Feb-05	Date Analyzed DB-225: NA					
Time Collected: 1428								
Analyte	Conc. (pg/L)	DL ^a	EMPC ^b	Qualifiers	Labeled Standard	%R	LCL-UCL ^d	Qualifiers
2,3,7,8-TCDD	ND	0.748			IS 13C-2,3,7,8-TCDD	71.5	25 - 164	
1,2,3,7,8-PeCDD	ND	2.26			13C-1,2,3,7,8-PeCDD	63.9	25 - 181	
1,2,3,4,7,8-HxCDD	ND	2.07			13C-1,2,3,4,7,8-HxCDD	64.6	32 - 141	
1,2,3,6,7,8-HxCDD	ND	4.09			13C-1,2,3,6,7,8-HxCDD	65.2	28 - 130	
1,2,3,7,8,9-HxCDD	ND	2.63			13C-1,2,3,4,6,7,8-HpCDD	64.3	23 - 140	
1,2,3,4,6,7,8-HpCDD	38.6				13C-OCDD	60.5	17 - 157	
OCDD	418				13C-2,3,7,8-TCDF	71.2	24 - 169	
2,3,7,8-TCDF	ND	1.06			13C-1,2,3,7,8-PeCDF	60.7	24 - 185	
1,2,3,7,8-PeCDF	ND	1.99			13C-2,3,4,7,8-PeCDF	60.3	21 - 178	
2,3,4,7,8-PeCDF	ND	1.94			13C-1,2,3,4,7,8-HxCDF	60.2	26 - 152	
1,2,3,4,7,8-HxCDF	ND	1.16			13C-1,2,3,6,7,8-HxCDF	59.4	26 - 123	
1,2,3,6,7,8-HxCDF	ND	2.06			13C-2,3,4,6,7,8-HxCDF	56.9	28 - 136	
2,3,4,6,7,8-HxCDF	ND	0.942			13C-1,2,3,7,8,9-HxCDF	58.8	29 - 147	
1,2,3,7,8,9-HxCDF	ND	0.760			13C-1,2,3,4,6,7,8-HpCDF	52.3	28 - 143	
1,2,3,4,6,7,8-HpCDF	6.16			J	13C-1,2,3,4,7,8,9-HpCDF	60.2	26 - 138	
1,2,3,4,7,8,9-HpCDF	ND	1.89			13C-OCDF	58.7	17 - 157	
OCDF	15.9			J	CRS 37Cl-2,3,7,8-TCDD	93.4	35 - 197	
Totals								
Total TCDD	ND	0.748						
Total PeCDD	ND	2.26						
Total HxCDD	8.49							
Total HpCDD	88.4		6.82	D				
Total TCDF	14.2							
Total PeCDF	5.58							
Total HxCDF	7.21							
Total HpCDF	18.9							
Footnotes								
a. Sample specific estimated detection limit.								
b. Estimated maximum possible concentration.								
c. Method detection limit.								
d. Lower control limit - upper control limit.								

Analyst: MS

Approved By:

William J. Luksemburg 01-Mar-2005 16:32

APPENDIX

DATA QUALIFIERS & ABBREVIATIONS

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

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

The control limits are “interim limits only” until in-house limits are utilized.



CURRENT CERTIFICATIONS

NELAP — (Primary AA: California, Certificate No. 02102CA)

Department of the Navy

U.S. Army Corps of Engineers

U.S. EPA Region 5

Bureau of Reclamation — Mid-Pacific Region — (MP-470, Res-1.10)

Commonwealth of Kentucky — (Certificate No. 90063)

Commonwealth of Virginia — (Certificate No. 00013)

State of Alaska, Department of Environmental Conservation — (Certificate No. OS-00197)

State of Arizona — (Certificate No. AZ0639)

State of Arkansas, Department of Health — (Approval granted through CA certification)

State of Arkansas, Department of Environmental Quality

State of California — (Certificate No. 1640)

State of Colorado

State of Connecticut — (Certificate No. PH-0182)

State of Florida — (Certificate No. 87456)

State of Louisiana, Department of Health and Hospitals — (Certificate No. LA000014)

State of Louisiana, Department of Environmental Quality

State of Maine

State of Michigan (Certificate No. 81178087)

State of Mississippi — (Approval granted through CA certification)

State of Nevada — (Certificate No. CA413)

State of New Jersey — (Certificate No. CA003)

State of New York, Department of Health — (Certificate No. 11411)

State of North Carolina — (Certification No. 06700)

State of North Dakota, Department of Health — (Certificate No. R-078)

State of New Mexico

State of Oklahoma — (D9919)

State of Oregon — (Certificate No. CA413)

State of Pennsylvania — (Certificate No. 68-490)

State of South Carolina — (Certificate No. 87002001)

State of Tennessee — (Certificate No. 02996)

State of Texas — (Certificate No. TX247-1000A)

State of Utah — (Certificate No. E-201)

State of Washington — (Certification No. C091)

State of Wisconsin — (Certificate No. 998036160)

State of Wyoming — (USEPA Region 8 Ref: 8TMS-Q)



17461 Derian Ave. Suite 100, Irvine, CA 92614 Ph (949) 261-1022 Fax (949) 261-1228
 1014 E. Cooley Dr., Suite A, Colton, CA 92324 Ph (909) 370-4667 Fax (909) 370-1046
 9484 Chesapeake Drive, Suite 805, San Diego, CA 92123 Ph (619) 505-9096 Fax (619) 505-9889
 9830 South 51st Street, Suite B-120, Phoenix, AZ 85044 Ph (480) 785-0043 Fax (480) 785-0851
 2520 E. Sunset Rd., Suite #3, Las Vegas, NV 89120 Ph (702) 798-3820 Fax (702) 798-3821

SUBCONTRACT ORDER - PROJECT # IOB1565

<p>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 Harper</p>	<p>RECEIVING LABORATORY: Alta Analytical 1104 Windfield Way El Dorado Hills, CA 95762 Phone: (916) 933-1640 Fax: (916) 933-0940</p> <p style="font-size: 2em; text-align: right;">25781 0.8C</p>
--	--

Standard TAT is requested unless specific due date is requested => Due Date: 2 weeks Initials: MT

Analysis	Expiration	Comments
Sample ID: IOB1565-01 Water	Sampled: 02/18/05 14:28	Instant Notification
1613-Dioxin-HR	02/25/05 14:28	J flags, 17 congeners, no TEQ, sub to Alta
EDD + Level 4	03/18/05 14:28	Excel EDD email to pm, Include Std logs for Lvl IV
Containers Supplied:		
1 L Amber (IOB1565-01G)		
1 L Amber (IOB1565-01H)		

SAMPLE INTEGRITY:

All containers intact: Yes No Sample labels/COC agree: Yes No Samples Received On Ice: Yes No
 Custody Seals Present: Yes No Samples Preserved Properly: Yes No Samples Received at (temp): _____

Released By: [Signature] Date: 2-23-05 Time: 1700 Received By: [Signature] Date: 02/24/05 Time: 0905

Released By: _____ Date: _____ Time: _____ Received By: _____ Date: _____ Time: _____

STANDARD OPERATING PROCEDURE

Attachment 10.B.1

SAMPLE LOG-IN CHECKLIST

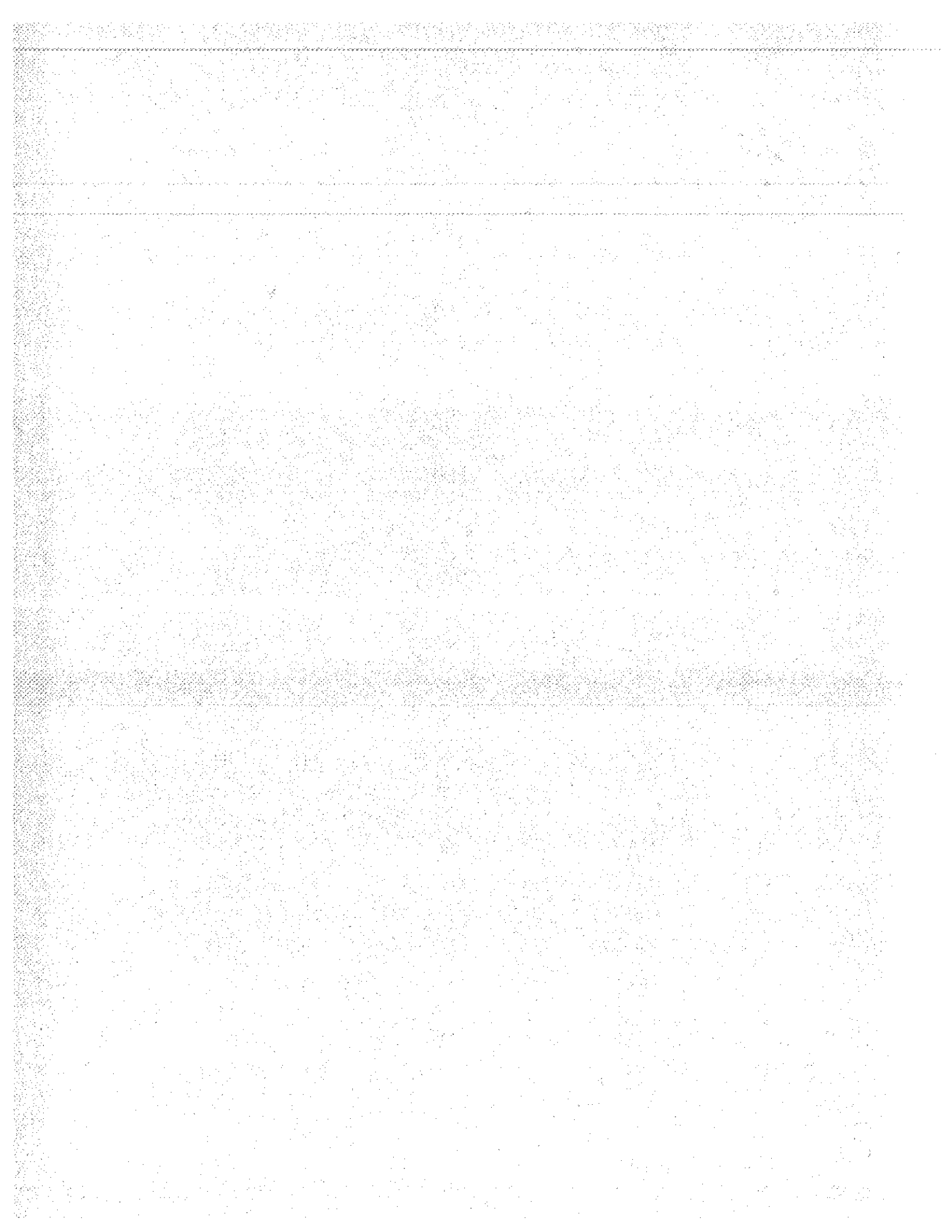
ALTA Project No.: 25781

1. Date Samples Arrived: <u>2/24/05</u> <u>0905</u> Initials: <u>BBB</u> Location: <u>WR-2</u>			
2. Time / Date logged in: <u>1230</u> <u>2/24/05</u> Initials: <u>BBB</u> Location: <u>WR-2</u>			
3. Samples Arrived By: (circle) <u>FedEx</u> UPS World Courier Other:			
4. Shipping Preservation: (circle) <u>Ice</u> / <u>Blue Ice</u> / Dry Ice / None Temp °C <u>0.8</u>			
5. Shipping Container(s) Intact? If not, describe condition in comment section.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Shipping Container(s) Custody Seals Present? Intact? If not intact, describe condition in comment section.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Shipping Documentation Present? (circle) Shipping Label <u>Airbill</u> Tracking Number <u>7904 3642 7349</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Sample Custody Seal(s) Present? No. of Seals _____ or Seal No. Intact? If not intact, describe condition in comment section.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
9. Sample Container Intact? If no, indicate sample condition in comment section.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Chain of Custody (COC) or other Sample Documentation Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. COC/Documentation Acceptable? If no, complete COC Anomaly Form.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Shipping Container (circle): ALTA <u>Client</u> Retain or <u>Return</u> or Disposed			
13. Container(s) and/or Bottle(s) Requested?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
14. Drinking Water Sample? (HRMS Only) If yes, Acceptable Preservation? Y or N Preservation Info From? (circle) COC or Sample Container or None Noted	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Comments:

samples initials found on sample label

ALTA Analytical Laboratory
El Dorado Hills, CA 95762

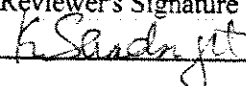


CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

AMEC Earth & Environmental
 550 South Wadsworth Boulevard
 Suite 500
 Lakewood, CO 80226

Package ID T711DF32
 Task Order 313150010
 SDG No. Multiple
 No. of Analyses 6

Laboratory Alta
 Reviewer K. Shadowlight
 Analysis/Method Dioxins

Date: March 16, 2005
 Reviewer's Signature


ACTION ITEMS ^a	
1. Case Narrative Deficiencies	
2. Out of Scope Analyses	
3. Analyses Not Conducted	
4. Missing Hardcopy Deliverables	
5. Incorrect Hardcopy Deliverables	
6. Deviations from Analysis Protocol, e.g., Holding Times GC/MS Tune/Inst. Performance Calibration Method blanks Surrogates Matrix Spike/Dup LCS Field QC Internal Standard Performance Compound Identification and Quantitation System Performance	Qualifications were assigned for the following: * Detects below the lower method calibration level
COMMENTS ^b	
^a 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

ANALYSIS: DIOXINS/FURANS

SAMPLE DELIVERY GROUPS: Multiple SDGs

Prepared by

AMEC—Denver Operations
550 South Wadsworth Boulevard, Suite 500
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title: NPDES Monitoring
Contract Task Order #: 313150010
Sample Delivery Group #: Multiple SDGs
Project Manager: B. McIlvaine
Matrix: Water
Analysis: Dioxins/Furans
QC Level: Level IV
No. of Samples: 6
No. of Reanalyses/Dilutions: 0
Reviewer: K. Shadowlight
Date of Review: March 16, 2005

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

Table 1. Sample Identification

Client ID	Laboratory ID (Del Mar)	Laboratory ID (Alta)	Matrix	COC Method
Outfall 001	IOB2098-01	25812-001	water	1613
Outfall 002	IOB2063-01	25811-001	water	1613
Outfall 011	IOB2066-01	25815-001	water	1613
Outfall 011 Composite	IOB2064-01	25816-001	water	1613
Outfall 011 Grab	IOB2065-01	25814-001	water	1613
Outfall 018	IOB2099-01	25813-001	water	1613

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

Following are findings associated with sample management:

2.1.1 Sample Preservation, Handling, and Transport

All of the samples in these SDGs were received at Del Mar Analytical within the temperature limits of $4^{\circ}\text{C} \pm 2^{\circ}\text{C}$. The samples were shipped to Alta for dioxin/furan analyses and the samples were received below the temperature limits at 0.8°C and 1.1°C ; however, as the samples were not noted to have been frozen or damaged, no qualifications were required. According to the laboratory login sheets, all samples were received intact and in good condition at both laboratories. No qualifications were required.

2.1.2 Chain of Custody

The COCs and transfer COCs were legible and signed by the appropriate field and laboratory personnel, and accounted for the analyses presented in these SDGs. The sample collector's name is not routinely provided on the transfer COC; however, the name of the sample collector was provided in the Sample Acceptance Form dated 03/01/05 for sample Outfall 011 Composite. As the samples were couriered directly to Del Mar Analytical, custody seals were not required. The coolers received by Alta had custody seals present and intact; however, custody seals were not present on the sample containers. The EPA 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 a year of collection. No qualifications were required.

2.2 INSTRUMENT PERFORMANCE

Following are findings associated with instrument performance:

2.2.1 GC Column Performance

A Windows Defining Mix (WDM) containing the first and last eluting congeners of each descriptor and isomer specificity compounds was not analyzed prior to the initial calibration sequence or at the beginning of each analytical sequence; however, the first and last eluting congeners and isomer specificity compounds were added to the midpoint of the initial calibration and to the continuing calibration standards (see section 2.3.2). The GC column performance in the calibrations was acceptable, with the height of the valley between the closely eluting isomers and 2,3,7,8-TCDD reported as less than 25%. No qualifications were required.

2.2.2 Mass Spectrometer Performance

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

2.3 CALIBRATION

2.3.1 Initial Calibration

There was one initial calibration, analyzed 08/30/04. The calibration consisted of six concentration level standards (CS0 through CS5) analyzed to verify instrument linearity. The initial calibration was acceptable with %RSDs $\leq 20\%$ for the 15 native compounds (calibration by isotope dilution) and $\leq 35\%$ for the two 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 VERs were acceptable with the concentrations within the acceptance criteria listed in Table 6 of EPA Method 1613. The ion abundance ratios and relative retention times were within the method QC limits. 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 standards 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 (6571-MB001) was extracted and analyzed with the samples in these SDGs. There were no detects reported 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 Ongoing Precision Recovery (OPR) sample (6571-OPR001) was extracted and analyzed with the samples in these SDGs. All recoveries were within the acceptance criteria listed in Table 6 of Method 1613. No qualifications were required.

2.6 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

MS/MSD analyses were not performed in these SDGs. 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 samples in these SDGs had no associated field QC samples. No qualifications were required.

2.7.2 Field Duplicates

No field duplicate samples were identified for these SDGs.

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. Any detects below the lower method calibration level (MCL) were qualified as estimated, "J;" however, as Alta analyzed an additional calibration standard, not all results below the method calibration level were appropriately qualified by the laboratory. These results were qualified as estimated, "J," by the reviewer. No further qualifications were required.



IOB2064-01 Outfall Oil Composite

EPA Method 1613

Client Data		Sample Data		Laboratory Data	
Name: Del Mar Analytical, Irvine	Matrix: Aqueous	Lab Sample: 25816-001	Date Received: 1-Mar-05	QC Batch No.: 6571	Date Extracted: 4-Mar-05
Project: IOB2064	Sample Size: 1.028 L	Date Analyzed DB-5: 8-Mar-05	Date Analyzed DB-225: NA		
Date Collected: 25-Feb-05					
Time Collected: 1340					
Analyte	Conc. (pg/L)	DL ^a	EMPC ^b	Labeled Standard	%R LCL-UCL ^d Qualifiers
2,3,7,8-TCDD	ND	0.958		13C-2,3,7,8-TCDD	68.7 25 - 164
1,2,3,7,8-PeCDD	ND	1.11		13C-1,2,3,7,8-PeCDD	57.9 25 - 181
1,2,3,4,7,8-HxCDD	ND	3.06		13C-1,2,3,4,7,8-HxCDD	55.7 32 - 141
1,2,3,6,7,8-HxCDD	ND	3.12		13C-1,2,3,6,7,8-HxCDD	57.2 28 - 130
1,2,3,7,8,9-HxCDD	ND	3.08		13C-1,2,3,4,6,7,8-HpCDD	57.4 23 - 140
1,2,3,4,6,7,8-HpCDD	6.35			13C-OCDD	52.0 17 - 157
OCDD	62.1			13C-2,3,7,8-TCDF	68.1 24 - 169
2,3,7,8-TCDF	ND	1.25		13C-1,2,3,7,8-PeCDF	55.9 24 - 185
1,2,3,7,8-PeCDF	ND	1.88		13C-2,3,4,7,8-PeCDF	55.6 21 - 178
2,3,4,7,8-PeCDF	ND	1.79		13C-1,2,3,4,7,8-HxCDF	44.0 26 - 152
1,2,3,4,7,8-HxCDF	ND	0.822		13C-1,2,3,6,7,8-HxCDF	48.8 26 - 123
1,2,3,6,7,8-HxCDF	ND	0.751		13C-2,3,4,6,7,8-HxCDF	47.1 28 - 136
2,3,4,6,7,8-HxCDF	ND	0.905		13C-1,2,3,7,8,9-HxCDF	49.5 29 - 147
1,2,3,7,8,9-HxCDF	ND	1.25		13C-1,2,3,4,6,7,8-HpCDF	47.5 28 - 143
1,2,3,4,6,7,8-HpCDF	ND	2.11		13C-1,2,3,4,7,8,9-HpCDF	52.2 26 - 138
1,2,3,4,7,8,9-HpCDF	ND	2.23		13C-OCDF	56.4 17 - 157
OCDF	ND	4.47		CRS 37Cl-2,3,7,8-TCDD	78.8 35 - 197
Totals					
Total TCDD	ND	0.958			
Total PeCDD	ND	1.11			
Total HxCDD	ND	3.09			
Total HpCDD	15.0				
Total TCDF	ND	1.25			
Total PeCDF	ND	1.83			
Total HxCDF	ND	0.914			
Total HpCDF	ND	2.16			

Footnotes

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

Analysis: JMH
 Approved By: Martha M. Maier 10-Mar-2005 10:37

Project 25816
 ANALYSIS VALIDATED



Sample ID: IOB2065-01		Client Data		Sample Data		Laboratory Data		EPA Method 1613	
Del Mar Analytical, Irvine IOB2065 25-Feb-05 1042		Matrix: Sample Size: 1.030 L		Aqueous		Lab Sample: QC Batch No.: Date Analyzed DB-5:		Date Received: Date Extracted: Date Analyzed DB-225: NA	
Analyte	Conc. (pg/L)	DL ^a	EMPC ^b	Qualifiers	Labeled Standard	%R	LCL-UCL ^d	Qualifiers	
2,3,7,8-TCDD	ND	0.921			IS 13C-2,3,7,8-TCDD	74.9	25 - 164		
1,2,3,7,8-PeCDD	ND	1.26			13C-1,2,3,7,8-PeCDD	64.1	25 - 181		
1,2,3,4,7,8-HxCDD	ND	2.84			13C-1,2,3,4,7,8-HxCDD	65.1	32 - 141		
1,2,3,6,7,8-HxCDD	ND	2.65			13C-1,2,3,6,7,8-HxCDD	67.9	28 - 130		
1,2,3,7,8,9-HxCDD	ND	2.73			13C-1,2,3,4,6,7,8-HpCDD	67.6	23 - 140		
1,2,3,4,6,7,8-HpCDD	9.15			J	13C-OCDD	60.5	17 - 157		
OCDD	81.2				13C-2,3,7,8-TCDF	77.3	24 - 169		
2,3,7,8-TCDF	ND	1.46			13C-1,2,3,7,8-PeCDF	61.6	24 - 185		
1,2,3,7,8-PeCDF	ND	1.91			13C-2,3,4,7,8-PeCDF	62.0	21 - 178		
2,3,4,7,8-PeCDF	ND	1.74			13C-1,2,3,4,7,8-HxCDF	52.8	26 - 152		
1,2,3,4,7,8-HxCDF	ND	1.18			13C-1,2,3,6,7,8-HxCDF	59.7	26 - 123		
1,2,2,6,7,8-HxCDF	ND	1.11			13C-2,3,4,6,7,8-HxCDF	57.4	28 - 136		
2,3,4,6,7,8-HxCDF	ND	1.27			13C-1,2,3,7,8,9-HxCDF	58.7	29 - 147		
1,2,3,7,8,9-HxCDF	ND	1.81			13C-1,2,3,4,6,7,8-HpCDF	55.8	28 - 143		
1,2,3,4,6,7,8-HpCDF	ND	2.06			13C-1,2,3,4,7,8,9-HpCDF	62.9	26 - 138		
1,2,3,4,7,8,9-HpCDF	ND	2.09			13C-OCDF	63.2	17 - 157		
OCDF	3.94			J	CRS 37Cl-2,3,7,8-TCDD	91.9	35 - 197		
Totals									
Total TCDD	ND	0.921							
Total PeCDD	ND	1.26							
Total HxCDD	ND	2.73							
Total HpCDD	20.8								
Total TCDF	ND	1.46							
Total PeCDF	ND	1.82							
Total HxCDF	ND	1.31							
Total HpCDF	ND	2.07							
Footnotes									
a. Sample specific estimated detection limit.									
b. Estimated maximum possible concentration.									
c. Method detection limit.									
d. Lower control limit - upper control limit.									

Approved By: Martha M. Maier 10-Mar-2005 10:14



Sample ID: IOB2066-01		Client Data		Sample Data		Laboratory Data		EPA Method 1613	
Name: Del Mar Analytical, Irvine Project: IOB2066 Date Collected: 25-Feb-05 Time Collected: 1510		Matrix: Aqueous Sample Size: 1.033 L		Lab Sample: 25815-001 QC Batch No.: 6571 Date Analyzed DB-5: 8-Mar-05		Date Received: 1-Mar-05 Date Extracted: 4-Mar-05 Date Analyzed DB-225: NA			
Analyte	Conc. (pg/L)	DL ^a	EMPC ^b	Qualifiers	Labeled Standard	%R	LCL-UCL ^d	Qualifiers	
2,3,7,8-TCDD	ND	0.905			13C-2,3,7,8-TCDD	74.2	25 - 164		
1,2,3,7,8-PeCDD	ND	1.03			13C-1,2,3,7,8-PeCDD	63.7	25 - 181		
1,2,3,4,7,8-HxCDD	ND	2.32			13C-1,2,3,4,7,8-HxCDD	63.2	32 - 141		
1,2,3,6,7,8-HxCDD	ND	2.20			13C-1,2,3,6,7,8-HxCDD	65.0	28 - 130		
1,2,3,7,8,9-HxCDD	ND	2.25			13C-1,2,3,4,6,7,8-HpCDD	66.4	23 - 140		
1,2,3,4,6,7,8-HpCDD	8.02				13C-OCDD	55.5	17 - 157		
OCDD	65.3			J	13C-2,3,7,8-TCDF	76.7	24 - 169		
2,3,7,8-TCDF	ND	1.15			13C-1,2,3,7,8-PeCDF	62.4	24 - 185		
1,2,3,7,8-PeCDF	ND	1.53			13C-2,3,4,7,8-PeCDF	63.9	21 - 178		
2,3,4,7,8-PeCDF	ND	1.41			13C-1,2,3,4,7,8-HxCDF	47.5	26 - 152		
1,2,3,4,7,8-HxCDF	ND	0.891			13C-1,2,3,6,7,8-HxCDF	53.7	26 - 123		
1,2,3,6,7,8-HxCDF	ND	0.854			13C-2,3,4,6,7,8-HxCDF	53.8	28 - 136		
2,3,4,6,7,8-HxCDF	ND	0.939			13C-1,2,3,7,8,9-HxCDF	56.1	29 - 147		
1,2,3,7,8,9-HxCDF	ND	1.32			13C-1,2,3,4,6,7,8-HpCDF	53.3	28 - 143		
1,2,3,4,6,7,8-HpCDF	ND	2.10			13C-1,2,3,4,7,8,9-HpCDF	59.3	26 - 138		
1,2,3,4,7,8,9-HpCDF	ND	2.01			13C-OCDF	61.9	17 - 157		
OCDF	ND	5.26			CRS 37Cl-2,3,7,8-TCDD	96.2	35 - 197		
Totals									
Total TCDD	ND	0.905							
Total PeCDD	ND	1.03							
Total HxCDD	ND	2.25							
Total HpCDD	17.1								
Total TCDF	ND	1.15							
Total PeCDF	ND	1.47							
Total HxCDF	ND	0.987							
Total HpCDF	ND	2.05							

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

Analyst: JMH
 Approved By: Martha M. Maier
 Project 25815
 10-Mar-2005 10:26

REC VALIDATED



DATA VALIDATION REPORT

NPDES Monitoring

ANALYSIS: HYDRAZINES

SAMPLE DELIVERY GROUPS: IOB2064 & IOB2065

Prepared by

AMEC—Denver Operations
550 South Wadsworth Boulevard, Suite 500
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title: NPDES Monitoring
Contract Task Order #: 313150010
Sample Delivery Group #: IOB2064, IOB2065
Project Manager: B. McIlvaine
Matrix: Water
Analysis: Hydrazines
QC Level: Level IV
No. of Samples: 2
Reviewer: P. Meeks
Date of Review: March 30, 2005

The samples listed in Table 1 were validated based on the general guidelines outlined in the USEPA *Contract Laboratory Program National Functional Guidelines for Organic Data Review (2/94)*, and USEPA SW-846 Method 8315. Any deviations from these procedures and guidelines are documented herein. Qualifiers were applied in cases where the data did not meet the required QC criteria or where special consideration by the data user is required. Data qualifiers were placed on Form Is with the associated qualification codes. Analytes that were rejected for any reason are denoted on the Form I as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

Table 1. Sample identification

EPA ID	Del Mar ID	Laboratory ID	Matrix	COC Method
Outfall 011 Composite	IOB2064-01	940177	water	Hydrazines by 8315
Outfall 011 Grab	IOB2065-01	940178	water	Hydrazines by 8315

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

Following are findings associated with sample management:

2.1.1 Sample Preservation, Handling, and Transport

The samples in these SDGs were received at Del Mar Analytical and the subcontract laboratory, Truesdail Laboratories, within the temperature limits of $4^{\circ}\text{C} \pm 2^{\circ}\text{C}$. The analysis did not require preservation, and no preservation was noted in the field. The case narratives for these SDGs noted that the samples were received intact at both laboratories. No qualifications were required.

2.1.2 Chain of Custody

The COCs from the field to Del Mar were signed and dated by field and laboratory personnel, and the transfer COCs from Del Mar to Truesdail Laboratories were signed and dated by personnel from both laboratories. Both the original COCs and transfer COCs requested only monomethyl hydrazine analysis; however, unsymmetrical dimethyl hydrazine and hydrazine were also reported. As the samples were transported to Del Mar and then to Truesdail by courier, no custody seals were required. Truesdail Laboratories did not list the Outfall 011 IDs on the Form Is; therefore, the reviewer hand-corrected the Form Is to include this information. No qualifications were required.

2.1.3 Holding Times

The holding time was assessed by comparing the date of collection with the date of analysis. The three-day extraction holding time for the hydrazine analysis was met. The samples were analyzed one day beyond the three-day analytical holding time; therefore, nondetected results in both samples were qualified as estimated, "UJ." No further qualifications were required.

2.2 CALIBRATION

The five-point initial calibrations were analyzed 03/03/05, with correlation coefficients of ≥ 0.995 for the hydrazines. The ICV and CCV bracketing the sample analyses had recoveries for the hydrazines within the QC limits of 85-115%. No qualifications were required.

2.3 BLANKS

One method blank was analyzed with these SDGs. The results reported on the method blank summary form and in the raw data for the instrument and method blank analyses associated with the samples were nondetects at the reporting limit. No qualifications were required.

2.4 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

One laboratory control sample/laboratory control sample duplicate was analyzed with these SDGs. The hydrazines were recovered within the laboratory-established control limits of 70%-130%, and the RPD was within the control limit of $\leq 20\%$. No qualifications were required.

2.5 SURROGATES RECOVERY

Surrogates were not utilized in this analysis. No qualifications were required.

2.6 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

MSD/MSD analyses were performed on Outfall 011 Grab. The recoveries for the hydrazines were within the laboratory QC limits of 0-150%; however, both recoveries were $\geq 10\%$. The RPDs were within the QC limit of $\leq 20\%$. No qualifications were required.

2.7 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:

2.7.1 Field Blanks and Equipment Rinsates

The site samples in these SDGs had no associated field QC. No qualifications were required.

2.7.2 Field Duplicates

There were no field duplicate samples in these SDGs.

2.8 COMPOUND IDENTIFICATION

The samples were analyzed by HPLC for monomethyl hydrazine, unsymmetrical dimethyl hydrazine, and hydrazine by Method 8315. Compound identification was verified, and review of the raw data indicated no compound identification errors. No qualifications were required.

2.9 COMPOUND QUANTIFICATION AND REPORTED DETECTION LIMITS

Compound quantification was verified from the raw data at a Level IV data validation by recalculating LCS/LCSD and MS/MSD detects, as there were no sample detects. No compound quantitation problems were noted. The hydrazine reporting limits were supported by the lower levels of the initial calibration. No qualifications were required.

TRUESDAIL LABORATORIES, INC.

INDEPENDENT TESTING, FORENSIC SCIENCE, AND ENVIRONMENTAL ANALYSES



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REPORT

Client: Del Mar Analytical
17461 Derian Ave., Suite 100
Irvine, CA 92614

Laboratory No: 940177
Report Date: March 8, 2005
Sampling Date: February 25, 2005
Receiving Date: February 28, 2005
Extraction Date: February 28, 2005
Analysis Date: March 4, 2005
Units: µg/L
Dilution Factor: 1
Reported By: JS

Attention: Michele Harper
Sample: Liquid / 1 Sample
Project Name: IOB2064
P.O. Number: IOB2064
Method Number: 6315 (Modified)
Investigation: Hydrazines in Liquid

Page 1 of 1

Analytical Results

Sample ID	Sample Description	Monomethyl Hydrazine		Unsymmetrical Dimethyl Hydrazine		Hydrazine	
		Raw Qual	Rev Qual	Raw Qual	Rev Qual	Raw Qual	Rev Qual
704807-MB	Method Blank	ND	*	ND	*	ND	*
940177	Outfall oil Composite IOB2064-01	ND	UJ	ND	UJ	ND	UJ
MDL		1.2					
PQL		5.0		0.27		0.39	
				5.0		1.0	

pm 3/30/05

MDL: Method Detection Limit, ug/L
PQL: Practical Quantitation Limit, ug/L
ND: Not Detected at or above the MDL value.
N/A: Not Applicable

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

Xuan Dang, Project Manager
Environmental Services

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2361

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or public relation matter without our written authorization from these laboratories.

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REPORT

Client: Del Mar Analytical
17461 Derian Ave., Suite 100
Irvine, CA 92614

Attention: Michele Harper

Sample: Liquid / 1 Sample

Project Name: IOB2065

P.O. Number: IOB2065

Method Number: 8315 (Modified)

Investigation: Hydrazines in Liquid

Laboratory No: 940178

Report Date: March 8, 2005

Sampling Date: February 25, 2005

Receiving Date: February 28, 2005

Extraction Date: February 28, 2005

Analysis Date: March 4, 2005

Units: ug/L

Dilution Factor: 1

Reported By: JS

Page 1 of 1

Analytical Results

Sample ID	Sample Description	Monomethyl Pw		Unsymmetrical Dimethyl		Hydrazine Pw	
		Hydrazine	Qual Code	Hydrazine	Qual Code	Hydrazine	Qual Code
704807-MB	Method Blank	ND	*	ND	*	ND	*
940178	outfall oil Grab IOB2065-01	ND	UJ	ND	UJ	ND	UJ
MDL		1.2		0.27		0.39	
PQL		5.0		5.0		1.0	

pm 3/29/05

MDL: Method Detection Limit, ug/L
PQL: Practical Quantitation Limit, ug/L
ND: Not Detected at or above the MDL value.
N/A: Not Applicable

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

Xuan Dang, Project Manager
Environmental Services

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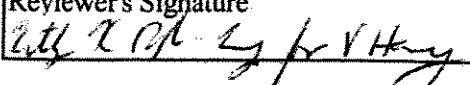
CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

AMEC Earth & Environmental
 550 South Wadsworth Boulevard
 Suite 500
 Lakewood, CO 80226

Package ID T711MT58
 Task Order 313150010
 SDG No. IOB2065, IOB2064

No. of Analyses 2

Laboratory Del Mar Analytical
 Reviewer V. Henry
 Analysis/Method Metals

Date: 4/04/05
 Reviewer's Signature


ACTION ITEMS*	
1. Case Narrative Deficiencies	
2. Out of Scope Analyses	
3. Analyses Not Conducted	
4. Missing Hardcopy Deliverables	
5. Incorrect Hardcopy Deliverables	
6. Deviations from Analysis Protocol, e.g., Holding Times GC/MS Tune/Inst. Perform Calibrations Blanks Surrogates Matrix Spike/Dup LCS Field QC Internal Standard Performance Compound Identification and Quantitation System Performance	Qualifications applied for: Analytes detected below the reporting limit was qualified as estimated, "J." Detects and negative results in the associated method and calibration blanks. Reporting limit check standard recoveries outside of control limits.
COMMENTS ^b	

* 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

ANALYSIS: METALS

SAMPLE DELIVERY GROUPS: IOB2064 & IOB2065

Prepared by

AMEC—Denver Operations
550 South Wadsworth Boulevard, Suite 500
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title: NPDES Monitoring
Contract Task Order #: 313150010
SDG#: IOB2064, IOB2065
Project Manager: B. McIlvaine
Matrix: Water
Analysis: Metals
QC Level: Level IV
No. of Samples: 2
No. of Reanalyses/Dilutions: 0
Reviewer: V. Henry
Date of Review: March 31, 2005

The samples listed in Table 1 were validated based on the guidelines outlined in the *AMEC Data Validation Procedure for Levels III and IV ICP-MS Metals, (DVP-5-A, Rev.0)*, *AMEC Data Validation Procedure for Levels III and IV ICP Metals (DVP-5, Rev. 0)*, *SW-846 Method 6020B for Inductively Coupled Plasma – Mass Spectrometry*, *SW-846 Method 6010B for Inductively Coupled Plasma*, *SW-846 Method 7471A for Mercury (Manual Cold-Vapor Technique)*, 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.

DATA VALIDATION REPORT

Project: NPDES
SDG No.: Multiple
Analysis: MET

Table 1. Sample identification

Client ID	EPA ID	Laboratory ID	Matrix	COC Method
Outfall 011 Comp	Outfall 011Comp	IOB2064-01	water	ILM04
Outfall 011 Grab	Outfall 011 Grab	IOB2065-01	water	ILM04

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

Following are findings associated with sample management:

2.1.1 Sample Preservation, Handling, and Transport

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

2.1.2 Chain of Custody

The COCs were signed and dated by field and laboratory personnel. The COCs accounted for the samples and analyses presented in these SDGs. A duplicate sample was submitted for sample Outfall 011 Grab; however, duplicate analyses were not required. No sample qualifications were required.

2.1.3 Holding Times

The dates of collection recorded on the COCs 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 and ICP/MS metals and 28 days for mercury. No qualifications were required.

2.2 ICP-MS TUNING

A precalibration routine must be completed prior to calibrating the instrument, which consists of analyzing a tuning solution to verify resolution, mass calibration, and thermal stability. The solution must be analyzed a minimum of five times and must contain isotopes representing all mass regions of interest. All %RSDs were less than 5%. The mass calibrations were within 0.1 amu of the true mass and the instrument resolutions were less than 0.75 amu at 5 percent peak height for all analytes in the tune solution. No site sample qualifications were required.

2.3 CALIBRATION

The ICV and CCV results showed acceptable recoveries, 90-110% for ICP and ICP/MS metals and 80-120% for mercury. The ICP reporting limit check standard was recovered within the AMEC control limits of 70-130%. Silver was recovered below the control limit in the ICP/MS 0.1 ppb reporting limit check standard associated with Outfall 011 Comp and Outfall 011 Grab; therefore, nondetected silver in both samples was qualified as estimated, "UJ." Arsenic from the 3/3/05 run was recovered above the control limit in the ICP/MS 1.0 ppb reporting limit check standard associated with Outfall 011 Grab and arsenic from the 3/7/05 run was recovered above the control limit in the ICP/MS 2.0 ppb reporting limit check standard associated with Outfall 011 Comp. Consequently, arsenic detected in both samples was qualified as estimated, "J." Vanadium was recovered above the control limit in the ICP/MS 2.0 ppb reporting limit check standard associated with Outfall 011 Comp and Outfall 011 Grab; therefore, the detect in Outfall 011 Grab was qualified as estimated, "J." Zinc was recovered below the control limit in the ICP/MS 2.0 ppb reporting limit check standard associated with Outfall 011 Comp and Outfall 011 Grab; therefore, zinc detected in both samples was qualified as estimated, "J." The remaining reporting limit check standards were recovered within the AMEC control limits of 70-130% and no further sample qualifications were required.

2.4 BLANKS

Boron was detected in a bracketing CCB at 0.013 mg/L; therefore, boron detected in Outfall 011 Composite and Outfall 011 Grab was qualified as estimated, "UJ." Antimony was detected in method blank 5C03085-BLK1 at 1.28 µg/L; therefore, antimony detected in Outfall 011 Grab and Outfall 011 Comp was qualified as estimated, "UJ," at a raised MDL of 1.3 µg/L. Chromium was detected in the CCBs bracketing Outfall 011 Grab and Outfall 011 Comp at approximately 1.4 µg/L; therefore, chromium detected in Outfall 011 Grab and Outfall 011 Composite was qualified as estimated, "UJ." Lead, nickel, and vanadium were reported in the CCB bracketing Outfall 011 Grab and Outfall 011 Comp at concentrations of -0.14, -0.6, and -0.9 µg/L, respectively. Consequently, the lead, nickel, and vanadium detects in Outfall 011 Grab were qualified as estimated, "J," the lead and nickel detects in Outfall 011 Comp were qualified as estimated, "J," and the vanadium nondetect in Outfall 011 Comp was qualified as estimated, "UJ." No further qualifications were required due to the method and calibration blank results.

2.5 ICP INTERFERENCE CHECK SAMPLE (ICS A/AB)

ICSA and ICSAB analyses were included in the raw data for the ICP-MS analyses. Results were not provided for spiked interferences sulfur, phosphorus, carbon, and chloride. Vanadium, manganese, cobalt, and cadmium were detected above the applicable reporting limit in the ICSA associated with Outfall 011 Grab and Outfall 011 Comp. The results for potassium were above the calibration range of the instrument in all the ICSA and ICSAB analyses associated with Outfall 011 Grab and Outfall 011 Comp; however, as potassium was found in the site samples at very low levels, no qualifications were required. The validator reviewed the raw data for the site sample ICP/MS analyses for the level of reported interferences, Al, Ca, Fe, and Mg, and determined that the level of reported interferences were not high enough to cause matrix effects. No assessment could be made with respect to possible interference from sulfur, phosphorus, carbon, and chloride.

ICSA and ICSAB analyses were included in the raw data for the ICP analyses, but were not run on the days the site samples were analyzed. The recoveries for the interferences and the other spiked analytes were within the control limits of 80-120%. In the ICSA analyses there were no positive or negative results that were above the applicable reporting limits. The validator reviewed the raw data for the site sample ICP analyses for the level of reported interferences, Al, Ca, Fe, and Mg, and determined that the level of reported interferences were not high enough to cause matrix effects. No qualifications were required.

2.6 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

The ICP/MS LCS sample was identified as 5C03085-BS1, the ICP LCS sample was identified as 5C02083-BS1, and the mercury LCS sample was identified as 5C02089-BS1. The LCS results on the summary forms and in the raw data were within the laboratory-established ICP, ICP/MS, and mercury control limits of 85-115%. No qualifications were required.

2.7 LABORATORY DUPLICATES

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

2.8 MATRIX SPIKE

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

2.9 FURNACE ATOMIC ABSORPTION QC

Furnace atomic absorption was not utilized for the analysis of these samples; therefore, furnace atomic absorption QC is not applicable.

2.10 ICP/MS AND ICP SERIAL DILUTION

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

2.11 INTERNAL STANDARDS PERFORMANCE

The ICP-MS internal standard recoveries for the site samples and associated QC sample analyses were within the 60-125% control limits and no qualifications were required.

2.12 SAMPLE RESULT VERIFICATION

A Level IV review was performed for the samples in these data packages. Calculations were verified, and the sample results reported on the Form Is were verified against the raw data. No transcription errors or calculation errors were noted. Analytes detected below the reporting limit were qualified as estimated, "J." Antimony was detected in the method blank, 5C03085-BLK1, at 1.28 $\mu\text{g/L}$, which is a detect at approximately 3.5 \times the level of antimony detected in the samples; therefore, the antimony detected in samples Outfall 011 Composite and Outfall 011 Grab was qualified as estimated "UJ" at a raised MDL of 1.3 $\mu\text{g/L}$. No further qualifications were required.

2.13 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.

2.13.1 Field Blanks and Equipment Rinsates

The samples in these SDGs had no associated field QC samples. No qualifications were required.

2.13.2 Field Duplicates

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



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

Project ID: 13267 (Study 1)

Outfall 011

Report Number: IOB2064

Sampled: 02/25/05

Received: 02/25/05

DRAFT: METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers	Rev Qual	Qual Code
Sample ID: IOB2064-01 (DRAFT: Outfall 011 Composite - Water) - cont.											
Reporting Units: mg/l											
Barium	EPA 200.8	5C03085	0.00014	0.0010	0.020	1	03/03/05	03/03/05			
Boron	EPA 200.7	5C02083	0.0074	0.050	0.065	1	03/02/05	03/02/05			
Iron	EPA 200.3	5C03085	0.0032	0.010	0.46	1	03/03/05	03/03/05		uJ	B

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

Project ID: 13267 (Study 1)
 Outfall 011
 Report Number: IOB2064

Sampled: 02/25/05
 Received: 02/25/05

DRAFT: METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers	Raw Qual	Qual Code
Sample ID: IOB2064-01 (DRAFT: Outfall 011 Composite - Water) - cont.											
Reporting Units: ug/l											
Antimony	EPA 200.8	5C03085	2.0	1.3	0.37	1	03/03/05	03/03/05	B, J	UJ	B, J
Arsenic	EPA 200.8	5C03085	0.49	1.0	2.1	1	03/03/05	03/07/05		J	*3
Beryllium	EPA 200.8	5C03085	0.037	0.50	ND	1	03/03/05	03/03/05		U	
Cadmium	EPA 200.8	5C03085	0.015	1.0	0.091	1	03/03/05	03/03/05	J	J	DNQ
Chromium	EPA 200.8	5C03085	0.26	2.0	1.8	1	03/03/05	03/03/05	J	UJ	DNQ
Cobalt	EPA 200.8	5C03085	0.10	1.0	0.19	1	03/03/05	03/03/05	J	J	DNQ
Copper	EPA 200.8	5C03085	0.49	2.0	3.3	1	03/03/05	03/03/05	J	J	DNQ
Lead	EPA 200.8	5C03085	0.13	1.0	0.30	1	03/03/05	03/03/05	J	J	B, DN
Manganese	EPA 200.8	5C03085	0.44	1.0	12	1	03/03/05	03/03/05		U	
Mercury	EPA 245.1	5C02089	0.063	0.20	ND	1	03/02/05	03/02/05		U	
Nickel	EPA 200.8	5C03085	0.15	2.0	0.87	1	03/03/05	03/03/05	J	J	B, DN
Selenium	EPA 200.8	5C03085	0.36	2.0	ND	1	03/03/05	03/03/05		U	
Silver	EPA 200.8	5C03085	0.089	1.0	ND	1	03/03/05	03/03/05		UJ	*3
Thallium	EPA 200.8	5C03085	0.075	1.0	ND	1	03/03/05	03/03/05		U	
Vanadium	EPA 200.8	5C03085	0.86	2.0	ND	1	03/03/05	03/03/05		UJ	B
Zinc	EPA 200.8	5C03085	3.1	20	13	1	03/03/05	03/03/05	J	J	*3, D

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

Project ID: 13267 (Study 1)

Outfall 011

Report Number: IOB2065

Sampled: 02/25/05

Received: 02/25/05

DRAFT: METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers	Qual Code
Sample ID: IOB2065-01 (DRAFT: Outfall 011 Grab - Water) - cont. Reporting Units: mg/l										
Barium	EPA 200.8	5C03085	0.00014	0.0010	0.020	1	03/03/05	03/03/05		
Boron	EPA 200.7	5C02083	0.0074	0.050	0.062	1	03/02/05	03/02/05		
Iron	EPA 200.8	5C03085	0.0032	0.010	0.56	1	03/03/05	03/03/05		

Qual
Code
 UJ B

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Level IV

DRAFT REPORT
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 DATA SUBJECT TO CHANGE

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 Attention: Bronwyn Kelly

Project ID: 13267 (Study 1)
 Outfall 011
 Report Number: IOB2065

Sampled: 02/25/05
 Received: 02/25/05

DRAFT: METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers	Qual	Qual
Sample ID: IOB2065-01 (DRAFT: Outfall 011 Grab - Water) - cont.											
Reporting Units: ug/l											
Antimony	EPA 200.8	5C03085	0.18	1.3	0.35	1	03/03/05	03/03/05	B, J	UJ	B, #3
Arsenic	EPA 200.8	5C03085	0.49	1.0	1.3	1	03/03/05	03/03/05		J	
Beryllium	EPA 200.8	5C03085	0.037	0.50	ND	1	03/03/05	03/03/05		UJ	
Cadmium	EPA 200.8	5C03085	0.015	1.0	0.10	1	03/03/05	03/03/05	J	J	DNQ
Chromium	EPA 200.8	5C03085	0.26	2.0	0.90	1	03/03/05	03/03/05	J	UJ	B
Cobalt	EPA 200.8	5C03085	0.10	1.0	0.23	1	03/03/05	03/03/05	J	J	DNQ
Copper	EPA 200.8	5C03085	0.49	2.0	3.2	1	03/03/05	03/03/05		J	B, DNQ
Lead	EPA 200.8	5C03085	0.13	1.0	0.57	1	03/03/05	03/03/05	J	J	
Manganese	EPA 200.8	5C03085	0.44	1.0	13	1	03/03/05	03/03/05		UJ	B, DNQ
Mercury	EPA 245.1	5C02089	0.063	0.20	ND	1	03/02/05	03/02/05		J	
Nickel	EPA 200.8	5C03085	0.15	2.0	1.0	1	03/03/05	03/03/05	J	UJ	#3
Selenium	EPA 200.8	5C03085	0.36	2.0	ND	1	03/03/05	03/03/05		UJ	B, DNQ
Silver	EPA 200.8	5C03085	0.089	1.0	ND	1	03/03/05	03/03/05		UJ	
Thallium	EPA 200.8	5C03085	0.075	1.0	ND	1	03/03/05	03/03/05		UJ	#3
Vanadium	EPA 200.8	5C03085	0.86	2.0	1.5	1	03/03/05	03/03/05	J	J	B, DNQ
Zinc	EPA 200.8	5C03085	3.1	20	16	1	03/03/05	03/03/05	J	J	DNQ

AMEC VALIDATED

Level IV

Amec Validated
 Level 4

DRAFT REPORT
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 DATA SUBJECT TO CHANGE

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DATA VALIDATION

DATA VALIDATION REPORT

NPDES Monitoring

NPDES Monitoring

ANALYSIS: PESTICIDES

ANALYSIS: PESTICIDES/PCBs

PEOPLE DELIVERY GROUP: IOB2064, IOB2065

AMEC Denver
230 South Wadsworth Blvd
Lakewood, Colorado

Prepared by

AMEC Denver Operations
550 South Wadsworth Boulevard, Suite 500
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title: NPDES Monitoring
Contract Task Order #: 313150010
SDG#: IOB2064, IOB2065
Project Manager: B. McIlvaine
Matrix: Water
Analysis: Pesticides/PCBs
QC Level: Level IV
No. of Samples: 2
No. of Reanalyses/Dilutions: 0
Reviewer: K. Shadowlight
Date of Review: April 6, 2005

The samples listed in Table 1 were validated based on the general guidelines outlined in the *AMEC Data Validation Procedures (DVP-4, Rev.2)*, *EPA Method 608*, 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 summary form as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

Table 1. Sample identification

Client ID	EPA ID	Laboratory ID	Matrix	Method
Outfall 011 Composite	Outfall 011 Composite	IOB2064-01	water	608
Outfall 011 Grab	Outfall 011 Grab	IOB2065-01	water	608

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

The following are findings associated with sample management:

2.1.1 Sample Preservation, Handling, and Transport

The coolers were received at the laboratory within the temperature limits of $4^{\circ}\text{C} \pm 2^{\circ}\text{C}$. The analysis did not require preservation, and no preservation was noted in the field. The COCs noted that the samples were received intact. No qualifications were required.

2.1.2 Chain of Custody

The COCs were signed and dated by both field and laboratory personnel. The COCs accounted for the analyses presented in these SDGs. As the samples were couriered directly to the laboratory, custody seals were not required. No qualifications were required.

2.1.3 Holding Times

The water samples were extracted within seven days of sample collection and analyzed within 40 days of extraction. No qualifications were required.

2.2 PESTICIDES INSTRUMENT PERFORMANCE

No resolution check standards or breakdown check standards are required by Method 608 for pesticides, and according to the raw data provided, a resolution check standard was not analyzed by the laboratory. The laboratory did analyze a breakdown check standard with a breakdown of $\leq 20\%$ for individual components (4,4-DDT and endrin) and $\leq 30\%$ for the total, as suggested in the National Functional Guidelines. A review of the raw data indicated that the analytical run time was of sufficient length to provide adequate standard separation. The two analytical columns used in the analyses were within the guidelines specified in the methods.

According to the laboratory SOP and the initial calibration raw data, the retention time windows are ± 0.10 minutes for both surrogates and target compound calibration standards. A review of the raw data indicated that the laboratory retention time criteria were met for the surrogates and pesticide calibration standards. No qualifications were required.

2.3 CALIBRATION

2.3.1 Analytical Sequence

Based on the data provided, the analytical sequences were in accordance with the requirements of Method 608. No qualifications were required.

2.3.2 Initial Calibration

There was one initial calibration dated 03/02/05 associated with the pesticide analyses of the samples in these SDGs, which consisted of six point calibrations for all pesticide target compounds on two analytical columns. The %RSDs were within the EPA Method 608 QC limit of $\leq 10\%$ or the r^2 values were ≥ 0.995 on both analytical columns. One initial calibration dated 02/11/05 was associated with the PCB analyses of the samples in these SDGs which consisted of five points for Aroclor 1016 and Aroclor 1260. Single point calibrations for Aroclor 1242, Aroclor 1248, and Aroclor 1254 were also analyzed. The average %RSDs for the individual peaks of Aroclor 1016 and Aroclor 1260 were $\leq 10\%$ or the r^2 values were ≥ 0.995 on both analytical columns. An ICV was analyzed immediately following each of the initial calibrations. The %Ds for all target compounds were within the QC limits of 15% on both analytical columns. A representative number of %RSDs and ICV %Ds were recalculated from the raw data and no transcription or calculation errors were noted. No qualifications were required.

2.3.3 Continuing Calibration

The %Ds for beta-BHC in the continuing calibration analyzed 03/04/05 (exceeded 15% on the primary channel; therefore, beta-BHC was qualified as estimated, "UJ," in sample Outfall 011 Grab. The remaining applicable %Ds were within the Method QC limit of $\pm 15\%$ for the remaining calibrations. Each of the PCB analyses for the samples in these SDGs was bracketed by two CCVs. The %D for Aroclor 1260 exceeded 15% in one of the continuing calibrations bracketing the sample analyses of these SDGs; therefore, the nondetect results for associated target compounds Aroclor 1248, Aroclor 1254, and Aroclor 1260 were qualified as estimated, "UJ," in samples Outfall 011 Composite and Outfall 011 Grab. The remaining %Ds for Aroclor 1016 and Aroclor 1260 were $\leq 15\%$. A representative number of %Ds were recalculated from the raw data and no transcription or calculation errors were noted. No further qualifications were required.

2.4 BLANKS

2.4.1 Instrument Blanks

An instrument blank was analyzed at the beginning of each analytical sequence. Cross-contamination was not evident in the samples. No qualifications were necessary.

2.4.2 Method Blanks

Two water method blanks (5C02052-BLK1 and 5C04051-BLK1) were extracted and analyzed with these SDGs. Both samples were originally extracted with method blank 5C02052-BLK1; however, sample Outfall 011 Grab was reextracted with method blank 5C0404051-BLK1. A notation by the analyst indicated that sample Outfall 011 Grab was reextracted to confirm the 4,4'-DDT detect in the sample. Target compound 4,4'-DDT was reported below the reporting limit in method blank 5C02052-BLK1 at a concentration of 0.0332ug/l and in sample Outfall 011 Composite at 0.036ug/l. The result for 4,4'-DDT was therefore qualified as an estimated nondetect, "UJ," at the reporting limit in sample Outfall 011 Composite. There were no other pesticide target compounds or Aroclors detected in the above the MDL in the method blanks; however, it should be noted that target compound 4,4'-DDT was also present at a concentration below the MDL in method blank 5C0404051-BLK1. Review of the chromatograms showed no false negatives or false positives. No further qualifications were required.

2.5 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

One blank spike/blank spike duplicate pair (5C02052-BS1/BSD1) and one blank spike (5C04051-BS1) were extracted and analyzed with these SDGs. The recoveries for all spiked pesticide target compounds and Aroclors were within the laboratory-established QC limits. The RPD for 4,4'-DDT exceeded 30% in the blank spike/blank spike duplicate pair; therefore, the nondetect (see section 2.4) was qualified as estimated, "UJ," in sample Outfall 011 Composite. The remaining RPDs were $\leq 30\%$. A representative number of recoveries were checked from the raw data, and no calculation or transcription errors were noted. No further qualifications were required.

2.6 SURROGATE RECOVERY

The sample and all QC samples were fortified with the surrogate compounds decachlorobiphenyl and tetrachloro-m-xylene. Surrogate recoveries for the pesticide and PCB analyses of the samples were within the laboratory-established QC limits. The recoveries were calculated from the raw data and no transcription or calculation errors were noted. No qualifications were required.

2.7 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

There were no MS/MSD analyses associated with these SDGs. Method accuracy and precision were assessed based on the blank spike/blank spike duplicate results. No qualifications were required.

2.8 SAMPLE CLEANUP PERFORMANCE

According to the laboratory extraction benchsheets, no cleanups were performed on the water samples. No qualifications were required.

2.9 FIELD QC SAMPLES

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

2.9.1 Field Blanks and Equipment Rinsates

There were no field QC samples associated with the samples in these SDGs. No qualifications were required.

2.9.2 Field Duplicates

There were no field duplicate samples associated with the sample in these SDGs.

2.10 COMPOUND IDENTIFICATION

The laboratory analyzed for pesticide target compounds and PCBs by EPA Method 608. Compound identification is verified at a Level IV validation. Review of chromatograms and retention times indicated no problems with compound identification for the samples in these SDGs. No qualifications were required.

2.11 COMPOUND QUANTIFICATION AND REPORTED DETECTION LIMITS

Compound quantification was verified for these SDGs and quantitation was verified by recalculating any sample detect and a representative number of blank spike and surrogate recoveries. Reporting limits were supported by the low level standard of the initial calibration and the laboratory MDL studies. The water reporting limits were not adjusted for sample amounts on the result summaries; however, the dilution factors listed on the summaries reflected the sample volumes extracted. Results were reported in ug/L (ppb). Any reported detect between the MDL and the reporting limit was qualified as estimated, "J," by the laboratory. No further qualifications were required.



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

Project ID: 13267 (Study 1)
 Outfall 011
 Report Number: IOB2064

Sampled: 02/25/05
 Received: 02/25/05

DRAFT: TOTAL PCBS (EPA 608)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOB2064-01 (DRAFT: Outfall 011 Composite - Water) - cont.									
Reporting Units: ug/l									
Aroclor 1016	EPA 608	5C02052	0.20	1.0	ND	0.952	03/02/05	03/03/05	Raw Qual / C
Aroclor 1221	EPA 608	5C02052	0.10	1.0	ND	0.952	03/02/05	03/03/05	u
Aroclor 1232	EPA 608	5C02052	0.15	1.0	ND	0.952	03/02/05	03/03/05	↓
Aroclor 1242	EPA 608	5C02052	0.15	1.0	ND	0.952	03/02/05	03/03/05	↓
Aroclor 1248	EPA 608	5C02052	0.25	1.0	ND	0.952	03/02/05	03/03/05	↓
Aroclor 1254	EPA 608	5C02052	0.25	1.0	ND	0.952	03/02/05	03/03/05	↓
Aroclor 1260	EPA 608	5C02052	0.40	1.0	ND	0.952	03/02/05	03/03/05	↓
Surrogate: Decachlorobiphenyl (45-120%)					59 %				

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 1174 E. Cooley Dr., Suite A, Colton, CA 92324 (909) 570-1667 FAX (909) 570-1669
 4484 Chippendale Dr., Suite 805, San Diego, CA 92123 (619) 502-8500 FAX (619) 502-0689
 9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 705-0013 FAX (480) 795-0051
 2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3020 FAX (702) 798-1021

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

Project ID: 13267 (Study 1)
 Outfall 011
 Report Number: IOB2064

Sampled: 02/25/05
 Received: 02/25/05

DRAFT: ORGANOCHLORINE PESTICIDES (EPA 608)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers	Raw Qual	Qual Code
Sample ID: IOB2064-01 (DRAFT: Outfall 011 Composite - Water) - cont.											
Reporting Units: ug/l											
Aldrin	EPA 608	5C02052	0.030	0.10	ND	0.952	03/02/05	03/03/05			
alpha-BHC	EPA 608	5C02052	0.015	0.10	ND	0.952	03/02/05	03/03/05			
beta-BHC	EPA 608	5C02052	0.015	0.10	ND	0.952	03/02/05	03/03/05			
delta-BHC	EPA 608	5C02052	0.020	0.20	ND	0.952	03/02/05	03/03/05			
gamma-BHC (Lindane)	EPA 608	5C02052	0.020	0.10	ND	0.952	03/02/05	03/03/05			
Chlordane	EPA 608	5C02052	0.20	1.0	ND	0.952	03/02/05	03/03/05			
4,4'-DDD	EPA 608	5C02052	0.020	0.10	ND	0.952	03/02/05	03/03/05			
4,4'-DDT	EPA 608	5C02052	0.025	0.10	ND	0.952	03/02/05	03/03/05			
Dieldrin	EPA 608	5C02052	0.030	0.10	ND	0.952	03/02/05	03/03/05			
Endosulfan I	EPA 608	5C02052	0.015	0.10	ND	0.952	03/02/05	03/03/05			
Endosulfan II	EPA 608	5C02052	0.040	0.10	ND	0.952	03/02/05	03/03/05			
Endosulfan sulfate	EPA 608	5C02052	0.015	0.20	ND	0.952	03/02/05	03/03/05			
Endrin	EPA 608	5C02052	0.020	0.10	ND	0.952	03/02/05	03/03/05			
Endrin aldehyde	EPA 608	5C02052	0.045	0.10	ND	0.952	03/02/05	03/03/05			
Endrin ketone	EPA 608	5C02052	0.020	0.10	ND	0.952	03/02/05	03/03/05			
Heptachlor	EPA 608	5C02052	0.030	0.10	ND	0.952	03/02/05	03/03/05			
Heptachlor epoxide	EPA 608	5C02052	0.020	0.10	ND	0.952	03/02/05	03/03/05			
Methoxychlor	EPA 608	5C02052	0.035	0.10	ND	0.952	03/02/05	03/03/05			
Toxaphene	EPA 608	5C02052	1.5	5.0	ND	0.952	03/02/05	03/03/05			
Surrogate: Tetrachloro-m-xylene (35-120%)					54 %						
Surrogate: Decachlorobiphenyl (45-120%)					64 %						

Raw Qual
 Qual Code
 B. J
 UJ
 B.75

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1/3 01/04/05



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 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: 13267 (Study 1)
 Outfall 011
 Report Number: IOB2065

Sampled: 02/25/05
 Received: 02/25/05

DRAFT: ORGANOCHLORINE PESTICIDES (EPA 608)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers	Raw Qual	Anal Code
Sample ID: IOB2065-01 (DRAFT: Outfall 011 Grab - Water) - cont.											
Reporting Units: ug/l											
Aldrin	EPA 608	5C04051	0.030	0.10	ND	1	03/04/05	03/05/05			
alpha-BHC	EPA 608	5C04051	0.015	0.10	ND	1	03/04/05	03/05/05			
beta-BHC	EPA 608	5C04051	0.015	0.10	ND	1	03/04/05	03/05/05			
delta-BHC	EPA 608	5C04051	0.020	0.20	ND	1	03/04/05	03/05/05			
gamma-BHC (Lindane)	EPA 608	5C04051	0.020	0.10	ND	1	03/04/05	03/05/05			
Chlordane	EPA 608	5C04051	0.20	1.0	ND	1	03/04/05	03/05/05			
4,4'-DDD	EPA 608	5C04051	0.020	0.10	ND	1	03/04/05	03/05/05			
4,4'-DDE	EPA 608	5C04051	0.025	0.10	ND	1	03/04/05	03/05/05			
4,4'-DDT	EPA 608	5C04051	0.030	0.10	0.038	1	03/04/05	03/05/05			
Dieldrin	EPA 608	5C04051	0.015	0.10	ND	1	03/04/05	03/05/05			
Endosulfan I	EPA 608	5C04051	0.015	0.10	ND	1	03/04/05	03/05/05			
Endosulfan II	EPA 608	5C04051	0.040	0.10	ND	1	03/04/05	03/05/05			
Endosulfan sulfate	EPA 608	5C04051	0.015	0.20	ND	1	03/04/05	03/05/05			
Endrin	EPA 608	5C04051	0.020	0.10	ND	1	03/04/05	03/05/05			
Endrin aldehyde	EPA 608	5C04051	0.045	0.10	ND	1	03/04/05	03/05/05			
Endrin ketone	EPA 608	5C04051	0.020	0.10	ND	1	03/04/05	03/05/05			
Heptachlor	EPA 608	5C04051	0.030	0.10	ND	1	03/04/05	03/05/05			
Heptachlor epoxide	EPA 608	5C04051	0.020	0.10	ND	1	03/04/05	03/05/05			
Methoxychlor	EPA 608	5C04051	0.035	0.10	ND	1	03/04/05	03/05/05			
Toxaphene	EPA 608	5C04051	1.5	5.0	ND	1	03/04/05	03/05/05			
Surrogate: Tetrachloro-m-xylene (35-120%)					61 %						
Surrogate: Decachlorobiphenyl (45-120%)					76 %						

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LEVEL IV

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

Project ID: 13267 (Study 1)
 Outfall 011
 Report Number: IOB2065

Sampled: 02/25/05
 Received: 02/25/05

DRAFT: TOTAL PCBS (EPA 608)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOB2065-01 (DRAFT: Outfall 011 Grab - Water) - cont.									
Reporting Units: ug/l									
Aroclor 1016	EPA 608	5C02052	0.20	1.0	ND	0.962	03/02/05	03/03/05	
Aroclor 1221	EPA 608	5C02052	0.10	1.0	ND	0.962	03/02/05	03/03/05	
Aroclor 1232	EPA 608	5C02052	0.15	1.0	ND	0.962	03/02/05	03/03/05	
Aroclor 1242	EPA 608	5C02052	0.15	1.0	ND	0.962	03/02/05	03/03/05	
Aroclor 1248	EPA 608	5C02052	0.25	1.0	ND	0.962	03/02/05	03/03/05	
Aroclor 1254	EPA 608	5C02052	0.25	1.0	ND	0.962	03/02/05	03/03/05	
Aroclor 1260	EPA 608	5C02052	0.40	1.0	ND	0.962	03/02/05	03/03/05	
Surrogate: Decachlorobiphenyl (45-120%)					65 %				

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CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

AMEC Earth & Environmental
 550 South Wadsworth Boulevard
 Suite 500
 Lakewood, CO 80226

Package ID T711RA6
 Task Order 313150010
 SDG No. IOB2064, 65, 69

No. of Analyses 3

Laboratory Eberline

Reviewer P. Meeks

Analysis/Method Radionuclides

Date: 03/31/05

Reviewer's Signature

P. Meeks

ACTION ITEMS*

1. Case Narrative Deficiencies
2. Out of Scope Analyses
3. Analyses Not Conducted
4. Missing Hardcopy Deliverables
5. Incorrect Hardcopy Deliverables
6. Deviations from Analysis Protocol, e.g.,
 - Holding Times
 - GC/MS Tune/Inst. Performance
 - Calibrations
 - Blanks
 - Surrogates
 - Matrix Spike/Dup LCS
 - Field QC
 - Internal Standard Performance
 - Compound Identification and Quantitation
 - System Performance

COMMENTS^b

Acceptable as reviewed.

* 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

ANALYSIS: RADIONUCLIDES

SAMPLE DELIVERY GROUPS:
IOB2064, IOB2065 & IOB2069

Prepared by

AMEC—Denver Operations
550 South Wadsworth Boulevard, Suite 500
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title: NPDES Monitoring
Contract Task Order #: 313150010
SDG#: IOB2064, IOB2065, IOB2069
Project Manager: B. McIlvaine
Matrix: Water
Analysis: Radionuclides
QC Level: Level IV
No. of Samples: 3
No. of Reanalyses/Dilutions: 0
Reviewer: P. Meeks
Date of Review: March 31, 2005

The samples listed in Table 1 were validated based on the guidelines outlined in the *EPA Prescribed Procedures for Measurements of Radioactivity in Drinking Water, Methods 900.0, 905.0, and 906.0*, and validation procedures outlined in the *USEPA CLP National Functional Guidelines for Inorganic Data Review (2/94)*. Any deviations from these procedures and guidelines are documented herein. Qualifiers were applied in cases where the data did not meet the required QC criteria or where special consideration by the data user is required. Data qualifiers were placed on Form Is with the associated qualification codes. Analytes that were rejected for any reason are denoted on the Form I as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

Table 1. Sample identification

Client ID	Del Mar ID	Eberline ID	Matrix	COC Method
Outfall 011 Composite	IOB2064-01	8306-001	water	900.0, 905.0, 906.0
Outfall 011 Grab	IOB2065-01	8305-001	water	900.0, 905.0, 906.0
Outfall 003	IOB2069-01	8307-001	water	900.0, 905.0, 906.0

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

Following are findings associated with sample management:

2.1.1 Sample Preservation, Handling, and Transport

All the samples in these SDGs were received at Del Mar Analytical within the temperature limits of $4\pm 2^{\circ}\text{C}$. No temperature information was provided by Eberline, the subcontract laboratory; however, as it is not necessary to chill radiological samples, no qualifications were required. The samples were noted to have been received intact and in good condition. All tritium samples were received unpreserved in glass containers. All gross alpha, gross beta, and strontium samples were received preserved. No qualifications were required.

2.1.2 Chain of Custody

The original COCs were signed and dated by field and laboratory personnel. The transfer COCs were signed by personnel from both laboratories. Eberline did not list the MWH IDs on the Form Is; therefore, the reviewer edited the Form Is to reflect these IDs. No qualifications were required.

2.1.3 Holding Times

The tritium and preserved gross alpha, gross beta, and strontium samples were analyzed within 180 days of collection. No qualifications were necessary.

2.2 CALIBRATION

The laboratory calibration information included the standard certificates and applicable preparation/dilutions logs for NIST-traceability.

Gross Alpha and Gross Beta

The initial calibration included with the data was performed in February 2003. The gross alpha detector efficiencies were all less than 20%; therefore, these results were qualified as estimated, "UJ," for nondetects and, "J," for detects. The remaining detector efficiencies were above 20%.

Tritium

No calibration standards were analyzed for this method. According to the laboratory, every sample was spiked for efficiency determination; therefore, no calibration is necessary. All detector efficiencies in the samples were at least 20% and were considered acceptable. All internal spike efficiency to default efficiency ratios were near 1, indicating that quenching did not occur.

Strontium-90

The initial calibrations were performed in June 1995. All strontium chemical yields were at least 75% and were considered acceptable. The strontium continuing calibration results were within the laboratory control limits. No qualifications were necessary.

2.3 BLANKS

No measurable activities were detected in the method blanks; therefore, no qualifications were necessary.

2.4 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

One blank spike (8305-002) was analyzed in association with the samples in these SDGs. The strontium recovery exceeded the 3-sigma limit; however, the recovery of 110% was deemed acceptable. The remaining blank spike results were within the 3-sigma limits. No qualifications were necessary.

2.5 LABORATORY DUPLICATES

The laboratory performed duplicate analysis on Outfall 011 Grab. The gross alpha and gross beta RPDs exceeded 20%; however, as the results were within the 3-sigma limits, they were deemed acceptable. The strontium and tritium results were within the 3-sigma limits and their RPDs were $\leq 20\%$. No qualifications were necessary.

2.6 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

The laboratory performed matrix spike analyses on Outfall 011 Grab for gross alpha, gross beta, and tritium. The recovery for gross beta was above 3-sigma; however, the recovery of 108% was considered acceptable. The remaining recoveries were within the 3-sigma limits. No qualifications were necessary.

2.7 SAMPLE RESULT VERIFICATION

An EPA Level IV review was performed for the samples in these data packages. Sample results and MDAs reported on the sample result forms were verified against the raw data and no calculation or transcription errors were noted. No qualifications were necessary.

2.8 FIELD QC SAMPLES

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

2.8.1 Field Blanks and Equipment Rinsates

The samples in these SDGs had no associated field QC samples. No qualifications were required.

2.8.2 Field Duplicates

There were no field duplicate samples in these SDGs.

Eberline Services

ANALYSIS RESULTS

SDG <u>8306</u>	Client <u>DEL MAR ANAL</u>
Work Order <u>R503011-01</u>	Contract <u>PROJECT# IOB2064</u>
Received Date <u>03/01/05</u>	Matrix <u>WATER</u>

Client	Lab	Sample ID	Collected	Analyzed	Nuclide	Results + 2σ	Units	MDA
Outfall 011 Composite IOB2064-01 PM 3/31/05	8306-001		02/25/05	03/15/05	GrossAlpha	1.29 ± 0.80	pCi/L	0.947
				03/15/05	Gross Beta	2.12 ± 1.2	pCi/L	1.89
				03/17/05	H3	-7.08 ± 150	pCi/L	261
				03/18/05	Sr90	-0.059 ± 0.24	pCi/L	0.459

Rev	Qual
S	R
U	
U	

AMEC VALIDATED

LEVEL 1

Certified by <u>[Signature]</u>
Report Date <u>03/24/05</u>
Page 1

Eberline Services

ANALYSIS RESULTS

SDG <u>8305</u>	Client <u>DEL MAR ANAL</u>
Work Order <u>R503010-01</u>	Contract <u>PROJECT# IOB2065</u>
Received Date <u>03/01/05</u>	Matrix <u>WATER</u>

Client	Lab	Sample ID	Collected	Analyzed	Nuclide	Results + 2σ	Units	MDA	Rev Qual	Qual Code
IOB2065-01	8305-001		02/25/05	03/15/05	GrossAlpha	1.50 ± 0.89	pCi/L	1.05	J	R
				03/15/05	Gross Beta	2.27 ± 1.2	pCi/L	1.77		
				03/17/05	H3	-45.7 ± 150	pCi/L	259		
				03/18/05	Sr90	0.206 ± 0.25	pCi/L	0.451		

Outfall Oil Grab

PM 3/31/05

AMEC VALIDATED

Certified by <u>[Signature]</u>
Report Date <u>03/24/05</u>
Page 1

CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

AMEC Earth & Environmental
 550 South Wadsworth Boulevard
 Suite 500
 Lakewood, CO 80226

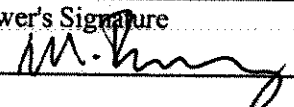
Package ID T711SV37
 Task Order 313150010
 SDG No. IOB2064, IOB2065

No. of Analyses 2

Laboratory Del Mar

Reviewer M. Pokorny

Analysis/Method Semivolatiles

Date: April 4, 2005
 Reviewer's Signature


ACTION ITEMS*	
1. Case Narrative Deficiencies	
2. Out of Scope Analyses	
3. Analyses Not Conducted	
4. Missing Hardcopy Deliverables	
5. Incorrect Hardcopy Deliverables	
6. Deviations from Analysis Protocol, e.g., Holding Times GC/MS Tune/Inst. Perform Calibrations Blanks Surrogates Matrix Spike/Dup LCS Field QC Internal Standard Performance Compound Identification and Quantitation System Performance	Qualifications were required for calibration outliers and blank contamination.
COMMENTS ^b	
^a 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

ANALYSIS: SEMIVOLATILES

SAMPLE DELIVERY GROUP: IOB2064, IOB2065

Prepared by

AMEC Denver Operations
550 South Wadsworth Boulevard, Suite 500
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title: NPDES Monitoring
Contract Task Order #: 313150010
SDG#: IOB2064, IOB2065
Project Manager: B. McIlvaine
Matrix: Water
Analysis: Semivolatiles
QC Level: Level IV
No. of Samples: 2
No. of Reanalyses/Dilutions: 0
Reviewer: M. Pokorny
Date of Review: April 4, 2005

The samples listed in Table 1 were validated based on the guidelines outlined in the *AMEC Data Validation Procedure for Levels C and D Semivolatile Organics (DVP-3, Rev. 2)*, *EPA Method 625*, and the *National Functional Guidelines For Organic Data Review (2/94)*. Any deviations from these procedures are documented herein. Qualifiers were applied in cases where the data did not meet the required QC criteria or where special consideration by the data user is required. Data qualifiers were placed on Form Is with the associated qualification codes. Analytes that were rejected for any reason are denoted on the Form I as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

Table 1. Sample identification

Client ID	EPA ID	Lab No.	Matrix	Method
Outfall 011-composite	Outfall 011-composite	IOB2064-01	water	625
Outfall 011-grab	Outfall 011-grab	IOB2065-01	water	625

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

The samples in these SDGs were received at the laboratory within the temperature limits of $4^{\circ}\text{C} \pm 2^{\circ}\text{C}$. The analysis did not require preservation, and no preservation was noted in the field. The COCs noted that the samples were received intact. No qualifications were required.

2.1.2 Chain of Custody

The COCs were signed and dated by both field and laboratory personnel. The COCs accounted for the analyses presented in these SDGs. As the samples were couriered directly to the laboratory, custody seals were not required. No qualifications were required.

2.1.3 Holding Times

The water samples were extracted within seven days of collection and analyzed within 40 days of collection. No qualifications were required.

2.2 GC/MS TUNING

The DFTPP tunes met the criteria specified in Method 625, and the samples were analyzed within 12 hours of the DFTPP injection time. No qualifications were required.

2.3 CALIBRATION

The initial calibrations associated with this SDG were dated 02/15/05 and 02/24/05. For the initial calibration dated 02/15/05, the average RRF for benzidine was ≥ 0.05 and the %RSD for benzidine was $\leq 35\%$ or $r^2 \geq 0.995$. For the initial calibration dated 02/24/05, the average RRFs for were ≥ 0.05 and the %RSDs were $\leq 35\%$ or $r^2 \geq 0.995$ for all target compounds except for the r^2 values for benzoic acid and 4-nitroaniline. Benzoic acid and 4-nitroaniline were qualified as estimated nondetects, "UJ," in the samples of these SDGs. A representative number of average RRFs and %RSDs were checked from the raw data, and no calculation or transcription errors were noted.

The continuing calibration associated with the sample analyses were analyzed 03/02/05 (10:35 and 15:11). For the continuing calibration dated 03/02/05 (10:35), the RRF and %D for benzidine were within the QC limits. For the continuing calibration dated 03/02/05 (15:11) the RRFs for all target compounds were ≥ 0.05 , and the %Ds were ≤ 20 . A representative number of RRFs and %Ds were checked from the raw data, and no calculation or transcription errors were noted. No further qualifications were required.

2.4 BLANKS

One method blank (5B28001-BLK1) was extracted and analyzed with these SDGs. Butylbenzylphthalate, di-n-butylphthalate, and diethylphthalate were reported in the method blank. The butylbenzylphthalate and di-n-butylphthalate detects for sample Outfall 011-composite were qualified as nondetects, "U." Review of the raw data indicated no reportable false negatives. No further qualifications were required.

2.5 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

One blank spike/ blank spike duplicate pair (5B28001-BS1/BSD1) was extracted and analyzed with these SDGs. For blank spike/blank spike duplicate pairs, qualifications are applied, if necessary, to the associated samples based on those recoveries consistently outside of the laboratory-established QC limits in both the blank spike and blank spike duplicate. Results for those compounds with recoveries not consistent within the pair, with RPDs above the QC limit, are qualified as estimated, "UJ" for nondetects and "J" for detects, in the associated samples.

For the 5B28001-BS1/BSD1 pair, all percent recoveries and RPDs were within the laboratory QC limits except for benzidine which was not recovered in the BS and the RPD for benzidine. Both of the samples of these SDGs had benzidine qualified as estimated nondetects, "UJ."

A representative number of recoveries and RPDs were calculated from the raw data and no calculation or transcription errors were found. No further qualifications were required.

2.6 SURROGATE RECOVERY

The sample surrogate recoveries were within the laboratory QC limits. A representative number of recoveries were calculated from the raw data, and no transcription or calculation errors were noted. No qualifications were required.

2.7 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

No MS/MSD analyses were associated with these SDGs. Evaluation of method accuracy and precision was based on blank spike/blank spike duplicate 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 Field Blanks and Equipment Rinsates

There were no field QC samples associated with these SDGs. No qualifications were required.

2.8.2 Field Duplicates

There were no field duplicate samples associated with these SDGs. No qualifications were required.

2.9 INTERNAL STANDARDS PERFORMANCE

The internal standard area counts and retention times were within the control limits established by the continuing calibration standards: -50%/+100% for internal standard areas and ± 30 seconds for retention times. A representative number of recoveries 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 the semivolatile target compounds by EPA Method 625. Review of the sample chromatogram, 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 level of the initial calibration and the method detection limit study. No qualifications were required.

2.12 TENTATIVELY IDENTIFIED COMPOUNDS

TICs were not reported by the laboratory for these SDGs. No qualifications were required.

2.13 SYSTEM PERFORMANCE

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



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

Project ID: 13267 (Study 1)
 Outfall 011
 Report Number: IOB2064

Sampled: 02/25/05
 Received: 02/25/05

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

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers	Rep Qual	Out Code
Sample ID: IOB2064-01 (DRAFT: Outfall 011 Composite - Water)											
Reporting Units: ug/l											
Acenaphthene	EPA 625	5B28001	0.10	0.50	ND	0.943	02/28/05	03/02/05		U	
Acenaphthylene	EPA 625	5B28001	0.10	0.50	ND	0.943	02/28/05	03/02/05		U	
Aniline	EPA 625	5B28001	2.9	10	ND	0.943	02/28/05	03/02/05		U	
Anthracene	EPA 625	5B28001	0.083	0.50	ND	0.943	02/28/05	03/02/05		U	
Benzidine	EPA 625	5B28001	3.2	5.0	ND	0.943	02/28/05	03/03/05	L2	U	#5
Benzoic acid	EPA 625	5B28001	3.7	20	ND	0.943	02/28/05	03/02/05		U	C
Benzo(a)anthracene	EPA 625	5B28001	0.038	5.0	ND	0.943	02/28/05	03/02/05		U	
Benzo(a)pyrene	EPA 625	5B28001	0.14	2.0	ND	0.943	02/28/05	03/02/05		U	
Benzo(b)fluoranthene	EPA 625	5B28001	0.050	2.0	ND	0.943	02/28/05	03/02/05		U	
Benzo(g,h,i)perylene	EPA 625	5B28001	0.059	5.0	ND	0.943	02/28/05	03/02/05		U	
Benzo(k)fluoranthene	EPA 625	5B28001	0.053	0.50	ND	0.943	02/28/05	03/02/05		U	
Benzyl alcohol	EPA 625	5B28001	0.21	5.0	ND	0.943	02/28/05	03/02/05		U	
Bis(2-chloroethoxy)methane	EPA 625	5B28001	0.072	0.50	ND	0.943	02/28/05	03/02/05		U	
Bis(2-chloroethyl)ether	EPA 625	5B28001	0.084	0.50	ND	0.943	02/28/05	03/02/05		U	
Bis(2-chloroisopropyl)ether	EPA 625	5B28001	0.11	0.50	ND	0.943	02/28/05	03/02/05		U	
Bis(2-ethylhexyl)phthalate	EPA 625	5B28001	1.1	5.0	ND	0.943	02/28/05	03/02/05		U	
4-Bromophenyl phenyl ether	EPA 625	5B28001	0.12	1.0	ND	0.943	02/28/05	03/02/05		U	
Butyl benzyl phthalate	EPA 625	5B28001	0.34	5.0	ND 0.43	0.943	02/28/05	03/02/05	B, J	U	B
4-Chloroaniline	EPA 625	5B28001	0.20	2.0	ND	0.943	02/28/05	03/02/05		U	
2-Chloronaphthalene	EPA 625	5B28001	0.059	0.50	ND	0.943	02/28/05	03/02/05		U	
4-Chloro-3-methylphenol	EPA 625	5B28001	0.34	2.0	ND	0.943	02/28/05	03/02/05		U	
4-Chlorophenyl phenyl ether	EPA 625	5B28001	0.056	0.50	ND	0.943	02/28/05	03/02/05		U	
2-Chlorophenol	EPA 625	5B28001	0.12	1.0	ND	0.943	02/28/05	03/02/05		U	
Chrysene	EPA 625	5B28001	0.072	0.50	ND	0.943	02/28/05	03/02/05		U	
Dibenz(a,h)anthracene	EPA 625	5B28001	0.083	0.50	ND	0.943	02/28/05	03/02/05		U	
Dibenzofuran	EPA 625	5B28001	0.075	0.50	ND	0.943	02/28/05	03/02/05		U	
Di-n-butyl phthalate	EPA 625	5B28001	0.26	2.0	ND	0.943	02/28/05	03/02/05		U	
1,2-Dichlorobenzene	EPA 625	5B28001	0.11	0.50	ND	0.943	02/28/05	03/02/05		U	
1,3-Dichlorobenzene	EPA 625	5B28001	0.13	0.50	ND	0.943	02/28/05	03/02/05		U	
1,4-Dichlorobenzene	EPA 625	5B28001	0.050	0.50	ND	0.943	02/28/05	03/02/05		U	
3,3-Dichlorobenzidine	EPA 625	5B28001	0.93	5.0	ND	0.943	02/28/05	03/02/05		U	
2,4-Dichlorophenol	EPA 625	5B28001	0.21	2.0	ND	0.943	02/28/05	03/02/05		U	
Diethyl phthalate	EPA 625	5B28001	0.12	1.0	ND 0.43	0.943	02/28/05	03/02/05	B, J	U	B
2,4-Dimethylphenol	EPA 625	5B28001	0.31	2.0	ND	0.943	02/28/05	03/02/05		U	
Dimethyl phthalate	EPA 625	5B28001	0.081	0.50	ND	0.943	02/28/05	03/02/05		U	
4,6-Dinitro-2-methylphenol	EPA 625	5B28001	0.38	5.0	ND	0.943	02/28/05	03/02/05		U	
2,4-Dinitrophenol	EPA 625	5B28001	2.7	5.0	ND	0.943	02/28/05	03/02/05		U	
2,4-Dinitrotoluene	EPA 625	5B28001	0.23	5.0	ND	0.943	02/28/05	03/02/05		U	
2,6-Dinitrotoluene	EPA 625	5B28001	0.24	5.0	ND	0.943	02/28/05	03/02/05		U	
Di-n-octyl phthalate	EPA 625	5B28001	0.17	5.0	ND	0.943	02/28/05	03/02/05		U	
1,2-Diphenylhydrazine/Azobenzene	EPA 625	5B28001	0.087	1.0	ND	0.943	02/28/05	03/02/05		U	

DRAFT REPORT
 DRAFT REPORT
 DATA SUBJECT TO CHANGE

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.

AMEC VALIDATED

LEVEL IV

MWP 4.5.05



Del Mar Analytical

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

Project ID: 13267 (Study 1)
 Outfall 011
 Report Number: IOB2064

Sampled: 02/25/05
 Received: 02/25/05

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

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
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Sample ID: IOB2064-01 (DRAFT: Outfall 011 Composite - Water) - cont.
 Reporting Units: ug/l

Fluoranthene	EPA 625	5B28001	0.089	0.50	ND	0.943	02/28/05	03/02/05	
Fluorene	EPA 625	5B28001	0.075	0.50	ND	0.943	02/28/05	03/02/05	
Hexachlorobenzene	EPA 625	5B28001	0.13	1.0	ND	0.943	02/28/05	03/02/05	
Hexachlorobutadiene	EPA 625	5B28001	0.38	2.0	ND	0.943	02/28/05	03/02/05	
Hexachlorocyclopentadiene	EPA 625	5B28001	1.8	5.0	ND	0.943	02/28/05	03/02/05	
Hexachloroethane	EPA 625	5B28001	0.51	3.0	ND	0.943	02/28/05	03/02/05	
Indeno(1,2,3-cd)pyrene	EPA 625	5B28001	0.19	2.0	ND	0.943	02/28/05	03/02/05	
Isophorone	EPA 625	5B28001	0.059	1.0	ND	0.943	02/28/05	03/02/05	
2-Methylnaphthalene	EPA 625	5B28001	0.13	1.0	ND	0.943	02/28/05	03/02/05	
2-Methylphenol	EPA 625	5B28001	0.28	2.0	ND	0.943	02/28/05	03/02/05	
4-Methylphenol	EPA 625	5B28001	0.20	5.0	ND	0.943	02/28/05	03/02/05	
Naphthalene	EPA 625	5B28001	0.13	1.0	ND	0.943	02/28/05	03/02/05	
2-Nitroaniline	EPA 625	5B28001	0.18	5.0	ND	0.943	02/28/05	03/02/05	
3-Nitroaniline	EPA 625	5B28001	0.35	5.0	ND	0.943	02/28/05	03/02/05	
4-Nitroaniline	EPA 625	5B28001	0.49	5.0	ND	0.943	02/28/05	03/02/05	
Nitrobenzene	EPA 625	5B28001	0.10	1.0	ND	0.943	02/28/05	03/02/05	
2-Nitrophenol	EPA 625	5B28001	0.23	2.0	ND	0.943	02/28/05	03/02/05	
4-Nitrophenol	EPA 625	5B28001	0.73	5.0	ND	0.943	02/28/05	03/02/05	
N-Nitrosodimethylamine	EPA 625	5B28001	0.22	2.0	ND	0.943	02/28/05	03/02/05	
N-Nitroso-di-n-propylamine	EPA 625	5B28001	0.18	2.0	ND	0.943	02/28/05	03/02/05	
N-Nitrosodiphenylamine	EPA 625	5B28001	0.077	1.0	ND	0.943	02/28/05	03/02/05	
Pentachlorophenol	EPA 625	5B28001	0.78	2.0	ND	0.943	02/28/05	03/02/05	
Phenanthrene	EPA 625	5B28001	0.071	0.50	ND	0.943	02/28/05	03/02/05	
Phenol	EPA 625	5B28001	0.14	1.0	ND	0.943	02/28/05	03/02/05	
Pyrene	EPA 625	5B28001	0.059	0.50	ND	0.943	02/28/05	03/02/05	
1,2,4-Trichlorobenzene	EPA 625	5B28001	0.10	1.0	ND	0.943	02/28/05	03/02/05	
2,4,5-Trichlorophenol	EPA 625	5B28001	0.075	2.0	ND	0.943	02/28/05	03/02/05	
2,4,6-Trichlorophenol	EPA 625	5B28001	0.10	1.0	ND	0.943	02/28/05	03/02/05	
Surrogate: 2-Fluorophenol (30-120%)					77 %				
Surrogate: Phenol-d6 (35-120%)					81 %				
Surrogate: 2,4,6-Tribromophenol (45-120%)					101 %				
Surrogate: Nitrobenzene-d5 (45-120%)					80 %				
Surrogate: 2-Fluorobiphenyl (45-120%)					80 %				
Surrogate: Terphenyl-d14 (45-120%)					88 %				

Handwritten notes: "Raw Data" and "Qual Code" written vertically on the right side of the table. A large handwritten "U" is present in the "Data Qualifiers" column for the first few rows. A vertical line with arrows at both ends is drawn through the "Data Qualifiers" column, with "U" and "C" written near the top and bottom respectively.

DRAFT REPORT
 DRAFT REPORT
 DATA SUBJECT TO CHANGE

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

Project ID: 13267 (Study 1)
 Outfall 011
 Report Number: IOB2065

Sampled: 02/25/05
 Received: 02/25/05

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

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers	Qual	Qual Code
Sample ID: IOB2065-01 (DRAFT: Outfall 011 Grab - Water)											
Reporting Units: ug/l											
Acenaphthene	EPA 625	5B28001	0.10	0.50	ND	0.971	02/28/05	03/02/05		U	
Acenaphthylene	EPA 625	5B28001	0.10	0.50	ND	0.971	02/28/05	03/02/05		U	
Aniline	EPA 625	5B28001	2.9	10	ND	0.971	02/28/05	03/02/05		U	
Anthracene	EPA 625	5B28001	0.083	0.50	ND	0.971	02/28/05	03/02/05		U	
Benzidine	EPA 625	5B28001	3.2	5.0	ND	0.971	02/28/05	03/03/05	L2	UJ	#5
Benzoic acid	EPA 625	5B28001	3.7	20	ND	0.971	02/28/05	03/02/05		UJ	C
Benzo(a)anthracene	EPA 625	5B28001	0.038	5.0	ND	0.971	02/28/05	03/02/05		UJ	
Benzo(a)pyrene	EPA 625	5B28001	0.14	2.0	ND	0.971	02/28/05	03/02/05		U	
Benzo(b)fluoranthene	EPA 625	5B28001	0.050	2.0	ND	0.971	02/28/05	03/02/05		U	
Benzo(g,h,i)perylene	EPA 625	5B28001	0.059	5.0	ND	0.971	02/28/05	03/02/05		U	
Benzo(k)fluoranthene	EPA 625	5B28001	0.053	0.50	ND	0.971	02/28/05	03/02/05		U	
Benzyl alcohol	EPA 625	5B28001	0.21	5.0	ND	0.971	02/28/05	03/02/05		U	
Bis(2-chloroethoxy)methane	EPA 625	5B28001	0.072	0.50	ND	0.971	02/28/05	03/02/05		U	
Bis(2-chloroethyl)ether	EPA 625	5B28001	0.084	0.50	ND	0.971	02/28/05	03/02/05		U	
Bis(2-chloroisopropyl)ether	EPA 625	5B28001	0.11	0.50	ND	0.971	02/28/05	03/02/05		U	
Bis(2-ethylhexyl)phthalate	EPA 625	5B28001	1.1	5.0	ND	0.971	02/28/05	03/02/05		U	
4-Bromophenyl phenyl ether	EPA 625	5B28001	0.12	1.0	ND	0.971	02/28/05	03/02/05		U	
Buryl benzyl phthalate	EPA 625	5B28001	0.34	5.0	ND	0.971	02/28/05	03/02/05		U	
4-Chloroaniline	EPA 625	5B28001	0.20	2.0	ND	0.971	02/28/05	03/02/05		U	
2-Chloronaphthalene	EPA 625	5B28001	0.059	0.50	ND	0.971	02/28/05	03/02/05		U	
4-Chloro-3-methylphenol	EPA 625	5B28001	0.34	2.0	ND	0.971	02/28/05	03/02/05		U	
4-Chlorophenyl phenyl ether	EPA 625	5B28001	0.056	0.50	ND	0.971	02/28/05	03/02/05		U	
2-Chlorophenol	EPA 625	5B28001	0.12	1.0	ND	0.971	02/28/05	03/02/05		U	
Chrysene	EPA 625	5B28001	0.072	0.50	ND	0.971	02/28/05	03/02/05		U	
Dibenz(a,h)anthracene	EPA 625	5B28001	0.083	0.50	ND	0.971	02/28/05	03/02/05		U	
Dibenzofuran	EPA 625	5B28001	0.075	0.50	ND	0.971	02/28/05	03/02/05		U	
Di-n-butyl phthalate	EPA 625	5B28001	0.26	2.0	ND	0.971	02/28/05	03/02/05		U	
1,2-Dichlorobenzene	EPA 625	5B28001	0.11	0.50	ND	0.971	02/28/05	03/02/05		U	
1,3-Dichlorobenzene	EPA 625	5B28001	0.13	0.50	ND	0.971	02/28/05	03/02/05		U	
1,4-Dichlorobenzene	EPA 625	5B28001	0.050	0.50	ND	0.971	02/28/05	03/02/05		U	
3,3-Dichlorobenzidine	EPA 625	5B28001	0.93	5.0	ND	0.971	02/28/05	03/02/05		U	
2,4-Dichlorophenol	EPA 625	5B28001	0.21	2.0	ND	0.971	02/28/05	03/02/05		U	
Diethyl phthalate	EPA 625	5B28001	0.12	1.0	ND	0.971	02/28/05	03/02/05		U	
2,4-Dimethylphenol	EPA 625	5B28001	0.31	2.0	ND	0.971	02/28/05	03/02/05		U	
Dimethyl phthalate	EPA 625	5B28001	0.081	0.50	ND	0.971	02/28/05	03/02/05		U	
4,6-Dinitro-2-methylphenol	EPA 625	5B28001	0.38	5.0	ND	0.971	02/28/05	03/02/05		U	
2,4-Dinitrophenol	EPA 625	5B28001	2.7	5.0	ND	0.971	02/28/05	03/02/05		U	
2,4-Dinitrotoluene	EPA 625	5B28001	0.23	5.0	ND	0.971	02/28/05	03/02/05		U	
2,6-Dinitrotoluene	EPA 625	5B28001	0.24	5.0	ND	0.971	02/28/05	03/02/05		U	
Di-n-octyl phthalate	EPA 625	5B28001	0.17	5.0	ND	0.971	02/28/05	03/02/05		U	
1,2-Diphenylhydrazine/Azobenzene	EPA 625	5B28001	0.087	1.0	ND	0.971	02/28/05	03/02/05		U	

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

Project ID: 13267 (Study 1)
 Outfall 011
 Report Number: IOB2065

Sampled: 02/25/05
 Received: 02/25/05

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

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOB2065-01 (DRAFT: Outfall 011 Grab - Water) - cont.									
Reporting Units: ug/l									
Fluoranthene	EPA 625	5B28001	0.089	0.50	ND	0.971	02/28/05	03/02/05	
Fluorene	EPA 625	5B28001	0.075	0.50	ND	0.971	02/28/05	03/02/05	
Hexachlorobenzene	EPA 625	5B28001	0.13	1.0	ND	0.971	02/28/05	03/02/05	
Hexachlorobutadiene	EPA 625	5B28001	0.38	2.0	ND	0.971	02/28/05	03/02/05	
Hexachlorocyclopentadiene	EPA 625	5B28001	1.8	5.0	ND	0.971	02/28/05	03/02/05	
Hexachloroethane	EPA 625	5B28001	0.51	3.0	ND	0.971	02/28/05	03/02/05	
Indeno(1,2,3-cd)pyrene	EPA 625	5B28001	0.19	2.0	ND	0.971	02/28/05	03/02/05	
Isophorone	EPA 625	5B28001	0.059	1.0	ND	0.971	02/28/05	03/02/05	
2-Methylnaphthalene	EPA 625	5B28001	0.13	1.0	ND	0.971	02/28/05	03/02/05	
2-Methylphenol	EPA 625	5B28001	0.28	2.0	ND	0.971	02/28/05	03/02/05	
4-Methylphenol	EPA 625	5B28001	0.20	5.0	ND	0.971	02/28/05	03/02/05	
Naphthalene	EPA 625	5B28001	0.13	1.0	ND	0.971	02/28/05	03/02/05	
2-Nitroaniline	EPA 625	5B28001	0.18	5.0	ND	0.971	02/28/05	03/02/05	
3-Nitroaniline	EPA 625	5B28001	0.35	5.0	ND	0.971	02/28/05	03/02/05	
4-Nitroaniline	EPA 625	5B28001	0.49	5.0	ND	0.971	02/28/05	03/02/05	
Nitrobenzene	EPA 625	5B28001	0.10	1.0	ND	0.971	02/28/05	03/02/05	
2-Nitrophenol	EPA 625	5B28001	0.23	2.0	ND	0.971	02/28/05	03/02/05	
4-Nitrophenol	EPA 625	5B28001	0.73	5.0	ND	0.971	02/28/05	03/02/05	
N-Nitrosodimethylamine	EPA 625	5B28001	0.22	2.0	ND	0.971	02/28/05	03/02/05	
N-Nitroso-di-n-propylamine	EPA 625	5B28001	0.18	2.0	ND	0.971	02/28/05	03/02/05	
N-Nitrosodiphenylamine	EPA 625	5B28001	0.077	1.0	ND	0.971	02/28/05	03/02/05	
Pentachlorophenol	EPA 625	5B28001	0.78	2.0	ND	0.971	02/28/05	03/02/05	
Phenanthrene	EPA 625	5B28001	0.071	0.50	ND	0.971	02/28/05	03/02/05	
Phenol	EPA 625	5B28001	0.14	1.0	ND	0.971	02/28/05	03/02/05	
Pyrene	EPA 625	5B28001	0.059	0.50	ND	0.971	02/28/05	03/02/05	
1,2,4-Trichlorobenzene	EPA 625	5B28001	0.10	1.0	ND	0.971	02/28/05	03/02/05	
2,4,5-Trichlorophenol	EPA 625	5B28001	0.075	2.0	ND	0.971	02/28/05	03/02/05	
2,4,6-Trichlorophenol	EPA 625	5B28001	0.10	1.0	ND	0.971	02/28/05	03/02/05	
Surrogate: 2-Fluorophenol (30-120%)									75 %
Surrogate: Phenol-d6 (35-120%)									69 %
Surrogate: 2,4,6-Tribromophenol (45-120%)									97 %
Surrogate: Nitrobenzene-d5 (45-120%)									77 %
Surrogate: 2-Fluorobiphenyl (45-120%)									78 %
Surrogate: Terphenyl-d14 (45-120%)									83 %

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LEVEL IV

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 Suite 500
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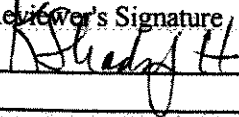
Package ID T711TF40
 Task Order 313150010
 SDG No. IOB2064, IOB2065

No. of Analyses 4

Laboratory Del Mar Analytical

Reviewer K. Shadowlight

Analysis/Method TPH-Purgeable

Date April 6, 2005
 Reviewer's Signature


ACTION ITEMS*	
1. Case Narrative	
Deficiencies	
2. Out of Scope	
Analyses	
3. Analyses Not Conducted	
4. Missing Hardcopy	
Deliverables	
5. Incorrect Hardcopy	
Deliverables	
6. Deviations from Analysis	
GC/MS Tune/Inst. Perform	
Calibrations	
Blanks	
Surrogates	
Matrix Spike/Dup LCS	
Field QC	
Internal Standard Performance	
Compound Identification and	
Quantitation	
System Performance	
COMMENTS ^b	Acceptable as reviewed
* 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

ANALYSIS: TPH/PURGEABLE

SAMPLE DELIVERY GROUP: IOB2064, IOB2065

Prepared by

AMEC Denver Operations
550 South Wadsworth Boulevard, Suite 500
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title: NPDES Monitoring
Contract Task Order #: 313150010
SDG#: IOB2064, IOB2065
Project Manager: B. McIlvaine
Matrix: Water
Analysis: TPH-Purgeable
QC Level: Level IV
No. of Samples: 4
No. of Reanalyses/Dilutions: 0
Reviewer: K. Shadowlight
Date of Review: April 6, 2005

The samples listed in Table 1 were validated based on the general guidelines outlined in the *AMEC Data Validation Procedure for Levels C and D Extractable Total Fuel Hydrocarbons by GC (DVP-8, Rev. 2)*, USEPA SW-846 Method 8015M, and validation guidelines outlined in the *USEPA CLP National Functional Guidelines for Organic Data Review (2/94)*. Any deviations from these procedures are documented herein. Qualifiers were applied in cases where the data did not meet the required QC criteria or where special consideration by the data user is required. Data qualifiers were placed on Form Is with the associated qualification codes. Analytes that were rejected for any reason are denoted on the Form I as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

Table 1. Sample identification

Client ID	EPA ID	Lab No.	Matrix	Method
Outfall 011 Grab	Outfall 011 Grab	IOB2065-01	water	8015M/GRO
Trip Blank	Trip Blank	IOB2065-02	water	8015M/GRO
Outfall 011 Composite	Outfall 011 Composite	IOB2064-01	water	8015M/GRO
Trip Blank	Trip Blank	IOB2064-02	water	8015M/GRO

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

The following are findings associated with sample management:

2.1.1 Sample Preservation, Handling, and Transport

The samples in these SDGs were received at Del Mar Analytical laboratory on ice within the temperature limits of $4^{\circ}\text{C} \pm 2^{\circ}\text{C}$. The Del Mar Analytical case narrative noted that the samples were received intact, and the COC indicated the samples were properly preserved; however, information regarding absence of headspace was not provided. No qualifications were required.

2.1.2 Chain of Custody

The COCs were signed and dated by both field and laboratory personnel. As the samples were couriered directly to the laboratory, custody seals were not required. The trip blank associated with Outfall 011 Composite (IOB2064) was not requested on the COC; however, as the laboratory analyzed and reported the sample Trip Blank, the results were validated. No qualifications were required.

2.1.3 Holding Times

The water samples were analyzed within 14 days of collection. No qualifications were required.

2.2 CALIBRATION

Two gasoline standard initial calibrations dated 08/20/04 and 08/26/04 were associated with these SDGs. The %RSDs for GRO (C4-C12) were within the QC limit of $\leq 20\%$. An initial calibration verification (ICV) was not provided in the data package. The %Ds for the CCVs bracketing the sample analyses were within the Method QC limit of $\leq 15\%$. The %RSD and %Ds were recalculated from the raw data and no transcription or calculation errors were noted. No qualifications were required.

2.3 METHOD BLANKS

Two water method blanks (5C03008-BLK1 and 5C04004-BLK1) were associated with these SDGs. GRO (C4-C12) was not detected above the MDL in either of the method blanks. Review of the raw data indicated no false negative results. No qualifications were necessary.

2.4 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

Two water method blank spikes (5C03008-BS1 and 5C04004-BS1) were associated with these SDGs. GRO (C4-C12) was recovered within the laboratory-established QC limits of 70-140% in

both of the blank spikes. The recoveries were checked from the raw data, and no calculation or transcription errors were noted. No qualifications were required.

2.5 SURROGATE RECOVERY

The samples and QC were fortified with the surrogate compound bromofluorobenzene (BFB). The surrogate recovery was within the laboratory QC limits of 65-140% for the samples. The recoveries were calculated from the raw data and no transcription or calculation errors were noted. No qualifications were required.

2.6 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

MS/MSD analyses were not performed for these SDGs; therefore, evaluation of method accuracy was based on the blank spike results. No qualifications were required.

2.7 FIELD QC SAMPLES

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

2.7.1 Trip Blanks, Field Blanks, and Equipment Rinsates

Sample Trip Blank (IOB2064) and Trip Blank (IOB2065) were the trip blanks associated with the site samples in these SDGs. Target compound GRO was not detected in either of the trip blanks. There were no other field QC samples associated with these SDGs. No qualifications were required.

2.7.2 Field Duplicates

There were no field duplicate samples in these SDGs.

2.8 COMPOUND IDENTIFICATION

The laboratory analyzed for GRO (C4-C12) by EPA SW-846 Method 8015M. Compound identification is verified at a Level IV validation. Review of chromatograms and retention times indicated no problems with compound identification for the samples in these SDGs. No qualifications were required.

2.9 COMPOUND QUANTIFICATION AND REPORTED DETECTION LIMITS

Compound quantification was verified for this SDG by recalculating any sample detects, blank spike recoveries, and a representative number of surrogate recoveries. Reporting limits were supported by the low level standard of the initial calibration and by the laboratory MDL. No qualifications were required.



Del Mar Analytical

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

Project ID: 13267 (Study 1)
 Outfall 011
 Report Number: IOB2064

Sampled: 02/25/05
 Received: 02/25/05

DRAFT: VOLATILE FUEL HYDROCARBONS (EPA 5030/CADHS Mod. 8015)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOB2064-01 (DRAFT: Outfall 011 Composite - Water) - cont. Reporting Units: mg/l									
GRO (C4 - C12)	EPA 8015 Mod.	5C03008	0.050	0.10	ND	1	03/03/05	03/03/05	U
Surrogate: 4-BFB (FID) (65-140%)					87 %				
Sample ID: IOB2064-02 (DRAFT: Trip Blank - Water) Reporting Units: mg/l									
GRO (C4 - C12)	EPA 8015 Mod.	5C03008	0.050	0.10	ND	1	03/03/05	03/03/05	U
Surrogate: 4-BFB (FID) (65-140%)					86 %				

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 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: 13267 (Study 1)
 Outfall 011
 Report Number: IOB2065

Sampled: 02/25/05
 Received: 02/25/05

DRAFT: VOLATILE FUEL HYDROCARBONS (EPA 5030/CADHS Mod. 8015)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers	Qual	Qual
Sample ID: IOB2065-01 (DRAFT: Outfall 011 Grab - Water) - cont. Reporting Units: ug/l											
GRO (C4 - C12)	EPA 8015 Mod.	5C04004	50	100	ND	1	03/04/05	03/04/05	U		
Surrogate: 4-BFB (FID) (65-140%) 87 %											
Sample ID: IOB2065-02 (DRAFT: Trip Blank - Water) Reporting Units: ug/l											
GRO (C4 - C12)	EPA 8015 Mod.	5C04004	50	100	ND	1	03/04/05	03/04/05	U		
Surrogate: 4-BFB (FID) (65-140%) 92 %											

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CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

AMEC Earth & Environmental
 550 South Wadsworth Boulevard
 Suite 500
 Lakewood, CO 80226

Package ID T711TF41
 Task Order 313150010
 SDG No. IOB2064, IOB2065

No. of Analyses 2

Laboratory Del Mar Analytical

Reviewer K. Shadowlight

Analysis/Method TPH-Extractable

Date April 6, 2005

Reviewer's Signature

K. Shadowlight

ACTION ITEMS ^a	
1. Case Narrative	
Deficiencies	
2. Out of Scope	
Analyses	
3. Analyses Not Conducted	
4. Missing Hardcopy	
Deliverables	
5. Incorrect Hardcopy	
Deliverables	
6. Deviations from Analysis	
GC/MS Tune/Inst. Perform	
Calibrations	
Blanks	
Surrogates	
Matrix Spike/Dup LCS	
Field QC	
Internal Standard Performance	
Compound Identification and	
Quantitation	
System Performance	
COMMENTS ^b	Acceptable as reviewed

^a 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

ANALYSIS: TPH/EXTRACTABLE

SAMPLE DELIVERY GROUP: IOB2064, IOB2065

Prepared by

AMEC Denver Operations
550 South Wadsworth Boulevard, Suite 500
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title: NPDES Monitoring
Contract Task Order #: 313150010
SDG#: IOB2064, IOB2065
Project Manager: B. McIlvaine
Matrix: Water
Analysis: TPH-Extractable
QC Level: Level IV
No. of Samples: 2
No. of Reanalyses/Dilutions: 0
Reviewer: K. Shadowlight
Date of Review: April 6, 2005

The samples listed in Table 1 were validated based on the general guidelines outlined in the *AMEC Data Validation Procedure for Levels C and D Extractable Total Fuel Hydrocarbons by GC (DVP-8, Rev. 2)*, USEPA SW-846 Method 8015M, and validation guidelines outlined in the *USEPA CLP National Functional Guidelines for Organic Data Review (2/94)*. Any deviations from these procedures are documented herein. Qualifiers were applied in cases where the data did not meet the required QC criteria or where special consideration by the data user is required. Data qualifiers were placed on Form Is with the associated qualification codes. Analytes that were rejected for any reason are denoted on the Form I as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

Table 1. Sample identification

Client ID	EPA ID	Lab No.	Matrix	Method
Outfall 011 Grab	Outfall 011 Grab	IOB2065-01	water	8015M/EFH
Outfall 011 Composite	Outfall 011 Composite	IOB2064-01	water	8015M/EFH

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

The following are findings associated with sample management:

2.1.1 Sample Preservation, Handling, and Transport

The samples in these SDGs were received at Del Mar Analytical laboratory on ice within the temperature limits of $4^{\circ}\text{C} \pm 2^{\circ}\text{C}$. The Del Mar Analytical case narrative noted that the sample containers were received intact. No qualifications were required.

2.1.2 Chain of Custody

The COCs were signed and dated by both field and laboratory personnel, and accounted for the analyses presented in these SDGs. As the samples were couriered directly to the laboratory, custody seals were not required. No qualifications were required.

2.1.3 Holding Times

The samples were extracted within seven days of sample collection and analyzed within 40 days of extraction. No qualifications were required.

2.2 CALIBRATION

The initial calibration associated with the sample analysis was analyzed on 11/11/04. The %RSD was within the QC limit of $\leq 20\%$. The %Ds for the initial calibration verification (ICV) and continuing calibrations associated with the sample analysis were $\leq 15\%$. The %RSD and %Ds were recalculated from the raw data and no transcription or calculation errors were noted. No qualifications were required.

2.3 METHOD BLANKS

One method blank (5C01045-BLK1) was extracted and analyzed with the samples in these SDGs. EFH (C13-C22) was not present above the MDL in the method blank or in the instrument blank analyzed at the beginning of the analytical sequence. Review of the chromatograms showed no false negatives. No qualifications were required.

2.4 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

One method blank spike/blank spike duplicate pair (5C01045-BS1/5C01045-BS1D) was extracted and analyzed with the samples in these SDGs. The laboratory reported the alkane range of C13-C28 from spiked diesel. The recoveries were within the laboratory-established QC limits of 40-120% and the RPD was $\leq 25\%$. The recoveries and RPD were checked from the raw data, and no calculation or transcription errors were noted. No qualifications were required.

2.5 SURROGATE RECOVERY

The samples and QC were fortified with the surrogate compound n-octacosane. The surrogate recoveries were within the laboratory-established QC limits of 40-125%. The recoveries were calculated from the raw data and no transcription or calculation errors were noted. No qualifications were required.

2.6 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

There were no MS/MSD analyses associated with the samples in these SDGs. Evaluation of method accuracy and precision was based on the BS/BSD results. No qualifications were required.

2.7 FIELD QC SAMPLES

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

2.7.1 Field Blanks and Equipment Rinsates

There were no field blank or equipment rinsate samples associated with the site samples in these SDGs. No qualifications were required.

2.7.2 Field Duplicates

There were no field duplicate samples associated with these SDGs.

2.8 COMPOUND IDENTIFICATION

The laboratory analyzed for EFH n-alkane range C13-C22 by EPA SW846 Method 8015M. Compound identification is verified at a Level IV validation. Review of chromatograms and retention times indicated no problems with compound identification for these SDGs. No qualifications were required.

2.9 COMPOUND QUANTIFICATION AND REPORTED DETECTION LIMITS

Compound quantification was verified for these SDGs by recalculating any sample detect, blank spike recoveries, and a representative number of surrogate recoveries. Reporting limits were supported by the low level standard of the initial calibration and by the laboratory MDL. The reporting limit was not adjusted for sample amount; however, the dilution factors on the sample result summaries reflected the sample amount extracted. No qualifications were required.



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

Project ID: 13267 (Study 1)
 Outfall 011
 Report Number: IOB2064

Sampled: 02-25/05
 Received: 02-25/05

DRAFT: EXTRACTABLE FUEL HYDROCARBONS (CADHS/8015 Modified)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOB2064-01 (DRAFT: Outfall 011 Composite - Water) - cont. Reporting Units: mg/l									
EFH (C13 - C22)	EPA 8015B	5C01045	0.082	0.50	ND	0.943	03/01/05	03/02/05	u
Surrogate: n-Octacosane (40-125%)						66%			

Raw Data
Raw Data

AMEC VALIDATED

LEVEL IV

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

Project ID: 13267 (Study 1)
 Outfall 011
 Report Number: IOB2065

Sampled: 02/25/05
 Received: 02/25/05

DRAFT: EXTRACTABLE FUEL HYDROCARBONS (CADHS/8015 Modified)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOB2065-01 (DRAFT: Outfall 011 Grab - Water) - cont.									
Reporting Units: mg/l									
EFH (C13 - C22)	EPA 8015B	5C01045	0.082	0.50	ND	0.99	03/01/05	03/02/05	u
Surrogate: n-Octacosane (40-125%)					69 %				

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CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

AMEC Earth & Environmental
 550 South Wadsworth Boulevard
 Suite 500
 Lakewood, CO 80226

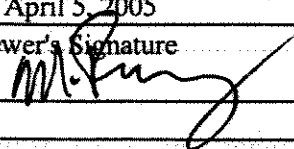
Package ID T711VO66
 Task Order 313150010
 SDG No. IOB2064, IOB2065

No. of Analyses 4

Laboratory Del Mar

Reviewer M. Pokorny

Analysis/Method Volatiles

Date: April 5, 2005
Reviewer's Signature 

ACTION ITEMS*	
1. Case Narrative Deficiencies	<hr/> <hr/>
2. Out of Scope Analyses	<hr/> <hr/> <hr/>
3. Analyses Not Conducted	<hr/> <hr/>
4. Missing Hardcopy Deliverables	<hr/> <hr/> <hr/>
5. Incorrect Hardcopy Deliverables	<hr/> <hr/> <hr/>
6. Deviations from Analysis	Qualifications were required for trip blank contamination and estimated nondetects for no calibration. <hr/> Protocol, e.g., Holding Times <hr/> GC/MS Tune/Inst. Perform <hr/> Calibrations <hr/> Blanks <hr/> Surrogates <hr/> Matrix Spike/Dup LCS <hr/> Field QC <hr/> Internal Standard Performance <hr/> Compound Identification and <hr/> Quantitation <hr/> System Performance <hr/>
COMMENTS^b	<hr/> <hr/> <hr/> <hr/> <hr/>
^a 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

ANALYSIS: VOLATILES

SAMPLE DELIVERY GROUP: IOB2064, IOB2065

Prepared by

AMEC Denver Operations
550 South Wadsworth Boulevard, Suite 500
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title: NPDES Monitoring
Contract Task Order #: 313150010
SDG#: IOB2064, IOB2065
Project Manager: B. McIlvaine
Matrix: Water
Analysis: Volatiles
QC Level: Level IV
No. of Samples: 4
No. of Reanalyses/Dilutions: 0
Reviewer: M. Pokorny
Date of Review: April 5, 2005

The samples listed in Table 1 were validated based on the guidelines outlined in the *AMEC Data Validation Procedure for Levels C and D Volatile Organics (DVP-2, Rev. 2)*, *EPA Method 624*, *EPA SW-846 Method 8260B*, 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 summary forms as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

Table 1. Sample identification

Client ID	EPA ID	Lab No.	Matrix	Method
Outfall 011-Composite	Outfall 011-Composite	IOB2064-01	water	624
Trip Blank	Trip Blank	IOB2064-02	water	624
Outfall 011-Grab	Outfall 011-Grab	IOB2065-01	water	624
Trip Blank	Trip Blank	IOB2065-02	water	624

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

The following are findings associated with sample management:

2.1.1 Sample Preservation, Handling, and Transport

The samples in these SDGs were received at the laboratory within the temperature limits of $4^{\circ}\text{C} \pm 2^{\circ}\text{C}$. The samples were properly preserved. The COCs noted that the samples were received intact; however, information regarding absence of headspace was not provided. No qualifications were required.

2.1.2 Chain of Custody

The COCs were signed and dated by both field and laboratory personnel. The COCs accounted for the analyses presented in these SDGs. As the samples were couriered directly to the laboratory, custody seals were not required. No qualifications were required.

2.1.3 Holding Times

The samples were analyzed within 14 days of collection. No qualifications were required.

2.2 GC/MS TUNING

The ion abundance windows shown on the quantitation reports were consistent with those specified in the EPA Method 624 and SW-846 Method 8260B, and all ion abundances were within the established windows. The samples and associated QC were analyzed within 12 hours of the BFB injection times. The Form Vs were verified from the raw data and no discrepancies between the summary forms and the raw data were noted. No qualifications were required.

2.3 CALIBRATION

Three initial calibrations dated 11/03/04 (acrolein, acrylonitrile, and Freon 113 only), 02/01/05, and 02/18/05 were associated with this SDG. The average RRFs were ≥ 0.05 for all compounds listed on the sample result summaries. The %RSDs were $\leq 35\%$ for the target compounds analyzed by EPA Method 624, and the %RSD for trichlorotrifluoroethane (Freon 113) analyzed by EPA SW-846 Method 8260B was $\leq 15\%$. Six continuing calibrations associated with the sample analyses were analyzed 02/26/05 (07:25 and 07:56), 03/02/05 (19:16 and 19:47), and 03/04/05 (09:12 and 09:43). The RRFs were ≥ 0.05 in all of the continuing calibrations. The %Ds for the continuing calibrations associated with the site samples were all $\leq 20\%$. A representative number of %RSDs and average RRFs from the initial calibrations, and %Ds and RRFs from the continuing calibrations were recalculated from the raw data, and no calculation or transcription errors were found. No qualifications were required.

2.4 BLANKS

Three water method blanks (5B26009-BLK1, 5C03036-BLK1, and 5C04021-BLK1) were associated with the sample analyses. There were no detects above the MDLs for the target compounds listed on the sample result summaries. The method blank raw data showed no evidence of false negatives. No qualifications were required.

2.5 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

Two water blank spikes (5B26009-BS1 and 5C03036-BS1) were associated with the sample analyses. All recoveries were within the laboratory-established QC limits. A representative number of recoveries were recalculated from the raw data and no calculation or transcription errors were found. No qualifications were required.

2.6 SURROGATE RECOVERY

The surrogates were recovered within the QC limits of 80-120% in the samples and associated QC. A representative number of surrogate recoveries were recalculated from the raw data and no calculation or transcription errors were found. No qualifications were required.

2.7 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

Sample Outfall011-Composite was the MS/MSD analyses associated with these SDGs. All percent recoveries and RPDs were within the 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

Samples Trip Blank (IOB2064-02) and Trip Blank (IOB2065-02) were the trip blank associated with these SDGs. No target compounds were reported in the Trip Blank IOB2064-02. Methylene chloride was reported in Trip Blank (IOB2065-02) at 0.94ug/L. The methylene chloride detect for sample Outfall 011-Grab was qualified as a nondetect, "U." No further qualifications were required.

2.8.2 Field Blanks and Equipment Rinsates

There were no field QC samples associated with these SDGs. No qualifications were required.

2.8.3 Field Duplicates

There were no field duplicate samples associated with these SDGs. No qualifications were required.

2.9 INTERNAL STANDARDS PERFORMANCE

Internal standard area counts and retention times for the samples in these SDGs were within the control limits established by the continuing calibration standards: +100%/-50% for internal standard areas and ± 0.50 minutes for retention times. A representative number of internal standard areas and retention times were verified from the raw data, and no calculation or transcription errors were noted. No qualifications were required.

2.10 COMPOUND IDENTIFICATION

Target compound identification was verified at a Level IV data validation. The laboratory analyzed the volatile target compounds by EPA Method 624. A TIC search was performed for requested target compounds 1,2-dichloro-1,1,2-trifluoroethane and cyclohexane, as these compounds were not included in the calibration (see section 2.11). Neither compound was detected as a TIC. Chromatograms, retention times, and spectra for the samples and QC were examined and no target compound identification problems were noted. No qualifications were required.

※ 2.11 COMPOUND QUANTIFICATION AND REPORTED DETECTION LIMITS

Compound quantification is verified at a Level IV data validation. The reporting limits were supported by the lowest concentrations of the initial calibration standards and by the MDL study. Calibration was not performed for target compounds 1,2-dichloro-1,1,2-trifluoroethane and cyclohexane; therefore, the laboratory performed only a TIC search for those compounds. Nondetects for both compounds were qualified as estimated, "UJ," in the site samples of these SDGs. Compound quantitation was verified by recalculating any sample detects and a representative number of blank spike and surrogate recoveries from the raw data. Results were reported in $\mu\text{g/L}$ (ppb). No calculation or transcription errors were noted. Detects below the reporting limits were qualified as estimated, "J," by the laboratory. No further qualifications were required.

2.12 TENTATIVELY IDENTIFIED COMPOUNDS

The laboratory did not provide TICs for these SDGs. No qualifications were required.

2.13 SYSTEM PERFORMANCE

A review of the chromatograms and other raw data showed no identifiable problems with system performance. No qualifications were required.



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

Project ID: 13267 (Study 1)

Outfall 011

Sampled: 02/25/05

Report Number: IOB2064

Received: 02/25/05

DRAFT: PURGEABLES BY GC/MS, TENTATIVELY IDENTIFIED COMPOUNDS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers	Perf Qual	Qual Check
Sample ID: IOB2064-01 (DRAFT: Outfall 011 Composite - Water) - cont.											
Reporting Units: ug/l											
1,2-Dichloro-1,1,2-trifluoroethane	EPA 624 (MOD.)	5B26009	N/A	2.5	ND	1	02/26/05	02/26/05	UI		* 11
Cyclohexane	EPA 624 (MOD.)	5B26009	N/A	2.5	ND	1	02/26/05	02/26/05	UI		* 11
Sample ID: IOB2064-02 (DRAFT: Trip Blank - Water)											
Reporting Units: ug/l											
1,2-Dichloro-1,1,2-trifluoroethane	EPA 624 (MOD.)	5C03036	N/A	2.5	ND	1	03/03/05	03/03/05	U		
Cyclohexane	EPA 624 (MOD.)	5C03036	N/A	2.5	ND	1	03/03/05	03/03/05	U		

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

Project ID: 13267 (Study 1)
 Outfall 011
 Report Number: IOB2064

Sampled: 02/25/05
 Received: 02/25/05

DRAFT: PURGEABLES BY GC/MS (EPA 624)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOB2064-01 (DRAFT: Outfall 011 Composite - Water)									
Reporting Units: ug/l									
Acrolein	EPA 624	5B26009	4.6	50	ND	1	02/26/05	02/26/05	
Acrylonitrile	EPA 624	5B26009	5.1	50	ND	1	02/26/05	02/26/05	
2-Chloroethyl vinyl ether	EPA 624	5B26009	1.3	5.0	ND	1	02/26/05	02/26/05	
Surrogate: Dibromofluoromethane (80-120%)					106 %				
Surrogate: Toluene-d8 (80-120%)					96 %				
Surrogate: 4-Bromofluorobenzene (80-120%)					94 %				

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 Attention: Bronwyn Kelly

Project ID: 13267 (Study 1)
 Outfall 011
 Report Number: IOB2064

Sampled: 02/25/05
 Received: 02/25/05

DRAFT: PURGEABLES BY GC/MS (EPA 624)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers	Raw Data	Anal Code
Sample ID: IOB2064-01 (DRAFT: Outfall 011 Composite - Water)											
Reporting Units: ug/l											
Benzene	EPA 624	5B26009	0.28	1.0	ND	1	02/26/05	02/26/05			
Bromodichloromethane	EPA 624	5B26009	0.30	2.0	ND	1	02/26/05	02/26/05			
Bromoform	EPA 624	5B26009	0.32	5.0	ND	1	02/26/05	02/26/05			
Bromomethane	EPA 624	5B26009	0.34	5.0	ND	1	02/26/05	02/26/05			
Carbon tetrachloride	EPA 624	5B26009	0.28	0.50	ND	1	02/26/05	02/26/05			
Chlorobenzene	EPA 624	5B26009	0.36	2.0	ND	1	02/26/05	02/26/05			
Chloroethane	EPA 624	5B26009	0.33	5.0	ND	1	02/26/05	02/26/05			
Chloroform	EPA 624	5B26009	0.33	2.0	ND	1	02/26/05	02/26/05			
Chloromethane	EPA 624	5B26009	0.30	5.0	ND	1	02/26/05	02/26/05			
Dibromochloromethane	EPA 624	5B26009	0.28	2.0	ND	1	02/26/05	02/26/05			
1,2-Dichlorobenzene	EPA 624	5B26009	0.32	2.0	ND	1	02/26/05	02/26/05			
1,3-Dichlorobenzene	EPA 624	5B26009	0.35	2.0	ND	1	02/26/05	02/26/05			
1,4-Dichlorobenzene	EPA 624	5B26009	0.37	2.0	ND	1	02/26/05	02/26/05			
1,1-Dichloroethane	EPA 624	5B26009	0.27	2.0	ND	1	02/26/05	02/26/05			
1,2-Dichloroethane	EPA 624	5B26009	0.28	0.50	ND	1	02/26/05	02/26/05			
1,1-Dichloroethene	EPA 624	5B26009	0.32	5.0	ND	1	02/26/05	02/26/05			
trans-1,2-Dichloroethene	EPA 624	5B26009	0.27	2.0	ND	1	02/26/05	02/26/05			
1,2-Dichloropropane	EPA 624	5B26009	0.35	2.0	ND	1	02/26/05	02/26/05			
cis-1,3-Dichloropropene	EPA 624	5B26009	0.22	2.0	ND	1	02/26/05	02/26/05			
trans-1,3-Dichloropropene	EPA 624	5B26009	0.24	2.0	ND	1	02/26/05	02/26/05			
Ethylbenzene	EPA 624	5B26009	0.25	2.0	ND	1	02/26/05	02/26/05			
Methylene chloride	EPA 624	5B26009	0.48	5.0	1.1	1	02/26/05	02/26/05	J	J	DNG
1,1,2,2-Tetrachloroethane	EPA 624	5B26009	0.24	2.0	ND	1	02/26/05	02/26/05			
Tetrachloroethene	EPA 624	5B26009	0.32	2.0	ND	1	02/26/05	02/26/05			
Toluene	EPA 624	5B26009	0.36	2.0	ND	1	02/26/05	02/26/05			
1,1,1-Trichloroethane	EPA 624	5B26009	0.30	2.0	ND	1	02/26/05	02/26/05			
1,1,2-Trichloroethane	EPA 624	5B26009	0.30	2.0	ND	1	02/26/05	02/26/05			
Trichloroethene	EPA 624	5B26009	0.26	2.0	ND	1	02/26/05	02/26/05			
Trichlorofluoromethane	EPA 624	5B26009	0.34	5.0	ND	1	02/26/05	02/26/05			
Vinyl chloride	EPA 624	5B26009	0.26	0.50	ND	1	02/26/05	02/26/05			
Xylenes, Total	EPA 624	5B26009	0.52	4.0	ND	1	02/26/05	02/26/05			
Surrogate: Dibromofluoromethane (80-120%)					106 %						
Surrogate: Toluene-d8 (80-120%)					96 %						
Surrogate: 4-Bromofluorobenzene (80-120%)					94 %						

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 LEVEL IV



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 2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3020 FAX (702) 798-3021

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

Project ID: 13267 (Study 1)
 Outfall 011

Report Number: IOB2064

Sampled: 02/25/05
 Received: 02/25/05

DRAFT: PURGEABLES BY GC/MS (EPA 624)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers	Raw Data	Qual Code
Sample ID: IOB2064-02 (DRAFT: Trip Blank - Water)											
Reporting Units: ug/l											
Benzene	EPA 624	5C03036	0.28	1.0	ND	1	03/03/05	03/03/05			
Bromodichloromethane	EPA 624	5C03036	0.30	2.0	ND	1	03/03/05	03/03/05			
Bromoform	EPA 624	5C03036	0.32	5.0	ND	1	03/03/05	03/03/05			
Bromomethane	EPA 624	5C03036	0.34	5.0	ND	1	03/03/05	03/03/05			
Carbon tetrachloride	EPA 624	5C03036	0.28	0.50	ND	1	03/03/05	03/03/05			
Chlorobenzene	EPA 624	5C03036	0.36	2.0	ND	1	03/03/05	03/03/05			
Chloroethane	EPA 624	5C03036	0.33	5.0	ND	1	03/03/05	03/03/05			
Chloroform	EPA 624	5C03036	0.33	2.0	ND	1	03/03/05	03/03/05			
Chloromethane	EPA 624	5C03036	0.30	5.0	ND	1	03/03/05	03/03/05			
Dibromochloromethane	EPA 624	5C03036	0.28	2.0	ND	1	03/03/05	03/03/05			
1,2-Dichlorobenzene	EPA 624	5C03036	0.32	2.0	ND	1	03/03/05	03/03/05			
1,3-Dichlorobenzene	EPA 624	5C03036	0.35	2.0	ND	1	03/03/05	03/03/05			
1,4-Dichlorobenzene	EPA 624	5C03036	0.37	2.0	ND	1	03/03/05	03/03/05			
1,1-Dichloroethane	EPA 624	5C03036	0.27	2.0	ND	1	03/03/05	03/03/05			
1,2-Dichloroethane	EPA 624	5C03036	0.28	0.50	ND	1	03/03/05	03/03/05			
1,1-Dichloroethene	EPA 624	5C03036	0.32	5.0	ND	1	03/03/05	03/03/05			
trans-1,2-Dichloroethene	EPA 624	5C03036	0.27	2.0	ND	1	03/03/05	03/03/05			
1,2-Dichloropropane	EPA 624	5C03036	0.35	2.0	ND	1	03/03/05	03/03/05			
cis-1,3-Dichloropropene	EPA 624	5C03036	0.22	2.0	ND	1	03/03/05	03/03/05			
trans-1,3-Dichloropropene	EPA 624	5C03036	0.24	2.0	ND	1	03/03/05	03/03/05			
Ethylbenzene	EPA 624	5C03036	0.25	2.0	ND	1	03/03/05	03/03/05			
Methylene chloride	EPA 624	5C03036	0.48	5.0	ND	1	03/03/05	03/03/05			
1,1,2,2-Tetrachloroethane	EPA 624	5C03036	0.24	2.0	ND	1	03/03/05	03/03/05			
Tetrachloroethene	EPA 624	5C03036	0.32	2.0	ND	1	03/03/05	03/03/05			
Toluene	EPA 624	5C03036	0.36	2.0	ND	1	03/03/05	03/03/05			
1,1,1-Trichloroethane	EPA 624	5C03036	0.30	2.0	ND	1	03/03/05	03/03/05			
1,1,2-Trichloroethane	EPA 624	5C03036	0.30	2.0	ND	1	03/03/05	03/03/05			
Trichloroethene	EPA 624	5C03036	0.26	2.0	ND	1	03/03/05	03/03/05			
Trichlorofluoromethane	EPA 624	5C03036	0.34	5.0	ND	1	03/03/05	03/03/05			
Vinyl chloride	EPA 624	5C03036	0.26	0.50	ND	1	03/03/05	03/03/05			
Xylenes, Total	EPA 624	5C03036	0.52	4.0	ND	1	03/03/05	03/03/05			
Trichlorotrifluoroethane (Freon 113)	EPA 624	5C03036	1.2	5.0	ND	1	03/03/05	03/03/05			
Surrogate: Dibromofluoromethane (80-120%)					105 %						
Surrogate: Toluene-d8 (80-120%)					98 %						
Surrogate: 4-Bromofluorobenzene (80-120%)					96 %						

Raw Data
 Qual Code



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 9484 Chesapeake Dr., Suite 805, San Diego, CA 92123 (619) 505-8596 FAX (619) 505-8602
 9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 705-0013 FAX (480) 705-0018
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MWH-Pasadena/Boeing
 300 North Lake Avenue, Suite 1200
 Pasadena, CA 91101
 Attention: Bronwyn Kelly

Project ID: 13267 (Study 1)
 Outfall 011
 Report Number: IOB2064

Sampled: 02/25/05
 Received: 02/25/05

DRAFT: FREON 113 (EPA 8260B)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOB2064-01 (DRAFT: Outfall 011 Composite - Water)									
Reporting Units: ug/l									
Trichlorotrifluoroethane (Freon 113)	EPA 8260B	5C03036	1.2	5.0	ND	1	03/03/05	03/03/05	U
Surrogate: Dibromofluoromethane (80-120%)					106 %				
Surrogate: Toluene-d8 (80-120%)					100 %				
Surrogate: 4-Bromofluorobenzene (80-120%)					97 %				
Sample ID: IOB2064-02 (DRAFT: Trip Blank - Water)									
Reporting Units: ug/l									
Trichlorotrifluoroethane (Freon 113)	EPA 8260B	5C03036	1.2	5.0	ND	1	03/03/05	03/03/05	U
Surrogate: Dibromofluoromethane (80-120%)					105 %				
Surrogate: Toluene-d8 (80-120%)					98 %				
Surrogate: 4-Bromofluorobenzene (80-120%)					96 %				

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 1014 E. Cooley Dr., Suite A, Colton, CA 92324 (909) 370-4667 FAX (949) 370-1046
 9484 Chesapeake Dr., Suite 805, San Diego, CA 92123 (858) 505-8586 FAX (858) 505-9589
 9530 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: 13267 (Study 1)
 300 North Lake Avenue, Suite 1200 Outfall 011
 Pasadena, CA 91101 Report Number: IOB2065
 Attention: Bronwyn Kelly Sampled: 02/25/05
 Received: 02/25/05

DRAFT: PURGEABLES BY GC/MS, TENTATIVELY IDENTIFIED COMPOUNDS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers	Raw Data	Anal Code
Sample ID: IOB2065-01 (DRAFT: Outfall 011 Grab - Water)											
Reporting Units: ug/l											
1,2-Dichloro-1,1,2-trifluoroethane	EPA 624 (MOD.)	5B26009	N/A	2.5	ND	1	02/26/05	02/26/05	UJ		*11
Cyclohexane	EPA 624 (MOD.)	5B26009	N/A	2.5	ND	1	02/26/05	02/26/05	UJ		*11
Sample ID: IOB2065-02 (DRAFT: Trip Blank - Water)											
Reporting Units: ug/l											
1,2-Dichloro-1,1,2-trifluoroethane	EPA 624 (MOD.)	5B26009	N/A	2.5	ND	1	02/26/05	02/26/05	U		
Cyclohexane	EPA 624 (MOD.)	5B26009	N/A	2.5	ND	1	02/26/05	02/26/05	U		

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 9484 Chesapeake Dr., Suite 805, San Diego, CA 92123 (858) 505-8596 FAX (858) 505-9689
 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: 13267 (Study 1)
 Outfall 011
 Report Number: IOB2065

Sampled: 02/25/05
 Received: 02/25/05

DRAFT: PURGEABLES BY GC/MS (EPA 624)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers	Qual	Code
Sample ID: IOB2065-01 (DRAFT: Outfall 011 Grab - Water)											
Reporting Units: ug/l											
Benzene	EPA 624	5B26009	0.28	1.0	ND	1	02/26/05	02/26/05			
Bromodichloromethane	EPA 624	5B26009	0.30	2.0	ND	1	02/26/05	02/26/05			
Bromoform	EPA 624	5B26009	0.32	5.0	ND	1	02/26/05	02/26/05			
Bromomethane	EPA 624	5B26009	0.34	5.0	ND	1	02/26/05	02/26/05			
Carbon tetrachloride	EPA 624	5B26009	0.28	0.50	ND	1	02/26/05	02/26/05			
Chlorobenzene	EPA 624	5B26009	0.36	2.0	ND	1	02/26/05	02/26/05			
Chloroethane	EPA 624	5B26009	0.33	5.0	ND	1	02/26/05	02/26/05			
Chloroform	EPA 624	5B26009	0.33	2.0	ND	1	02/26/05	02/26/05			
Chloromethane	EPA 624	5B26009	0.30	5.0	ND	1	02/26/05	02/26/05			
Dibromochloromethane	EPA 624	5B26009	0.28	2.0	ND	1	02/26/05	02/26/05			
1,2-Dichlorobenzene	EPA 624	5B26009	0.32	2.0	ND	1	02/26/05	02/26/05			
1,3-Dichlorobenzene	EPA 624	5B26009	0.35	2.0	ND	1	02/26/05	02/26/05			
1,4-Dichlorobenzene	EPA 624	5B26009	0.37	2.0	ND	1	02/26/05	02/26/05			
1,1-Dichloroethane	EPA 624	5B26009	0.27	2.0	ND	1	02/26/05	02/26/05			
1,2-Dichloroethane	EPA 624	5B26009	0.28	0.50	ND	1	02/26/05	02/26/05			
1,1-Dichloroethene	EPA 624	5B26009	0.32	5.0	ND	1	02/26/05	02/26/05			
trans-1,2-Dichloroethene	EPA 624	5B26009	0.27	2.0	ND	1	02/26/05	02/26/05			
1,2-Dichloropropane	EPA 624	5B26009	0.35	2.0	ND	1	02/26/05	02/26/05			
cis-1,3-Dichloropropene	EPA 624	5B26009	0.22	2.0	ND	1	02/26/05	02/26/05			
trans-1,3-Dichloropropene	EPA 624	5B26009	0.24	2.0	ND	1	02/26/05	02/26/05			
Ethylbenzene	EPA 624	5B26009	0.25	2.0	ND	1	02/26/05	02/26/05			
Methylene chloride	EPA 624	5B26009	0.48	5.0	ND 0.74	1	02/26/05	02/26/05			
1,1,2,2-Tetrachloroethane	EPA 624	5B26009	0.24	2.0	ND	1	02/26/05	02/26/05			
Tetrachloroethene	EPA 624	5B26009	0.32	2.0	ND	1	02/26/05	02/26/05			
Toluene	EPA 624	5B26009	0.36	2.0	ND	1	02/26/05	02/26/05			
1,1,1-Trichloroethane	EPA 624	5B26009	0.30	2.0	ND	1	02/26/05	02/26/05			
1,1,2-Trichloroethane	EPA 624	5B26009	0.30	2.0	ND	1	02/26/05	02/26/05			
Trichloroethene	EPA 624	5B26009	0.26	2.0	ND	1	02/26/05	02/26/05			
Trichlorofluoromethane	EPA 624	5B26009	0.34	5.0	ND	1	02/26/05	02/26/05			
Vinyl chloride	EPA 624	5B26009	0.26	0.50	ND	1	02/26/05	02/26/05			
Xylenes, Total	EPA 624	5B26009	0.52	4.0	ND	1	02/26/05	02/26/05			
Surrogate: Dibromofluoromethane (80-120%)											106 %
Surrogate: Toluene-d8 (80-120%)											96 %
Surrogate: 4-Bromofluorobenzene (80-120%)											94 %

Handwritten notes and arrows on the right side of the table, including 'Qual' and 'Code' labels and a vertical arrow pointing downwards.

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 2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 796-3620 FAX (702) 798-3620

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

Project ID: 13267 (Study 1)
 Outfall 011
 Report Number: IOB2065

Sampled: 02/25/05
 Received: 02/25/05

DRAFT: PURGEABLES BY GC/MS (EPA 624)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOB2065-01 (DRAFT: Outfall 011 Grab - Water)									
Reporting Units: ug/l									
Acrolein	EPA 624	5B26009	4.6	50	ND	1	02/26/05	02/26/05	U
Acrylonitrile	EPA 624	5B26009	5.1	50	ND	1	02/26/05	02/26/05	U
2-Chloroethyl vinyl ether	EPA 624	5B26009	1.3	5.0	ND	1	02/26/05	02/26/05	U
Surrogate: Dibromofluoromethane (80-120%)					106 %				
Surrogate: Toluene-d8 (80-120%)					96 %				
Surrogate: 4-Bromofluorobenzene (80-120%)					94 %				
Sample ID: IOB2065-02 (DRAFT: Trip Blank - Water)									
Reporting Units: ug/l									
Acrolein	EPA 624	5B26009	4.6	50	ND	1	02/26/05	02/26/05	U
Acrylonitrile	EPA 624	5B26009	5.1	50	ND	1	02/26/05	02/26/05	U
2-Chloroethyl vinyl ether	EPA 624	5B26009	1.3	5.0	ND	1	02/26/05	02/26/05	U
Surrogate: Dibromofluoromethane (80-120%)					101 %				
Surrogate: Toluene-d8 (80-120%)					94 %				
Surrogate: 4-Bromofluorobenzene (80-120%)					94 %				

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 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: 13267 (Study 1)
 Outfall 011
 Report Number: IOB2065

Sampled: 02/25/05
 Received: 02/25/05

DRAFT: PURGEABLES BY GC/MS (EPA 624)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers	Qual Code
Sample ID: IOB2065-02 (DRAFT: Trip Blank - Water)										
Reporting Units: ug/l										
Benzene	EPA 624	5B26009	0.28	1.0	ND	1	02/26/05	02/26/05		
Bromodichloromethane	EPA 624	5B26009	0.30	2.0	ND	1	02/26/05	02/26/05		
Bromoform	EPA 624	5B26009	0.32	5.0	ND	1	02/26/05	02/26/05		
Bromomethane	EPA 624	5B26009	0.34	5.0	ND	1	02/26/05	02/26/05		
Carbon tetrachloride	EPA 624	5B26009	0.28	0.50	ND	1	02/26/05	02/26/05		
Chlorobenzene	EPA 624	5B26009	0.36	2.0	ND	1	02/26/05	02/26/05		
Chloroethane	EPA 624	5B26009	0.33	5.0	ND	1	02/26/05	02/26/05		
Chloroform	EPA 624	5B26009	0.33	2.0	ND	1	02/26/05	02/26/05		
Chloromethane	EPA 624	5B26009	0.30	5.0	ND	1	02/26/05	02/26/05		
Dibromochloromethane	EPA 624	5B26009	0.28	2.0	ND	1	02/26/05	02/26/05		
1,2-Dichlorobenzene	EPA 624	5B26009	0.32	2.0	ND	1	02/26/05	02/26/05		
1,3-Dichlorobenzene	EPA 624	5B26009	0.35	2.0	ND	1	02/26/05	02/26/05		
1,4-Dichlorobenzene	EPA 624	5B26009	0.37	2.0	ND	1	02/26/05	02/26/05		
1,1-Dichloroethane	EPA 624	5B26009	0.27	2.0	ND	1	02/26/05	02/26/05		
1,2-Dichloroethane	EPA 624	5B26009	0.28	0.50	ND	1	02/26/05	02/26/05		
1,1-Dichloroethene	EPA 624	5B26009	0.32	5.0	ND	1	02/26/05	02/26/05		
trans-1,2-Dichloroethene	EPA 624	5B26009	0.27	2.0	ND	1	02/26/05	02/26/05		
1,2-Dichloropropane	EPA 624	5B26009	0.35	2.0	ND	1	02/26/05	02/26/05		
cis-1,3-Dichloropropene	EPA 624	5B26009	0.22	2.0	ND	1	02/26/05	02/26/05		
trans-1,3-Dichloropropene	EPA 624	5B26009	0.24	2.0	ND	1	02/26/05	02/26/05		
Ethylbenzene	EPA 624	5B26009	0.25	2.0	ND	1	02/26/05	02/26/05		
Methylene chloride	EPA 624	5B26009	0.48	5.0	0.94	1	02/26/05	02/26/05	J	DNQ
1,1,2,2-Tetrachloroethane	EPA 624	5B26009	0.24	2.0	ND	1	02/26/05	02/26/05		
Tetrachloroethene	EPA 624	5B26009	0.32	2.0	ND	1	02/26/05	02/26/05		
Toluene	EPA 624	5B26009	0.36	2.0	ND	1	02/26/05	02/26/05		
1,1,1-Trichloroethane	EPA 624	5B26009	0.30	2.0	ND	1	02/26/05	02/26/05		
1,1,2-Trichloroethane	EPA 624	5B26009	0.30	2.0	ND	1	02/26/05	02/26/05		
Trichloroethene	EPA 624	5B26009	0.26	2.0	ND	1	02/26/05	02/26/05		
Trichlorofluoromethane	EPA 624	5B26009	0.34	5.0	ND	1	02/26/05	02/26/05		
Vinyl chloride	EPA 624	5B26009	0.26	0.50	ND	1	02/26/05	02/26/05		
Xylenes, Total	EPA 624	5B26009	0.52	4.0	ND	1	02/26/05	02/26/05		
Surrogate: Dibromofluoromethane (80-120%)					101 %					
Surrogate: Toluene-d8 (80-120%)					94 %					
Surrogate: 4-Bromofluorobenzene (80-120%)					94 %					

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

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

Project ID: 13267 (Study 1)
 Outfall 011
 Report Number: IOB2065

Sampled: 02/25/05
 Received: 02/25/05

DRAFT: FREON 113 (EPA 8260B)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers	Raw Qual	Anal Code
Sample ID: IOB2065-01 (DRAFT: Outfall 011 Grab - Water)											
Reporting Units: ug/l											
Trichlorotrifluoroethane (Freon 113)	EPA 8260B	5C04021	1.2	5.0	ND	1	03/04/05	03/04/05	U		
Surrogate: Dibromofluoromethane (80-120%)					105 %						
Surrogate: Toluene-d8 (80-120%)					100 %						
Surrogate: 4-Bromofluorobenzene (80-120%)					96 %						
Sample ID: IOB2065-02 (DRAFT: Trip Blank - Water)											
Reporting Units: ug/l											
Trichlorotrifluoroethane (Freon 113)	EPA 8260B	5C04021	1.2	5.0	ND	1	03/04/05	03/04/05	U		
Surrogate: Dibromofluoromethane (80-120%)					105 %						
Surrogate: Toluene-d8 (80-120%)					99 %						
Surrogate: 4-Bromofluorobenzene (80-120%)					95 %						

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LEVEL IV

CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

AMEC Earth & Environmental
 550 South Wadsworth Boulevard
 Suite 500
 Lakewood, CO 80226

Package ID T711WC93
 Task Order 313150010
 SDG No. IOB2064, IOB2065

No. of Analyses 2

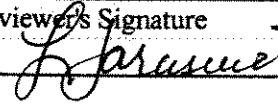
Laboratory Del Mar Analytical

Reviewer L. Jarusewic

Analysis/Method Perchlorate

Date: 03/29/05

Reviewer's Signature



ACTION ITEMS^a

1. Case Narrative Deficiencies
2. Out of Scope Analyses
3. Analyses Not Conducted
4. Missing Hardcopy Deliverables
5. Incorrect Hardcopy Deliverables
6. Deviations from Analysis Protocol, e.g.,
 - Holding Times
 - GC/MS Tune/Inst. Performance
 - Calibrations
 - Blanks
 - Surrogates
 - Matrix Spike/Dup LCS
 - Field QC
 - Internal Standard Performance
 - Compound Identification and Quantitation
 - System Performance

COMMENTS^b

Acceptable as reviewed.

^a 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

ANALYSIS: PERCHLORATE

SAMPLES DELIVERY GROUPS: IOB2064 & IOB2065

Prepared by

AMEC—Denver Operations
550 South Wadsworth Boulevard, Suite 500
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title: NPDES Monitoring
Contract Task Order #: 313150010
Samples Delivery Group #: IOB2064, IOB2065
Project Manager: B. McIlvaine
Matrix: Water
Analysis: Perchlorate
QC Level: Level IV
No. of Samples: 2
Reviewer: L. Jarusewic
Date of Review: March 29, 2005

The samples listed in Table 1 was validated based on the guidelines outlined in the AMEC *Data Validation Procedures SOP DVP-6, Rev. 2, USEPA Methods for Chemical Analysis of Water and Wastes Method 314.0, and 120.1*, 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 I as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

Table 1. Samples identification

Client ID	EPA ID	Laboratory ID	Matrix	COC Method
Outfall 011-Composite	Outfall 011-Composite	IOB2064-01	Water	Perchlorate
Outfall 011- Grab	Outfall 011- Grab	IOB2065-01	Water	Perchlorate

2. DATA VALIDATION FINDINGS

2.1 SAMPLES MANAGEMENT

Following are findings associated with sample management:

2.1.1 Samples Preservation, Handling, and Transport

The samples in these SDGs were received at the laboratory within the temperature limits of $4^{\circ}\text{C} \pm 2^{\circ}\text{C}$. No preservation problems were noted by the laboratory. No qualifications were required.

2.1.2 Chain of Custody

The COCs were signed and dated by field and laboratory personnel, and accounted for the samples and analysis presented in these SDGs. No qualifications were required.

2.1.3 Holding Times

The holding time was assessed by comparing the dates of collection with the dates of analysis. The 28-day analytical holding time for perchlorate was met, and no qualifications were required.

2.2 CALIBRATION

The initial calibration correlation coefficient was ≥ 0.995 . The IPC-MA recovery was within the control limits of 80-120%. The ICV, CCV and IPC recoveries were within the control limits of 90-110%. No qualifications were required.

2.3 BLANKS

The method blank and CCB results reported on the summary forms and in the raw data for blank analyses associated with the samples were nondetects at the reporting limit. No qualifications were required.

2.4 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

The laboratory control sample recovery was within the method control limits of 85-115%. No qualifications were required.

2.5 SURROGATES RECOVERY

Surrogate recovery is not applicable to the analysis presented in these SDGs.

2.6 LABORATORY DUPLICATES

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

2.7 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

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

2.8 FURNACE ATOMIC ABSORPTION QC

Furnace atomic absorption was not utilized for the analysis of these samples; therefore, furnace atomic absorption QC is not applicable.

2.9 ICP SERIAL DILUTION

ICP serial dilution is not applicable to the analysis presented in this data validation report.

2.10 SAMPLES RESULT VERIFICATION

A Level IV review was performed for the samples in these data packages. Calculations were verified, and the sample results reported on the Form Is were verified against the raw data. No transcription errors or calculation errors were noted. No qualifications were required.

2.11 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. The following are findings associated with field QC samples:

2.11.1 Field Blanks and Equipment Rinsates

The samples in these SDGs had no associated field QC samples. No qualifications were required.

2.11.2 Field Duplicates

There were no field duplicate pairs associated with these SDGs.



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

Project ID: 13267 (Study 1)
 Outfall 011
 Report Number: IOB2064

Sampled: 02/25/05
 Received: 02/25/05

DRAFT: INORGANICS

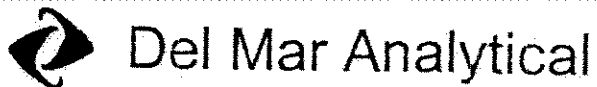
Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOB2064-01 (DRAFT: Outfall 011 Composite - Water) - cont.									
Reporting Units: ug/l									
Chromium VI	EPA 218.6	5B25125	0.10	1.0	ND	1	02/25/05	02/26/05	*
Total Cyanide	EPA 335.2	5B28115	2.2	5.0	ND	1	02/28/05	03/01/05	*
Perchlorate	EPA 314.0	5B28103	0.80	4.0	ND	1	02/28/05	03/01/05	U

AMEC VALIDATED

LEVEL IV

Analysis Not Validated

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

Project ID: 13267 (Study 1)
 Outfall 011
 Report Number: IOB2065

Sampled: 02/25/05
 Received: 02/25/05

DRAFT: INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Analyzed	Date Data	Qualifiers
Sample ID: IOB2065-01 (DRAFT: Outfall 011 Grab - Water) - cont.									
Reporting Units: ug/l									
Perchlorate	EPA 314.0	5B28103	0.80	4.0	ND	1	02/28/05	03/01/05	U

REV
 QUAL
 LOC

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DATA VALIDATION REPORT

NPDES Monitoring

ANALYSIS: GENERAL MINERALS

SAMPLE DELIVERY GROUPS: IOB2064 & IOB2065

Prepared by

AMEC—Denver Operations
550 South Wadsworth Boulevard, Suite 500
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title: NPDES Monitoring
Contract Task Order #: 313150010
Sample Delivery Group #: IOB2064/IOB2065
Project Manager: B. McIlvaine
Matrix: Water
Analysis: General Minerals
QC Level: Level IV
No. of Samples: 2
Reviewer: L. Jarusewic
Date of Review: March 29, 2005

The samples listed in Table 1 was validated based on the guidelines outlined in the AMEC *Data Validation Procedures* SOP DVP-6, Rev. 2, USEPA *Methods for Chemical Analysis of Water and Wastes Method 300.0, 330.5, 405.1, 335.2, 218.6, 418.1, 350.2, 413.1, 415.1, 160.5, 120.1, 160.2, and 180.1. Standard Methods for the Examination of Water and Wastewater Method SM5540-C and SM2540C*, 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 I as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

Table 1. Sample identification

Client ID	EPA ID	Laboratory ID	Matrix	COC Method
Outfall 011-Composite	Outfall 011-Composite	IOB2064-01	Water	General Minerals
Outfall 011-Grab	Outfall 011-Grab	IOB2065-01	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 samples in these SDGs were received at the laboratory within the temperature limits of $4^{\circ}\text{C} \pm 2^{\circ}\text{C}$. No preservation problems were noted by the laboratory. No qualifications were required.

2.1.2 Chain of Custody

The COCs were signed and dated by field and laboratory personnel. The COCs accounted for the analyses and samples presented in these SDGs. No qualifications were required.

2.1.3 Holding Times

The holding times were assessed by comparing the date of collection with the dates of analyses. The 28-day analytical holding time for oil and grease, chloride, sulfate, fluoride, total organic carbon, conductivity, ammonia, and total recoverable hydrocarbons, the 14-day holding time for cyanide, the seven-day holding time for total suspended solids and total dissolved solids, the 48-hour holding time for turbidity, nitrate/nitrite, total settleable solids, surfactants, and biological oxygen demand, and the 24-hour hexavalent chromium and residual chlorine holding times were met. No qualifications were required.

2.2 CALIBRATION

For the applicable analyses, the initial calibration correlation coefficients were ≥ 0.995 . The initial and continuing calibration verification information was acceptable with %Rs within the control limits of 90-110%. For BOD, no information regarding the calibration of the oxygen meter was provided; however, as the LCS recovery was within the CCV control limits, no qualifications were required. For ammonia, no information regarding the standardization of the titrant was provided; however, as the LCS recovery was within the CCV control limits, no qualifications were required. The reporting limit check standards for cyanide, chloride, nitrate, fluoride, and sulfate were within the control limits of 70-130%. Calibration is not applicable to residual chlorine, oil and grease, total dissolved solids, total settleable solids, or total suspended solids. No qualifications were required.

2.3 BLANKS

Turbidity was detected in method blank 5B26046-BLK1 at 0.0500 NTU; however, the method blank result was insufficient to qualify the Outfall 011-Composite and Outfall 011-Grab results. The remaining method blank and CCB results reported on the summary forms and in the raw data for blank analyses associated with the sample were nondetects at the reporting limit. Blank analyses are not applicable to residual chlorine, conductivity, and total settleable solids. No qualifications were required.

2.4 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

The laboratory control sample and laboratory control sample duplicate (BOD, total recoverable hydrocarbons, and oil and grease only) recoveries were within the laboratory-established control limits. The LCS is not applicable to turbidity, total settleable solids, or residual chlorine. No qualifications were required.

2.5 SURROGATES RECOVERY

Surrogate recovery is not applicable to the analyses presented in these SDGs.

2.6 LABORATORY DUPLICATES

MS/MSD analyses were performed on sample Outfall 011-Composite for cyanide. The RPD was within the control limit of $\leq 15\%$. No qualifications were required.

2.7 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

MS/MSD analyses were performed on sample Outfall 011-Composite for cyanide. The recoveries were within the laboratory-established control limits and no qualifications were required.

2.8 FURNACE ATOMIC ABSORPTION QC

Furnace atomic absorption was not utilized for the analyses of these samples; therefore, furnace atomic absorption QC is not applicable.

2.9 ICP SERIAL DILUTION

ICP serial dilution is not applicable to the analyses presented in this data validation report.

2.10 SAMPLE RESULT VERIFICATION

A Level IV review was performed for the samples in these data packages. Calculations were verified, and the sample results reported on the Form Is were verified against the raw data. No transcription errors or calculation errors were noted. Flouride, BOD, and surfactant detected below the reporting limit in samples Outfall 011-Composite and Outfall 011-Grab were qualified as estimated, "J." No further qualifications were required.

2.11 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. The following are findings associated with field QC samples:

2.11.1 Field Blanks and Equipment Rinsates

The samples in these SDGs had no associated field QC samples. No qualifications were required.

2.11.2 Field Duplicates

There were no field duplicate pairs associated with these SDGs.



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

Project ID: 13267 (Study 1)
 Outfall 011
 Report Number: IOB2064

Sampled: 02/25/05
 Received: 02/25/05

DRAFT: INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOB2064-01 (DRAFT: Outfall 011 Composite - Water) - cont.									
Reporting Units: ml/hr									
Total Settleable Solids	EPA 160.5	5B25097	0.10	0.10	ND	1	02/25/05	02/25/05	u

Handwritten: QUAL CODE

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 Pasadena, CA 91101
 Attention: Bronwyn Kelly

Project ID: 13267 (Study 1)
 Outfall 011
 Report Number: IOB2064

Sampled: 02/25/05
 Received: 02/25/05

DRAFT: INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Analyzed	Date Data	Qualifiers
Sample ID: IOB2064-01 (DRAFT: Outfall 011 Composite - Water) - cont.									
Reporting Units: NTU									
Turbidity	EPA 180.1	5B26046	0.040	1.0	8.0	1	02/26/05	02/26/05	REV QUAL CODE

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 2920 E. Sunset Blvd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3622

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

Project ID: 13267 (Study 1)
 Outfall 011
 Report Number: IOB2064

Sampled: 02/25/05
 Received: 02/25/05

DRAFT: INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOB2064-01 (DRAFT: Outfall 011 Composite - Water) - cont.									
Reporting Units: umhos/cm									
Specific Conductance	EPA 120.1	5B28080	1.0	1.0	150	1	02/28/05	02/28/05	REV QUAL GMM COO

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 Attention: Bronwyn Kelly

Project ID: 13267 (Study 1)
 Outfall 011
 Report Number: IOB2064

Sampled: 02/25/05
 Received: 02/25/05

DRAFT: INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOB2064-01 (DRAFT: Outfall 011 Composite - Water) - cont.									
Reporting Units: ug/l									
Chromium VI	EPA 218.6	5B25125	0.10	1.0	ND	1	02/25/05	02/26/05	U
Total Cyanide	EPA 335.2	5B28115	2.2	5.0	ND	1	02/28/05	03/01/05	U
Perchlorate	EPA 314.0	5B28103	0.80	4.0	ND	1	02/28/05	03/01/05	*

REV QUAL CODE

AMEC VALIDATED

LEVEL IV

Analysis Not Validated

DRAFT REPORT
 DRAFT REPORT
 DATA SUBJECT TO CHANGE

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 9484 Chesapeake Dr., Suite 805, San Diego, CA 92123 (619) 585-8596 FAX (619) 505-9111
 9530 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-6143 FAX (480) 785-0181
 2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3611

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

Project ID: 13267 (Study 1)
 Outfall 011
 Report Number: IOB2064

Sampled: 02/25/05
 Received: 02/25/05

DRAFT: INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOB2064-01 (DRAFT: Outfall 011 Composite - Water) - cont.									
Reporting Units: mg/l									
Ammonia-N (Distilled)	EPA 350.2	5C07070	0.30	0.50	ND	1	03/07/05	03/07/05	U
Biochemical Oxygen Demand	EPA 405.1	5B25128	0.59	2.0	0.76	1	02/25/05	03/02/05	J
Chloride	EPA 300.0	5B25042	0.26	0.50	5.1	1	02/25/05	02/25/05	J
Fluoride	EPA 300.0	5B25042	0.10	0.50	0.15	1	02/25/05	02/25/05	J
Nitrate/Nitrite-N	EPA 300.0	5B25042	0.072	0.26	0.38	1	02/25/05	02/25/05	J
Oil & Grease	EPA 413.1	5C02094	0.94	5.0	ND	1	03/02/05	03/02/05	U
Residual Chlorine	EPA 330.5	5B25120	0.10	0.10	ND	1	02/25/05	02/25/05	U
Sulfate	EPA 300.0	5B25042	0.18	0.50	11	1	02/25/05	02/25/05	J
Surfactants (MBAS)	SM5540-C	5B25118	0.044	0.10	0.051	1	02/25/05	02/25/05	J
Total Dissolved Solids	SM2540C	5B28078	10	10	110	1	02/28/05	02/28/05	J
Total Organic Carbon	EPA 415.1	5C01065	0.25	1.0	9.0	1	03/01/05	03/01/05	J
Total Suspended Solids	EPA 160.2	5C03074	10	10	ND	1	03/03/05	03/03/05	U

PRV QUAL CODE

AMEC VALIDATED

LEVEL IV

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

Project ID: 13267 (Study 1)
 Outfall 011
 Report Number: IOB2065

Sampled: 02/25/05
 Received: 02/25/05

DRAFT: TOTAL RECOVERABLE PETROLEUM HYDROCARBONS (EPA 418.1)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOB2065-01 (DRAFT: Outfall 011 Grab - Water)									
Reporting Units: mg/l									
Total Recoverable Hydrocarbons	EPA 418.1	5B28069	0.31	1.0	ND	1	02/28/05	02/28/05	U

KEY: OUT
QUAL CODE

AMEC VALIDATED

LEVEL IV

DRAFT REPORT
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 DATA SUBJECT TO CHANGE

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

Project ID: 13267 (Study 1)
 Outfall 011
 Report Number: IOB2065

Sampled: 02/25/05
 Received: 02/25/05

DRAFT: INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOB2065-01 (DRAFT: Outfall 011 Grab - Water) - cont.									
Reporting Units: ml/l/hr									
Total Settleable Solids	EPA 160.5	5B25097	0.10	0.10	ND	1	02/25/05	02/25/05	U

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

Project ID: 13267 (Study 1)
 Outfall 011
 Report Number: IOB2065

Sampled: 02/25/05
 Received: 02/25/05

DRAFT: INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOB2065-01 (DRAFT: Outfall 011 Grab - Water) - cont. Reporting Units: NTU									
Turbidity	EPA 180.1	5B26046	0.040	1.0	9.4	1	02/26/05	02/26/05	REV DUM QMA COO

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

Project ID: 13267 (Study 1)
 Outfall 011
 Report Number: IOB2065

Sampled: 02/25/05
 Received: 02/25/05

DRAFT: INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
									REV QUAL
Sample ID: IOB2065-01 (DRAFT: Outfall 011 Grab - Water) - cont.									
Reporting Units: umhos/cm									
Specific Conductance	EPA 120.1	5B28080	1.0	1.0	150	1	02/28/05	02/28/05	QUAL CODE

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 2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-362

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

Project ID: 13267 (Study 1)
 Outfall 011
 Report Number: IOB2065

Sampled: 02/25/05
 Received: 02/25/05

DRAFT: INORGANICS

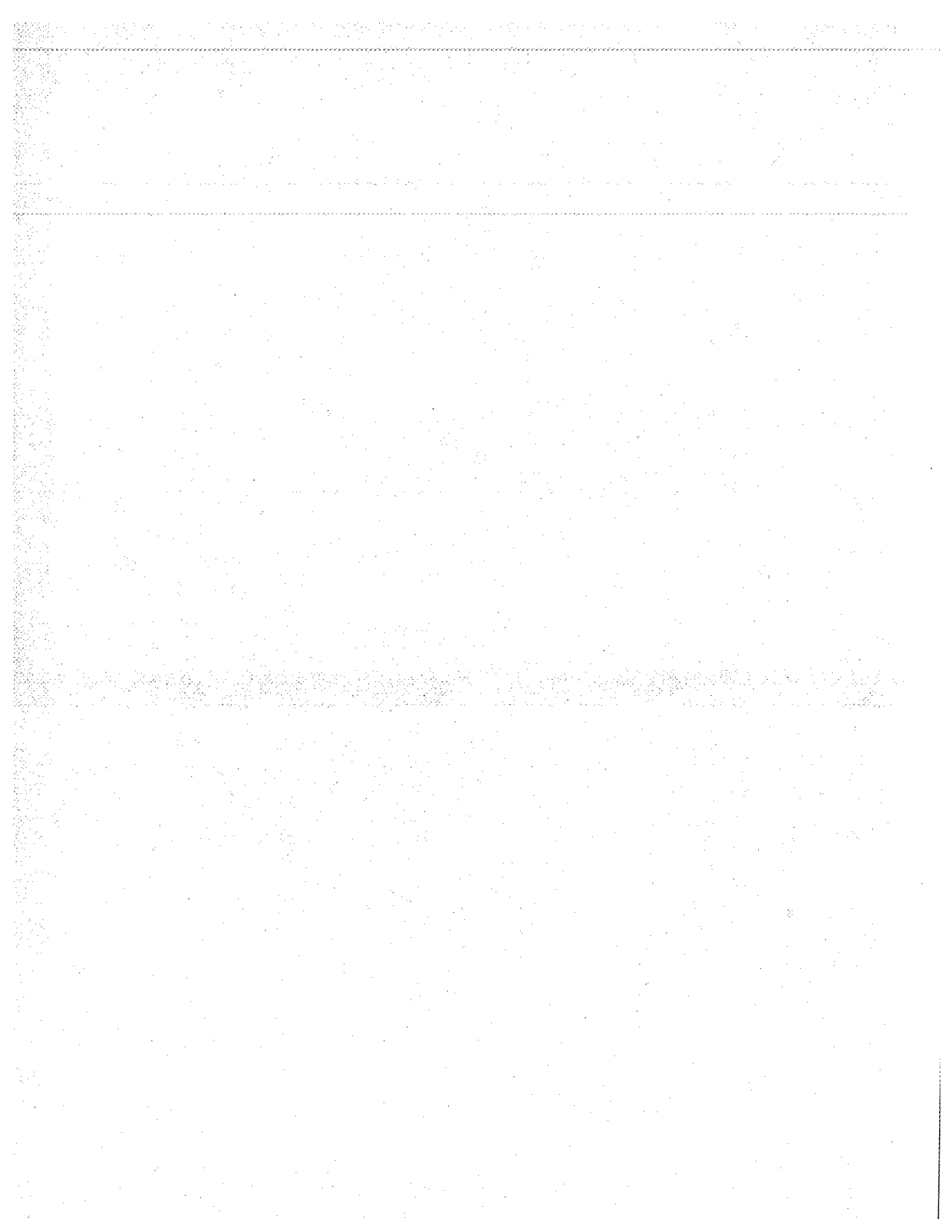
Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers	
									REV QUAL	QUAL CODE
Sample ID: IOB2065-01 (DRAFT: Outfall 011 Grab - Water) - cont.										
Reporting Units: mg/l										
Ammonia-N (Distilled)	EPA 350.2	5C07070	0.30	0.50	ND	1	03/07/05	03/07/05	U	
Biochemical Oxygen Demand	EPA 405.1	5B25128	0.59	2.0	0.68	1	02/25/05	03/02/05	J	DNQ
Chloride	EPA 300.0	5B25042	0.26	0.50	5.1	1	02/25/05	02/25/05		
Chromium VI	EPA 218.6	5B25125	0.00010	0.0010	ND	1	02/25/05	02/26/05	U	
Total Cyanide	EPA 335.2	5B28115	0.0022	0.0050	ND	1	02/28/05	03/01/05	U	
Fluoride	EPA 300.0	5B25042	0.10	0.50	0.17	1	02/25/05	02/25/05	J	DNQ
Nitrate/Nitrite-N	EPA 300.0	5B25042	0.072	0.26	0.38	1	02/25/05	02/25/05		
Oil & Grease	EPA 413.1	5C02094	0.94	5.0	ND	1	03/02/05	03/02/05	U	
Residual Chlorine	EPA 330.5	5B25120	0.10	0.10	ND	1	02/25/05	02/25/05	U	
Sulfate	EPA 300.0	5B25042	0.18	0.50	11	1	02/25/05	02/25/05		
Surfactants (MBAS)	SM5540-C	5B25118	0.044	0.10	0.054	1	02/25/05	02/25/05	J	DNQ
Total Dissolved Solids	SM2540C	5B28078	10	10	100	1	02/28/05	02/28/05		
Total Organic Carbon	EPA 415.1	5C01065	0.25	1.0	11	1	03/01/05	03/01/05		
Total Suspended Solids	EPA 160.2	5C03074	10	10	ND	1	03/03/05	03/03/05	U	

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LABORATORY REPORT

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

Project: 13267 (Study 1)
Outfall 011

Sampled: 02/25/05
Received: 02/25/05
Issued: 04/07/05 18:41

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, 3 pages, are included and are an integral part of this report.
This entire report was reviewed and approved for release.*

SAMPLE CROSS REFERENCE

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

LABORATORY ID

IOB2064-01
IOB2064-02

CLIENT ID

Outfall 011 Composite
Trip Blank

MATRIX

Water
Water

Reviewed By:

Del Mar Analytical, Irvine
Michele Harper
Project Manager



MWH-Pasadena/Boeing 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Attention: Bronwyn Kelly	Project ID: 13267 (Study 1) Outfall 011 Report Number: IOB2064	Sampled: 02/25/05 Received: 02/25/05
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CORRECTIVE ACTION REPORT

Department: Extractions

Date: 03/03/2005

Method: EPA 625

Matrix: Water

QC Batch: 5B28001

Identification and Definition of Problem:

The percent recovery for benzidine in the LCS was below method acceptance limits.

Determination of the Cause of the Problem:

Benzidine is known to be a problematic compound. According to the EPA, it can be subject to oxidative losses during solvent extraction and its chromatographic behavior is poor.

Corrective Action Taken:

All results reported for benzidine are potentially biased low and can be considered estimates only.

Quality Assurance Approval:

Dave Dawes

Date: 03/04/2005 09:37 AM

Del Mar Analytical, Irvine
Michele Harper
Project Manager



Del Mar Analytical

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MWH-Pasadena/Boeing 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Attention: Bronwyn Kelly	Project ID: 13267 (Study 1) Outfall 011 Report Number: IOB2064	Sampled: 02/25/05 Received: 02/25/05
--	--	---

TOTAL RECOVERABLE PETROLEUM HYDROCARBONS (EPA 418.1)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOB2064-01RE1 (Outfall 011 Composite - Water)									
Reporting Units: mg/l									
Total Recoverable Hydrocarbons	EPA 418.1	5C24109	0.31	1.0	ND	1	03/24/05	03/24/05	

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 Michele Harper
 Project Manager

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

Project ID: 13267 (Study 1)
 Outfall 011
 Report Number: IOB2064

Sampled: 02/25/05
 Received: 02/25/05

EXTRACTABLE FUEL HYDROCARBONS (CADHS/8015 Modified)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOB2064-01 (Outfall 011 Composite - Water) - cont.									
Reporting Units: mg/l									
EFH (C13 - C22)	EPA 8015B	5C01045	0.082	0.50	ND	0.943	03/01/05	03/02/05	
Surrogate: n-Octacosane (40-125%)					66 %				

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Attention: Bronwyn Kelly

Project ID: 13267 (Study 1)
Outfall 011
Report Number: IOB2064

Sampled: 02/25/05
Received: 02/25/05

VOLATILE FUEL HYDROCARBONS (EPA 5030/CADHS Mod. 8015)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOB2064-01 (Outfall 011 Composite - Water) - cont.									
Reporting Units: mg/l									
GRO (C4 - C12)	EPA 8015 Mod.	5C03008	0.050	0.10	ND	1	03/03/05	03/03/05	
Surrogate: 4-BFB (FID) (65-140%)					87 %				
Sample ID: IOB2064-02 (Trip Blank - Water)									
Reporting Units: mg/l									
GRO (C4 - C12)	EPA 8015 Mod.	5C03008	0.050	0.10	ND	1	03/03/05	03/03/05	
Surrogate: 4-BFB (FID) (65-140%)					86 %				

Del Mar Analytical, Irvine
Michele Harper
Project Manager



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 Pasadena, CA 91101
 Attention: Bronwyn Kelly

Project ID: 13267 (Study 1)
 Outfall 011
 Report Number: IOB2064

Sampled: 02/25/05
 Received: 02/25/05

FREON 113 (EPA 8260B)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOB2064-01 (Outfall 011 Composite - Water)									
Reporting Units: ug/l									
Trichlorotrifluoroethane (Freon 113)	EPA 8260B	5C03036	1.2	5.0	ND	1	03/03/05	03/03/05	
Surrogate: Dibromofluoromethane (80-120%)					106 %				
Surrogate: Toluene-d8 (80-120%)					100 %				
Surrogate: 4-Bromofluorobenzene (80-120%)					97 %				
Sample ID: IOB2064-02 (Trip Blank - Water)									
Reporting Units: ug/l									
Trichlorotrifluoroethane (Freon 113)	EPA 8260B	5C03036	1.2	5.0	ND	1	03/03/05	03/03/05	
Surrogate: Dibromofluoromethane (80-120%)					105 %				
Surrogate: Toluene-d8 (80-120%)					98 %				
Surrogate: 4-Bromofluorobenzene (80-120%)					96 %				

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 Michele Harper
 Project Manager

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 Attention: Bronwyn Kelly

Project ID: 13267 (Study 1)
 Outfall 011
 Report Number: IOB2064

Sampled: 02/25/05
 Received: 02/25/05

PURGEABLES BY GC/MS (EPA 624)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOB2064-01 (Outfall 011 Composite - Water)									
Reporting Units: ug/l									
Benzene	EPA 624	5B26009	0.28	1.0	ND	1	02/26/05	02/26/05	
Bromodichloromethane	EPA 624	5B26009	0.30	2.0	ND	1	02/26/05	02/26/05	
Bromoform	EPA 624	5B26009	0.32	5.0	ND	1	02/26/05	02/26/05	
Bromomethane	EPA 624	5B26009	0.34	5.0	ND	1	02/26/05	02/26/05	
Carbon tetrachloride	EPA 624	5B26009	0.28	0.50	ND	1	02/26/05	02/26/05	
Chlorobenzene	EPA 624	5B26009	0.36	2.0	ND	1	02/26/05	02/26/05	
Chloroethane	EPA 624	5B26009	0.33	5.0	ND	1	02/26/05	02/26/05	
Chloroform	EPA 624	5B26009	0.33	2.0	ND	1	02/26/05	02/26/05	
Chloromethane	EPA 624	5B26009	0.30	5.0	ND	1	02/26/05	02/26/05	
Dibromochloromethane	EPA 624	5B26009	0.28	2.0	ND	1	02/26/05	02/26/05	
1,2-Dichlorobenzene	EPA 624	5B26009	0.32	2.0	ND	1	02/26/05	02/26/05	
1,3-Dichlorobenzene	EPA 624	5B26009	0.35	2.0	ND	1	02/26/05	02/26/05	
1,4-Dichlorobenzene	EPA 624	5B26009	0.37	2.0	ND	1	02/26/05	02/26/05	
1,1-Dichloroethane	EPA 624	5B26009	0.27	2.0	ND	1	02/26/05	02/26/05	
1,2-Dichloroethane	EPA 624	5B26009	0.28	0.50	ND	1	02/26/05	02/26/05	
1,1-Dichloroethene	EPA 624	5B26009	0.32	5.0	ND	1	02/26/05	02/26/05	
trans-1,2-Dichloroethene	EPA 624	5B26009	0.27	2.0	ND	1	02/26/05	02/26/05	
1,2-Dichloropropane	EPA 624	5B26009	0.35	2.0	ND	1	02/26/05	02/26/05	
cis-1,3-Dichloropropene	EPA 624	5B26009	0.22	2.0	ND	1	02/26/05	02/26/05	
trans-1,3-Dichloropropene	EPA 624	5B26009	0.24	2.0	ND	1	02/26/05	02/26/05	
Ethylbenzene	EPA 624	5B26009	0.25	2.0	ND	1	02/26/05	02/26/05	
Methylene chloride	EPA 624	5B26009	0.48	5.0	1.1	1	02/26/05	02/26/05	J
1,1,2,2-Tetrachloroethane	EPA 624	5B26009	0.24	2.0	ND	1	02/26/05	02/26/05	
Tetrachloroethene	EPA 624	5B26009	0.32	2.0	ND	1	02/26/05	02/26/05	
Toluene	EPA 624	5B26009	0.36	2.0	ND	1	02/26/05	02/26/05	
1,1,1-Trichloroethane	EPA 624	5B26009	0.30	2.0	ND	1	02/26/05	02/26/05	
1,1,2-Trichloroethane	EPA 624	5B26009	0.30	2.0	ND	1	02/26/05	02/26/05	
Trichloroethene	EPA 624	5B26009	0.26	2.0	ND	1	02/26/05	02/26/05	
Trichlorofluoromethane	EPA 624	5B26009	0.34	5.0	ND	1	02/26/05	02/26/05	
Vinyl chloride	EPA 624	5B26009	0.26	0.50	ND	1	02/26/05	02/26/05	
Xylenes, Total	EPA 624	5B26009	0.52	4.0	ND	1	02/26/05	02/26/05	
Surrogate: Dibromofluoromethane (80-120%)					106 %				
Surrogate: Toluene-d8 (80-120%)					96 %				
Surrogate: 4-Bromofluorobenzene (80-120%)					94 %				

Del Mar Analytical, Irvine
 Michele Harper
 Project Manager

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

Project ID: 13267 (Study 1)
Outfall 011
Report Number: IOB2064

Sampled: 02/25/05
Received: 02/25/05

PURGEABLES BY GC/MS (EPA 624)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOB2064-02 (Trip Blank - Water)									
Reporting Units: ug/l									
Benzene	EPA 624	5C03036	0.28	1.0	ND	1	03/03/05	03/03/05	
Bromodichloromethane	EPA 624	5C03036	0.30	2.0	ND	1	03/03/05	03/03/05	
Bromoform	EPA 624	5C03036	0.32	5.0	ND	1	03/03/05	03/03/05	
Bromomethane	EPA 624	5C03036	0.34	5.0	ND	1	03/03/05	03/03/05	
Carbon tetrachloride	EPA 624	5C03036	0.28	0.50	ND	1	03/03/05	03/03/05	
Chlorobenzene	EPA 624	5C03036	0.36	2.0	ND	1	03/03/05	03/03/05	
Chloroethane	EPA 624	5C03036	0.33	5.0	ND	1	03/03/05	03/03/05	
Chloroform	EPA 624	5C03036	0.33	2.0	ND	1	03/03/05	03/03/05	
Chloromethane	EPA 624	5C03036	0.30	5.0	ND	1	03/03/05	03/03/05	
Dibromochloromethane	EPA 624	5C03036	0.28	2.0	ND	1	03/03/05	03/03/05	
1,2-Dichlorobenzene	EPA 624	5C03036	0.32	2.0	ND	1	03/03/05	03/03/05	
1,3-Dichlorobenzene	EPA 624	5C03036	0.35	2.0	ND	1	03/03/05	03/03/05	
1,4-Dichlorobenzene	EPA 624	5C03036	0.37	2.0	ND	1	03/03/05	03/03/05	
1,1-Dichloroethane	EPA 624	5C03036	0.27	2.0	ND	1	03/03/05	03/03/05	
1,2-Dichloroethane	EPA 624	5C03036	0.28	0.50	ND	1	03/03/05	03/03/05	
1,1-Dichloroethene	EPA 624	5C03036	0.32	5.0	ND	1	03/03/05	03/03/05	
trans-1,2-Dichloroethene	EPA 624	5C03036	0.27	2.0	ND	1	03/03/05	03/03/05	
1,2-Dichloropropane	EPA 624	5C03036	0.35	2.0	ND	1	03/03/05	03/03/05	
cis-1,3-Dichloropropene	EPA 624	5C03036	0.22	2.0	ND	1	03/03/05	03/03/05	
trans-1,3-Dichloropropene	EPA 624	5C03036	0.24	2.0	ND	1	03/03/05	03/03/05	
Ethylbenzene	EPA 624	5C03036	0.25	2.0	ND	1	03/03/05	03/03/05	
Methylene chloride	EPA 624	5C03036	0.48	5.0	ND	1	03/03/05	03/03/05	
1,1,2,2-Tetrachloroethane	EPA 624	5C03036	0.24	2.0	ND	1	03/03/05	03/03/05	
Tetrachloroethene	EPA 624	5C03036	0.32	2.0	ND	1	03/03/05	03/03/05	
Toluene	EPA 624	5C03036	0.36	2.0	ND	1	03/03/05	03/03/05	
1,1,1-Trichloroethane	EPA 624	5C03036	0.30	2.0	ND	1	03/03/05	03/03/05	
1,1,2-Trichloroethane	EPA 624	5C03036	0.30	2.0	ND	1	03/03/05	03/03/05	
Trichloroethene	EPA 624	5C03036	0.26	2.0	ND	1	03/03/05	03/03/05	
Trichlorofluoromethane	EPA 624	5C03036	0.34	5.0	ND	1	03/03/05	03/03/05	
Vinyl chloride	EPA 624	5C03036	0.26	0.50	ND	1	03/03/05	03/03/05	
Xylenes, Total	EPA 624	5C03036	0.52	4.0	ND	1	03/03/05	03/03/05	
Trichlorotrifluoroethane (Freon 113)	EPA 624	5C03036	1.2	5.0	ND	1	03/03/05	03/03/05	
Surrogate: Dibromofluoromethane (80-120%)									105 %
Surrogate: Toluene-d8 (80-120%)									98 %
Surrogate: 4-Bromofluorobenzene (80-120%)									96 %

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MWH-Pasadena/Boeing 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Attention: Bronwyn Kelly	Project ID: 13267 (Study 1) Outfall 011 Report Number: IOB2064	Sampled: 02/25/05 Received: 02/25/05
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PURGEABLES BY GC/MS (EPA 624)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOB2064-01 (Outfall 011 Composite - Water)									
Reporting Units: ug/l									
Acrolein	EPA 624	5B26009	4.6	50	ND	1	02/26/05	02/26/05	
Acrylonitrile	EPA 624	5B26009	5.1	50	ND	1	02/26/05	02/26/05	
2-Chloroethyl vinyl ether	EPA 624	5B26009	1.3	5.0	ND	1	02/26/05	02/26/05	
<i>Surrogate: Dibromofluoromethane (80-120%)</i>					106 %				
<i>Surrogate: Toluene-d8 (80-120%)</i>					96 %				
<i>Surrogate: 4-Bromofluorobenzene (80-120%)</i>					94 %				

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Project ID: 13267 (Study 1)
 Outfall 011
 Report Number: IOB2064

Sampled: 02/25/05
 Received: 02/25/05

PURGEABLES BY GC/MS, TENTATIVELY IDENTIFIED COMPOUNDS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOB2064-01 (Outfall 011 Composite - Water) - cont.									
Reporting Units: ug/l									
1,2-Dichloro-1,1,2-trifluoroethane	EPA 624 (MOD.)	5B26009	N/A	2.5	ND	1	02/26/05	02/26/05	
Cyclohexane	EPA 624 (MOD.)	5B26009	N/A	2.5	ND	1	02/26/05	02/26/05	
Sample ID: IOB2064-02 (Trip Blank - Water)									
Reporting Units: ug/l									
1,2-Dichloro-1,1,2-trifluoroethane	EPA 624 (MOD.)	5C03036	N/A	2.5	ND	1	03/03/05	03/03/05	
Cyclohexane	EPA 624 (MOD.)	5C03036	N/A	2.5	ND	1	03/03/05	03/03/05	

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

Project ID: 13267 (Study 1)
 Outfall 011
 Report Number: IOB2064

Sampled: 02/25/05
 Received: 02/25/05

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

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOB2064-01 (Outfall 011 Composite - Water)									
Reporting Units: ug/l									
Acenaphthene	EPA 625	5B28001	0.10	0.50	ND	0.943	02/28/05	03/02/05	
Acenaphthylene	EPA 625	5B28001	0.10	0.50	ND	0.943	02/28/05	03/02/05	
Aniline	EPA 625	5B28001	2.9	10	ND	0.943	02/28/05	03/02/05	
Anthracene	EPA 625	5B28001	0.083	0.50	ND	0.943	02/28/05	03/02/05	
Benzidine	EPA 625	5B28001	3.2	5.0	ND	0.943	02/28/05	03/03/05	L2
Benzoic acid	EPA 625	5B28001	3.7	20	ND	0.943	02/28/05	03/02/05	
Benzo(a)anthracene	EPA 625	5B28001	0.038	5.0	ND	0.943	02/28/05	03/02/05	
Benzo(a)pyrene	EPA 625	5B28001	0.14	2.0	ND	0.943	02/28/05	03/02/05	
Benzo(b)fluoranthene	EPA 625	5B28001	0.050	2.0	ND	0.943	02/28/05	03/02/05	
Benzo(g,h,i)perylene	EPA 625	5B28001	0.059	5.0	ND	0.943	02/28/05	03/02/05	
Benzo(k)fluoranthene	EPA 625	5B28001	0.053	0.50	ND	0.943	02/28/05	03/02/05	
Benzyl alcohol	EPA 625	5B28001	0.21	5.0	ND	0.943	02/28/05	03/02/05	
Bis(2-chloroethoxy)methane	EPA 625	5B28001	0.072	0.50	ND	0.943	02/28/05	03/02/05	
Bis(2-chloroethyl)ether	EPA 625	5B28001	0.084	0.50	ND	0.943	02/28/05	03/02/05	
Bis(2-chloroisopropyl)ether	EPA 625	5B28001	0.11	0.50	ND	0.943	02/28/05	03/02/05	
Bis(2-ethylhexyl)phthalate	EPA 625	5B28001	1.1	5.0	ND	0.943	02/28/05	03/02/05	
4-Bromophenyl phenyl ether	EPA 625	5B28001	0.12	1.0	ND	0.943	02/28/05	03/02/05	
Butyl benzyl phthalate	EPA 625	5B28001	0.34	5.0	0.43	0.943	02/28/05	03/02/05	B, J
4-Chloroaniline	EPA 625	5B28001	0.20	2.0	ND	0.943	02/28/05	03/02/05	
2-Chloronaphthalene	EPA 625	5B28001	0.059	0.50	ND	0.943	02/28/05	03/02/05	
4-Chloro-3-methylphenol	EPA 625	5B28001	0.34	2.0	ND	0.943	02/28/05	03/02/05	
4-Chlorophenyl phenyl ether	EPA 625	5B28001	0.056	0.50	ND	0.943	02/28/05	03/02/05	
2-Chlorophenol	EPA 625	5B28001	0.12	1.0	ND	0.943	02/28/05	03/02/05	
Chrysene	EPA 625	5B28001	0.072	0.50	ND	0.943	02/28/05	03/02/05	
Dibenz(a,h)anthracene	EPA 625	5B28001	0.083	0.50	ND	0.943	02/28/05	03/02/05	
Dibenzofuran	EPA 625	5B28001	0.075	0.50	ND	0.943	02/28/05	03/02/05	
Di-n-butyl phthalate	EPA 625	5B28001	0.26	2.0	ND	0.943	02/28/05	03/02/05	
1,2-Dichlorobenzene	EPA 625	5B28001	0.11	0.50	ND	0.943	02/28/05	03/02/05	
1,3-Dichlorobenzene	EPA 625	5B28001	0.13	0.50	ND	0.943	02/28/05	03/02/05	
1,4-Dichlorobenzene	EPA 625	5B28001	0.050	0.50	ND	0.943	02/28/05	03/02/05	
3,3-Dichlorobenzidine	EPA 625	5B28001	0.93	5.0	ND	0.943	02/28/05	03/02/05	
2,4-Dichlorophenol	EPA 625	5B28001	0.21	2.0	ND	0.943	02/28/05	03/02/05	
Diethyl phthalate	EPA 625	5B28001	0.12	1.0	0.13	0.943	02/28/05	03/02/05	B, J
2,4-Dimethylphenol	EPA 625	5B28001	0.31	2.0	ND	0.943	02/28/05	03/02/05	
Dimethyl phthalate	EPA 625	5B28001	0.081	0.50	ND	0.943	02/28/05	03/02/05	
4,6-Dinitro-2-methylphenol	EPA 625	5B28001	0.38	5.0	ND	0.943	02/28/05	03/02/05	
2,4-Dinitrophenol	EPA 625	5B28001	2.7	5.0	ND	0.943	02/28/05	03/02/05	
2,4-Dinitrotoluene	EPA 625	5B28001	0.23	5.0	ND	0.943	02/28/05	03/02/05	
2,6-Dinitrotoluene	EPA 625	5B28001	0.24	5.0	ND	0.943	02/28/05	03/02/05	
Di-n-octyl phthalate	EPA 625	5B28001	0.17	5.0	ND	0.943	02/28/05	03/02/05	
1,2-Diphenylhydrazine/Azobenzene	EPA 625	5B28001	0.087	1.0	ND	0.943	02/28/05	03/02/05	

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MWH-Pasadena/Boeing 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Attention: Bronwyn Kelly	Project ID: 13267 (Study 1) Outfall 011 Report Number: IOB2064	Sampled: 02/25/05 Received: 02/25/05
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ACID & BASE/NEUTRALS BY GC/MS (EPA 625)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOB2064-01 (Outfall 011 Composite - Water) - cont.									
Reporting Units: ug/l									
Fluoranthene	EPA 625	5B28001	0.089	0.50	ND	0.943	02/28/05	03/02/05	
Fluorene	EPA 625	5B28001	0.075	0.50	ND	0.943	02/28/05	03/02/05	
Hexachlorobenzene	EPA 625	5B28001	0.13	1.0	ND	0.943	02/28/05	03/02/05	
Hexachlorobutadiene	EPA 625	5B28001	0.38	2.0	ND	0.943	02/28/05	03/02/05	
Hexachlorocyclopentadiene	EPA 625	5B28001	1.8	5.0	ND	0.943	02/28/05	03/02/05	
Hexachloroethane	EPA 625	5B28001	0.51	3.0	ND	0.943	02/28/05	03/02/05	
Indeno(1,2,3-cd)pyrene	EPA 625	5B28001	0.19	2.0	ND	0.943	02/28/05	03/02/05	
Isophorone	EPA 625	5B28001	0.059	1.0	ND	0.943	02/28/05	03/02/05	
2-Methylnaphthalene	EPA 625	5B28001	0.13	1.0	ND	0.943	02/28/05	03/02/05	
2-Methylphenol	EPA 625	5B28001	0.28	2.0	ND	0.943	02/28/05	03/02/05	
4-Methylphenol	EPA 625	5B28001	0.20	5.0	ND	0.943	02/28/05	03/02/05	
Naphthalene	EPA 625	5B28001	0.13	1.0	ND	0.943	02/28/05	03/02/05	
2-Nitroaniline	EPA 625	5B28001	0.18	5.0	ND	0.943	02/28/05	03/02/05	
3-Nitroaniline	EPA 625	5B28001	0.35	5.0	ND	0.943	02/28/05	03/02/05	
4-Nitroaniline	EPA 625	5B28001	0.49	5.0	ND	0.943	02/28/05	03/02/05	
Nitrobenzene	EPA 625	5B28001	0.10	1.0	ND	0.943	02/28/05	03/02/05	
2-Nitrophenol	EPA 625	5B28001	0.23	2.0	ND	0.943	02/28/05	03/02/05	
4-Nitrophenol	EPA 625	5B28001	0.73	5.0	ND	0.943	02/28/05	03/02/05	
N-Nitrosodimethylamine	EPA 625	5B28001	0.22	2.0	ND	0.943	02/28/05	03/02/05	
N-Nitroso-di-n-propylamine	EPA 625	5B28001	0.18	2.0	ND	0.943	02/28/05	03/02/05	
N-Nitrosodiphenylamine	EPA 625	5B28001	0.077	1.0	ND	0.943	02/28/05	03/02/05	
Pentachlorophenol	EPA 625	5B28001	0.78	2.0	ND	0.943	02/28/05	03/02/05	
Phenanthrene	EPA 625	5B28001	0.071	0.50	ND	0.943	02/28/05	03/02/05	
Phenol	EPA 625	5B28001	0.14	1.0	ND	0.943	02/28/05	03/02/05	
Pyrene	EPA 625	5B28001	0.059	0.50	ND	0.943	02/28/05	03/02/05	
1,2,4-Trichlorobenzene	EPA 625	5B28001	0.10	1.0	ND	0.943	02/28/05	03/02/05	
2,4,5-Trichlorophenol	EPA 625	5B28001	0.075	2.0	ND	0.943	02/28/05	03/02/05	
2,4,6-Trichlorophenol	EPA 625	5B28001	0.10	1.0	ND	0.943	02/28/05	03/02/05	
Surrogate: 2-Fluorophenol (30-120%)									77 %
Surrogate: Phenol-d6 (35-120%)									81 %
Surrogate: 2,4,6-Tribromophenol (45-120%)									101 %
Surrogate: Nitrobenzene-d5 (45-120%)									80 %
Surrogate: 2-Fluorobiphenyl (45-120%)									80 %
Surrogate: Terphenyl-d14 (45-120%)									88 %

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

Project ID: 13267 (Study 1)
 Outfall 011
 Report Number: IOB2064

Sampled: 02/25/05
 Received: 02/25/05

ORGANOCHLORINE PESTICIDES (EPA 608)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOB2064-01 (Outfall 011 Composite - Water) - cont.									
Reporting Units: ug/l									
Aldrin	EPA 608	5C02052	0.030	0.10	ND	0.952	03/02/05	03/03/05	
alpha-BHC	EPA 608	5C02052	0.015	0.10	ND	0.952	03/02/05	03/03/05	
beta-BHC	EPA 608	5C02052	0.015	0.10	ND	0.952	03/02/05	03/03/05	
delta-BHC	EPA 608	5C02052	0.020	0.20	ND	0.952	03/02/05	03/03/05	
gamma-BHC (Lindane)	EPA 608	5C02052	0.020	0.10	ND	0.952	03/02/05	03/03/05	
Chlordane	EPA 608	5C02052	0.20	1.0	ND	0.952	03/02/05	03/03/05	
4,4'-DDD	EPA 608	5C02052	0.020	0.10	ND	0.952	03/02/05	03/03/05	
4,4'-DDE	EPA 608	5C02052	0.025	0.10	ND	0.952	03/02/05	03/03/05	
4,4'-DDT	EPA 608	5C02052	0.030	0.10	0.036	0.952	03/02/05	03/03/05	B, J
Dieldrin	EPA 608	5C02052	0.015	0.10	ND	0.952	03/02/05	03/03/05	
Endosulfan I	EPA 608	5C02052	0.015	0.10	ND	0.952	03/02/05	03/03/05	
Endosulfan II	EPA 608	5C02052	0.040	0.10	ND	0.952	03/02/05	03/03/05	
Endosulfan sulfate	EPA 608	5C02052	0.015	0.20	ND	0.952	03/02/05	03/03/05	
Endrin	EPA 608	5C02052	0.020	0.10	ND	0.952	03/02/05	03/03/05	
Endrin aldehyde	EPA 608	5C02052	0.045	0.10	ND	0.952	03/02/05	03/03/05	
Endrin ketone	EPA 608	5C02052	0.020	0.10	ND	0.952	03/02/05	03/03/05	
Heptachlor	EPA 608	5C02052	0.030	0.10	ND	0.952	03/02/05	03/03/05	
Heptachlor epoxide	EPA 608	5C02052	0.020	0.10	ND	0.952	03/02/05	03/03/05	
Methoxychlor	EPA 608	5C02052	0.035	0.10	ND	0.952	03/02/05	03/03/05	
Toxaphene	EPA 608	5C02052	1.5	5.0	ND	0.952	03/02/05	03/03/05	
Surrogate: Tetrachloro-m-xylene (35-120%)					54 %				
Surrogate: Decachlorobiphenyl (45-120%)					64 %				

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MWH-Pasadena/Boeing 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Attention: Bronwyn Kelly	Project ID: 13267 (Study 1) Outfall 011 Report Number: IOB2064	Sampled: 02/25/05 Received: 02/25/05
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TOTAL PCBS (EPA 608)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOB2064-01 (Outfall 011 Composite - Water) - cont.									
Reporting Units: ug/l									
Aroclor 1016	EPA 608	5C02052	0.20	1.0	ND	0.952	03/02/05	03/03/05	
Aroclor 1221	EPA 608	5C02052	0.10	1.0	ND	0.952	03/02/05	03/03/05	
Aroclor 1232	EPA 608	5C02052	0.15	1.0	ND	0.952	03/02/05	03/03/05	
Aroclor 1242	EPA 608	5C02052	0.15	1.0	ND	0.952	03/02/05	03/03/05	
Aroclor 1248	EPA 608	5C02052	0.25	1.0	ND	0.952	03/02/05	03/03/05	
Aroclor 1254	EPA 608	5C02052	0.25	1.0	ND	0.952	03/02/05	03/03/05	
Aroclor 1260	EPA 608	5C02052	0.40	1.0	ND	0.952	03/02/05	03/03/05	
<i>Surrogate: Decachlorobiphenyl (45-120%)</i>					.59 %				

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

Project ID: 13267 (Study 1)
 Outfall 011
 Report Number: IOB2064

Sampled: 02/25/05
 Received: 02/25/05

METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOB2064-01 (Outfall 011 Composite - Water) - cont.									
Reporting Units: mg/l									
Barium	EPA 200.8	5C03085	0.00014	0.0010	0.020	1	03/03/05	03/03/05	
Boron	EPA 200.7	5C02083	0.0074	0.050	0.065	1	03/02/05	03/02/05	
Iron	EPA 200.8	5C03085	0.0032	0.010	0.46	1	03/03/05	03/03/05	

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MWH-Pasadena/Boeing 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Attention: Bronwyn Kelly	Project ID: 13267 (Study 1) Outfall 011 Report Number: IOB2064	Sampled: 02/25/05 Received: 02/25/05
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METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOB2064-01 (Outfall 011 Composite - Water) - cont.									
Reporting Units: ug/l									
Antimony	EPA 200.8	5C03085	0.18	2.0	0.37	1	03/03/05	03/03/05	B, J
Arsenic	EPA 200.8	5C03085	0.49	1.0	2.1	1	03/03/05	03/07/05	
Beryllium	EPA 200.8	5C03085	0.037	0.50	ND	1	03/03/05	03/03/05	
Cadmium	EPA 200.8	5C03085	0.015	1.0	0.091	1	03/03/05	03/03/05	J
Chromium	EPA 200.8	5C03085	0.26	2.0	1.8	1	03/03/05	03/03/05	J
Cobalt	EPA 200.8	5C03085	0.10	1.0	0.19	1	03/03/05	03/03/05	J
Copper	EPA 200.8	5C03085	0.49	2.0	3.3	1	03/03/05	03/03/05	
Lead	EPA 200.8	5C03085	0.13	1.0	0.30	1	03/03/05	03/03/05	J
Manganese	EPA 200.8	5C03085	0.44	1.0	12	1	03/03/05	03/03/05	
Mercury	EPA 245.1	5C02089	0.063	0.20	ND	1	03/02/05	03/02/05	
Nickel	EPA 200.8	5C03085	0.15	2.0	0.87	1	03/03/05	03/03/05	J
Selenium	EPA 200.8	5C03085	0.36	2.0	ND	1	03/03/05	03/03/05	
Silver	EPA 200.8	5C03085	0.089	1.0	ND	1	03/03/05	03/03/05	
Thallium	EPA 200.8	5C03085	0.075	1.0	ND	1	03/03/05	03/03/05	
Vanadium	EPA 200.8	5C03085	0.86	2.0	ND	1	03/03/05	03/03/05	
Zinc	EPA 200.8	5C03085	3.1	20	13	1	03/03/05	03/03/05	J

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MWH-Pasadena/Boeing 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Attention: Bronwyn Kelly	Project ID: 13267 (Study 1) Outfall 011 Report Number: IOB2064	Sampled: 02/25/05 Received: 02/25/05
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INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOB2064-01 (Outfall 011 Composite - Water) - cont.									
Reporting Units: mg/l									
Ammonia-N (Distilled)	EPA 350.2	5C07070	0.30	0.50	ND	1	03/07/05	03/07/05	
Biochemical Oxygen Demand	EPA 405.1	5B25128	0.59	2.0	0.76	1	02/25/05	03/02/05	J
Chloride	EPA 300.0	5B25042	0.26	0.50	5.1	1	02/25/05	02/25/05	
Fluoride	EPA 300.0	5B25042	0.10	0.50	0.15	1	02/25/05	02/25/05	J
Nitrate/Nitrite-N	EPA 300.0	5B25042	0.072	0.26	0.38	1	02/25/05	02/25/05	
Oil & Grease	EPA 413.1	5C02094	0.94	5.0	ND	1	03/02/05	03/02/05	
Residual Chlorine	EPA 330.5	5B25120	0.10	0.10	ND	1	02/25/05	02/25/05	
Sulfate	EPA 300.0	5B25042	0.18	0.50	11	1	02/25/05	02/25/05	
Surfactants (MBAS)	SM5540-C	5B25118	0.044	0.10	0.051	1	02/25/05	02/25/05	J
Total Dissolved Solids	SM2540C	5B28078	10	10	110	1	02/28/05	02/28/05	
Total Organic Carbon	EPA 415.1	5C01065	0.25	1.0	9.0	1	03/01/05	03/01/05	
Total Suspended Solids	EPA 160.2	5C03074	10	10	ND	1	03/03/05	03/03/05	

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 Pasadena, CA 91101
 Attention: Bronwyn Kelly

Project ID: 13267 (Study 1)
 Outfall 011
 Report Number: IOB2064

Sampled: 02/25/05
 Received: 02/25/05

INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOB2064-01 (Outfall 011 Composite - Water) - cont.									
Reporting Units: ml/l/hr									
Total Settleable Solids	EPA 160.5	5B25097	0.10	0.10	ND	1	02/25/05	02/25/05	

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INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOB2064-01 (Outfall 011 Composite - Water) - cont.									
Reporting Units: NTU									
Turbidity	EPA 180.1	5B26046	0.040	1.0	8.0	1	02/26/05	02/26/05	

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INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOB2064-01 (Outfall 011 Composite - Water) - cont.									
Reporting Units: ug/l									
Chromium VI	EPA 218.6	5B25125	0.10	1.0	ND	1	02/25/05	02/26/05	
Total Cyanide	EPA 335.2	5B28115	2.2	5.0	ND	1	02/28/05	03/01/05	
Perchlorate	EPA 314.0	5B28103	0.80	4.0	ND	1	02/28/05	03/01/05	

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INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOB2064-01 (Outfall 011 Composite - Water) - cont.									
Reporting Units: umhos/cm									
Specific Conductance	EPA 120.1	5B28080	1.0	1.0	150	1	02/28/05	02/28/05	

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1,4-DIOXANE BY GC/MS (EPA 5030B/8260B)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOB2064-01 (Outfall 011 Composite - Water) - cont.									
Reporting Units: ug/l									
1,4-Dioxane	EPA 8260B	P5C0309	0.49	1.0	ND	1	03/03/05	03/03/05	
Surrogate: Dibromofluoromethane (80-125%)					113 %				

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 Attention: Bronwyn Kelly

Project ID: 13267 (Study 1)
 Outfall 011
 Report Number: IOB2064

Sampled: 02/25/05
 Received: 02/25/05

SHORT HOLD TIME DETAIL REPORT

Sample ID: Outfall 011 Composite (IOB2064-01) - Water	Hold Time (in days)	Date/Time Sampled	Date/Time Received	Date/Time Extracted	Date/Time Analyzed
EPA 160.5	2	02/25/2005 13:40	02/25/2005 19:15	02/25/2005 22:15	02/25/2005 23:15
EPA 180.1	2	02/25/2005 13:40	02/25/2005 19:15	02/26/2005 12:00	02/26/2005 13:00
EPA 218.6	1	02/25/2005 13:40	02/25/2005 19:15	02/25/2005 22:20	02/26/2005 00:01
EPA 300.0	2	02/25/2005 13:40	02/25/2005 19:15	02/25/2005 20:15	02/25/2005 22:39
EPA 330.5	1	02/25/2005 13:40	02/25/2005 19:15	02/25/2005 22:15	02/25/2005 22:30
EPA 405.1	2	02/25/2005 13:40	02/25/2005 19:15	02/25/2005 21:00	03/02/2005 14:30
EPA 624	3	02/25/2005 13:40	02/25/2005 19:15	02/26/2005 00:00	02/26/2005 17:27
SM5540-C	2	02/25/2005 13:40	02/25/2005 19:15	02/25/2005 19:49	02/25/2005 23:14

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Outfall 011
Report Number: IOB2064

Sampled: 02/25/05
Received: 02/25/05

METHOD BLANK/QC DATA

TOTAL RECOVERABLE PETROLEUM HYDROCARBONS (EPA 418.1)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	RPD Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5C24109 Extracted: 03/24/05											
Blank Analyzed: 03/24/2005 (5C24109-BLK1)											
Total Recoverable Hydrocarbons	ND	1.0	0.31	mg/l							
LCS Analyzed: 03/24/2005 (5C24109-BS1)											
Total Recoverable Hydrocarbons	4.21	1.0	0.31	mg/l	5.00		84	65-120			M-NR1
LCS Dup Analyzed: 03/24/2005 (5C24109-BSD1)											
Total Recoverable Hydrocarbons	4.14	1.0	0.31	mg/l	5.00		83	65-120	2	20	

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Outfall 011
Report Number: IOB2064

Sampled: 02/25/05
Received: 02/25/05

METHOD BLANK/QC DATA

EXTRACTABLE FUEL HYDROCARBONS (CADHS/8015 Modified)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5C01045 Extracted: 03/01/05											
Blank Analyzed: 03/02/2005 (5C01045-BLK1)											
EFH (C13 - C22)	ND	0.50	0.082	mg/l							
EFH (C13 - C40)	ND	0.50	0.082	mg/l							
Surrogate: n-Octacosane	0.131			mg/l	0.200		66	40-125			
LCS Analyzed: 03/02/2005 (5C01045-BS1)											
EFH (C13 - C40)	0.586	0.50	0.082	mg/l	0.775		76	40-120			M-NR1
Surrogate: n-Octacosane	0.164			mg/l	0.200		82	40-125			
LCS Dup Analyzed: 03/02/2005 (5C01045-BSD1)											
EFH (C13 - C40)	0.503	0.50	0.082	mg/l	0.775		65	40-120	15	25	
Surrogate: n-Octacosane	0.146			mg/l	0.200		73	40-125			

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METHOD BLANK/QC DATA

VOLATILE FUEL HYDROCARBONS (EPA 5030/CADHS Mod. 8015)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5C03008 Extracted: 03/03/05										
Blank Analyzed: 03/03/2005 (5C03008-BLK1)										
GRO (C4 - C12)	ND	0.10	0.050	mg/l						
Surrogate: 4-BFB (FID)	0.00999			mg/l	0.0100		100 65-140			
LCS Analyzed: 03/03/2005 (5C03008-BS1)										
GRO (C4 - C12)	0.683	0.10	0.050	mg/l	0.800		85 70-140			
Surrogate: 4-BFB (FID)	0.0261			mg/l	0.0300		87 65-140			
Matrix Spike Analyzed: 03/03/2005 (5C03008-MS1) Source: IOB1956-11										
GRO (C4 - C12)	0.201	0.10	0.050	mg/l	0.220	ND	91 60-140			
Surrogate: 4-BFB (FID)	0.00988			mg/l	0.0100		99 65-140			
Matrix Spike Dup Analyzed: 03/03/2005 (5C03008-MSD1) Source: IOB1956-11										
GRO (C4 - C12)	0.197	0.10	0.050	mg/l	0.220	ND	90 60-140	2	20	
Surrogate: 4-BFB (FID)	0.00941			mg/l	0.0100		94 65-140			

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METHOD BLANK/QC DATA

FREON 113 (EPA 8260B)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5C03036 Extracted: 03/03/05										
Blank Analyzed: 03/03/2005 (5C03036-BLK1)										
Trichlorotrifluoroethane (Freon 113)	ND	5.0	1.2	ug/l						
Surrogate: Dibromofluoromethane	26.2			ug/l	25.0		105 80-120			
Surrogate: Toluene-d8	24.8			ug/l	25.0		99 80-120			
Surrogate: 4-Bromofluorobenzene	24.1			ug/l	25.0		96 80-120			

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 Outfall 011
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Sampled: 02/25/05
 Received: 02/25/05

METHOD BLANK/QC DATA

PURGEABLES BY GC/MS (EPA 624)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC Limits	RPD RPD	Data Qualifiers	
Batch: 5B26009 Extracted: 02/26/05										
Blank Analyzed: 02/26/2005 (5B26009-BLK1)										
Benzene	ND	1.0	0.28	ug/l						
Bromodichloromethane	ND	2.0	0.30	ug/l						
Bromoform	ND	5.0	0.32	ug/l						
Bromomethane	ND	5.0	0.34	ug/l						
Carbon tetrachloride	ND	0.50	0.28	ug/l						
Chlorobenzene	ND	2.0	0.36	ug/l						
Chloroethane	ND	5.0	0.33	ug/l						
Chloroform	ND	2.0	0.33	ug/l						
Chloromethane	ND	5.0	0.30	ug/l						
Dibromochloromethane	ND	2.0	0.28	ug/l						
1,2-Dichlorobenzene	ND	2.0	0.32	ug/l						
1,3-Dichlorobenzene	ND	2.0	0.35	ug/l						
1,4-Dichlorobenzene	ND	2.0	0.37	ug/l						
1,1-Dichloroethane	ND	2.0	0.27	ug/l						
1,2-Dichloroethane	ND	0.50	0.28	ug/l						
1,1-Dichloroethene	ND	5.0	0.32	ug/l						
trans-1,2-Dichloroethene	ND	2.0	0.27	ug/l						
1,2-Dichloropropane	ND	2.0	0.35	ug/l						
cis-1,3-Dichloropropene	ND	2.0	0.22	ug/l						
trans-1,3-Dichloropropene	ND	2.0	0.24	ug/l						
Ethylbenzene	ND	2.0	0.25	ug/l						
Methylene chloride	ND	5.0	0.48	ug/l						
1,1,2,2-Tetrachloroethane	ND	2.0	0.24	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	2.0	0.26	ug/l						
Trichlorofluoromethane	ND	5.0	0.34	ug/l						
Vinyl chloride	ND	0.50	0.26	ug/l						
Xylenes, Total	ND	4.0	0.52	ug/l						
Surrogate: Dibromofluoromethane	26.2			ug/l	25.0	105	80-120			
Surrogate: Toluene-d8	24.4			ug/l	25.0	98	80-120			
Surrogate: 4-Bromofluorobenzene	24.4			ug/l	25.0	98	80-120			

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

Project ID: 13267 (Study 1)
 Outfall 011
 Report Number: IOB2064

Sampled: 02/25/05
 Received: 02/25/05

METHOD BLANK/QC DATA

PURGEABLES BY GC/MS (EPA 624)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5B26009 Extracted: 02/26/05											
LCS Analyzed: 02/26/2005 (5B26009-BS1)											
Benzene	28.2	1.0	0.28	ug/l	25.0		113	70-120			
Bromodichloromethane	27.2	2.0	0.30	ug/l	25.0		109	70-140			
Bromoform	22.4	5.0	0.32	ug/l	25.0		90	55-135			
Bromomethane	28.1	5.0	0.34	ug/l	25.0		112	60-140			
Carbon tetrachloride	26.7	0.50	0.28	ug/l	25.0		107	70-140			
Chlorobenzene	27.5	2.0	0.36	ug/l	25.0		110	80-125			
Chloroethane	27.7	5.0	0.33	ug/l	25.0		111	60-145			
Chloroform	30.0	2.0	0.33	ug/l	25.0		120	75-130			
Chloromethane	26.2	5.0	0.30	ug/l	25.0		105	40-145			
Dibromochloromethane	27.4	2.0	0.28	ug/l	25.0		110	65-145			
1,2-Dichlorobenzene	27.8	2.0	0.32	ug/l	25.0		111	80-120			
1,3-Dichlorobenzene	27.6	2.0	0.35	ug/l	25.0		110	80-120			
1,4-Dichlorobenzene	27.0	2.0	0.37	ug/l	25.0		108	80-120			
1,1-Dichloroethane	28.9	2.0	0.27	ug/l	25.0		116	70-135			
1,2-Dichloroethane	29.0	0.50	0.28	ug/l	25.0		116	60-150			
1,1-Dichloroethene	27.7	5.0	0.32	ug/l	25.0		111	75-135			
trans-1,2-Dichloroethene	29.0	2.0	0.27	ug/l	25.0		116	70-130			
1,2-Dichloropropane	28.1	2.0	0.35	ug/l	25.0		112	70-120			
cis-1,3-Dichloropropene	29.1	2.0	0.22	ug/l	25.0		116	75-130			
trans-1,3-Dichloropropene	29.1	2.0	0.24	ug/l	25.0		116	75-135			
Ethylbenzene	29.5	2.0	0.25	ug/l	25.0		118	80-120			
Methylene chloride	29.3	5.0	0.48	ug/l	25.0		117	60-135			
1,1,2,2-Tetrachloroethane	28.1	2.0	0.24	ug/l	25.0		112	60-135			
Tetrachloroethene	25.6	2.0	0.32	ug/l	25.0		102	75-125			
Toluene	27.8	2.0	0.36	ug/l	25.0		111	75-120			
1,1,1-Trichloroethane	28.5	2.0	0.30	ug/l	25.0		114	75-140			
1,1,2-Trichloroethane	28.2	2.0	0.30	ug/l	25.0		113	70-125			
Trichloroethene	26.2	2.0	0.26	ug/l	25.0		105	80-120			
Trichlorofluoromethane	29.0	5.0	0.34	ug/l	25.0		116	65-145			
Vinyl chloride	26.2	0.50	0.26	ug/l	25.0		105	50-130			
Surrogate: Dibromofluoromethane	26.2			ug/l	25.0		105	80-120			
Surrogate: Toluene-d8	24.9			ug/l	25.0		100	80-120			
Surrogate: 4-Bromofluorobenzene	25.5			ug/l	25.0		102	80-120			

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

Project ID: 13267 (Study 1)
 Outfall 011
 Report Number: IOB2064

Sampled: 02/25/05
 Received: 02/25/05

METHOD BLANK/QC DATA

PURGEABLES BY GC/MS (EPA 624)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5B26009 Extracted: 02/26/05											
Matrix Spike Analyzed: 02/26/2005 (5B26009-MS1)						Source: IOB2045-02					
Benzene	26.6	1.0	0.28	ug/l	25.0	0.71	104	70-120			
Bromodichloromethane	25.4	2.0	0.30	ug/l	25.0	ND	102	70-140			
Bromoform	20.9	5.0	0.32	ug/l	25.0	ND	84	55-140			
Bromomethane	24.9	5.0	0.34	ug/l	25.0	ND	100	50-145			
Carbon tetrachloride	24.2	0.50	0.28	ug/l	25.0	ND	97	70-145			
Chlorobenzene	25.1	2.0	0.36	ug/l	25.0	ND	100	80-125			
Chloroethane	25.4	5.0	0.33	ug/l	25.0	ND	102	50-145			
Chloroform	79.4	2.0	0.33	ug/l	25.0	50	118	70-135			
Chloromethane	23.8	5.0	0.30	ug/l	25.0	ND	95	35-145			
Dibromochloromethane	25.2	2.0	0.28	ug/l	25.0	ND	101	65-145			
1,2-Dichlorobenzene	25.8	2.0	0.32	ug/l	25.0	ND	103	75-130			
1,3-Dichlorobenzene	25.2	2.0	0.35	ug/l	25.0	ND	101	75-130			
1,4-Dichlorobenzene	24.8	2.0	0.37	ug/l	25.0	ND	99	80-120			
1,1-Dichloroethane	26.8	2.0	0.27	ug/l	25.0	ND	107	65-135			
1,2-Dichloroethane	27.4	0.50	0.28	ug/l	25.0	0.30	108	60-150			
1,1-Dichloroethene	25.6	5.0	0.32	ug/l	25.0	ND	102	65-140			
trans-1,2-Dichloroethene	26.4	2.0	0.27	ug/l	25.0	ND	106	65-135			
1,2-Dichloropropane	26.0	2.0	0.35	ug/l	25.0	ND	104	65-130			
cis-1,3-Dichloropropene	26.7	2.0	0.22	ug/l	25.0	ND	107	70-140			
trans-1,3-Dichloropropene	27.2	2.0	0.24	ug/l	25.0	ND	109	70-140			
Ethylbenzene	27.0	2.0	0.25	ug/l	25.0	0.60	106	70-130			
Methylene chloride	38.7	5.0	0.48	ug/l	25.0	8.4	121	60-135			
1,1,2,2-Tetrachloroethane	27.2	2.0	0.24	ug/l	25.0	ND	109	60-145			
Tetrachloroethene	22.6	2.0	0.32	ug/l	25.0	ND	90	70-130			
Toluene	25.9	2.0	0.36	ug/l	25.0	ND	104	70-120			
1,1,1-Trichloroethane	26.6	2.0	0.30	ug/l	25.0	ND	106	75-140			
1,1,2-Trichloroethane	27.1	2.0	0.30	ug/l	25.0	ND	108	60-135			
Trichloroethene	25.2	2.0	0.26	ug/l	25.0	1.6	94	70-125			
Trichlorofluoromethane	64.8	5.0	0.34	ug/l	25.0	37	111	55-145			
Vinyl chloride	23.7	0.50	0.26	ug/l	25.0	ND	95	40-135			
Surrogate: Dibromofluoromethane	26.5			ug/l	25.0		106	80-120			
Surrogate: Toluene-d8	24.3			ug/l	25.0		97	80-120			
Surrogate: 4-Bromofluorobenzene	25.3			ug/l	25.0		101	80-120			

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

Project ID: 13267 (Study 1)
 Outfall 011
 Report Number: IOB2064

Sampled: 02/25/05
 Received: 02/25/05

METHOD BLANK/QC DATA

PURGEABLES BY GC/MS (EPA 624)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
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Batch: 5B26009 Extracted: 02/26/05

Matrix Spike Dup Analyzed: 02/26/2005 (5B26009-MSD1)

Source: IOB2045-02

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Benzene	25.5	1.0	0.28	ug/l	25.0	0.71	99	70-120	4	20	
Bromodichloromethane	24.3	2.0	0.30	ug/l	25.0	ND	97	70-140	4	20	
Bromoform	20.8	5.0	0.32	ug/l	25.0	ND	83	55-140	1	25	
Bromomethane	23.6	5.0	0.34	ug/l	25.0	ND	94	50-145	5	25	
Carbon tetrachloride	23.5	0.50	0.28	ug/l	25.0	ND	94	70-145	3	25	
Chlorobenzene	24.5	2.0	0.36	ug/l	25.0	ND	98	80-125	2	20	
Chloroethane	24.0	5.0	0.33	ug/l	25.0	ND	96	50-145	6	25	
Chloroform	72.4	2.0	0.33	ug/l	25.0	50	90	70-135	9	20	
Chloromethane	22.1	5.0	0.30	ug/l	25.0	ND	88	35-145	7	25	
Dibromochloromethane	24.6	2.0	0.28	ug/l	25.0	ND	98	65-145	2	25	
1,2-Dichlorobenzene	25.0	2.0	0.32	ug/l	25.0	ND	100	75-130	3	20	
1,3-Dichlorobenzene	24.3	2.0	0.35	ug/l	25.0	ND	97	75-130	4	20	
1,4-Dichlorobenzene	24.0	2.0	0.37	ug/l	25.0	ND	96	80-120	3	20	
1,1-Dichloroethane	25.5	2.0	0.27	ug/l	25.0	ND	102	65-135	5	20	
1,2-Dichloroethane	26.2	0.50	0.28	ug/l	25.0	0.30	104	60-150	4	20	
1,1-Dichloroethene	23.9	5.0	0.32	ug/l	25.0	ND	96	65-140	7	20	
trans-1,2-Dichloroethene	25.4	2.0	0.27	ug/l	25.0	ND	102	65-135	4	20	
1,2-Dichloropropane	25.2	2.0	0.35	ug/l	25.0	ND	101	65-130	3	20	
cis-1,3-Dichloropropene	26.0	2.0	0.22	ug/l	25.0	ND	104	70-140	3	20	
trans-1,3-Dichloropropene	26.1	2.0	0.24	ug/l	25.0	ND	104	70-140	4	25	
Ethylbenzene	26.0	2.0	0.25	ug/l	25.0	0.60	102	70-130	4	20	
Methylene chloride	34.7	5.0	0.48	ug/l	25.0	8.4	105	60-135	11	20	
1,1,2,2-Tetrachloroethane	26.0	2.0	0.24	ug/l	25.0	ND	104	60-145	5	30	
Tetrachloroethene	22.2	2.0	0.32	ug/l	25.0	ND	89	70-130	2	20	
Toluene	24.8	2.0	0.36	ug/l	25.0	ND	99	70-120	4	20	
1,1,1-Trichloroethane	25.2	2.0	0.30	ug/l	25.0	ND	101	75-140	5	20	
1,1,2-Trichloroethane	25.5	2.0	0.30	ug/l	25.0	ND	102	60-135	6	25	
Trichloroethene	24.7	2.0	0.26	ug/l	25.0	1.6	92	70-125	2	20	
Trichlorofluoromethane	59.0	5.0	0.34	ug/l	25.0	37	88	55-145	9	25	
Vinyl chloride	22.3	0.50	0.26	ug/l	25.0	ND	89	40-135	6	30	
Surrogate: Dibromofluoromethane	25.6			ug/l	25.0		102	80-120			
Surrogate: Toluene-d8	24.1			ug/l	25.0		96	80-120			
Surrogate: 4-Bromofluorobenzene	24.9			ug/l	25.0		100	80-120			

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Project ID: 13267 (Study 1)
 Outfall 011
 Report Number: IOB2064

Sampled: 02/25/05
 Received: 02/25/05

METHOD BLANK/QC DATA

PURGEABLES BY GC/MS (EPA 624)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	RPD Limits	RPD RPD	Data Qualifiers
Batch: 5C03036 Extracted: 03/03/05										
Blank Analyzed: 03/03/2005 (5C03036-BLK1)										
Benzene	ND	1.0	0.28	ug/l						
Bromodichloromethane	ND	2.0	0.30	ug/l						
Bromoform	ND	5.0	0.32	ug/l						
Bromomethane	ND	5.0	0.34	ug/l						
Carbon tetrachloride	ND	0.50	0.28	ug/l						
Chlorobenzene	ND	2.0	0.36	ug/l						
Chloroethane	ND	5.0	0.33	ug/l						
Chloroform	ND	2.0	0.33	ug/l						
Chloromethane	ND	5.0	0.30	ug/l						
Dibromochloromethane	ND	2.0	0.28	ug/l						
1,2-Dichlorobenzene	ND	2.0	0.32	ug/l						
1,3-Dichlorobenzene	ND	2.0	0.35	ug/l						
1,4-Dichlorobenzene	ND	2.0	0.37	ug/l						
1,1-Dichloroethane	ND	2.0	0.27	ug/l						
1,2-Dichloroethane	ND	0.50	0.28	ug/l						
1,1-Dichloroethene	ND	5.0	0.32	ug/l						
trans-1,2-Dichloroethene	ND	2.0	0.27	ug/l						
1,2-Dichloropropane	ND	2.0	0.35	ug/l						
cis-1,3-Dichloropropene	ND	2.0	0.22	ug/l						
trans-1,3-Dichloropropene	ND	2.0	0.24	ug/l						
Ethylbenzene	ND	2.0	0.25	ug/l						
Methylene chloride	ND	5.0	0.48	ug/l						
1,1,2,2-Tetrachloroethane	ND	2.0	0.24	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	2.0	0.26	ug/l						
Trichlorofluoromethane	ND	5.0	0.34	ug/l						
Vinyl chloride	ND	0.50	0.26	ug/l						
Xylenes, Total	ND	4.0	0.52	ug/l						
Trichlorotrifluoroethane (Freon 113)	ND	5.0	1.2	ug/l						
Surrogate: Dibromofluoromethane	26.2			ug/l	25.0		105	80-120		
Surrogate: Toluene-d8	24.8			ug/l	25.0		99	80-120		
Surrogate: 4-Bromofluorobenzene	24.1			ug/l	25.0		96	80-120		

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METHOD BLANK/QC DATA

PURGEABLES BY GC/MS (EPA 624)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5C03036 Extracted: 03/03/05										
LCS Analyzed: 03/03/2005 (5C03036-BS1)										
Benzene	26.4	1.0	0.28	ug/l	25.0		106 70-120			
Bromodichloromethane	27.3	2.0	0.30	ug/l	25.0		109 70-140			
Bromoform	27.8	5.0	0.32	ug/l	25.0		111 55-135			
Bromomethane	31.9	5.0	0.34	ug/l	25.0		128 60-140			
Carbon tetrachloride	27.8	0.50	0.28	ug/l	25.0		111 70-140			
Chlorobenzene	24.7	2.0	0.36	ug/l	25.0		99 80-125			
Chloroethane	29.6	5.0	0.33	ug/l	25.0		118 60-145			
Chloroform	27.9	2.0	0.33	ug/l	25.0		112 75-130			
Chloromethane	27.0	5.0	0.30	ug/l	25.0		108 40-145			
Dibromochloromethane	27.4	2.0	0.28	ug/l	25.0		110 65-145			
1,2-Dichlorobenzene	25.8	2.0	0.32	ug/l	25.0		103 80-120			
1,3-Dichlorobenzene	25.2	2.0	0.35	ug/l	25.0		101 80-120			
1,4-Dichlorobenzene	25.0	2.0	0.37	ug/l	25.0		100 80-120			
1,1-Dichloroethane	27.4	2.0	0.27	ug/l	25.0		110 70-135			
1,2-Dichloroethane	28.7	0.50	0.28	ug/l	25.0		115 60-150			
1,1-Dichloroethene	27.2	5.0	0.32	ug/l	25.0		109 75-135			
trans-1,2-Dichloroethene	27.4	2.0	0.27	ug/l	25.0		110 70-130			
1,2-Dichloropropane	26.9	2.0	0.35	ug/l	25.0		108 70-120			
cis-1,3-Dichloropropene	28.2	2.0	0.22	ug/l	25.0		113 75-130			
trans-1,3-Dichloropropene	28.9	2.0	0.24	ug/l	25.0		116 75-135			
Ethylbenzene	27.5	2.0	0.25	ug/l	25.0		110 80-120			
Methylene chloride	28.7	5.0	0.48	ug/l	25.0		115 60-135			
1,1,2,2-Tetrachloroethane	27.1	2.0	0.24	ug/l	25.0		108 60-135			
Tetrachloroethene	24.3	2.0	0.32	ug/l	25.0		97 75-125			
Toluene	26.3	2.0	0.36	ug/l	25.0		105 75-120			
1,1,1-Trichloroethane	28.8	2.0	0.30	ug/l	25.0		115 75-140			
1,1,2-Trichloroethane	28.0	2.0	0.30	ug/l	25.0		112 70-125			
Trichloroethene	25.2	2.0	0.26	ug/l	25.0		101 80-120			
Trichlorofluoromethane	29.1	5.0	0.34	ug/l	25.0		116 65-145			
Vinyl chloride	28.8	0.50	0.26	ug/l	25.0		115 50-130			
Surrogate: Dibromofluoromethane	26.8			ug/l	25.0		107 80-120			
Surrogate: Toluene-d8	24.9			ug/l	25.0		100 80-120			
Surrogate: 4-Bromofluorobenzene	26.6			ug/l	25.0		106 80-120			

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MWH-Pasadena/Boeing 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Attention: Bronwyn Kelly	Project ID: 13267 (Study 1) Outfall 011 Report Number: IOB2064	Sampled: 02/25/05 Received: 02/25/05
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METHOD BLANK/QC DATA

PURGEABLES BY GC/MS (EPA 624)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5C03036 Extracted: 03/03/05											
Matrix Spike Analyzed: 03/03/2005 (5C03036-MS1)						Source: IOB2064-01					
Benzene	25.3	1.0	0.28	ug/l	25.0	ND	101	70-120			
Bromodichloromethane	26.0	2.0	0.30	ug/l	25.0	ND	104	70-140			
Bromoform	25.7	5.0	0.32	ug/l	25.0	ND	103	55-140			
Bromomethane	30.2	5.0	0.34	ug/l	25.0	ND	121	50-145			
Carbon tetrachloride	26.9	0.50	0.28	ug/l	25.0	ND	108	70-145			
Chlorobenzene	24.8	2.0	0.36	ug/l	25.0	ND	99	80-125			
Chloroethane	28.2	5.0	0.33	ug/l	25.0	ND	113	50-145			
Chloroform	27.4	2.0	0.33	ug/l	25.0	ND	110	70-135			
Chloromethane	24.8	5.0	0.30	ug/l	25.0	ND	99	35-145			
Dibromochloromethane	26.1	2.0	0.28	ug/l	25.0	ND	104	65-145			
1,2-Dichlorobenzene	25.2	2.0	0.32	ug/l	25.0	ND	101	75-130			
1,3-Dichlorobenzene	25.2	2.0	0.35	ug/l	25.0	ND	101	75-130			
1,4-Dichlorobenzene	25.2	2.0	0.37	ug/l	25.0	ND	101	80-120			
1,1-Dichloroethane	26.8	2.0	0.27	ug/l	25.0	ND	107	65-135			
1,2-Dichloroethane	26.6	0.50	0.28	ug/l	25.0	ND	106	60-150			
1,1-Dichloroethene	26.2	5.0	0.32	ug/l	25.0	ND	105	65-140			
trans-1,2-Dichloroethene	26.5	2.0	0.27	ug/l	25.0	ND	106	65-135			
1,2-Dichloropropane	25.8	2.0	0.35	ug/l	25.0	ND	103	65-130			
cis-1,3-Dichloropropene	26.2	2.0	0.22	ug/l	25.0	ND	105	70-140			
trans-1,3-Dichloropropene	26.6	2.0	0.24	ug/l	25.0	ND	106	70-140			
Ethylbenzene	27.8	2.0	0.25	ug/l	25.0	ND	111	70-130			
Methylene chloride	27.3	5.0	0.48	ug/l	25.0	1.1	105	60-135			
1,1,2,2-Tetrachloroethane	25.6	2.0	0.24	ug/l	25.0	ND	102	60-145			
Tetrachloroethene	24.0	2.0	0.32	ug/l	25.0	ND	96	70-130			
Toluene	25.3	2.0	0.36	ug/l	25.0	ND	101	70-120			
1,1,1-Trichloroethane	28.3	2.0	0.30	ug/l	25.0	ND	113	75-140			
1,1,2-Trichloroethane	26.1	2.0	0.30	ug/l	25.0	ND	104	60-135			
Trichloroethene	23.6	2.0	0.26	ug/l	25.0	ND	94	70-125			
Trichlorofluoromethane	27.8	5.0	0.34	ug/l	25.0	ND	111	55-145			
Vinyl chloride	26.7	0.50	0.26	ug/l	25.0	ND	107	40-135			
Surrogate: Dibromofluoromethane	26.9			ug/l	25.0		108	80-120			
Surrogate: Toluene-d8	24.7			ug/l	25.0		99	80-120			
Surrogate: 4-Bromofluorobenzene	26.7			ug/l	25.0		107	80-120			

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

Project ID: 13267 (Study 1)
 Outfall 011
 Report Number: IOB2064

Sampled: 02/25/05
 Received: 02/25/05

METHOD BLANK/QC DATA

PURGEABLES BY GC/MS (EPA 624)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5C03036 Extracted: 03/03/05											
Matrix Spike Dup Analyzed: 03/03/2005 (5C03036-MSD1)						Source: IOB2064-01					
Benzene	26.4	1.0	0.28	ug/l	25.0	ND	106	70-120	4	20	
Bromodichloromethane	27.1	2.0	0.30	ug/l	25.0	ND	108	70-140	4	20	
Bromoform	27.8	5.0	0.32	ug/l	25.0	ND	111	55-140	8	25	
Bromomethane	32.5	5.0	0.34	ug/l	25.0	ND	130	50-145	7	25	
Carbon tetrachloride	27.2	0.50	0.28	ug/l	25.0	ND	109	70-145	1	25	
Chlorobenzene	25.0	2.0	0.36	ug/l	25.0	ND	100	80-125	1	20	
Chloroethane	29.9	5.0	0.33	ug/l	25.0	ND	120	50-145	6	25	
Chloroform	28.1	2.0	0.33	ug/l	25.0	ND	112	70-135	3	20	
Chloromethane	27.8	5.0	0.30	ug/l	25.0	ND	111	35-145	11	25	
Dibromochloromethane	27.7	2.0	0.28	ug/l	25.0	ND	111	65-145	6	25	
1,2-Dichlorobenzene	26.2	2.0	0.32	ug/l	25.0	ND	105	75-130	4	20	
1,3-Dichlorobenzene	26.1	2.0	0.35	ug/l	25.0	ND	104	75-130	4	20	
1,4-Dichlorobenzene	25.5	2.0	0.37	ug/l	25.0	ND	102	80-120	1	20	
1,1-Dichloroethane	27.2	2.0	0.27	ug/l	25.0	ND	109	65-135	1	20	
1,2-Dichloroethane	28.2	0.50	0.28	ug/l	25.0	ND	113	60-150	6	20	
1,1-Dichloroethene	26.8	5.0	0.32	ug/l	25.0	ND	107	65-140	2	20	
trans-1,2-Dichloroethene	27.6	2.0	0.27	ug/l	25.0	ND	110	65-135	4	20	
1,2-Dichloropropane	27.1	2.0	0.35	ug/l	25.0	ND	108	65-130	5	20	
cis-1,3-Dichloropropene	27.7	2.0	0.22	ug/l	25.0	ND	111	70-140	6	20	
trans-1,3-Dichloropropene	29.1	2.0	0.24	ug/l	25.0	ND	116	70-140	9	25	
Ethylbenzene	27.8	2.0	0.25	ug/l	25.0	ND	111	70-130	0	20	
Methylene chloride	28.2	5.0	0.48	ug/l	25.0	1.1	108	60-135	3	20	
1,1,2,2-Tetrachloroethane	28.0	2.0	0.24	ug/l	25.0	ND	112	60-145	9	30	
Tetrachloroethene	24.4	2.0	0.32	ug/l	25.0	ND	98	70-130	2	20	
Toluene	26.0	2.0	0.36	ug/l	25.0	ND	104	70-120	3	20	
1,1,1-Trichloroethane	28.3	2.0	0.30	ug/l	25.0	ND	113	75-140	0	20	
1,1,2-Trichloroethane	27.5	2.0	0.30	ug/l	25.0	ND	110	60-135	5	25	
Trichloroethene	24.5	2.0	0.26	ug/l	25.0	ND	98	70-125	4	20	
Trichlorofluoromethane	28.2	5.0	0.34	ug/l	25.0	ND	113	55-145	1	25	
Vinyl chloride	29.4	0.50	0.26	ug/l	25.0	ND	118	40-135	10	30	
Surrogate: Dibromofluoromethane	27.1			ug/l	25.0		108	80-120			
Surrogate: Toluene-d8	24.4			ug/l	25.0		98	80-120			
Surrogate: 4-Bromofluorobenzene	26.2			ug/l	25.0		105	80-120			

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MWH-Pasadena/Boeing 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Attention: Bronwyn Kelly	Project ID: 13267 (Study 1) Outfall 011 Report Number: IOB2064	Sampled: 02/25/05 Received: 02/25/05
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METHOD BLANK/QC DATA

PURGEABLES BY GC/MS (EPA 624)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5B26009 Extracted: 02/26/05										
Blank Analyzed: 02/26/2005 (5B26009-BLK1)										
Acrolein	ND	50	4.6	ug/l						
Acrylonitrile	ND	50	5.1	ug/l						
2-Chloroethyl vinyl ether	ND	5.0	1.3	ug/l						
Surrogate: Dibromofluoromethane	26.2			ug/l	25.0		105 80-120			
Surrogate: Toluene-d8	24.4			ug/l	25.0		98 80-120			
Surrogate: 4-Bromofluorobenzene	24.4			ug/l	25.0		98 80-120			
LCS Analyzed: 02/26/2005 (5B26009-BS1)										
2-Chloroethyl vinyl ether	27.6	5.0	1.3	ug/l	25.0		110 20-175			
Surrogate: Dibromofluoromethane	26.2			ug/l	25.0		105 80-120			
Surrogate: Toluene-d8	24.9			ug/l	25.0		100 80-120			
Surrogate: 4-Bromofluorobenzene	25.5			ug/l	25.0		102 80-120			

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Pasadena, CA 91101
Attention: Bronwyn Kelly

Project ID: 13267 (Study 1)
Outfall 011
Report Number: IOB2064

Sampled: 02/25/05
Received: 02/25/05

METHOD BLANK/QC DATA

PURGEABLES BY GC/MS, TENTATIVELY IDENTIFIED COMPOUNDS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC Limits	RPD RPD	Data Qualifiers
<u>Batch: 5B26009 Extracted: 02/26/05</u>									
Blank Analyzed: 02/26/2005 (5B26009-BLK1)									
1,2-Dichloro-1,1,2-trifluoroethane	ND	2.5	N/A	ug/l					
Cyclohexane	ND	2.5	N/A	ug/l					
<u>Batch: 5C03036 Extracted: 03/03/05</u>									
Blank Analyzed: 03/03/2005 (5C03036-BLK1)									
1,2-Dichloro-1,1,2-trifluoroethane	ND	2.5	N/A	ug/l					
Cyclohexane	ND	2.5	N/A	ug/l					

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MWH-Pasadena/Boeing 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Attention: Bronwyn Kelly	Project ID: 13267 (Study 1) Outfall 011 Report Number: IOB2064	Sampled: 02/25/05 Received: 02/25/05
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METHOD BLANK/QC DATA

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

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	RPD Limits	RPD RPD	Data Limit	Qualifiers
Batch: 5B28001 Extracted: 02/28/05											
Blank Analyzed: 03/02/2005 (5B28001-BLK1)											
Acenaphthene	ND	0.50	0.10	ug/l							
Acenaphthylene	ND	0.50	0.10	ug/l							
Aniline	ND	10	2.9	ug/l							
Anthracene	ND	0.50	0.083	ug/l							
Benzidine	ND	5.0	3.2	ug/l							
Benzoic acid	ND	20	3.7	ug/l							
Benzo(a)anthracene	ND	5.0	0.038	ug/l							
Benzo(a)pyrene	ND	2.0	0.14	ug/l							
Benzo(b)fluoranthene	ND	2.0	0.050	ug/l							
Benzo(g,h,i)perylene	ND	5.0	0.059	ug/l							
Benzo(k)fluoranthene	ND	0.50	0.053	ug/l							
Benzyl alcohol	ND	5.0	0.21	ug/l							
Bis(2-chloroethoxy)methane	ND	0.50	0.072	ug/l							
Bis(2-chloroethyl)ether	ND	0.50	0.084	ug/l							
Bis(2-chloroisopropyl)ether	ND	0.50	0.11	ug/l							
Bis(2-ethylhexyl)phthalate	ND	5.0	1.1	ug/l							
4-Bromophenyl phenyl ether	ND	1.0	0.12	ug/l							
Butyl benzyl phthalate	1.00	5.0	0.34	ug/l							J
4-Chloroaniline	ND	2.0	0.20	ug/l							
2-Chloronaphthalene	ND	0.50	0.059	ug/l							
4-Chloro-3-methylphenol	ND	2.0	0.34	ug/l							
4-Chlorophenyl phenyl ether	ND	0.50	0.056	ug/l							
2-Chlorophenol	ND	1.0	0.12	ug/l							
Chrysene	ND	0.50	0.072	ug/l							
Dibenz(a,h)anthracene	ND	0.50	0.083	ug/l							
Dibenzofuran	ND	0.50	0.075	ug/l							
Di-n-butyl phthalate	0.380	2.0	0.26	ug/l							J
1,2-Dichlorobenzene	ND	0.50	0.11	ug/l							
1,3-Dichlorobenzene	ND	0.50	0.13	ug/l							
1,4-Dichlorobenzene	ND	0.50	0.050	ug/l							
3,3-Dichlorobenzidine	ND	5.0	0.93	ug/l							
2,4-Dichlorophenol	ND	2.0	0.21	ug/l							
Diethyl phthalate	0.140	1.0	0.12	ug/l							J
2,4-Dimethylphenol	ND	2.0	0.31	ug/l							
Dimethyl phthalate	ND	0.50	0.081	ug/l							

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 Outfall 011
 Report Number: IOB2064

Sampled: 02/25/05
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METHOD BLANK/QC DATA

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

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	RPD RPD	RPD Limit	Data Qualifiers
Batch: 5B28001 Extracted: 02/28/05										
Blank Analyzed: 03/02/2005 (5B28001-BLK1)										
4,6-Dinitro-2-methylphenol	ND	5.0	0.38	ug/l						
2,4-Dinitrophenol	ND	5.0	2.7	ug/l						
2,4-Dinitrotoluene	ND	5.0	0.23	ug/l						
2,6-Dinitrotoluene	ND	5.0	0.24	ug/l						
Di-n-octyl phthalate	ND	5.0	0.17	ug/l						
1,2-Diphenylhydrazine/Azobenzene	ND	1.0	0.087	ug/l						
Fluoranthene	ND	0.50	0.089	ug/l						
Fluorene	ND	0.50	0.075	ug/l						
Hexachlorobenzene	ND	1.0	0.13	ug/l						
Hexachlorobutadiene	ND	2.0	0.38	ug/l						
Hexachlorocyclopentadiene	ND	5.0	1.8	ug/l						
Hexachloroethane	ND	3.0	0.51	ug/l						
Indeno(1,2,3-cd)pyrene	ND	2.0	0.19	ug/l						
Isophorone	ND	1.0	0.059	ug/l						
2-Methylnaphthalene	ND	1.0	0.13	ug/l						
2-Methylphenol	ND	2.0	0.28	ug/l						
4-Methylphenol	ND	5.0	0.20	ug/l						
Naphthalene	ND	1.0	0.13	ug/l						
2-Nitroaniline	ND	5.0	0.18	ug/l						
3-Nitroaniline	ND	5.0	0.35	ug/l						
4-Nitroaniline	ND	5.0	0.49	ug/l						
Nitrobenzene	ND	1.0	0.10	ug/l						
2-Nitrophenol	ND	2.0	0.23	ug/l						
4-Nitrophenol	ND	5.0	0.73	ug/l						
N-Nitrosodimethylamine	ND	2.0	0.22	ug/l						
N-Nitroso-di-n-propylamine	ND	2.0	0.18	ug/l						
N-Nitrosodiphenylamine	ND	1.0	0.077	ug/l						
Pentachlorophenol	ND	2.0	0.78	ug/l						
Phenanthrene	ND	0.50	0.071	ug/l						
Phenol	ND	1.0	0.14	ug/l						
Pyrene	ND	0.50	0.059	ug/l						
1,2,4-Trichlorobenzene	ND	1.0	0.10	ug/l						
2,4,5-Trichlorophenol	ND	2.0	0.075	ug/l						
2,4,6-Trichlorophenol	ND	1.0	0.10	ug/l						
Surrogate: 2-Fluorophenol	14.4			ug/l	20.0		72		35-120	

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 Received: 02/25/05

METHOD BLANK/QC DATA

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

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	Limit	RPD	RPD Limit	Data Qualifiers
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Batch: 5B28001 Extracted: 02/28/05

Blank Analyzed: 03/02/2005 (5B28001-BLK1)

Surrogate: Phenol-d6	14.6			ug/l	20.0		73	45-120			
Surrogate: 2,4,6-Tribromophenol	19.1			ug/l	20.0		96	50-125			
Surrogate: Nitrobenzene-d5	7.80			ug/l	10.0		78	45-120			
Surrogate: 2-Fluorobiphenyl	7.90			ug/l	10.0		79	45-120			
Surrogate: Terphenyl-d14	8.86			ug/l	10.0		89	45-135			

LCS Analyzed: 03/02/2005-03/03/2005 (5B28001-BS1)

Acenaphthene	8.22	0.50	0.10	ug/l	10.0		82	55-120			M-NR1
Acenaphthylene	8.76	0.50	0.10	ug/l	10.0		88	55-120			
Aniline	7.52	10	2.9	ug/l	10.0		75	30-120			J
Anthracene	8.80	0.50	0.083	ug/l	10.0		88	60-120			
Benzidine	ND	5.0	3.2	ug/l	10.0			20-180			L2
Benzoic acid	9.08	20	3.7	ug/l	10.0		91	30-125			J
Benzo(a)anthracene	8.64	5.0	0.038	ug/l	10.0		86	65-120			
Benzo(a)pyrene	9.26	2.0	0.14	ug/l	10.0		93	55-125			
Benzo(b)fluoranthene	8.54	2.0	0.050	ug/l	10.0		85	50-125			
Benzo(g,h,i)perylene	9.52	5.0	0.059	ug/l	10.0		95	35-160			
Benzo(k)fluoranthene	8.30	0.50	0.053	ug/l	10.0		83	50-125			
Benzyl alcohol	7.10	5.0	0.21	ug/l	10.0		71	40-130			
Bis(2-chloroethoxy)methane	8.10	0.50	0.072	ug/l	10.0		81	55-120			
Bis(2-chloroethyl)ether	7.30	0.50	0.084	ug/l	10.0		73	50-120			
Bis(2-chloroisopropyl)ether	7.94	0.50	0.11	ug/l	10.0		79	50-120			
Bis(2-ethylhexyl)phthalate	8.90	5.0	1.1	ug/l	10.0		89	65-125			
4-Bromophenyl phenyl ether	8.52	1.0	0.12	ug/l	10.0		85	55-125			
Butyl benzyl phthalate	9.04	5.0	0.34	ug/l	10.0		90	60-125			
4-Chloroaniline	6.48	2.0	0.20	ug/l	10.0		65	55-120			
2-Chloronaphthalene	8.36	0.50	0.059	ug/l	10.0		84	60-120			
4-Chloro-3-methylphenol	9.10	2.0	0.34	ug/l	10.0		91	60-120			
4-Chlorophenyl phenyl ether	8.74	0.50	0.056	ug/l	10.0		87	55-120			
2-Chlorophenol	7.64	1.0	0.12	ug/l	10.0		76	45-120			
Chrysene	8.52	0.50	0.072	ug/l	10.0		85	65-120			
Dibenz(a,h)anthracene	9.66	0.50	0.083	ug/l	10.0		97	40-160			
Dibenzofuran	8.48	0.50	0.075	ug/l	10.0		85	60-120			
Di-n-butyl phthalate	8.90	2.0	0.26	ug/l	10.0		89	65-125			
1,2-Dichlorobenzene	6.42	0.50	0.11	ug/l	10.0		64	40-120			
1,3-Dichlorobenzene	6.10	0.50	0.13	ug/l	10.0		61	40-120			

Del Mar Analytical, Irvine
 Michele Harper
 Project Manager

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

Project ID: 13267 (Study 1)
Outfall 011
Report Number: IOB2064

Sampled: 02/25/05
Received: 02/25/05

METHOD BLANK/QC DATA

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

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5B28001 Extracted: 02/28/05										
LCS Analyzed: 03/02/2005-03/03/2005 (5B28001-BS1)										
1,4-Dichlorobenzene	6.00	0.50	0.050	ug/l	10.0	60	40-120			M-NR1
3,3-Dichlorobenzidine	6.60	5.0	0.93	ug/l	10.0	66	50-170			
2,4-Dichlorophenol	7.48	2.0	0.21	ug/l	10.0	75	55-120			
Diethyl phthalate	8.42	1.0	0.12	ug/l	10.0	84	60-120			
2,4-Dimethylphenol	6.90	2.0	0.31	ug/l	10.0	69	35-120			
Dimethyl phthalate	7.86	0.50	0.081	ug/l	10.0	79	60-120			
4,6-Dinitro-2-methylphenol	8.12	5.0	0.38	ug/l	10.0	81	55-120			
2,4-Dinitrophenol	7.80	5.0	2.7	ug/l	10.0	78	40-140			
2,4-Dinitrotoluene	7.92	5.0	0.23	ug/l	10.0	79	60-140			
2,6-Dinitrotoluene	7.94	5.0	0.24	ug/l	10.0	79	65-125			
Di-n-octyl phthalate	9.08	5.0	0.17	ug/l	10.0	91	60-130			
1,2-Diphenylhydrazine/Azobenzene	8.78	1.0	0.087	ug/l	10.0	88	60-120			
Fluoranthene	8.96	0.50	0.089	ug/l	10.0	90	55-125			
Fluorene	8.80	0.50	0.075	ug/l	10.0	88	60-120			
Hexachlorobenzene	9.14	1.0	0.13	ug/l	10.0	91	50-120			
Hexachlorobutadiene	6.76	2.0	0.38	ug/l	10.0	68	45-120			
Hexachlorocyclopentadiene	7.22	5.0	1.8	ug/l	10.0	72	10-130			
Hexachloroethane	6.00	3.0	0.51	ug/l	10.0	60	40-120			
Indeno(1,2,3-cd)pyrene	10.1	2.0	0.19	ug/l	10.0	101	35-150			
Isophorone	7.50	1.0	0.059	ug/l	10.0	75	55-120			
2-Methylnaphthalene	8.66	1.0	0.13	ug/l	10.0	87	50-120			
2-Methylphenol	7.66	2.0	0.28	ug/l	10.0	77	45-120			
4-Methylphenol	7.30	5.0	0.20	ug/l	10.0	73	45-120			
Naphthalene	8.08	1.0	0.13	ug/l	10.0	81	50-120			
2-Nitroaniline	8.22	5.0	0.18	ug/l	10.0	82	60-130			
3-Nitroaniline	8.00	5.0	0.35	ug/l	10.0	80	50-140			
4-Nitroaniline	7.86	5.0	0.49	ug/l	10.0	79	45-160			
Nitrobenzene	7.38	1.0	0.10	ug/l	10.0	74	50-120			
2-Nitrophenol	7.76	2.0	0.23	ug/l	10.0	78	55-120			
4-Nitrophenol	7.28	5.0	0.73	ug/l	10.0	73	50-135			
N-Nitrosodimethylamine	6.94	2.0	0.22	ug/l	10.0	69	40-120			
N-Nitroso-di-n-propylamine	6.80	2.0	0.18	ug/l	10.0	68	50-120			
N-Nitrosodiphenylamine	7.84	1.0	0.077	ug/l	10.0	78	60-120			
pentachlorophenol	8.46	2.0	0.78	ug/l	10.0	85	50-125			
phenanthrene	8.38	0.50	0.071	ug/l	10.0	84	55-120			

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

Project ID: 13267 (Study 1)
 Outfall 011
 Report Number: IOB2064

Sampled: 02/25/05
 Received: 02/25/05

METHOD BLANK/QC DATA

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

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	Limit	RPD	RPD Limit	Data Qualifiers
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Batch: 5B28001 Extracted: 02/28/05

LCS Analyzed: 03/02/2005-03/03/2005 (5B28001-BS1)

Phenol	7.48	1.0	0.14	ug/l	10.0		75	45-120			M-NR1
Pyrene	8.86	0.50	0.059	ug/l	10.0		89	50-120			
1,2,4-Trichlorobenzene	7.18	1.0	0.10	ug/l	10.0		72	50-120			
2,4,5-Trichlorophenol	8.50	2.0	0.075	ug/l	10.0		85	60-120			
2,4,6-Trichlorophenol	8.80	1.0	0.10	ug/l	10.0		88	60-120			
Surrogate: 2-Fluorophenol	15.0			ug/l	20.0		75	35-120			
Surrogate: Phenol-d6	14.6			ug/l	20.0		73	45-120			
Surrogate: 2,4,6-Tribromophenol	19.3			ug/l	20.0		96	50-125			
Surrogate: Nitrobenzene-d5	7.94			ug/l	10.0		79	45-120			
Surrogate: 2-Fluorobiphenyl	8.42			ug/l	10.0		84	45-120			
Surrogate: Terphenyl-d14	8.96			ug/l	10.0		90	45-135			

LCS Dup Analyzed: 03/02/2005-03/03/2005 (5B28001-BSD1)

Acenaphthene	8.34	0.50	0.10	ug/l	10.0		83	55-120	1	20	
Acenaphthylene	8.44	0.50	0.10	ug/l	10.0		84	55-120	4	20	
Aniline	7.86	10	2.9	ug/l	10.0		79	30-120	4	25	J
Anthracene	8.50	0.50	0.083	ug/l	10.0		85	60-120	3	20	
Benzidine	3.62	5.0	3.2	ug/l	10.0		36	20-180		35	J
Benzoic acid	6.72	20	3.7	ug/l	10.0		67	30-125	30	30	J
Benzo(a)anthracene	8.82	5.0	0.038	ug/l	10.0		88	65-120	2	20	
Benzo(a)pyrene	9.32	2.0	0.14	ug/l	10.0		93	55-125	1	25	
Benzo(b)fluoranthene	8.78	2.0	0.050	ug/l	10.0		88	50-125	3	25	
Benzo(g,h,i)perylene	9.94	5.0	0.059	ug/l	10.0		99	35-160	4	25	
Benzo(k)fluoranthene	8.56	0.50	0.053	ug/l	10.0		86	50-125	3	20	
Benzyl alcohol	8.08	5.0	0.21	ug/l	10.0		81	40-130	13	20	
Bis(2-chloroethoxy)methane	8.02	0.50	0.072	ug/l	10.0		80	55-120	1	20	
Bis(2-chloroethyl)ether	7.44	0.50	0.084	ug/l	10.0		74	50-120	2	20	
Bis(2-chloroisopropyl)ether	8.36	0.50	0.11	ug/l	10.0		84	50-120	5	20	
Bis(2-ethylhexyl)phthalate	9.44	5.0	1.1	ug/l	10.0		94	65-125	6	20	
4-Bromophenyl phenyl ether	8.02	1.0	0.12	ug/l	10.0		80	55-125	6	25	
Butyl benzyl phthalate	9.50	5.0	0.34	ug/l	10.0		95	60-125	5	20	
4-Chloroaniline	7.58	2.0	0.20	ug/l	10.0		76	55-120	16	25	
2-Chloronaphthalene	8.14	0.50	0.059	ug/l	10.0		81	60-120	3	20	
4-Chloro-3-methylphenol	8.74	2.0	0.34	ug/l	10.0		87	60-120	4	25	
4-Chlorophenyl phenyl ether	8.36	0.50	0.056	ug/l	10.0		84	55-120	4	20	
2-Chlorophenol	7.84	1.0	0.12	ug/l	10.0		78	45-120	3	25	

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 Michele Harper
 Project Manager

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

Project ID: 13267 (Study 1)
 Outfall 011
 Report Number: IOB2064

Sampled: 02/25/05
 Received: 02/25/05

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: 5B28001 Extracted: 02/28/05											
LCS Dup Analyzed: 03/02/2005-03/03/2005 (5B28001-BSD1)											
Chrysene	8.44	0.50	0.072	ug/l	10.0	84	65-120	1	20		
Dibenz(a,h)anthracene	10.0	0.50	0.083	ug/l	10.0	100	40-160	3	25		
Dibenzofuran	8.06	0.50	0.075	ug/l	10.0	81	60-120	5	20		
Di-n-butyl phthalate	8.74	2.0	0.26	ug/l	10.0	87	65-125	2	20		
1,2-Dichlorobenzene	6.26	0.50	0.11	ug/l	10.0	63	40-120	3	25		
1,3-Dichlorobenzene	6.00	0.50	0.13	ug/l	10.0	60	40-120	2	25		
1,4-Dichlorobenzene	6.10	0.50	0.050	ug/l	10.0	61	40-120	2	25		
3,3-Dichlorobenzidine	8.02	5.0	0.93	ug/l	10.0	80	50-170	19	25		
2,4-Dichlorophenol	7.58	2.0	0.21	ug/l	10.0	76	55-120	1	20		
Diethyl phthalate	8.02	1.0	0.12	ug/l	10.0	80	60-120	5	20		
2,4-Dimethylphenol	6.62	2.0	0.31	ug/l	10.0	66	35-120	4	25		
Dimethyl phthalate	7.74	0.50	0.081	ug/l	10.0	77	60-120	2	20		
4,6-Dinitro-2-methylphenol	7.88	5.0	0.38	ug/l	10.0	79	55-120	3	25		
2,4-Dinitrophenol	7.12	5.0	2.7	ug/l	10.0	71	40-140	9	25		
2,4-Dinitrotoluene	7.70	5.0	0.23	ug/l	10.0	77	60-140	3	20		
2,6-Dinitrotoluene	7.78	5.0	0.24	ug/l	10.0	78	65-125	2	20		
Di-n-octyl phthalate	9.70	5.0	0.17	ug/l	10.0	97	60-130	7	20		
1,2-Diphenylhydrazine/Azobenzene	8.30	1.0	0.087	ug/l	10.0	83	60-120	6	25		
Fluoranthene	8.94	0.50	0.089	ug/l	10.0	89	55-125	0	20		
Fluorene	8.56	0.50	0.075	ug/l	10.0	86	60-120	3	20		
Hexachlorobenzene	9.26	1.0	0.13	ug/l	10.0	93	50-120	1	20		
Hexachlorobutadiene	6.24	2.0	0.38	ug/l	10.0	62	45-120	8	25		
Hexachlorocyclopentadiene	7.08	5.0	1.8	ug/l	10.0	71	10-130	2	30		
Hexachloroethane	5.86	3.0	0.51	ug/l	10.0	59	40-120	2	25		
Indeno(1,2,3-cd)pyrene	10.3	2.0	0.19	ug/l	10.0	103	35-150	2	25		
Isophorone	7.42	1.0	0.059	ug/l	10.0	74	55-120	1	20		
2-Methylnaphthalene	8.06	1.0	0.13	ug/l	10.0	81	50-120	7	20		
2-Methylphenol	7.98	2.0	0.28	ug/l	10.0	80	45-120	4	20		
4-Methylphenol	7.60	5.0	0.20	ug/l	10.0	76	45-120	4	20		
Naphthalene	7.68	1.0	0.13	ug/l	10.0	77	50-120	5	20		
2-Nitroaniline	8.24	5.0	0.18	ug/l	10.0	82	60-130	0	20		
3-Nitroaniline	7.84	5.0	0.35	ug/l	10.0	78	50-140	2	25		
4-Nitroaniline	7.96	5.0	0.49	ug/l	10.0	80	45-160	1	20		
Nitrobenzene	7.00	1.0	0.10	ug/l	10.0	70	50-120	5	25		
2-Nitrophenol	8.10	2.0	0.23	ug/l	10.0	81	55-120	4	25		

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 Michele Harper
 Project Manager

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

Project ID: 13267 (Study 1)
 Outfall 011
 Report Number: IOB2064

Sampled: 02/25/05
 Received: 02/25/05

METHOD BLANK/QC DATA

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

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	RPD Limits	RPD RPD	Data Qualifiers
Batch: 5B28001 Extracted: 02/28/05										
LCS Dup Analyzed: 03/02/2005-03/03/2005 (5B28001-BSD1)										
4-Nitrophenol	8.16	5.0	0.73	ug/l	10.0	82	50-135	11	25	
N-Nitrosodimethylamine	7.90	2.0	0.22	ug/l	10.0	79	40-120	13	20	
N-Nitroso-di-n-propylamine	7.56	2.0	0.18	ug/l	10.0	76	50-120	11	20	
N-Nitrosodiphenylamine	7.92	1.0	0.077	ug/l	10.0	79	60-120	1	20	
Pentachlorophenol	8.76	2.0	0.78	ug/l	10.0	88	50-125	3	25	
Phenanthrene	8.70	0.50	0.071	ug/l	10.0	87	55-120	4	20	
Phenol	7.60	1.0	0.14	ug/l	10.0	76	45-120	2	25	
Pyrene	8.74	0.50	0.059	ug/l	10.0	87	50-120	1	25	
1,2,4-Trichlorobenzene	6.58	1.0	0.10	ug/l	10.0	66	50-120	9	20	
2,4,5-Trichlorophenol	8.30	2.0	0.075	ug/l	10.0	83	60-120	2	20	
2,4,6-Trichlorophenol	8.64	1.0	0.10	ug/l	10.0	86	60-120	2	20	
Surrogate: 2-Fluorophenol	14.4			ug/l	20.0	72	35-120			
Surrogate: Phenol-d6	15.0			ug/l	20.0	75	45-120			
Surrogate: 2,4,6-Tribromophenol	19.8			ug/l	20.0	99	50-125			
Surrogate: Nitrobenzene-d5	7.80			ug/l	10.0	78	45-120			
Surrogate: 2-Fluorobiphenyl	7.90			ug/l	10.0	79	45-120			
Surrogate: Terphenyl-d14	8.80			ug/l	10.0	88	45-135			

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 Michele Harper
 Project Manager

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 Attention: Bronwyn Kelly

Project ID: 13267 (Study 1)
 Outfall 011
 Report Number: IOB2064

Sampled: 02/25/05
 Received: 02/25/05

METHOD BLANK/QC DATA

ORGANOCHLORINE PESTICIDES (EPA 608)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC Limits	RPD RPD	RPD Limit	Data Qualifiers
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Batch: 5C02052 Extracted: 03/02/05

Blank Analyzed: 03/03/2005 (5C02052-BLK1)

Aldrin	ND	0.10	0.030	ug/l						
alpha-BHC	ND	0.10	0.015	ug/l						
beta-BHC	ND	0.10	0.015	ug/l						
delta-BHC	ND	0.20	0.020	ug/l						
gamma-BHC (Lindane)	ND	0.10	0.020	ug/l						
Chlordane	ND	1.0	0.20	ug/l						
4,4'-DDD	ND	0.10	0.020	ug/l						
4,4'-DDE	ND	0.10	0.025	ug/l						
4,4'-DDT	0.0332	0.10	0.030	ug/l						J
Dieldrin	ND	0.10	0.015	ug/l						
Endosulfan I	ND	0.10	0.015	ug/l						
Endosulfan II	ND	0.10	0.040	ug/l						
Endosulfan sulfate	ND	0.20	0.015	ug/l						
Endrin	ND	0.10	0.020	ug/l						
Endrin aldehyde	ND	0.10	0.045	ug/l						
Endrin ketone	ND	0.10	0.020	ug/l						
Heptachlor	ND	0.10	0.030	ug/l						
Heptachlor epoxide	ND	0.10	0.020	ug/l						
Methoxychlor	ND	0.10	0.035	ug/l						
Toxaphene	ND	5.0	1.5	ug/l						
Surrogate: Tetrachloro-m-xylene	0.322			ug/l	0.500	64	35-120			
Surrogate: Decachlorobiphenyl	0.394			ug/l	0.500	79	45-120			

LCS Analyzed: 03/03/2005 (5C02052-BS1)

Aldrin	0.314	0.10	0.030	ug/l	0.500	63	45-115			M-NRI
alpha-BHC	0.392	0.10	0.015	ug/l	0.500	78	45-115			
beta-BHC	0.357	0.10	0.015	ug/l	0.500	71	50-115			
delta-BHC	0.379	0.20	0.020	ug/l	0.500	76	55-120			
gamma-BHC (Lindane)	0.392	0.10	0.020	ug/l	0.500	78	45-115			
4,4'-DDD	0.417	0.10	0.020	ug/l	0.500	83	60-120			
4,4'-DDE	0.398	0.10	0.025	ug/l	0.500	80	55-120			
4,4'-DDT	0.604	0.10	0.030	ug/l	0.500	121	60-130			
Dieldrin	0.392	0.10	0.015	ug/l	0.500	78	55-120			
Endosulfan I	0.376	0.10	0.015	ug/l	0.500	75	50-115			
Endosulfan II	0.376	0.10	0.040	ug/l	0.500	75	60-125			
Endosulfan sulfate	0.381	0.20	0.015	ug/l	0.500	76	60-120			

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

Project ID: 13267 (Study 1)
 Outfall 011
 Report Number: IOB2064

Sampled: 02/25/05
 Received: 02/25/05

METHOD BLANK/QC DATA

ORGANOCHLORINE PESTICIDES (EPA 608)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	RPD RPD	RPD Limit	Data Qualifiers
Batch: 5C02052 Extracted: 03/02/05										
LCS Analyzed: 03/03/2005 (5C02052-BS1)										
Endrin	0.393	0.10	0.020	ug/l	0.500	79	55-125			M-NR1
Endrin aldehyde	0.356	0.10	0.045	ug/l	0.500	71	55-115			
Endrin ketone	0.396	0.10	0.020	ug/l	0.500	79	60-120			
Heptachlor	0.405	0.10	0.030	ug/l	0.500	81	45-115			
Heptachlor epoxide	0.376	0.10	0.020	ug/l	0.500	75	50-120			
Methoxychlor	0.391	0.10	0.035	ug/l	0.500	78	60-135			
Surrogate: Tetrachloro-m-xylene	0.334			ug/l	0.500	67	35-120			
Surrogate: Decachlorobiphenyl	0.380			ug/l	0.500	76	45-120			
LCS Dup Analyzed: 03/03/2005 (5C02052-BSD1)										
Aldrin	0.318	0.10	0.030	ug/l	0.500	64	45-115	1	30	
alpha-BHC	0.395	0.10	0.015	ug/l	0.500	79	45-115	1	30	
beta-BHC	0.372	0.10	0.015	ug/l	0.500	74	50-115	4	30	
delta-BHC	0.381	0.20	0.020	ug/l	0.500	76	55-120	1	30	
gamma-BHC (Lindane)	0.400	0.10	0.020	ug/l	0.500	80	45-115	2	30	
4,4'-DDD	0.423	0.10	0.020	ug/l	0.500	85	60-120	1	30	
4,4'-DDE	0.402	0.10	0.025	ug/l	0.500	80	55-120	1	30	
4,4'-DDT	0.420	0.10	0.030	ug/l	0.500	84	60-130	36	30	R-7
Dieldrin	0.398	0.10	0.015	ug/l	0.500	80	55-120	2	30	
Endosulfan I	0.378	0.10	0.015	ug/l	0.500	76	50-115	1	30	
Endosulfan II	0.383	0.10	0.040	ug/l	0.500	77	60-125	2	30	
Endosulfan sulfate	0.377	0.20	0.015	ug/l	0.500	75	60-120	1	30	
Endrin	0.399	0.10	0.020	ug/l	0.500	80	55-125	2	30	
Endrin aldehyde	0.361	0.10	0.045	ug/l	0.500	72	55-115	1	30	
Endrin ketone	0.391	0.10	0.020	ug/l	0.500	78	60-120	1	30	
Heptachlor	0.401	0.10	0.030	ug/l	0.500	80	45-115	1	30	
Heptachlor epoxide	0.376	0.10	0.020	ug/l	0.500	75	50-120	0	30	
Methoxychlor	0.388	0.10	0.035	ug/l	0.500	78	60-135	1	30	
Surrogate: Tetrachloro-m-xylene	0.333			ug/l	0.500	67	35-120			
Surrogate: Decachlorobiphenyl	0.374			ug/l	0.500	75	45-120			

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

Project ID: 13267 (Study 1)
 Outfall 011
 Report Number: IOB2064

Sampled: 02/25/05
 Received: 02/25/05

METHOD BLANK/QC DATA

TOTAL PCBS (EPA 608)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	RPD RPD	RPD Limit	Data Qualifiers
Batch: 5C02052 Extracted: 03/02/05										
Blank Analyzed: 03/03/2005 (5C02052-BLK1)										
Aroclor 1016	ND	1.0	0.20	ug/l						
Aroclor 1221	ND	1.0	0.10	ug/l						
Aroclor 1232	ND	1.0	0.15	ug/l						
Aroclor 1242	ND	1.0	0.15	ug/l						
Aroclor 1248	ND	1.0	0.25	ug/l						
Aroclor 1254	ND	1.0	0.25	ug/l						
Aroclor 1260	ND	1.0	0.40	ug/l						
Surrogate: Decachlorobiphenyl	0.344			ug/l	0.500		69		45-120	
LCS Analyzed: 03/03/2005 (5C02052-BS2)										
Aroclor 1016	2.93	1.0	0.20	ug/l	4.00		73		50-115	M-NRI
Aroclor 1260	2.73	1.0	0.40	ug/l	4.00		68		60-115	
Surrogate: Decachlorobiphenyl	0.349			ug/l	0.500		70		45-120	
LCS Dup Analyzed: 03/03/2005 (5C02052-BSD2)										
Aroclor 1016	3.27	1.0	0.20	ug/l	4.00		82		50-115	11 30
Aroclor 1260	3.05	1.0	0.40	ug/l	4.00		76		60-115	11 25
Surrogate: Decachlorobiphenyl	0.383			ug/l	0.500		77		45-120	

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MWH-Pasadena/Boeing 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Attention: Bronwyn Kelly	Project ID: 13267 (Study 1) Outfall 011 Report Number: IOB2064	Sampled: 02/25/05 Received: 02/25/05
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METHOD BLANK/QC DATA

METALS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	RPD Limits	RPD RPD	Data Limit	Qualifiers
Batch: 5C02083 Extracted: 03/02/05											
Blank Analyzed: 03/02/2005 (5C02083-BLK1)											
Boron	ND	0.050	0.0074	mg/l							
LCS Analyzed: 03/02/2005 (5C02083-BS1)											
Boron	0.468	0.050	0.0074	mg/l	0.500		94	85-115			
Matrix Spike Analyzed: 03/02/2005 (5C02083-MS1) Source: IOB1981-05											
Boron	0.679	0.050	0.0074	mg/l	0.500	0.20	96	70-130			
Matrix Spike Dup Analyzed: 03/02/2005 (5C02083-MSD1) Source: IOB1981-05											
Boron	0.698	0.050	0.0074	mg/l	0.500	0.20	100	70-130	3	20	
Batch: 5C02089 Extracted: 03/02/05											
Blank Analyzed: 03/02/2005 (5C02089-BLK1)											
Mercury	ND	0.20	0.063	ug/l							
LCS Analyzed: 03/02/2005 (5C02089-BS1)											
Mercury	8.06	0.20	0.063	ug/l	8.00		101	85-115			
Matrix Spike Analyzed: 03/02/2005 (5C02089-MS1) Source: IOB1993-06											
Mercury	8.30	0.20	0.063	ug/l	8.00	ND	104	70-130			
Matrix Spike Dup Analyzed: 03/02/2005 (5C02089-MSD1) Source: IOB1993-06											
Mercury	8.18	0.20	0.063	ug/l	8.00	ND	102	70-130	1	20	
Batch: 5C03085 Extracted: 03/03/05											
Blank Analyzed: 03/03/2005 (5C03085-BLK1)											
Antimony	1.28	2.0	0.18	ug/l							J
Arsenic	ND	1.0	0.49	ug/l							
Barium	ND	0.0010	0.00014	mg/l							
Beryllium	ND	0.50	0.037	ug/l							
Cadmium	ND	1.0	0.015	ug/l							
Chromium	ND	2.0	0.26	ug/l							
Cobalt	ND	1.0	0.10	ug/l							
Copper	ND	2.0	0.49	ug/l							
Iron	0.00553	0.010	0.0032	mg/l							J
Lead	ND	1.0	0.13	ug/l							

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MWH-Pasadena/Boeing 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Attention: Bronwyn Kelly	Project ID: 13267 (Study 1) Outfall 011 Report Number: IOB2064	Sampled: 02/25/05 Received: 02/25/05
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METHOD BLANK/QC DATA

METALS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC Limits	RPD RPD	RPD Limit	Data Qualifiers
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Batch: 5C03085 Extracted: 03/03/05

Blank Analyzed: 03/03/2005 (5C03085-BLK1)

Manganese	ND	1.0	0.44	ug/l						
Nickel	ND	2.0	0.15	ug/l						
Selenium	ND	2.0	0.36	ug/l						
Silver	ND	1.0	0.089	ug/l						
Thallium	ND	1.0	0.075	ug/l						
Vanadium	ND	2.0	0.86	ug/l						
Zinc	ND	20	3.1	ug/l						

LCS Analyzed: 03/03/2005 (5C03085-BS1)

Antimony	90.2	2.0	0.18	ug/l	80.0		113	85-115		
Arsenic	83.8	1.0	0.49	ug/l	80.0		105	85-115		
Barium	0.0861	0.0010	0.00014	mg/l	0.0800		108	85-115		
Beryllium	86.8	0.50	0.037	ug/l	80.0		108	85-115		
Cadmium	83.1	1.0	0.015	ug/l	80.0		104	85-115		
Chromium	81.1	2.0	0.26	ug/l	80.0		101	85-115		
Cobalt	80.3	1.0	0.10	ug/l	80.0		100	85-115		
Copper	78.5	2.0	0.49	ug/l	80.0		98	85-115		
Iron	0.878	0.010	0.0032	mg/l	0.800		110	85-115		
Lead	82.6	1.0	0.13	ug/l	80.0		103	85-115		
Manganese	85.7	1.0	0.44	ug/l	80.0		107	85-115		
Nickel	80.0	2.0	0.15	ug/l	80.0		100	85-115		
Selenium	87.9	2.0	0.36	ug/l	80.0		110	85-115		
Silver	81.3	1.0	0.089	ug/l	80.0		102	85-115		
Thallium	85.6	1.0	0.075	ug/l	80.0		107	85-115		
Vanadium	77.4	2.0	0.86	ug/l	80.0		97	85-115		
Zinc	81.5	20	3.1	ug/l	80.0		102	85-115		

Matrix Spike Analyzed: 03/03/2005 (5C03085-MS1)

Source: IOB2069-01

Antimony	92.7	2.0	0.18	ug/l	80.0	0.58	115	70-130		
Arsenic	87.9	1.0	0.49	ug/l	80.0	0.89	109	70-130		
Barium	0.155	0.0010	0.00014	mg/l	0.0800	0.066	111	70-130		
Beryllium	83.7	0.50	0.037	ug/l	80.0	ND	105	70-130		
Cadmium	83.5	1.0	0.015	ug/l	80.0	ND	104	70-130		
Chromium	84.3	2.0	0.26	ug/l	80.0	1.2	104	70-130		
Cobalt	81.4	1.0	0.10	ug/l	80.0	0.18	102	70-130		
Copper	78.8	2.0	0.49	ug/l	80.0	1.2	97	70-130		

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MWH-Pasadena/Boeing 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Attention: Bronwyn Kelly	Project ID: 13267 (Study 1) Outfall 011 Report Number: IOB2064	Sampled: 02/25/05 Received: 02/25/05
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METHOD BLANK/QC DATA

METALS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	RPD Limits	RPD Limit	Data Qualifiers
Batch: 5C03085 Extracted: 03/03/05										
Matrix Spike Analyzed: 03/03/2005 (5C03085-MS1)					Source: IOB2069-01					
Iron	0.832	0.010	0.0032	mg/l	0.800	0.052	98	70-130		
Lead	82.3	1.0	0.13	ug/l	80.0	ND	103	70-130		
Manganese	101	1.0	0.44	ug/l	80.0	15	108	70-130		
Nickel	79.5	2.0	0.15	ug/l	80.0	0.36	99	70-130		
Selenium	90.6	2.0	0.36	ug/l	80.0	1.8	111	70-130		
Silver	80.4	1.0	0.089	ug/l	80.0	ND	100	70-130		
Thallium	86.2	1.0	0.075	ug/l	80.0	ND	108	70-130		
Vanadium	82.5	2.0	0.86	ug/l	80.0	ND	103	70-130		
Zinc	103	20	3.1	ug/l	80.0	25	98	70-130		
Matrix Spike Analyzed: 03/03/2005 (5C03085-MS2)					Source: IOB2149-04					
Antimony	96.1	2.0	0.18	ug/l	80.0	0.53	119	70-130		
Arsenic	100	1.0	0.49	ug/l	80.0	13	109	70-130		
Barium	0.284	0.0010	0.00014	mg/l	0.0800	0.18	130	70-130		
Beryllium	78.8	0.50	0.037	ug/l	80.0	0.048	98	70-130		
Cadmium	80.9	1.0	0.015	ug/l	80.0	0.053	101	70-130		
Chromium	85.0	2.0	0.26	ug/l	80.0	0.67	105	70-130		
Cobalt	81.6	1.0	0.10	ug/l	80.0	0.59	101	70-130		
Copper	75.9	2.0	0.49	ug/l	80.0	2.9	91	70-130		
Iron	0.746	0.010	0.0032	mg/l	0.800	0.022	90	70-130		
Lead	78.9	1.0	0.13	ug/l	80.0	0.20	98	70-130		
Manganese	1470	10	4.4	ug/l	80.0	1300	212	70-130		M-HA
Nickel	77.3	2.0	0.15	ug/l	80.0	0.93	95	70-130		
Selenium	97.5	2.0	0.36	ug/l	80.0	6.5	114	70-130		
Silver	77.1	1.0	0.089	ug/l	80.0	ND	96	70-130		
Thallium	81.5	1.0	0.075	ug/l	80.0	ND	102	70-130		
Vanadium	91.7	2.0	0.86	ug/l	80.0	4.5	109	70-130		
Zinc	101	20	3.1	ug/l	80.0	28	91	70-130		

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 Attention: Bronwyn Kelly

Project ID: 13267 (Study 1)
 Outfall 011
 Report Number: IOB2064

Sampled: 02/25/05
 Received: 02/25/05

METHOD BLANK/QC DATA

METALS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5C03085 Extracted: 03/03/05											
Matrix Spike Dup Analyzed: 03/03/2005 (5C03085-MSD1)						Source: IOB2069-01					
Antimony	88.4	2.0	0.18	ug/l	80.0	0.58	110	70-130	5	20	
Arsenic	84.3	1.0	0.49	ug/l	80.0	0.89	104	70-130	4	20	
Barium	0.151	0.0010	0.00014	mg/l	0.0800	0.066	106	70-130	3	20	
Beryllium	80.3	0.50	0.037	ug/l	80.0	ND	100	70-130	4	20	
Cadmium	81.5	1.0	0.015	ug/l	80.0	ND	102	70-130	2	20	
Chromium	82.0	2.0	0.26	ug/l	80.0	1.2	101	70-130	3	20	
Cobalt	78.6	1.0	0.10	ug/l	80.0	0.18	98	70-130	4	20	
Copper	76.4	2.0	0.49	ug/l	80.0	1.2	94	70-130	3	20	
Iron	0.807	0.010	0.0032	mg/l	0.800	0.052	94	70-130	3	20	
Lead	80.0	1.0	0.13	ug/l	80.0	ND	100	70-130	3	20	
Manganese	101	1.0	0.44	ug/l	80.0	15	108	70-130	0	20	
Nickel	77.6	2.0	0.15	ug/l	80.0	0.36	97	70-130	2	20	
Selenium	87.1	2.0	0.36	ug/l	80.0	1.8	107	70-130	4	20	
Silver	78.7	1.0	0.089	ug/l	80.0	ND	98	70-130	2	20	
Thallium	83.7	1.0	0.075	ug/l	80.0	ND	105	70-130	3	20	
Vanadium	81.0	2.0	0.86	ug/l	80.0	ND	101	70-130	2	20	
Zinc	99.9	20	3.1	ug/l	80.0	25	94	70-130	3	20	

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

Project ID: 13267 (Study 1)
 Outfall 011
 Report Number: IOB2064

Sampled: 02/25/05
 Received: 02/25/05

METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	RPD RPD	RPD Limit	Data Qualifiers
Batch: 5B25042 Extracted: 02/25/05										
Blank Analyzed: 02/25/2005 (5B25042-BLK1)										
Chloride	ND	0.50	0.26	mg/l						
Fluoride	ND	0.50	0.10	mg/l						
Nitrate/Nitrite-N	ND	0.26	0.072	mg/l						
Sulfate	ND	0.50	0.18	mg/l						
LCS Analyzed: 02/25/2005 (5B25042-BS1)										
Chloride	5.13	0.50	0.26	mg/l	5.00		103		90-110	
Fluoride	5.07	0.50	0.10	mg/l	5.00		101		90-110	
Sulfate	10.5	0.50	0.18	mg/l	10.0		105		90-110	
Matrix Spike Analyzed: 02/25/2005 (5B25042-MS1)										
						Source: IOB1979-01				
Chloride	13.9	0.50	0.26	mg/l	5.00	9.6	86		80-120	
Fluoride	5.02	0.50	0.10	mg/l	5.00	0.36	93		80-120	
Sulfate	57.0	0.50	0.18	mg/l	10.0	49	80		80-120	
Matrix Spike Dup Analyzed: 02/25/2005 (5B25042-MSD1)										
						Source: IOB1979-01				
Chloride	14.3	0.50	0.26	mg/l	5.00	9.6	94		80-120	3 20
Fluoride	5.13	0.50	0.10	mg/l	5.00	0.36	95		80-120	2 20
Sulfate	58.2	0.50	0.18	mg/l	10.0	49	92		80-120	2 20
Batch: 5B25118 Extracted: 02/25/05										
Blank Analyzed: 02/25/2005 (5B25118-BLK1)										
Surfactants (MBAS)	ND	0.10	0.044	mg/l						
LCS Analyzed: 02/25/2005 (5B25118-BS1)										
Surfactants (MBAS)	0.247	0.10	0.044	mg/l	0.250		99		90-110	

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 Attention: Bronwyn Kelly

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 Outfall 011
 Report Number: IOB2064

Sampled: 02/25/05
 Received: 02/25/05

METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5B25118 Extracted: 02/25/05											
Matrix Spike Analyzed: 02/25/2005 (5B25118-MS1)						Source: IOB1984-01					
Surfactants (MBAS)	0.278	0.10	0.044	mg/l	0.250	ND	111	50-125			
Matrix Spike Dup Analyzed: 02/25/2005 (5B25118-MSD1)						Source: IOB1984-01					
Surfactants (MBAS)	0.267	0.10	0.044	mg/l	0.250	ND	107	50-125	4	20	
Batch: 5B25120 Extracted: 02/25/05											
Duplicate Analyzed: 02/25/2005 (5B25120-DUP1)						Source: IOB1977-01					
Residual Chlorine	ND	0.10	0.10	mg/l		ND				20	
Batch: 5B25125 Extracted: 02/25/05											
Blank Analyzed: 02/25/2005 (5B25125-BLK1)											
Chromium VI	ND	1.0	0.10	ug/l							
LCS Analyzed: 02/25/2005 (5B25125-BS1)											
Chromium VI	48.6	1.0	0.10	ug/l	50.0		97	90-110			
Matrix Spike Analyzed: 02/25/2005 (5B25125-MS1)						Source: IOB2067-07					
Chromium VI	65.8	1.0	0.10	ug/l	50.0	20	92	90-110			
Matrix Spike Dup Analyzed: 02/25/2005 (5B25125-MSD1)						Source: IOB2067-07					
Chromium VI	65.0	1.0	0.10	ug/l	50.0	20	90	90-110	1	10	
Batch: 5B25128 Extracted: 02/25/05											
Blank Analyzed: 03/02/2005 (5B25128-BLK1)											
Biochemical Oxygen Demand	ND	2.0	0.59	mg/l							

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Sampled: 02/25/05
 Received: 02/25/05

METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5B25128 Extracted: 02/25/05											
LCS Analyzed: 03/02/2005 (5B25128-BS1)											
Biochemical Oxygen Demand	203	100	30	mg/l	198		103	85-115			
LCS Dup Analyzed: 03/02/2005 (5B25128-BSD1)											
Biochemical Oxygen Demand	202	100	30	mg/l	198		102	85-115	1	20	
Batch: 5B26046 Extracted: 02/26/05											
Blank Analyzed: 02/26/2005 (5B26046-BLK1)											
Turbidity	0.0500	1.0	0.040	NTU							J
Duplicate Analyzed: 02/26/2005 (5B26046-DUP1)											
Turbidity	1.80	1.0	0.040	NTU		Source: IOB2071-01 1.8			0	20	
Batch: 5B28078 Extracted: 02/28/05											
Blank Analyzed: 02/28/2005 (5B28078-BLK1)											
Total Dissolved Solids	ND	10	10	mg/l							
LCS Analyzed: 02/28/2005 (5B28078-BS1)											
Total Dissolved Solids	1010	10	10	mg/l	1000		101	90-110			
Duplicate Analyzed: 02/28/2005 (5B28078-DUP1)											
Total Dissolved Solids	124	10	10	mg/l		Source: IOB2066-01 120			3	10	
Batch: 5B28080 Extracted: 02/28/05											
Duplicate Analyzed: 02/28/2005 (5B28080-DUP1)											
Specific Conductance	950	1.0	1.0	umhos/cm		Source: IOB1874-01 950			0	5	

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 Received: 02/25/05

METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5B28103 Extracted: 02/28/05											
Blank Analyzed: 02/28/2005 (5B28103-BLK1)											
Perchlorate	ND	4.0	0.80	ug/l							
LCS Analyzed: 02/28/2005 (5B28103-BS1)											
Perchlorate	51.9	4.0	0.80	ug/l	50.0		104	85-115			
Matrix Spike Analyzed: 03/01/2005 (5B28103-MS1)											
						Source: IOB1879-01RE1					
Perchlorate	53.1	4.0	0.80	ug/l	50.0	5.7	95	80-120			
Matrix Spike Dup Analyzed: 03/01/2005 (5B28103-MSD1)											
						Source: IOB1879-01RE1					
Perchlorate	53.7	4.0	0.80	ug/l	50.0	5.7	96	80-120	1	20	
Batch: 5B28115 Extracted: 02/28/05											
Blank Analyzed: 03/01/2005 (5B28115-BLK1)											
Total Cyanide	ND	5.0	2.2	ug/l							
LCS Analyzed: 03/01/2005 (5B28115-BS1)											
Total Cyanide	197	5.0	2.2	ug/l	200		98	90-110			
Matrix Spike Analyzed: 03/01/2005 (5B28115-MS1)											
						Source: IOB2064-01					
Total Cyanide	202	5.0	2.2	ug/l	200	ND	101	70-115			
Matrix Spike Dup Analyzed: 03/01/2005 (5B28115-MSD1)											
						Source: IOB2064-01					
Total Cyanide	210	5.0	2.2	ug/l	200	ND	105	70-115	4	15	
Batch: 5C01065 Extracted: 03/01/05											
Blank Analyzed: 03/01/2005 (5C01065-BLK1)											
Total Organic Carbon	ND	1.0	0.25	mg/l							

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MWH-Pasadena/Boeing 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Attention: Bronwyn Kelly	Project ID: 13267 (Study 1) Outfall 011 Report Number: IOB2064	Sampled: 02/25/05 Received: 02/25/05
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METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	RPD Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5C01065 Extracted: 03/01/05											
LCS Analyzed: 03/01/2005 (5C01065-BS1)											
Total Organic Carbon	10.7	1.0	0.25	mg/l	10.0		107	90-110			
Matrix Spike Analyzed: 03/01/2005 (5C01065-MS1)											
						Source: IOB2047-09					
Total Organic Carbon	6.25	1.0	0.25	mg/l	5.00	0.94	106	80-120			
Matrix Spike Dup Analyzed: 03/01/2005 (5C01065-MSD1)											
						Source: IOB2047-09					
Total Organic Carbon	6.26	1.0	0.25	mg/l	5.00	0.94	106	80-120	0	20	
Batch: 5C02094 Extracted: 03/02/05											
Blank Analyzed: 03/02/2005 (5C02094-BLK1)											
Oil & Grease	ND	5.0	0.94	mg/l							
LCS Analyzed: 03/02/2005 (5C02094-BS1)											
Oil & Grease	18.5	5.0	0.94	mg/l	20.0		92	65-120			M-NR1
LCS Dup Analyzed: 03/02/2005 (5C02094-BSD1)											
Oil & Grease	17.2	5.0	0.94	mg/l	20.0		86	65-120	7	20	
Batch: 5C03074 Extracted: 03/03/05											
Blank Analyzed: 03/03/2005 (5C03074-BLK1)											
Total Suspended Solids	ND	10	10	mg/l							
LCS Analyzed: 03/03/2005 (5C03074-BS1)											
Total Suspended Solids	983	10	10	mg/l	1000		98	85-115			

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METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5C03074 Extracted: 03/03/05											
Duplicate Analyzed: 03/03/2005 (5C03074-DUP1)											
Total Suspended Solids	21.0	10	10	mg/l		Source: IOB2138-01 ND				10	
Batch: 5C07070 Extracted: 03/07/05											
Blank Analyzed: 03/07/2005 (5C07070-BLK1)											
Ammonia-N (Distilled)	ND	0.50	0.30	mg/l							
LCS Analyzed: 03/07/2005 (5C07070-BS1)											
Ammonia-N (Distilled)	9.52	0.50	0.30	mg/l	10.0		95	80-115			
Matrix Spike Analyzed: 03/07/2005 (5C07070-MS1)											
Ammonia-N (Distilled)	9.80	0.50	0.30	mg/l	10.0	Source: IOB2063-01 ND	98	70-120			
Matrix Spike Dup Analyzed: 03/07/2005 (5C07070-MSD1)											
Ammonia-N (Distilled)	9.52	0.50	0.30	mg/l	10.0	Source: IOB2063-01 ND	95	70-120	3	15	

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METHOD BLANK/QC DATA

1,4-DIOXANE BY GC/MS (EPA 5030B/8260B)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD RPD	RPD Limit	Data Qualifiers
Batch: P5C0309 Extracted: 03/03/05											
Blank Analyzed: 03/03/2005 (P5C0309-BLK1)											
1,4-Dioxane	ND	1.0	0.49	ug/l							
Surrogate: Dibromofluoromethane	1.05			ug/l	1.00		105	80-125			
LCS Analyzed: 03/03/2005 (P5C0309-BS1)											
1,4-Dioxane	11.3	1.0	0.49	ug/l	10.0		113	70-130			
Surrogate: Dibromofluoromethane	1.06			ug/l	1.00		106	80-125			
LCS Dup Analyzed: 03/03/2005 (P5C0309-BSD1)											
1,4-Dioxane	10.2	1.0	0.49	ug/l	10.0		102	70-130	10	20	
Surrogate: Dibromofluoromethane	1.05			ug/l	1.00		105	80-125			
Matrix Spike Analyzed: 03/03/2005 (P5C0309-MS1)											
1,4-Dioxane	11.7	1.0	0.49	ug/l	10.0	0.59	111	70-150			
Surrogate: Dibromofluoromethane	1.05			ug/l	1.00		105	80-125			
Matrix Spike Dup Analyzed: 03/03/2005 (P5C0309-MSD1)											
1,4-Dioxane	13.4	1.0	0.49	ug/l	10.0	0.59	128	70-150	14	25	
Surrogate: Dibromofluoromethane	1.04			ug/l	1.00		104	80-125			

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DATA QUALIFIERS AND DEFINITIONS

- B** Analyte was detected in the associated Method Blank.
- J** Estimated value. Analyte detected at a level less than the Reporting Limit (RL) and greater than or equal to the Method Detection Limit (MDL). The user of this data should be aware that this data is of unknown quality.
- L2** Laboratory Control Sample recovery was below method control limits.
- 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.
- 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

ADDITIONAL COMMENTS

For TICs:

All identifications are tentative and concentrations are estimates based upon spectral comparison to the EPA/NIH library.

For 1,2-Diphenylhydrazine:

The result for 1,2-Diphenylhydrazine is based upon the reading of its breakdown product, Azobenzene.

For GRO (C4-C12):

GRO (C4-C12) is quantitated against a gasoline standard. Quantitation begins immediately following the methanol peak.

For Extractable Fuel Hydrocarbons (EFH, DRO, ORO) :

Unless otherwise noted, Extractable Fuel Hydrocarbons (EFH, DRO, ORO) are quantitated against a Diesel Fuel Standard.

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Certification Summary

Del Mar Analytical, Irvine

Method	Matrix	Nelac	California
EPA 120.1	Water	X	X
EPA 160.2	Water	X	X
EPA 160.5	Water	X	X
EPA 180.1	Water	X	X
EPA 200.7	Water	X	X
EPA 200.8	Water	X	X
EPA 218.6	Water	X	X
EPA 245.1	Water	X	X
EPA 300.0	Water	X	X
EPA 314.0	Water	X	X
EPA 330.5	Water	X	X
EPA 335.2	Water	X	X
EPA 350.2	Water	X	X
EPA 405.1	Water	X	X
EPA 413.1	Water	X	X
EPA 415.1	Water	X	X
EPA 418.1	Water	X	X
EPA 608	Water	X	X
EPA 624 (MOD.)	Water	X	X
EPA 624	Water	X	X
EPA 625	Water	X	X
EPA 8015 Mod.	Water	X	X
EPA 8015B	Water	X	X
EPA 8260B	Water	X	X
SM2540C	Water	X	X
SM5540-C	Water	X	X

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

Subcontracted Laboratories

Alta Analytical California Cert #1640

1104 Windfield Way - El Dorado Hills, CA 95762

Analysis Performed: 1613-Dioxin-HR

Samples: IOB2064-01

Analysis Performed: EDD + Level 4

Samples: IOB2064-01

Aquatic Testing Laboratories-SUB California Cert #1775

4350 Transport Street, Unit 107 - Ventura, CA 93003

Analysis Performed: Bioassay-7 dy Chnric

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 Outfall 011
 Report Number: IOB2064

Sampled: 02/25/05
 Received: 02/25/05

Aquatic Testing Laboratories-SUB California Cert #1775

4350 Transport Street, Unit 107 - Ventura, CA 93003

Samples: IOB2064-01

Analysis Performed: Bioassay-Acute 96hr

Samples: IOB2064-01

Del Mar Analytical - Phoenix NELAC Cert #01109CA, California Cert #2446

9830 S. 51st Street, Suite B-120 - Phoenix, AZ 85044

Method Performed: EPA 8260B

Samples: IOB2064-01

Eberline Services - SUB

2030 Wright Avenue - Richmond, CA 94804

Analysis Performed: EDD + Level 4

Samples: IOB2064-01

Analysis Performed: Gross Alpha

Samples: IOB2064-01

Analysis Performed: Gross Beta

Samples: IOB2064-01

Analysis Performed: Radium, Combined

Samples: IOB2064-01

Analysis Performed: Strontium 90

Samples: IOB2064-01

Analysis Performed: Tritium

Samples: IOB2064-01

Truesdall Laboratories-SUB California Cert #1237

14201 Franklin Avenue - Tustin, CA 92680

Analysis Performed: Hydrazine

Samples: IOB2064-01

Analysis Performed: Level 4 Data Package

Samples: IOB2064-01

Del Mar Analytical, Irvine
 Michele Harper
 Project Manager

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

OB2064

CHAIN OF CUSTODY FORM

Del Mar Analytical Version 02/23/05

Client Name/Address: MW-H Pasadena 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101		Project: Boeing-SSFL NPDES Outfall 011 - 13267 Perimeter Pond		ANALYSIS REQUIRED										Field readings: Temp = 55.4 pH = 7.0	
Project Manager: Bronwyn Kelly Phone Number: (626) 568-6691 Fax Number: (626) 568-6515		Flow Weight Composite Phone Number: (626) 568-6691 Fax Number: (626) 568-6515		Sample Description		Container Type		# of Cont.		Sampling Date/Time		Preservative		Comments "Continued Analyze required on Page 2 of 2"	
Sampler: Pollock		None		None		None		None		None		None		None	
Outfall 011		1G Poly		2		2/25/05 11:00		None		X		X		Total Flow (gals) = 3952500 Flow (gpm) = 338	
Outfall 011		1G Poly		2		11:20		None		X		X		Total Flow (gals) = 3950850 Flow (gpm) = 331	
Outfall 011		1G Poly		2		11:40		None		X		X		Total Flow (gals) = 3951500 Flow (gpm) = 281	
Outfall 011		1G Poly		2		12:00		None		X		X		Total Flow (gals) = 3951900 Flow (gpm) = 281	
Outfall 011		1G Poly		2		12:20		None		X		X		Total Flow (gals) = 3952500 Flow (gpm) = 316	
Outfall 011		1G Poly		2		12:40		None		X		X		Total Flow (gals) = 39531800 Flow (gpm) = 296	
Outfall 011		1G Poly		2		13:00		None		X		X		Total Flow (gals) = 39537500 Flow (gpm) = 286	
Outfall 011		1G Poly		2		13:20		None		X		X		Total Flow (gals) = 39543200 Flow (gpm) = 222	
Outfall 011		1G Poly		2		13:40		None		X		X		Total Flow (gals) = 39548900 Flow (gpm) = 276	
Outfall 011		1G Poly		2		2/25/05		None		X		X		Total Flow (gals) = Flow (gpm) =	
Trip Blank		VOAs		7		HCL		HCL		X		X		Total Flow (gals) = Flow (gpm) =	
Relinquished By: [Signature]		Date/Time: 2/25/05 15:30		Received By: [Signature]		Date/Time: 2/25/05 15:30		Turn around Time (check): 24 Hours _____ 5 Days _____ 48 Hours _____ 10 Days _____ 72 Hours _____ Normal _____ Perchlorate Only 72 Hours _____ Metals Only 72 Hours _____		Sample Integrity (Check): Intact <input checked="" type="checkbox"/> On Ice <input type="checkbox"/>		69			
Relinquished By: [Signature]		Date/Time: 2/25/05 19:15		Received By: [Signature]		Date/Time: 2/25/05 19:15		X		X		X		X	
Relinquished By: [Signature]		Date/Time: 2/25/05 19:15		Received By: [Signature]		Date/Time: 2/25/05 19:15		X		X		X		X	

Note: Composite by flow weighted averages and analyze according to 13267 Sampling protocol.

MH

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

Project: **Boeing-SSFL NPDES Outfall 011 - 13267**
 Perimeter Pond

Project Manager: **Bronwyn Kelly**

Flow-weight Composite
 Phone Number: (626) 568-6691
 Fax Number: (626) 568-6515

Sample Description	Sample Matrix	Container Type	# of Cont.	Preservative	ANALYSIS REQUIRED										Comments **Required analysis continued from Page 1 of 2		
					Residual Chlorine	TOC	Chromium VI (218.6)	Total Rec. Petroleum Hydrocarbons (EPA 418.1)	Diesel	8015 (GRO)	Momomethylhydrazine	624 Mod A+A+ZCVE	Acute and Chronic Toxicity-bioassays	Gross Alpha, Gross Beta, Tritium (906.0), Sr-90 (905.0), Total Combined Radium 226 g Radium 228, Tritium			
Outfall 011	W	1G Poly	-	None	X	X	X	X	X	X	X	X	X	X	X	X	Total Flow (gals)= Flow (gpm)=
Outfall 011	W	1G Poly	-	None	X	X	X	X	X	X	X	X	X	X	X	X	Total Flow (gals)= Flow (gpm)=
Outfall 011	W	1G Poly	-	None	X	X	X	X	X	X	X	X	X	X	X	X	Total Flow (gals)= Flow (gpm)=
Outfall 011	W	1G Poly	-	None	X	X	X	X	X	X	X	X	X	X	X	X	Total Flow (gals)= Flow (gpm)=
Outfall 011	W	1G Poly	-	None	X	X	X	X	X	X	X	X	X	X	X	X	Total Flow (gals)= Flow (gpm)=
Outfall 011	W	1G Poly	-	None	X	X	X	X	X	X	X	X	X	X	X	X	Total Flow (gals)= Flow (gpm)=
Outfall 011	W	1G Poly	-	None	X	X	X	X	X	X	X	X	X	X	X	X	Total Flow (gals)= Flow (gpm)=
Outfall 011	W	1G Poly	-	None	X	X	X	X	X	X	X	X	X	X	X	X	Total Flow (gals)= Flow (gpm)=
Outfall 011	W	1G Poly	-	None	X	X	X	X	X	X	X	X	X	X	X	X	Total Flow (gals)= Flow (gpm)=
Outfall 011	W	1G Poly	-	None	X	X	X	X	X	X	X	X	X	X	X	X	Total Flow (gals)= Flow (gpm)=
Outfall 011	W	1G Poly	-	None	X	X	X	X	X	X	X	X	X	X	X	X	Total Flow (gals)= Flow (gpm)=

Relinquished By: *[Signature]* Date/Time: 2/25/05 1530
 Received By: *[Signature]* Date/Time: 2/25/05 1530

Relinquished By: *[Signature]* Date/Time: 2/25/05 1915
 Received By: *[Signature]* Date/Time: 2/25/05 1915

Relinquished By: *[Signature]* Date/Time: 2/25/05 1915
 Received By: *[Signature]* Date/Time: 2/25/05 1915

Turn around Time: (check)
 24 Hours _____ 5 Days _____
 48 Hours _____ 10 Days _____
 72 Hours _____ Normal _____
 Perchlorate Only 72 Hours _____
 Metals Only 72 Hours _____
 Sample Integrity: (Check)
 Intact _____ On Ice: _____

(MTH)



2852 Alton Ave., Irvine CA 92606 (949) 261-1022 FAX (949) 261-1228
1014 E. Cooley Dr., Suite A, Colton, CA 92324 (909) 370-4667 FAX (949) 370-1046
9484 Chesapeake Dr., Suite 805, San Diego, CA 92123 (858) 505-8596 FAX (858) 505-9689
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

March 31, 2005

MWH-Pasadena/ Boeing
300 North Lake Avenue, Suite 1200
Pasadena, CA 91101

Attention: Bronwyn Kelly
Project: 13267 (Study 1)
Sampled: 02/25/05
Del Mar Analytical Number: IOB2064

Dear Ms. Kelly:

Alta Analytical Laboratory performed the EPA Method 1613 for Dioxin, Aquatic Testing Laboratories tested Fathead Minnow 96 hr Percent Survival Bioassay (EPA Method 2000.0) & *Ceriodaphnia dubia* Survival and Reproduction Test (EPA Method 1002), Eberline Services performed gross alpha/ gross beta (EPA 900.0), tritium (H-3, EPA 906.0), and strontium-90 (Sr-90, EPA 905.0) and Truesdail Laboratories tested Hydrazines by EPA 8315 M for the project referenced above. Please use the following cross-reference table when reviewing your results.

MWH ID	DEL MAR ID	ALTA ID	ATL ID	EBERLINE ID	TRUESDAIL ID
Outfall 011 Composite	IOB2064-01	25816-001	A-05022602-001/002	R-503011-8306	940177-1

Attached are the original reports from the subcontract laboratories. If you have any questions or require further assistance, please do not hesitate to contact me at (949) 261-1022 at extension 215.

Sincerely yours,
DEL MAR ANALYTICAL


Michele Harper
Project Manager



March 10, 2005

Alta Project I.D.: 25816

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

Dear Ms. Harper,

Enclosed are the results for the one aqueous sample received at Alta Analytical Laboratory on March 01, 2005 under your Project Name "IOB2064". 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,

A handwritten signature in cursive script that reads "Martha M. Maier".

Martha M. Maier
Director of HRMS Services



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: 3/1/2005

Alta Lab. ID

Client Sample ID

25816-001

IOB2064-01

SECTION II



Method Blank		EPA Method 1613				
Matrix:	Aqueous	QC Batch No.:	6571	Lab Sample:	0-MB001	
Sample Size:	1.000 L	Date Extracted:	4-Mar-05	Date Analyzed DB-5:	9-Mar-05	
				Date Analyzed DB-225:	NA	
Analyte	Conc. (pg/L)	DL ^a	EMPC ^b	Labeled Standard	%R	LCL-UCL ^d Qualifiers
2,3,7,8-TCDD	ND	3.17		13C-2,3,7,8-TCDD	79.8	25 - 164
1,2,3,7,8-PeCDD	ND	2.85		13C-1,2,3,7,8-PeCDD	67.3	25 - 181
1,2,3,4,7,8-HxCDD	ND	7.88		13C-1,2,3,4,7,8-HxCDD	77.9	32 - 141
1,2,3,6,7,8-HxCDD	ND	7.76		13C-1,2,3,6,7,8-HxCDD	88.2	28 - 130
1,2,3,7,8,9-HxCDD	ND	7.78		13C-1,2,3,4,6,7,8-HpCDD	63.7	23 - 140
1,2,3,4,6,7,8-HpCDD	ND	6.25		13C-OCDD	44.4	17 - 157
OCDD	ND	15.4		13C-2,3,7,8-TCDF	79.2	24 - 169
2,3,7,8-TCDF	ND	4.50		13C-1,2,3,7,8-PeCDF	66.2	24 - 185
1,2,3,7,8-PeCDF	ND	5.76		13C-2,3,4,7,8-PeCDF	67.5	21 - 178
2,3,4,7,8-PeCDF	ND	4.98		13C-1,2,3,4,7,8-HxCDF	72.8	26 - 152
1,2,3,4,7,8-HxCDF	ND	3.01		13C-1,2,3,6,7,8-HxCDF	81.0	26 - 123
1,2,3,6,7,8-HxCDF	ND	2.73		13C-2,3,4,6,7,8-HxCDF	80.3	28 - 136
2,3,4,6,7,8-HxCDF	ND	3.11		13C-1,2,3,7,8,9-HxCDF	74.3	29 - 147
1,2,3,7,8,9-HxCDF	ND	5.02		13C-1,2,3,4,6,7,8-HpCDF	65.7	28 - 143
1,2,3,4,6,7,8-HpCDF	ND	4.70		13C-1,2,3,4,7,8,9-HpCDF	64.1	26 - 138
1,2,3,4,7,8,9-HpCDF	ND	5.90		13C-OCDF	51.8	17 - 157
OCDF	ND	15.0		CRS 37Cl-2,3,7,8-TCDD	84.6	35 - 197
Totals						
Total TCDD	ND	3.17				
Total PeCDD	ND	2.85				
Total HxCDD	ND	7.80				
Total HpCDD	ND	6.25				
Total TCDF	ND	4.50				
Total PeCDF	ND	5.36				
Total HxCDF	ND	3.36				
Total HpCDF	ND	5.21				
Footnotes						
a. Sample specific estimated detection limit.						
b. Estimated maximum possible concentration.						
c. Method detection limit.						
d. Lower control limit - upper control limit.						

Analyst: JMH

Approved By: Martha M. Maier 10-Mar-2005 10:37



OPR Results

EPA Method 1613

Matrix:	Aqueous	QC Batch No.:	6571	Lab Sample:	0-OPR001	
Sample Size:	1.000 L	Date Extracted:	4-Mar-05	Date Analyzed DB-5:	8-Mar-05	
Analyte	Spike Conc.	Conc. (ng/mL)	OPR Limits	Labeled Standard	%R	LCL-UCL
2,3,7,8-TCDD	10.0	9.19	6.7 - 15.8	13C-2,3,7,8-TCDD	67.1	25 - 164
1,2,3,7,8-PeCDD	50.0	45.5	35 - 71	13C-1,2,3,7,8-PeCDD	61.4	25 - 181
1,2,3,4,7,8-HxCDD	50.0	47.0	35 - 82	13C-1,2,3,4,7,8-HxCDD	60.9	32 - 141
1,2,3,6,7,8-HxCDD	50.0	45.2	38 - 67	13C-1,2,3,6,7,8-HxCDD	67.6	28 - 130
1,2,3,7,8,9-HxCDD	50.0	47.0	32 - 81	13C-1,2,3,4,6,7,8-HpCDD	66.0	23 - 140
1,2,3,4,6,7,8-HpCDD	50.0	49.1	35 - 70	13C-OCDD	64.3	17 - 157
OCDD	100	98.3	78 - 144	13C-2,3,7,8-TCDF	72.7	24 - 169
2,3,7,8-TCDF	10.0	9.57	7.5 - 15.8	13C-1,2,3,7,8-PeCDF	58.0	24 - 185
1,2,3,7,8-PeCDF	50.0	49.9	40 - 67	13C-2,3,4,7,8-PeCDF	60.4	21 - 178
2,3,4,7,8-PeCDF	50.0	50.3	34 - 80	13C-1,2,3,4,7,8-HxCDF	46.8	26 - 152
1,2,3,4,7,8-HxCDF	50.0	51.5	36 - 67	13C-1,2,3,6,7,8-HxCDF	52.4	26 - 123
1,2,3,6,7,8-HxCDF	50.0	51.4	42 - 65	13C-2,3,4,6,7,8-HxCDF	53.1	28 - 136
2,3,4,6,7,8-HxCDF	50.0	50.4	35 - 78	13C-1,2,3,7,8,9-HxCDF	55.3	29 - 147
1,2,3,7,8,9-HxCDF	50.0	49.8	39 - 65	13C-1,2,3,4,6,7,8-HpCDF	57.2	28 - 143
1,2,3,4,6,7,8-HpCDF	50.0	51.7	41 - 61	13C-1,2,3,4,7,8,9-HpCDF	60.2	26 - 138
1,2,3,4,7,8,9-HpCDF	50.0	52.5	39 - 69	13C-OCDF	66.3	17 - 157
OCDF	100	103	63 - 170	CRS 37Cl-2,3,7,8-TCDD	80.8	35 - 197

Analyst: JMH

Approved By: Martha M. Maier 10-Mar-2005 10:37



Sample ID: IOB2064-01

EPA Method 1613

Client Data		Sample Data		Laboratory Data	
Name: Del Mar Analytical, Irvine	Matrix: Aqueous	Lab Sample: 25816-001	Date Received: 1-Mar-05	QC Batch No.: 6571	Date Extracted: 4-Mar-05
Project: IOB2064	Sample Size: 1.028 L	Date Analyzed DB-5: 8-Mar-05	Date Analyzed DB-225: NA		
Date Collected: 25-Feb-05					
Time Collected: 1340					
Analyte	Conc. (pg/L)	DL ^a	EMPC ^b	Qualifiers	%R LCL-UCL ^d Qualifiers
2,3,7,8-TCDD	ND	0.958			68.7 25 - 164
1,2,3,7,8-PeCDD	ND	1.11			57.9 25 - 181
1,2,3,4,7,8-HxCDD	ND	3.06			55.7 32 - 141
1,2,3,6,7,8-HxCDD	ND	3.12			57.2 28 - 130
1,2,3,7,8,9-HxCDD	ND	3.08			57.4 23 - 140
1,2,3,4,6,7,8-HpCDD	6.35				52.0 17 - 157
OCDD	62.1				68.1 24 - 169
2,3,7,8-TCDF	ND	1.25			55.9 24 - 185
1,2,3,7,8-PeCDF	ND	1.88			55.6 21 - 178
2,3,4,7,8-PeCDF	ND	1.79			44.0 26 - 152
1,2,3,4,7,8-HxCDF	ND	0.822			48.8 26 - 123
1,2,3,6,7,8-HxCDF	ND	0.751			47.1 28 - 136
2,3,4,6,7,8-HxCDF	ND	0.905			49.5 29 - 147
1,2,3,7,8,9-HxCDF	ND	1.25			47.5 28 - 143
1,2,3,4,6,7,8-HpCDF	ND	2.11			52.2 26 - 138
1,2,3,4,7,8,9-HpCDF	ND	2.23			56.4 17 - 157
OCDF	ND	4.47			78.8 35 - 197
Totals					
Total TCDD	ND	0.958			
Total PeCDD	ND	1.11			
Total HxCDD	ND	3.09			
Total HpCDD	15.0				
Total TCDF	ND	1.25			
Total PeCDF	ND	1.83			
Total HxCDF	ND	0.914			
Total HpCDF	ND	2.16			
Footnotes					
a. Sample specific estimated detection limit.					
b. Estimated maximum possible concentration.					
c. Method detection limit.					
d. Lower control limit - upper control limit.					

Analyst: JMH

Approved By: Martha M. Maier 10-Mar-2005 10:37

APPENDIX

DATA QUALIFIERS & ABBREVIATIONS

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

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

The control limits are “interim limits only” until in-house limits are utilized.



CURRENT CERTIFICATIONS

NELAP — (Primary AA: California, Certificate No. 02102CA)
Department of the Navy
U.S. Army Corps of Engineers
U.S. EPA Region 5
Bureau of Reclamation — Mid-Pacific Region — (MP-470, Res-1.10)
Commonwealth of Kentucky — (Certificate No. 90063)
Commonwealth of Virginia — (Certificate No. 00013)
State of Alaska, Department of Environmental Conservation — (Certificate No. OS-00197)
State of Arizona — (Certificate No. AZ0639)
State of Arkansas, Department of Health — (Approval granted through CA certification)
State of Arkansas, Department of Environmental Quality
State of California — (Certificate No. 1640)
State of Colorado
State of Connecticut — (Certificate No. PH-0182)
State of Florida — (Certificate No. 87456)
State of Louisiana, Department of Health and Hospitals — (Certificate No. LA000014)
State of Louisiana, Department of Environmental Quality
State of Maine
State of Michigan (Certificate No. 81178087)
State of Mississippi — (Approval granted through CA certification)
State of Nevada — (Certificate No. CA413)
State of New Jersey — (Certificate No. CA003)
State of New York, Department of Health — (Certificate No. 11411)
State of North Carolina — (Certification No. 06700)
State of North Dakota, Department of Health — (Certificate No. R-078)
State of New Mexico
State of Oklahoma — (D9919)
State of Oregon — (Certificate No. CA413)
State of Pennsylvania — (Certificate No. 68-490)
State of South Carolina — (Certificate No. 87002001)
State of Tennessee — (Certificate No. 02996)
State of Texas — (Certificate No. TX247-1000A)
State of Utah — (Certificate No. E-201)
State of Washington — (Certification No. C091)
State of Wisconsin — (Certificate No. 998036160)
State of Wyoming — (USEPA Region 8 Ref: 8TMS-Q)



17461 Derian Ave., Suite 100, Irvine, CA 92614 Ph (949) 261-1022 Fax (949) 261-1228
 1014 E. Cooley Dr., Suite A, Colton, CA 92304 Ph (909) 370-4867 Fax (909) 370-1048
 9484 Chesapeake Drive, Suite 805, San Diego, CA 92123 Ph (619) 505-8886 Fax (619) 505-8899
 9530 South 51st Street, Suite 8-120, Phoenix, AZ 85044 Ph (480) 795-8043 Fax (480) 795-0851
 2520 E. Sunset Rd., Suite 88, Las Vegas, NV 89120 Ph (702) 798-3820 Fax (702) 798-3821

SUBCONTRACT ORDER - PROJECT # IOB2064

<p>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 Harper</p>	<p>RECEIVING LABORATORY: Alta Analytical 1104 Windfield Way El Dorado Hills, CA 95762 Phone: (916) 933-1640 Fax: (916) 933-0940</p> <p style="font-size: 2em; margin-left: 200px;">25816 0.1°C</p>
--	--

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

Analysis	Expiration	Comments
Sample ID: IOB2064-01 Water	Sampled: 02/25/05 13:40	Instant Notification
1613-Dioxin-HR	03/04/05 13:40	J flags, 17 congeners, no TEQ, sub to Pace-MN
EDD + Level 4	03/25/05 13:40	Excel EDD email to pm, Include Std logs for Lvl IV
Containers Supplied:		
1 L Amber (IOB2064-01G)		
1 L Amber (IOB2064-01H)		

SAMPLE INTEGRITY:

All containers intact: <input type="checkbox"/> Yes <input type="checkbox"/> No	Sample labels/COC agree: <input type="checkbox"/> Yes <input type="checkbox"/> No	Samples Received On Ice: <input type="checkbox"/> Yes <input type="checkbox"/> No
Custody Seals Present: <input type="checkbox"/> Yes <input type="checkbox"/> No	Samples Preserved Properly: <input type="checkbox"/> Yes <input type="checkbox"/> No	Samples Received at (temp): _____

Released By: Michele Harper Date: _____ Time: _____ Received By: Bethina J. Benedict Date: 3/1/05 Time: 0853

Released By: _____ Date: _____ Time: _____ Received By: _____ Date: _____ Time: _____

STANDARD OPERATING PROCEDURE

Attachment 10.B.1

SAMPLE LOG-IN CHECKLIST

ALTA Project No.: 25816

1. Date Samples Arrived: <u>3/1/05 0853</u> Initials: <u>BSB</u> Location: <u>WR-2</u>			
2. Time / Date logged in: <u>1425 3/1/05</u> Initials: <u>BSB</u> Location: <u>WR-2</u>			
3. Samples Arrived By: (circle) <u>FedEx</u> UPS World Courier Other:			
4. Shipping Preservation: (circle) <u>Ice</u> <u>Blue Ice</u> Dry Ice / None Temp °C <u>0.1</u>			
	YES	NO	NA
5. Shipping Container(s) Intact? If not, describe condition in comment section.	✓		
6. Shipping Container(s) Custody Seals Present?	✓		
Intact? If not intact, describe condition in comment section.	✓		
7. Shipping Documentation Present? (circle) Shipping Label <u>Airbill</u> Tracking Number <u>7909 3312 2387</u>	✓		
8. Sample Custody Seal(s) Present? No. of Seals _____ or Seal No. _____ Intact? If not intact, describe condition in comment section.		✓	✓
9. Sample Container Intact? If no, indicate sample condition in comment section.	✓		
10. Chain of Custody (COC) or other Sample Documentation Present?	✓		
11. COC/Documentation Acceptable? If no, complete COC Anomaly Form.		✓	
12. Shipping Container (circle): ALTA <u>Client</u> Retain or <u>Return</u> or Dispose			
13. Container(s) and/or Bottle(s) Requested?		✓	
14. Drinking Water Sample? (HRMS Only) If yes, Acceptable Preservation? Y or N Preservation Info From? (circle) COC or Sample Container or None Noted			✓

Comments:

ALTA Analytical Laboratory
El Dorado Hills, CA 95762



17461 Decian Ave. Suite 100, Irvine, CA 92614 Ph (949) 261-1022 Fax (949) 261-1228
 2034 E. Colby Dr., Suite A, Colton, CA 92324 Ph (909) 379-4887 Fax (909) 379-7000
 6047 Chesapeake Drive, Suite 205, San Diego, CA 92123 Ph (619) 655-0005 Fax (619) 655-0000
 1020 Greenfield Blvd., Suite B-120, Phoenix, AZ 85004 Ph (480) 785-0000 Fax (480) 785-0000
 2000 E. Street, #2, Las Vegas, NV 89102 Ph (702) 790-8800 Fax (702) 790-3001

SUBCONTRACT ORDER - PROJECT # IOB2064

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

RECEIVING LABORATORY:
 Alta Analytical
 1104 Windfield Way
 El Dorado Hills, CA 95762
 Phone: (916) 933-1640
 Fax: (916) 933-0940

25816 0.1°C

Standard TAT is requested unless specific due date is requested => Due Date: 2 weeks Initials: MH

Analysis	Expiration	Comments
Sample ID: IOB2064-01 Water	Sampled: 02/25/05 13:40	Instant Notification
1613-Dioxin-HR	03/04/05 13:40	J flags, 17 congeners, no TEQ, sub to Pace-MN
EDD + Level 4	03/25/05 13:40	Excel EDD email to pm, include Std logs for Lvl IV
Containers Supplied:		
1 L Amber (IOB2064-01G)		
1 L Amber (IOB2064-01H)		

Sampler = P.P.
 MH 3/2/05

SAMPLE INTEGRITY:

All containers intact: <input type="checkbox"/> Yes <input type="checkbox"/> No	Sample labels/COC agree: <input type="checkbox"/> Yes <input type="checkbox"/> No	Sample Received On time: <input type="checkbox"/> Yes <input type="checkbox"/> No
Contody Seals Present: <input type="checkbox"/> Yes <input type="checkbox"/> No	Samples Preserved Properly: <input type="checkbox"/> Yes <input type="checkbox"/> No	Sample Returned at (arr): _____

Released By: Michele Harper Date: _____ Time: _____ Received By: William J. Benedict Date: 3/1/05 Time: 0853

Released By: _____ Date: _____ Time: _____ Received By: _____ Date: _____ Time: _____

STANDARD OPERATING PROCEDURE

Attachment 10.B.4

Client: Del Mar Analytical Chain of Custody Anomaly / Sample Acceptance Form
 Project Number: 25816
 Contact: Michele Harper Date Received: 3/01/05
 Fax Number: 949/261-1228 Documented by/date: CSB 3/01/05

Please review the following information and complete the Client Authorization section. To comply with NELAC regulations, we must receive authorization before proceeding with sample analysis. Thank You. (Fax #916-673-0108)

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

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

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

Temperature outside $\pm 2^{\circ}\text{C}$ range Samples Affected: _____
 Temp _____ $^{\circ}\text{C}$ 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: _____

Incorrect Container Type Samples Affected: _____

Other _____

Client Authorization:
 Proceed With Analysis: YES NO Signature and Date: Michele Harper 3/2/05
 Client Comments/Instructions: sample = 30 P.P.

LABORATORY REPORT

**Aquatic
Testing
Laboratories**



"dedicated to providing quality aquatic toxicity testing"

Date: March 5, 2005
Client: Del Mar Analytical, Irvine
17461 Derian Avenue, Suite 100
Irvine, CA 92614
Attn: Michele Harper

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

Laboratory No.: A-05022602-001/002
Sample I.D.: IOB2064-01

Sample Control: The sample was received by ATL chilled, with the chain of custody record attached.

Date Sampled: 02/25/05
Date Received: 02/26/05
Date Tested: 02/26/05 to 03/04/05

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

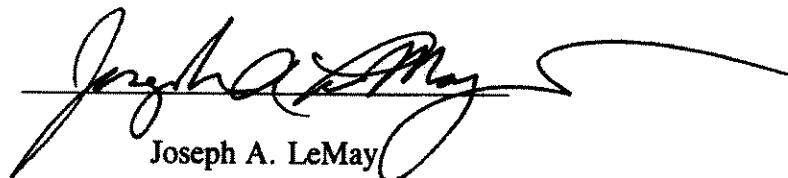
Fathead Minnow 96hr Percent Survival Bioassay (EPA Method 2000.0),
Ceriodaphnia dubia Survival and Reproduction Test (EPA Method 1002).

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

Result Summary:

Acute:	<u>Survival</u>	<u>TU_a</u>
Fathead Minnow:	100%	0.0
Chronic:	<u>NOEC</u>	<u>TU_c</u>
<i>Ceriodaphnia</i> Survival:	100%	1.0
<i>Ceriodaphnia</i> Reproduction:	100%	1.0

Quality Control: Reviewed and approved by:


Joseph A. LeMay
Laboratory Director

FATHEAD MINNOW PERCENT SURVIVAL TEST



Lab No.: A-05022602-001
 Client/ID: Del Mar IOB2064-01

Start Date: 02/26/2005

TEST SUMMARY

Species: *Pimephales promelas*.

Age: 9 (1-14) days.

Regulations: NPDES.

Test solution volume: 250 ml.

Feeding: prior to renewal at 48 hrs.

Number of replicates: 2.

Dilution water: Moderately hard reconstituted water.

Photoperiod: 16/8 hrs light/dark.

Source: In-laboratory Culture.

Test type: Static-Renewal.

Test Protocol: EPA-821-R-02-012.

Endpoints: Percent Survival at 96 hrs.

Test chamber: 600 ml beakers.

Temperature: 20 +/- 1°C.

Number of fish per chamber: 10.

QA/QC Batch No.: RT-050208.

TEST DATA

		°C	DO	pH	# Dead		Analyst & Time of Readings
					A	B	
INITIAL	Control	19.2	9.1	7.8	0	0	RM 1030
	100%	20.1	10.2	7.2	0	0	
24 Hr	Control	19.5	7.8	7.6	0	0	RM 1000
	100%	19.4	7.5	7.3	0	0	
48 Hr	Control	19.6	6.9	7.6	0	0	RM 1100
	100%	19.5	6.1	7.1	0	0	
Renewal	Control	19.4	8.2	7.7	0	0	RM 1100
	100%	19.6	9.1	7.4	0	0	
72 Hr	Control	19.1	7.8	7.5	0	0	RM 1030
	100%	19.1	7.8	7.2	0	0	
96 Hr	Control	19.3	8.2	7.5	0	0	RM 1030
	100%	19.1	8.1	7.2	0	0	

Comments:

Sample as received: Chlorine: 0 mg/l; pH: 7.2; Conductivity: 130 umho; Temp: 4°C;

DO: 10.2 mg/l; Alkalinity: 41 mg/l; Hardness: 55 mg/l; NH₃-N: 0.4 mg/l.

Sample aerated moderately (approx. 500 ml/min) to raise or lower DO? Yes / No

Control: Alkalinity: 55 mg/l; Hardness: 93 mg/l; Conductivity: 295 umho.

Test solution aerated (not to exceed 100 bubbles/min) to maintain DO > 4.0 mg/l? Yes / No.

Sample used for renewal is the original sample kept at 0-6°C with minimal headspace.

RESULTS

Percent Survival In: Control: 100 % 100% Sample: 100 %

**CERIODAPHNIA CHRONIC BIOASSAY
EPA METHOD 1002.0**



Lab No.: A-05022602
Client/ID: Del Mar IOB2064-01

Date Tested: 02/26/05 to 03/04/05

TEST SUMMARY

Test type: Daily static-renewal.
Species: *Ceriodaphnia dubia*.
Age: < 24 hrs; all released within 8 hrs.
Test vessel size: 30 ml.
Number of test organisms per vessel: 1.
Temperature: 25 +/- 1°C.
Dilution water: Mod. hard reconstituted (MHRW).
QA/QC Batch No.: RT-050225.

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

RESULTS SUMMARY

Sample Concentration	Percent Survival	Mean Number of Young Per Female
Control	100%	28.2
6.25 %	100%	28.4
12.5 %	100%	27.5
25 %	100%	28.5
50 %	100%	27.2
100 %	100%	25.0

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

CHRONIC TOXICITY

Parameter	Survival	Growth
NOEC	100%	100%
TUc	1.0	1.0

QA/QC TEST ACCEPTABILITY

Parameter	Result
Control survival ≥80%	Pass (100% survival)
>15 young per surviving control female	Pass (28.2 young)
≥60% surviving controls had 3 broods	Pass (100% with 3 broods)
PMSD <47% for reproduction; if >47% and no toxicity at IWC, the test must be repeated	Pass (PMSD = 15.3%)
Statistically significantly different concentrations relative difference >13%	NA - No stat. sig. diff. concentrations
Concentration response relationship acceptable	Pass (slight response at conc. tested)



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 9484 Chesapeake Drive, Suite 805, San Diego, CA 92123 Ph (619) 505-9596 Fax (619) 505-9689
 9830 South 51st Street, Suite B-120, Phoenix, AZ 85044 Ph (480) 785-0043 Fax (480) 785-0851
 2520 E. Sunset Rd., Suite #3, Las Vegas, NV 89120 Ph (702) 798-3620 Fax (702) 798-3621

SUBCONTRACT ORDER - PROJECT # IOB2064

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 Harper	Aquatic Testing Laboratories-SUB 4350 Transport Street, Unit 107 Ventura, CA 93003 Phone: (805) 650-0546 Fax: (805) 650-0756

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

Analysis	Expiration	Sampled:	Comments
Sample ID: IOB2064-01	Water	02/25/05 13:40	Instant Notification
Bioassay-7 dy Chrnic	02/27/05 01:40		ceriodaphnia, 13267
Bioassay-Acute 96hr	02/27/05 01:40		fathead minnow, 13267
Containers Supplied:			
1 gal Poly (IOB2064-01AZ)			
1 gal Poly (IOB2064-01BA)			

SAMPLE INTEGRITY:			
All containers intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Sample labels/COC agree: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Samples Received On Ice: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Custody Seals Present: <input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Samples Preserved Properly: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Samples Received at (temp):	4 °C

<i>Michael Harper</i>	2/26	0530	<i>John Long</i>	2/26/05	0530
Released By	Date	Time	Received By	Date	Time
<i>John Long</i>	2/26/05	0745	<i>Michael Harper</i>	2-26-05	0745
Released By	Date	Time	Received By	Date	Time



EBERLINE SERVICES

March 24, 2005

Ms. Michele Harper
Project Manager
Del Mar Analytical
17461 Derian Avenue, Suite 100
Irvine, CA 92614

Reference: Del Mar Analytical Project No. IOB2064
Eberline Services NELAP Cert #01120CA (exp. 01/31/06)
Eberline Services Report R503011-8306

Dear Ms. Harper:

Enclosed are results from the analyses of one water sample received at Eberline Services on March 1, 2005. The sample was analyzed according to the accompanying Del Mar Analytical Subcontract Order Form. The requested analyses were gross alpha/gross beta (EPA900.0), tritium (H-3, EPA906.0), and strontium-90 (Sr-90, EPA905.0). The QC LCS, blank analyses, sample duplicates, and matrix spike results for the analyses were within the limits defined in Eberline Services Quality Control Procedures Manual. Analyses that involve the yielding of an analytical tracer or carrier, such as Sr-90, do not require matrix spike analyses to be performed.

Please call me if you have any questions concerning this report.

Regards,

Melissa Mannion
Senior Program Manager

MC/Mnjv

Enclosure: Report
Subcontract Form
Receipt checklist
Invoice

Analytical Services
2030 Wright Avenue
P.O. Box 4040
Richmond, California 94804-0040
(510) 235-2633 Fax (510) 235-0438
Toll Free (800) 841-5487
www.eberlineservices.com

Eberline Services

ANALYSIS RESULTS

SDG <u>8306</u>	Client <u>DEL MAR ANAL</u>
Work Order <u>R503811-01</u>	Contract <u>PROJECT# IOB2064</u>
Received Date <u>03/01/05</u>	Matrix <u>WATER</u>

Client	Lab						
<u>Sample ID</u>	<u>Sample ID</u>	<u>Collected</u>	<u>Analyzed</u>	<u>Nuclide</u>	<u>Results + 2σ</u>	<u>Units</u>	<u>MDA</u>
IOB2064-01	8306-001	02/25/05	03/15/05	GrossAlpha	1.29 ± 0.80	pCi/L	0.947
			03/15/05	Gross Beta	2.12 ± 1.2	pCi/L	1.89
			03/17/05	H3	-7.08 ± 150	pCi/L	261
			03/18/05	Sr90	-0.059 ± 0.24	pCi/L	0.459

Certified by *[Signature]*
Report Date 03/24/05
Page 1

Eberline Services

QC RESULTS

SDG <u>8306</u> Work Order <u>R503011-01</u> Received Date <u>03/01/05</u>	Client <u>DEL MAR ANAL</u> Contract <u>PROJECT# IOB2064</u> Matrix <u>WATER</u>
--	---

Lab	Sample ID	Nuclide	Results	Units	Amount Added	MDA	Evaluation
<u>LCS</u>							
	8305-002	GrossAlpha	10.5 ± 1.2	pCi/Smpl	11.2	0.436	94% recovery
		Gross Beta	11.2 ± 0.81	pCi/Smpl	12.1	0.584	93% recovery
		H3	266 ± 25	pCi/Smpl	258	26.2	103% recovery
		Sr90	12.2 ± 0.57	pCi/Smpl	11.1	0.236	110% recovery
<u>BLANK</u>							
	8305-003	GrossAlpha	-0.070 ± 0.17	pCi/Smpl	NA	0.417	<MDA
		Gross Beta	-0.046 ± 0.31	pCi/Smpl	NA	0.545	<MDA
		H3	1.77 ± 15	pCi/Smpl	NA	26.0	<MDA
		Sr90	-0.098 ± 0.12	pCi/Smpl	NA	0.224	<MDA

<u>DUPLICATES</u>			
Sample ID	Nuclide	Results + 2σ	MDA
8305-004	GrossAlpha	0.325 ± 0.53	0.874
	Gross Beta	2.92 ± 1.2	1.82
	H3	-91.7 ± 150	260
	Sr90	-0.070 ± 0.21	0.441

<u>ORIGINALS</u>						
Sample ID	Results + 2σ	MDA	3σ		RPD (Tot)	Eval
8305-001	1.50 ± 0.89	1.05	129	178		satis.
	2.27 ± 1.2	1.77	25	103		satis.
	-45.7 ± 150	259	-	0		satis.
	0.206 ± 0.25	0.451	-	0		satis.

<u>SPIKED SAMPLE</u>			
Sample ID	Nuclide	Results + 2σ	MDA
8305-005	GrossAlpha	74.5 ± 5.1	0.951
	Gross Beta	82.2 ± 3.8	1.89
	H3	31400 ± 690	263

<u>ORIGINAL SAMPLE</u>						
Sample ID	Results + 2σ	MDA	Added	%Recv		
8305-001	1.50 ± 0.89	1.05	76.6	95		
	2.27 ± 1.2	1.77	73.8	108		
	-45.7 ± 150	259	31400	100		

Certified by <u><i>M. [Signature]</i></u> Report Date <u>03/24/05</u> Page 2
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 1014 E. Cooley Dr., Suite A, Colton, CA 92324 Ph (909) 370-4667 Fax (909) 370-1046
 9484 Chesapeake Drive, Suite 805, San Diego, CA 92123 Ph (619) 505-9586 Fax (619) 505-9688
 9830 South 51st Street, Suite B-120, Phoenix, AZ 85044 Ph (480) 785-0043 Fax (480) 785-0851
 2520 E. Sunset Rd., Suite #3, Las Vegas, NV 89120 Ph (702) 798-3620 Fax (702) 798-3621

SUBCONTRACT ORDER - PROJECT # IOB2064

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 Harper	Eberline Services 2030 Wright Avenue Richmond, CA 94804 Phone: (510) 235-2633 Fax: (510) 235-0438

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

Analysis	Expiration	Sampled:	Comments
Sample ID: IOB2064-01 Water		02/25/05 13:40	Instant Notification
EDD + Level 4-OUT	03/25/05 13:40		**LEVEL IV QC, ACCESS 7 EDD**
Gross Alpha-O	02/25/06 13:40		900.0, IF RESULT>15 pCi/L, run Radium 226 & 228
Gross Beta-O	02/25/06 13:40		900.0, IF RESULT>15 pCi/L, run Radium 226 & 228
Radium, Combined-O	02/25/06 13:40		HOLD for Gross Alpha/Beta result; EPA 903.1 & 904.0
Strontium 90-O	02/25/06 13:40		905.0
Tritium-O	02/25/06 13:40		906

Containers Supplied:

- 40 ml Voa Vial (IOB2064-01AD) B
- 40 ml Voa Vial (IOB2064-01AE)
- 40 ml Voa Vial (IOB2064-01AF)
- 1 L Amber (IOB2064-01AT) w/ HNO₃
- 1 L Amber (IOB2064-01AU) -1
- 1 L Amber (IOB2064-01AV) "
- 1 L Amber (IOB2064-01AW) "

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

Released By: Michele Harper Date: 2/28/05 Time: 17:00 Received By: Alex Leung Date: 3/1/05 Time: 10:00

Released By: _____ Date: _____ Time: _____ Received By: _____ Date: _____ Time: _____



EBERLINE
SERVICES

RICHMOND, CA LABORATORY

SAMPLE RECEIPT CHECKLIST

Client: DEL. MAR ANALYT City: IRVINE State: CA
 Date/Time received: 3/1/05 10:00 CoC No.: IDB2064
 Container I.D. No.: DEL MAR COLTON Requested TAT (Days): STAND P.O. Received Yes [] No []

INSPECTION

1. Custody seals on shipping container intact? Yes [] No [] N/A []
 2. Custody seals on shipping container dated & signed? Yes [] No [] N/A []
 3. Custody seals on sample containers intact? Yes [] No [] N/A []
 4. Custody seals on sample containers dated & signed? Yes [] No [] N/A []
 5. Packing material is: Wet [] Dry []
 6. Number of samples in shipping container: 1 Sample Matrix: WATER
 7. Number of containers per sample: 7 (Or see CoC _____)
 8. Samples are in correct container Yes [] No []
 9. Paperwork agrees with samples? Yes [] No []
 10. Samples have: Tape [] Hazard labels [] Rad labels [] Appropriate sample labels []
 11. Samples are: In good condition [] Leaking [] Broken Container [] Missing []
 12. Samples are: Preserved [] Not preserved [] pH 2 Preservative HNO3
 13. Describe any anomalies: _____
 14. Was P.M. notified of any anomalies? Yes [] No [] Date: _____
 15. Inspected by: PK Date: 3/1/05 Time: 10:00

Customer Sample No.	cpm	mR/hr	wipe	Customer Sample No.	cpm	mR/hr	wipe

Ion Chamber Ser. No. _____ Calibration date _____
 Alpha Meter Ser. No. _____ Calibration date _____
 Beta/Gamma Meter Ser. No. _____ Calibration date _____

TRUESDAIL LABORATORIES, INC.

INDEPENDENT TESTING, FORENSIC SCIENCE, AND ENVIRONMENTAL ANALYSES



Established 1931

March 8, 2005

14201 FRANKLIN AVENUE
TUSTIN, CALIFORNIA 92780-7008
(714) 730-6239 · FAX (714) 730-6462
www.truesdail.com

Client: Del Mar Analytical
17461 Derian Avenue, Suite 100
Irvine, CA 92614
Attention: Michele Harper

Project Name: IOB2064
Date Received: 02/28/05

Truesdail Project: 940177

Samples Cross-reference

<u>Truesdail ID</u>	<u>Client ID</u>	<u>Matrix</u>	<u>Date Sampled</u>	<u>Time Sampled</u>	<u>Analysis Requested</u>
940177-1	IOB2064-01	Water	02/25/05	1340	Hydrazines by EPA 8315M

Respectfully Submitted,
TRUESDAIL LABORATORIES, INC.

K. R. P. Iyer
K.R.P. Iyer
Quality Control/Quality Assurance Officer

Xuan Huong Dang
Xuan Huong Dang
Project Manager

TRUESDAIL LABORATORIES, INC.

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March 8, 2005

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TUSTIN, CALIFORNIA 92780-7008
(714) 730-6239 · FAX (714) 730-6462
www.truesdail.com

Client: Del Mar Analytical
17461 Derian Avenue, Suite 100
Irvine, CA 92614

Attention: Michele Harper

Project Name: IOB2064
Date Received: 02/28/05

Truesdail Project: 940177

Case Narrative

Sample Receipt The sample was received in good condition and no anomalies were noted during check-in. The sample was kept in a locked refrigerator until analysis. Thereafter, it is being kept in ambient storage for an additional 2 months before disposal.

Analysis The analysis was performed as requested on the chain-of-custody.

Quality Control The analytical results for each batch of samples performed include a minimum of one set of laboratory control sample/laboratory control sample duplicate (LCS/LCSD), one matrix spike (MS) and a reagent blank (Method blank). Any exceptions or problems would be noted in the "comments" section.

Comments The test results in this report meet all quality assurance requirements set forth by the method specification and all quality control recoveries were within the laboratory acceptance limits. No anomalies or nonconformance events occurred during the course of analysis.

The analytes were quantitated down to the Method Detection Limit (J flags) per client's request.

Respectfully Submitted,
TRUESDAIL LABORATORIES, INC.


K.R.P. Iyer
Quality Control/Quality Assurance Officer


Xuan Huong Dang
Project Manager

TRUESDAIL LABORATORIES, INC.

INDEPENDENT TESTING, FORENSIC SCIENCE, AND ENVIRONMENTAL ANALYSES



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REPORT

Client: Del Mar Analytical
17461 Derian Ave., Suite 100
Irvine, CA 92614

Attention: Michele Harper
Sample: Liquid / 1 Sample
Project Name: IOB2064
P.O. Number: IOB2064
Method Number: 8315 (Modified)
Investigation: Hydrazines in Liquid

Laboratory No: 940177
Report Date: March 8, 2005
Sampling Date: February 25, 2005
Receiving Date: February 28, 2005
Extraction Date: February 28, 2005
Analysis Date: March 4, 2005
Units: µg/L
Dilution Factor: 1
Reported By: JS

Page 1 of 1

Analytical Results

Sample ID	Sample Description	Monomethyl		Unsymmetrical Dimethyl	
		Hydrazine	ND	Hydrazine	ND
704807-MB	Method Blank	ND	ND	ND	ND
940177	IOB2064-01	ND	ND	ND	ND
MDL		1.2	0.27	0.39	
PQL		5.0	5.0	1.0	

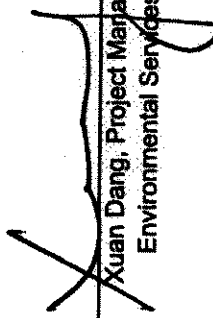
MDL: Method Detection Limit, ug/L

PQL: Practical Quantitation Limit, ug/L

ND: Not Detected at or above the MDL value.

N/A: Not Applicable

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


Xuan Dang, Project Manager
Environmental Services

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from these laboratories.

TRUESDAIL LABORATORIES, INC.

INDEPENDENT TESTING, FORENSIC SCIENCE, AND ENVIRONMENTAL ANALYSES



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14201 FRANKLIN AVENUE · TUSTIN, CALIFORNIA 92780-7008
(714) 730-6239 · FAX (714) 730-6462 · www.truesdail.com

Client: Del Mar Analytical
17491 Derlan Ave., Suite 100
Irvine, CA 92614

Client Contact: Michele Harper
Sample: Liquid / 1 Sample
Sample ID: IOB2064
P.O. Number: IOB2064
Method Number: 8315 (Modified)
Run Batch No.: Extraction: 2994; Analysis: 372
Investigation: Hydrazines in Liquid

REPORT

QC Lab. No.: 704807
Project Lab. No.: 940177
Spiked Sample ID: 940178
Report Date: March 8, 2005
Sampling Date: February 25, 2005
Receiving Date: February 28, 2005
Extraction Date: February 28, 2005
Analysis Date: March 3-4, 2005
Units: µg/L
Reported By: JS

Quality Control/Quality Assurance Calibration Report

Parameter	Theoretical Value (ug/L)	Measured Value (ug/L)	% Rec.	Control		Flag
				Limits	Rec.	
Monomethyl Hydrazine	25.0	26.3	105	85-115		PASS
u-Dimethyl Hydrazine	25.0	23.2	93.0	85-115		PASS
Hydrazine	5.0	5.10	102	85-115		PASS

QCS

Parameter	Theoretical Value (ug/L)	Measured Value (ug/L)	% Rec.	Control		Flag
				Limits	Rec.	
Monomethyl Hydrazine	50.0	47.4	94.7	85-115		PASS
u-Dimethyl Hydrazine	50.0	48.3	96.6	85-115		PASS
Hydrazine	10.0	8.62	86.2	85-115		PASS

Quality Control/Quality Assurance Spikes Report MS/MSD

Parameter	Spiked Conc. ug/L	Recovered Concentration MS	Percent Recovery (%) MS	Control Limits		Flag	Accuracy %D
				LCS	LCSD		
Monomethyl Hydrazine	50.0	54.5	109	117	7.54%	PASS	20
u-Dimethyl Hydrazine	50.0	50.1	100	101	0.58%	PASS	20
Hydrazine	10.0	10.2	102	103	1.08%	PASS	20

Parameter	Spiked Conc. ug/L	Recovered Concentration MS	Percent Recovery (%) MS	Control Limits		Flag	Accuracy %D
				MSD	%D		
Monomethyl Hydrazine	50.0	20.4	19.8	0.0	40.8	39.6	2.93%
u-Dimethyl Hydrazine	50.0	38.2	38.3	0.0	76.4	76.6	0.24%
Hydrazine	10.0	8.21	8.32	0.0	82.1	83.2	1.36%

ICV: Initial Calibration Verification

OCS: Quality Control Standard

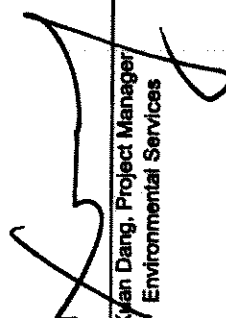
LCS: Laboratory Control Spike

MS: Matrix Spike

%D: Percent Difference

Flag: "Pass" if within Control Limits; otherwise "Fail"

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


Xian Dang, Project Manager
Environmental Services

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from these laboratories.



Del Mar Analytical

940177

SUBCONTRACT ORDER - PROJECT # IOB2064

17461 Derian Ave. Suite 100, Irvine, CA 92614 Ph: (949) 261-1022 Fax: (949) 261-1228
 1014 E. Cooley Dr., Suite A, Colton, CA 92324 Ph: (909) 370-8667 Fax: (909) 370-1046
 9484 Chesapeake Drive, Suite 805, San Diego, CA 92123 Ph: (619) 505-9696 Fax: (619) 505-9699
 9830 South 51st Street, Suite B-120, Phoenix, AZ 85044 Ph: (480) 785-0043 Fax: (480) 785-0851
 2529 E. Street Rd., Suite #3, Las Vegas, NV 89120 Ph: (702) 798-3820 Fax: (702) 798-3821

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 Harper

RECEIVING LABORATORY:
 Truesdail Laboratories-SUB
 14201 Franklin Avenue
 Tustin, CA 92680
 Phone: (714) 730-6239
 Fax: (714) 730-6462

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

Analysis	Expiration	Comments
Sample ID: IOB2064-01 Water	Sampled: 02/25/05 13:40	Instant Notification
Hydrazine-OUT	02/28/05 13:40	Sub Truesdail for Monomethylhydrazine, 13267
Level 4 Data Package	03/25/05 13:40	

Containers Supplied:
 1 L Amber (IOB2064-01AX)
 1 L Amber (IOB2064-01AY)

Rec'd 02/28/05
 s2b 940177

ALERT!!
Level III QC

**For Sample Conditions
 See Form Attached**

SAMPLE INTEGRITY:

All containers intact: Yes No
 Sample labels/COC agree: Yes No
 Samples Received On Ice: Yes No
 Custody Seals Present: Yes No
 Samples Preserved Properly: Yes No
 Samples Received at (temp): _____

Released By: *Michele Harper* 2/28/05 0900
 Received By: *John DeLoe* 2/28/05 0900

Released By: *John DeLoe* 2/28/05 0925
 Received By: *Jacqueline Brown* 2/28/05 9:25



TRUESDAIL LABORATORIES, INC.

Sample Integrity & Analysis Discrepancy Form

Client: Del Mar Analy

Lab # 940177

Date Delivered: 2/28/05 Time: 9:25 By: Mail Field Service Client

1. Was a Chain of Custody received and signed? Yes No N/A
2. Does Customer require an acknowledgement of the COC? Yes No N/A
3. Are there any special requirements or notes on the COC? Yes No N/A
4. If a letter was sent with the COC, does it match the COC? Yes No N/A
5. Were all requested analyses understood and acceptable? Yes No N/A
6. Were samples received in a chilled condition?
Temperature (if yes)? 4°C Yes No N/A
7. Were samples received intact
(i.e. broken bottles, leaks, air bubbles, etc.)? Yes No N/A
8. Were sample custody seals intact? Yes No N/A
9. Does the number of samples received agree with COC? Yes No N/A
10. Did sample labels correspond with the client ID's? Yes No N/A
11. Did sample labels indicate proper preservation?
Preserved (if yes) by Truesdail Client
12. Were samples pH checked? pH = 7.5 Yes No N/A
13. Were all analyses within holding time at time of receipt?
If not, notify the Project Manager. Yes No N/A
14. Have Project due dates been checked and accepted?
Turn Around Time (TAT): RUSH Std Yes No N/A
15. **Sample Matrix:** Liquid Drinking Water Ground Water Waste Water
 Sludge Soil Wipe Paint Solid Other water

ALERT!!!
Level IV QC

16. Comments: _____

17. Sample Check-In completed by Truesdail Log-In/Receiving: J Brown



Internal Chain of Custody Logbook

Lab Number: 940174
 Client Name: Del MAR

Storage Temperature: 4.0°C

Bottle I.D.	Analysis Done	Date Out	Time Out	Date In	Time In	Amount Taken (g or ml)	Printed Name	Signature
				2/28/05	09:50		L. Stubbins	Mead
	Hydrazine	022805	1230	022805	1400	100ml	in Cal	M

Storage Date	Shelf No. For Storage	Printed Name	Initials

Discharge Date	Printed Name	Initials

Bottle I.D.	Analysis Done	Date Out	Time Out	Date In	Time In	Amount Taken (g or ml)	Printed Name	Signature

Storage Date	Shelf No. For Storage	Printed Name	Initials

Discharge Date	Printed Name	Initials

Bottle I.D.	Analysis Done	Date Out	Time Out	Date In	Time In	Amount Taken (g or ml)	Printed Name	Signature

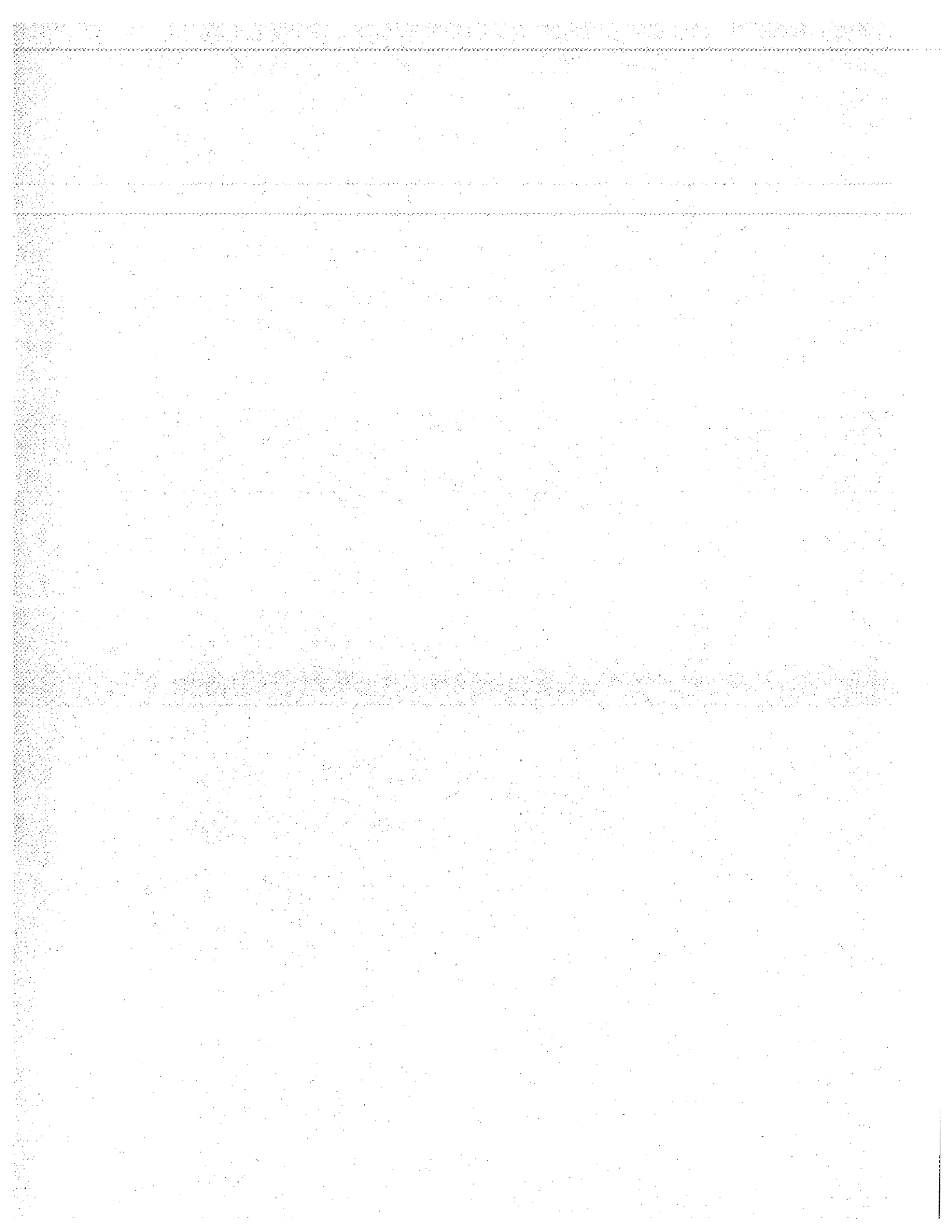
Storage Date	Shelf No. For Storage	Printed Name	Initials

Discharge Date	Printed Name	Initials

Bottle I.D.	Analysis Done	Date Out	Time Out	Date In	Time In	Amount Taken (g or ml)	Printed Name	Signature

Storage Date	Shelf No. For Storage	Printed Name	Initials

Discharge Date	Printed Name	Initial





LABORATORY REPORT

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

Project: 13267 (Study 1)
Outfall 011

Sampled: 02/25/05
Received: 02/25/05
Issued: 04/07/05 18:48

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, 3 pages, are included and are an integral part of this report.
This entire report was reviewed and approved for release.*

SAMPLE CROSS REFERENCE

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

LABORATORY ID	CLIENT ID	MATRIX
IOB2065-01	Outfall 011 Grab	Water
IOB2065-02	Trip Blank	Water
IOB2065-03	Outfall 011-Grab/filtered	Water
IOB2065-04	Outfall 011-Grab/Substrate	Water

Reviewed By:

Del Mar Analytical, Irvine
Michele Harper
Project Manager



MWH-Pasadena/Boeing 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Attention: Bronwyn Kelly	Project ID: 13267 (Study 1) Outfall 011 Report Number: IOB2065	Sampled: 02/25/05 Received: 02/25/05
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CORRECTIVE ACTION REPORT

Department: Extractions

Date: 03/03/2005

Method: EPA 625

Matrix: Water

QC Batch: 5B28001

Identification and Definition of Problem:

The percent recovery for benzidine in the LCS was below method acceptance limits.

Determination of the Cause of the Problem:

Benzidine is known to be a problematic compound. According to the EPA, it can be subject to oxidative losses during solvent extraction and its chromatographic behavior is poor.

Corrective Action Taken:

All results reported for benzidine are potentially biased low and can be considered estimates only.

Quality Assurance Approval:

Dave Dawes

Date: 03/04/2005 09:37 AM

Del Mar Analytical, Irvine
Michele Harper
Project Manager



MWH-Pasadena/Boeing 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Attention: Bronwyn Kelly	Project ID: 13267 (Study 1) Outfall 011 Report Number: IOB2065	Sampled: 02/25/05 Received: 02/25/05
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TOTAL RECOVERABLE PETROLEUM HYDROCARBONS (EPA 418.1)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOB2065-01 (Outfall 011 Grab - Water)									
Reporting Units: mg/l									
Total Recoverable Hydrocarbons	EPA 418.1	5B28069	0.31	1.0	ND	1	02/28/05	02/28/05	

Del Mar Analytical, Irvine
Michele Harper
Project Manager



MWH-Pasadena/Boeing Project ID: 13267 (Study 1)
300 North Lake Avenue, Suite 1200 Outfall 011
Pasadena, CA 91101 Report Number: IOB2065
Attention: Bronwyn Kelly Sampled: 02/25/05
Received: 02/25/05

EXTRACTABLE FUEL HYDROCARBONS (CADHS/8015 Modified)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOB2065-01 (Outfall 011 Grab - Water) - cont.									
Reporting Units: mg/l									
EFH (C13 - C22)	EPA 8015B	5C01045	0.082	0.50	ND	0.99	03/01/05	03/02/05	
Surrogate: n-Octacosane (40-125%)					69 %				

Del Mar Analytical, Irvine
Michele Harper
Project Manager



Del Mar Analytical

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

MWH-Pasadena/Boeing 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Attention: Bronwyn Kelly	Project ID: 13267 (Study 1) Outfall 011 Report Number: IOB2065	Sampled: 02/25/05 Received: 02/25/05
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VOLATILE FUEL HYDROCARBONS (EPA 5030/CADHS Mod. 8015)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOB2065-01 (Outfall 011 Grab - Water) - cont.									
Reporting Units: mg/l									
GRO (C4 - C12)	EPA 8015 Mod.	5C04004	0.050	0.10	ND	1	03/04/05	03/04/05	
Surrogate: 4-BFB (FID) (65-140%)					87 %				
Sample ID: IOB2065-02 (Trip Blank - Water)									
Reporting Units: mg/l									
GRO (C4 - C12)	EPA 8015 Mod.	5C04004	0.050	0.10	ND	1	03/04/05	03/04/05	
Surrogate: 4-BFB (FID) (65-140%)					92 %				

Del Mar Analytical, Irvine
 Michele Harper
 Project Manager

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

Project ID: 13267 (Study 1)
 Outfall 011
 Report Number: IOB2065

Sampled: 02/25/05
 Received: 02/25/05

FREON 113 (EPA 8260B)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOB2065-01 (Outfall 011 Grab - Water)									
Reporting Units: ug/l									
Trichlorotrifluoroethane (Freon 113)	EPA 8260B	5C04021	1.2	5.0	ND	1	03/04/05	03/04/05	
Surrogate: Dibromofluoromethane (80-120%)					105 %				
Surrogate: Toluene-d8 (80-120%)					100 %				
Surrogate: 4-Bromofluorobenzene (80-120%)					96 %				
Sample ID: IOB2065-02 (Trip Blank - Water)									
Reporting Units: ug/l									
Trichlorotrifluoroethane (Freon 113)	EPA 8260B	5C04021	1.2	5.0	ND	1	03/04/05	03/04/05	
Surrogate: Dibromofluoromethane (80-120%)					105 %				
Surrogate: Toluene-d8 (80-120%)					99 %				
Surrogate: 4-Bromofluorobenzene (80-120%)					95 %				

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 Michele Harper
 Project Manager

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 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: 13267 (Study 1) Outfall 011 Report Number: IOB2065	Sampled: 02/25/05 Received: 02/25/05
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PURGEABLES BY GC/MS (EPA 624)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOB2065-01 (Outfall 011 Grab - Water)									
Reporting Units: ug/l									
Benzene	EPA 624	5B26009	0.28	1.0	ND	1	02/26/05	02/26/05	
Bromodichloromethane	EPA 624	5B26009	0.30	2.0	ND	1	02/26/05	02/26/05	
Bromoform	EPA 624	5B26009	0.32	5.0	ND	1	02/26/05	02/26/05	
Bromomethane	EPA 624	5B26009	0.34	5.0	ND	1	02/26/05	02/26/05	
Carbon tetrachloride	EPA 624	5B26009	0.28	0.50	ND	1	02/26/05	02/26/05	
Chlorobenzene	EPA 624	5B26009	0.36	2.0	ND	1	02/26/05	02/26/05	
Chloroethane	EPA 624	5B26009	0.33	5.0	ND	1	02/26/05	02/26/05	
Chloroform	EPA 624	5B26009	0.33	2.0	ND	1	02/26/05	02/26/05	
Chloromethane	EPA 624	5B26009	0.30	5.0	ND	1	02/26/05	02/26/05	
Dibromochloromethane	EPA 624	5B26009	0.28	2.0	ND	1	02/26/05	02/26/05	
1,2-Dichlorobenzene	EPA 624	5B26009	0.32	2.0	ND	1	02/26/05	02/26/05	
1,3-Dichlorobenzene	EPA 624	5B26009	0.35	2.0	ND	1	02/26/05	02/26/05	
1,4-Dichlorobenzene	EPA 624	5B26009	0.37	2.0	ND	1	02/26/05	02/26/05	
1,1-Dichloroethane	EPA 624	5B26009	0.27	2.0	ND	1	02/26/05	02/26/05	
1,2-Dichloroethane	EPA 624	5B26009	0.28	0.50	ND	1	02/26/05	02/26/05	
1,1-Dichloroethene	EPA 624	5B26009	0.32	5.0	ND	1	02/26/05	02/26/05	
trans-1,2-Dichloroethene	EPA 624	5B26009	0.27	2.0	ND	1	02/26/05	02/26/05	
1,2-Dichloropropane	EPA 624	5B26009	0.35	2.0	ND	1	02/26/05	02/26/05	
cis-1,3-Dichloropropene	EPA 624	5B26009	0.22	2.0	ND	1	02/26/05	02/26/05	
trans-1,3-Dichloropropene	EPA 624	5B26009	0.24	2.0	ND	1	02/26/05	02/26/05	
Ethylbenzene	EPA 624	5B26009	0.25	2.0	ND	1	02/26/05	02/26/05	
Methylene chloride	EPA 624	5B26009	0.48	5.0	0.74	1	02/26/05	02/26/05	J
1,1,2,2-Tetrachloroethane	EPA 624	5B26009	0.24	2.0	ND	1	02/26/05	02/26/05	
Tetrachloroethene	EPA 624	5B26009	0.32	2.0	ND	1	02/26/05	02/26/05	
Toluene	EPA 624	5B26009	0.36	2.0	ND	1	02/26/05	02/26/05	
1,1,1-Trichloroethane	EPA 624	5B26009	0.30	2.0	ND	1	02/26/05	02/26/05	
1,1,2-Trichloroethane	EPA 624	5B26009	0.30	2.0	ND	1	02/26/05	02/26/05	
Trichloroethene	EPA 624	5B26009	0.26	2.0	ND	1	02/26/05	02/26/05	
Trichlorofluoromethane	EPA 624	5B26009	0.34	5.0	ND	1	02/26/05	02/26/05	
Vinyl chloride	EPA 624	5B26009	0.26	0.50	ND	1	02/26/05	02/26/05	
Xylenes, Total	EPA 624	5B26009	0.52	4.0	ND	1	02/26/05	02/26/05	
Surrogate: Dibromofluoromethane (80-120%)									106 %
Surrogate: Toluene-d8 (80-120%)									96 %
Surrogate: 4-Bromofluorobenzene (80-120%)									94 %

Del Mar Analytical, Irvine
 Michele Harper
 Project Manager

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 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: 13267 (Study 1) Outfall 011 Report Number: IOB2065	Sampled: 02/25/05 Received: 02/25/05
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PURGEABLES BY GC/MS (EPA 624)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOB2065-02 (Trip Blank - Water)									
Reporting Units: ug/l									
Benzene	EPA 624	5B26009	0.28	1.0	ND	1	02/26/05	02/26/05	
Bromodichloromethane	EPA 624	5B26009	0.30	2.0	ND	1	02/26/05	02/26/05	
Bromoform	EPA 624	5B26009	0.32	5.0	ND	1	02/26/05	02/26/05	
Bromomethane	EPA 624	5B26009	0.34	5.0	ND	1	02/26/05	02/26/05	
Carbon tetrachloride	EPA 624	5B26009	0.28	0.50	ND	1	02/26/05	02/26/05	
Chlorobenzene	EPA 624	5B26009	0.36	2.0	ND	1	02/26/05	02/26/05	
Chloroethane	EPA 624	5B26009	0.33	5.0	ND	1	02/26/05	02/26/05	
Chloroform	EPA 624	5B26009	0.33	2.0	ND	1	02/26/05	02/26/05	
Chloromethane	EPA 624	5B26009	0.30	5.0	ND	1	02/26/05	02/26/05	
Dibromochloromethane	EPA 624	5B26009	0.28	2.0	ND	1	02/26/05	02/26/05	
1,2-Dichlorobenzene	EPA 624	5B26009	0.32	2.0	ND	1	02/26/05	02/26/05	
1,3-Dichlorobenzene	EPA 624	5B26009	0.35	2.0	ND	1	02/26/05	02/26/05	
1,4-Dichlorobenzene	EPA 624	5B26009	0.37	2.0	ND	1	02/26/05	02/26/05	
1,1-Dichloroethane	EPA 624	5B26009	0.27	2.0	ND	1	02/26/05	02/26/05	
1,2-Dichloroethane	EPA 624	5B26009	0.28	0.50	ND	1	02/26/05	02/26/05	
1,1-Dichloroethene	EPA 624	5B26009	0.32	5.0	ND	1	02/26/05	02/26/05	
trans-1,2-Dichloroethene	EPA 624	5B26009	0.27	2.0	ND	1	02/26/05	02/26/05	
1,2-Dichloropropane	EPA 624	5B26009	0.35	2.0	ND	1	02/26/05	02/26/05	
cis-1,3-Dichloropropene	EPA 624	5B26009	0.22	2.0	ND	1	02/26/05	02/26/05	
trans-1,3-Dichloropropene	EPA 624	5B26009	0.24	2.0	ND	1	02/26/05	02/26/05	
Ethylbenzene	EPA 624	5B26009	0.25	2.0	ND	1	02/26/05	02/26/05	
Methylene chloride	EPA 624	5B26009	0.48	5.0	0.94	1	02/26/05	02/26/05	J
1,1,2,2-Tetrachloroethane	EPA 624	5B26009	0.24	2.0	ND	1	02/26/05	02/26/05	
Tetrachloroethene	EPA 624	5B26009	0.32	2.0	ND	1	02/26/05	02/26/05	
Toluene	EPA 624	5B26009	0.36	2.0	ND	1	02/26/05	02/26/05	
1,1,1-Trichloroethane	EPA 624	5B26009	0.30	2.0	ND	1	02/26/05	02/26/05	
1,1,2-Trichloroethane	EPA 624	5B26009	0.30	2.0	ND	1	02/26/05	02/26/05	
Trichloroethene	EPA 624	5B26009	0.26	2.0	ND	1	02/26/05	02/26/05	
Trichlorofluoromethane	EPA 624	5B26009	0.34	5.0	ND	1	02/26/05	02/26/05	
Vinyl chloride	EPA 624	5B26009	0.26	0.50	ND	1	02/26/05	02/26/05	
Xylenes, Total	EPA 624	5B26009	0.52	4.0	ND	1	02/26/05	02/26/05	
Surrogate: Dibromofluoromethane (80-120%)					101 %				
Surrogate: Toluene-d8 (80-120%)					94 %				
Surrogate: 4-Bromofluorobenzene (80-120%)					94 %				

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 Michele Harper
 Project Manager

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MWH-Pasadena/Boeing 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Attention: Bronwyn Kelly	Project ID: 13267 (Study 1) Outfall 011 Report Number: IOB2065	Sampled: 02/25/05 Received: 02/25/05
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PURGEABLES BY GC/MS (EPA 624)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOB2065-01 (Outfall 011 Grab - Water)									
Reporting Units: ug/l									
Acrolein	EPA 624	5B26009	4.6	50	ND	1	02/26/05	02/26/05	
Acrylonitrile	EPA 624	5B26009	5.1	50	ND	1	02/26/05	02/26/05	
2-Chloroethyl vinyl ether	EPA 624	5B26009	1.3	5.0	ND	1	02/26/05	02/26/05	
Surrogate: Dibromofluoromethane (80-120%)					106 %				
Surrogate: Toluene-d8 (80-120%)					96 %				
Surrogate: 4-Bromofluorobenzene (80-120%)					94 %				
Sample ID: IOB2065-02 (Trip Blank - Water)									
Reporting Units: ug/l									
Acrolein	EPA 624	5B26009	4.6	50	ND	1	02/26/05	02/26/05	
Acrylonitrile	EPA 624	5B26009	5.1	50	ND	1	02/26/05	02/26/05	
2-Chloroethyl vinyl ether	EPA 624	5B26009	1.3	5.0	ND	1	02/26/05	02/26/05	
Surrogate: Dibromofluoromethane (80-120%)					101 %				
Surrogate: Toluene-d8 (80-120%)					94 %				
Surrogate: 4-Bromofluorobenzene (80-120%)					94 %				

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MWH-Pasadena/Boeing 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Attention: Bronwyn Kelly	Project ID: 13267 (Study 1) Outfall 011 Report Number: IOB2065	Sampled: 02/25/05 Received: 02/25/05
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PURGEABLES BY GC/MS, TENTATIVELY IDENTIFIED COMPOUNDS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOB2065-01 (Outfall 011 Grab - Water)									
Reporting Units: ug/l									
1,2-Dichloro-1,1,2-trifluoroethane	EPA 624 (MOD.)	5B26009	N/A	2.5	ND	1	02/26/05	02/26/05	
Cyclohexane	EPA 624 (MOD.)	5B26009	N/A	2.5	ND	1	02/26/05	02/26/05	
Sample ID: IOB2065-02 (Trip Blank - Water)									
Reporting Units: ug/l									
1,2-Dichloro-1,1,2-trifluoroethane	EPA 624 (MOD.)	5B26009	N/A	2.5	ND	1	02/26/05	02/26/05	
Cyclohexane	EPA 624 (MOD.)	5B26009	N/A	2.5	ND	1	02/26/05	02/26/05	

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

Project ID: 13267 (Study 1)
 Outfall 011
 Report Number: IOB2065

Sampled: 02/25/05
 Received: 02/25/05

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

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOB2065-01 (Outfall 011 Grab - Water)									
Reporting Units: ug/l									
Acenaphthene	EPA 625	5B28001	0.10	0.50	ND	0.971	02/28/05	03/02/05	
Acenaphthylene	EPA 625	5B28001	0.10	0.50	ND	0.971	02/28/05	03/02/05	
Aniline	EPA 625	5B28001	2.9	10	ND	0.971	02/28/05	03/02/05	
Anthracene	EPA 625	5B28001	0.083	0.50	ND	0.971	02/28/05	03/02/05	
Benzidine	EPA 625	5B28001	3.2	5.0	ND	0.971	02/28/05	03/03/05	L2
Benzoic acid	EPA 625	5B28001	3.7	20	ND	0.971	02/28/05	03/02/05	
Benzo(a)anthracene	EPA 625	5B28001	0.038	5.0	ND	0.971	02/28/05	03/02/05	
Benzo(a)pyrene	EPA 625	5B28001	0.14	2.0	ND	0.971	02/28/05	03/02/05	
Benzo(b)fluoranthene	EPA 625	5B28001	0.050	2.0	ND	0.971	02/28/05	03/02/05	
Benzo(g,h,i)perylene	EPA 625	5B28001	0.059	5.0	ND	0.971	02/28/05	03/02/05	
Benzo(k)fluoranthene	EPA 625	5B28001	0.053	0.50	ND	0.971	02/28/05	03/02/05	
Benzyl alcohol	EPA 625	5B28001	0.21	5.0	ND	0.971	02/28/05	03/02/05	
Bis(2-chloroethoxy)methane	EPA 625	5B28001	0.072	0.50	ND	0.971	02/28/05	03/02/05	
Bis(2-chloroethyl)ether	EPA 625	5B28001	0.084	0.50	ND	0.971	02/28/05	03/02/05	
Bis(2-chloroisopropyl)ether	EPA 625	5B28001	0.11	0.50	ND	0.971	02/28/05	03/02/05	
Bis(2-ethylhexyl)phthalate	EPA 625	5B28001	1.1	5.0	ND	0.971	02/28/05	03/02/05	
4-Bromophenyl phenyl ether	EPA 625	5B28001	0.12	1.0	ND	0.971	02/28/05	03/02/05	
Butyl benzyl phthalate	EPA 625	5B28001	0.34	5.0	ND	0.971	02/28/05	03/02/05	
4-Chloroaniline	EPA 625	5B28001	0.20	2.0	ND	0.971	02/28/05	03/02/05	
2-Chloronaphthalene	EPA 625	5B28001	0.059	0.50	ND	0.971	02/28/05	03/02/05	
4-Chloro-3-methylphenol	EPA 625	5B28001	0.34	2.0	ND	0.971	02/28/05	03/02/05	
4-Chlorophenyl phenyl ether	EPA 625	5B28001	0.056	0.50	ND	0.971	02/28/05	03/02/05	
2-Chlorophenol	EPA 625	5B28001	0.12	1.0	ND	0.971	02/28/05	03/02/05	
Chrysene	EPA 625	5B28001	0.072	0.50	ND	0.971	02/28/05	03/02/05	
Dibenz(a,h)anthracene	EPA 625	5B28001	0.083	0.50	ND	0.971	02/28/05	03/02/05	
Dibenzofuran	EPA 625	5B28001	0.075	0.50	ND	0.971	02/28/05	03/02/05	
Di-n-butyl phthalate	EPA 625	5B28001	0.26	2.0	ND	0.971	02/28/05	03/02/05	
1,2-Dichlorobenzene	EPA 625	5B28001	0.11	0.50	ND	0.971	02/28/05	03/02/05	
1,3-Dichlorobenzene	EPA 625	5B28001	0.13	0.50	ND	0.971	02/28/05	03/02/05	
1,4-Dichlorobenzene	EPA 625	5B28001	0.050	0.50	ND	0.971	02/28/05	03/02/05	
3,3-Dichlorobenzidine	EPA 625	5B28001	0.93	5.0	ND	0.971	02/28/05	03/02/05	
2,4-Dichlorophenol	EPA 625	5B28001	0.21	2.0	ND	0.971	02/28/05	03/02/05	
Diethyl phthalate	EPA 625	5B28001	0.12	1.0	ND	0.971	02/28/05	03/02/05	
2,4-Dimethylphenol	EPA 625	5B28001	0.31	2.0	ND	0.971	02/28/05	03/02/05	
Dimethyl phthalate	EPA 625	5B28001	0.081	0.50	ND	0.971	02/28/05	03/02/05	
4,6-Dinitro-2-methylphenol	EPA 625	5B28001	0.38	5.0	ND	0.971	02/28/05	03/02/05	
2,4-Dinitrophenol	EPA 625	5B28001	2.7	5.0	ND	0.971	02/28/05	03/02/05	
2,4-Dinitrotoluene	EPA 625	5B28001	0.23	5.0	ND	0.971	02/28/05	03/02/05	
2,6-Dinitrotoluene	EPA 625	5B28001	0.24	5.0	ND	0.971	02/28/05	03/02/05	
Di-n-octyl phthalate	EPA 625	5B28001	0.17	5.0	ND	0.971	02/28/05	03/02/05	
1,2-Diphenylhydrazine/Azobenzene	EPA 625	5B28001	0.087	1.0	ND	0.971	02/28/05	03/02/05	

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MWH-Pasadena/Boeing 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Attention: Bronwyn Kelly	Project ID: 13267 (Study 1) Outfall 011 Report Number: IOB2065	Sampled: 02/25/05 Received: 02/25/05
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ACID & BASE/NEUTRALS BY GC/MS (EPA 625)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOB2065-01 (Outfall 011 Grab - Water) - cont.									
Reporting Units: ug/l									
Fluoranthene	EPA 625	5B28001	0.089	0.50	ND	0.971	02/28/05	03/02/05	
Fluorene	EPA 625	5B28001	0.075	0.50	ND	0.971	02/28/05	03/02/05	
Hexachlorobenzene	EPA 625	5B28001	0.13	1.0	ND	0.971	02/28/05	03/02/05	
Hexachlorobutadiene	EPA 625	5B28001	0.38	2.0	ND	0.971	02/28/05	03/02/05	
Hexachlorocyclopentadiene	EPA 625	5B28001	1.8	5.0	ND	0.971	02/28/05	03/02/05	
Hexachloroethane	EPA 625	5B28001	0.51	3.0	ND	0.971	02/28/05	03/02/05	
Indeno(1,2,3-cd)pyrene	EPA 625	5B28001	0.19	2.0	ND	0.971	02/28/05	03/02/05	
Isophorone	EPA 625	5B28001	0.059	1.0	ND	0.971	02/28/05	03/02/05	
2-Methylnaphthalene	EPA 625	5B28001	0.13	1.0	ND	0.971	02/28/05	03/02/05	
2-Methylphenol	EPA 625	5B28001	0.28	2.0	ND	0.971	02/28/05	03/02/05	
4-Methylphenol	EPA 625	5B28001	0.20	5.0	ND	0.971	02/28/05	03/02/05	
Naphthalene	EPA 625	5B28001	0.13	1.0	ND	0.971	02/28/05	03/02/05	
2-Nitroaniline	EPA 625	5B28001	0.18	5.0	ND	0.971	02/28/05	03/02/05	
3-Nitroaniline	EPA 625	5B28001	0.35	5.0	ND	0.971	02/28/05	03/02/05	
4-Nitroaniline	EPA 625	5B28001	0.49	5.0	ND	0.971	02/28/05	03/02/05	
Nitrobenzene	EPA 625	5B28001	0.10	1.0	ND	0.971	02/28/05	03/02/05	
2-Nitrophenol	EPA 625	5B28001	0.23	2.0	ND	0.971	02/28/05	03/02/05	
4-Nitrophenol	EPA 625	5B28001	0.73	5.0	ND	0.971	02/28/05	03/02/05	
N-Nitrosodimethylamine	EPA 625	5B28001	0.22	2.0	ND	0.971	02/28/05	03/02/05	
N-Nitroso-di-n-propylamine	EPA 625	5B28001	0.18	2.0	ND	0.971	02/28/05	03/02/05	
N-Nitrosodiphenylamine	EPA 625	5B28001	0.077	1.0	ND	0.971	02/28/05	03/02/05	
Pentachlorophenol	EPA 625	5B28001	0.78	2.0	ND	0.971	02/28/05	03/02/05	
Phenanthrene	EPA 625	5B28001	0.071	0.50	ND	0.971	02/28/05	03/02/05	
Phenol	EPA 625	5B28001	0.14	1.0	ND	0.971	02/28/05	03/02/05	
Pyrene	EPA 625	5B28001	0.059	0.50	ND	0.971	02/28/05	03/02/05	
1,2,4-Trichlorobenzene	EPA 625	5B28001	0.10	1.0	ND	0.971	02/28/05	03/02/05	
2,4,5-Trichlorophenol	EPA 625	5B28001	0.075	2.0	ND	0.971	02/28/05	03/02/05	
2,4,6-Trichlorophenol	EPA 625	5B28001	0.10	1.0	ND	0.971	02/28/05	03/02/05	
Surrogate: 2-Fluorophenol (30-120%)									75 %
Surrogate: Phenol-d6 (35-120%)									69 %
Surrogate: 2,4,6-Tribromophenol (45-120%)									97 %
Surrogate: Nitrobenzene-d5 (45-120%)									77 %
Surrogate: 2-Fluorobiphenyl (45-120%)									78 %
Surrogate: Terphenyl-d14 (45-120%)									83 %

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

Project ID: 13267 (Study 1)
 Outfall 011
 Report Number: IOB2065

Sampled: 02/25/05
 Received: 02/25/05

ORGANOCHLORINE PESTICIDES (EPA 608)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOB2065-01 (Outfall 011 Grab - Water) - cont.									
Reporting Units: ug/l									
Aldrin	EPA 608	5C04051	0.030	0.10	ND	1	03/04/05	03/05/05	
alpha-BHC	EPA 608	5C04051	0.015	0.10	ND	1	03/04/05	03/05/05	
beta-BHC	EPA 608	5C04051	0.015	0.10	ND	1	03/04/05	03/05/05	
delta-BHC	EPA 608	5C04051	0.020	0.20	ND	1	03/04/05	03/05/05	
gamma-BHC (Lindane)	EPA 608	5C04051	0.020	0.10	ND	1	03/04/05	03/05/05	
Chlordane	EPA 608	5C04051	0.20	1.0	ND	1	03/04/05	03/05/05	
4,4'-DDD	EPA 608	5C04051	0.020	0.10	ND	1	03/04/05	03/05/05	
4,4'-DDE	EPA 608	5C04051	0.025	0.10	ND	1	03/04/05	03/05/05	
4,4'-DDT	EPA 608	5C04051	0.030	0.10	0.038	1	03/04/05	03/05/05	J
Dieldrin	EPA 608	5C04051	0.015	0.10	ND	1	03/04/05	03/05/05	
Endosulfan I	EPA 608	5C04051	0.015	0.10	ND	1	03/04/05	03/05/05	
Endosulfan II	EPA 608	5C04051	0.040	0.10	ND	1	03/04/05	03/05/05	
Endosulfan sulfate	EPA 608	5C04051	0.015	0.20	ND	1	03/04/05	03/05/05	
Endrin	EPA 608	5C04051	0.020	0.10	ND	1	03/04/05	03/05/05	
Endrin aldehyde	EPA 608	5C04051	0.045	0.10	ND	1	03/04/05	03/05/05	
Endrin ketone	EPA 608	5C04051	0.020	0.10	ND	1	03/04/05	03/05/05	
Heptachlor	EPA 608	5C04051	0.030	0.10	ND	1	03/04/05	03/05/05	
Heptachlor epoxide	EPA 608	5C04051	0.020	0.10	ND	1	03/04/05	03/05/05	
Methoxychlor	EPA 608	5C04051	0.035	0.10	ND	1	03/04/05	03/05/05	
Toxaphene	EPA 608	5C04051	1.5	5.0	ND	1	03/04/05	03/05/05	
Surrogate: Tetrachloro-m-xylene (35-120%)					61 %				
Surrogate: Decachlorobiphenyl (45-120%)					76 %				

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MWH-Pasadena/Boeing 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Attention: Bronwyn Kelly	Project ID: 13267 (Study 1) Outfall 011 Report Number: IOB2065	Sampled: 02/25/05 Received: 02/25/05
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TOTAL PCBS (EPA 608)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOB2065-01 (Outfall 011 Grab - Water) - cont.									
Reporting Units: ug/l									
Aroclor 1016	EPA 608	5C02052	0.20	1.0	ND	0.962	03/02/05	03/03/05	
Aroclor 1221	EPA 608	5C02052	0.10	1.0	ND	0.962	03/02/05	03/03/05	
Aroclor 1232	EPA 608	5C02052	0.15	1.0	ND	0.962	03/02/05	03/03/05	
Aroclor 1242	EPA 608	5C02052	0.15	1.0	ND	0.962	03/02/05	03/03/05	
Aroclor 1248	EPA 608	5C02052	0.25	1.0	ND	0.962	03/02/05	03/03/05	
Aroclor 1254	EPA 608	5C02052	0.25	1.0	ND	0.962	03/02/05	03/03/05	
Aroclor 1260	EPA 608	5C02052	0.40	1.0	ND	0.962	03/02/05	03/03/05	
<i>Surrogate: Decachlorobiphenyl (45-120%)</i>					65 %				

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MWH-Pasadena/Boeing 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Attention: Bronwyn Kelly	Project ID: 13267 (Study 1) Outfall 011 Report Number: IOB2065	Sampled: 02/25/05 Received: 02/25/05
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METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOB2065-01 (Outfall 011 Grab - Water) - cont.									
Reporting Units: mg/l									
Barium	EPA 200.8	5C03085	0.00014	0.0010	0.020	1	03/03/05	03/03/05	
Boron	EPA 200.7	5C02083	0.0074	0.050	0.062	1	03/02/05	03/02/05	
Iron	EPA 200.8	5C03085	0.0032	0.010	0.56	1	03/03/05	03/03/05	

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MWH-Pasadena/Boeing 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Attention: Bronwyn Kelly	Project ID: 13267 (Study 1) Outfall 011 Report Number: IOB2065	Sampled: 02/25/05 Received: 02/25/05
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METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOB2065-01 (Outfall 011 Grab - Water) - cont.									
Reporting Units: ug/l									
Antimony	EPA 200.8	5C03085	0.18	2.0	0.33	1	03/03/05	03/03/05	B, J
Arsenic	EPA 200.8	5C03085	0.49	1.0	1.3	1	03/03/05	03/03/05	
Beryllium	EPA 200.8	5C03085	0.037	0.50	ND	1	03/03/05	03/03/05	
Cadmium	EPA 200.8	5C03085	0.015	1.0	0.10	1	03/03/05	03/03/05	J
Chromium	EPA 200.8	5C03085	0.26	2.0	0.90	1	03/03/05	03/03/05	J
Cobalt	EPA 200.8	5C03085	0.10	1.0	0.23	1	03/03/05	03/03/05	J
Copper	EPA 200.8	5C03085	0.49	2.0	3.2	1	03/03/05	03/03/05	
Lead	EPA 200.8	5C03085	0.13	1.0	0.57	1	03/03/05	03/03/05	J
Manganese	EPA 200.8	5C03085	0.44	1.0	13	1	03/03/05	03/03/05	
Mercury	EPA 245.1	5C02089	0.063	0.20	ND	1	03/02/05	03/02/05	
Nickel	EPA 200.8	5C03085	0.15	2.0	1.0	1	03/03/05	03/03/05	J
Selenium	EPA 200.8	5C03085	0.36	2.0	ND	1	03/03/05	03/03/05	
Silver	EPA 200.8	5C03085	0.089	1.0	ND	1	03/03/05	03/03/05	
Thallium	EPA 200.8	5C03085	0.075	1.0	ND	1	03/03/05	03/03/05	
Vanadium	EPA 200.8	5C03085	0.86	2.0	1.5	1	03/03/05	03/03/05	J
Zinc	EPA 200.8	5C03085	3.1	20	16	1	03/03/05	03/03/05	J

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

Project ID: 13267 (Study 1)
 Outfall 011
 Report Number: IOB2065

Sampled: 02/25/05
 Received: 02/25/05

INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOB2065-01 (Outfall 011 Grab - Water) - cont.									
Reporting Units: mg/l									
Ammonia-N (Distilled)	EPA 350.2	5C07070	0.30	0.50	ND	1	03/07/05	03/07/05	
Biochemical Oxygen Demand	EPA 405.1	5B25128	0.59	2.0	0.68	1	02/25/05	03/02/05	J
Chloride	EPA 300.0	5B25042	0.26	0.50	5.1	1	02/25/05	02/25/05	
Fluoride	EPA 300.0	5B25042	0.10	0.50	0.17	1	02/25/05	02/25/05	J
Nitrate/Nitrite-N	EPA 300.0	5B25042	0.072	0.26	0.38	1	02/25/05	02/25/05	
Oil & Grease	EPA 413.1	5C02094	0.94	5.0	ND	1	03/02/05	03/02/05	
Residual Chlorine	EPA 330.5	5B25120	0.10	0.10	ND	1	02/25/05	02/25/05	
Sulfate	EPA 300.0	5B25042	0.18	0.50	11	1	02/25/05	02/25/05	
Surfactants (MBAS)	SM5540-C	5B25118	0.044	0.10	0.054	1	02/25/05	02/25/05	J
Total Dissolved Solids	SM2540C	5B28078	10	10	100	1	02/28/05	02/28/05	
Total Organic Carbon	EPA 415.1	5C01065	0.25	1.0	11	1	03/01/05	03/01/05	
Total Suspended Solids	EPA 160.2	5C03074	10	10	ND	1	03/03/05	03/03/05	

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INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOB2065-01 (Outfall 011 Grab - Water) - cont.									
Reporting Units: ml/hr									
Total Settleable Solids	EPA 160.5	5B25097	0.10	0.10	ND	1	02/25/05	02/25/05	

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INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOB2065-01 (Outfall 011 Grab - Water) - cont.									
Reporting Units: NTU									
Turbidity	EPA 180.1	5B26046	0.040	1.0	9.4	1	02/26/05	02/26/05	

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INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOB2065-01 (Outfall 011 Grab - Water) - cont.									
Reporting Units: ug/l									
Chromium VI	EPA 218.6	5B25125	0.10	1.0	ND	1	02/25/05	02/26/05	
Total Cyanide	EPA 335.2	5B28115	2.2	5.0	ND	1	02/28/05	03/01/05	
Perchlorate	EPA 314.0	5B28103	0.80	4.0	ND	1	02/28/05	03/01/05	

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INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOB2065-01 (Outfall 011 Grab - Water) - cont.									
Reporting Units: umhos/cm									
Specific Conductance	EPA 120.1	5B28080	1.0	1.0	150	1	02/28/05	02/28/05	

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1,4-DIOXANE BY GC/MS (EPA 5030B/8260B)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOB2065-01 (Outfall 011 Grab - Water) - cont.									
Reporting Units: ug/l									
1,4-Dioxane	EPA 8260B	P5C0309	0.49	1.0	ND	1	03/03/05	03/03/05	
Surrogate: Dibromofluoromethane (80-125%)					117 %				

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Project ID: 13267 (Study 1)
 Outfall 011
 Report Number: IOB2065

Sampled: 02/25/05
 Received: 02/25/05

SHORT HOLD TIME DETAIL REPORT

Sample ID: Outfall 011 Grab (IOB2065-01) - Water	Hold Time (in days)	Date/Time Sampled	Date/Time Received	Date/Time Extracted	Date/Time Analyzed
EPA 160.5	2	02/25/2005 10:42	02/25/2005 19:20	02/25/2005 21:15	02/25/2005 22:15
EPA 180.1	2	02/25/2005 10:42	02/25/2005 19:20	02/26/2005 12:00	02/26/2005 13:00
EPA 218.6	1	02/25/2005 10:42	02/25/2005 19:20	02/25/2005 22:20	02/26/2005 00:11
EPA 300.0	2	02/25/2005 10:42	02/25/2005 19:20	02/25/2005 20:15	02/25/2005 22:00
EPA 330.5	1	02/25/2005 10:42	02/25/2005 19:20	02/25/2005 22:15	02/25/2005 22:30
EPA 405.1	2	02/25/2005 10:42	02/25/2005 19:20	02/25/2005 21:00	03/02/2005 14:30
EPA 624	3	02/25/2005 10:42	02/25/2005 19:20	02/26/2005 00:00	02/26/2005 17:57
SM5540-C	2	02/25/2005 10:42	02/25/2005 19:20	02/25/2005 19:49	02/25/2005 23:14
Sample ID: Trip Blank (IOB2065-02) - Water					
EPA 624	3	02/25/2005 15:00	02/25/2005 19:20	02/26/2005 00:00	02/26/2005 11:56

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METHOD BLANK/QC DATA

TOTAL RECOVERABLE PETROLEUM HYDROCARBONS (EPA 418.1)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	RPD Limits	RPD	Data Qualifiers
Batch: 5B28069 Extracted: 02/28/05										
Blank Analyzed: 02/28/2005 (5B28069-BLK1)										
Total Recoverable Hydrocarbons	ND	1.0	0.31	mg/l						
LCS Analyzed: 02/28/2005 (5B28069-BS1)										
Total Recoverable Hydrocarbons	4.18	1.0	0.31	mg/l	5.00		84	65-120		M-NR1
LCS Dup Analyzed: 02/28/2005 (5B28069-BSD1)										
Total Recoverable Hydrocarbons	4.33	1.0	0.31	mg/l	5.00		87	65-120	4	20

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Outfall 011
Report Number: IOB2065

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Received: 02/25/05

METHOD BLANK/QC DATA

EXTRACTABLE FUEL HYDROCARBONS (CADHS/8015 Modified)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	RPD RPD	RPD Limit	Data Qualifiers
Batch: 5C01045 Extracted: 03/01/05										
Blank Analyzed: 03/02/2005 (5C01045-BLK1)										
EFH (C13 - C22)	ND	0.50	0.082	mg/l						
EFH (C13 - C40)	ND	0.50	0.082	mg/l						
Surrogate: n-Octacosane	0.131			mg/l	0.200		66		40-125	
LCS Analyzed: 03/02/2005 (5C01045-BS1)										
EFH (C13 - C40)	0.586	0.50	0.082	mg/l	0.775		76		40-120	M-NR1
Surrogate: n-Octacosane	0.164			mg/l	0.200		82		40-125	
LCS Dup Analyzed: 03/02/2005 (5C01045-BSD1)										
EFH (C13 - C40)	0.503	0.50	0.082	mg/l	0.775		65	15	40-120	25
Surrogate: n-Octacosane	0.146			mg/l	0.200		73		40-125	

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 Received: 02/25/05

METHOD BLANK/QC DATA

VOLATILE FUEL HYDROCARBONS (EPA 5030/CADHS Mod. 8015)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	Limit	RPD	RPD Limit	Data Qualifiers
Batch: 5C04004 Extracted: 03/04/05											
Blank Analyzed: 03/04/2005 (5C04004-BLK1)											
GRO (C4 - C12)	ND	0.10	0.050	mg/l							
Surrogate: 4-BFB (FID)	0.00860			mg/l	0.0100		86	65-140			
LCS Analyzed: 03/04/2005 (5C04004-BS1)											
GRO (C4 - C12)	0.654	0.10	0.050	mg/l	0.800		82	70-140			
Surrogate: 4-BFB (FID)	0.0248			mg/l	0.0300		83	65-140			
Matrix Spike Analyzed: 03/04/2005 (5C04004-MS1)											
						Source: IOB1759-15					
GRO (C4 - C12)	3.47	1.0	0.50	mg/l	2.20	1.7	80	60-140			
Surrogate: 4-BFB (FID)	0.109			mg/l	0.100		109	65-140			
Matrix Spike Dup Analyzed: 03/04/2005 (5C04004-MSD1)											
						Source: IOB1759-15					
GRO (C4 - C12)	3.61	1.0	0.50	mg/l	2.20	1.7	87	60-140	4	20	
Surrogate: 4-BFB (FID)	0.108			mg/l	0.100		108	65-140			

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METHOD BLANK/QC DATA

FREON 113 (EPA 8260B)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5C04021 Extracted: 03/04/05											
Blank Analyzed: 03/04/2005 (5C04021-BLK1)											
Trichlorotrifluoroethane (Freon 113)	ND	5.0	1.2	ug/l							
Surrogate: Dibromofluoromethane	26.9			ug/l	25.0		108	80-120			
Surrogate: Toluene-d8	25.2			ug/l	25.0		101	80-120			
Surrogate: 4-Bromofluorobenzene	24.6			ug/l	25.0		98	80-120			

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METHOD BLANK/QC DATA

PURGEABLES BY GC/MS (EPA 624)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	RPD Limits	RPD RPD	Data Qualifiers
Batch: 5B26009 Extracted: 02/26/05										
Blank Analyzed: 02/26/2005 (5B26009-BLK1)										
Benzene	ND	1.0	0.28	ug/l						
Bromodichloromethane	ND	2.0	0.30	ug/l						
Bromoform	ND	5.0	0.32	ug/l						
Bromomethane	ND	5.0	0.34	ug/l						
Carbon tetrachloride	ND	0.50	0.28	ug/l						
Chlorobenzene	ND	2.0	0.36	ug/l						
Chloroethane	ND	5.0	0.33	ug/l						
Chloroform	ND	2.0	0.33	ug/l						
Chloromethane	ND	5.0	0.30	ug/l						
Dibromochloromethane	ND	2.0	0.28	ug/l						
1,2-Dichlorobenzene	ND	2.0	0.32	ug/l						
1,3-Dichlorobenzene	ND	2.0	0.35	ug/l						
1,4-Dichlorobenzene	ND	2.0	0.37	ug/l						
1,1-Dichloroethane	ND	2.0	0.27	ug/l						
1,2-Dichloroethane	ND	0.50	0.28	ug/l						
1,1-Dichloroethene	ND	5.0	0.32	ug/l						
trans-1,2-Dichloroethene	ND	2.0	0.27	ug/l						
1,2-Dichloropropane	ND	2.0	0.35	ug/l						
cis-1,3-Dichloropropene	ND	2.0	0.22	ug/l						
trans-1,3-Dichloropropene	ND	2.0	0.24	ug/l						
Ethylbenzene	ND	2.0	0.25	ug/l						
Methylene chloride	ND	5.0	0.48	ug/l						
1,1,2,2-Tetrachloroethane	ND	2.0	0.24	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	2.0	0.26	ug/l						
Trichlorofluoromethane	ND	5.0	0.34	ug/l						
Vinyl chloride	ND	0.50	0.26	ug/l						
Xylenes, Total	ND	4.0	0.52	ug/l						
Surrogate: Dibromofluoromethane	26.2			ug/l	25.0	105	80-120			
Surrogate: Toluene-d8	24.4			ug/l	25.0	98	80-120			
Surrogate: 4-Bromofluorobenzene	24.4			ug/l	25.0	98	80-120			

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MWH-Pasadena/Boeing 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Attention: Bronwyn Kelly	Project ID: 13267 (Study 1) Outfall 011 Report Number: IOB2065	Sampled: 02/25/05 Received: 02/25/05
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METHOD BLANK/QC DATA

PURGEABLES BY GC/MS (EPA 624)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	Limit	RPD	RPD Limit	Data Qualifiers
Batch: 5B26009 Extracted: 02/26/05											
LCS Analyzed: 02/26/2005 (5B26009-BS1)											
Benzene	28.2	1.0	0.28	ug/l	25.0		113	70-120			
Bromodichloromethane	27.2	2.0	0.30	ug/l	25.0		109	70-140			
Bromoform	22.4	5.0	0.32	ug/l	25.0		90	55-135			
Bromomethane	28.1	5.0	0.34	ug/l	25.0		112	60-140			
Carbon tetrachloride	26.7	0.50	0.28	ug/l	25.0		107	70-140			
Chlorobenzene	27.5	2.0	0.36	ug/l	25.0		110	80-125			
Chloroethane	27.7	5.0	0.33	ug/l	25.0		111	60-145			
Chloroform	30.0	2.0	0.33	ug/l	25.0		120	75-130			
Chloromethane	26.2	5.0	0.30	ug/l	25.0		105	40-145			
Dibromochloromethane	27.4	2.0	0.28	ug/l	25.0		110	65-145			
1,2-Dichlorobenzene	27.8	2.0	0.32	ug/l	25.0		111	80-120			
1,3-Dichlorobenzene	27.6	2.0	0.35	ug/l	25.0		110	80-120			
1,4-Dichlorobenzene	27.0	2.0	0.37	ug/l	25.0		108	80-120			
1,1-Dichloroethane	28.9	2.0	0.27	ug/l	25.0		116	70-135			
1,2-Dichloroethane	29.0	0.50	0.28	ug/l	25.0		116	60-150			
1,1-Dichloroethene	27.7	5.0	0.32	ug/l	25.0		111	75-135			
trans-1,2-Dichloroethene	29.0	2.0	0.27	ug/l	25.0		116	70-130			
1,2-Dichloropropane	28.1	2.0	0.35	ug/l	25.0		112	70-120			
cis-1,3-Dichloropropene	29.1	2.0	0.22	ug/l	25.0		116	75-130			
trans-1,3-Dichloropropene	29.1	2.0	0.24	ug/l	25.0		116	75-135			
Ethylbenzene	29.5	2.0	0.25	ug/l	25.0		118	80-120			
Methylene chloride	29.3	5.0	0.48	ug/l	25.0		117	60-135			
1,1,2,2-Tetrachloroethane	28.1	2.0	0.24	ug/l	25.0		112	60-135			
Tetrachloroethene	25.6	2.0	0.32	ug/l	25.0		102	75-125			
Toluene	27.8	2.0	0.36	ug/l	25.0		111	75-120			
1,1,1-Trichloroethane	28.5	2.0	0.30	ug/l	25.0		114	75-140			
1,1,2-Trichloroethane	28.2	2.0	0.30	ug/l	25.0		113	70-125			
Trichloroethene	26.2	2.0	0.26	ug/l	25.0		105	80-120			
Trichlorofluoromethane	29.0	5.0	0.34	ug/l	25.0		116	65-145			
Vinyl chloride	26.2	0.50	0.26	ug/l	25.0		105	50-130			
Surrogate: Dibromofluoromethane	26.2			ug/l	25.0		105	80-120			
Surrogate: Toluene-d8	24.9			ug/l	25.0		100	80-120			
Surrogate: 4-Bromofluorobenzene	25.5			ug/l	25.0		102	80-120			

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 Michele Harper
 Project Manager

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MWH-Pasadena/Boeing 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Attention: Bronwyn Kelly	Project ID: 13267 (Study 1) Outfall 011 Report Number: IOB2065	Sampled: 02/25/05 Received: 02/25/05
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METHOD BLANK/QC DATA

PURGEABLES BY GC/MS (EPA 624)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	RPD Limits	RPD Limit	Data Qualifiers
Batch: 5B26009 Extracted: 02/26/05										
Matrix Spike Analyzed: 02/26/2005 (5B26009-MS1)					Source: IOB2045-02					
Benzene	26.6	1.0	0.28	ug/l	25.0	0.71	104	70-120		
Bromodichloromethane	25.4	2.0	0.30	ug/l	25.0	ND	102	70-140		
Bromoform	20.9	5.0	0.32	ug/l	25.0	ND	84	55-140		
Bromomethane	24.9	5.0	0.34	ug/l	25.0	ND	100	50-145		
Carbon tetrachloride	24.2	0.50	0.28	ug/l	25.0	ND	97	70-145		
Chlorobenzene	25.1	2.0	0.36	ug/l	25.0	ND	100	80-125		
Chloroethane	25.4	5.0	0.33	ug/l	25.0	ND	102	50-145		
Chloroform	79.4	2.0	0.33	ug/l	25.0	50	118	70-135		
Chloromethane	23.8	5.0	0.30	ug/l	25.0	ND	95	35-145		
Dibromochloromethane	25.2	2.0	0.28	ug/l	25.0	ND	101	65-145		
1,2-Dichlorobenzene	25.8	2.0	0.32	ug/l	25.0	ND	103	75-130		
1,3-Dichlorobenzene	25.2	2.0	0.35	ug/l	25.0	ND	101	75-130		
1,4-Dichlorobenzene	24.8	2.0	0.37	ug/l	25.0	ND	99	80-120		
1,1-Dichloroethane	26.8	2.0	0.27	ug/l	25.0	ND	107	65-135		
1,2-Dichloroethane	27.4	0.50	0.28	ug/l	25.0	0.30	108	60-150		
1,1-Dichloroethene	25.6	5.0	0.32	ug/l	25.0	ND	102	65-140		
trans-1,2-Dichloroethene	26.4	2.0	0.27	ug/l	25.0	ND	106	65-135		
1,2-Dichloropropane	26.0	2.0	0.35	ug/l	25.0	ND	104	65-130		
cis-1,3-Dichloropropene	26.7	2.0	0.22	ug/l	25.0	ND	107	70-140		
trans-1,3-Dichloropropene	27.2	2.0	0.24	ug/l	25.0	ND	109	70-140		
Ethylbenzene	27.0	2.0	0.25	ug/l	25.0	0.60	106	70-130		
Methylene chloride	38.7	5.0	0.48	ug/l	25.0	8.4	121	60-135		
1,1,2,2-Tetrachloroethane	27.2	2.0	0.24	ug/l	25.0	ND	109	60-145		
Tetrachloroethene	22.6	2.0	0.32	ug/l	25.0	ND	90	70-130		
Toluene	25.9	2.0	0.36	ug/l	25.0	ND	104	70-120		
1,1,1-Trichloroethane	26.6	2.0	0.30	ug/l	25.0	ND	106	75-140		
1,1,2-Trichloroethane	27.1	2.0	0.30	ug/l	25.0	ND	108	60-135		
Trichloroethene	25.2	2.0	0.26	ug/l	25.0	1.6	94	70-125		
Trichlorofluoromethane	64.8	5.0	0.34	ug/l	25.0	37	111	55-145		
Vinyl chloride	23.7	0.50	0.26	ug/l	25.0	ND	95	40-135		
Surrogate: Dibromofluoromethane	26.5			ug/l	25.0		106	80-120		
Surrogate: Toluene-d8	24.3			ug/l	25.0		97	80-120		
Surrogate: 4-Bromofluorobenzene	25.3			ug/l	25.0		101	80-120		

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

Project ID: 13267 (Study 1)
 Outfall 011
 Report Number: IOB2065

Sampled: 02/25/05
 Received: 02/25/05

METHOD BLANK/QC DATA

PURGEABLES BY GC/MS (EPA 624)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5B26009 Extracted: 02/26/05											
Matrix Spike Dup Analyzed: 02/26/2005 (5B26009-MSD1)						Source: IOB2045-02					
Benzene	25.5	1.0	0.28	ug/l	25.0	0.71	99	70-120	4	20	
Bromodichloromethane	24.3	2.0	0.30	ug/l	25.0	ND	97	70-140	4	20	
Bromoform	20.8	5.0	0.32	ug/l	25.0	ND	83	55-140	1	25	
Bromomethane	23.6	5.0	0.34	ug/l	25.0	ND	94	50-145	5	25	
Carbon tetrachloride	23.5	0.50	0.28	ug/l	25.0	ND	94	70-145	3	25	
Chlorobenzene	24.5	2.0	0.36	ug/l	25.0	ND	98	80-125	2	20	
Chloroethane	24.0	5.0	0.33	ug/l	25.0	ND	96	50-145	6	25	
Chloroform	72.4	2.0	0.33	ug/l	25.0	50	90	70-135	9	20	
Chloromethane	22.1	5.0	0.30	ug/l	25.0	ND	88	35-145	7	25	
Dibromochloromethane	24.6	2.0	0.28	ug/l	25.0	ND	98	65-145	2	25	
1,2-Dichlorobenzene	25.0	2.0	0.32	ug/l	25.0	ND	100	75-130	3	20	
1,3-Dichlorobenzene	24.3	2.0	0.35	ug/l	25.0	ND	97	75-130	4	20	
1,4-Dichlorobenzene	24.0	2.0	0.37	ug/l	25.0	ND	96	80-120	3	20	
1,1-Dichloroethane	25.5	2.0	0.27	ug/l	25.0	ND	102	65-135	5	20	
1,2-Dichloroethane	26.2	0.50	0.28	ug/l	25.0	0.30	104	60-150	4	20	
1,1-Dichloroethene	23.9	5.0	0.32	ug/l	25.0	ND	96	65-140	7	20	
trans-1,2-Dichloroethene	25.4	2.0	0.27	ug/l	25.0	ND	102	65-135	4	20	
1,2-Dichloropropane	25.2	2.0	0.35	ug/l	25.0	ND	101	65-130	3	20	
cis-1,3-Dichloropropene	26.0	2.0	0.22	ug/l	25.0	ND	104	70-140	3	20	
trans-1,3-Dichloropropene	26.1	2.0	0.24	ug/l	25.0	ND	104	70-140	4	25	
Ethylbenzene	26.0	2.0	0.25	ug/l	25.0	0.60	102	70-130	4	20	
Methylene chloride	34.7	5.0	0.48	ug/l	25.0	8.4	105	60-135	11	20	
1,1,2,2-Tetrachloroethane	26.0	2.0	0.24	ug/l	25.0	ND	104	60-145	5	30	
Tetrachloroethene	22.2	2.0	0.32	ug/l	25.0	ND	89	70-130	2	20	
Toluene	24.8	2.0	0.36	ug/l	25.0	ND	99	70-120	4	20	
1,1,1-Trichloroethane	25.2	2.0	0.30	ug/l	25.0	ND	101	75-140	5	20	
1,1,2-Trichloroethane	25.5	2.0	0.30	ug/l	25.0	ND	102	60-135	6	25	
Trichloroethene	24.7	2.0	0.26	ug/l	25.0	1.6	92	70-125	2	20	
Trichlorofluoromethane	59.0	5.0	0.34	ug/l	25.0	37	88	55-145	9	25	
Vinyl chloride	22.3	0.50	0.26	ug/l	25.0	ND	89	40-135	6	30	
Surrogate: Dibromofluoromethane	25.6			ug/l	25.0		102	80-120			
Surrogate: Toluene-d8	24.1			ug/l	25.0		96	80-120			
Surrogate: 4-Bromofluorobenzene	24.9			ug/l	25.0		100	80-120			

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 Michele Harper
 Project Manager



MWH-Pasadena/Boeing 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Attention: Bronwyn Kelly	Project ID: 13267 (Study 1) Outfall 011 Report Number: IOB2065	Sampled: 02/25/05 Received: 02/25/05
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METHOD BLANK/QC DATA

PURGEABLES BY GC/MS (EPA 624)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	RPD RPD	Limit Limits	RPD Limit	Data Qualifiers
Batch: 5B26009 Extracted: 02/26/05											
Blank Analyzed: 02/26/2005 (5B26009-BLK1)											
Acrolein	ND	50	4.6	ug/l							
Acrylonitrile	ND	50	5.1	ug/l							
2-Chloroethyl vinyl ether	ND	5.0	1.3	ug/l							
Surrogate: Dibromofluoromethane	26.2			ug/l	25.0		105		80-120		
Surrogate: Toluene-d8	24.4			ug/l	25.0		98		80-120		
Surrogate: 4-Bromofluorobenzene	24.4			ug/l	25.0		98		80-120		
LCS Analyzed: 02/26/2005 (5B26009-BS1)											
2-Chloroethyl vinyl ether	27.6	5.0	1.3	ug/l	25.0		110		20-175		
Surrogate: Dibromofluoromethane	26.2			ug/l	25.0		105		80-120		
Surrogate: Toluene-d8	24.9			ug/l	25.0		100		80-120		
Surrogate: 4-Bromofluorobenzene	25.5			ug/l	25.0		102		80-120		

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Project Manager



MWH-Pasadena/Boeing 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Attention: Bronwyn Kelly	Project ID: 13267 (Study 1) Outfall 011 Report Number: IOB2065	Sampled: 02/25/05 Received: 02/25/05
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METHOD BLANK/QC DATA

PURGEABLES BY GC/MS, TENTATIVELY IDENTIFIED COMPOUNDS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC Limits	RPD	Data Qualifiers
Batch: 5B26009 Extracted: 02/26/05									
Blank Analyzed: 02/26/2005 (5B26009-BLK1)									
Cyclohexane	ND	2.5	N/A	ug/l					
1,2-Dichloro-1,1,2-trifluoroethane	ND	2.5	N/A	ug/l					

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MWH-Pasadena/Boeing 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Attention: Bronwyn Kelly	Project ID: 13267 (Study 1) Outfall 011 Report Number: IOB2065	Sampled: 02/25/05 Received: 02/25/05
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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	RPD Limit	Data Qualifiers
Batch: 5B28001 Extracted: 02/28/05										
Blank Analyzed: 03/02/2005 (5B28001-BLK1)										
Acenaphthene	ND	0.50	0.10	ug/l						
Acenaphthylene	ND	0.50	0.10	ug/l						
Aniline	ND	10	2.9	ug/l						
Anthracene	ND	0.50	0.083	ug/l						
Benzidine	ND	5.0	3.2	ug/l						
Benzoic acid	ND	20	3.7	ug/l						
Benzo(a)anthracene	ND	5.0	0.038	ug/l						
Benzo(a)pyrene	ND	2.0	0.14	ug/l						
Benzo(b)fluoranthene	ND	2.0	0.050	ug/l						
Benzo(g,h,i)perylene	ND	5.0	0.059	ug/l						
Benzo(k)fluoranthene	ND	0.50	0.053	ug/l						
Benzyl alcohol	ND	5.0	0.21	ug/l						
Bis(2-chloroethoxy)methane	ND	0.50	0.072	ug/l						
Bis(2-chloroethyl)ether	ND	0.50	0.084	ug/l						
Bis(2-chloroisopropyl)ether	ND	0.50	0.11	ug/l						
Bis(2-ethylhexyl)phthalate	ND	5.0	1.1	ug/l						
4-Bromophenyl phenyl ether	ND	1.0	0.12	ug/l						
Butyl benzyl phthalate	1.00	5.0	0.34	ug/l						J
4-Chloroaniline	ND	2.0	0.20	ug/l						
2-Chloronaphthalene	ND	0.50	0.059	ug/l						
4-Chloro-3-methylphenol	ND	2.0	0.34	ug/l						
4-Chlorophenyl phenyl ether	ND	0.50	0.056	ug/l						
2-Chlorophenol	ND	1.0	0.12	ug/l						
Chrysene	ND	0.50	0.072	ug/l						
Dibenz(a,h)anthracene	ND	0.50	0.083	ug/l						
Dibenzofuran	ND	0.50	0.075	ug/l						
Di-n-butyl phthalate	0.380	2.0	0.26	ug/l						J
1,2-Dichlorobenzene	ND	0.50	0.11	ug/l						
1,3-Dichlorobenzene	ND	0.50	0.13	ug/l						
1,4-Dichlorobenzene	ND	0.50	0.050	ug/l						
3,3-Dichlorobenzidine	ND	5.0	0.93	ug/l						
2,4-Dichlorophenol	ND	2.0	0.21	ug/l						
Diethyl phthalate	0.140	1.0	0.12	ug/l						J
2,4-Dimethylphenol	ND	2.0	0.31	ug/l						
Dimethyl phthalate	ND	0.50	0.081	ug/l						

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

Project ID: 13267 (Study 1)
 Outfall 011
 Report Number: IOB2065

Sampled: 02/25/05
 Received: 02/25/05

METHOD BLANK/QC DATA

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

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	RPD Limits	RPD Limit	Data Qualifiers
Batch: 5B28001 Extracted: 02/28/05										
Blank Analyzed: 03/02/2005 (5B28001-BLK1)										
4,6-Dinitro-2-methylphenol	ND	5.0	0.38	ug/l						
2,4-Dinitrophenol	ND	5.0	2.7	ug/l						
2,4-Dinitrotoluene	ND	5.0	0.23	ug/l						
2,6-Dinitrotoluene	ND	5.0	0.24	ug/l						
Di-n-octyl phthalate	ND	5.0	0.17	ug/l						
1,2-Diphenylhydrazine/Azobenzene	ND	1.0	0.087	ug/l						
Fluoranthene	ND	0.50	0.089	ug/l						
Fluorene	ND	0.50	0.075	ug/l						
Hexachlorobenzene	ND	1.0	0.13	ug/l						
Hexachlorobutadiene	ND	2.0	0.38	ug/l						
Hexachlorocyclopentadiene	ND	5.0	1.8	ug/l						
Hexachloroethane	ND	3.0	0.51	ug/l						
Indeno(1,2,3-cd)pyrene	ND	2.0	0.19	ug/l						
Isophorone	ND	1.0	0.059	ug/l						
2-Methylnaphthalene	ND	1.0	0.13	ug/l						
2-Methylphenol	ND	2.0	0.28	ug/l						
4-Methylphenol	ND	5.0	0.20	ug/l						
Naphthalene	ND	1.0	0.13	ug/l						
2-Nitroaniline	ND	5.0	0.18	ug/l						
3-Nitroaniline	ND	5.0	0.35	ug/l						
4-Nitroaniline	ND	5.0	0.49	ug/l						
Nitrobenzene	ND	1.0	0.10	ug/l						
2-Nitrophenol	ND	2.0	0.23	ug/l						
4-Nitrophenol	ND	5.0	0.73	ug/l						
N-Nitrosodimethylamine	ND	2.0	0.22	ug/l						
N-Nitroso-di-n-propylamine	ND	2.0	0.18	ug/l						
N-Nitrosodiphenylamine	ND	1.0	0.077	ug/l						
Pentachlorophenol	ND	2.0	0.78	ug/l						
Phenanthrene	ND	0.50	0.071	ug/l						
Phenol	ND	1.0	0.14	ug/l						
Pyrene	ND	0.50	0.059	ug/l						
1,2,4-Trichlorobenzene	ND	1.0	0.10	ug/l						
2,4,5-Trichlorophenol	ND	2.0	0.075	ug/l						
2,4,6-Trichlorophenol	ND	1.0	0.10	ug/l						
Surrogate: 2-Fluorophenol	14.4			ug/l	20.0		72	35-120		

Del Mar Analytical, Irvine
 Michele Harper
 Project Manager



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

Project ID: 13267 (Study 1)
 Outfall 011
 Report Number: IOB2065

Sampled: 02/25/05
 Received: 02/25/05

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	RPD Limit	Data Qualifiers
Batch: 5B28001 Extracted: 02/28/05										
Blank Analyzed: 03/02/2005 (5B28001-BLK1)										
Surrogate: Phenol-d6	14.6			ug/l	20.0		73 45-120			
Surrogate: 2,4,6-Tribromophenol	19.1			ug/l	20.0		96 50-125			
Surrogate: Nitrobenzene-d5	7.80			ug/l	10.0		78 45-120			
Surrogate: 2-Fluorobiphenyl	7.90			ug/l	10.0		79 45-120			
Surrogate: Terphenyl-d14	8.86			ug/l	10.0		89 45-135			
LCS Analyzed: 03/02/2005-03/03/2005 (5B28001-BS1)										
Acenaphthene	8.22	0.50	0.10	ug/l	10.0		82 55-120			
Acenaphthylene	8.76	0.50	0.10	ug/l	10.0		88 55-120			
Aniline	7.52	10	2.9	ug/l	10.0		75 30-120			J
Anthracene	8.80	0.50	0.083	ug/l	10.0		88 60-120			
Benzidine	ND	5.0	3.2	ug/l	10.0		20-180			L2
Benzoic acid	9.08	20	3.7	ug/l	10.0		91 30-125			J
Benzo(a)anthracene	8.64	5.0	0.038	ug/l	10.0		86 65-120			
Benzo(a)pyrene	9.26	2.0	0.14	ug/l	10.0		93 55-125			
Benzo(b)fluoranthene	8.54	2.0	0.050	ug/l	10.0		85 50-125			
Benzo(g,h,i)perylene	9.52	5.0	0.059	ug/l	10.0		95 35-160			
Benzo(k)fluoranthene	8.30	0.50	0.053	ug/l	10.0		83 50-125			
Benzyl alcohol	7.10	5.0	0.21	ug/l	10.0		71 40-130			
Bis(2-chloroethoxy)methane	8.10	0.50	0.072	ug/l	10.0		81 55-120			
Bis(2-chloroethyl)ether	7.30	0.50	0.084	ug/l	10.0		73 50-120			
Bis(2-chloroisopropyl)ether	7.94	0.50	0.11	ug/l	10.0		79 50-120			
Bis(2-ethylhexyl)phthalate	8.90	5.0	1.1	ug/l	10.0		89 65-125			
4-Bromophenyl phenyl ether	8.52	1.0	0.12	ug/l	10.0		85 55-125			
Butyl benzyl phthalate	9.04	5.0	0.34	ug/l	10.0		90 60-125			
4-Chloroaniline	6.48	2.0	0.20	ug/l	10.0		65 55-120			
2-Chloronaphthalene	8.36	0.50	0.059	ug/l	10.0		84 60-120			
4-Chloro-3-methylphenol	9.10	2.0	0.34	ug/l	10.0		91 60-120			
4-Chlorophenyl phenyl ether	8.74	0.50	0.056	ug/l	10.0		87 55-120			
2-Chlorophenol	7.64	1.0	0.12	ug/l	10.0		76 45-120			
Chrysene	8.52	0.50	0.072	ug/l	10.0		85 65-120			
Dibenz(a,h)anthracene	9.66	0.50	0.083	ug/l	10.0		97 40-160			
Dibenzofuran	8.48	0.50	0.075	ug/l	10.0		85 60-120			
Di-n-butyl phthalate	8.90	2.0	0.26	ug/l	10.0		89 65-125			
1,2-Dichlorobenzene	6.42	0.50	0.11	ug/l	10.0		64 40-120			
1,3-Dichlorobenzene	6.10	0.50	0.13	ug/l	10.0		61 40-120			

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 Michele Harper
 Project Manager

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

Project ID: 13267 (Study 1)
 Outfall 011
 Report Number: IOB2065

Sampled: 02/25/05
 Received: 02/25/05

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	RPD Limit	Data Qualifiers
Batch: 5B28001 Extracted: 02/28/05										
LCS Analyzed: 03/02/2005-03/03/2005 (5B28001-BS1)										
1,4-Dichlorobenzene	6.00	0.50	0.050	ug/l	10.0	60	40-120			M-NR1
3,3-Dichlorobenzidine	6.60	5.0	0.93	ug/l	10.0	66	50-170			
2,4-Dichlorophenol	7.48	2.0	0.21	ug/l	10.0	75	55-120			
Diethyl phthalate	8.42	1.0	0.12	ug/l	10.0	84	60-120			
2,4-Dimethylphenol	6.90	2.0	0.31	ug/l	10.0	69	35-120			
Dimethyl phthalate	7.86	0.50	0.081	ug/l	10.0	79	60-120			
4,6-Dinitro-2-methylphenol	8.12	5.0	0.38	ug/l	10.0	81	55-120			
2,4-Dinitrophenol	7.80	5.0	2.7	ug/l	10.0	78	40-140			
2,4-Dinitrotoluene	7.92	5.0	0.23	ug/l	10.0	79	60-140			
2,6-Dinitrotoluene	7.94	5.0	0.24	ug/l	10.0	79	65-125			
Di-n-octyl phthalate	9.08	5.0	0.17	ug/l	10.0	91	60-130			
1,2-Diphenylhydrazine/Azobenzene	8.78	1.0	0.087	ug/l	10.0	88	60-120			
Fluoranthene	8.96	0.50	0.089	ug/l	10.0	90	55-125			
Fluorene	8.80	0.50	0.075	ug/l	10.0	88	60-120			
Hexachlorobenzene	9.14	1.0	0.13	ug/l	10.0	91	50-120			
Hexachlorobutadiene	6.76	2.0	0.38	ug/l	10.0	68	45-120			
Hexachlorocyclopentadiene	7.22	5.0	1.8	ug/l	10.0	72	10-130			
Hexachloroethane	6.00	3.0	0.51	ug/l	10.0	60	40-120			
Indeno(1,2,3-cd)pyrene	10.1	2.0	0.19	ug/l	10.0	101	35-150			
Isophorone	7.50	1.0	0.059	ug/l	10.0	75	55-120			
2-Methylnaphthalene	8.66	1.0	0.13	ug/l	10.0	87	50-120			
2-Methylphenol	7.66	2.0	0.28	ug/l	10.0	77	45-120			
4-Methylphenol	7.30	5.0	0.20	ug/l	10.0	73	45-120			
Naphthalene	8.08	1.0	0.13	ug/l	10.0	81	50-120			
2-Nitroaniline	8.22	5.0	0.18	ug/l	10.0	82	60-130			
3-Nitroaniline	8.00	5.0	0.35	ug/l	10.0	80	50-140			
4-Nitroaniline	7.86	5.0	0.49	ug/l	10.0	79	45-160			
Nitrobenzene	7.38	1.0	0.10	ug/l	10.0	74	50-120			
2-Nitrophenol	7.76	2.0	0.23	ug/l	10.0	78	55-120			
4-Nitrophenol	7.28	5.0	0.73	ug/l	10.0	73	50-135			
N-Nitrosodimethylamine	6.94	2.0	0.22	ug/l	10.0	69	40-120			
N-Nitroso-di-n-propylamine	6.80	2.0	0.18	ug/l	10.0	68	50-120			
N-Nitrosodiphenylamine	7.84	1.0	0.077	ug/l	10.0	78	60-120			
Pentachlorophenol	8.46	2.0	0.78	ug/l	10.0	85	50-125			
Phenanthrene	8.38	0.50	0.071	ug/l	10.0	84	55-120			

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 Attention: Bronwyn Kelly

Project ID: 13267 (Study 1)
 Outfall 011
 Report Number: IOB2065

Sampled: 02/25/05
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METHOD BLANK/QC DATA

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

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC Limits	RPD	RPD Limit	Data Qualifiers
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Batch: 5B28001 Extracted: 02/28/05

LCS Analyzed: 03/02/2005-03/03/2005 (5B28001-BS1)

M-NR1

Phenol	7.48	1.0	0.14	ug/l	10.0	75	45-120			
Pyrene	8.86	0.50	0.059	ug/l	10.0	89	50-120			
1,2,4-Trichlorobenzene	7.18	1.0	0.10	ug/l	10.0	72	50-120			
2,4,5-Trichlorophenol	8.50	2.0	0.075	ug/l	10.0	85	60-120			
2,4,6-Trichlorophenol	8.80	1.0	0.10	ug/l	10.0	88	60-120			
Surrogate: 2-Fluorophenol	15.0			ug/l	20.0	75	35-120			
Surrogate: Phenol-d6	14.6			ug/l	20.0	73	45-120			
Surrogate: 2,4,6-Tribromophenol	19.3			ug/l	20.0	96	50-125			
Surrogate: Nitrobenzene-d5	7.94			ug/l	10.0	79	45-120			
Surrogate: 2-Fluorobiphenyl	8.42			ug/l	10.0	84	45-120			
Surrogate: Terphenyl-d14	8.96			ug/l	10.0	90	45-135			

LCS Dup Analyzed: 03/02/2005-03/03/2005 (5B28001-BS1)

Acenaphthene	8.34	0.50	0.10	ug/l	10.0	83	55-120	1	20	
Acenaphthylene	8.44	0.50	0.10	ug/l	10.0	84	55-120	4	20	
Aniline	7.86	10	2.9	ug/l	10.0	79	30-120	4	25	J
Anthracene	8.50	0.50	0.083	ug/l	10.0	85	60-120	3	20	
Benzidine	3.62	5.0	3.2	ug/l	10.0	36	20-180		35	J
Benzoic acid	6.72	20	3.7	ug/l	10.0	67	30-125	30	30	J
Benzo(a)anthracene	8.82	5.0	0.038	ug/l	10.0	88	65-120	2	20	
Benzo(a)pyrene	9.32	2.0	0.14	ug/l	10.0	93	55-125	1	25	
Benzo(b)fluoranthene	8.78	2.0	0.050	ug/l	10.0	88	50-125	3	25	
Benzo(g,h,i)perylene	9.94	5.0	0.059	ug/l	10.0	99	35-160	4	25	
Benzo(k)fluoranthene	8.56	0.50	0.053	ug/l	10.0	86	50-125	3	20	
Benzyl alcohol	8.08	5.0	0.21	ug/l	10.0	81	40-130	13	20	
Bis(2-chloroethoxy)methane	8.02	0.50	0.072	ug/l	10.0	80	55-120	1	20	
Bis(2-chloroethyl)ether	7.44	0.50	0.084	ug/l	10.0	74	50-120	2	20	
Bis(2-chloroisopropyl)ether	8.36	0.50	0.11	ug/l	10.0	84	50-120	5	20	
Bis(2-ethylhexyl)phthalate	9.44	5.0	1.1	ug/l	10.0	94	65-125	6	20	
4-Bromophenyl phenyl ether	8.02	1.0	0.12	ug/l	10.0	80	55-125	6	25	
Butyl benzyl phthalate	9.50	5.0	0.34	ug/l	10.0	95	60-125	5	20	
4-Chloroaniline	7.58	2.0	0.20	ug/l	10.0	76	55-120	16	25	
2-Chloronaphthalene	8.14	0.50	0.059	ug/l	10.0	81	60-120	3	20	
4-Chloro-3-methylphenol	8.74	2.0	0.34	ug/l	10.0	87	60-120	4	25	
4-Chlorophenyl phenyl ether	8.36	0.50	0.056	ug/l	10.0	84	55-120	4	20	
2-Chlorophenol	7.84	1.0	0.12	ug/l	10.0	78	45-120	3	25	

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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: 5B28001 Extracted: 02/28/05										
LCS Dup Analyzed: 03/02/2005-03/03/2005 (5B28001-BSD1)										
Chrysene	8.44	0.50	0.072	ug/l	10.0	84	65-120	1	20	
Dibenz(a,h)anthracene	10.0	0.50	0.083	ug/l	10.0	100	40-160	3	25	
Dibenzofuran	8.06	0.50	0.075	ug/l	10.0	81	60-120	5	20	
Di-n-butyl phthalate	8.74	2.0	0.26	ug/l	10.0	87	65-125	2	20	
1,2-Dichlorobenzene	6.26	0.50	0.11	ug/l	10.0	63	40-120	3	25	
1,3-Dichlorobenzene	6.00	0.50	0.13	ug/l	10.0	60	40-120	2	25	
1,4-Dichlorobenzene	6.10	0.50	0.050	ug/l	10.0	61	40-120	2	25	
3,3-Dichlorobenzidine	8.02	5.0	0.93	ug/l	10.0	80	50-170	19	25	
2,4-Dichlorophenol	7.58	2.0	0.21	ug/l	10.0	76	55-120	1	20	
Diethyl phthalate	8.02	1.0	0.12	ug/l	10.0	80	60-120	5	20	
2,4-Dimethylphenol	6.62	2.0	0.31	ug/l	10.0	66	35-120	4	25	
Dimethyl phthalate	7.74	0.50	0.081	ug/l	10.0	77	60-120	2	20	
4,6-Dinitro-2-methylphenol	7.88	5.0	0.38	ug/l	10.0	79	55-120	3	25	
2,4-Dinitrophenol	7.12	5.0	2.7	ug/l	10.0	71	40-140	9	25	
2,4-Dinitrotoluene	7.70	5.0	0.23	ug/l	10.0	77	60-140	3	20	
2,6-Dinitrotoluene	7.78	5.0	0.24	ug/l	10.0	78	65-125	2	20	
Di-n-octyl phthalate	9.70	5.0	0.17	ug/l	10.0	97	60-130	7	20	
1,2-Diphenylhydrazine/Azobenzene	8.30	1.0	0.087	ug/l	10.0	83	60-120	6	25	
Fluoranthene	8.94	0.50	0.089	ug/l	10.0	89	55-125	0	20	
Fluorene	8.56	0.50	0.075	ug/l	10.0	86	60-120	3	20	
Hexachlorobenzene	9.26	1.0	0.13	ug/l	10.0	93	50-120	1	20	
Hexachlorobutadiene	6.24	2.0	0.38	ug/l	10.0	62	45-120	8	25	
Hexachlorocyclopentadiene	7.08	5.0	1.8	ug/l	10.0	71	10-130	2	30	
Hexachloroethane	5.86	3.0	0.51	ug/l	10.0	59	40-120	2	25	
Indeno(1,2,3-cd)pyrene	10.3	2.0	0.19	ug/l	10.0	103	35-150	2	25	
Isophorone	7.42	1.0	0.059	ug/l	10.0	74	55-120	1	20	
2-Methylnaphthalene	8.06	1.0	0.13	ug/l	10.0	81	50-120	7	20	
2-Methylphenol	7.98	2.0	0.28	ug/l	10.0	80	45-120	4	20	
4-Methylphenol	7.60	5.0	0.20	ug/l	10.0	76	45-120	4	20	
Naphthalene	7.68	1.0	0.13	ug/l	10.0	77	50-120	5	20	
2-Nitroaniline	8.24	5.0	0.18	ug/l	10.0	82	60-130	0	20	
3-Nitroaniline	7.84	5.0	0.35	ug/l	10.0	78	50-140	2	25	
4-Nitroaniline	7.96	5.0	0.49	ug/l	10.0	80	45-160	1	20	
Nitrobenzene	7.00	1.0	0.10	ug/l	10.0	70	50-120	5	25	
2-Nitrophenol	8.10	2.0	0.23	ug/l	10.0	81	55-120	4	25	

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MWH-Pasadena/Boeing 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Attention: Bronwyn Kelly	Project ID: 13267 (Study 1) Outfall 011 Report Number: IOB2065	Sampled: 02/25/05 Received: 02/25/05
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METHOD BLANK/QC DATA

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

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	RPD Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5B28001 Extracted: 02/28/05											
LCS Dup Analyzed: 03/02/2005-03/03/2005 (5B28001-BSD1)											
4-Nitrophenol	8.16	5.0	0.73	ug/l	10.0	82	50-135	11	25		
N-Nitrosodimethylamine	7.90	2.0	0.22	ug/l	10.0	79	40-120	13	20		
N-Nitroso-di-n-propylamine	7.56	2.0	0.18	ug/l	10.0	76	50-120	11	20		
N-Nitrosodiphenylamine	7.92	1.0	0.077	ug/l	10.0	79	60-120	1	20		
Pentachlorophenol	8.76	2.0	0.78	ug/l	10.0	88	50-125	3	25		
Phenanthrene	8.70	0.50	0.071	ug/l	10.0	87	55-120	4	20		
Phenol	7.60	1.0	0.14	ug/l	10.0	76	45-120	2	25		
Pyrene	8.74	0.50	0.059	ug/l	10.0	87	50-120	1	25		
1,2,4-Trichlorobenzene	6.58	1.0	0.10	ug/l	10.0	66	50-120	9	20		
2,4,5-Trichlorophenol	8.30	2.0	0.075	ug/l	10.0	83	60-120	2	20		
2,4,6-Trichlorophenol	8.64	1.0	0.10	ug/l	10.0	86	60-120	2	20		
Surrogate: 2-Fluorophenol	14.4			ug/l	20.0	72	35-120				
Surrogate: Phenol-d6	15.0			ug/l	20.0	75	45-120				
Surrogate: 2,4,6-Tribromophenol	19.8			ug/l	20.0	99	50-125				
Surrogate: Nitrobenzene-d5	7.80			ug/l	10.0	78	45-120				
Surrogate: 2-Fluorobiphenyl	7.90			ug/l	10.0	79	45-120				
Surrogate: Terphenyl-d14	8.80			ug/l	10.0	88	45-135				

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

Project ID: 13267 (Study 1)
 Outfall 011
 Report Number: IOB2065

Sampled: 02/25/05
 Received: 02/25/05

METHOD BLANK/QC DATA

ORGANOCHLORINE PESTICIDES (EPA 608)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC Limits	RPD RPD	RPD Limit	Data Qualifiers
Batch: 5C04051 Extracted: 03/04/05										
Blank Analyzed: 03/04/2005 (5C04051-BLK1)										
Aldrin	ND	0.10	0.030	ug/l						
alpha-BHC	ND	0.10	0.015	ug/l						
beta-BHC	ND	0.10	0.015	ug/l						
delta-BHC	ND	0.20	0.020	ug/l						
gamma-BHC (Lindane)	ND	0.10	0.020	ug/l						
Chlordane	ND	1.0	0.20	ug/l						
4,4'-DDD	ND	0.10	0.020	ug/l						
4,4'-DDE	ND	0.10	0.025	ug/l						
4,4'-DDT	ND	0.10	0.030	ug/l						
Dieldrin	ND	0.10	0.015	ug/l						
Endosulfan I	ND	0.10	0.015	ug/l						
Endosulfan II	ND	0.10	0.040	ug/l						
Endosulfan sulfate	ND	0.20	0.015	ug/l						
Endrin	ND	0.10	0.020	ug/l						
Endrin aldehyde	ND	0.10	0.045	ug/l						
Endrin ketone	ND	0.10	0.020	ug/l						
Heptachlor	ND	0.10	0.030	ug/l						
Heptachlor epoxide	ND	0.10	0.020	ug/l						
Methoxychlor	ND	0.10	0.035	ug/l						
Toxaphene	ND	5.0	1.5	ug/l						
Surrogate: Tetrachloro-m-xylene	0.364			ug/l	0.500		73	35-120		
Surrogate: Decachlorobiphenyl	0.408			ug/l	0.500		82	45-120		
LCS Analyzed: 03/04/2005 (5C04051-BS1)										
Aldrin	0.340	0.10	0.030	ug/l	0.500		68	45-115		
alpha-BHC	0.320	0.10	0.015	ug/l	0.500		64	45-115		
beta-BHC	0.385	0.10	0.015	ug/l	0.500		77	50-115		
delta-BHC	0.428	0.20	0.020	ug/l	0.500		86	55-120		
gamma-BHC (Lindane)	0.374	0.10	0.020	ug/l	0.500		75	45-115		
4,4'-DDD	0.431	0.10	0.020	ug/l	0.500		86	60-120		
4,4'-DDE	0.428	0.10	0.025	ug/l	0.500		86	55-120		
4,4'-DDT	0.448	0.10	0.030	ug/l	0.500		90	60-130		
Dieldrin	0.401	0.10	0.015	ug/l	0.500		80	55-120		
Endosulfan I	0.374	0.10	0.015	ug/l	0.500		75	50-115		
Endosulfan II	0.404	0.10	0.040	ug/l	0.500		81	60-125		
Endosulfan sulfate	0.411	0.20	0.015	ug/l	0.500		82	60-120		

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Outfall 011
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METHOD BLANK/QC DATA
ORGANOCHLORINE PESTICIDES (EPA 608)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5C04051 Extracted: 03/04/05											
LCS Analyzed: 03/04/2005 (5C04051-BS1)											
Endrin	0.409	0.10	0.020	ug/l	0.500		82	55-125			
Endrin aldehyde	0.398	0.10	0.045	ug/l	0.500		80	55-115			
Endrin ketone	0.417	0.10	0.020	ug/l	0.500		83	60-120			
Heptachlor	0.371	0.10	0.030	ug/l	0.500		74	45-115			
Heptachlor epoxide	0.381	0.10	0.020	ug/l	0.500		76	50-120			
Methoxychlor	0.429	0.10	0.035	ug/l	0.500		86	60-135			
Surrogate: Tetrachloro-m-xylene	0.321			ug/l	0.500		64	35-120			
Surrogate: Decachlorobiphenyl	0.396			ug/l	0.500		79	45-120			
Matrix Spike Analyzed: 03/04/2005 (5C04051-MS1) Source: IOB2149-04											
Aldrin	0.703	0.20	0.060	ug/l	1.00	ND	70	45-115			
alpha-BHC	0.683	0.20	0.030	ug/l	1.00	ND	68	45-115			
beta-BHC	0.777	0.20	0.030	ug/l	1.00	ND	78	50-115			
delta-BHC	0.867	0.40	0.040	ug/l	1.00	ND	87	55-120			
gamma-BHC (Lindane)	0.791	0.20	0.040	ug/l	1.00	ND	79	45-115			
4,4'-DDD	0.870	0.20	0.040	ug/l	1.00	ND	87	60-120			
4,4'-DDE	0.863	0.20	0.050	ug/l	1.00	ND	86	55-120			
4,4'-DDT	0.916	0.20	0.060	ug/l	1.00	ND	92	60-130			
Dieldrin	0.818	0.20	0.030	ug/l	1.00	ND	82	55-120			
Endosulfan I	0.766	0.20	0.030	ug/l	1.00	ND	77	50-115			
Endosulfan II	0.816	0.20	0.080	ug/l	1.00	ND	82	60-125			
Endosulfan sulfate	0.833	0.40	0.030	ug/l	1.00	ND	83	60-120			
Endrin	0.831	0.20	0.040	ug/l	1.00	ND	83	55-125			
Endrin aldehyde	0.804	0.20	0.090	ug/l	1.00	ND	80	55-115			
Endrin ketone	0.846	0.20	0.040	ug/l	1.00	ND	85	60-120			
Heptachlor	0.791	0.20	0.060	ug/l	1.00	ND	79	45-115			
Heptachlor epoxide	0.785	0.20	0.040	ug/l	1.00	ND	78	50-120			
Methoxychlor	0.866	0.20	0.070	ug/l	1.00	ND	87	60-135			
Surrogate: Tetrachloro-m-xylene	0.683			ug/l	1.00		68	35-120			
Surrogate: Decachlorobiphenyl	0.790			ug/l	1.00		79	45-120			



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METHOD BLANK/QC DATA

ORGANOCHLORINE PESTICIDES (EPA 608)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5C04051 Extracted: 03/04/05											
Matrix Spike Dup Analyzed: 03/05/2005 (5C04051-MSD1)						Source: IOB2149-04					
Aldrin	0.797	0.20	0.060	ug/l	1.00	ND	80	45-115	13	30	
alpha-BHC	0.735	0.20	0.030	ug/l	1.00	ND	74	45-115	7	30	
beta-BHC	0.862	0.20	0.030	ug/l	1.00	ND	86	50-115	10	30	
delta-BHC	0.957	0.40	0.040	ug/l	1.00	ND	96	55-120	10	30	
gamma-BHC (Lindane)	0.852	0.20	0.040	ug/l	1.00	ND	85	45-115	7	30	
4,4'-DDD	0.992	0.20	0.040	ug/l	1.00	ND	99	60-120	13	30	
4,4'-DDE	0.970	0.20	0.050	ug/l	1.00	ND	97	55-120	12	30	
4,4'-DDT	1.02	0.20	0.060	ug/l	1.00	ND	102	60-130	11	30	
Dieldrin	0.908	0.20	0.030	ug/l	1.00	ND	91	55-120	10	30	
Endosulfan I	0.845	0.20	0.030	ug/l	1.00	ND	84	50-115	10	30	
Endosulfan II	0.921	0.20	0.080	ug/l	1.00	ND	92	60-125	12	30	
Endosulfan sulfate	0.946	0.40	0.030	ug/l	1.00	ND	95	60-120	13	30	
Endrin	0.927	0.20	0.040	ug/l	1.00	ND	93	55-125	11	30	
Endrin aldehyde	0.916	0.20	0.090	ug/l	1.00	ND	92	55-115	13	30	
Endrin ketone	0.970	0.20	0.040	ug/l	1.00	ND	97	60-120	14	30	
Heptachlor	0.851	0.20	0.060	ug/l	1.00	ND	85	45-115	7	30	
Heptachlor epoxide	0.855	0.20	0.040	ug/l	1.00	ND	86	50-120	9	30	
Methoxychlor	1.01	0.20	0.070	ug/l	1.00	ND	101	60-135	15	30	
Surrogate: Tetrachloro-m-xylene	0.734			ug/l	1.00		73	35-120			
Surrogate: Decachlorobiphenyl	0.907			ug/l	1.00		91	45-120			

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METHOD BLANK/QC DATA

TOTAL PCBS (EPA 608)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5C02052 Extracted: 03/02/05										
Blank Analyzed: 03/03/2005 (5C02052-BLK1)										
Aroclor 1016	ND	1.0	0.20	ug/l						
Aroclor 1221	ND	1.0	0.10	ug/l						
Aroclor 1232	ND	1.0	0.15	ug/l						
Aroclor 1242	ND	1.0	0.15	ug/l						
Aroclor 1248	ND	1.0	0.25	ug/l						
Aroclor 1254	ND	1.0	0.25	ug/l						
Aroclor 1260	ND	1.0	0.40	ug/l						
Surrogate: Decachlorobiphenyl	0.344			ug/l	0.500		69	45-120		
LCS Analyzed: 03/03/2005 (5C02052-BS2)										
Aroclor 1016	2.93	1.0	0.20	ug/l	4.00		73	50-115		M-NR1
Aroclor 1260	2.73	1.0	0.40	ug/l	4.00		68	60-115		
Surrogate: Decachlorobiphenyl	0.349			ug/l	0.500		70	45-120		
LCS Dup Analyzed: 03/03/2005 (5C02052-BSD2)										
Aroclor 1016	3.27	1.0	0.20	ug/l	4.00		82	50-115	11	30
Aroclor 1260	3.05	1.0	0.40	ug/l	4.00		76	60-115	11	25
Surrogate: Decachlorobiphenyl	0.383			ug/l	0.500		77	45-120		

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 Report Number: IOB2065

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METHOD BLANK/QC DATA

METALS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5C02083 Extracted: 03/02/05											
Blank Analyzed: 03/02/2005 (5C02083-BLK1)											
Boron	ND	0.050	0.0074	mg/l							
LCS Analyzed: 03/02/2005 (5C02083-BS1)											
Boron	0.468	0.050	0.0074	mg/l	0.500		94	85-115			
Matrix Spike Analyzed: 03/02/2005 (5C02083-MS1)											
						Source: IOB1981-05					
Boron	0.679	0.050	0.0074	mg/l	0.500	0.20	96	70-130			
Matrix Spike Dup Analyzed: 03/02/2005 (5C02083-MSD1)											
						Source: IOB1981-05					
Boron	0.698	0.050	0.0074	mg/l	0.500	0.20	100	70-130	3	20	
Batch: 5C02089 Extracted: 03/02/05											
Blank Analyzed: 03/02/2005 (5C02089-BLK1)											
Mercury	ND	0.20	0.063	ug/l							
LCS Analyzed: 03/02/2005 (5C02089-BS1)											
Mercury	8.06	0.20	0.063	ug/l	8.00		101	85-115			
Matrix Spike Analyzed: 03/02/2005 (5C02089-MS1)											
						Source: IOB1993-06					
Mercury	8.30	0.20	0.063	ug/l	8.00	ND	104	70-130			
Matrix Spike Dup Analyzed: 03/02/2005 (5C02089-MSD1)											
						Source: IOB1993-06					
Mercury	8.18	0.20	0.063	ug/l	8.00	ND	102	70-130	1	20	
Batch: 5C03085 Extracted: 03/03/05											
Blank Analyzed: 03/03/2005 (5C03085-BLK1)											
Antimony	1.28	2.0	0.18	ug/l							J
Arsenic	ND	1.0	0.49	ug/l							
Barium	ND	0.0010	0.00014	mg/l							
Beryllium	ND	0.50	0.037	ug/l							
Cadmium	ND	1.0	0.015	ug/l							
Chromium	ND	2.0	0.26	ug/l							
Cobalt	ND	1.0	0.10	ug/l							
Copper	ND	2.0	0.49	ug/l							
Iron	0.00553	0.010	0.0032	mg/l							J
Lead	ND	1.0	0.13	ug/l							

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METHOD BLANK/QC DATA

METALS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Data Qualifiers
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Batch: 5C03085 Extracted: 03/03/05

Blank Analyzed: 03/03/2005 (5C03085-BLK1)

Manganese	ND	1.0	0.44	ug/l						
Nickel	ND	2.0	0.15	ug/l						
Selenium	ND	2.0	0.36	ug/l						
Silver	ND	1.0	0.089	ug/l						
Thallium	ND	1.0	0.075	ug/l						
Vanadium	ND	2.0	0.86	ug/l						
Zinc	ND	20	3.1	ug/l						

LCS Analyzed: 03/03/2005 (5C03085-BS1)

Antimony	90.2	2.0	0.18	ug/l	80.0		113	85-115		
Arsenic	83.8	1.0	0.49	ug/l	80.0		105	85-115		
Barium	0.0861	0.0010	0.00014	mg/l	0.0800		108	85-115		
Beryllium	86.8	0.50	0.037	ug/l	80.0		108	85-115		
Cadmium	83.1	1.0	0.015	ug/l	80.0		104	85-115		
Chromium	81.1	2.0	0.26	ug/l	80.0		101	85-115		
Cobalt	80.3	1.0	0.10	ug/l	80.0		100	85-115		
Copper	78.5	2.0	0.49	ug/l	80.0		98	85-115		
Iron	0.878	0.010	0.0032	mg/l	0.800		110	85-115		
Lead	82.6	1.0	0.13	ug/l	80.0		103	85-115		
Manganese	85.7	1.0	0.44	ug/l	80.0		107	85-115		
Nickel	80.0	2.0	0.15	ug/l	80.0		100	85-115		
Selenium	87.9	2.0	0.36	ug/l	80.0		110	85-115		
Silver	81.3	1.0	0.089	ug/l	80.0		102	85-115		
Thallium	85.6	1.0	0.075	ug/l	80.0		107	85-115		
Vanadium	77.4	2.0	0.86	ug/l	80.0		97	85-115		
Zinc	81.5	20	3.1	ug/l	80.0		102	85-115		

Matrix Spike Analyzed: 03/03/2005 (5C03085-MS1)

Source: IOB2069-01

Antimony	92.7	2.0	0.18	ug/l	80.0	0.58	115	70-130		
Arsenic	87.9	1.0	0.49	ug/l	80.0	0.89	109	70-130		
Barium	0.155	0.0010	0.00014	mg/l	0.0800	0.066	111	70-130		
Beryllium	83.7	0.50	0.037	ug/l	80.0	ND	105	70-130		
Cadmium	83.5	1.0	0.015	ug/l	80.0	ND	104	70-130		
Chromium	84.3	2.0	0.26	ug/l	80.0	1.2	104	70-130		
Cobalt	81.4	1.0	0.10	ug/l	80.0	0.18	102	70-130		
Copper	78.8	2.0	0.49	ug/l	80.0	1.2	97	70-130		

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METHOD BLANK/QC DATA

METALS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	RPD Limits	RPD RPD	Data Qualifiers
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Batch: 5C03085 Extracted: 03/03/05

Matrix Spike Analyzed: 03/03/2005 (5C03085-MS1)

Source: IOB2069-01

Iron	0.832	0.010	0.0032	mg/l	0.800	0.052	98	70-130		
Lead	82.3	1.0	0.13	ug/l	80.0	ND	103	70-130		
Manganese	101	1.0	0.44	ug/l	80.0	15	108	70-130		
Nickel	79.5	2.0	0.15	ug/l	80.0	0.36	99	70-130		
Selenium	90.6	2.0	0.36	ug/l	80.0	1.8	111	70-130		
Silver	80.4	1.0	0.089	ug/l	80.0	ND	100	70-130		
Thallium	86.2	1.0	0.075	ug/l	80.0	ND	108	70-130		
Vanadium	82.5	2.0	0.86	ug/l	80.0	ND	103	70-130		
Zinc	103	20	3.1	ug/l	80.0	25	98	70-130		

Matrix Spike Analyzed: 03/03/2005 (5C03085-MS2)

Source: IOB2149-04

Antimony	96.1	2.0	0.18	ug/l	80.0	0.53	119	70-130		
Arsenic	100	1.0	0.49	ug/l	80.0	13	109	70-130		
Barium	0.284	0.0010	0.00014	mg/l	0.0800	0.18	130	70-130		
Beryllium	78.8	0.50	0.037	ug/l	80.0	0.048	98	70-130		
Cadmium	80.9	1.0	0.015	ug/l	80.0	0.053	101	70-130		
Chromium	85.0	2.0	0.26	ug/l	80.0	0.67	105	70-130		
Cobalt	81.6	1.0	0.10	ug/l	80.0	0.59	101	70-130		
Copper	75.9	2.0	0.49	ug/l	80.0	2.9	91	70-130		
Iron	0.746	0.010	0.0032	mg/l	0.800	0.022	90	70-130		
Lead	78.9	1.0	0.13	ug/l	80.0	0.20	98	70-130		
Manganese	1470	10	4.4	ug/l	80.0	1300	212	70-130		
Nickel	77.3	2.0	0.15	ug/l	80.0	0.93	95	70-130		M-HA
Selenium	97.5	2.0	0.36	ug/l	80.0	6.5	114	70-130		
Silver	77.1	1.0	0.089	ug/l	80.0	ND	96	70-130		
Thallium	81.5	1.0	0.075	ug/l	80.0	ND	102	70-130		
Vanadium	91.7	2.0	0.86	ug/l	80.0	4.5	109	70-130		
Zinc	101	20	3.1	ug/l	80.0	28	91	70-130		

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MWH-Pasadena/Boeing
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 Attention: Bronwyn Kelly

Project ID: 13267 (Study 1)
 Outfall 011
 Report Number: IOB2065

Sampled: 02/25/05
 Received: 02/25/05

METHOD BLANK/QC DATA

METALS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	Limit	RPD	RPD Limit	Data Qualifiers
Batch: 5C03085 Extracted: 03/03/05											
Matrix Spike Dup Analyzed: 03/03/2005 (5C03085-MSD1)						Source: IOB2069-01					
Antimony	88.4	2.0	0.18	ug/l	80.0	0.58	110	70-130	5	20	
Arsenic	84.3	1.0	0.49	ug/l	80.0	0.89	104	70-130	4	20	
Barium	0.151	0.0010	0.00014	mg/l	0.0800	0.066	106	70-130	3	20	
Beryllium	80.3	0.50	0.037	ug/l	80.0	ND	100	70-130	4	20	
Cadmium	81.5	1.0	0.015	ug/l	80.0	ND	102	70-130	2	20	
Chromium	82.0	2.0	0.26	ug/l	80.0	1.2	101	70-130	3	20	
Cobalt	78.6	1.0	0.10	ug/l	80.0	0.18	98	70-130	4	20	
Copper	76.4	2.0	0.49	ug/l	80.0	1.2	94	70-130	3	20	
Iron	0.807	0.010	0.0032	mg/l	0.800	0.052	94	70-130	3	20	
Lead	80.0	1.0	0.13	ug/l	80.0	ND	100	70-130	3	20	
Manganese	101	1.0	0.44	ug/l	80.0	15	108	70-130	0	20	
Nickel	77.6	2.0	0.15	ug/l	80.0	0.36	97	70-130	2	20	
Selenium	87.1	2.0	0.36	ug/l	80.0	1.8	107	70-130	4	20	
Silver	78.7	1.0	0.089	ug/l	80.0	ND	98	70-130	2	20	
Thallium	83.7	1.0	0.075	ug/l	80.0	ND	105	70-130	3	20	
Vanadium	81.0	2.0	0.86	ug/l	80.0	ND	101	70-130	2	20	
Zinc	99.9	20	3.1	ug/l	80.0	25	94	70-130	3	20	

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METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	RPD Limits	RPD Limit	Data Qualifiers
Batch: 5B25042 Extracted: 02/25/05										
Blank Analyzed: 02/25/2005 (5B25042-BLK1)										
Chloride	ND	0.50	0.26	mg/l						
Fluoride	ND	0.50	0.10	mg/l						
Nitrate/Nitrite-N	ND	0.26	0.072	mg/l						
Sulfate	ND	0.50	0.18	mg/l						
LCS Analyzed: 02/25/2005 (5B25042-BS1)										
Chloride	5.13	0.50	0.26	mg/l	5.00		103	90-110		
Fluoride	5.07	0.50	0.10	mg/l	5.00		101	90-110		
Sulfate	10.5	0.50	0.18	mg/l	10.0		105	90-110		
Matrix Spike Analyzed: 02/25/2005 (5B25042-MS1) Source: IOB1979-01										
Chloride	13.9	0.50	0.26	mg/l	5.00	9.6	86	80-120		
Fluoride	5.02	0.50	0.10	mg/l	5.00	0.36	93	80-120		
Sulfate	57.0	0.50	0.18	mg/l	10.0	49	80	80-120		
Matrix Spike Dup Analyzed: 02/25/2005 (5B25042-MSD1) Source: IOB1979-01										
Chloride	14.3	0.50	0.26	mg/l	5.00	9.6	94	80-120	3	20
Fluoride	5.13	0.50	0.10	mg/l	5.00	0.36	95	80-120	2	20
Sulfate	58.2	0.50	0.18	mg/l	10.0	49	92	80-120	2	20
Batch: 5B25118 Extracted: 02/25/05										
Blank Analyzed: 02/25/2005 (5B25118-BLK1)										
Surfactants (MBAS)	ND	0.10	0.044	mg/l						
LCS Analyzed: 02/25/2005 (5B25118-BS1)										
Surfactants (MBAS)	0.247	0.10	0.044	mg/l	0.250		99	90-110		

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METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5B25118 Extracted: 02/25/05											
Matrix Spike Analyzed: 02/25/2005 (5B25118-MS1)						Source: IOB1984-01					
Surfactants (MBAS)	0.278	0.10	0.044	mg/l	0.250	ND	111	50-125			
Matrix Spike Dup Analyzed: 02/25/2005 (5B25118-MSD1)						Source: IOB1984-01					
Surfactants (MBAS)	0.267	0.10	0.044	mg/l	0.250	ND	107	50-125	4	20	
Batch: 5B25120 Extracted: 02/25/05											
Duplicate Analyzed: 02/25/2005 (5B25120-DUP1)						Source: IOB1977-01					
Residual Chlorine	ND	0.10	0.10	mg/l		ND				20	
Batch: 5B25125 Extracted: 02/25/05											
Blank Analyzed: 02/25/2005 (5B25125-BLK1)											
Chromium VI	ND	1.0	0.10	ug/l							
LCS Analyzed: 02/25/2005 (5B25125-BS1)											
Chromium VI	48.6	1.0	0.10	ug/l	50.0		97	90-110			
Matrix Spike Analyzed: 02/25/2005 (5B25125-MS1)						Source: IOB2067-07					
Chromium VI	65.8	1.0	0.10	ug/l	50.0	20	92	90-110			
Matrix Spike Dup Analyzed: 02/25/2005 (5B25125-MSD1)						Source: IOB2067-07					
Chromium VI	65.0	1.0	0.10	ug/l	50.0	20	90	90-110	1	10	
Batch: 5B25128 Extracted: 02/25/05											
Blank Analyzed: 03/02/2005 (5B25128-BLK1)											
Biochemical Oxygen Demand	ND	2.0	0.59	mg/l							

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METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5B25128 Extracted: 02/25/05										
LCS Analyzed: 03/02/2005 (5B25128-BS1)										
Biochemical Oxygen Demand	203	100	30	mg/l	198		103 85-115			
LCS Dup Analyzed: 03/02/2005 (5B25128-BSD1)										
Biochemical Oxygen Demand	202	100	30	mg/l	198		102 85-115	1	20	
Batch: 5B26046 Extracted: 02/26/05										
Blank Analyzed: 02/26/2005 (5B26046-BLK1)										
Turbidity	0.0500	1.0	0.040	NTU						J
Duplicate Analyzed: 02/26/2005 (5B26046-DUP1)										
Turbidity	1.80	1.0	0.040	NTU		Source: IOB2071-01 1.8		0	20	
Batch: 5B28078 Extracted: 02/28/05										
Blank Analyzed: 02/28/2005 (5B28078-BLK1)										
Total Dissolved Solids	ND	10	10	mg/l						
LCS Analyzed: 02/28/2005 (5B28078-BS1)										
Total Dissolved Solids	1010	10	10	mg/l	1000		101 90-110			
Duplicate Analyzed: 02/28/2005 (5B28078-DUP1)										
Total Dissolved Solids	124	10	10	mg/l		Source: IOB2066-01 120		3	10	
Batch: 5B28080 Extracted: 02/28/05										
Duplicate Analyzed: 02/28/2005 (5B28080-DUP1)										
Specific Conductance	950	1.0	1.0	umhos/cm		Source: IOB1874-01 950		0	5	

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METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	Limit Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5B28103 Extracted: 02/28/05											
Blank Analyzed: 02/28/2005 (5B28103-BLK1)											
Perchlorate	ND	4.0	0.80	ug/l							
LCS Analyzed: 02/28/2005 (5B28103-BS1)											
Perchlorate	51.9	4.0	0.80	ug/l	50.0		104	85-115			
Matrix Spike Analyzed: 03/01/2005 (5B28103-MS1)											
Perchlorate	53.1	4.0	0.80	ug/l	50.0	5.7	95	80-120			
Matrix Spike Dup Analyzed: 03/01/2005 (5B28103-MSD1)											
Perchlorate	53.7	4.0	0.80	ug/l	50.0	5.7	96	80-120	1	20	
Batch: 5B28115 Extracted: 02/28/05											
Blank Analyzed: 03/01/2005 (5B28115-BLK1)											
Total Cyanide	ND	5.0	2.2	ug/l							
LCS Analyzed: 03/01/2005 (5B28115-BS1)											
Total Cyanide	197	5.0	2.2	ug/l	200		98	90-110			
Matrix Spike Analyzed: 03/01/2005 (5B28115-MS1)											
Total Cyanide	202	5.0	2.2	ug/l	200	ND	101	70-115			
Matrix Spike Dup Analyzed: 03/01/2005 (5B28115-MSD1)											
Total Cyanide	210	5.0	2.2	ug/l	200	ND	105	70-115	4	15	
Batch: 5C01065 Extracted: 03/01/05											
Blank Analyzed: 03/01/2005 (5C01065-BLK1)											
Total Organic Carbon	ND	1.0	0.25	mg/l							

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METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5C01065 Extracted: 03/01/05											
LCS Analyzed: 03/01/2005 (5C01065-BS1)											
Total Organic Carbon	10.7	1.0	0.25	mg/l	10.0		107	90-110			
Matrix Spike Analyzed: 03/01/2005 (5C01065-MS1)											
						Source: IOB2047-09					
Total Organic Carbon	6.25	1.0	0.25	mg/l	5.00	0.94	106	80-120			
Matrix Spike Dup Analyzed: 03/01/2005 (5C01065-MSD1)											
						Source: IOB2047-09					
Total Organic Carbon	6.26	1.0	0.25	mg/l	5.00	0.94	106	80-120	0	20	
Batch: 5C02094 Extracted: 03/02/05											
Blank Analyzed: 03/02/2005 (5C02094-BLK1)											
Oil & Grease	ND	5.0	0.94	mg/l							
LCS Analyzed: 03/02/2005 (5C02094-BS1)											
Oil & Grease	18.5	5.0	0.94	mg/l	20.0		92	65-120			M-NR1
LCS Dup Analyzed: 03/02/2005 (5C02094-BSD1)											
Oil & Grease	17.2	5.0	0.94	mg/l	20.0		86	65-120	7	20	
Batch: 5C03074 Extracted: 03/03/05											
Blank Analyzed: 03/03/2005 (5C03074-BLK1)											
Total Suspended Solids	ND	10	10	mg/l							
LCS Analyzed: 03/03/2005 (5C03074-BS1)											
Total Suspended Solids	983	10	10	mg/l	1000		98	85-115			

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METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	RPD Limits	RPD RPD	RPD Limit	Data Qualifiers
Batch: 5C03074 Extracted: 03/03/05											
Duplicate Analyzed: 03/03/2005 (5C03074-DUP1)						Source: IOB2138-01					
Total Suspended Solids	21.0	10	10	mg/l		ND				10	
Batch: 5C07070 Extracted: 03/07/05											
Blank Analyzed: 03/07/2005 (5C07070-BLK1)											
Ammonia-N (Distilled)	ND	0.50	0.30	mg/l							
LCS Analyzed: 03/07/2005 (5C07070-BS1)											
Ammonia-N (Distilled)	9.52	0.50	0.30	mg/l	10.0		95	80-115			
Matrix Spike Analyzed: 03/07/2005 (5C07070-MS1)						Source: IOB2063-01					
Ammonia-N (Distilled)	9.80	0.50	0.30	mg/l	10.0	ND	98	70-120			
Matrix Spike Dup Analyzed: 03/07/2005 (5C07070-MSD1)						Source: IOB2063-01					
Ammonia-N (Distilled)	9.52	0.50	0.30	mg/l	10.0	ND	95	70-120	3	15	

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METHOD BLANK/QC DATA

1,4-DIOXANE BY GC/MS (EPA 5030B/8260B)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	RPD Limits	RPD	Data Limit	Qualifiers
Batch: P5C0309 Extracted: 03/03/05											
Blank Analyzed: 03/03/2005 (P5C0309-BLK1)											
1,4-Dioxane	ND	1.0	0.49	ug/l							
Surrogate: Dibromofluoromethane	1.05			ug/l	1.00		105	80-125			
LCS Analyzed: 03/03/2005 (P5C0309-BS1)											
1,4-Dioxane	11.3	1.0	0.49	ug/l	10.0		113	70-130			
Surrogate: Dibromofluoromethane	1.06			ug/l	1.00		106	80-125			
LCS Dup Analyzed: 03/03/2005 (P5C0309-BSD1)											
1,4-Dioxane	10.2	1.0	0.49	ug/l	10.0		102	70-130	10	20	
Surrogate: Dibromofluoromethane	1.05			ug/l	1.00		105	80-125			
Matrix Spike Analyzed: 03/03/2005 (P5C0309-MS1) Source: POC0043-01											
1,4-Dioxane	11.7	1.0	0.49	ug/l	10.0	0.59	111	70-150			
Surrogate: Dibromofluoromethane	1.05			ug/l	1.00		105	80-125			
Matrix Spike Dup Analyzed: 03/03/2005 (P5C0309-MSD1) Source: POC0043-01											
1,4-Dioxane	13.4	1.0	0.49	ug/l	10.0	0.59	128	70-150	14	25	
Surrogate: Dibromofluoromethane	1.04			ug/l	1.00		104	80-125			

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DATA QUALIFIERS AND DEFINITIONS

- B** Analyte was detected in the associated Method Blank.
- J** Estimated value. Analyte detected at a level less than the Reporting Limit (RL) and greater than or equal to the Method Detection Limit (MDL). The user of this data should be aware that this data is of unknown quality.
- L2** Laboratory Control Sample recovery was below method control limits.
- 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

ADDITIONAL COMMENTS

For TICs:

All identifications are tentative and concentrations are estimates based upon spectral comparison to the EPA/NIH library.

For 1,2-Diphenylhydrazine:

The result for 1,2-Diphenylhydrazine is based upon the reading of its breakdown product, Azobenzene.

For GRO (C4-C12):

GRO (C4-C12) is quantitated against a gasoline standard. Quantitation begins immediately following the methanol peak.

For Extractable Fuel Hydrocarbons (EFH, DRO, ORO) :

Unless otherwise noted, Extractable Fuel Hydrocarbons (EFH, DRO, ORO) are quantitated against a Diesel Fuel Standard.



Del Mar Analytical

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 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: 13267 (Study 1)
 Outfall 011
 Report Number: IOB2065

Sampled: 02/25/05
 Received: 02/25/05

Certification Summary

Del Mar Analytical, Irvine

Method	Matrix	Nelac	California
EPA 120.1	Water	X	X
EPA 160.2	Water	X	X
EPA 160.5	Water	X	X
EPA 180.1	Water	X	X
EPA 200.7	Water	X	X
EPA 200.8	Water	X	X
EPA 218.6	Water	X	X
EPA 245.1	Water	X	X
EPA 300.0	Water	X	X
EPA 314.0	Water	X	X
EPA 330.5	Water	X	X
EPA 335.2	Water	X	X
EPA 350.2	Water	X	X
EPA 405.1	Water	X	X
EPA 413.1	Water	X	X
EPA 415.1	Water	X	X
EPA 418.1	Water	X	X
EPA 608	Water	X	X
EPA 624 (MOD.)	Water	X	X
EPA 624	Water	X	X
EPA 625	Water	X	X
EPA 8015 Mod.	Water	X	X
EPA 8015B	Water	X	X
EPA 8260B	Water	X	X
SM2540C	Water	X	X
SM5540-C	Water	X	X

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

Subcontracted Laboratories

Alta Analytical California Cert #1640

1104 Windfield Way - El Dorado Hills, CA 95762

Analysis Performed: 1613-Dioxin-HR

Samples: IOB2065-01

Analysis Performed: EDD + Level 4

Samples: IOB2065-01

Aquatic Testing Laboratories-SUB California Cert #1775

4350 Transport Street, Unit 107 - Ventura, CA 93003

Analysis Performed: 413.1 Oil and Grease

Del Mar Analytical, Irvine

Michele Harper
 Project Manager



Del Mar Analytical

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

Project ID: 13267 (Study 1)
Outfall 011
Report Number: IOB2065

Sampled: 02/25/05
Received: 02/25/05

Aquatic Testing Laboratories-SUB California Cert #1775

4350 Transport Street, Unit 107 - Ventura, CA 93003

Samples: IOB2065-01

Analysis Performed: Bioassay-7 dy Chrmic

Samples: IOB2065-01

Analysis Performed: Bioassay-Acute 96hr

Samples: IOB2065-01

Del Mar Analytical - Phoenix NELAC Cert #01109CA, California Cert #2446

9830 S. 51st Street, Suite B-120 - Phoenix, AZ 85044

Method Performed: EPA 8260B

Samples: IOB2065-01

Eberline Services - SUB

2030 Wright Avenue - Richmond, CA 94804

Analysis Performed: EDD + Level 4

Samples: IOB2065-01

Analysis Performed: Gross Alpha

Samples: IOB2065-01

Analysis Performed: Gross Beta

Samples: IOB2065-01

Analysis Performed: Radium, Combined

Samples: IOB2065-01

Analysis Performed: Strontium 90

Samples: IOB2065-01

Analysis Performed: Tritium

Samples: IOB2065-01

Eberline Services - SUB

2030 Wright Avenue - Richmond, CA 94804

Analysis Performed: Gamma Scan

Samples: IOB2065-04

Analysis Performed: Gross Alpha

Samples: IOB2065-03

Analysis Performed: Gross Beta

Samples: IOB2065-03

Analysis Performed: Level 4 Data Package

Samples: IOB2065-03

Analysis Performed: Radium, Combined

Samples: IOB2065-03

Analysis Performed: Strontium 90

Samples: IOB2065-03

Analysis Performed: Tritium

Samples: IOB2065-03

Truesdail Laboratories-SUB California Cert #1237

14201 Franklin Avenue - Tustin, CA 92680

Analysis Performed: Hydrazine

Samples: IOB2065-01

Analysis Performed: Level 4 Data Package

Del Mar Analytical, Irvine

Michele Harper

Project Manager



Del Mar Analytical

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

Project ID: 13267 (Study 1)
Outfall 011
Report Number: IOB2065

Sampled: 02/25/05
Received: 02/25/05

Truesdail Laboratories-SUB California Cert #1237
14201 Franklin Avenue - Tustin, CA 92680
Samples: IOB2065-01

Del Mar Analytical, Irvine
Michele Harper
Project Manager

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

IOB2065 <Page 59 of 59>

004 IOB2065 Page 1 of 2

CHAIN OF CUSTODY FORM

Del Mar Analytical Version 02/23/05

Client Name/Address: MWH-Pasadena 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Project Manager: Bronwyn Kelly Sampler: <i>P. Polach</i>		Project: Boeing-SSFL NPDES Outfall 011 - 13267 Perimeter Pond Phone Number: (626) 568-6691 Fax Number: (626) 568-6515		ANALYSIS REQUIRED Total Recoverable Metals: Ba, Cu, Pb, B, Fe, Mn, Sb, As, Be, Cd, Ni, Se, Ag, Tl, Zn, Co, V, Cr, Hg, Settleable Solids VOCs 624 + xylenes + Freon 113 + Freon 123 A + PP list TCDD (and all congeners) Oil & Grease (EPA 413.1) Cyanide (total recoverable) BOD5(20 degrees C) Surfactants (MBAS) Cl, SO4, NO3+NO2-N, Perchlorate, Fluoride Turbidity, TDS, TSS, Conductivity Ammonia-N, Titr (350.2) w/dist Alpha BHC (608) + PP list + 608-PcBs 2,4,6 Trichlorophenol, 2,4-Dinitrofluorene, Bis(2-ethylhexyl)phthalate, NDMA, pentachlorophenol (EPA 625) + Field readings: Temp 55.7 F pH= 7.0														
Sample Description	Sample Matrix	Container Type	# of Con	Sampling Date/Time	Preservative	Bottle #	113 + Freon 123 A + PP list	TCDD (and all congeners)	Oil & Grease (EPA 413.1)	Cyanide (total recoverable)	BOD5(20 degrees C)	Surfactants (MBAS)	Cl, SO4, NO3+NO2-N, Perchlorate, Fluoride	Turbidity, TDS, TSS, Conductivity	Ammonia-N, Titr (350.2) w/dist	Alpha BHC (608) + PP list + 608-PcBs	2,4,6 Trichlorophenol, 2,4-Dinitrofluorene, Bis(2-ethylhexyl)phthalate, NDMA, pentachlorophenol (EPA 625) +	Field readings:
Outfall 011	W	Poly-1L	1	2-25-05 10:42	HNO3	1A												
Outfall 011-Dup	W	Poly-1L	1		HNO3	1B												
Outfall 011	W	Poly-1L	1		None	2												
Outfall 011	W	VOAs	3		HCl	3A, 3B, 3C	X											
Outfall 011	W	1L Amber	2		None	4A, 4B		X										
Outfall 011	W	1L Amber	2		HCl	5A, 5B			X									
Outfall 011	W	Poly-500 ml	1		NaOH	6				X								
Outfall 011	W	Poly-1L	1		None	7					X							
Outfall 011	W	Poly-500 ml	2		None	8A, 8B						X						
Outfall 011	W	Poly-500 ml	2		None	9A, 9B							X					
Outfall 011	W	Poly-500 ml	2		None	10A, 10B												
Outfall 011	W	Poly-500 ml	1		H2SO4	11									X			
Outfall 011	W	1L Amber	2		None	12A, 12B												
Outfall 011	W	1L Amber	2		None	13A, 13B												
Trip Blank	W	VOAs	3		HCl	14A, 14B, 14C	X											

Turn around Time: (check)
 24 Hours _____ 5 Days _____
 48 Hours _____ 10 Days _____
 72 Hours _____ Normal _____
 Perchlorate Only 72 Hours _____
 Metals Only 72 Hours _____
 Sample Integrity: (Check)
 Intact On Ice:

Relinquished By: *[Signature]* Date/Time: 2-25-05 15:00
 Received By: *[Signature]* Date/Time: 2/25/05 19:20
 Relinquished By: *[Signature]* Date/Time: 2/25/05 19:20
 Received By: *[Signature]* Date/Time: 2/25/05 19:20

10B2005

Client Name/Address:				Project:				ANALYSIS REQUIRED										Comments			
MWH-Pasadena 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101				Boeing-SSFL NPDES Outfall 011 - 13267 Perimeter Pond				Residual Chlorine	TOC	Chromium VI (218.6)	Total Rec. Petroleum Hydrocarbons (EPA 418.1)	Diesel	8015 (GRO)	Momomethylhydrazine	624-Mod A+A+2C+E	Acute and Chronic toxicity-bioassays	Gross Alpha, Gross Beta, Tritium (906.0), Sr-90 (905.0), Radium 228, Tritium	1,4 Dioxane		(Lutons from 2/24/05)	
Sample Description	Sample Matrix	Container Type	# of Cont.	Sampling Date/Time	Preservative	Bottle #															
Outfall 011	W	150ml Brown Poly	1	2-25-05 10:00	None	15	X														
Outfall 011	W	VOA	3		HCl	16A, 16B, 16C		X													
Outfall 011	W	500ml Poly	1		None	17			X												
Outfall 011	W	1L Amber	2		HCl	18A, 18B				X											
Outfall 011	W	1L Amber	2		None	19A, 19B					X										
Outfall 011	W	VOA	3		HCl	20A, 20B, 20C						X									
Outfall 011	W	1L Amber	2		None	21A, 21B							X								
Outfall 011	W	VOA	3		None	22A, 22B, 22C								X							
Outfall 011	W	Poly-1Gal	2		None	23A, 23B									X						
Outfall 011	W	1L Amber VOA	4		None	24A, 24B, 24C, 24D, 24E, 24F										X					
Trip Blanks	W	VOA	3		None	25A, 25B, 25C															
Trip Blanks	W	VOA	3		HCl	26A, 26B, 26C											X				
Relinquished By: [Signature]							Date/Time: 2-25-05 15:00	Received By: [Signature]							Date/Time: 2/25/05 15:00	Turn around Time: (check) 24 Hours _____ 5 Days _____ 48 Hours _____ 10 Days _____ 72 Hours _____ Normal _____ Perchlorate Only 72 Hours _____ Metals Only 72 Hours _____					
Relinquished By: [Signature]							Date/Time: 2/25/05 19:20	Received By: [Signature]							Date/Time: 2/25/05 19:20	Sample Integrity: (Check) Intact <input checked="" type="checkbox"/> On Ice <input checked="" type="checkbox"/> 6°C					
Relinquished By: [Signature]							Date/Time: 2/25/05 19:20	Received By: [Signature]							Date/Time: 2/25/05 19:20						



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March 31, 2005

MWH-Pasadena/ Boeing
 300 North Lake Avenue, Suite 1200
 Pasadena, CA 91101

Attention: Bronwyn Kelly
 Project: 13267 (Study 1)
 Outfall 011
 Sampled: 02/25/05
 Del Mar Analytical Number: IOB2065

Dear Ms. Kelly:

Truesdail Laboratories performed Hydrazines by EPA Method 8315M, Eberline Services tested gross alpha/gross beta (EPA 900.0), tritium (H-3, EPA 906.0), and strontium-90 (Sr-90, EPA905.0), Aquatic Testing Laboratories performed Fathead Minnow 96 hr Percent Survival Bioassay (EPA Method 2000.0) & *Ceriodaphnia dubia* Survival and Reproduction Test (EPA Method 1002) and Alta Analytical Laboratories performed EPA Method 1613 for Dioxin for the project referenced above. Please use the following cross-reference table letter when reviewing you your results.

MWH ID	DEL MAR ID	TRUESDAIL ID	EBERLINE ID	ATL ID	ALTA ID
Outfall 011 Grab	IOB2065-01	940178-1	R503010-8305	A-05022603-001/002	25814-001

Attached are the original reports from the subcontract laboratories. If you have any questions or require further assistance, please do not hesitate to contact me at (949) 261-1022 at extension 215.

Sincerely yours,
 DEL MAR ANALYTICAL


 Michele Harper
 Project Manager



March 10, 2005

Alta Project I.D.: 25814

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

Dear Ms. Harper,

Enclosed are the results for the one aqueous sample received at Alta Analytical Laboratory on March 01, 2005 under your Project Name "IOB2065". This sample was extracted and analyzed using EPA Method 1613 for tetra-through-octa chlorinated dioxins and furans. A rush 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,

Martha M. Maier
Director of HRMS Services



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: 3/1/2005

Alta Lab. ID

Client Sample ID

25814-001

IOB2065-01

SECTION II



EPA Method 1613

Method Blank		Matrix: Aqueous	QC Batch No.: 6571	Lab Sample: 0-MB001	Date Analyzed DB-5: 9-Mar-05	Date Analyzed DB-225: NA
Analyte	Conc. (pg/L)	DL ^a	EMPC ^b	Labeled Standard	%R	LCL-UCL ^d Qualifiers
2,3,7,8-TCDD	ND	3.17		IS 13C-2,3,7,8-TCDD	79.8	25 - 164
1,2,3,7,8-PeCDD	ND	2.85		13C-1,2,3,7,8-PeCDD	67.3	25 - 181
1,2,3,4,7,8-HxCDD	ND	7.88		13C-1,2,3,4,7,8-HxCDD	77.9	32 - 141
1,2,3,6,7,8-HxCDD	ND	7.76		13C-1,2,3,6,7,8-HxCDD	88.2	28 - 130
1,2,3,7,8,9-HxCDD	ND	7.78		13C-1,2,3,4,6,7,8-HpCDD	63.7	23 - 140
1,2,3,4,6,7,8-HpCDD	ND	6.25		13C-OCDD	44.4	17 - 157
OCDD	ND	15.4		13C-2,3,7,8-TCDF	79.2	24 - 169
2,3,7,8-TCDF	ND	4.50		13C-1,2,3,7,8-PeCDF	66.2	24 - 185
1,2,3,7,8-PeCDF	ND	5.76		13C-2,3,4,7,8-PeCDF	67.5	21 - 178
2,3,4,7,8-PeCDF	ND	4.98		13C-1,2,3,4,7,8-HxCDF	72.8	26 - 152
1,2,3,4,7,8-HxCDF	ND	3.01		13C-1,2,3,6,7,8-HxCDF	81.0	26 - 123
1,2,3,6,7,8-HxCDF	ND	2.73		13C-2,3,4,6,7,8-HxCDF	80.3	28 - 136
2,3,4,6,7,8-HxCDF	ND	3.11		13C-1,2,3,7,8,9-HxCDF	74.3	29 - 147
1,2,3,7,8,9-HxCDF	ND	5.02		13C-1,2,3,4,6,7,8-HpCDF	65.7	28 - 143
1,2,3,4,6,7,8-HpCDF	ND	4.70		13C-1,2,3,4,7,8,9-HpCDF	64.1	26 - 138
1,2,3,4,7,8,9-HpCDF	ND	5.90		13C-OCDF	51.8	17 - 157
OCDF	ND	15.0		CRS 37Cl-2,3,7,8-TCDD	84.6	35 - 197
Totals						
Total TCDD	ND	3.17				
Total PeCDD	ND	2.85				
Total HxCDD	ND	7.80				
Total HpCDD	ND	6.25				
Total TCDF	ND	4.50				
Total PeCDF	ND	5.36				
Total HxCDF	ND	3.36				
Total HpCDF	ND	5.21				
Footnotes						
a. Sample specific estimated detection limit.						
b. Estimated maximum possible concentration.						
c. Method detection limit.						
d. Lower control limit - upper control limit.						

Analyst: JMH

Approved By: Martha M. Maier 10-Mar-2005 10:14



OPR Results

EPA Method 1613

Matrix:	Aqueous	QC Batch No.:	6571	Lab Sample:	0-OPR001	
Sample Size:	1.000 L	Date Extracted:	4-Mar-05	Date Analyzed DB-5:	8-Mar-05	
Analyte	Spike Conc.	Conc. (ng/mL)	OPR Limits	Labeled Standard	%R	LCL-UCL
2,3,7,8-TCDD	10.0	9.19	6.7 - 15.8	IS 13C-2,3,7,8-TCDD	67.1	25 - 164
1,2,3,7,8-PeCDD	50.0	45.5	35 - 71	13C-1,2,3,7,8-PeCDD	61.4	25 - 181
1,2,3,4,7,8-HxCDD	50.0	47.0	35 - 82	13C-1,2,3,4,7,8-HxCDD	60.9	32 - 141
1,2,3,6,7,8-HxCDD	50.0	45.2	38 - 67	13C-1,2,3,6,7,8-HxCDD	67.6	28 - 130
1,2,3,7,8,9-HxCDD	50.0	47.0	32 - 81	13C-1,2,3,4,6,7,8-HpCDD	66.0	23 - 140
1,2,3,4,6,7,8-HpCDD	50.0	49.1	35 - 70	13C-OCDD	64.3	17 - 157
OCDD	100	98.3	78 - 144	13C-2,3,7,8-TCDF	72.7	24 - 169
2,3,7,8-TCDF	10.0	9.57	7.5 - 15.8	13C-1,2,3,7,8-PeCDF	58.0	24 - 185
1,2,3,7,8-PeCDF	50.0	49.9	40 - 67	13C-2,3,4,7,8-PeCDF	60.4	21 - 178
2,3,4,7,8-PeCDF	50.0	50.3	34 - 80	13C-1,2,3,4,7,8-HxCDF	46.8	26 - 152
1,2,3,4,7,8-HxCDF	50.0	51.5	36 - 67	13C-1,2,3,6,7,8-HxCDF	52.4	26 - 123
1,2,3,6,7,8-HxCDF	50.0	51.4	42 - 65	13C-2,3,4,6,7,8-HxCDF	53.1	28 - 136
2,3,4,6,7,8-HxCDF	50.0	50.4	35 - 78	13C-1,2,3,7,8,9-HxCDF	55.3	29 - 147
1,2,3,7,8,9-HxCDF	50.0	49.8	39 - 65	13C-1,2,3,4,6,7,8-HpCDF	57.2	28 - 143
1,2,3,4,6,7,8-HpCDF	50.0	51.7	41 - 61	13C-1,2,3,4,7,8,9-HpCDF	60.2	26 - 138
1,2,3,4,7,8,9-HpCDF	50.0	52.5	39 - 69	13C-OCDF	66.3	17 - 157
OCDF	100	103	63 - 170	CRS 37Cl-2,3,7,8-TCDD	80.8	35 - 197

Analyst: JMH

Approved By: Martha M. Maier 10-Mar-2005 10:14



Sample ID: **IOB2065-01**

EPA Method 1613

Client Data		Sample Data		Laboratory Data	
Name:	Del Mar Analytical, Irvine	Matrix:	Aqueous	Lab Sample:	25814-001
Project:	IOB2065	Sample Size:	1.030 L	QC Batch No.:	6571
Date Collected:	25-Feb-05			Date Analyzed DB-5:	8-Mar-05
Time Collected:	1042			Date Analyzed DB-225:	NA

Analyte	Conc. (pg/L)	DL ^a	EMPC ^b	Qualifiers	Labeled Standard	%R	LCL-UCL ^d	Qualifiers
2,3,7,8-TCDD	ND	0.921			13C-2,3,7,8-TCDD	74.9	25 - 164	
1,2,3,7,8-PeCDD	ND	1.26			13C-1,2,3,7,8-PeCDD	64.1	25 - 181	
1,2,3,4,7,8-HxCDD	ND	2.84			13C-1,2,3,4,7,8-HxCDD	65.1	32 - 141	
1,2,3,6,7,8-HxCDD	ND	2.65			13C-1,2,3,6,7,8-HxCDD	67.9	28 - 130	
1,2,3,7,8,9-HxCDD	ND	2.73			13C-1,2,3,4,6,7,8-HpCDD	67.6	23 - 140	
1,2,3,4,6,7,8-HpCDD	9.15			J	13C-OCDD	60.5	17 - 157	
OCDD	81.2				13C-2,3,7,8-TCDF	77.3	24 - 169	
2,3,7,8-TCDF	ND	1.46			13C-1,2,3,7,8-PeCDF	61.6	24 - 185	
1,2,3,7,8-PeCDF	ND	1.91			13C-2,3,4,7,8-PeCDF	62.0	21 - 178	
2,3,4,7,8-PeCDF	ND	1.74			13C-1,2,3,4,7,8-HxCDF	52.8	26 - 152	
1,2,3,4,7,8-HxCDF	ND	1.18			13C-1,2,3,6,7,8-HxCDF	59.7	26 - 123	
1,2,3,6,7,8-HxCDF	ND	1.11			13C-2,3,4,6,7,8-HxCDF	57.4	28 - 136	
2,3,4,6,7,8-HxCDF	ND	1.27			13C-1,2,3,7,8,9-HxCDF	58.7	29 - 147	
1,2,3,7,8,9-HxCDF	ND	1.81			13C-1,2,3,4,6,7,8-HpCDF	55.8	28 - 143	
1,2,3,4,6,7,8-HpCDF	ND	2.06			13C-1,2,3,4,7,8,9-HpCDF	62.9	26 - 138	
1,2,3,4,7,8,9-HpCDF	ND	2.09			13C-OCDF	63.2	17 - 157	
OCDF	3.94			J	CRS 37Cl-2,3,7,8-TCDD	91.9	35 - 197	

Totals	Conc. (pg/L)	DL ^a	EMPC ^b	Qualifiers	Footnotes
Total TCDD	ND	0.921			a. Sample specific estimated detection limit.
Total PeCDD	ND	1.26			b. Estimated maximum possible concentration.
Total HxCDD	ND	2.73			c. Method detection limit.
Total HpCDD	20.8				d. Lower control limit - upper control limit.
Total TCDF	ND	1.46			
Total PeCDF	ND	1.82			
Total HxCDF	ND	1.31			
Total HpCDF	ND	2.07			

Analyst: JMH

Approved By: Martha M. Maier 10-Mar-2005 10:14

APPENDIX

DATA QUALIFIERS & ABBREVIATIONS

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

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

The control limits are “interim limits only” until in-house limits are utilized.

CURRENT CERTIFICATIONS



NELAP — (Primary AA: California, Certificate No. 02102CA)
Department of the Navy
U.S. Army Corps of Engineers
U.S. EPA Region 5
Bureau of Reclamation — Mid-Pacific Region — (MP-470, Res-1.10)
Commonwealth of Kentucky — (Certificate No. 90063)
Commonwealth of Virginia — (Certificate No. 00013)
State of Alaska, Department of Environmental Conservation — (Certificate No. OS-00197)
State of Arizona — (Certificate No. AZ0639)
State of Arkansas, Department of Health — (Approval granted through CA certification)
State of Arkansas, Department of Environmental Quality
State of California — (Certificate No. 1640)
State of Colorado
State of Connecticut — (Certificate No. PH-0182)
State of Florida — (Certificate No. 87456)
State of Louisiana, Department of Health and Hospitals — (Certificate No. LA000014)
State of Louisiana, Department of Environmental Quality
State of Maine
State of Michigan (Certificate No. 81178087)
State of Mississippi — (Approval granted through CA certification)
State of Nevada — (Certificate No. CA413)
State of New Jersey — (Certificate No. CA003)
State of New York, Department of Health — (Certificate No. 11411)
State of North Carolina — (Certification No. 06700)
State of North Dakota, Department of Health — (Certificate No. R-078)
State of New Mexico
State of Oklahoma — (D9919)
State of Oregon — (Certificate No. CA413)
State of Pennsylvania — (Certificate No. 68-490)
State of South Carolina — (Certificate No. 87002001)
State of Tennessee — (Certificate No. 02996)
State of Texas — (Certificate No. TX247-1000A)
State of Utah — (Certificate No. E-201)
State of Washington — (Certification No. C091)
State of Wisconsin — (Certificate No. 998036160)
State of Wyoming — (USEPA Region 8 Ref: 8TMS-Q)

09/28/04



17461 Derian Ave. Suite 100, Irvine, CA 92614 Ph (949) 261-1022 Fax (949) 261-1228
 1014 E. Gentry Dr., Suite A, Colton, CA 92324 Ph (909) 370-4667 Fax (909) 370-1046
 9484 Chesapeake Drive, Suite 306, San Diego, CA 92123 Ph (619) 505-6586 Fax (619) 505-8688
 9630 South 51st Street, Suite B-120, Phoenix, AZ 85044 Ph (480) 786-0043 Fax (480) 786-0851
 2620 E. Sunset Rd., Suite 60, Las Vegas, NV 89120 Ph (702) 786-3620 Fax (702) 786-3881

SUBCONTRACT ORDER - PROJECT # IOB2065

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 Harper

RECEIVING LABORATORY:
 Alta Analytical
 1104 Windfield Way
 El Dorado Hills, CA 95762
 Phone: (916) 933-1640
 Fax: (916) 933-0940

25814 1.1°C

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

Analysis	Expiration	Comments
Sample ID: IOB2065-01 Water	Sampled: 02/25/05 10:42	Instant Notification
1613-Dioxin-HR	03/04/05 10:42	J flags, 17 congeners, no TEQ, sub to Pace-MN
EDD + Level 4	03/25/05 10:42	Excel EDD email to pm, Include Std logs for Lvl IV
Containers Supplied:		
1 L Amber (IOB2065-01G)		
1 L Amber (IOB2065-01H)		

SAMPLE INTEGRITY:

All containers intact: Yes No Sample labels/COC agree: Yes No Samples Received On Ice: Yes No
 Custody Seals Present: Yes No Samples Preserved Properly: Yes No Samples Received at (temp): _____

Released By: *[Signature]* Date: 2-28-05 Time: 1700 Received By: *[Signature]* Date: 3/1/05 Time: 0853

Released By: _____ Date: _____ Time: _____ Received By: _____ Date: _____ Time: _____

STANDARD OPERATING PROCEDURE

Attachment 10.B.1

SAMPLE LOG-IN CHECKLIST

ALTA Project No.: 25814

1. Date Samples Arrived: <u>3/1/05</u> <u>0953</u> Initials: <u>BBB</u> Location: <u>WR-2</u>			
2. Time / Date logged in: <u>1354</u> <u>3/1/05</u> Initials: <u>BBB</u> Location: <u>WR-2</u>			
3. Samples Arrived By: (circle) <u>FedEx</u> UPS World Courier Other:			
4. Shipping Preservation: (circle) <u>Ice</u> <u>Blue Ice</u> Dry Ice / None Temp °C <u>1.1°C</u>			
5. Shipping Container(s) intact? If not, describe condition in comment section.	YES ✓	NO	NA
6. Shipping Container(s) Custody Seals Present? Intact? If not intact, describe condition in comment section.	✓		
7. Shipping Documentation Present? (circle) Shipping Label Airbill Tracking Number <u>7909 3312 2398</u>	✓		
8. Sample Custody Seal(s) Present? No. of Seals _____ or Seal No. Intact? If not intact, describe condition in comment section.		✓	✓
9. Sample Container Intact? If no, indicate sample condition in comment section.	✓		
10. Chain of Custody (COC) or other Sample Documentation Present?	✓		
11. COC/Documentation Acceptable? If no, complete COC Anomaly Form.	✓		
12. Shipping Container (circle): ALTA <u>Client</u> Retain or <u>Return</u> or Disposed			
13. Container(s) and/or Bottle(s) Requested?		✓	
14. Drinking Water Sample? (HRMS Only) If yes, Acceptable Preservation? Y or N Preservation Info From? (circle) COC or Sample Container or None Noted			✓

Comments:

ALTA Analytical Laboratory
El Dorado Hills, CA 95762



17461 Dorian Ave. Suite 100, Irvine, CA 92614 Ph (949) 261-1022 Fax (949) 261-1228
 1014 E. Dunley Dr., Suite A, Colton, CA 92324 Ph (909) 370-1887 Fax (909) 370-1848
 5484 Chatsworth Blvd., Suite 200, San Diego, CA 92173 Ph (619) 508-8888 Fax (619) 508-8889
 8820 South Star Street, Suite B-120, Phoenix, AZ 85044 Ph (480) 788-0043 Fax (480) 788-0881
 2820 E. Sunset Rd., Suite 20, Las Vegas, NV 89139 Ph (702) 798-8888 Fax (702) 798-8881

SUBCONTRACT ORDER - PROJECT # IOB2065

SENDING LABORATORY:
 Del Mar Analytical, Irvine
 17461 Dorian Avenue, Suite 100
 Irvine, CA 92614
 Phone: (949) 261-1022
 Fax: (949) 261-1228
 Project Manager: Michelo Harpo

RECEIVING LABORATORY:
 Alta Analytical
 1104 Windfield Way
 El Dorado Hills, CA 95762
 Phone: (916) 933-1640
 Fax: (916) 933-0940

Standard TAT is requested unless specific due date is requested => Due Date: 2 weeks Initials: MH

Analysis	Expiration	Comments
Sample ID: IOB2065-01 Water	Sampled: 02/25/05 10:42	Instant Notification
1613-Dioxin-HR	03/04/05 10:42	J flags, 17 congeners, no TEQ, sub to Pacc-MN
EDD + Level 4	03/25/05 10:42	Excel EDD email to pm, Include Std logs for Lvl IV
Containers Supplied:		
1 L Amber (IOB2065-01G)		
1 L Amber (IOB2065-01H)		

Sampler = P.P.

MH 2/25/05

SAMPLE INTEGRITY:

All containers intact: Yes No Sample labels/COC agree: Yes No Samples Received On Ice: Yes No
 Custody Seals Present: Yes No Samples Preserved Properly: Yes No Samples Received at (temp): _____

[Signature]
 Released By _____ Date _____ Time _____ Received By _____ Date _____ Time _____
 Released By _____ Date _____ Time _____ Received By _____ Date _____ Time _____

LABORATORY REPORT

**Aquatic
Testing
Laboratories**



"dedicated to providing quality aquatic toxicity testing"

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

Date: March 5, 2005
Client: Del Mar Analytical, Irvine
17461 Derian Avenue, Suite 100
Irvine, CA 92614
Attn: Michele Harper

Laboratory No.: A-05022603-001/002
Sample I.D.: IOB2065-01

Sample Control: The sample was received by ATL chilled, with the chain of custody record attached.

Date Sampled: 02/25/05
Date Received: 02/26/05
Date Tested: 02/26/05 to 03/04/05

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

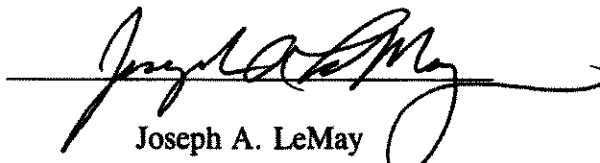
Fathead Minnow 96hr Percent Survival Bioassay (EPA Method 2000.0),
Ceriodaphnia dubia Survival and Reproduction Test (EPA Method 1002).

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

Result Summary:

Acute:	<u>Survival</u>	<u>TUa</u>
Fathead Minnow:	100%	0.0
Chronic:	<u>NOEC</u>	<u>TUc</u>
<i>Ceriodaphnia</i> Survival:	100%	1.0
<i>Ceriodaphnia</i> Reproduction:	100%	1.0

Quality Control: Reviewed and approved by:


Joseph A. LeMay
Laboratory Director

FATHEAD MINNOW PERCENT SURVIVAL TEST



Lab No.: A-05022603-001
 Client/ID: Del Mar IOB2065-01

Start Date: 02/26/2005

TEST SUMMARY

Species: *Pimephales promelas*.
 Age: 9 (1-14) days.
 Regulations: NPDES.
 Test solution volume: 250 ml.
 Feeding: prior to renewal at 48 hrs.
 Number of replicates: 2.
 Dilution water: Moderately hard reconstituted water.
 Photoperiod: 16/8 hrs light/dark.

Source: In-laboratory Culture.
 Test type: Static-Renewal.
 Test Protocol: EPA-821-R-02-012.
 Endpoints: Percent Survival at 96 hrs.
 Test chamber: 600 ml beakers.
 Temperature: 20 +/- 1°C.
 Number of fish per chamber: 10.
 QA/QC Batch No.: RT-050208.

TEST DATA

		°C	DO	pH	# Dead		Analyst & Time of Readings
					A	B	
INITIAL	Control	19.2	9.1	7.8	0	0	1030
	100%	19.3	9.8	6.9	0	0	
24 Hr	Control	19.4	7.8	7.6	0	0	1000
	100%	19.4	7.4	7.1	0	0	
48 Hr	Control	19.6	6.9	7.6	0	0	1100
	100%	19.5	7.0	7.1	0	0	
Renewal	Control	19.4	8.2	7.7	0	0	1100
	100%	19.7	8.9	7.1	0	0	
72 Hr	Control	19.1	7.8	7.5	0	0	1030
	100%	19.1	7.9	7.3	0	0	
96 Hr	Control	19.3	8.2	7.5	0	0	1030
	100%	19.2	8.1	7.3	0	0	

Comments:

Sample as received: Chlorine: 0 mg/l; pH: 6.9; Conductivity: 132 umho; Temp: 4°C;
 DO: 9.8 mg/l; Alkalinity: 42 mg/l; Hardness: 54 mg/l; NH₃-N: 0.4 mg/l.
 Sample aerated moderately (approx. 500 ml/min) to raise or lower DO? Yes / No.
 Control: Alkalinity: 55 mg/l; Hardness: 93 mg/l; Conductivity: 295 umho.
 Test solution aerated (not to exceed 100 bubbles/min) to maintain DO > 4.0 mg/l? Yes / No.
 Sample used for renewal is the original sample kept at 0-6°C with minimal headspace.

RESULTS

Percent Survival In: Control: 100 % 100% Sample: 100 %

**CERIODAPHNIA CHRONIC BIOASSAY
EPA METHOD 1002.0**



Lab No.: A-05022603
Client/ID: Del Mar IOB2065-01

Date Tested: 02/26/05 to 03/04/05

TEST SUMMARY

Test type: Daily static-renewal.
Species: *Ceriodaphnia dubia*.
Age: < 24 hrs; all released within 8 hrs.
Test vessel size: 30 ml.
Number of test organisms per vessel: 1.
Temperature: 25 +/- 1°C.
Dilution water: Mod. hard reconstituted (MHRW).
QA/QC Batch No.: RT-050225.

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

RESULTS SUMMARY

Sample Concentration	Percent Survival	Mean Number of Young Per Female
Control	100%	29.1
6.25%	100%	28.5
12.5%	100%	29.0
25%	100%	28.3
50%	100%	30.4
100%	100%	28.4

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

CHRONIC TOXICITY

Parameter	Survival	Growth
NOEC	100%	100%
TUc	1.0	1.0

QA/QC TEST ACCEPTABILITY

Parameter	Result
Control survival ≥ 80%	Pass (100% survival)
≥ 15 young per surviving control female	Pass (29.1 young)
≥ 60% surviving controls had 3 broods	Pass (100% with 3 broods)
PMSD < 47% for reproduction; if > 47% and no toxicity at IWC, the test must be repeated	Pass (PMSD = 9.2%)
Statistically significantly different concentrations relative difference > 13%	NA - No stat. sig. diff. concentrations
Concentration response relationship acceptable	Pass (slight response at conc. tested)



17461 Derian Ave. Suite 100, Irvine, CA 92614 Ph (949) 261-1022 Fax (949) 261-1228
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 9484 Chesapeake Drive, Suite 805, San Diego, CA 92123 Ph (619) 505-9596 Fax (619) 505-9689
 9830 South 51st Street, Suite B-120, Phoenix, AZ 85044 Ph (480) 785-0043 Fax (480) 785-0851
 2520 E. Sunset Rd., Suite #3, Las Vegas, NV 89120 Ph (702) 798-3820 Fax (702) 798-3821

SUBCONTRACT ORDER - PROJECT # IOB2065

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 Harper	Aquatic Testing Laboratories-SUB 4350 Transport Street, Unit 107 Ventura, CA 93003 Phone : (805) 650-0546 Fax: (805) 650-0756

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

Analysis	Expiration	Sampled:	Comments
Sample ID: IOB2065-01 Water		02/25/05 10:42	Instant Notification
413.1 Oil and Grease	03/25/05 10:42		Boeing, permit, J flags
Bioassay-7 dy Chrnic	02/26/05 22:42		ceriodaphnia, 13267
Bioassay-Acute 96hr	02/26/05 22:42		fathead minnow, 13267
Containers Supplied:			
1 gal Poly (IOB2065-01AO)			
1 gal Poly (IOB2065-01AP)			

SAMPLE INTEGRITY:			
All containers intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Sample labels/COC agree: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Samples Received On Ice: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Custody Seals Present: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Samples Preserved Properly: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Samples Received at (temp): <u>4°C</u>	

<i>[Signature]</i>	2/26/05	0530	<i>[Signature]</i>	2/26/05	0530
Released By	Date	Time	Received By	Date	Time
<i>[Signature]</i>	2/26/05	0745	<i>[Signature]</i>	2-26-05	0745
Released By	Date	Time	Received By	Date	Time



EBERLINE SERVICES

March 24, 2005

Ms. Michele Harper
Project Manager
Del Mar Analytical
17461 Derian Avenue, Suite 100
Irvine, CA 92614

Reference: Del Mar Analytical Project No. IOB2065
Eberline Services NELAP Cert #01120CA (exp. 01/31/06)
Eberline Services Report R503010-8305

Dear Ms. Harper:

Enclosed are results from the analyses of one water sample received at Eberline Services on March 1, 2005. The sample was analyzed according to the accompanying Del Mar Analytical Subcontract Order Form. The requested analyses were gross alpha/gross beta (EPA900.0), tritium (H-3, EPA906.0), and strontium-90 (Sr-90, EPA905.0). The QC LCS, blank analyses, sample duplicates, and matrix spike results for the analyses were within the limits defined in Eberline Services Quality Control Procedures Manual. Analyses that involve the yielding of an analytical tracer or carrier, such as Sr-90, do not require matrix spike analyses to be performed.

Please call me if you have any questions concerning this report.

Regards,

Melissa Mannion
Senior Program Manager

MCM/njv

Enclosure: Report
Subcontract Form
Receipt checklist
Invoice

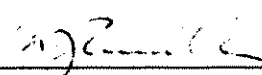
Analytical Services
2030 Wright Avenue
P.O. Box 4040
Richmond, California 94804-0040
(510) 235-2633 Fax (510) 235-0438
Toll Free (800) 841-5487
www.eberlineservices.com

Eberline Services

ANALYSIS RESULTS

SDG <u>8305</u>	Client <u>DEL MAR ANAL</u>
Work Order <u>R503010-01</u>	Contract <u>PROJECT# IOB2065</u>
Received Date <u>03/01/05</u>	Matrix <u>WATER</u>

Client	Lab						
<u>Sample ID</u>	<u>Sample ID</u>	<u>Collected</u>	<u>Analyzed</u>	<u>Nuclide</u>	<u>Results ± 2σ</u>	<u>Units</u>	<u>MDA</u>
IOB2065-01	8305-001	02/25/05	03/15/05	GrossAlpha	1.50 ± 0.89	pCi/L	1.05
			03/15/05	Gross Beta	2.27 ± 1.2	pCi/L	1.77
			03/17/05	H3	-45.7 ± 150	pCi/L	259
			03/18/05	Sr90	0.206 ± 0.25	pCi/L	0.451

Certified by 
Report Date 03/24/05
Page 1

Eberline Services

QC RESULTS

SDG <u>8305</u> Work Order <u>R503010-01</u> Received Date <u>03/01/05</u>	Client <u>DEL MAR ANAL</u> Contract <u>PROJECT# IOB2065</u> Matrix <u>WATER</u>
--	---

Lab	Sample ID	Nuclide	Results	Units	Amount Added	MDA	Evaluation
<u>LCS</u>							
	8305-002	GrossAlpha	10.5 ± 1.2	pCi/Smpl	11.2	0.436	94% recovery
		Gross Beta	11.2 ± 0.81	pCi/Smpl	12.1	0.584	93% recovery
		H3	266 ± 25	pCi/Smpl	258	26.2	103% recovery
		Sr90	12.2 ± 0.57	pCi/Smpl	11.1	0.236	110% recovery
<u>BLANK</u>							
	8305-003	GrossAlpha	-0.070 ± 0.17	pCi/Smpl	NA	0.417	<MDA
		Gross Beta	-0.046 ± 0.31	pCi/Smpl	NA	0.545	<MDA
		H3	1.77 ± 15	pCi/Smpl	NA	26.0	<MDA
		Sr90	-0.098 ± 0.12	pCi/Smpl	NA	0.224	<MDA

<u>DUPLICATES</u>			
Sample ID	Nuclide	Results + 2σ	MDA
8305-004	GrossAlpha	0.325 ± 0.53	0.874
	Gross Beta	2.92 ± 1.2	1.82
	H3	-91.7 ± 150	260
	Sr90	-0.070 ± 0.21	0.441

<u>ORIGINALS</u>						
Sample ID	Results + 2σ	MDA	3σ	RPD (Tot)	Eval	
8305-001	1.50 ± 0.89	1.05	129	178	satis.	
	2.27 ± 1.2	1.77	25	103	satis.	
	-45.7 ± 150	259	-	0	satis.	
	0.206 ± 0.25	0.451	-	0	satis.	

<u>SPIKED SAMPLE</u>			
Sample ID	Nuclide	Results + 2σ	MDA
8305-005	GrossAlpha	74.5 ± 5.1	0.951
	Gross Beta	82.2 ± 3.8	1.89
	H3	31400 ± 690	263

<u>ORIGINAL SAMPLE</u>						
Sample ID	Results + 2σ	MDA	Added	%Recv		
8305-001	1.50 ± 0.89	1.05	76.6	95		
	2.27 ± 1.2	1.77	73.8	108		
	-45.7 ± 150	259	31400	100		

Certified by <u><i>[Signature]</i></u> Report Date <u>03/24/05</u> Page 2



17461 Derian Ave. Suite 100, Irvine, CA 92614 Ph (949) 261-1022 Fax (949) 261-1228
 1014 E. Cooley Dr., Suite A, Colton, CA 92324 Ph (909) 370-4667 Fax (909) 370-1046
 9484 Chesapeake Drive, Suite 805, San Diego, CA 92123 Ph (619) 505-9596 Fax (619) 505-9689
 9830 South 51st Street, Suite B-120, Phoenix, AZ 85044 Ph (480) 785-0043 Fax (480) 785-0051
 2520 E. Sunset Rd., Suite 65, Las Vegas, NV 89120 Ph (702) 798-3820 Fax (702) 798-3821

SUBCONTRACT ORDER - PROJECT # IOB2065

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 Harper

RECEIVING LABORATORY:

Eberline Services
 2030 Wright Avenue
 Richmond, CA 94804
 Phone: (510) 235-2633
 Fax: (510) 235-0438

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

Analysis	Expiration	Comments
Sample ID: IOB2065-01 Water	Sampled: 02/25/05 10:42	Instant Notification
EDD + Level 4-OUT	03/25/05 10:42	**LEVEL IV QC, ACCESS 7 EDD**
Gross Alpha-O	02/25/06 10:42	900.0, IF RESULT > 15 pCi/L, run Radium 226 & 228
Gross Beta-O	02/25/06 10:42	900.0, IF RESULT > 15 pCi/L, run Radium 226 & 228
Radium, Combined-O	02/25/06 10:42	HOLD for Gross Alpha/Beta result; EPA 903.1 & 904.0
Strontium 90-O	02/25/06 10:42	905.0
Tritium-O	02/25/06 10:42	906

- Containers Supplied:**
- 1 L Amber (IOB2065-01AQ) *w/BeNO3*
 - 1 L Amber (IOB2065-01AR) "
 - 1 L Amber (IOB2065-01AS) "
 - 1 L Amber (IOB2065-01AT) "
 - 40 ml Voa Vial (IOB2065-01AU)
 - 40 ml Voa Vial (IOB2065-01AV)

SAMPLE INTEGRITY:

All containers intact: Yes No Sample labels/COC agree: Yes No Samples Received On Ice: Yes No
 Custody Seals Present: Yes No Samples Preserved Properly: Yes No Samples Received at (temp): _____

Released By: *[Signature]* Date: 2-28-05 Time: 1700 Received By: *Alex Keller* Date: 3/1/05 Time: 10:00

Released By: _____ Date: _____ Time: _____ Received By: _____ Date: _____ Time: _____



RICHMOND, CA LABORATORY

SAMPLE RECEIPT CHECKLIST

Client: DEL. MHR City IRVINE State CA

Date/Time received 3/1/05 10:00 CoC No. IOB 2065

Container I.D. No. DEL. MHR COLTON Requested TAT (Days) STAND P.D. Received Yes [] No []

INSPECTION

- 1. Custody seals on shipping container intact? Yes [] No [] N/A []
- 2. Custody seals on shipping container dated & signed? Yes [] No [] N/A []
- 3. Custody seals on sample containers intact? Yes [] No [] N/A []
- 4. Custody seals on sample containers dated & signed? Yes [] No [] N/A []
- 5. Packing material is: Wet [] Dry []
- 6. Number of samples in shipping container: 1 Sample Matrix WATER
- 7. Number of containers per sample: 6 (Or see CoC _____)
- 8. Samples are in correct container Yes [] No []
- 9. Paperwork agrees with samples? Yes [] No []
- 10. Samples have: Tape [] Hazard labels [] Rad labels [] Appropriate sample labels []
- 11. Samples are: In good condition [] Leaking [] Broken Container [] Missing []
- 12. Samples are: Preserved [] Not preserved [] pH 2 Preservative HNO3
- 13. Describe any anomalies: _____

14. Was P.M. notified of any anomalies? Yes [] No [] Date _____

15. Inspected by AK Date: 3/1/05 Time: 10:00

Customer Sample No.	cpm	mR/hr	wipe	Customer Sample No.	cpm	mR/hr	wipe

Ion Chamber Ser. No. _____ Calibration date _____

Alpha Meter Ser. No. _____ Calibration date _____

Beta/Gamma Meter Ser. No. _____ Calibration date _____

TRUESDAIL LABORATORIES, INC.

INDEPENDENT TESTING, FORENSIC SCIENCE, AND ENVIRONMENTAL ANALYSES



Established 1931

March 8, 2005

14201 FRANKLIN AVENUE
TUSTIN, CALIFORNIA 92780-7008
(714) 730-6239 · FAX (714) 730-6462
www.truesdail.com

Client: Del Mar Analytical
17461 Derian Avenue, Suite 100
Irvine, CA 92614
Attention: Michele Harper

Project Name: IOB2065
Date Received: 02/28/05

Truesdail Project: 940178

Samples Cross-reference

<u>Truesdail ID</u>	<u>Client ID</u>	<u>Matrix</u>	<u>Date Sampled</u>	<u>Time Sampled</u>	<u>Analysis Requested</u>
940178-1	IOB2065-01	Water	02/25/05	1042	Hydrazines by EPA 8315M

Respectfully Submitted,
TRUESDAIL LABORATORIES, INC.

K.R.P. Iyer
K.R.P. Iyer
Quality Control/Quality Assurance Officer

Xuan Huong Dang
Xuan Huong Dang
Project Manager

TRUESDAIL LABORATORIES, INC.

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17461 Derian Avenue, Suite 100
Irvine, CA 92614
Attention: Michele Harper

Project Name: IOB2065
Date Received: 02/28/05

Truesdail Project: 940178

Case Narrative

Sample Receipt The sample was received in good condition and no anomalies were noted during check-in. The sample was kept in a locked refrigerator until analysis. Thereafter, it is being kept in ambient storage for an additional 2 months before disposal.

Analysis The analysis was performed as requested on the chain-of-custody.


Quality Control The analytical results for each batch of samples performed include a minimum of one set of laboratory control sample/laboratory control sample duplicate (LCS/LCSD), one matrix spike (MS) and a reagent blank (Method blank). Any exceptions or problems would be noted in the "comments" section.

Comments The test results in this report meet all quality assurance requirements set forth by the method specification and all quality control recoveries were within the laboratory acceptance limits. No anomalies or nonconformance events occurred during the course of analysis.

The analytes were quantitated down to the Method Detection Limit (J flags) per client's request.

Respectfully Submitted,
TRUESDAIL LABORATORIES, INC.


K.R.P. Iyer
Quality Control/Quality Assurance Officer


Xuan Huong Dang
Project Manager

TRUESDAIL LABORATORIES, INC.

INDEPENDENT TESTING, FORENSIC SCIENCE, AND ENVIRONMENTAL ANALYSES



Established 1937

14201 FRANKLIN AVENUE · TUSTIN, CALIFORNIA 92780-7008
(714) 730-6239 · FAX (714) 730-6462 · www.truesdail.com

REPORT

Client: Del Mar Analytical
17461 Derian Ave., Suite 100
Irvine, CA 92614

Attention: Michele Harper
Sample: Liquid / 1 Sample
Project Name: IOB2065
P.O. Number: IOB2065
Method Number: 8315 (Modified)
Investigation: Hydrazines in Liquid

Laboratory No: 940178
Report Date: March 8, 2005
Sampling Date: February 25, 2005
Receiving Date: February 28, 2005
Extraction Date: February 28, 2005
Analysis Date: March 4, 2005
Units: µg/L
Dilution Factor: 1
Reported By: JS

Page 1 of 1

Analytical Results

Sample ID	Sample Description	Monomethyl		Unsymmetrical Dimethyl	
		Hydrazine	ND	Hydrazine	ND
704807-MB	Method Blank	ND	ND	ND	ND
940178	IOB2065-01	ND	ND	ND	ND
MDL		1.2	0.27	0.39	
PQL		5.0	5.0	1.0	


MDL: Method Detection Limit, ug/L

PQL: Practical Quantitation Limit, ug/L

ND: Not Detected at or above the MDL value.

N/A: Not Applicable

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


Xuan Dang, Project Manager
Environmental Services

This report applies only to the sample or samples investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from these laboratories.

TRUESDAIL LABORATORIES, INC.

INDEPENDENT TESTING, FORENSIC SCIENCE, AND ENVIRONMENTAL ANALYSES



Established 1931

14201 FRANKLIN AVENUE TUSTIN, CALIFORNIA 92780-7008
(714) 730-6239 · FAX (714) 730-6462 · www.truesdail.com

Client: Del Mar Analytical
17461 Derian Ave., Suite 100
Irvine, CA 92614

Client Contact: Michele Harper
Sample: Liquid / 1 Sample
Sample ID: IOB2065
P.O. Number: IOB2065
Method Number: 8315 (Modified)
Run Batch No.: Extraction: 2994; Analysis: 372
Investigation: Hydrazines in Liquid

REPORT

QC Lab. No.: 704807
Project Lab. No.: 940178
Spiked Sample ID: 940178
Report Date: March 8, 2005
Sampling Date: February 25, 2005
Receiving Date: February 28, 2005
Extraction Date: February 28, 2005
Analysis Date: March 3-4, 2005
Units: ug/L
Reported By: JS

Quality Control/Quality Assurance Calibration Report

ICV

Parameter	Theoretical Value (ug/L)	Measured Value (ug/L)	% Rec.	Control Limits	Flag
Monomethyl Hydrazine	25.0	26.3	105	85-115	PASS
u-Dimethyl Hydrazine	25.0	23.2	93.0	85-115	PASS
Hydrazine	5.0	5.10	102	85-115	PASS

QCS

Parameter	Theoretical Value (ug/L)	Measured Value (ug/L)	% Rec.	Control Limits	Flag
Monomethyl Hydrazine	50.0	47.4	94.7	85-115	PASS
u-Dimethyl Hydrazine	50.0	48.3	96.6	85-115	PASS
Hydrazine	10.0	8.62	86.2	85-115	PASS

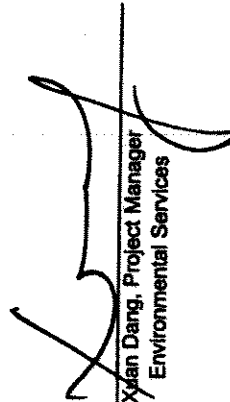
Quality Control/Quality Assurance Spikes Report MS/MSD

Parameter	Spiked Conc.			Recovered Concentration			Percent Recovery (%)			Control Limits		
	ug/L	MS	MSD	ug/L	MS	MSD	LCS	LCSD	%D	LCS	LCSD	%D
Monomethyl Hydrazine	50.0	20.4	19.8	0.0	40.8	39.6	109	117	7.54%	109	117	7.54%
u-Dimethyl Hydrazine	50.0	38.2	38.3	0.0	76.4	76.6	100	101	0.58%	100	101	0.58%
Hydrazine	10.0	8.21	8.32	0.0	82.1	83.2	102	103	1.08%	102	103	1.08%

LCS/LCSD

ICV: Initial Calibration Verification
QCS: Quality Control Standard
LCS: Laboratory Control Spike
MS: Matrix Spike
%D: Percent Difference
Flag: "Pass" if within Control Limits; otherwise "Fail"

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


Xufan Dang, Project Manager
Environmental Services

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Del Mar Analytical

940178

SUBCONTRACT ORDER - PROJECT # IOB2065

17461 Derian Ave., Suite 100, Irvine, CA 92614 Ph (949) 261-1022 Fax (949) 261-1228
 1014 E. Cooley Dr., Suite A, Colton, CA 92324 Ph (909) 370-4667 Fax (909) 370-1046
 9484 Chesapeake Drive, Suite 805, San Diego, CA 92123 Ph (619) 505-9596 Fax (619) 505-9689
 9630 South 51st Street, Suite B-120, Phoenix, AZ 85044 Ph (480) 785-0043 Fax (480) 785-0851
 2620 E. Sunset Rd., Suite #3, Las Vegas, NV 89120 Ph (702) 798-3820 Fax (702) 798-3821

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 Harper

RECEIVING LABORATORY:

Truesdail Laboratories-SUB
 14201 Franklin Avenue
 Tustin, CA 92680
 Phone: (714) 730-6239
 Fax: (714) 730-6462

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

Analysis	Expiration	Comments
Sample ID: IOB2065-01 Water	Sampled: 02/25/05 10:42	Instant Notification
Hydrazine-OUT	02/28/05 10:42	Sub Truesdail for Monomethylhydrazine, 13267
Level 4 Data Package	03/25/05 10:42	

Containers Supplied:
 1 L Amber (IOB2065-01AJ)
 1 L Amber (IOB2065-01AK)

Rec'd 02/28/05
 s2b 940178

ALERT!!
Level IV QC

**For Sample Conditions
 See Form Attached**

SAMPLE INTEGRITY:

All containers intact: Yes No Sample labels/COC agree: Yes No Samples Received On Ice: Yes No
 Custody Seals Present: Yes No Samples Preserved Properly: Yes No Samples Received at (temp): _____

Released By: *[Signature]* Date: 2/28/05 Time: 0900 Received By: *[Signature]* Date: 2/28/05 Time: 0900
 Released By: *[Signature]* Date: 2/28/05 Time: 0925 Received By: *[Signature]* Date: 2/28/05 Time: 9:25



Sample Integrity & Analysis Discrepancy Form

Client: Del Mar Analytical

Lab # 940178

Date Delivered: 8/28/05 Time: 9:25 By: Mail Field Service Client

1. Was a Chain of Custody received and signed? Yes No N/A
2. Does Customer require an acknowledgement of the COC? Yes No N/A
3. Are there any special requirements or notes on the COC? Yes No N/A
4. If a letter was sent with the COC, does it match the COC? Yes No N/A
5. Were all requested analyses understood and acceptable? Yes No N/A
6. Were samples received in a chilled condition?
Temperature (if yes)? °C Yes No N/A
7. Were samples received intact
(i.e. broken bottles, leaks, air bubbles, etc..)? Yes No N/A
8. Were sample custody seals intact? Yes No N/A
9. Does the number of samples received agree with COC? Yes No N/A
10. Did sample labels correspond with the client ID's? Yes No N/A
11. Did sample labels indicate proper preservation?
Preserved (if yes) by: Truesdail Client
12. Were samples pH checked? pH = Yes No N/A
13. Were all analyses within holding time at time of receipt?
If not, notify the Project Manager. Yes No N/A
14. Have Project due dates been checked and accepted?
Turn Around Time (TAT): RUSH Std Yes No N/A
15. **Sample Matrix:** Liquid Drinking Water Ground Water Waste Water
 Sludge Soil Wipe Paint Solid Other Water

ALERT!!
Level III QC

16. Comments: _____

17. Sample Check-In completed by Truesdail Log-In/Receiving: L. Suberino



Internal Chain of Custody Logbook

Lab Number: 940178
 Client Name: Del Mar

Storage Temperature: 4°C

Bottle I.D.	Analysis Done	Date Out	Time Out	Date In	Time In	Amount Taken (g or ml)	Printed Name	Signature
				2/28/05	09:50		J. Stubbins	[Signature]
	Hydrazine	022805	1230	022805	1400	300ML	ROGER	[Signature]

Storage Date	Shelf No. For Storage	Printed Name	Initials

Discharge Date	Printed Name	Initials

Bottle I.D.	Analysis Done	Date Out	Time Out	Date In	Time In	Amount Taken (g or ml)	Printed Name	Signature

Storage Date	Shelf No. For Storage	Printed Name	Initials

Discharge Date	Printed Name	Initials

Bottle I.D.	Analysis Done	Date Out	Time Out	Date In	Time In	Amount Taken (g or ml)	Printed Name	Signature

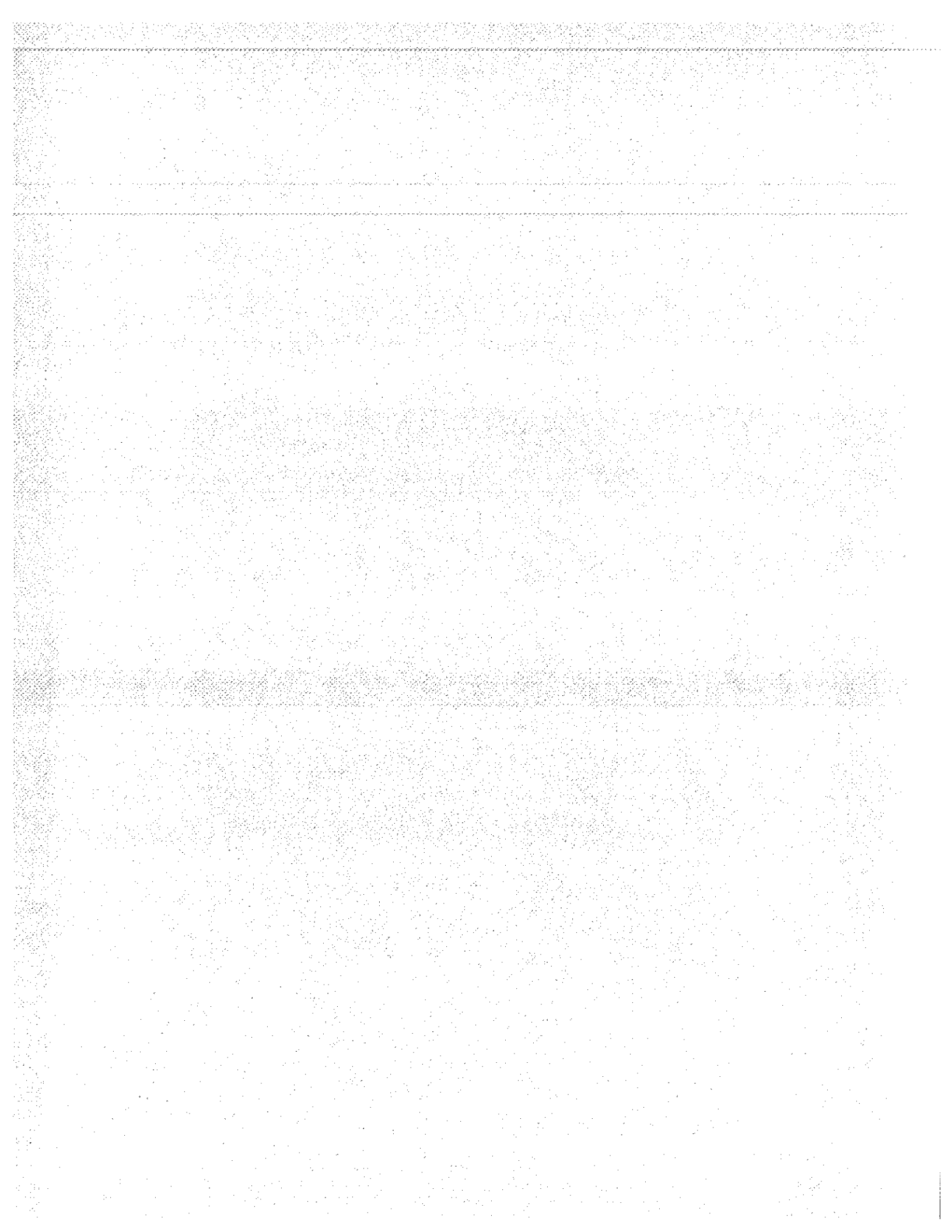
Storage Date	Shelf No. For Storage	Printed Name	Initials

Discharge Date	Printed Name	Initials

Bottle I.D.	Analysis Done	Date Out	Time Out	Date In	Time In	Amount Taken (g or ml)	Printed Name	Signature

Storage Date	Shelf No. For Storage	Printed Name	Initials

Discharge Date	Printed Name	Initial

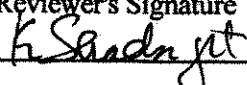


CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

AMEC Earth & Environmental
 550 South Wadsworth Boulevard
 Suite 500
 Lakewood, CO 80226

Package ID T711DF32
 Task Order 313150010
 SDG No. Multiple
 No. of Analyses 6

Laboratory Alta
 Reviewer K. Shadowlight
 Analysis/Method Dioxins

Date: March 16, 2005
 Reviewer's Signature


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

Data Qualifier Reference Table

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

Qualification Code Reference Table

Qualifier	Organics	Inorganics
H	Holding times were exceeded.	Holding times were exceeded.
S	Surrogate recovery was outside QC limits.	The sequence or number of standards used for the calibration was incorrect
C	Calibration %RSD or %D were noncompliant.	Correlation coefficient is <0.995.
R	Calibration RRF was <0.05.	%R for calibration is not within control limits.
B	Presumed contamination from preparation (method) blank.	Presumed contamination from preparation (method) or calibration blank.
L	Laboratory Blank Spike/Blank Spike Duplicate %R was not within control limits.	Laboratory Control Sample %R was not within control limits.
Q	MS/MSD recovery was poor or RPD high.	MS recovery was poor.
E	Not applicable.	Duplicates showed poor agreement.
I	Internal standard performance was unsatisfactory.	ICP ICS results were unsatisfactory.
A	Not applicable.	ICP Serial Dilution %D were not within control limits.
M	Tuning (BFB or DFTPP) was noncompliant.	Not applicable.
T	Presumed contamination from trip blank.	Not applicable.
+	False positive – reported compound was not present. Not applicable.	
-	False negative – compound was present but not reported.	Not applicable.
F	Presumed contamination from FB, or ER.	Presumed contamination from FB or ER.
\$	Reported result or other information was incorrect.	Reported result or other information was incorrect.
?	TIC identity or reported retention time has been changed.	Not applicable.
D	The analysis with this flag should not be used because another more technically sound analysis is available.	The analysis with this flag should not be used because another more technically sound analysis is available.
P	Instrument performance for pesticides was poor.	Post Digestion Spike recovery was not within control limits.
DNQ	The compound was detected between the MDL and the RL and, by definition, is considered an estimated value.	The compound was detected between the MDL and the RL and, by definition, is considered an estimated value.

***#**

Unusual problems found with the data that have been described in Section 2.#, "Data Validation Findings." The number following the asterisk (*) will indicate the subsection where a description of the problem can be found (eg. *1 would indicate a sample was not within temperature limits).

Unusual problems found with the data that have been described in Section 2.#, "Data Validation Findings." The number following the asterisk (*) will indicate the subsection where a description of the problem can be found (eg. *1 would indicate a sample was not within temperature limits).



DATA VALIDATION REPORT

NPDES Monitoring

ANALYSIS: DIOXINS/FURANS

SAMPLE DELIVERY GROUPS: Multiple SDGs

Prepared by

AMEC—Denver Operations
550 South Wadsworth Boulevard, Suite 500
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title: NPDES Monitoring
Contract Task Order #: 313150010
Sample Delivery Group #: Multiple SDGs
Project Manager: B. McIlvaine
Matrix: Water
Analysis: Dioxins/Furans
QC Level: Level IV
No. of Samples: 6
No. of Reanalyses/Dilutions: 0
Reviewer: K. Shadowlight
Date of Review: March 16, 2005

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

Table 1. Sample Identification

Client ID	Laboratory ID (Del Mar)	Laboratory ID (Alta)	Matrix	COC Method
Outfall 001	IOB2098-01	25812-001	water	1613
Outfall 002	IOB2063-01	25811-001	water	1613
Outfall 011	IOB2066-01	25815-001	water	1613
Outfall 011 Composite	IOB2064-01	25816-001	water	1613
Outfall 011 Grab	IOB2065-01	25814-001	water	1613
Outfall 018	IOB2099-01	25813-001	water	1613

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

Following are findings associated with sample management:

2.1.1 Sample Preservation, Handling, and Transport

All of the samples in these SDGs were received at Del Mar Analytical within the temperature limits of $4^{\circ}\text{C} \pm 2^{\circ}\text{C}$. The samples were shipped to Alta for dioxin/furan analyses and the samples were received below the temperature limits at 0.8°C and 1.1°C ; however, as the samples were not noted to have been frozen or damaged, no qualifications were required. According to the laboratory login sheets, all samples were received intact and in good condition at both laboratories. No qualifications were required.

2.1.2 Chain of Custody

The COCs and transfer COCs were legible and signed by the appropriate field and laboratory personnel, and accounted for the analyses presented in these SDGs. The sample collector's name is not routinely provided on the transfer COC; however, the name of the sample collector was provided in the Sample Acceptance Form dated 03/01/05 for sample Outfall 011 Composite. As the samples were couriered directly to Del Mar Analytical, custody seals were not required. The coolers received by Alta had custody seals present and intact; however, custody seals were not present on the sample containers. The EPA 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 a year of collection. No qualifications were required.

2.2 INSTRUMENT PERFORMANCE

Following are findings associated with instrument performance:

2.2.1 GC Column Performance

A Windows Defining Mix (WDM) containing the first and last eluting congeners of each descriptor and isomer specificity compounds was not analyzed prior to the initial calibration sequence or at the beginning of each analytical sequence; however, the first and last eluting congeners and isomer specificity compounds were added to the midpoint of the initial calibration and to the continuing calibration standards (see section 2.3.2). The GC column performance in the calibrations was acceptable, with the height of the valley between the closely eluting isomers and 2,3,7,8-TCDD reported as less than 25%. No qualifications were required.

2.2.2 Mass Spectrometer Performance

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

2.3 CALIBRATION

2.3.1 Initial Calibration

There was one initial calibration, analyzed 08/30/04. The calibration consisted of six concentration level standards (CS0 through CS5) analyzed to verify instrument linearity. The initial calibration was acceptable with %RSDs $\leq 20\%$ for the 15 native compounds (calibration by isotope dilution) and $\leq 35\%$ for the two 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 VERs were acceptable with the concentrations within the acceptance criteria listed in Table 6 of EPA Method 1613. The ion abundance ratios and relative retention times were within the method QC limits. 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 standards 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 (6571-MB001) was extracted and analyzed with the samples in these SDGs. There were no detects reported 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 Ongoing Precision Recovery (OPR) sample (6571-OPR001) was extracted and analyzed with the samples in these SDGs. All recoveries were within the acceptance criteria listed in Table 6 of Method 1613. No qualifications were required.

2.6 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

MS/MSD analyses were not performed in these SDGs. 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 samples in these SDGs had no associated field QC samples. No qualifications were required.

2.7.2 Field Duplicates

No field duplicate samples were identified for these SDGs.

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. Any detects below the lower method calibration level (MCL) were qualified as estimated, "J," however, as Alta analyzed an additional calibration standard, not all results below the method calibration level were appropriately qualified by the laboratory. These results were qualified as estimated, "J," by the reviewer. No further qualifications were required.



Sample ID: IOB2066-01		Outfall oil		EPA Method 1613		
Client Data		Sample Data		Laboratory Data		
Name:	Del Mar Analytical, Irvine	Matrix:	Aqueous	Lab Sample:	25815-001	
Project:	IOB2066	Sample Size:	1.033 L	QC Batch No.:	6571	
Date Collected:	25-Feb-05			Date Analyzed DB-5:	8-Mar-05	
Time Collected:	1510			Date Analyzed DB-22.5:	NA	
Analyte	Conc. (pg/L)	DL ^a	EMPC ^b	Labeled Standard	%R	LCL-UCLD ^d Qualifiers
2,3,7,8-TCDD	ND	0.905		IS 13C-2,3,7,8-TCDD	74.2	25 - 164
1,2,3,7,8-PeCDD	ND	1.03		13C-1,2,3,7,8-PeCDD	63.7	25 - 181
1,2,3,4,7,8-HxCDD	ND	2.32		13C-1,2,3,4,7,8-HxCDD	63.2	32 - 141
1,2,3,6,7,8-HxCDD	ND	2.20		13C-1,2,3,6,7,8-HxCDD	65.0	28 - 130
1,2,3,7,8,9-HxCDD	ND	2.25		13C-1,2,3,4,6,7,8-HpCDD	66.4	23 - 140
1,2,3,4,6,7,8-HpCDD	8.02			13C-OCDD	55.5	17 - 157
OCDD	65.3			13C-2,3,7,8-TCDF	76.7	24 - 169
2,3,7,8-TCDF	ND	1.15		13C-1,2,3,7,8-PeCDF	62.4	24 - 185
1,2,3,7,8-PeCDF	ND	1.53		13C-2,3,4,7,8-PeCDF	63.9	21 - 178
2,3,4,7,8-PeCDF	ND	1.41		13C-1,2,3,4,7,8-HxCDF	47.5	26 - 152
1,2,3,4,7,8-HxCDF	ND	0.891		13C-1,2,3,6,7,8-HxCDF	53.7	26 - 123
1,2,3,6,7,8-HxCDF	ND	0.854		13C-2,3,4,6,7,8-HxCDF	53.8	28 - 136
2,3,4,6,7,8-HxCDF	ND	0.939		13C-1,2,3,7,8,9-HxCDF	56.1	29 - 147
1,2,3,7,8,9-HxCDF	ND	1.32		13C-1,2,3,4,6,7,8-HpCDF	53.3	28 - 143
1,2,3,4,6,7,8-HpCDF	ND	2.10		13C-1,2,3,4,7,8,9-HpCDF	59.3	26 - 138
1,2,3,4,7,8,9-HpCDF	ND	2.01		13C-OCDF	61.9	17 - 157
OCDF	ND	5.26		CRS 37Cl-2,3,7,8-TCDD	96.2	35 - 197
Totals						
Total TCDD	ND	0.905		Footnotes		
Total PeCDD	ND	1.03		a. Sample specific estimated detection limit.		
Total HxCDD	ND	2.25		b. Estimated maximum possible concentration.		
Total HpCDD	17.1			c. Method detection limit.		
Total TCDF	ND	1.15		d. Lower control limit - upper control limit.		
Total PeCDF	ND	1.47				
Total HxCDF	ND	0.987				
Total HpCDF	ND	2.05				

See Qual
Push Code

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J

J

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DWG

Rev 1 Analyst: JMH
10/4/05

Project 25815 AMEC VALIDATED

Approved By: Martha M. Maier 10-Mar-2005 10:26

LEVEL IV

CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

AMEC Earth & Environmental
 550 South Wadsworth Boulevard
 Suite 500
 Lakewood, CO 80226

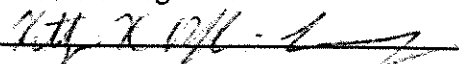
Package ID T711MT54
 Task Order 313150010
 SDG No. IOB2066, IOB2099

No. of Analyses 2

Laboratory Del Mar Analytical

Reviewer K. Okonzak

Analysis/Method Metals

Date: 3/30/05
 Reviewer's Signature


ACTION ITEMS ^a	
1. Case Narrative Deficiencies	
2. Out of Scope Analyses	
3. Analyses Not Conducted	
4. Missing Hardcopy Deliverables	
5. Incorrect Hardcopy Deliverables	
6. Deviations from Analysis Protocol, e.g., Holding Times GC/MS Tune/Inst. Perform Calibrations Blanks Surrogates Matrix Spike/Dup ECS Field QC Internal Standard Performance Compound Identification and Quantitation System Performance	Qualifications applied for: Lead detected below the reporting limit was qualified as estimated, "J." Lead detected in Outfall 011 was qualified as estimated, "J," due to a negative result for a bracketing CCB.
COMMENTS ^b	
^a 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 Qualifier Reference Table

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

Qualification Code Reference Table

Qualifier	Organics	Inorganics
H	Holding times were exceeded.	Holding times were exceeded.
S	Surrogate recovery was outside QC limits.	The sequence or number of standards used for the calibration was incorrect
C	Calibration %RSD or %D were noncompliant.	Correlation coefficient is <0.995.
R	Calibration RRF was <0.05.	%R for calibration is not within control limits.
B	Presumed contamination from preparation (method) blank.	Presumed contamination from preparation (method) or calibration blank.
L	Laboratory Blank Spike/Blank Spike Duplicate %R was not within control limits.	Laboratory Control Sample %R was not within control limits.
Q	MS/MSD recovery was poor or RPD high.	MS recovery was poor.
E	Not applicable.	Duplicates showed poor agreement.
I	Internal standard performance was unsatisfactory.	ICP ICS results were unsatisfactory.
A	Not applicable.	ICP Serial Dilution %D were not within control limits.
M	Tuning (BFB or DFTPP) was noncompliant.	Not applicable.
T	Presumed contamination from trip blank.	Not applicable.
+	False positive – reported compound was not present. Not applicable.	
-	False negative – compound was present but not reported.	Not applicable.
F	Presumed contamination from FB, or ER.	Presumed contamination from FB or ER.
\$	Reported result or other information was incorrect.	Reported result or other information was incorrect.
?	TIC identity or reported retention time has been changed.	Not applicable.
D	The analysis with this flag should not be used because another more technically sound analysis is available.	The analysis with this flag should not be used because another more technically sound analysis is available.
P	Instrument performance for pesticides was poor.	Post Digestion Spike recovery was not within control limits.
DNQ	The compound was detected between the MDL and the RL and, by definition, is considered an estimated value.	The compound was detected between the MDL and the RL and, by definition, is considered an estimated value.

***#** Unusual problems found with the data that have been described in Section 2.#, "Data Validation Findings." The number following the asterisk (*) will indicate the subsection where a description of the problem can be found (eg. *1 would indicate a sample was not within temperature limits).

Unusual problems found with the data that have been described in Section 2.#, "Data Validation Findings." The number following the asterisk (*) will indicate the subsection where a description of the problem can be found (eg. *1 would indicate a sample was not within temperature limits).



DATA VALIDATION REPORT

NPDES
Monitoring

ANALYSIS: METALS

SAMPLE DELIVERY GROUPS: IOB2066, IOB2099

Prepared by

AMEC—Denver Operations
550 South Wadsworth Boulevard, Suite 500
Lakewood, Colorado 80226

I. INTRODUCTION

Task Order Title: NPDES Monitoring
Contract Task Order #: 313150010
SDG#: IOB2066, IOB2099
Project Manager: B. McIlvaine
Matrix: Water
Analysis: Metals
QC Level: Level IV
No. of Samples: 2
No. of Reanalyses/Dilutions: 0
Reviewer: K. Okonczak-Lowry
Date of Review: March 30, 2005

The samples listed in Table 1 were validated based on the guidelines outlined in the *AMEC Data Validation Procedure for Levels III and IV ICP-MS Metals, (DVP-5-A, Rev.0)*, *AMEC Data Validation Procedure for Levels III and IV ICP Metals (DVP-5, Rev. 0)*, *SW-846 Method 6020B for Inductively Coupled Plasma – Mass Spectrometry*, *SW-846 Method 7471A for Mercury (Manual Cold-Vapor Technique)*, 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.

DATA VALIDATION REPORT

Project: NPDES
SDG No.: multiple
Analysis: MET

Table 1. Sample identification

Client ID	EPA ID	Laboratory ID	Matrix	COC Method
Outfall 011	Outfall 011	IOB2066-01	water	ILM04
Outfall 018	Outfall 018	IOB2099-01	water	ILM04

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

Following are findings associated with sample management:

2.1.1 Sample Preservation, Handling, and Transport

The samples in these SDGs were received at the laboratory within the temperature limits of $4^{\circ}\text{C} \pm 2^{\circ}\text{C}$. No sample preservation, handling, or transport problems were noted, and no qualifications were necessary.

2.1.2 Chain of Custody

The COCs were signed and dated by field and laboratory personnel. The COCs listed duplicate samples for both site samples; however, duplicate analyses were not required. No sample qualifications were required.

2.1.3 Holding Times

The dates of collection recorded on the COCs 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

A precalibration routine must be completed prior to calibrating the instrument, which consists of analyzing a tuning solution to verify resolution, mass calibration, and thermal stability. The solution must be analyzed a minimum of five times and must contain isotopes representing all mass regions of interest. The laboratory performed the required tune solution analyses. The %RSDs for the tune were all within the 5% control limit. The mass calibrations were within 0.1 amu of the true mass and the instrument resolutions were less than 0.75 amu at 5 percent peak height for all analytes in the tune solution. No site sample qualifications were required.

2.3 CALIBRATION

The ICV and CCV results showed acceptable recoveries, 90-110% for the ICP/MS and 80-120% for mercury. The applicable reporting limit check standards were recovered within the AMEC control limits of 70-130%. No qualifications were required.

2.4 BLANKS

The method blanks and bracketing ICBs/CCBs associated with the samples in these SDGs were nondetected at the laboratory MDL, with the exception of the ICP/MS CCBs for lead bracketing the Outfall 011 sample analysis. The lead CCBs were reported at -0.142 and -0.141 $\mu\text{g/L}$; therefore, the lead detected in sample Outfall 011 was qualified as estimated, "J." No further sample qualifications were required.

2.5 ICP INTERFERENCE CHECK SAMPLE (ICS A/AB)

ICSA and ICSAB analyses were included in the raw data for the ICP-MS analyses. Results were not provided for spiked interferents sulfur, phosphorus, carbon, and chloride, and lead was not spiked into the ICSAB solution. The results for potassium were above the calibration range of the instrument in all the ICSA and ICSAB analyses. Copper was detected at above the reporting limit in both ICSA analyses. The validator reviewed the raw data for the site sample ICP/MS analyses for the level of reported interferents, Al, Ca, Fe, and Mg, and determined that the level of reported interferents were not high enough to cause matrix affects. No assessment could be made with respect to possible interference from sulfur, phosphorus, carbon, and chloride. No sample qualifications were required.

2.6 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

The ICP/MS LCS sample was identified as 5C03085-BS1, and the mercury LCS samples were identified as 5C02118-BS1 and 5C02089-BS1. The LCS results on the summary forms and in the raw data were within the laboratory-established ICP/MS and mercury control limits of 85-115%. No qualifications were required.

2.7 LABORATORY DUPLICATES

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

2.8 MATRIX SPIKE

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

2.9 FURNACE ATOMIC ABSORPTION QC

Furnace atomic absorption was not utilized for the analysis of these samples; therefore, furnace atomic absorption QC is not applicable.

2.10 ICP/MS SERIAL DILUTION

No serial dilution analysis was performed in association with the samples in these SDGs; therefore, no assessment was made with respect to this criterion.

2.11 INTERNAL STANDARDS PERFORMANCE

The ICP-MS internal standard recoveries for the site samples and associated QC sample analyses were within the 60-125% control limits and no qualifications were required.

2.12 SAMPLE RESULT VERIFICATION

A Level IV review was performed for the samples in these data packages. Calculations were verified, and the sample results reported on the Form Is were verified against the raw data. No transcription errors or calculation errors were noted. Analytes detected below the reporting limit were qualified as estimated, "J." No qualifications were required.

2.13 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.

2.13.1 Field Blanks and Equipment Rinsates

The samples in these SDGs had no associated field QC samples. No qualifications were required.

2.13.2 Field Duplicates

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



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

Project ID: Routine Outfall 011
 Report Number: IOB2066

Sampled: 02/25/05
 Received: 02/25/05

DRAFT: METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOB2066-01 (DRAFT: Outfall 011 - Water) - cont.									
Reporting Units: ug/l									
Copper	EPA 200.8	5C03085	0.49	2.0	3.5	1	03/03/05	03/03/05	Rev Qual
Lead	EPA 200.8	5C03085	0.13	1.0	0.35	1	03/03/05	03/03/05	J J
Mercury	EPA 245.1	5C02089	0.063	0.20	ND	1	03/02/05	03/02/05	U U

AMEC VALIDATED

Level IV

DRAFT REPORT
 DRAFT REPORT
 DATA SUBJECT TO CHANGE

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CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

AMEC Earth & Environmental
 550 South Wadsworth Boulevard
 Suite 500
 Lakewood, CO 80226

Package ID T711PP18
 Task Order 313150010
 SDG No. IOB2066, IOB2099
 No. of Analyses 2

Laboratory Del Mar Analytical

Reviewer L. Calvin

Analysis/Method Pesticides by Method 608

Date: April 1, 2005

Reviewer's Signature


ACTION ITEMS ^a	
1. Case Narrative Deficiencies	
2. Out of Scope Analyses	
3. Analyses Not Conducted	
4. Missing Hardcopy Deliverables	
5. Incorrect Hardcopy Deliverables	
6. Deviations from Protocol, e	
Holding Time	
GC/MS Tune/In.	
Calibration	
Method blanks	
Surrogates	
Matrix Spike/Dup LCS	
Field QC	
Internal Standard Performance	
Compound Identification	
Quantitation	
System Performance	

COMMENTS^b	Acceptable as reviewed.

^a 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

ANALYSIS: PESTICIDES

SAMPLE DELIVERY GROUPS: IOB2066, IOB2099

Prepared by

AMEC Denver Operations
550 South Wadsworth Boulevard, Suite 500
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title: NPDES Monitoring
Contract Task Order #: 313150010
SDG#: IOB2066, IOB2099
Project Manager: B. McIlvaine
Matrix: Water
Analysis: PCBs
QC Level: Level IV
No. of Samples: 2
No. of Reanalyses/Dilutions: 0
Reviewer: L. Calvin
Date of Review: April 1, 2005

The samples listed in Table 1 were validated based on the general guidelines outlined in the *AMEC Data Validation Procedures (DVP-4, Rev.2)*, *EPA Method 608*, 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 summary form as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

Table 1. Sample identification

Client ID	EPA ID	Laboratory ID	Matrix	Method
Outfall 011	Outfall 011	IOB2066-01	water	608
Outfall 018	Outfall 018	IOB2099-01	water	608

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

The following are findings associated with sample management:

2.1.1 Sample Preservation, Handling, and Transport

The samples in these SDGs were received at the laboratory within the temperature limits of $4^{\circ}\text{C} \pm 2^{\circ}\text{C}$. The analysis did not require preservation, and no preservation was noted in the field. The COCs noted that the samples were received intact. No qualifications were required.

2.1.2 Chain of Custody

The COCs were signed and dated by both field and laboratory personnel. The COCs accounted for the analysis presented in this SDG. As the samples were couriered directly to the laboratory, custody seals were not required. No qualifications were required.

2.1.3 Holding Times

The water samples were extracted within seven days of sample collection and analyzed within 40 days of extraction. No qualifications were required.

2.2 PESTICIDES INSTRUMENT PERFORMANCE

No resolution check standards or breakdown check standards are required by Method 608 for pesticides, and according to the raw data provided, a resolution check standard was not analyzed by the laboratory. The laboratory did analyze a breakdown check standard; however, as alpha-BHC was the only compound of interest, the breakdown check standard was not necessary. A review of the raw data indicated that the analytical run time was of sufficient length to provide adequate standard separation. The two analytical columns used in the analyses were within the guidelines specified in the methods.

According to the laboratory SOP and the initial calibration raw data, the retention time windows are ± 0.10 minutes for both surrogates and alpha-BHC calibration standards. A review of the raw data indicated that the laboratory retention time criteria were met for the surrogates and pesticide calibration standards. No qualifications were required.

2.3 CALIBRATION

2.3.1 Analytical Sequence

Based on the data provided, the analytical sequences were in accordance with the requirements of Method 608. No qualifications were required.

2.3.2 Initial Calibration

There was one initial calibration dated 03/02/05 associated with these SDGs, which consisted of six-point calibrations for alpha-BHC on two analytical columns. The laboratory provided an overlay of the sample chromatogram and the pesticide standard for identification purposes. The %RSD was within the EPA Method 608 QC limit of $\leq 10\%$ on channel B, and the r^2 was ≥ 0.995 on channel A. An ICV was analyzed immediately following the initial calibration. The %D for alpha-BHC was within the QC limit of $\leq 15\%$ on both analytical columns. The %RSD, r^2 , and ICV %D for alpha-BHC were recalculated from the raw data and no transcription or calculation errors were noted. No qualifications were required.

2.3.3 Continuing Calibration

The sample analyses of these SDGs were bracketed by the daily ICV and two closing continuing calibration standards. The applicable %Ds were within the Method QC limit of $\pm 15\%$ for both calibrations. A representative number of %Ds were recalculated from the raw data and no transcription or calculation errors were noted. No qualifications were required.

2.4 BLANKS

2.4.1 Instrument Blanks

An instrument blank was analyzed at the beginning of the analytical sequence. Cross-contamination was not evident in the sample. No qualifications were necessary.

2.4.2 Method Blanks

One water method blank (5C01050-BLK1) was extracted and analyzed with these SDGs. Target compound alpha-BHC was not detected in the method blank. Review of the chromatograms showed no false negative. No qualifications were required.

2.5 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

One blank spike/blank spike duplicate pair (5C01050-BS1/5C01050-BSD1) was extracted and analyzed with these SDGs. The recoveries for alpha-BHC were within the laboratory-established QC limits of 45-115% and the RPD was $\leq 30\%$. The recoveries were checked from the raw data, and no calculation or transcription errors were noted. No qualifications were required.

2.6 SURROGATE RECOVERY

The samples and all QC samples were fortified with the surrogate compounds decachlorobiphenyl and tetrachloro-m-xylene. Surrogate recoveries for both samples were within the laboratory-established QC limits. The recoveries were calculated from the raw data and no transcription or calculation errors were noted. No qualifications were required.

2.7 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

There were no MS/MSD analyses associated with these SDGs. Accuracy and precision were assessed based on the blank spike/blank spike duplicate results. No qualifications were required.

2.8 SAMPLE CLEANUP PERFORMANCE

According to the laboratory extraction benchsheet, no cleanups were performed on the water samples. No qualifications were required.

2.9 FIELD QC SAMPLES

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

2.9.1 Field Blanks and Equipment Rinsates

There were no field QC samples associated with the samples in these SDGs. No qualifications were required.

2.9.2 Field Duplicates

There were no field duplicate samples associated with the samples in these SDGs.

2.10 COMPOUND IDENTIFICATION

The laboratory analyzed for alpha-BHC by EPA Method 608. Compound identification is verified at a Level IV validation. Review of chromatograms and retention times indicated no problems with compound identification for the samples in these SDGs. No qualifications were required.

2.11 COMPOUND QUANTIFICATION AND REPORTED DETECTION LIMITS

Compound quantification was verified for these SDGs; however, as there were no reported detects, quantitation was verified by recalculating blank spike and surrogate recoveries. Reporting limits were supported by the low level standard of the initial calibration and the laboratory MDL study. The reporting limit for alpha-BHC was not adjusted for sample amount on the result summary; however, the dilution factor listed on the summary reflected the sample volume extracted. Results were reported in ug/L (ppb). No qualifications were required.



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

Project ID: Routine Outfall 011

Report Number: IOB2066

Sampled: 02/25/05
 Received: 02/25/05

DRAFT: ORGANOCHLORINE PESTICIDES (EPA 608)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Analyzed	Date Analyzed	Data Qualifiers	Rev	Anal
Sample ID: IOB2066-01 (DRAFT: Outfall 011 - Water) - cont.											
Reporting Units: ug/l											
alpha-BHC	EPA 608	5C01050	0.0010	0.010	ND	0.98	03/01/05	03/03/05			
Surrogate: Decachlorobiphenyl (45-120%)					47 %						
Surrogate: Tetrachloro-m-xylene (35-120%)					43 %						

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AMEC VALIDATED

LEVEL II

DRAFT REPORT
 DRAFT REPORT
 DATA SUBJECT TO CHANGE

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CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA


AMEC Earth & Environmental
 550 South Wadsworth Boulevard
 Suite 500
 Lakewood, CO 80226

Package ID T711SV33
 Task Order 313150010
 SDG No. IOB2066, IOB2099
 No. of Analyses 2

Laboratory Del Mar Analytical

Reviewer L. Calvin

Analysis/Method Semivolatiles by Method 625

Date: April 1, 2005
 Reviewer's Signature: 

ACTION ITEMS^a	
1. Case Narrative Deficiencies	
2. Out of Scope Analyses	
3. Analyses Not Conducted	
4. Missing Hardcopy Deliverables	
5. Incorrect Hardcopy Deliverables	
6. Deviations from Analysis Protocol, e.g., Holding Times GC/MS Tune/Inst. Performance Calibration Method blanks Surrogates Matrix Spike/Dup LCS Field QC Internal Standard Performance Compound Identification Quantitation System Performance	
COMMENTS^b	Acceptable as reviewed.

^a 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

ANALYSIS: SEMIVOLATILES

SAMPLE DELIVERY GROUP: IOB2066, IOB2099

Prepared by

AMEC Denver Operations
550 South Wadsworth Boulevard, Suite 500
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title: NPDES Monitoring
Contract Task Order #: 313150010
SDG#: IOB2066, IOB2099
Project Manager: B. McIlvaine
Matrix: Water
Analysis: Semivolatiles
QC Level: Level IV
No. of Samples: 2
No. of Reanalyses/Dilutions: 0
Reviewer: L. Calvin
Date of Review: April 1, 2005

The samples listed in Table 1 were validated based on the guidelines outlined in the *AMEC Data Validation Procedure for Levels C and D Semivolatile Organics (DVP-3, Rev. 2)*, *EPA Method 625*, and the *National Functional Guidelines For Organic Data Review (2/94)*. Any deviations from these procedures are documented herein. Qualifiers were applied in cases where the data did not meet the required QC criteria or where special consideration by the data user is required. Data qualifiers were placed on Form Is with the associated qualification codes. Analytes that were rejected for any reason are denoted on the Form I as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

Table 1. Sample identification

Client ID	EPA ID	Lab No.	Matrix	Method
Outfall 011	Outfall 011	IOB2066-01	water	625
Outfall 018	Outfall 018	IOB2099-01	water	625

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

The samples in these SDGs were received at the laboratory within the temperature limits of $4^{\circ}\text{C} \pm 2^{\circ}\text{C}$. The analysis did not require preservation, and no preservation was noted in the field. The COCs noted that the samples were received intact. No qualifications were required.

2.1.2 Chain of Custody

The COCs were signed and dated by both field and laboratory personnel. The COCs accounted for the analyses presented in these SDGs. As the samples were couriered directly to the laboratory, custody seals were not required. No qualifications were required.

2.1.3 Holding Times

The samples were extracted within seven days of collection and analyzed within 40 days of extraction. No qualifications were required.

2.2 GC/MS TUNING

The DFTPP tunes met the ion abundance criteria specified in Method 625. No qualifications were required.

2.3 CALIBRATION

The initial calibration associated with these SDGs was dated 02/24/05. The average RRFs for were ≥ 0.05 and the %RSDs were $\leq 35\%$ for all applicable target compounds. The continuing calibration associated with the sample analyses was analyzed 03/02/05. The RRFs for all target compounds were ≥ 0.05 , and the %Ds were $\leq 20\%$. A representative number of average RRFs, %RSDs, and r^2 s for the initial calibration and RRFs and %Ds for the continuing calibration were checked from the raw data, and no calculation or transcription errors were noted. No qualifications were required.

2.4 BLANKS

One method blank (5B28001-BLK1) were extracted and analyzed with these SDGs. There were no detects above the MDLs for any target compounds. Review of the raw data indicated no false negatives. No qualifications were required.

2.5 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

One blank spike/ blank spike duplicate pair (5B28001-BS1/BSD1) was extracted and analyzed with these SDGs. Recoveries and RPDs for all target compounds were within the laboratory-established QC limits. No qualifications were required.

2.6 SURROGATE RECOVERY

The surrogate recoveries for both samples were within the laboratory QC limits. A representative number of recoveries were calculated from the raw data, and no transcription or calculation errors were noted. No qualifications were required.

2.7 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

No MS/MSD analyses were associated with these SDGs. Evaluation of method accuracy and precision was based on blank spike/blank spike duplicate 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 Field Blanks and Equipment Rinsates

There were no field QC samples associated with these SDGs. No qualifications were required.

2.8.2 Field Duplicates

There were no field duplicate samples associated with these SDGs.

2.9 INTERNAL STANDARDS PERFORMANCE

The internal standard area counts and retention times were within the control limits established by the continuing calibration standards: -50%/+100% for internal standard areas and ± 30 seconds for retention times. A representative number of recoveries 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 semivolatile target compounds by EPA Method 625. Review of the sample chromatogram, 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 level of the initial calibration and the method detection limit study. The reporting limits were not adjusted for sample amount; however, the dilution factors on the sample result summaries reflected the sample amount extracted. Results were reported in $\mu\text{g/L}$ (ppb). No qualifications were required.

2.12 TENTATIVELY IDENTIFIED COMPOUNDS

TICs were not reported by the laboratory for these SDGs. No qualifications were required.

2.13 SYSTEM PERFORMANCE

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



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MWH-Pasadena/Boeing Project ID: Routine Outfall 011
 300 North Lake Avenue, Suite 1200
 Pasadena, CA 91101 Report Number: IOB2066
 Attention: Bronwyn Kelly
 Sampled: 02/25/05
 Received: 02/25/05

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

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers	Qual Code
Sample ID: IOB2066-01 (DRAFT: Outfall 011 - Water)										
Reporting Units: ug/l										
Bis(2-ethylhexyl)phthalate	EPA 625	5B28001	1.1	5.0	ND	0.98	02/28/05	03/02/05		<i>few Qual</i> <i>Qual Code</i> u ↓
2,4-Dinitrotoluene	EPA 625	5B28001	0.23	9.0	ND	0.98	02/28/05	03/02/05		
N-Nitrosodimethylamine	EPA 625	5B28001	0.22	8.0	ND	0.98	02/28/05	03/02/05		
Pentachlorophenol	EPA 625	5B28001	0.78	8.0	ND	0.98	02/28/05	03/02/05		
2,4,6-Trichlorophenol	EPA 625	5B28001	0.10	6.0	ND	0.98	02/28/05	03/02/05		
Surrogate: 2-Fluorophenol (30-120%)					72 %					
Surrogate: Phenol-d6 (35-120%)					50 %					
Surrogate: 2,4,6-Tribromophenol (45-120%)					98 %					
Surrogate: Nitrobenzene-d5 (45-120%)					79 %					
Surrogate: 2-Fluorobiphenyl (45-120%)					84 %					
Surrogate: Terphenyl-d14 (45-120%)					88 %					

AMEC VALIDATED
LEVEL IV

DRAFT REPORT
 DRAFT REPORT
 DATA SUBJECT TO CHANGE


CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

AMEC Earth & Environmental
 550 South Wadsworth Boulevard
 Suite 500
 Lakewood, CO 80226

Package ID T711VO62
 Task Order 313150010
 SDG No. IOB2066, IOB2099

No. of Analyses 2

Laboratory Del Mar Analytical

Date: April 1, 2005
 Reviewer's Signature


Reviewer L. Calvin

Analysis/Method Volatiles by Method 624

ACTION ITEMS^a	
1. Case Narrative Deficiencies	
2. Out of Scope Analyses	
3. Analyses Not Conducted	
4. Missing Hardcopy Deliverables	
5. Incorrect Hardcopy Deliverables	
6. Deviations from Analysis Protocol, e.g., Holding Times GC/MS Tune/Inst. Performance Calibration Method blanks Surrogates Matrix Spike/Dup LCS Field QC Internal Standard Performance Compound Identification Quantitation System Performance	
COMMENTS^b	Acceptable as reviewed.
^a 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

ANALYSIS: VOLATILES

SAMPLE DELIVERY GROUP: IOB2066, IOB2099

Prepared by

AMEC Denver Operations
550 South Wadsworth Boulevard, Suite 500
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title: NPDES Monitoring
Contract Task Order #: 313150010
SDG#: IOB2066, IOB2099
Project Manager: B. McIlvaine
Matrix: Water
Analysis: Volatiles
QC Level: Level IV
No. of Samples: 4
No. of Reanalyses/Dilutions: 0
Reviewer: L. Calvin
Date of Review: April 1, 2005

The samples listed in Table 1 were validated based on the guidelines outlined in the *AMEC Data Validation Procedure for Levels C and D Volatile Organics (DVP-2, Rev. 2)*, *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 summary forms as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

Table 1. Sample identification

Client ID	EPA ID	Lab No.	Matrix	Method
Outfall 011	Outfall 011	IOB2066-01	water	624
Trip Blank	Trip Blank	IOB2066-02	water	624
Outfall 018	Outfall 018	IOB2099-01	water	624
Trip Blank	Trip Blank	IOB2099-02	water	624

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

The following are findings associated with sample management:

2.1.1 Sample Preservation, Handling, and Transport

The samples in these SDGs were received at the laboratory within the temperature limits of $4^{\circ}\text{C} \pm 2^{\circ}\text{C}$. The samples were properly preserved. The COCs noted that the samples were received intact; however, information regarding absence of headspace was not provided. No qualifications were required.

2.1.2 Chain of Custody

The COCs were signed and dated by both field and laboratory personnel. The COCs accounted for the analyses presented in these SDGs. As the samples were couriered directly to the laboratory, custody seals were not required. No qualifications were required.

2.1.3 Holding Times

The samples were analyzed within 14 days of collection. No qualifications were required.

2.2 GC/MS TUNING

The ion abundance windows shown on the quantitation report were consistent with those specified in the EPA Method 624, and all ion abundances were within the established windows. The samples and associated QC were analyzed within 12 hours of the BFB injection times. The Form Vs were verified from the raw data and no discrepancies between the summary forms and the raw data were noted. No qualifications were required.

2.3 CALIBRATION

One initial calibration dated 01/11/05, was associated with these SDGs. The average RRFs were ≥ 0.05 and the %RSDs were $\leq 35\%$ for the target compounds listed on the sample result summaries. One continuing calibration analyzed 02/28/05, was associated with the sample analyses. The %Ds were $\leq 20\%$ and the RRFs for all target compounds were ≥ 0.05 . A representative number of %RSDs and average RRFs from the initial calibration, and %Ds and RRFs from the continuing calibration were recalculated from the raw data, and no calculation or transcription errors were found. No qualifications were required.

2.4 BLANKS

One water method blank (5B28023-BLK1) was associated with these SDGs. There were no detects above the MDLs for the target compounds listed on the sample result summaries. The method blank raw data showed no evidence of false negatives. No qualifications were required.

2.5 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

One water blank spike (5B28023-BS1) was associated with these SDGs. All recoveries were within the laboratory-established QC limits. A representative number of recoveries were recalculated from the raw data and no calculation or transcription errors were found. No qualifications were required.

2.6 SURROGATE RECOVERY

The surrogates were recovered within the QC limits of 80-120% in the samples and associated QC. A representative number of surrogate recoveries were recalculated from the raw data and no calculation or transcription errors were found. No qualifications were required.

2.7 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

MS/MSD analyses were not performed on the samples in these SDGs. 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

Samples Trip Blank (IOB2066) and Trip Blank (IOB2099) were the trip blanks associated with the site samples in these SDGs. There were no target compounds detected above the MDLs in the either of the trip blanks. No qualifications were required.

2.8.2 Field Blanks and Equipment Rinsates

There were no other field QC samples associated with these SDGs. No qualifications were required.

2.8.3 Field Duplicates

There were no field duplicate samples associated with these SDGs.

2.9 INTERNAL STANDARDS PERFORMANCE

Internal standard area counts and retention times for the samples in these SDGs were within the control limits established by the continuing calibration standards: +100%/-50% for internal standard areas and ± 0.50 minutes for retention times. A representative number of internal standard areas and retention times were verified from the raw data, and no calculation or transcription errors were noted. No qualifications were required.

2.10 COMPOUND IDENTIFICATION

Target compound identification was verified at a Level IV data validation. The laboratory analyzed for volatile target compounds by EPA Method 624. Chromatograms, retention times, and spectra for the samples and QC were examined and no target compound identification problems were noted. No qualifications were required.

2.11 COMPOUND QUANTIFICATION AND REPORTED DETECTION LIMITS

Compound quantification is verified at a Level IV data validation. The reporting limits were supported by the lowest concentrations of the initial calibration standards and by the MDL study. Compound quantitation was verified by recalculating any sample detects and a representative number of blank spike and surrogate recoveries from the raw data. Results were reported in ug/L (ppm). No calculation or transcription errors were noted. Any detect between the MDL and the reporting limit was qualified as estimated, "J," by the laboratory. No further qualifications were required.

2.12 TENTATIVELY IDENTIFIED COMPOUNDS

The laboratory did not provide TICs for these SDGs. No qualifications were required.

2.13 SYSTEM PERFORMANCE

A review of the chromatograms and other raw data showed no identifiable problems with system performance. No qualifications were required.



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

Project ID: Routine Outfall 011

Report Number: IOB2066

Sampled: 02/25/05
 Received: 02/25/05

PURGEABLES BY GC/MS (EPA 624)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers	
Sample ID: IOB2066-01 (Outfall 011 - Water)										
Reporting Units: ug/l										
Benzene	EPA 624	5B28023	0.28	2.0	ND	1	02/28/05	02/28/05	<i>see qual log</i> <i>add</i> ↓	
Carbon tetrachloride	EPA 624	5B28023	0.28	5.0	ND	1	02/28/05	02/28/05		
Chloroform	EPA 624	5B28023	0.33	2.0	ND	1	02/28/05	02/28/05		
1,1-Dichloroethane	EPA 624	5B28023	0.27	2.0	ND	1	02/28/05	02/28/05		
1,2-Dichloroethane	EPA 624	5B28023	0.28	2.0	ND	1	02/28/05	02/28/05		
1,1-Dichloroethene	EPA 624	5B28023	0.32	3.0	ND	1	02/28/05	02/28/05		
Ethylbenzene	EPA 624	5B28023	0.25	2.0	ND	1	02/28/05	02/28/05		
Tetrachloroethene	EPA 624	5B28023	0.32	2.0	ND	1	02/28/05	02/28/05		
Toluene	EPA 624	5B28023	0.36	2.0	ND	1	02/28/05	02/28/05		
1,1,1-Trichloroethane	EPA 624	5B28023	0.30	2.0	ND	1	02/28/05	02/28/05		
1,1,2-Trichloroethane	EPA 624	5B28023	0.30	2.0	ND	1	02/28/05	02/28/05		
Trichloroethene	EPA 624	5B28023	0.26	5.0	ND	1	02/28/05	02/28/05		
Trichlorofluoromethane	EPA 624	5B28023	0.34	5.0	ND	1	02/28/05	02/28/05		
Vinyl chloride	EPA 624	5B28023	0.26	5.0	ND	1	02/28/05	02/28/05		
Xylenes, Total	EPA 624	5B28023	0.52	4.0	ND	1	02/28/05	02/28/05		
Surrogate: Dibromofluoromethane (80-120%)										108 %
Surrogate: Toluene-d8 (80-120%)										96 %
Surrogate: 4-Bromofluorobenzene (80-120%)										100 %
Sample ID: IOB2066-02 (Trip Blank - Water)										
Reporting Units: ug/l										
Benzene	EPA 624	5B28023	0.28	2.0	ND	1	02/28/05	02/28/05	↓	
Carbon tetrachloride	EPA 624	5B28023	0.28	5.0	ND	1	02/28/05	02/28/05		
Chloroform	EPA 624	5B28023	0.33	2.0	ND	1	02/28/05	02/28/05		
1,1-Dichloroethane	EPA 624	5B28023	0.27	2.0	ND	1	02/28/05	02/28/05		
1,2-Dichloroethane	EPA 624	5B28023	0.28	2.0	ND	1	02/28/05	02/28/05		
1,1-Dichloroethene	EPA 624	5B28023	0.32	3.0	ND	1	02/28/05	02/28/05		
Ethylbenzene	EPA 624	5B28023	0.25	2.0	ND	1	02/28/05	02/28/05		
Tetrachloroethene	EPA 624	5B28023	0.32	2.0	ND	1	02/28/05	02/28/05		
Toluene	EPA 624	5B28023	0.36	2.0	ND	1	02/28/05	02/28/05		
1,1,1-Trichloroethane	EPA 624	5B28023	0.30	2.0	ND	1	02/28/05	02/28/05		
1,1,2-Trichloroethane	EPA 624	5B28023	0.30	2.0	ND	1	02/28/05	02/28/05		
Trichloroethene	EPA 624	5B28023	0.26	5.0	ND	1	02/28/05	02/28/05		
Trichlorofluoromethane	EPA 624	5B28023	0.34	5.0	ND	1	02/28/05	02/28/05		
Vinyl chloride	EPA 624	5B28023	0.26	5.0	ND	1	02/28/05	02/28/05		
Xylenes, Total	EPA 624	5B28023	0.52	4.0	ND	1	02/28/05	02/28/05		
Surrogate: Dibromofluoromethane (80-120%)										102 %
Surrogate: Toluene-d8 (80-120%)										95 %
Surrogate: 4-Bromofluorobenzene (80-120%)										96 %

AMEC VALIDATED
LEVEL IV

Del Mar Analytical, Irvine
 Michele Harper
 Project Manager

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

CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

AMEC Earth & Environmental
 550 South Wadsworth Boulevard
 Suite 500
 Lakewood, CO 80226

Package ID T711WC88
 Task Order 313150010
 SDG No. IOB2066/2099

No. of Analyses 2

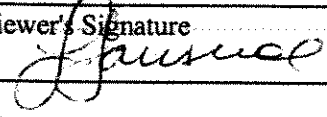
Laboratory Del Mar Analytical

Reviewer L. Jarusewic

Analysis/Method General Minerals

Date: 03/25/05

Reviewer's Signature



ACTION ITEMS^a

1. **Case Narrative Deficiencies**
2. **Out of Scope Analyses**
3. **Analyses Not Conducted**
4. **Missing Hardcopy Deliverables**
5. **Incorrect Hardcopy Deliverables**
6. **Deviations from Analysis Protocol, e.g.,**

Qualifications applied for detects below the reporting limit.

- Holding Times
- GC/MS Tune/Inst. Performance
- Calibrations
- Blanks
- Surrogates
- Matrix Spike/Dup LCS
- Field QC
- Internal Standard Performance
- Compound Identification and Quantitation
- System Performance

COMMENTS^b

^a 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

ANALYSIS: GENERAL MINERALS

SAMPLE DELIVERY GROUPS: IOB2066 & IOB2099

Prepared by

AMEC—Denver Operations
550 South Wadsworth Boulevard, Suite 500
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title: NPDES Monitoring
Contract Task Order #: 313150010
Sample Delivery Group #: IOB2066, IOB2099
Project Manager: B. McIlvaine
Matrix: Water
Analysis: General Minerals
QC Level: Level IV
No. of Samples: 2
Reviewer: L. Jarusewic
Date of Review: March 25, 2005

The sample listed in Table 1 was validated based on the guidelines outlined in the AMEC *Data Validation Procedures SOP DVP-6, Rev. 2*, USEPA *Methods for Chemical Analysis of Water and Wastes Method 300.0, 350.2, 405.1, 335.2, 413.1, 425.1, 120.1, 160.2, 160.5, 180.1, and 160.1*. *Standard Methods for the Examination of Water and Wastewater Method SM2540C*, 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 I as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

Table 1. Sample identification

Client ID	EPA ID	Laboratory ID	Matrix	COC Method
Outfall 011	Outfall 011	IOB2066-01	Water	General Minerals
Outfall 018	Outfall 018	IOB2099-01	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 samples in these SDGs were received at the laboratory within the temperature limits of $4^{\circ}\text{C} \pm 2^{\circ}\text{C}$. No preservation problems were noted by the laboratory. No qualifications were required.

2.1.2 Chain of Custody

The COCs were signed and dated by field and laboratory personnel. The COCs accounted for all analyses present in these SDGs. No sample qualifications were required.

2.1.3 Holding Times

The holding times were assessed by comparing the dates of collection with the dates of analyses. The 28-day analytical holding time for ammonia, chloride, sulfate, conductivity, and oil and grease, the 14-day analytical holding time for cyanide, the seven-day holding time for total suspended solids and total dissolved solids, and the 48-hour holding time for surfactants, turbidity, nitrate/nitrite, biological oxygen demand, and total settleable solids were met. No qualifications were required.

2.2 CALIBRATION

For the applicable analyses, the initial calibration correlation coefficients were ≥ 0.995 . Initial and continuing calibration information was acceptable with %Rs within the control limits of 90-110% for all analytes. For ammonia, no information regarding the standardization of the titrant was provided; however, as the LCS recovery was within the CCV control limits, no qualifications were required. For BOD, no information regarding the calibration of the oxygen meter was provided; however, as the LCS recovery was within the CCV control limits, no qualifications were required. Calibration is not applicable to total settleable solids, total dissolved solids, and total suspended solids. The total cyanide reporting limit check standard was recovered within the control limits of 70-130%. No qualifications were required.

2.3 BLANKS

Turbidity was detected in method blank 5B26046-BLK1 associated with samples Outfall 011 and Outfall 018; however, the method blank result was insufficient to qualify samples Outfall 011 and Outfall 018. The remaining method blank and CCB results reported on the summary forms and in the raw data for blank analyses associated with the samples were nondetects at the reporting limit. No qualifications were required.

2.4 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

The laboratory control sample and laboratory control sample duplicate (BOD and oil and grease only) recoveries and RPDs were within the laboratory-established control limits. The LCS is not applicable to turbidity, conductivity, or settleable solids. No qualifications were required.

2.5 SURROGATES RECOVERY

Surrogate recovery is not applicable to the analyses presented in these SDGs.

2.6 LABORATORY DUPLICATES

Laboratory duplicate analyses were performed on sample Outfall 011 for total dissolved solids in association with the samples in these SDGs. The RPD was within the control limits of $\leq 10\%$ and no qualifications were required.

2.7 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

No MS/MSD analyses were performed in association with the samples in these SDGs; therefore, no assessment was made with respect to this criterion.

2.8 FURNACE ATOMIC ABSORPTION QC

Furnace atomic absorption was not utilized for the analyses of these samples; therefore, furnace atomic absorption QC is not applicable.

2.9 ICP SERIAL DILUTION

ICP serial dilution is not applicable to the analyses presented in this data validation report.

2.10 SAMPLE RESULT VERIFICATION

A Level IV review was performed for the samples in these data packages. Calculations were verified, and the sample results reported on the Form Is were verified against the raw data. No transcription errors or calculation errors were noted. Surfactant and cyanide in sample Outfall 011 and BOD, oil and grease, and cyanide in sample Outfall 018 detected below the reporting limit were qualified as estimated, "J." No further qualifications were required.

2.11 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. The following are findings associated with field QC samples:

2.11.1 Field Blanks and Equipment Rinsates

The samples in these SDGs had no associated field QC samples. No qualifications were required.

2.11.2 Field Duplicates

There were no field duplicate pairs associated with these SDGs.



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

Project ID: Routine Outfall 011

Report Number: IOB2066

Sampled: 02/25/05

Received: 02/25/05

DRAFT: INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Quaiifiers
Sample ID: IOB2066-01 (DRAFT: Outfall 011 - Water) - cont.									
Reporting Units: mg/l									
Ammonia-N (Distilled)	EPA 350.2	5C07070	0.30	0.50	ND	1	03/07/05	03/07/05	U
Biochemical Oxygen Demand	EPA 405.1	5B25128	0.59	2.0	2.5	1	02/25/05	03/02/05	U
Chloride	EPA 300.0	5B25042	0.26	0.50	6.7	1	02/25/05	02/25/05	U
Total Cyanide	EPA 335.2	5B28115	0.0022	0.0050	0.0025	1	02/28/05	03/01/05	J J DNQ
Nitrate/Nitrite-N	EPA 300.0	5B25042	0.072	0.26	0.38	1	02/25/05	02/25/05	U
Oil & Grease	EPA 413.1	5C02094	0.94	5.0	ND	1	03/02/05	03/02/05	U
Sulfate	EPA 300.0	5B25042	0.18	0.50	12	1	02/25/05	02/25/05	J J DNQ
Surfactants (MBAS)	SM5540-C	5B25118	0.044	0.10	0.046	1	02/25/05	02/25/05	J J DNQ
Total Dissolved Solids	SM2540C	5B28078	10	10	120	1	02/28/05	02/28/05	U
Total Suspended Solids	EPA 160.2	5C03074	10	10	ND	1	03/03/05	03/03/05	U
Sample ID: IOB2066-01 (DRAFT: Outfall 011 - Water)									
Reporting Units: ml/hr									
Total Settleable Solids	EPA 160.5	5B25097	0.10	0.10	ND	1	02/25/05	02/25/05	U
Sample ID: IOB2066-01 (DRAFT: Outfall 011 - Water)									
Reporting Units: NTU									
Turbidity	EPA 180.1	5B26046	0.040	1.0	8.2	1	02/26/05	02/26/05	
Sample ID: IOB2066-01 (DRAFT: Outfall 011 - Water)									
Reporting Units: ug/l									
Perchlorate	EPA 314.0	5B28103	0.80	4.0	ND	1	02/28/05	03/01/05	*
Sample ID: IOB2066-01 (DRAFT: Outfall 011 - Water)									
Reporting Units: umhos/cm									
Specific Conductance	EPA 120.1	5B28080	1.0	1.0	160	1	02/28/05	02/28/05	

AMEC VALIDATED

LEVEL I

*Analysis Not Validated

DRAFT REPORT
 DRAFT REPORT
 DATA SUBJECT TO CHANGE

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CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

AMEC Earth & Environmental
 550 South Wadsworth Boulevard
 Suite 500
 Lakewood, CO 80226

Package ID T711WC89
 Task Order 313150010
 SDG No. IOB2066/2099

No. of Analyses 2

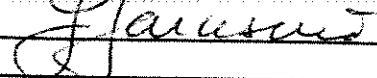
Laboratory Del Mar Analytical

Reviewer L. Jarusewic

Analysis/Method Perchlorate

Date: 03/25/05

Reviewer's Signature



ACTION ITEMS^a

1. **Case Narrative Deficiencies**
2. **Out of Scope Analyses**
3. **Analyses Not Conducted**
4. **Missing Hardcopy Deliverables**
5. **Incorrect Hardcopy Deliverables**
6. **Deviations from Analysis Protocol, e.g.,**
 - Qualifications were applied for low ICCS recovery.
 - Holding Times
 - GC/MS Tune/Inst. Performance
 - Calibrations
 - Blanks
 - Surrogates
 - Matrix Spike/Dup LCS
 - Field QC
 - Internal Standard Performance
 - Compound Identification and Quantitation
 - System Performance

COMMENTS^b

^a 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

ANALYSIS: PERCHLORATE

SAMPLE DELIVERY GROUPS: IOB2066 & IOB2099

Prepared by

AMEC—Denver Operations
550 South Wadsworth Boulevard, Suite 500
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title: NPDES Monitoring
Contract Task Order #: 313150010
Sample Delivery Group #: IOB2066, IOB2099
Project Manager: B. McIlvaine
Matrix: Water
Analysis: Perchlorate
QC Level: Level IV
No. of Samples: 2
Reviewer: L. Jarusewic
Date of Review: March 25, 2005

The sample listed in Table 1 was validated based on the guidelines outlined in the AMEC *Data Validation Procedures SOP DVP-6, Rev. 2, USEPA Methods for Chemical Analysis of Water and Wastes Method 314.0, and 120.1*, 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 I as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

Table 1. Sample identification

Client ID	EPA ID	Laboratory ID	Matrix	COC Method
Outfall 011	Outfall 011	IOB2066-01	Water	Perchlorate
Outfall 018	Outfall 018	IOB2099-01	Water	Perchlorate

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

Following are findings associated with sample management:

2.1.1 Sample Preservation, Handling, and Transport

The samples in these SDGs were received at the laboratory within the temperature limits of $4^{\circ}\text{C} \pm 2^{\circ}\text{C}$. No preservation problems were noted by the laboratory. No qualifications were required.

2.1.2 Chain of Custody

The COCs were signed and dated by field and laboratory personnel, and accounted for the samples and analysis presented in these SDGs. As the samples were couriered directly to the laboratory, custody seals were not required. No qualifications were required.

2.1.3 Holding Times

The holding time was assessed by comparing the dates of collection with the dates of analysis. The 28-day analytical holding time for perchlorate was met, and no qualifications were required.

2.2 CALIBRATION

The initial calibration correlation coefficients were ≥ 0.995 . The IPC-MA recoveries were within the control limits of 80-120%. The ICV, CCV and IPC recoveries were within the control limits of 90-110%. The ICCS associated with sample Outfall 018 was recovered below control limits; therefore, nondetected perchlorate in Outfall 018 was qualified as estimated, "UJ." No further qualifications were required.

2.3 BLANKS

The method blank and CCB results reported on the summary forms and in the raw data for blank analyses associated with the samples were nondetects at the reporting limit. No qualifications were required.

2.4 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

The laboratory control sample recoveries were within the method control limits of 85-115%. No qualifications were required.

2.5 SURROGATES RECOVERY

Surrogate recovery is not applicable to the analysis presented in these SDGs.

2.6 LABORATORY DUPLICATES

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

2.7 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

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

2.8 FURNACE ATOMIC ABSORPTION QC

Furnace atomic absorption was not utilized for the analysis of these samples; therefore, furnace atomic absorption QC is not applicable.

2.9 ICP SERIAL DILUTION

ICP serial dilution is not applicable to the analysis presented in this data validation report.

2.10 SAMPLE RESULT VERIFICATION

A Level IV review was performed for the samples in these data packages. Calculations were verified, and the sample results reported on the Form Is were verified against the raw data. No transcription errors or calculation errors were noted. No qualifications were required.

2.11 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. The following are findings associated with field QC samples:

2.11.1 Field Blanks and Equipment Rinsates

The samples in these SDGs had no associated field QC samples. No qualifications were required.

2.11.2 Field Duplicates

There were no field duplicate pairs associated with these SDGs.



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

Project ID: Routine Outfall 011

Report Number: IOB2066

Sampled: 02/25/05
 Received: 02/25/05

DRAFT: INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Quaiifiers
Sample ID: IOB2066-01 (DRAFT: Outfall 011 - Water) - cont.									
Reporting Units: mg/l									
Ammonia-N (Distilled)	EPA 350.2	5C07070	0.30	0.50	ND	1	03/07/05	03/07/05	*
Biochemical Oxygen Demand	EPA 405.1	5B25128	0.59	2.0	2.5	1	02/25/05	03/02/05	
Chloride	EPA 300.0	5B25042	0.26	0.50	6.7	1	02/25/05	02/25/05	
Total Cyanide	EPA 335.2	5B28115	0.0022	0.0050	0.0025	1	02/28/05	03/01/05	J
Nitrate/Nitrite-N	EPA 300.0	5B25042	0.072	0.26	0.38	1	02/25/05	02/25/05	
Oil & Grease	EPA 413.1	5C02094	0.94	5.0	ND	1	03/02/05	03/02/05	
Sulfate	EPA 300.0	5B25042	0.18	0.50	12	1	02/25/05	02/25/05	
Surfactants (MBAS)	SM5540-C	5B25118	0.044	0.10	0.046	1	02/25/05	02/25/05	J
Total Dissolved Solids	SM2540C	5B28078	10	10	120	1	02/28/05	02/28/05	
Total Suspended Solids	EPA 160.2	5C03074	10	10	ND	1	03/03/05	03/03/05	
Sample ID: IOB2066-01 (DRAFT: Outfall 011 - Water)									
Reporting Units: ml/hr									
Total Settleable Solids	EPA 160.5	5B25097	0.10	0.10	ND	1	02/25/05	02/25/05	
Sample ID: IOB2066-01 (DRAFT: Outfall 011 - Water)									
Reporting Units: NTU									
Turbidity	EPA 180.1	5B26046	0.040	1.0	8.2	1	02/26/05	02/26/05	
Sample ID: IOB2066-01 (DRAFT: Outfall 011 - Water)									
Reporting Units: ug/l									
Perchlorate	EPA 314.0	5B28103	0.80	4.0	ND	1	02/28/05	03/01/05	u
Sample ID: IOB2066-01 (DRAFT: Outfall 011 - Water)									
Reporting Units: umhos/cm									
Specific Conductance	EPA 120.1	5B28080	1.0	1.0	160	1	02/28/05	02/28/05	*

REV
 QUAL
 CODE



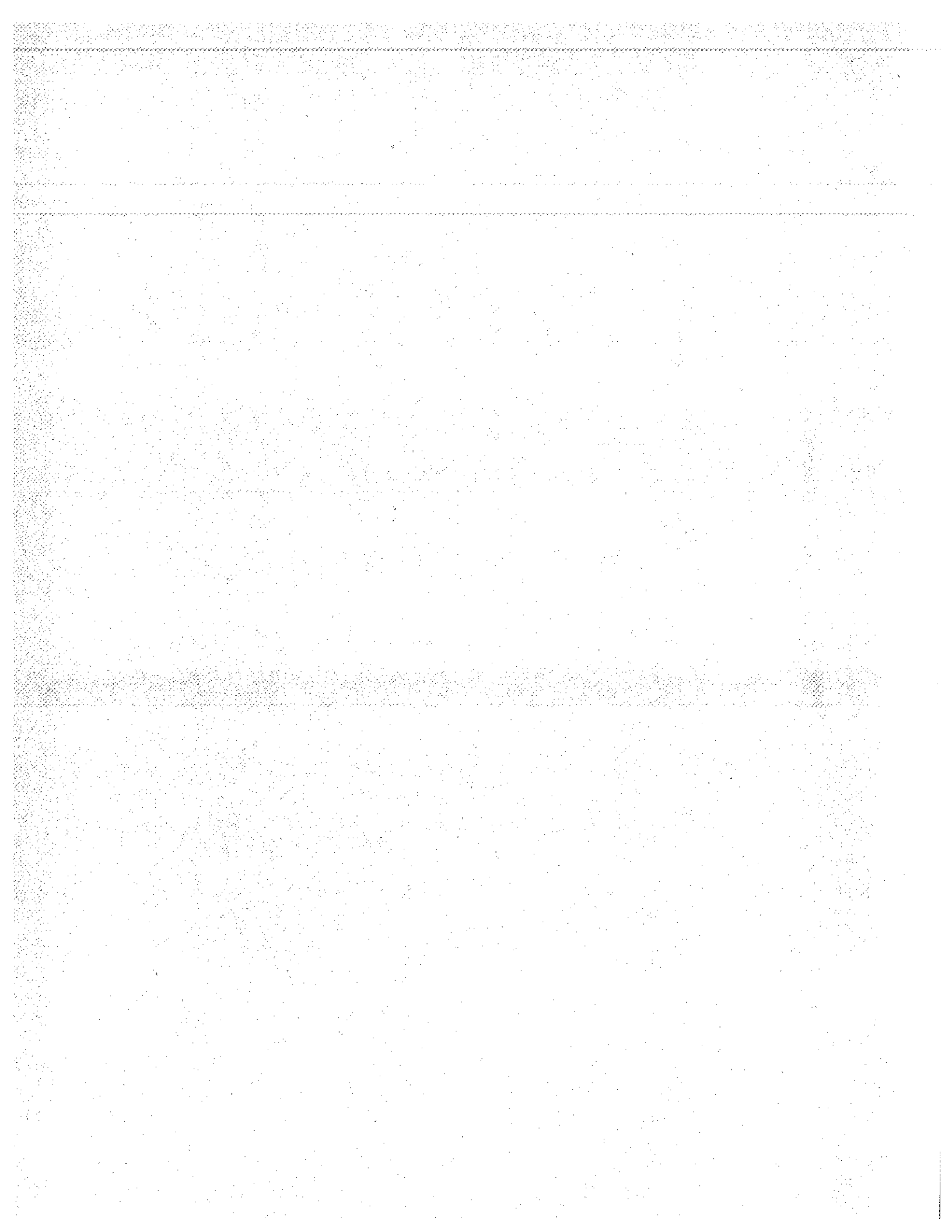
AMEC VALIDATED

LEVEL IV

Analysis Not Validated

DRAFT REPORT
 DRAFT REPORT
 DATA SUBJECT TO CHANGE

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LABORATORY REPORT

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

Project: Routine Outfall 011

Sampled: 02/25/05
Received: 02/25/05
Issued: 04/02/05 14:23

NELAP #01108CA California ELAP#1197 CSDLAC #10117

*The results listed within this Laboratory Report pertain only to the samples tested in the laboratory. The analyses contained in this report were performed in accordance with the applicable certifications as noted. All soil samples are reported on a wet weight basis unless otherwise noted in the report. This Laboratory Report is confidential and is intended for the sole use of Del Mar Analytical and its client. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical. The Chain of Custody, 1 page, is included and is an integral part of this report.
This entire report was reviewed and approved for release.*

SAMPLE CROSS REFERENCE

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

LABORATORY ID	CLIENT ID	MATRIX
IOB2066-01	Outfall 011	Water
IOB2066-02	Trip Blank	Water

Reviewed By:

Del Mar Analytical, Irvine
Michele Harper
Project Manager



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

Project ID: Routine Outfall 011

Report Number: IOB2066

Sampled: 02/25/05
 Received: 02/25/05

PURGEABLES BY GC/MS (EPA 624)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOB2066-01 (Outfall 011 - Water)									
Reporting Units: ug/l									
Benzene	EPA 624	5B28023	0.28	2.0	ND	1	02/28/05	02/28/05	
Carbon tetrachloride	EPA 624	5B28023	0.28	5.0	ND	1	02/28/05	02/28/05	
Chloroform	EPA 624	5B28023	0.33	2.0	ND	1	02/28/05	02/28/05	
1,1-Dichloroethane	EPA 624	5B28023	0.27	2.0	ND	1	02/28/05	02/28/05	
1,2-Dichloroethane	EPA 624	5B28023	0.28	2.0	ND	1	02/28/05	02/28/05	
1,1-Dichloroethene	EPA 624	5B28023	0.32	3.0	ND	1	02/28/05	02/28/05	
Ethylbenzene	EPA 624	5B28023	0.25	2.0	ND	1	02/28/05	02/28/05	
Tetrachloroethene	EPA 624	5B28023	0.32	2.0	ND	1	02/28/05	02/28/05	
Toluene	EPA 624	5B28023	0.36	2.0	ND	1	02/28/05	02/28/05	
1,1,1-Trichloroethane	EPA 624	5B28023	0.30	2.0	ND	1	02/28/05	02/28/05	
1,1,2-Trichloroethane	EPA 624	5B28023	0.30	2.0	ND	1	02/28/05	02/28/05	
Trichloroethene	EPA 624	5B28023	0.26	5.0	ND	1	02/28/05	02/28/05	
Trichlorofluoromethane	EPA 624	5B28023	0.34	5.0	ND	1	02/28/05	02/28/05	
Vinyl chloride	EPA 624	5B28023	0.26	5.0	ND	1	02/28/05	02/28/05	
Xylenes, Total	EPA 624	5B28023	0.52	4.0	ND	1	02/28/05	02/28/05	
Surrogate: Dibromofluoromethane (80-120%)					108 %				
Surrogate: Toluene-d8 (80-120%)					96 %				
Surrogate: 4-Bromofluorobenzene (80-120%)					100 %				
Sample ID: IOB2066-02 (Trip Blank - Water)									
Reporting Units: ug/l									
Benzene	EPA 624	5B28023	0.28	2.0	ND	1	02/28/05	02/28/05	
Carbon tetrachloride	EPA 624	5B28023	0.28	5.0	ND	1	02/28/05	02/28/05	
Chloroform	EPA 624	5B28023	0.33	2.0	ND	1	02/28/05	02/28/05	
1,1-Dichloroethane	EPA 624	5B28023	0.27	2.0	ND	1	02/28/05	02/28/05	
1,2-Dichloroethane	EPA 624	5B28023	0.28	2.0	ND	1	02/28/05	02/28/05	
1,1-Dichloroethene	EPA 624	5B28023	0.32	3.0	ND	1	02/28/05	02/28/05	
Ethylbenzene	EPA 624	5B28023	0.25	2.0	ND	1	02/28/05	02/28/05	
Tetrachloroethene	EPA 624	5B28023	0.32	2.0	ND	1	02/28/05	02/28/05	
Toluene	EPA 624	5B28023	0.36	2.0	ND	1	02/28/05	02/28/05	
1,1,1-Trichloroethane	EPA 624	5B28023	0.30	2.0	ND	1	02/28/05	02/28/05	
1,1,2-Trichloroethane	EPA 624	5B28023	0.30	2.0	ND	1	02/28/05	02/28/05	
Trichloroethene	EPA 624	5B28023	0.26	5.0	ND	1	02/28/05	02/28/05	
Trichlorofluoromethane	EPA 624	5B28023	0.34	5.0	ND	1	02/28/05	02/28/05	
Vinyl chloride	EPA 624	5B28023	0.26	5.0	ND	1	02/28/05	02/28/05	
Xylenes, Total	EPA 624	5B28023	0.52	4.0	ND	1	02/28/05	02/28/05	
Surrogate: Dibromofluoromethane (80-120%)					102 %				
Surrogate: Toluene-d8 (80-120%)					95 %				
Surrogate: 4-Bromofluorobenzene (80-120%)					96 %				

Del Mar Analytical, Irvine
 Michele Harper
 Project Manager

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MWH-Pasadena/Boeing 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Attention: Bronwyn Kelly	Project ID: Routine Outfall 011 Report Number: IOB2066	Sampled: 02/25/05 Received: 02/25/05
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ACID & BASE/NEUTRALS BY GC/MS (EPA 625)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOB2066-01 (Outfall 011 - Water)									
Reporting Units: ug/l									
Bis(2-ethylhexyl)phthalate	EPA 625	5B28001	1.1	5.0	ND	0.98	02/28/05	03/02/05	
2,4-Dinitrotoluene	EPA 625	5B28001	0.23	9.0	ND	0.98	02/28/05	03/02/05	
N-Nitrosodimethylamine	EPA 625	5B28001	0.22	8.0	ND	0.98	02/28/05	03/02/05	
Pentachlorophenol	EPA 625	5B28001	0.78	8.0	ND	0.98	02/28/05	03/02/05	
2,4,6-Trichlorophenol	EPA 625	5B28001	0.10	6.0	ND	0.98	02/28/05	03/02/05	
Surrogate: 2-Fluorophenol (30-120%)					72 %				
Surrogate: Phenol-d6 (35-120%)					50 %				
Surrogate: 2,4,6-Tribromophenol (45-120%)					98 %				
Surrogate: Nitrobenzene-d5 (45-120%)					79 %				
Surrogate: 2-Fluorobiphenyl (45-120%)					84 %				
Surrogate: Terphenyl-d14 (45-120%)					88 %				

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 Michele Harper
 Project Manager

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 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 011 Report Number: IOB2066	Sampled: 02/25/05 Received: 02/25/05
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ORGANOCHLORINE PESTICIDES (EPA 608)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOB2066-01 (Outfall 011 - Water) - cont.									
Reporting Units: ug/l									
alpha-BHC	EPA 608	5C01050	0.0010	0.010	ND	0.98	03/01/05	03/03/05	
Surrogate: Decachlorobiphenyl (45-120%)					47 %				
Surrogate: Tetrachloro-m-xylene (35-120%)					43 %				

Del Mar Analytical, Irvine
 Michele Harper
 Project Manager

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MWH-Pasadena/Boeing 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Attention: Bronwyn Kelly	Project ID: Routine Outfall 011 Report Number: IOB2066	Sampled: 02/25/05 Received: 02/25/05
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METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOB2066-01 (Outfall 011 - Water) - cont.									
Reporting Units: ug/l									
Copper	EPA 200.8	5C03085	0.49	2.0	3.5	1	03/03/05	03/03/05	
Lead	EPA 200.8	5C03085	0.13	1.0	0.35	1	03/03/05	03/03/05	J
Mercury	EPA 245.1	5C02089	0.063	0.20	ND	1	03/02/05	03/02/05	

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 Project Manager

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

Project ID: Routine Outfall 011

Report Number: IOB2066

Sampled: 02/25/05
 Received: 02/25/05

INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOB2066-01 (Outfall 011 - Water) - cont.									
Reporting Units: mg/l									
Ammonia-N (Distilled)	EPA 350.2	5C07070	0.30	0.50	ND	1	03/07/05	03/07/05	
Biochemical Oxygen Demand	EPA 405.1	5B25128	0.59	2.0	2.5	1	02/25/05	03/02/05	
Chloride	EPA 300.0	5B25042	0.26	0.50	6.7	1	02/25/05	02/25/05	
Nitrate/Nitrite-N	EPA 300.0	5B25042	0.072	0.26	0.38	1	02/25/05	02/25/05	
Oil & Grease	EPA 413.1	5C02094	0.94	5.0	ND	1	03/02/05	03/02/05	
Sulfate	EPA 300.0	5B25042	0.18	0.50	12	1	02/25/05	02/25/05	
Surfactants (MBAS)	SM5540-C	5B25118	0.044	0.10	0.046	1	02/25/05	02/25/05	J
Total Dissolved Solids	SM2540C	5B28078	10	10	120	1	02/28/05	02/28/05	
Total Suspended Solids	EPA 160.2	5C03074	10	10	ND	1	03/03/05	03/03/05	
Sample ID: IOB2066-01 (Outfall 011 - Water)									
Reporting Units: ml/hr									
Total Settleable Solids	EPA 160.5	5B25097	0.10	0.10	ND	1	02/25/05	02/25/05	
Sample ID: IOB2066-01 (Outfall 011 - Water)									
Reporting Units: NTU									
Turbidity	EPA 180.1	5B26046	0.040	1.0	8.2	1	02/26/05	02/26/05	
Sample ID: IOB2066-01 (Outfall 011 - Water)									
Reporting Units: ug/l									
Total Cyanide	EPA 335.2	5B28115	2.2	5.0	2.5	1	02/28/05	03/01/05	J
Perchlorate	EPA 314.0	5B28103	0.80	4.0	ND	1	02/28/05	03/01/05	
Sample ID: IOB2066-01 (Outfall 011 - Water)									
Reporting Units: umhos/cm									
Specific Conductance	EPA 120.1	5B28080	1.0	1.0	160	1	02/28/05	02/28/05	

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

Project ID: Routine Outfall 011

Report Number: IOB2066

Sampled: 02/25/05
 Received: 02/25/05

SHORT HOLD TIME DETAIL REPORT

Sample ID: Outfall 011 (IOB2066-01) - Water	Hold Time (in days)	Date/Time Sampled	Date/Time Received	Date/Time Extracted	Date/Time Analyzed
EPA 160.5	2	02/25/2005 15:10	02/25/2005 19:15	02/25/2005 21:15	02/25/2005 22:15
EPA 180.1	2	02/25/2005 15:10	02/25/2005 19:15	02/26/2005 12:00	02/26/2005 13:00
EPA 300.0	2	02/25/2005 15:10	02/25/2005 19:15	02/25/2005 20:15	02/25/2005 22:13
EPA 405.1	2	02/25/2005 15:10	02/25/2005 19:15	02/25/2005 21:00	03/02/2005 14:30
SM5540-C	2	02/25/2005 15:10	02/25/2005 19:15	02/25/2005 19:49	02/25/2005 23:14

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 Pasadena, CA 91101
 Attention: Bronwyn Kelly

Project ID: Routine Outfall 011

Report Number: IOB2066

Sampled: 02/25/05
 Received: 02/25/05

METHOD BLANK/QC DATA

PURGEABLES BY GC/MS (EPA 624)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC Limits	RPD RPD	RPD Limit	Data Qualifiers
Batch: 5B28023 Extracted: 02/28/05										
Blank Analyzed: 02/28/2005 (5B28023-BLK1)										
Benzene	ND	2.0	0.28	ug/l						
Trichlorotrifluoroethane (Freon 113)	ND	5.0	1.2	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	0.32	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	0.52	ug/l						
Surrogate: Dibromofluoromethane	23.9			ug/l	25.0		96	80-120		
Surrogate: Toluene-d8	22.6			ug/l	25.0		90	80-120		
Surrogate: 4-Bromofluorobenzene	23.5			ug/l	25.0		94	80-120		

LCS Analyzed: 02/28/2005 (5B28023-BS1)

Benzene	25.6	2.0	0.28	ug/l	25.0		102	70-120		
Carbon tetrachloride	26.7	5.0	0.28	ug/l	25.0		107	70-140		
Chloroform	25.5	2.0	0.33	ug/l	25.0		102	75-130		
1,1-Dichloroethane	25.9	2.0	0.27	ug/l	25.0		104	70-135		
1,2-Dichloroethane	23.8	2.0	0.28	ug/l	25.0		95	60-150		
1,1-Dichloroethene	25.8	3.0	0.32	ug/l	25.0		103	75-135		
Ethylbenzene	27.2	2.0	0.25	ug/l	25.0		109	80-120		
Tetrachloroethene	27.1	2.0	0.32	ug/l	25.0		108	75-125		
Toluene	24.8	2.0	0.36	ug/l	25.0		99	75-120		
1,1,1-Trichloroethane	25.9	2.0	0.30	ug/l	25.0		104	75-140		
1,1,2-Trichloroethane	22.8	2.0	0.30	ug/l	25.0		91	70-125		
Trichloroethene	24.3	5.0	0.26	ug/l	25.0		97	80-120		
Trichlorofluoromethane	27.0	5.0	0.34	ug/l	25.0		108	65-145		
Vinyl chloride	27.5	5.0	0.26	ug/l	25.0		110	50-130		
Surrogate: Dibromofluoromethane	23.8			ug/l	25.0		95	80-120		

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MWH-Pasadena/Boeing
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Attention: Bronwyn Kelly

Project ID: Routine Outfall 011

Report Number: IOB2066

Sampled: 02/25/05
Received: 02/25/05

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

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	Limit	RPD	RPD Limit	Data Qualifiers
Batch: 5B28023 Extracted: 02/28/05											
LCS Analyzed: 02/28/2005 (5B28023-BS1)											
Surrogate: Toluene-d8	22.5			ug/l	25.0		90	80-120			
Surrogate: 4-Bromofluorobenzene	22.9			ug/l	25.0		92	80-120			
Matrix Spike Analyzed: 02/28/2005 (5B28023-MS1)											
Source: IOB2063-01											
Benzene	25.9	2.0	0.28	ug/l	25.0	ND	104	70-120			
Carbon tetrachloride	25.7	5.0	0.28	ug/l	25.0	ND	103	70-145			
Chloroform	28.0	2.0	0.33	ug/l	25.0	ND	112	70-135			
1,1-Dichloroethane	26.2	2.0	0.27	ug/l	25.0	ND	105	65-135			
1,2-Dichloroethane	25.7	2.0	0.28	ug/l	25.0	ND	103	60-150			
1,1-Dichloroethene	27.3	3.0	0.32	ug/l	25.0	ND	109	65-140			
Ethylbenzene	25.6	2.0	0.25	ug/l	25.0	ND	102	70-130			
Tetrachloroethene	24.6	2.0	0.32	ug/l	25.0	ND	98	70-130			
Toluene	24.9	2.0	0.36	ug/l	25.0	ND	100	70-120			
1,1,1-Trichloroethane	25.9	2.0	0.30	ug/l	25.0	ND	104	75-140			
1,1,2-Trichloroethane	27.4	2.0	0.30	ug/l	25.0	ND	110	60-135			
Trichloroethene	24.3	5.0	0.26	ug/l	25.0	0.51	95	70-125			
Trichlorofluoromethane	27.4	5.0	0.34	ug/l	25.0	ND	110	55-145			
Vinyl chloride	23.1	5.0	0.26	ug/l	25.0	ND	92	40-135			
Surrogate: Dibromofluoromethane	27.5			ug/l	25.0		110	80-120			
Surrogate: Toluene-d8	22.8			ug/l	25.0		91	80-120			
Surrogate: 4-Bromofluorobenzene	23.8			ug/l	25.0		95	80-120			
Matrix Spike Dup Analyzed: 02/28/2005 (5B28023-MSD1)											
Source: IOB2063-01											
Benzene	26.0	2.0	0.28	ug/l	25.0	ND	104	70-120	0	20	
Carbon tetrachloride	26.2	5.0	0.28	ug/l	25.0	ND	105	70-145	2	25	
Chloroform	27.8	2.0	0.33	ug/l	25.0	ND	111	70-135	1	20	
1,1-Dichloroethane	26.6	2.0	0.27	ug/l	25.0	ND	106	65-135	2	20	
1,2-Dichloroethane	29.4	2.0	0.28	ug/l	25.0	ND	118	60-150	13	20	
1,1-Dichloroethene	28.1	3.0	0.32	ug/l	25.0	ND	112	65-140	3	20	
Ethylbenzene	27.0	2.0	0.25	ug/l	25.0	ND	108	70-130	5	20	
Tetrachloroethene	25.6	2.0	0.32	ug/l	25.0	ND	102	70-130	4	20	
Toluene	24.7	2.0	0.36	ug/l	25.0	ND	99	70-120	1	20	
1,1,1-Trichloroethane	26.6	2.0	0.30	ug/l	25.0	ND	106	75-140	3	20	
1,1,2-Trichloroethane	31.5	2.0	0.30	ug/l	25.0	ND	126	60-135	14	25	
Trichloroethene	24.2	5.0	0.26	ug/l	25.0	0.51	95	70-125	0	20	
Trichlorofluoromethane	27.7	5.0	0.34	ug/l	25.0	ND	111	55-145	1	25	

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MWH-Pasadena/Boeing 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Attention: Bronwyn Kelly	Project ID: Routine Outfall 011 Report Number: IOB2066	Sampled: 02/25/05 Received: 02/25/05
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METHOD BLANK/QC DATA

PURGEABLES BY GC/MS (EPA 624)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5B28023 Extracted: 02/28/05											
Matrix Spike Dup Analyzed: 02/28/2005 (5B28023-MSD1)						Source: IOB2063-01					
Vinyl chloride	22.0	5.0	0.26	ug/l	25.0	ND	88	40-135	5	30	
Surrogate: Dibromofluoromethane	26.6			ug/l	25.0		106	80-120			
Surrogate: Toluene-d8	22.2			ug/l	25.0		89	80-120			
Surrogate: 4-Bromofluorobenzene	24.2			ug/l	25.0		97	80-120			

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

Project ID: Routine Outfall 011

Report Number: IOB2066

Sampled: 02/25/05
 Received: 02/25/05

METHOD BLANK/QC DATA

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

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	RPD RPD	Limit Limits	RPD	Limit	Data Qualifiers
Batch: 5B28001 Extracted: 02/28/05												
Blank Analyzed: 03/02/2005 (5B28001-BLK1)												
Bis(2-ethylhexyl)phthalate	ND	5.0	1.1	ug/l								
2,4-Dinitrotoluene	ND	9.0	0.23	ug/l								
N-Nitrosodimethylamine	ND	8.0	0.22	ug/l								
Pentachlorophenol	ND	8.0	0.78	ug/l								
2,4,6-Trichlorophenol	ND	6.0	0.10	ug/l								
Surrogate: 2-Fluorophenol	14.4			ug/l	20.0		72		30-120			
Surrogate: Phenol-d6	14.6			ug/l	20.0		73		35-120			
Surrogate: 2,4,6-Tribromophenol	19.1			ug/l	20.0		96		45-120			
Surrogate: Nitrobenzene-d5	7.80			ug/l	10.0		78		45-120			
Surrogate: 2-Fluorobiphenyl	7.90			ug/l	10.0		79		45-120			
Surrogate: Terphenyl-d14	8.86			ug/l	10.0		89		45-120			
LCS Analyzed: 03/02/2005 (5B28001-BS1)												
Bis(2-ethylhexyl)phthalate	8.90	5.0	1.1	ug/l	10.0		89		60-130			
2,4-Dinitrotoluene	7.92	9.0	0.23	ug/l	10.0		79		60-120			J
N-Nitrosodimethylamine	6.94	8.0	0.22	ug/l	10.0		69		40-120			J
Pentachlorophenol	8.46	8.0	0.78	ug/l	10.0		85		50-120			
2,4,6-Trichlorophenol	8.80	6.0	0.10	ug/l	10.0		88		60-120			
Surrogate: 2-Fluorophenol	15.0			ug/l	20.0		75		30-120			
Surrogate: Phenol-d6	14.6			ug/l	20.0		73		35-120			
Surrogate: 2,4,6-Tribromophenol	19.3			ug/l	20.0		96		45-120			
Surrogate: Nitrobenzene-d5	7.94			ug/l	10.0		79		45-120			
Surrogate: 2-Fluorobiphenyl	8.42			ug/l	10.0		84		45-120			
Surrogate: Terphenyl-d14	8.96			ug/l	10.0		90		45-120			
LCS Dup Analyzed: 03/02/2005 (5B28001-BSD1)												
Bis(2-ethylhexyl)phthalate	9.44	5.0	1.1	ug/l	10.0		94		60-130	6	20	
2,4-Dinitrotoluene	7.70	9.0	0.23	ug/l	10.0		77		60-120	3	20	J
N-Nitrosodimethylamine	7.90	8.0	0.22	ug/l	10.0		79		40-120	13	20	J
Pentachlorophenol	8.76	8.0	0.78	ug/l	10.0		88		50-120	3	25	
2,4,6-Trichlorophenol	8.64	6.0	0.10	ug/l	10.0		86		60-120	2	20	
Surrogate: 2-Fluorophenol	14.4			ug/l	20.0		72		30-120			
Surrogate: Phenol-d6	15.0			ug/l	20.0		75		35-120			
Surrogate: 2,4,6-Tribromophenol	19.8			ug/l	20.0		99		45-120			
Surrogate: Nitrobenzene-d5	7.80			ug/l	10.0		78		45-120			
Surrogate: 2-Fluorobiphenyl	7.90			ug/l	10.0		79		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 011 Report Number: IOB2066	Sampled: 02/25/05 Received: 02/25/05
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METHOD BLANK/QC DATA

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

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	RPD Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5B28001 Extracted: 02/28/05											
LCS Dup Analyzed: 03/02/2005 (5B28001-BSD1)											
Surrogate: Terphenyl-d14	8.80			ug/l	10.0		88	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 011 Report Number: IOB2066	Sampled: 02/25/05 Received: 02/25/05
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METHOD BLANK/QC DATA

ORGANOCHLORINE PESTICIDES (EPA 608)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5C01050 Extracted: 03/01/05										
Blank Analyzed: 03/03/2005 (5C01050-BLK1)										
alpha-BHC	ND	0.010	0.0010	ug/l						
Surrogate: Decachlorobiphenyl	0.449			ug/l	0.500		90 45-120			
Surrogate: Tetrachloro-m-xylene	0.349			ug/l	0.500		70 35-120			
LCS Analyzed: 03/03/2005 (5C01050-BS1)										
alpha-BHC	0.393	0.010	0.0010	ug/l	0.500		79 45-115			M-NR1
Surrogate: Decachlorobiphenyl	0.438			ug/l	0.500		88 45-120			
Surrogate: Tetrachloro-m-xylene	0.336			ug/l	0.500		67 35-120			
LCS Dup Analyzed: 03/03/2005 (5C01050-BSD1)										
alpha-BHC	0.391	0.010	0.0010	ug/l	0.500		78 45-115	1	30	
Surrogate: Decachlorobiphenyl	0.440			ug/l	0.500		88 45-120			
Surrogate: Tetrachloro-m-xylene	0.353			ug/l	0.500		71 35-120			

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Report Number: IOB2066

Sampled: 02/25/05
 Received: 02/25/05

METHOD BLANK/QC DATA

METALS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5C02089 Extracted: 03/02/05											
Blank Analyzed: 03/02/2005 (5C02089-BLK1)											
Mercury	ND	0.20	0.063	ug/l							
LCS Analyzed: 03/02/2005 (5C02089-BS1)											
Mercury	8.06	0.20	0.063	ug/l	8.00		101	85-115			
Matrix Spike Analyzed: 03/02/2005 (5C02089-MS1)											
Mercury	8.30	0.20	0.063	ug/l	8.00	ND	104	70-130			
Matrix Spike Dup Analyzed: 03/02/2005 (5C02089-MSD1)											
Mercury	8.18	0.20	0.063	ug/l	8.00	ND	102	70-130	1	20	
Batch: 5C03085 Extracted: 03/03/05											
Blank Analyzed: 03/03/2005 (5C03085-BLK1)											
Copper	ND	2.0	0.49	ug/l							
Lead	ND	1.0	0.13	ug/l							
LCS Analyzed: 03/03/2005 (5C03085-BS1)											
Copper	78.5	2.0	0.49	ug/l	80.0		98	85-115			
Lead	82.6	1.0	0.13	ug/l	80.0		103	85-115			
Matrix Spike Analyzed: 03/03/2005 (5C03085-MS1)											
Copper	78.8	2.0	0.49	ug/l	80.0	1.2	97	70-130			
Lead	82.3	1.0	0.13	ug/l	80.0	ND	103	70-130			
Matrix Spike Analyzed: 03/03/2005 (5C03085-MS2)											
Copper	75.9	2.0	0.49	ug/l	80.0	2.9	91	70-130			
Lead	78.9	1.0	0.13	ug/l	80.0	0.20	98	70-130			

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 Michele Harper
 Project Manager



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

Project ID: Routine Outfall 011

Report Number: IOB2066

Sampled: 02/25/05
 Received: 02/25/05

METHOD BLANK/QC DATA

METALS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5C03085 Extracted: 03/03/05											
Matrix Spike Dup Analyzed: 03/03/2005 (5C03085-MSD1)						Source: IOB2069-01					
Copper	76.4	2.0	0.49	ug/l	80.0	1.2	94	70-130	3	20	
Lead	80.0	1.0	0.13	ug/l	80.0	ND	100	70-130	3	20	

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MWH-Pasadena/Boeing 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Attention: Bronwyn Kelly	Project ID: Routine Outfall 011 Report Number: IOB2066	Sampled: 02/25/05 Received: 02/25/05
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METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5B25042 Extracted: 02/25/05											
Blank Analyzed: 02/25/2005 (5B25042-BLK1)											
Chloride	ND	0.50	0.26	mg/l							
Nitrate/Nitrite-N	ND	0.26	0.072	mg/l							
Sulfate	ND	0.50	0.18	mg/l							
LCS Analyzed: 02/25/2005 (5B25042-BS1)											
Chloride	5.13	0.50	0.26	mg/l	5.00		103	90-110			
Sulfate	10.5	0.50	0.18	mg/l	10.0		105	90-110			
Matrix Spike Analyzed: 02/25/2005 (5B25042-MS1)											
						Source: IOB1979-01					
Chloride	13.9	0.50	0.26	mg/l	5.00	9.6	86	80-120			
Sulfate	57.0	0.50	0.18	mg/l	10.0	49	80	80-120			
Matrix Spike Dup Analyzed: 02/25/2005 (5B25042-MSD1)											
						Source: IOB1979-01					
Chloride	14.3	0.50	0.26	mg/l	5.00	9.6	94	80-120	3	20	
Sulfate	58.2	0.50	0.18	mg/l	10.0	49	92	80-120	2	20	
Batch: 5B25118 Extracted: 02/25/05											
Blank Analyzed: 02/25/2005 (5B25118-BLK1)											
Surfactants (MBAS)	ND	0.10	0.044	mg/l							
LCS Analyzed: 02/25/2005 (5B25118-BS1)											
Surfactants (MBAS)	0.247	0.10	0.044	mg/l	0.250		99	90-110			
Matrix Spike Analyzed: 02/25/2005 (5B25118-MS1)											
						Source: IOB1984-01					
Surfactants (MBAS)	0.278	0.10	0.044	mg/l	0.250	ND	111	50-125			

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MWH-Pasadena/Boeing 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Attention: Bronwyn Kelly	Project ID: Routine Outfall 011 Report Number: IOB2066	Sampled: 02/25/05 Received: 02/25/05
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METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5B25118 Extracted: 02/25/05											
Matrix Spike Dup Analyzed: 02/25/2005 (5B25118-MSD1)						Source: IOB1984-01					
Surfactants (MBAS)	0.267	0.10	0.044	mg/l	0.250	ND	107	50-125	4	20	
Batch: 5B25128 Extracted: 02/25/05											
Blank Analyzed: 03/02/2005 (5B25128-BLK1)											
Biochemical Oxygen Demand	ND	2.0	0.59	mg/l							
LCS Analyzed: 03/02/2005 (5B25128-BS1)											
Biochemical Oxygen Demand	203	100	30	mg/l	198		103	85-115			
LCS Dup Analyzed: 03/02/2005 (5B25128-BSD1)											
Biochemical Oxygen Demand	202	100	30	mg/l	198		102	85-115	1	20	
Batch: 5B26046 Extracted: 02/26/05											
Blank Analyzed: 02/26/2005 (5B26046-BLK1)											
Turbidity	0.0500	1.0	0.040	NTU							J
Duplicate Analyzed: 02/26/2005 (5B26046-DUP1)						Source: IOB2071-01					
Turbidity	1.80	1.0	0.040	NTU		1.8			0	20	
Batch: 5B28078 Extracted: 02/28/05											
Blank Analyzed: 02/28/2005 (5B28078-BLK1)											
Total Dissolved Solids	ND	10	10	mg/l							

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

Project ID: Routine Outfall 011

Report Number: IOB2066

Sampled: 02/25/05
 Received: 02/25/05

METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	RPD Limits	RPD	Limit	Data Qualifiers
Batch: 5B28078 Extracted: 02/28/05											
LCS Analyzed: 02/28/2005 (5B28078-BS1)											
Total Dissolved Solids	1010	10	10	mg/l	1000		101	90-110			
Duplicate Analyzed: 02/28/2005 (5B28078-DUP1)											
						Source: IOB2066-01					
Total Dissolved Solids	124	10	10	mg/l		120			3	10	
Batch: 5B28080 Extracted: 02/28/05											
Duplicate Analyzed: 02/28/2005 (5B28080-DUP1)											
						Source: IOB1874-01					
Specific Conductance	950	1.0	1.0	umhos/cm		950			0	5	
Batch: 5B28103 Extracted: 02/28/05											
Blank Analyzed: 02/28/2005 (5B28103-BLK1)											
Perchlorate	ND	4.0	0.80	ug/l							
LCS Analyzed: 02/28/2005 (5B28103-BS1)											
Perchlorate	51.9	4.0	0.80	ug/l	50.0		104	85-115			
Matrix Spike Analyzed: 03/01/2005 (5B28103-MS1)											
						Source: IOB1879-01RE1					
Perchlorate	53.1	4.0	0.80	ug/l	50.0	5.7	95	80-120			
Matrix Spike Dup Analyzed: 03/01/2005 (5B28103-MSD1)											
						Source: IOB1879-01RE1					
Perchlorate	53.7	4.0	0.80	ug/l	50.0	5.7	96	80-120	1	20	
Batch: 5B28115 Extracted: 02/28/05											
Blank Analyzed: 03/01/2005 (5B28115-BLK1)											
Total Cyanide	ND	5.0	2.2	ug/l							

Del Mar Analytical, Irvine
 Michele Harper
 Project Manager



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

Project ID: Routine Outfall 011

Report Number: IOB2066

Sampled: 02/25/05
 Received: 02/25/05

METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	RPD Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5B28115 Extracted: 02/28/05											
LCS Analyzed: 03/01/2005 (5B28115-BS1)											
Total Cyanide	197	5.0	2.2	ug/l	200		98	90-110			
Matrix Spike Analyzed: 03/01/2005 (5B28115-MS1) Source: IOB2064-01											
Total Cyanide	202	5.0	2.2	ug/l	200	ND	101	70-115			
Matrix Spike Dup Analyzed: 03/01/2005 (5B28115-MSD1) Source: IOB2064-01											
Total Cyanide	210	5.0	2.2	ug/l	200	ND	105	70-115	4	15	
Batch: 5C02094 Extracted: 03/02/05											
Blank Analyzed: 03/02/2005 (5C02094-BLK1)											
Oil & Grease	ND	5.0	0.94	mg/l							
LCS Analyzed: 03/02/2005 (5C02094-BS1) M-NR1											
Oil & Grease	18.5	5.0	0.94	mg/l	20.0		92	65-120			
LCS Dup Analyzed: 03/02/2005 (5C02094-BSD1)											
Oil & Grease	17.2	5.0	0.94	mg/l	20.0		86	65-120	7	20	
Batch: 5C03074 Extracted: 03/03/05											
Blank Analyzed: 03/03/2005 (5C03074-BLK1)											
Total Suspended Solids	ND	10	10	mg/l							
LCS Analyzed: 03/03/2005 (5C03074-BS1)											
Total Suspended Solids	983	10	10	mg/l	1000		98	85-115			

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MWH-Pasadena/Boeing 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Attention: Bronwyn Kelly	Project ID: Routine Outfall 011 Report Number: IOB2066	Sampled: 02/25/05 Received: 02/25/05
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METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	RPD Limits	RPD Limit	Data Qualifiers
Batch: 5C03074 Extracted: 03/03/05										
Duplicate Analyzed: 03/03/2005 (5C03074-DUP1)						Source: IOB2138-01				
Total Suspended Solids	21.0	10	10	mg/l		ND			10	
Batch: 5C07070 Extracted: 03/07/05										
Blank Analyzed: 03/07/2005 (5C07070-BLK1)										
Ammonia-N (Distilled)	ND	0.50	0.30	mg/l						
LCS Analyzed: 03/07/2005 (5C07070-BS1)										
Ammonia-N (Distilled)	9.52	0.50	0.30	mg/l	10.0		95	80-115		
Matrix Spike Analyzed: 03/07/2005 (5C07070-MS1)						Source: IOB2063-01				
Ammonia-N (Distilled)	9.80	0.50	0.30	mg/l	10.0	ND	98	70-120		
Matrix Spike Dup Analyzed: 03/07/2005 (5C07070-MSD1)						Source: IOB2063-01				
Ammonia-N (Distilled)	9.52	0.50	0.30	mg/l	10.0	ND	95	70-120	3	15

Del Mar Analytical, Irvine
 Michele Harper
 Project Manager

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

Project ID: Routine Outfall 011

Report Number: IOB2066

Sampled: 02/25/05
Received: 02/25/05

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 unknown quality.
- 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



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

Project ID: Routine Outfall 011

Report Number: IOB2066

Sampled: 02/25/05
 Received: 02/25/05

Certification Summary

Del Mar Analytical, Irvine

Method	Matrix	Nelac	California
EPA 120.1	Water	X	X
EPA 160.2	Water	X	X
EPA 160.5	Water	X	X
EPA 180.1	Water	X	X
EPA 200.8	Water	X	X
EPA 245.1	Water	X	X
EPA 300.0	Water	X	X
EPA 314.0	Water	X	X
EPA 335.2	Water	X	X
EPA 350.2	Water	X	X
EPA 405.1	Water	X	X
EPA 413.1	Water	X	X
EPA 608	Water	X	X
EPA 624	Water	X	X
EPA 625	Water	X	X
SM2540C	Water	X	X
SM5540-C	Water	X	X

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

Subcontracted Laboratories

Alta Analytical California Cert #1640

1104 Windfield Way - El Dorado Hills, CA 95762

Analysis Performed: 1613-Dioxin-HR
 Samples: IOB2066-01

Analysis Performed: EDD + Level 4
 Samples: IOB2066-01

Del Mar Analytical, Irvine
 Michele Harper
 Project Manager

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IOB2066

CHAIN OF CUSTODY FORM

Del Mar Analytical Version 02/17/05

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

Project:
 Boeing-SSFL NPDES
 Routine Outfall 011
 Perimeter Pond

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

Sampler: P. Rolluck
 MH 3/1/05

Sample Description	Sample Matrix	Container Type	# of Cont.	Sampling Date/Time	Preservative	Bottle #
Outfall 011	W	Poly-1L	1	2-15-05 15:10	HNO3	1A
Outfall 011-Dup	W	Poly-1L	1		HNO3	1B
Outfall 011	W	Poly-1L	1		None	2
Outfall 011	W	VOAs	3		HCl	3A, 3B, 3C
Outfall 011	W	1L Amber	2		None	4A, 4B
Outfall 011	W	1L Amber	2		HCl	5A, 5B
Outfall 011	W	Poly-500 ml	1		NaOH	6
Outfall 011	W	Poly-1L	1		None	7
Outfall 011	W	Poly-500 ml	2		None	8A, 8B
Outfall 011	W	Poly-500 ml	2		None	9A, 9B
Outfall 011	W	Poly-500 ml	2		None	10A, 10B
Outfall 011	W	Poly-500 ml	1		H2SO4	11
Outfall 011	W	1L Amber	2		None	12A, 12B
Outfall 011	W	1L Amber	2		None	13A, 13B
Trip Blank	W	VOAs	3		HCl	14A, 14B, 14C

Relinquished By	Date/Time	Received By	Date/Time
<i>[Signature]</i>	2-25-05 15:30	<i>[Signature]</i>	2/25/05 15:30
<i>[Signature]</i>	2/25/05 19:15	<i>[Signature]</i>	2/25/05 19:15
<i>[Signature]</i>		<i>[Signature]</i>	

ANALYSIS REQUIRED										Field readings:
Turbidity, TDS, TSS	Conductivity	Ammonia-N	2,4,6 Trichlorophenol, 2,4	Dinitrofluorene, Bis(2-ethoxyethyl)phthalate, NDMA, pentachlorophenol (EPA 625)	Temp = 57.2 F					
Perchlorate	Ch ₂ SO ₄ , NO ₃ +NO ₂ -N	Surfactants (MBAS)	BOD ₅ (20 degrees C)	Cyanide (total recoverable)	pH = 7.0					
Oil & Grease (EPA 413.1)	TCDD (and all congeners)	VOCS 624 + xylenes	Settleable Solids	Cu, Pb, Hg	Comments					
Settleable Solids	VOCS 624 + xylenes	TCDD (and all congeners)	Oil & Grease (EPA 413.1)	Cyanide (total recoverable)						
Surfactants (MBAS)	BOD ₅ (20 degrees C)	Ch ₂ SO ₄ , NO ₃ +NO ₂ -N	Perchlorate	Turbidity, TDS, TSS						
Conductivity	Ammonia-N	2,4,6 Trichlorophenol, 2,4	Dinitrofluorene, Bis(2-ethoxyethyl)phthalate, NDMA, pentachlorophenol (EPA 625)	Temp = 57.2 F						
Temp = 57.2 F	pH = 7.0	Comments								

Turn around Time: (check)
 24 Hours _____ 5 Days _____
 48 Hours _____ 10 Days _____
 72 Hours _____ Normal _____
 Perchlorate Only 72 Hours _____
 Metals Only 72 Hours _____
 Sample integrity: (Check) On bar: X 6.0



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March 24, 2005

MWH-Pasadena/ Boeing
300 North Lake Avenue, Suite 1200
Pasadena, CA 91101

Attention: Bronwyn Kelly
Project: Annual Outfall 011
Sampled: 02/25/05
Del Mar Analytical Number: IOB2066

Dear Ms. Kelly:

Alta Analytical Laboratory performed the EPA Method 1613B Dioxin analysis for the project referenced above. Please use the following cross-reference table when reviewing your results.

MWH ID	DEL MAR ID	ALTA ID
Outfall 011	IOB2066-01	25815-001

Attached is the original report from the subcontract laboratory. If you have any questions or require further assistance, please do not hesitate to contact me at (949) 261-1022 at extension 215.

Sincerely yours,
DEL MAR ANALYTICAL


Michele Harper
Project Manager



March 10, 2005

Alta Project I.D.: 25815

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

Dear Ms. Harper,

Enclosed are the results for the one aqueous sample received at Alta Analytical Laboratory on March 01, 2005 under your Project Name "IOB2066". 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,

Martha M. Maier
Director of HRMS Services



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: 3/1/2005

Alta Lab. ID

Client Sample ID

25815-001

IOB2066-01

SECTION II



Method Blank		EPA Method 1613						
Matrix:	Aqueous	QC Batch No.:	6571	Lab Sample:	0-MB001			
Sample Size:	1.000 L	Date Extracted:	4-Mar-05	Date Analyzed DB-5:	9-Mar-05			
				Date Analyzed DB-225:	NA			
Analyte	Conc. (pg/L)	DL ^a	EMPC ^b	Qualifiers	Labeled Standard	%R	LCL-UCL ^d	Qualifiers
2,3,7,8-TCDD	ND	3.17			IS 13C-2,3,7,8-TCDD	79.8	25 - 164	
1,2,3,7,8-PeCDD	ND	2.85			13C-1,2,3,7,8-PeCDD	67.3	25 - 181	
1,2,3,4,7,8-HxCDD	ND	7.88			13C-1,2,3,4,7,8-HxCDD	77.9	32 - 141	
1,2,3,6,7,8-HxCDD	ND	7.76			13C-1,2,3,6,7,8-HxCDD	88.2	28 - 130	
1,2,3,7,8,9-HxCDD	ND	7.78			13C-1,2,3,4,6,7,8-HpCDD	63.7	23 - 140	
1,2,3,4,6,7,8-HpCDD	ND	6.25			13C-OCDD	44.4	17 - 157	
OCDD	ND	15.4			13C-2,3,7,8-TCDF	79.2	24 - 169	
2,3,7,8-TCDF	ND	4.50			13C-1,2,3,7,8-PeCDF	66.2	24 - 185	
1,2,3,7,8-PeCDF	ND	5.76			13C-2,3,4,7,8-PeCDF	67.5	21 - 178	
2,3,4,7,8-PeCDF	ND	4.98			13C-1,2,3,4,7,8-HxCDF	72.8	26 - 152	
1,2,3,4,7,8-HxCDF	ND	3.01			13C-1,2,3,6,7,8-HxCDF	81.0	26 - 123	
1,2,3,6,7,8-HxCDF	ND	2.73			13C-2,3,4,6,7,8-HxCDF	80.3	28 - 136	
2,3,4,6,7,8-HxCDF	ND	3.11			13C-1,2,3,7,8,9-HxCDF	74.3	29 - 147	
1,2,3,7,8,9-HxCDF	ND	5.02			13C-1,2,3,4,6,7,8-HpCDF	65.7	28 - 143	
1,2,3,4,6,7,8-HpCDF	ND	4.70			13C-1,2,3,4,7,8,9-HpCDF	64.1	26 - 138	
1,2,3,4,7,8,9-HpCDF	ND	5.90			13C-OCDF	51.8	17 - 157	
OCDF	ND	15.0			CRS 37Cl-2,3,7,8-TCDD	84.6	35 - 197	
Totals								
Total TCDD	ND	3.17						
Total PeCDD	ND	2.85						
Total HxCDD	ND	7.80						
Total HpCDD	ND	6.25						
Total TCDF	ND	4.50						
Total PeCDF	ND	5.36						
Total HxCDF	ND	3.36						
Total HpCDF	ND	5.21						

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

Analyst: JMH
Approved By: Martha M. Maier
10-Mar-2005 10:26



EPA Method 1613

OPR Results		Lab Sample: 0-OPR001		Date Analyzed DB-5: 8-Mar-05		Date Analyzed DB-225: NA	
Matrix:	Aqueous	QC Batch No.:	6571	Date Analyzed DB-5:	8-Mar-05	Date Analyzed DB-225:	NA
Sample Size:	1.000 L	Date Extracted:	4-Mar-05				
Analyte	Spike Conc.	Conc. (ng/mL)	OPR Limits	Labeled Standard	%R	LCL-UCL	
2,3,7,8-TCDD	10.0	9.19	6.7 - 15.8	IS 13C-2,3,7,8-TCDD	67.1	25 - 164	
1,2,3,7,8-PeCDD	50.0	45.5	35 - 71	13C-1,2,3,7,8-PeCDD	61.4	25 - 181	
1,2,3,4,7,8-HxCDD	50.0	47.0	35 - 82	13C-1,2,3,4,7,8-HxCDD	60.9	32 - 141	
1,2,3,6,7,8-HxCDD	50.0	45.2	38 - 67	13C-1,2,3,6,7,8-HxCDD	67.6	28 - 130	
1,2,3,7,8,9-HxCDD	50.0	47.0	32 - 81	13C-1,2,3,4,6,7,8-HpCDD	66.0	23 - 140	
1,2,3,4,6,7,8-HpCDD	50.0	49.1	35 - 70	13C-OCDD	64.3	17 - 157	
OCDD	100	98.3	78 - 144	13C-2,3,7,8-TCDF	72.7	24 - 169	
2,3,7,8-TCDF	10.0	9.57	7.5 - 15.8	13C-1,2,3,7,8-PeCDF	58.0	24 - 185	
1,2,3,7,8-PeCDF	50.0	49.9	40 - 67	13C-2,3,4,7,8-PeCDF	60.4	21 - 178	
2,3,4,7,8-PeCDF	50.0	50.3	34 - 80	13C-1,2,3,4,7,8-HxCDF	46.8	26 - 152	
1,2,3,4,7,8-HxCDF	50.0	51.5	36 - 67	13C-1,2,3,6,7,8-HxCDF	52.4	26 - 123	
1,2,3,6,7,8-HxCDF	50.0	51.4	42 - 65	13C-2,3,4,6,7,8-HxCDF	53.1	28 - 136	
2,3,4,6,7,8-HxCDF	50.0	50.4	35 - 78	13C-1,2,3,7,8,9-HxCDF	55.3	29 - 147	
1,2,3,7,8,9-HxCDF	50.0	49.8	39 - 65	13C-1,2,3,4,6,7,8-HpCDF	57.2	28 - 143	
1,2,3,4,6,7,8-HpCDF	50.0	51.7	41 - 61	13C-1,2,3,4,7,8,9-HpCDF	60.2	26 - 138	
1,2,3,4,7,8,9-HpCDF	50.0	52.5	39 - 69	13C-OCDF	66.3	17 - 157	
OCDF	100	103	63 - 170	CRS 37Cl-2,3,7,8-TCDD	80.8	35 - 197	

Analyst: JMH

Approved By: Martha M. Maier 10-Mar-2005 10:26



Sample ID: IOB2066-01

EPA Method 1613

Client Data		Sample Data		Laboratory Data	
Name:	Del Mar Analytical, Irvine	Matrix:	Aqueous	Lab Sample:	25815-001
Project:	IOB2066	Sample Size:	1.033 L	QC Batch No.:	6571
Date Collected:	25-Feb-05			Date Analyzed DB-5:	8-Mar-05
Time Collected:	1510			Date Analyzed DB-225:	NA
				Date Received:	1-Mar-05
				Date Extracted:	4-Mar-05

Analyte	Conc. (pg/L)	DL ^a	EMPC ^b	Qualifiers	Labeled Standard	%R	LCL-UCL ^d	Qualifiers
2,3,7,8-TCDD	ND	0.905			13C-2,3,7,8-TCDD	74.2	25 - 164	
1,2,3,7,8-PeCDD	ND	1.03			13C-1,2,3,7,8-PeCDD	63.7	25 - 181	
1,2,3,4,7,8-HxCDD	ND	2.32			13C-1,2,3,4,7,8-HxCDD	63.2	32 - 141	
1,2,3,6,7,8-HxCDD	ND	2.20			13C-1,2,3,6,7,8-HxCDD	65.0	28 - 130	
1,2,3,7,8,9-HxCDD	ND	2.25			13C-1,2,3,4,6,7,8-HpCDD	66.4	23 - 140	
1,2,3,4,6,7,8-HpCDD	8.02				13C-OCDD	55.5	17 - 157	
OCDD	65.3			J				
2,3,7,8-TCDF	ND	1.15			13C-2,3,7,8-TCDF	76.7	24 - 169	
1,2,3,7,8-PeCDF	ND	1.53			13C-1,2,3,7,8-PeCDF	62.4	24 - 185	
2,3,4,7,8-PeCDF	ND	1.41			13C-2,3,4,7,8-PeCDF	63.9	21 - 178	
1,2,3,4,7,8-HxCDF	ND	0.891			13C-1,2,3,4,7,8-HxCDF	47.5	26 - 152	
1,2,3,6,7,8-HxCDF	ND	0.854			13C-1,2,3,6,7,8-HxCDF	53.7	26 - 123	
2,3,4,6,7,8-HxCDF	ND	0.939			13C-2,3,4,6,7,8-HxCDF	53.8	28 - 136	
1,2,3,7,8,9-HxCDF	ND	1.32			13C-1,2,3,7,8,9-HxCDF	56.1	29 - 147	
1,2,3,4,6,7,8-HpCDF	ND	2.10			13C-1,2,3,4,6,7,8-HpCDF	53.3	28 - 143	
1,2,3,4,7,8,9-HpCDF	ND	2.01			13C-1,2,3,4,7,8,9-HpCDF	59.3	26 - 138	
OCDF	ND	5.26			13C-OCDF	61.9	17 - 157	

Totals

Total TCDD	ND	0.905						
Total PeCDD	ND	1.03						
Total HxCDD	ND	2.25						
Total HpCDD	17.1							
Total TCDF	ND	1.15						
Total PeCDF	ND	1.47						
Total HxCDF	ND	0.987						
Total HpCDF	ND	2.05						

Footnotes

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

Analyst: JMH

Approved By: Martha M. Maier 10-Mar-2005 10:26

APPENDIX

DATA QUALIFIERS & ABBREVIATIONS

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

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

The control limits are “interim limits only” until in-house limits are utilized.



CURRENT CERTIFICATIONS

NELAP — (Primary AA: California, Certificate No. 02102CA)

Department of the Navy

U.S. Army Corps of Engineers

U.S. EPA Region 5

Bureau of Reclamation — Mid-Pacific Region — (MP-470, Res-1.10)

Commonwealth of Kentucky — (Certificate No. 90063)

Commonwealth of Virginia — (Certificate No. 00013)

State of Alaska, Department of Environmental Conservation — (Certificate No. OS-00197)

State of Arizona — (Certificate No. AZ0639)

State of Arkansas, Department of Health — (Approval granted through CA certification)

State of Arkansas, Department of Environmental Quality

State of California — (Certificate No. 1640)

State of Colorado

State of Connecticut — (Certificate No. PH-0182)

State of Florida — (Certificate No. 87456)

State of Louisiana, Department of Health and Hospitals — (Certificate No. LA000014)

State of Louisiana, Department of Environmental Quality

State of Maine

State of Michigan (Certificate No. 81178087)

State of Mississippi — (Approval granted through CA certification)

State of Nevada — (Certificate No. CA413)

State of New Jersey — (Certificate No. CA003)

State of New York, Department of Health — (Certificate No. 11411)

State of North Carolina — (Certification No. 06700)

State of North Dakota, Department of Health — (Certificate No. R-078)

State of New Mexico

State of Oklahoma — (D9919)

State of Oregon — (Certificate No. CA413)

State of Pennsylvania — (Certificate No. 68-490)

State of South Carolina — (Certificate No. 87002001)

State of Tennessee — (Certificate No. 02996)

State of Texas — (Certificate No. TX247-1000A)

State of Utah — (Certificate No. E-201)

State of Washington — (Certification No. C091)

State of Wisconsin — (Certificate No. 998036160)

State of Wyoming — (USEPA Region 8 Ref: 8TMS-Q)



17461 Derian Ave, Suite 100, Irvine, CA 92614 Ph (949) 261-1022 Fax (949) 261-1228

1014 E. Cooley Dr., Suite A, Colton, CA 92324 Ph (909) 370-4667 Fax (909) 370-1046

9484 Chesapeake Drive, Suite 805, San Diego, CA 92123 Ph (619) 505-9996 Fax (619) 505-9999

9630 South 61st Street, Suite B-120, Phoenix, AZ 85044 Ph (480) 785-0043 Fax (480) 785-0551

2520 E. Sunset Rd., Suite #3, Las Vegas, NV 89120 Ph (702) 796-3020 Fax (702) 796-5821

SUBCONTRACT ORDER - PROJECT # IOB2066

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 Harper

RECEIVING LABORATORY:
 Alta Analytical
 1104 Windfield Way
 El Dorado Hills, CA 95762
 Phone: (916) 933-1640
 Fax: (916) 933-0940

25815 1.10

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

Analysis	Expiration	Comments
Sample ID: IOB2066-01 Water	Sampled: 02/25/05 15:10	Instant Notification
1613-Dioxin-HR	03/04/05 15:10	J flags, 17 congeners, no TEQ, sub to Alta
EDD + Level 4	03/25/05 15:10	Excel EDD email to pm, Include Std logs for Lvl IV
Containers Supplied:		
1 L Amber (IOB2066-01G)		
1 L Amber (IOB2066-01H)		

SAMPLE INTEGRITY:

All containers intact: Yes No Sample labels/COC agree: Yes No Samples Received On Ice: Yes No
 Custody Seals Present: Yes No Samples Preserved Properly: Yes No Samples Received at (temp): _____

M. Holly *2/25/05 1700* *Bottom of Buedet* *3/1/05 0853*
 Released By Date Time Received By Date Time

Released By Date Time Received By Date Time

STANDARD OPERATING PROCEDURE

Attachment 10.B.1

SAMPLE LOG-IN CHECKLIST

ALTA Project No.: 25815

1. Date Samples Arrived: <u>3/1/05 0953</u> Initials: <u>BSB</u> Location: <u>WR-2</u>			
2. Time / Date logged In: <u>1357 3/1/05</u> Initials: <u>BSB</u> Location: <u>WR-2</u>			
3. Samples Arrived By: (circle) <u>FedEx</u> UPS World Courier Other:			
4. Shipping Preservation: (circle) <u>Ice</u> <u>Blue Ice</u> Dry Ice / None Temp °C <u>1.1°C</u>			
5. Shipping Container(s) Intact? If not, describe condition in comment section.	YES ✓	NO	NA
6. Shipping Container(s) Custody Seals Present? Intact? If not intact, describe condition in comment section.	✓		
7. Shipping Documentation Present? (circle) Shipping Label Airbill Tracking Number <u>7909 3312 2398</u>	✓		
8. Sample Custody Seal(s) Present? No. of Seals _____ or Seal No. _____ Intact? If not intact, describe condition in comment section.		✓	✓
9. Sample Container Intact? If no, indicate sample condition in comment section.	✓		
10. Chain of Custody (COC) or other Sample Documentation Present?	✓		
11. COC/Documentation Acceptable? If no, complete COC Anomaly Form.	✓		
12. Shipping Container (circle): ALTA <u>Client</u> Retain or <u>Return</u> or Disposed			
13. Container(s) and/or Bottle(s) Requested?		✓	
14. Drinking Water Sample? (HRMS Only) If yes, Acceptable Preservation? Y or N Preservation Info From? (circle) COC or Sample Container or None Noted			✓

Comments:

Sampler's initials found on sample label

ALTA Analytical Laboratory
El Dorado Hills, CA 95782

APPENDIX G

Section 26

February Outfall 018

AMEC Data Validation Reports

Del Mar Analytical Laboratory Reports

CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

AMEC Earth & Environmental
 550 South Wadsworth Boulevard
 Suite 500
 Lakewood, CO 80226

Package ID T711DF30
 Task Order 313150010
 SDG No. Multi
 No. of Analyses 13

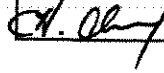
Laboratory Alta Analytical Perspective

Reviewer H. Chang

Analysis/Method Dioxin&Furans/1613

Date: March 18, 2005

Reviewer's Signature



ACTION ITEMS ^a	
1. Case Narrative Deficiencies	
2. Out of Scope Analyses	
3. Analyses Not Conducted	
4. Missing Hardcopy Deliverables	
5. Incorrect Hardcopy Deliverables	
6. Deviations from Analysis Protocol, e.g., Holding Times GC/MS Tune/Inst. Perform Calibrations Blanks Surrogates Matrix Spike/Dup LCS Field QC Internal Standard Performance Compound Identification and Quantitation System Performance	Detects below the calibration range were qualified "J." False negative and false positives noted. Several transcription errors were noted.
COMMENTS ^b	
^a 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

ANALYSIS: DIOXINS/FURANS

SAMPLE DELIVERY GROUPS: Multiple SDGs

Prepared by

AMEC—Denver Operations
550 South Wadsworth Boulevard, Suite 500
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title: NPDES Monitoring
Contract Task Order #: 313150010
Sample Delivery Group #: Multiple SDGs
Project Manager: B. McIlvaine
Matrix: Water
Analysis: Dioxins/Furans
QC Level: Level IV
No. of Samples: 13
No. of Reanalyses/Dilutions: 0
Reviewer: H. Chang
Date of Review: March 18, 2005

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

Table 1. Sample Identification

Client ID	Laboratory ID (Del Mar)	Laboratory ID (Alta AP)	Matrix	COC Method
Outfall 001	IOB0980-01	P5072_2989_007	water	1613B
Outfall 002	IOB0981-01	P5072_2989_013	water	1613B
Outfall 003	IOB0988-01	P5072_2989_012	water	1613B
Outfall 004	IOB1002-01	P5072_2989_009	water	1613B
Outfall 005	IOB0990-01	P5072_2989_006	water	1613B
Outfall 006	IOB0992-01	P5072_2989_010	water	1613B
Outfall 007	IOB0993-01	P5072_2989_002	water	1613B
Outfall 008	IOB0997-01	P5072_2989_004	water	1613B
Outfall 009	IOB0996-01	P5072_2989_003	water	1613B
Outfall 010	IOB1001-01	P5072_2989_001	water	1613B
Outfall 011 Composite	IOB1004-01	P5072_2989_011	water	1613B
Outfall 011	IOB1014-01	P5072_2989_005	water	1613B
Outfall 018	IOB1008-01	P5072_2989_008	water	1613B

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

Following are findings associated with sample management:

2.1.1 Sample Preservation, Handling, and Transport

All of the samples in these SDGs were received at Del Mar Analytical within the temperature limits of $4^{\circ}\text{C} \pm 2^{\circ}\text{C}$ except sample Outfall 009 which was at 8°C . Due to non-volatile nature of the analytes, no qualifications were necessary for the elevated cooler temperature. The samples were received at Pace Analytical with cooler temperatures of 1.6°C , 2.3°C , and 3°C . The samples were received at Alta Analytical Perspectives with cooler temperatures of 1°C and 3°C . According to the laboratory login sheets, all samples were received intact and in good condition at Del Mar and Alta AP. No sample conditions were available for review for the sample receipt at Pace. No qualifications were required.

2.1.2 Chain of Custody

It appears that the samples were initially sent from Del Mar Analytical to Pace Analytical then subsequently shipped to Alta Analytical Perspectives. The COCs from the field to Del Mar, Del Mar to Pace, and Pace to Alta were available for review. The COCs were legible and signed by the appropriate field and laboratory personnel, and accounted for the analyses presented in these SDGs. The custody seals were not present on the coolers upon receipt at either Del Mar or Alta. No custody seal information was available for Pace. No qualifications were required.

2.1.3 Holding Times

The samples were extracted and analyzed within a 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 Column Performance Check Standard (CPSM) containing the first and last eluting congeners of each descriptor and isomer specificity compounds was analyzed prior to initial calibration analysis. A separate CPSM was not analyzed for daily analytical sequence; instead, CPSM compounds were added to OPR analysis. The GC column performance in the calibrations was acceptable, with the height of the valley between the closely eluting isomers and 2,3,7,8-TCDD reported as less than 25%. No qualifications were required.

2.2.2 Mass Spectrometer Performance

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

2.3 CALIBRATION

2.3.1 Initial Calibration

There was one initial calibrations, analyzed 08/12/04. The calibrations each consisted of six concentration level standards (CS0 through CS5) analyzed to verify instrument linearity. The initial calibration was acceptable with %RSDs $\leq 20\%$ for the native compounds and $\leq 35\%$ for the labeled compounds. 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 VERs were acceptable with the concentrations within the acceptance criteria listed in Table 6 of EPA Method 1613. The ion abundance ratios and relative retention times were within the method QC limits. A representative number of %Ds were verified from the raw data, and no calculation or transcription errors were noted. No qualifications were required.

2.4 BLANKS

One method blank (0_2989_MB001) was extracted and analyzed with the samples in these SDGs. There were no detects reported 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 Ongoing Precision Recovery (OPR) sample (0_2989_OPR001) was extracted and analyzed with the samples in these SDGs. All recoveries were within the acceptance criteria listed in Table 6 of the Method 1613. No qualifications were required.

2.6 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

MS/MSD analyses were not performed in these SDGs. 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 samples in these SDGs had no associated field QC samples. No qualifications were required.

2.7.2 Field Duplicates

No field duplicate samples were identified for these SDGs.

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. The laboratory reported total PeCDFs detects in samples Outfall 005, Outfall 006, Outfall 007, and Outfall 011. The reviewer deemed the signals used to be below the signal-to-noise ratio of 2.5 and the results were changed to nondetects. A false negative for total HxCDD was noted in sample Outfall 001 and was changed to a detect. 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. Any detects below the lower method calibration level (MCL) were qualified as estimated, "J." The laboratory did not flag OCDD in samples Outfall 002 and Outfall 003 although the reported concentrations were below the lower MCL. OCDD in these samples was qualified as estimated, "J." In addition, Alta analyzed an additional calibration standard at concentrations below the level specified in the method. Not all results below the lower MCLs were flagged as estimated by the laboratory. These results were qualified as estimated, "J," by the reviewer. The laboratory also did not flag detects below the lower MCL for totals as estimated. These totals were qualified as estimated, "J." The "DNQ" qualification code was applied only if all components of the totals were below the lower MCL. Total HpCDF in samples Outfall 001 and Outfall 010 had one of the components below the lower MCL but one within the MCL. Total HpCDF in these samples were qualified as estimated, "J."

The laboratory indicated that one of the non-2,3,7,8 substituted HxCDD detect, present in majority of the samples, was due to recovery standard (13C-1,2,3,4,6,7-HxCDD) contribution. This compound was also present in the method blank. This compound was not included in the total HxCDD concentration. Several total HxCDD results could not be reproduced from the raw data by the reviewer and were hand-corrected on the Form I. No further qualifications were required.

Sample ID: IOB1008-01 *Cutfall 018*

Method 1613

Client Data		Sample Data		Laboratory Data	
Name: Pace Inc. General Analytical HRMS 11 Feb 05		Matrix: Aqueous 1.03 L 6		Project No.: P5072 Sample ID: P5072_2989_008 QC Batch No.: 2989	
Date Collected: 11 Feb 05		Weight/Volume: pH		Date Received: 01 Mar 05 Date Extracted: 01 Mar 05 Date Analyzed: 03 Mar 05	
Analyte	Conc. pg/L	DL pg/L	EMPC pg/L	Qualifier	Recoveries
					ES CS
2,3,7,8-TCDD	ND	1.61			72 81.4
1,2,3,7,8-PeCDD	ND	1.62			71.7 83.2
1,2,3,4,7,8-HxCDD	3.57	3.44		J	80.8 84.2
1,2,3,6,7,8-HxCDD	8.47	3.3		J	85.5 84.2
1,2,3,7,8,9-HxCDD	5.27	4.06		J	81.4 84.2
1,2,3,4,6,7,8-HpCDD	207	13.7			68.6 69
OCDD	2,120	5.72			61.7 69
2,3,7,8-TCDF	ND	1.49			74.2 81.4
1,2,3,7,8-PeCDF	ND	2.35			78.4 80.4
2,3,4,7,8-PeCDF	ND	2.31			72.3 80.4
1,2,3,4,7,8-HxCDF	ND	0.97			74.1 84.2
1,2,3,6,7,8-HxCDF	ND	0.898			85.5 84.2
2,3,4,6,7,8-HxCDF	ND	1.1			75.4 84.2
1,2,3,7,8,9-HxCDF	ND	1.7			70.7 84.2
1,2,3,4,6,7,8-HpCDF	27.2	2.79			63.2 69
1,2,3,4,7,8,9-HpCDF	ND	4.43			60.4 69
OCDF	67.1	12.5			60.2 69
Totals & TEQs					
TCDDs	4.77	1.61			
PeCDDs	15.5	1.62			
HxCDDs	39.8 44.1	3.61	65.1		
HpCDDs	415	13.7			
TCDFs	6.53	1.49			
PeCDFs	2.57	2.33			
HxCDFs	32.8	1.13			
HpCDFs	98.7	3.53			
Total PCDD/Fs	2,800 2,810		2,830		

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AMEC VALIDATED

Checkcode: 0335

pm 4/14/05
Rev 2

AAP 2005 Rev. B

Reviewer _____
Date _____

LEVEL IV

CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

AMEC Earth & Environmental
 550 South Wadsworth Boulevard
 Suite 500
 Lakewood, CO 80226

Package ID T711DF30
 Task Order 313150010
 SDG No. Multi
 No. of Analyses 13

Laboratory Alta Analytical Perspective
 Reviewer H. Chang
 Analysis/Method Dioxin&Furans/1613

Date: March 18, 2005
 Reviewer's Signature H. Chang

ACTION ITEMS ^a	
1. Case Narrative Deficiencies	
2. Out of Scope Analyses	
3. Analyses Not Conducted	
4. Missing Hardcopy Deliverables	
5. Incorrect Hardcopy Deliverables	
6. Deviations from Analysis Protocol, e.g., Holding Times GC/MS Tune/Inst. Perform Calibrations Blanks Surrogates Matrix Spike/Dup LCS Field QC Internal Standard Performance Compound Identification and Quantitation System Performance	Detects below the calibration range were qualified "J." False negative and false positives noted. Several transcription errors were noted.
COMMENTS ^b	
^a 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

ANALYSIS: DIOXINS/FURANS

SAMPLE DELIVERY GROUPS: Multiple SDGs

Prepared by

AMEC—Denver Operations
550 South Wadsworth Boulevard, Suite 500
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title: NPDES Monitoring
Contract Task Order #: 313150010
Sample Delivery Group #: Multiple SDGs
Project Manager: B. McIlvaine
Matrix: Water
Analysis: Dioxins/Furans
QC Level: Level IV
No. of Samples: 13
No. of Reanalyses/Dilutions: 0
Reviewer: H. Chang
Date of Review: March 18, 2005

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

Table 1. Sample Identification

Client ID	Laboratory ID (Del Mar)	Laboratory ID (Alta AP)	Matrix	COC Method
Outfall 001	IOB0980-01	P5072_2989_007	water	1613B
Outfall 002	IOB0981-01	P5072_2989_013	water	1613B
Outfall 003	IOB0988-01	P5072_2989_012	water	1613B
Outfall 004	IOB1002-01	P5072_2989_009	water	1613B
Outfall 005	IOB0990-01	P5072_2989_006	water	1613B
Outfall 006	IOB0992-01	P5072_2989_010	water	1613B
Outfall 007	IOB0993-01	P5072_2989_002	water	1613B
Outfall 008	IOB0997-01	P5072_2989_004	water	1613B
Outfall 009	IOB0996-01	P5072_2989_003	water	1613B
Outfall 010	IOB1001-01	P5072_2989_001	water	1613B
Outfall 011 Composite	IOB1004-01	P5072_2989_011	water	1613B
Outfall 011	IOB1014-01	P5072_2989_005	water	1613B
Outfall 018	IOB1008-01	P5072_2989_008	water	1613B

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

Following are findings associated with sample management:

2.1.1 Sample Preservation, Handling, and Transport

All of the samples in these SDGs were received at Del Mar Analytical within the temperature limits of $4^{\circ}\text{C} \pm 2^{\circ}\text{C}$ except sample Outfall 009 which was at 8°C . Due to non-volatile nature of the analytes, no qualifications were necessary for the elevated cooler temperature. The samples were received at Pace Analytical with cooler temperatures of 1.6°C , 2.3°C , and 3°C . The samples were received at Alta Analytical Perspectives with cooler temperatures of 1°C and 3°C . According to the laboratory login sheets, all samples were received intact and in good condition at Del Mar and Alta AP. No sample conditions were available for review for the sample receipt at Pace. No qualifications were required.

2.1.2 Chain of Custody

It appears that the samples were initially sent from Del Mar Analytical to Pace Analytical then subsequently shipped to Alta Analytical Perspectives. The COCs from the field to Del Mar, Del Mar to Pace, and Pace to Alta were available for review. The COCs were legible and signed by the appropriate field and laboratory personnel, and accounted for the analyses presented in these SDGs. The custody seals were not present on the coolers upon receipt at either Del Mar or Alta. No custody seal information was available for Pace. No qualifications were required.

2.1.3 Holding Times

The samples were extracted and analyzed within a 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 Column Performance Check Standard (CPSM) containing the first and last eluting congeners of each descriptor and isomer specificity compounds was analyzed prior to initial calibration analysis. A separate CPSM was not analyzed for daily analytical sequence; instead, CPSM compounds were added to OPR analysis. The GC column performance in the calibrations was acceptable, with the height of the valley between the closely eluting isomers and 2,3,7,8-TCDD reported as less than 25%. No qualifications were required.

2.2.2 Mass Spectrometer Performance

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

2.3 CALIBRATION

2.3.1 Initial Calibration

There was one initial calibrations, analyzed 08/12/04. The calibrations each consisted of six concentration level standards (CS0 through CS5) analyzed to verify instrument linearity. The initial calibration was acceptable with %RSDs $\leq 20\%$ for the native compounds and $\leq 35\%$ for the labeled compounds. 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 VERs were acceptable with the concentrations within the acceptance criteria listed in Table 6 of EPA Method 1613. The ion abundance ratios and relative retention times were within the method QC limits. A representative number of %Ds were verified from the raw data, and no calculation or transcription errors were noted. No qualifications were required.

2.4 BLANKS

One method blank (0_2989_MB001) was extracted and analyzed with the samples in these SDGs. There were no detects reported 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 Ongoing Precision Recovery (OPR) sample (0_2989_OPR001) was extracted and analyzed with the samples in these SDGs. All recoveries were within the acceptance criteria listed in Table 6 of the Method 1613. No qualifications were required.

2.6 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

MS/MSD analyses were not performed in these SDGs. 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 samples in these SDGs had no associated field QC samples. No qualifications were required.

2.7.2 Field Duplicates

No field duplicate samples were identified for these SDGs.

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. The laboratory reported total PeCDFs detects in samples Outfall 005, Outfall 006, Outfall 007, and Outfall 011. The reviewer deemed the signals used to be below the signal-to-noise ratio of 2.5 and the results were changed to nondetects. A false negative for total HxCDD was noted in sample Outfall 001 and was changed to a detect. 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. Any detects below the lower method calibration level (MCL) were qualified as estimated, "J." The laboratory did not flag OCDD in samples Outfall 002 and Outfall 003 although the reported concentrations were below the lower MCL. OCDD in these samples was qualified as estimated, "J." The laboratory did not notate detects below the lower MCL for totals. These totals were qualified as estimated, "J." The "DNQ" qualification code was applied only if all components of the totals were below the lower MCL.

The laboratory indicated that one of the non-2,3,7,8 substituted HxCDD detect, present in majority of the samples, was due to recovery standard (13C-1,2,3,4,6,7-HxCDD) contribution. This compound was also present in the method blank. This compound was not included in the total HxCDD concentration. Several total HxCDD results could not be reproduced from the raw data by the reviewer and were hand-corrected on the Form I. No further qualifications were required.

Sample ID: IOB1008-01 *Outfall 018* **Method 1613**

Client Data		Sample Data		Laboratory Data	
Name:	Pace Inc.	Matrix:	Aqueous	Project No.:	Date Received:
Project ID:	General Analytical HRMS	Weight/Volume:	1.03 L	Sample ID:	01 Mar 05
Date Collected:	11 Feb 05	pH	6	QC Batch No.:	03 Mar 05
Analyte	Conc.	DL	EMPC	Qualifier	Recoveries
	pg/L	pg/L	pg/L		ES CS
2,3,7,8-TCDD	ND	1.61			72 81.4
1,2,3,7,8-PeCDD	ND	1.62			71.7 83.2
1,2,3,4,7,8-HxCDD	3.57	3.44		J	80.8 84.2
1,2,3,6,7,8-HxCDD	8.47	3.3		J	85.5 84.2
1,2,3,7,8,9-HxCDD	5.27	4.06		J	81.4 84.2
1,2,3,4,6,7,8-HpCDD	207	13.7			68.6 69
OCDD	2,120	5.72			61.7 69
2,3,7,8-TCDF	ND	1.49			74.2 81.4
1,2,3,7,8-PeCDF	ND	2.35			78.4 80.4
2,3,4,7,8-PeCDF	ND	2.31			72.3 80.4
1,2,3,4,7,8-HxCDF	ND	0.97			74.1 84.2
1,2,3,6,7,8-HxCDF	ND	0.898			85.5 84.2
2,3,4,6,7,8-HxCDF	ND	1.1			75.4 84.2
1,2,3,7,8,9-HxCDF	ND	1.7			70.7 84.2
1,2,3,4,6,7,8-HpCDF	27.2	2.79			63.2 69
1,2,3,4,7,8,9-HpCDF	ND	4.43			60.4 69
OCDF	67.1	12.5			60.2 69
Totals & TEQs					
TCDDs	4.77	1.61			
PeCDDs	15.5	1.62			
HxCDDs	39.9 44.1	3.61	65.1		
HpCDDs	415	13.7			
TCDFs	6.53	1.49			
PeCDFs	2.57	2.33			
HxCDFs	32.8	1.13			
HpCDFs	98.7	3.53			
Total PCDD/Fs	2,800.2810		2.830		

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Checkcode: 0335 **AMEC VALIDATED** *LEVEL IV* Reviewer *AP* Date *03 Mar 05*
 AAP 2005 Rev. B

CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

AMEC Earth & Environmental
550 South Wadsworth Boulevard
Suite 500
Lakewood, CO 80226

Package ID T711MT53
Task Order 313150010
SDG No. IOB0997, 1001, 1008

No. of Analyses 3

Laboratory Del Mar

Date: 03/28/05

Reviewer P. Meeks

Reviewer's Signature

Analysis/Method Metals

P. Meeks

ACTION ITEMS^a

1. Case Narrative Deficiencies	
2. Out of Scope Analyses	
3. Analyses Not Conducted	
4. Missing Hardcopy Deliverables	
5. Incorrect Hardcopy Deliverables	
6. Deviations from Analysis Protocol, e.g.,	Qualifications applied for:
Holding Times	1. Detects below the reporting limit.
GC/MS Tune/Inst. Performance	2. Negative results and detected in the blanks.
Calibrations	3. Antimony MDLs raised.
Blanks	4. Reporting limit check standard recovery outliers.
Surrogates	
Matrix Spike/Dup LCS	
Field QC	
Internal Standard Performance	
Compound Identification and Quantitation	
System Performance	

COMMENTS^b

^a 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

ANALYSIS: METALS

SAMPLE DELIVERY GROUPS: IOB0997, IOB1001, & IOB1008

Prepared by

AMEC—Denver Operations
550 South Wadsworth Boulevard, Suite 500
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title: NPDES Monitoring
Contract Task Order #: 313150010
SDG#: IOB0997, IOB1001, IOB1008
Project Manager: B. McIlvaine
Matrix: Water
Analysis: Metals
QC Level: Level IV
No. of Samples: 3
No. of Reanalyses/Dilutions: 0
Reviewer: P. Meeks
Date of Review: March 28, 2005

The samples listed in Table 1 were validated based on the guidelines outlined in the *AMEC Data Validation Procedure for Levels III and IV ICP-MS Metals, (DVP-5-A, Rev.0)*, *AMEC Data Validation Procedure for Levels III and IV ICP Metals (DVP-5, Rev. 0)*, *SW-846 Method 6020B for Inductively Coupled Plasma – Mass Spectrometry*, *SW-846 Method 6010B for Inductively Coupled Plasma*, *SW-846 Method 7471A for Mercury (Manual Cold-Vapor Technique)*, and validation guidelines outlined in the *USEPA CLP National Functional Guidelines for Inorganic Data Review (2/94)*. Any deviations from these procedures and guidelines are documented herein. Qualifiers were applied in cases where the data did not meet the required QC criteria or where special consideration by the data user is required. Data qualifiers were placed on Form Is with the associated qualification codes. Analytes that were rejected for any reason are denoted on the Form I as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

Table 1. Sample identification

Client ID	EPA ID	Laboratory ID	Matrix	COC Method
Outfall 008	Outfall 008	IOB0997-01	water	ILM04
Outfall 010	Outfall 010	IOB1001-01	water	ILM04
Outfall 018	Outfall 018	IOB1008-01	water	ILM04

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

Following are findings associated with sample management:

2.1.1 Sample Preservation, Handling, and Transport

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

2.1.2 Chain of Custody

The COCs were signed and dated by field and laboratory personnel. The requested analytes for Outfall 018 were changed in a memo from MWH personnel dated 02/17/05. The COCs accounted for the remaining samples and analyses presented in these SDGs. Duplicate samples were submitted for all samples in these SDGs; however, duplicate analyses were not required. No sample qualifications were required.

2.1.3 Holding Times

The dates of collection recorded on the COCs 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 and ICP/MS metals and 28 days for mercury. No qualifications were required.

2.2 ICP-MS TUNING

A precalibration routine must be completed prior to calibrating the instrument, which consists of analyzing a tuning solution to verify resolution, mass calibration, and thermal stability. The solution must be analyzed a minimum of five times and must contain isotopes representing all mass regions of interest. All %RSDs were less than 5%. The mass calibrations were within 0.1 amu of the true mass and the instrument resolutions were less than 0.75 amu at 5 percent peak height for all analytes in the tune solution. No site sample qualifications were required.

2.3 CALIBRATION

The ICV and CCV results showed acceptable recoveries, 90-110% for ICP/MS metals and 80-120% for mercury. Silver was recovered below the control limit in the ICP reporting limit check standard associated with Outfall 008 and Outfall 010; therefore, nondetected silver in these samples was qualified as estimated, "UJ." Antimony was recovered below the control limit in the ICP/MS 0.2 ppb reporting limit check standard associated with Outfall 010; therefore, nondetected antimony in Outfall 010 (see

section 2.4) was qualified as estimated, "UJ." Copper was not recovered in the ICP/MS 1.0 ppb reporting limit check standard and was recovered below the control limit in the ICP/MS 2.0 ppb reporting limit check standard; however, as copper was detected in the associated sample, Outfall 018, at $\geq 3 \times RL$, no qualifications were required. The remaining reporting limit check standards were recovered within the AMEC control limits of 70-130%. No further sample qualifications were required.

2.4 BLANKS

Arsenic was reported in method blank 5B17127 at -0.0071 mg/L; therefore, nondetected arsenic in Outfall 010 was qualified as estimated, "UJ." Antimony was detected in the CCBs bracketing Outfall 008 and Outfall 010 at approximately 0.95 and 0.50 $\mu\text{g/L}$, respectively and antimony was detected in Outfall 008 and Outfall 010 at concentrations below the level reported in the CCBs. The CCB detects indicated the laboratory could not detect antimony at the reported MDL. The reviewer raised the MDLs in the site samples to the level reported in the respective CCBs and qualified the results as estimated, "UJ." No further qualifications were required due to the method and calibration blank results.

2.5 ICP INTERFERENCE CHECK SAMPLE (ICS A/AB)

ICSA and ICSAB analyses were included in the raw data for the ICP-MS analyses. Results were not provided for spiked interferents sulfur, phosphorus, carbon, and chloride, and antimony and lead were not spiked into the ICSAB solution. Copper and cadmium were detected above the applicable reporting limit in the ICSA. The results for sodium and potassium were above the calibration range of the instrument in all the ICSA and ICSAB analyses and aluminum was above the calibration range in the ICSA and ICSAB analyses associated with Outfall 010; however, as these analytes were not reported in the site samples, no qualifications were required. The validator reviewed the raw data for the site sample ICP/MS analyses for the level of reported interferents, Al, Ca, Fe, and Mg, and determined that the level of reported interferents were not high enough to cause matrix affects. No assessment could be made with respect to possible interference from sulfur, phosphorus, carbon, and chloride.

ICSA and ICSAB analyses were included in the raw data for the ICP analyses, but were not run on the days the site samples were analyzed. The recoveries for the interferents and the other spiked analytes were within the control limits of 80-120%. In the ICSA analyses there were negative results for chromium and positive results for thallium and zinc that were above the applicable reporting limits. The validator reviewed the raw data for the site sample ICP analyses for the level of reported interferents, Al, Ca, Fe, and Mg, and determined that the level of reported interferents were not high enough to cause matrix affects. No qualifications were required.

2.6 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

The ICP/MS LCS samples were identified as 5B12041-BS1, 5B17098-BS1, and 5B17129-BS1 and the ICP LCS samples were identified as 5B17097-BS1 and 5B17127-BS1. The mercury LCS samples were identified as 5B12033-BS1 and 5B15070-BS1. The LCS results on the summary forms and in the raw data were within the laboratory-established ICP, ICP/MS, and mercury control limits of 85-115%. No qualifications were required.

2.7 LABORATORY DUPLICATES

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

2.8 MATRIX SPIKE

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

2.9 FURNACE ATOMIC ABSORPTION QC

Furnace atomic absorption was not utilized for the analysis of these samples; therefore, furnace atomic absorption QC is not applicable.

2.10 ICP/MS AND ICP SERIAL DILUTION

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

2.11 INTERNAL STANDARDS PERFORMANCE

The ICP-MS internal standard recoveries for the site samples and associated QC sample analyses were within the 60-125% control limits and no qualifications were required.

2.12 SAMPLE RESULT VERIFICATION

A Level IV review was performed for the samples in these data packages. Calculations were verified, and the sample results reported on the Form Is were verified against the raw data. No transcription errors or calculation errors were noted. Analytes detected below the reporting limit were qualified as estimated, "J." No further qualifications were required.

2.13 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.

2.13.1 Field Blanks and Equipment Rinsates

The samples in these SDGs had no associated field QC samples. No qualifications were required.

2.13.2 Field Duplicates

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



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 1014 E. Cooley Dr., Suite A, Colton, CA 92324 (909) 370-4667 FAX (949) 370-1046
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 2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

MWH-Pasadena/Boeing 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Attention: Bronwyn Kelly	Project ID: Routine Outfall 018 Report Number: IOB1008	Sampled: 02/11/05 Received: 02/11/05
--	---	---

DRAFT: METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOB1008-01 (DRAFT: Outfall 018 - Water) - cont.									
Reporting Units: ug/l									
Copper	EPA 200.8	5B12041	0.49	2.0	8.9	1	02/12/05	02/14/05	
Lead	EPA 200.8	5B12041	0.13	1.0	6.0	1	02/12/05	02/14/05	
Mercury	EPA 245.1	5B12033	0.063	0.20	0.15	1	02/12/05	02/12/05	J J DNA

LEVEL IV
AMEC VALIDATED

DRAFT REPORT
DRAFT REPORT
DATA SUBJECT TO CHANGE

CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

AMEC Earth & Environmental
 550 South Wadsworth Boulevard
 Suite 500
 Lakewood, CO 80226

Package ID T711PP17
 Task Order 313150010
 SDG No. Multiple

No. of Analyses 3

Laboratory Del Mar Analytical

Date March 28, 2005

Reviewer K. Shadowlight

Reviewer's Signature
K. Shadowlight

Analysis/Method Pesticides

ACTION ITEMS ^a	
1. Case Narrative	
Deficiencies	
2. Out of Scope	
Analyses	
3. Analyses Not Conducted	
4. Missing Hardcopy Deliverables	
5. Incorrect Hardcopy Deliverables	
6. Deviations from Analysis Protocol, e.g.,	Qualifications were assigned for %D continuing calibration outliers
Holding Times	
GC/MS Tune/Inst. Perform	
Calibrations	
Blanks	
Surrogates	
Matrix Spike/Dup LCS	
Field QC	
Internal Standard Performance	
Compound Identification and	
Quantitation	
System Performance	
COMMENTS ^b	
Acceptable as reviewed.	
^a 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

ANALYSIS: PESTICIDES/PCBs

SAMPLE DELIVERY GROUP: Multiple SDGs

Prepared by

AMEC Denver Operations
550 South Wadsworth Boulevard, Suite 500
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title: NPDES Monitoring
Contract Task Order #: 313150010
SDG#: Multiple SDGs
Project Manager: B. McIlvaine
Matrix: Water
Analysis: Pesticides/PCBs
QC Level: Level IV
No. of Samples: 3
No. of Reanalyses/Dilutions: 0
Reviewer: K. Shadowlight
Date of Review: March 25, 2005

The samples listed in Table 1 were validated based on the general guidelines outlined in the *AMEC Data Validation Procedures (DVP-4, Rev.2)*, *EPA Method 608*, 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 summary form as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

Table 1. Sample identification

Client ID	EPA ID	Laboratory ID	Matrix	Method
Outfall 008	Outfall 008	IOB0997-01	water	608
Outfall 010	Outfall 010	IOB1001-01	water	608
Outfall 018	Outfall 018	IOB1008-01	water	608

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

The following are findings associated with sample management:

2.1.1 Sample Preservation, Handling, and Transport

The coolers were received at the laboratory within the temperature limits of $4^{\circ}\text{C} \pm 2^{\circ}\text{C}$. The analysis did not require preservation, and no preservation was noted in the field. The COCs noted that the samples were received intact. No qualifications were required.

2.1.2 Chain of Custody

The COCs were signed and dated by both field and laboratory personnel. The COCs accounted for the analyses presented in these SDGs. As the samples were couriered directly to the laboratory, custody seals were not required. No qualifications were required.

2.1.3 Holding Times

The water samples were extracted within seven days of sample collection and analyzed within 40 days of extraction. No qualifications were required.

2.2 PESTICIDES INSTRUMENT PERFORMANCE

No resolution check standards or breakdown check standards are required by Method 608 for pesticides, and according to the raw data provided, a resolution check standard was not analyzed by the laboratory. The laboratory did analyze a breakdown check standard with a breakdown of $\leq 20\%$ for individual components (4,4-DDT and endrin) and $\leq 30\%$ for the total, as suggested in the National Functional Guidelines. A review of the raw data indicated that the analytical run time was of sufficient length to provide adequate standard separation. The two analytical columns used in the analyses were within the guidelines specified in the methods.

According to the laboratory SOP and the initial calibration raw data, the retention time windows are ± 0.10 minutes for both surrogates and target compound calibration standards. A review of the raw data indicated that the laboratory retention time criteria were met for the surrogates and pesticide calibration standards. No qualifications were required.

2.3 CALIBRATION

2.3.1 Analytical Sequence

Based on the data provided, the analytical sequences were in accordance with the requirements of Method 608. No qualifications were required.

2.3.2 Initial Calibration

There were two initial calibrations dated 02/15/05 and 02/17/05 associated with the pesticide analyses of the samples in these SDGs, which consisted of six point calibrations for all pesticide target compounds on two analytical columns. The %RSDs were within the EPA Method 608 QC limit of $\leq 10\%$ or the r^2 values were ≥ 0.995 on both analytical columns. There was one initial calibration dated 02/11/05 associated with the PCB analyses of the samples in these SDGs which consisted of five points for Aroclor 1016 and Aroclor 1260. Single point calibrations for Aroclor 1242 and Aroclor 1254 were also analyzed. The average %RSDs for the individual peaks of Aroclor 1016 and Aroclor 1260 were $\leq 10\%$ or the r^2 values were ≥ 0.995 on both analytical columns. An ICV was analyzed immediately following each of the initial calibrations. The %Ds for all target compounds were within the QC limits of 15% on both analytical columns. A representative number of %RSDs and ICV %Ds were recalculated from the raw data and no transcription or calculation errors were noted. No qualifications were required.

2.3.3 Continuing Calibration

Of the continuing calibrations associated with the pesticide analyses for the samples in these SDGs there were several %D outliers. The %Ds for beta-BHC, endosulfan II, endrin aldehyde, and endrin ketone exceeded 15% in one of the three calibrations standards bracketing sample Outfall 008; therefore, the aforementioned target compounds were qualified as estimated, "UJ," in Outfall 008.

The continuing calibrations associated with sample Outfall 010 were bracketed by four continuing calibrations, two preceding and two following the analyses. The %Ds for target compounds endrin aldehyde (02/17/05), 4,4'-DDT and methoxychlor (02/18/05 at 03:14 a.m. and 03:41 a.m.) and heptachlor, endrin aldehyde, and endrin ketone (02/18/05 at 03:41 a.m.) exceeded 15% on the primary channel; therefore, the aforementioned target compounds were qualified as estimated, "UJ," in sample Outfall 010.

The remaining %Ds were within the Method QC limit of $\pm 15\%$ for the remaining calibrations. Each of the PCB analyses for the samples in these SDGs were bracketed by two CCVs and the %Ds for Aroclor 1016 and Aroclor 1260 were $\leq 15\%$. A representative number of %Ds were recalculated from the raw data and no transcription or calculation errors were noted.

No further qualifications were required.

2.4 BLANKS

2.4.1 Instrument Blanks

An instrument blank was analyzed at the beginning of each analytical sequence. Cross-contamination was not evident in the samples. No qualifications were necessary.

2.4.2 Method Blanks

Three water method blanks (5B15038-BLK1, 5B17042-BLK1, and 5B13028-BLK1) were extracted and analyzed with these SDGs. There were no pesticide target compounds or Aroclors detected in any of the method blanks. Review of the chromatograms showed no false negatives. No qualifications were required.

2.5 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

Three blank spike/blank spike duplicate pairs (5B15038-BS1/BSD1, 5B17042-BS1/BSD, and 5B13028-BS1/BSD) were extracted and analyzed with these SDGs. The recoveries for all spiked pesticide target compounds and Aroclors were within the laboratory-established QC limits and the RPDs were $\leq 30\%$. A representative number of recoveries were checked from the raw data, and no calculation or transcription errors were noted. No qualifications were required.

2.6 SURROGATE RECOVERY

The sample and all QC samples were fortified with the surrogate compounds decachlorobiphenyl and tetrachloro-m-xylene. Surrogate recoveries for the pesticide and PCB analyses of the samples were within the laboratory-established. The recoveries were calculated from the raw data and no transcription or calculation errors were noted. No qualifications were required.

2.7 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

There were no MS/MSD analyses associated with these SDGs. Method accuracy and precision were assessed based on the blank spike/blank spike duplicate results. No qualifications were required.

2.8 SAMPLE CLEANUP PERFORMANCE

According to the laboratory extraction benchsheets, no cleanups were performed on the water samples. No qualifications were required.

2.9 FIELD QC SAMPLES

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

2.9.1 Field Blanks and Equipment Rinsates

There were no field QC samples associated with the samples in these SDGs. No qualifications were required.

2.9.2 Field Duplicates

There were no field duplicate samples associated with the sample in these SDGs.

2.10 COMPOUND IDENTIFICATION

The laboratory analyzed for pesticide target compounds and PCBs by EPA Method 608. Compound identification is verified at a Level IV validation. Review of chromatograms and

retention times indicated no problems with compound identification for the samples in these SDGs. No qualifications were required.

2.11 COMPOUND QUANTIFICATION AND REPORTED DETECTION LIMITS

Compound quantification was verified for these SDGs; however, as there were no detects reported in the samples, quantitation was verified by recalculating a representative number of blank spike and surrogate recoveries. Reporting limits were supported by the low level standard of the initial calibration and the laboratory MDL studies. The water reporting limits were not adjusted for sample amounts on the result summaries; however, the dilution factors listed on the summaries reflected the sample volumes extracted. Results were reported in ug/L (ppb). No qualifications were required.



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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: IOB1008	Sampled: 02/11/05 Received: 02/11/05
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DRAFT: ORGANOCHLORINE PESTICIDES (EPA 608)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOB1008-01 (DRAFT: Outfall 018 - Water) - cont. Reporting Units: ug/l									
alpha-BHC	EPA 608	5B13028	0.0010	0.010	ND	0.99	02/13/05	02/14/05	u
Surrogate: Decachlorobiphenyl (45-120%)					62 %				
Surrogate: Tetrachloro-m-xylene (35-120%)					50 %				

AMEC VALIDATED
LEVEL IV

DRAFT REPORT
DRAFT REPORT
DATA SUBJECT TO CHANGE

CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

AMEC Earth & Environmental
 550 South Wadsworth Boulevard
 Suite 500
 Lakewood, CO 80226

Package ID T711SV32
 Task Order 313150010
 SDG No. IOB0997, 1001, 1008

No. of Analyses 3

Laboratory Del Mar

Reviewer M. Pokorny

Analysis/Method Semivolatiles

Date: <u>March 30, 2005</u>
Reviewer's Signature <i>M. Pokorny</i>

ACTION ITEMS ^a	
1. Case Narrative Deficiencies	<hr/> <hr/>
2. Out of Scope Analyses	<hr/> <hr/>
3. Analyses Not Conducted	<hr/> <hr/>
4. Missing Hardcopy Deliverables	<hr/> <hr/>
5. Incorrect Hardcopy Deliverables	<hr/> <hr/>
6. Deviations from Analysis Protocol, e.g.,	Qualifications were required for calibration and RPD outliers.
Holding Times	<hr/>
GC/MS Tune/Inst. Perform	<hr/>
Calibrations	<hr/>
Blanks	<hr/>
Surrogates	<hr/>
Matrix Spike/Dup LCS	<hr/>
Field QC	<hr/>
Internal Standard Performance	<hr/>
Compound Identification and Quantitation	<hr/>
System Performance	<hr/>
COMMENTS ^b	<hr/> <hr/> <hr/>
^a 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

ANALYSIS: SEMIVOLATILES

SAMPLE DELIVERY GROUP: IOB0997, IOB1001,
IOB1008

Prepared by

AMEC Denver Operations
550 South Wadsworth Boulevard, Suite 500

Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title: NPDES Monitoring
Contract Task Order #: 313150010
SDG#: IOB0997, IOB1001, IOB1008
Project Manager: B. McIlvaine
Matrix: Water
Analysis: Semivolatiles
QC Level: Level IV
No. of Samples: 3
No. of Reanalyses/Dilutions: 0
Reviewer: L. Calvin
Date of Review: March 30, 2005

The samples listed in Table 1 were validated based on the guidelines outlined in the *AMEC Data Validation Procedure for Levels C and D Semivolatile Organics (DVP-3, Rev. 2)*, *EPA Method 625*, and the *National Functional Guidelines For Organic Data Review (2/94)*. Any deviations from these procedures are documented herein. Qualifiers were applied in cases where the data did not meet the required QC criteria or where special consideration by the data user is required. Data qualifiers were placed on Form Is with the associated qualification codes. Analytes that were rejected for any reason are denoted on the Form I as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

Table 1. Sample identification

Client ID	EPA ID	Lab No.	Matrix	Method
Outfall 008	Outfall 008	IOB0997-01	water	625
Outfall 010	Outfall 010	IOB1001-01	water	625
Outfall 018	Outfall 018	IOB1008-01	water	625

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

The samples in these SDGs were received at the laboratory within the temperature limits of $4^{\circ}\text{C} \pm 2^{\circ}\text{C}$. No qualifications were required.

2.1.2 Chain of Custody

The COCs were signed and dated by both field and laboratory personnel. The COCs accounted for the analyses presented in these SDGs. As the samples were couriered directly to the laboratory, custody seals were not required. No qualifications were required.

2.1.3 Holding Times

Extraction of the water samples was performed within seven days of collection. The samples were analyzed within 40 days of extraction. No qualifications were required.

2.2 GC/MS TUNING

The DFTPP tune met the ion abundance criteria specified in Method 625. No qualifications were required.

2.3 CALIBRATION

The initial calibrations associated with these SDGs were dated 02/15/05 and 02/17/05. The average RRFs for were ≥ 0.05 for all applicable target compounds. The %RSDs were $\leq 35\%$ or $r^2 \geq 0.995$ with the exception of the r^2 values for benzoic acid, hexachlorocyclopentadiene, and 2,4-dinitrophenol. The nondetect results for the aforementioned compounds were qualified as estimated, "UJ," in site samples Outfall 008 and Outfall 010. The continuing calibrations associated with the sample analyses were analyzed 02/15/05, 02/17/05, and 02/22/05. The RRFs for all target compounds were ≥ 0.05 , and the %Ds were $\leq 20\%$ except for the %D for NDMA in the calibration dated 02/17/05. The nondetect for NDMA was qualified as estimated, "UJ," for sample Outfall 018. A representative number of average RRFs, %RSDs, and r^2 s for the initial calibration and RRFs and %Ds for the continuing calibration were checked from the raw data, and no calculation or transcription errors were noted. No further qualifications were required.

2.4 BLANKS

Two method blanks (5B13024-BLK1, 5B17041-BLK1/benzidine only, and 5B14010-BLK1) were extracted and analyzed with these SDGs. There were no detects above the MDLs for any target compounds. Review of the raw data indicated no false negatives. No qualifications were required.

2.5 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

Three blank spike/ blank spike duplicate pairs (5B13024-BS1/BSD1, 5B17041-BS1/BSD1, and 5B14010-BS1/BSD1) were extracted and analyzed with these SDGs. For blank spike/blank spike duplicate pairs, qualifications are applied, if necessary, to the associated samples based on those recoveries consistently outside of the laboratory-established QC limits in both the blank spike and blank spike duplicate. Results for those compounds with recoveries not consistent within the pair, with RPDs above the QC limit, are qualified as estimated, "UJ" for nondetects and "J" for detects, in the associated samples.

For 5B13024-BS1/BSD1 and 5B17041-BS1/BSD1, all applicable target compounds were recovered within the QC limits and all RPDs were below the QC limits.

For 5B14010-BS1/BSD1, all percent recoveries were within the QC limits and all RPDs were below the QC limits except for the RPD for n-nitrosodimethylamine (NDMA). The nondetect for NDMA was qualified as estimated, "UJ," for sample Outfall 018.

A representative number of recoveries and RPDs were calculated from the raw data and no calculation or transcription errors were found. No further qualifications were required.

2.6 SURROGATE RECOVERY

The sample surrogate recoveries for all samples were within the laboratory QC limits. A representative number of recoveries were calculated from the raw data, and no transcription or calculation errors were noted. No qualifications were required.

2.7 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

No MS/MSD analyses were associated with these SDGs. Evaluation of method accuracy and precision was based on blank spike/blank spike duplicate 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 Field Blanks and Equipment Rinsates

There were no field QC samples associated with these SDGs. No qualifications were required.

2.8.2 Field Duplicates

There were no field duplicate samples associated with these SDGs.

2.9 INTERNAL STANDARDS PERFORMANCE

The internal standard area counts and retention times were within the control limits established by the continuing calibration standards: -50%/+100% for internal standard areas and ± 30 seconds for retention times. A representative number of recoveries 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 semivolatile target compounds by EPA Method 625. 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 level of the initial and the method detection limit study. The reporting limits were not adjusted for sample amount; however, the dilution factors on the sample result summaries reflected the sample amount extracted. Results were reported in $\mu\text{g/L}$ (ppb). No qualifications were required.

2.12 TENTATIVELY IDENTIFIED COMPOUNDS

TICs were not reported by the laboratory for these SDGs. No qualifications were required.

2.13 SYSTEM PERFORMANCE

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



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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: IOB1008

Sampled: 02/11/05
 Received: 02/11/05

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

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOB1008-01 (DRAFT: Outfall 018 - Water)									
Reporting Units: ug/l									
Bis(2-ethylhexyl)phthalate	EPA 625	5B14010	1.1	5.0	ND	0.957	02/14/05	02/18/05	U
2,4-Dinitrotoluene	EPA 625	5B14010	0.23	9.0	ND	0.957	02/14/05	02/18/05	U
N-Nitrosodimethylamine	EPA 625	5B14010	0.22	8.0	ND	0.957	02/14/05	02/18/05	U
Pentachlorophenol	EPA 625	5B14010	0.78	8.0	ND	0.957	02/14/05	02/18/05	U
2,4,6-Trichlorophenol	EPA 625	5B14010	0.10	6.0	ND	0.957	02/14/05	02/18/05	U
Surrogate: 2-Fluorophenol (35-120%)					73 %				
Surrogate: Phenol-d6 (45-120%)					76 %				
Surrogate: 2,4,6-Tribromophenol (50-125%)					85 %				
Surrogate: Nitrobenzene-d5 (45-120%)					75 %				
Surrogate: 2-Fluorobiphenyl (45-120%)					77 %				
Surrogate: Terphenyl-d14 (45-135%)					73 %				

REV QUAL	QUAL CODE
U	
U	
U	C, *5
U	
U	

DRAFT REPORT
 DRAFT REPORT
 DATA SUBJECT TO CHANGE

AMEC VALIDATED

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.

IOB1008 <Page 3 of 24>
 LEVEL IV

CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

AMEC Earth & Environmental
 550 South Wadsworth Boulevard
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 Lakewood, CO 80226

Package ID T711VO61
 Task Order 313150010
 SDG No. IOB0997, 1001, 1008

No. of Analyses 6

Laboratory Del Mar

Reviewer M. Pokorny

Analysis/Method Volatiles

Date: March 30, 2005

Reviewer's Signature



ACTION ITEMS^a

- | | |
|--|---|
| 1. Case Narrative Deficiencies | _____ |
| 2. Out of Scope Analyses | _____ |
| 3. Analyses Not Conducted | _____ |
| 4. Missing Hardcopy Deliverables | _____ |
| 5. Incorrect Hardcopy Deliverables | _____ |
| 6. Deviations from Analysis Protocol, e.g., | Qualifications were required for calibration outliers. |
| Holding Times | _____ |
| GC/MS Tune/Inst. Perform | _____ |
| Calibrations | _____ |
| Blanks | _____ |
| Surrogates | _____ |
| Matrix Spike/Dup LCS | _____ |
| Field QC | _____ |
| Internal Standard Performance | _____ |
| Compound Identification and Quantitation | _____ |
| System Performance | _____ |

COMMENTS^b

^a 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

ANALYSIS: VOLATILES

SAMPLE DELIVERY GROUPs: IOB0997, IOB1001,
IOB1008

Prepared by

AMEC Denver Operations
550 South Wadsworth Boulevard, Suite 500
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title: NPDES Monitoring
Contract Task Order #: 313150010
SDG#: IOB0997, IOB1001, IOB1008
Project Manager: B. McIlvaine
Matrix: Water
Analysis: Volatiles
QC Level: Level IV
No. of Samples: 6
No. of Reanalyses/Dilutions: 0
Reviewer: M. Pokorny
Date of Review: March 30, 2005

The samples listed in Table 1 were validated based on the guidelines outlined in the *AMEC Data Validation Procedure for Levels C and D Volatile Organics (DVP-2, Rev. 2)*, *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 summary forms as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

Table 1. Sample identification

Client ID	EPA ID	Lab No.	Matrix	Method
Outfall 008	Outfall 008	IOB0997-01	water	624
Trip Blank	Trip Blank	IOB0997-02	water	624
Outfall 010	Outfall 010	IOB1001-01	water	624
Trip Blank	Trip Blank	IOB1001-02	water	624
Outfall 018	Outfall 018	IOB1008-01	water	624
Trip Blank	Trip Blank	IOB1008-02	water	624

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

The following are findings associated with sample management:

2.1.1 Sample Preservation, Handling, and Transport

The samples in these SDGs were received at the laboratory within the temperature limits of $4^{\circ}\text{C} \pm 2^{\circ}\text{C}$. The samples were properly preserved. The COC noted that the samples were received intact; however, information regarding absence of headspace was not provided. No qualifications were required.

2.1.2 Chain of Custody

The COCs were signed and dated by both field and laboratory personnel. The COCs accounted for the analyses presented in these SDGs. As the samples were couriered directly to the laboratory, custody seals were not required. No qualifications were required.

2.1.3 Holding Times

The samples were analyzed within 14 days of collection. No qualifications were required.

2.2 GC/MS TUNING

The ion abundance windows shown on the quantitation report were consistent with those specified in the EPA Method 624, and all ion abundances were within the established windows. The samples and associated QC were analyzed within 12 hours of the BFB injection times. The Form Vs were verified from the raw data and no discrepancies between the summary forms and the raw data were noted. No qualifications were required.

2.3 CALIBRATION

Three initial calibrations dated 10/14/04 (acrolein and acrylonitrile only), 02/01/05, and 02/07/05, were associated with these SDGs. The average RRF for acrolein was <0.05 ; therefore, the nondetect results for acrolein were rejected, "R," in samples Outfall 008, Trip Blank (IOB 0997-02), Outfall 010, and Trip blank (IOB 1001-02). The remaining average RRFs were ≥ 0.05 and all %RSDs were $\leq 35\%$ for the target compounds listed on the sample result summaries. Three continuing calibrations analyzed 02/17/05 and 02/18/05 (08:37 and 17:45) were associated with the sample analyses. The RRF for acrolein was <0.05 in the continuing calibration dated 02/17/05; therefore, the nondetect results for acrolein were rejected, "R," in samples Outfall 008, Trip Blank (IOB 0997-02), Outfall 010, and Trip blank (IOB 1001-02). The %Ds for acrolein and acrylonitrile exceeded 20%; therefore, nondetect results for acrolein and acrylonitrile were qualified as estimated, "UJ," in samples Outfall 008 and Outfall 010, unless otherwise rejected. The trip blanks were not qualified for %D calibration outliers. For all remaining target compounds the %Ds were $\leq 20\%$ and the RRFs were ≥ 0.05 . A representative number of %RSDs and average RRFs from the

initial calibration, and %Ds and RRFs from the continuing calibration were recalculated from the raw data, and no calculation or transcription errors were found. No further qualifications were required.

2.4 BLANKS

Three water method blanks (5B17014-BLK1, 5B18008-BLK1, and 5B12011-BLK1) were associated with these SDGs. There were no detects above the MDLs for the target compounds listed on the sample result summaries. The method blank raw data showed no evidence of false negatives. No qualifications were required.

2.5 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

Three water blank spikes (5B17014-BS1, 5B18008-BS1, and 5B12011-BS1) were associated with these SDGs. All recoveries were within the laboratory-established QC limits. A representative number of recoveries were recalculated from the raw data and no calculation or transcription errors were found. No qualifications were required.

2.6 SURROGATE RECOVERY

The surrogates were recovered within the QC limits of 80-120% in the samples and associated QC. A representative number of surrogate recoveries were recalculated from the raw data and no calculation or transcription errors were found. No qualifications were required.

2.7 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

Sample Outfall 010 was the MS/MSD analyses performed with the site samples in these SDGs. All recoveries and 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 sample. Following are findings associated with field QC samples:

2.8.1 Trip Blanks

Sample Trip Blank (IOB0997), Trip Blank (IOB1001), and Trip Blank (IOB1008) were the trip blanks associated with the site samples in these SDGs. There were no target compounds detected above the MDLs in any of the trip blanks. No qualifications were required.

2.8.2 Field Blanks and Equipment Rinsates

There were no field QC samples associated with these SDGs. No qualifications were required.

2.8.3 Field Duplicates

There were no field duplicate samples associated with these SDGs.

2.9 INTERNAL STANDARDS PERFORMANCE

Internal standard area counts and retention times for the samples in these SDGs were within the control limits established by the continuing calibration standards, of +100%/-50% for internal standard areas and ± 0.50 minutes for retention times. A representative number of internal standard areas and retention times were verified from the raw data, and no calculation or transcription errors were noted. No qualifications were required.

2.10 COMPOUND IDENTIFICATION

Target compound identification was verified at a Level IV data validation. The laboratory analyzed for volatile target compounds by EPA Method 624. Chromatograms, retention times, and spectra for the samples and QC were examined and no target compound identification problems were noted. No qualifications were required.

2.11 COMPOUND QUANTIFICATION AND REPORTED DETECTION LIMITS

Compound quantification is verified at a Level IV data validation. The reporting limits were supported by the lowest concentrations of the initial calibration standards and by the MDL study. Compound quantitation was verified by recalculating any sample detects and a representative number of blank spike and surrogate recoveries from the raw data. Results were reported in ug/L (ppb). No calculation or transcription errors were noted. No qualifications were required.

2.12 TENTATIVELY IDENTIFIED COMPOUNDS

The laboratory did not provide TICs for these SDGs. No qualifications were required.

2.13 SYSTEM PERFORMANCE

A review of the chromatograms and other raw data showed no identifiable problems with system performance. No qualifications were required.



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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: IOB1008

Sampled: 02/11/05
 Received: 02/11/05

PURGEABLES BY GC/MS (EPA 624)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOB1008-01 (Outfall 018 - Water)									
Reporting Units: ug/l									
Benzene	EPA 624	5B18019	0.28	2.0	ND	1	02/18/05	02/18/05	REV QUAL MI
Carbon tetrachloride	EPA 624	5B18019	0.28	5.0	ND	1	02/18/05	02/18/05	QUAL CODE
Chloroform	EPA 624	5B18019	0.33	2.0	ND	1	02/18/05	02/18/05	
1,1-Dichloroethane	EPA 624	5B18019	0.27	2.0	ND	1	02/18/05	02/18/05	
1,2-Dichloroethane	EPA 624	5B18019	0.28	2.0	ND	1	02/18/05	02/18/05	
1,1-Dichloroethene	EPA 624	5B18019	0.32	3.0	ND	1	02/18/05	02/18/05	
Ethylbenzene	EPA 624	5B18019	0.25	2.0	ND	1	02/18/05	02/18/05	
Tetrachloroethene	EPA 624	5B18019	0.32	2.0	ND	1	02/18/05	02/18/05	
Toluene	EPA 624	5B18019	0.36	2.0	ND	1	02/18/05	02/18/05	
1,1,1-Trichloroethane	EPA 624	5B18019	0.30	2.0	ND	1	02/18/05	02/18/05	
1,1,2-Trichloroethane	EPA 624	5B18019	0.30	2.0	ND	1	02/18/05	02/18/05	
Trichloroethene	EPA 624	5B18019	0.26	5.0	ND	1	02/18/05	02/18/05	
Trichlorofluoromethane	EPA 624	5B18019	0.34	5.0	ND	1	02/18/05	02/18/05	
Vinyl chloride	EPA 624	5B18019	0.26	5.0	ND	1	02/18/05	02/18/05	
Xylenes, Total	EPA 624	5B18019	0.52	4.0	ND	1	02/18/05	02/18/05	
Surrogate: Dibromofluoromethane (80-120%)					111 %				
Surrogate: Toluene-d8 (80-120%)					102 %				
Surrogate: 4-Bromofluorobenzene (80-120%)					96 %				
Sample ID: IOB1008-02 (Trip Blanks - Water)									
Reporting Units: ug/l									
Benzene	EPA 624	5B17014	0.28	2.0	ND	1	02/17/05	02/17/05	MI
Carbon tetrachloride	EPA 624	5B17014	0.28	5.0	ND	1	02/17/05	02/17/05	
Chloroform	EPA 624	5B17014	0.33	2.0	ND	1	02/17/05	02/17/05	
1,1-Dichloroethane	EPA 624	5B17014	0.27	2.0	ND	1	02/17/05	02/17/05	
1,2-Dichloroethane	EPA 624	5B17014	0.28	2.0	ND	1	02/17/05	02/17/05	
1,1-Dichloroethene	EPA 624	5B17014	0.32	3.0	ND	1	02/17/05	02/17/05	
Ethylbenzene	EPA 624	5B17014	0.25	2.0	ND	1	02/17/05	02/17/05	
Tetrachloroethene	EPA 624	5B17014	0.32	2.0	ND	1	02/17/05	02/17/05	
Toluene	EPA 624	5B17014	0.36	2.0	ND	1	02/17/05	02/17/05	
1,1,1-Trichloroethane	EPA 624	5B17014	0.30	2.0	ND	1	02/17/05	02/17/05	
1,1,2-Trichloroethane	EPA 624	5B17014	0.30	2.0	ND	1	02/17/05	02/17/05	
Trichloroethene	EPA 624	5B17014	0.26	5.0	ND	1	02/17/05	02/17/05	
Trichlorofluoromethane	EPA 624	5B17014	0.34	5.0	ND	1	02/17/05	02/17/05	
Vinyl chloride	EPA 624	5B17014	0.26	5.0	ND	1	02/17/05	02/17/05	
Xylenes, Total	EPA 624	5B17014	0.52	4.0	ND	1	02/17/05	02/17/05	
Surrogate: Dibromofluoromethane (80-120%)					108 %				
Surrogate: Toluene-d8 (80-120%)					101 %				
Surrogate: 4-Bromofluorobenzene (80-120%)					97 %				

AMEC VALIDATED

Del Mar Analytical, Irvine
 Michele Harper
 Project Manager

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LEVEL IV

CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

AMEC Earth & Environmental
 550 South Wadsworth Boulevard
 Suite 500
 Lakewood, CO 80226

Package ID T711WC86
 Task Order 313150010
 SDG No. IOB0997/1001/1008

No. of Analyses 3

Laboratory Del Mar Analytical

Reviewer L. Jarusewic

Analysis/Method General Minerals

Date: 03/24/05

Reviewer's Signature



ACTION ITEMS*

1. Case Narrative
 Deficiencies

2. Out of Scope
 Analyses

3. Analyses Not
 Conducted

4. Missing Hardcopy
 Deliverables

5. Incorrect Hardcopy
 Deliverables

6. Deviations from
 Analysis Protocol, e.g.,

Qualifications applied for detects below the reporting limit.

Holding Times

GC/MS Tune/Inst.
 Performance

Calibrations

Blanks

Surrogates

Matrix Spike/Dup LCS

Field QC

Internal Standard

Performance

Compound Identification
 and Quantitation

System Performance

COMMENTS^b

* 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

ANALYSIS: GENERAL MINERALS

SAMPLE DELIVERY GROUP: IOB0997, IOB1001, & IOB1008

Prepared by

AMEC—Denver Operations
550 South Wadsworth Boulevard, Suite 500
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title: NPDES Monitoring
Contract Task Order #: 313150010
Sample Delivery Group #: IOB0997, IOB1001, IOB1008
Project Manager: B. McIlvaine
Matrix: Water
Analysis: General Minerals
QC Level: Level IV
No. of Samples: 3
Reviewer: L. Jarusewic
Date of Review: March 24, 2005

The sample listed in Table 1 was validated based on the guidelines outlined in the AMEC *Data Validation Procedures SOP DVP-6, Rev. 2, USEPA Methods for Chemical Analysis of Water and Wastes Method 300.0, 350.2, 405.1, 335.2, 413.1, 425.1, 218.6, 120.1, 160.2, 160.5, 180.1, and 160.1, Standard Methods for the Examination of Water and Wastewater Method SM2540C*, 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 I as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

Table 1. Sample identification

Client ID	EPA ID	Laboratory ID	Matrix	COC Method
Outfall 008	Outfall 008	IOB0997-01	Water	General Minerals
Outfall 010	Outfall 010	IOB1001-01	Water	General Minerals
Outfall 018	Outfall 018	IOB1008-01	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 samples in these SDGs were received at the laboratory within the temperature limits of $4^{\circ}\text{C} \pm 2^{\circ}\text{C}$. No preservation problems were noted by the laboratory. No qualifications were required.

2.1.2 Chain of Custody

The COCs were signed and dated by field and laboratory personnel. The COCs accounted for all analyses present in these SDGs. A memo from MWH personnel dated 02/17/05 requested a change of analysis for sample Outfall 018 from annual to routine constituent analysis. No sample qualifications were required.

2.1.3 Holding Times

The holding times were assessed by comparing the date of collection with the dates of analyses. The 28-day analytical holding time for ammonia, chloride, sulfate, conductivity, and oil and grease, the 14-day analytical holding time for cyanide, the seven-day holding time for total suspended solids and total dissolved solids, the 48-hour holding time for surfactants, turbidity, nitrate/nitrite, biological oxygen demand, and total settleable solids were met. No qualifications were required.

2.2 CALIBRATION

For the applicable analyses, the initial calibration correlation coefficients were ≥ 0.995 . Initial and continuing calibration information was acceptable with %Rs within the control limits of 90-110% for all analytes. For ammonia, no information regarding the standardization of the titrant was provided; however, as the LCS recovery was within the CCV control limits, no qualifications were required. For BOD, no information regarding the calibration of the oxygen meter was provided; however, as the LCS recovery was within the CCV control limits, no qualifications were required. Calibration is not applicable to total settleable solids. No qualifications were required.

The total cyanide reporting limit check standards were recovered above the control limits of 70-130% at 137.9% and 155.9%; however, as cyanide was not detected in any of the samples, no qualifications were required.

2.3 BLANKS

Turbidity was detected in the associated method blank for Outfall 018 at 0.040 NTU; however, the result was insufficient to qualify the Outfall 018 result. The remaining method blank and CCB results

reported on the summary forms and in the raw data for blank analyses associated with the samples were nondetects at the reporting limit. No qualifications were required.

2.4 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

The laboratory control sample and laboratory control sample duplicate (BOD and oil and grease only) recoveries and RPDs were within the laboratory-established control limits. The LCS is not applicable to turbidity, conductivity, or total settleable solids. No qualifications were required.

2.5 SURROGATES RECOVERY

Surrogate recovery is not applicable to the analyses presented in these SDGs.

2.6 LABORATORY DUPLICATES

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

2.7 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

No MS/MSD analyses were performed in association with the samples in these SDGs; therefore, no assessment was made with respect to this criterion.

2.8 FURNACE ATOMIC ABSORPTION QC

Furnace atomic absorption was not utilized for the analyses of these samples; therefore, furnace atomic absorption QC is not applicable.

2.9 ICP SERIAL DILUTION

ICP serial dilution is not applicable to the analyses presented in this data validation report.

2.10 SAMPLE RESULT VERIFICATION

A Level IV review was performed for the samples in these data packages. Calculations were verified, and the sample results reported on the Form Is were verified against the raw data. No transcription errors or calculation errors were noted. Surfactant detected below the reporting limit in Outfall 018 was qualified as estimated, "J." No further qualifications were required.

2.11 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. The following are findings associated with field QC samples:

2.11.1 Field Blanks and Equipment Rinsates

The samples in these SDGs had no associated field QC samples. No qualifications were required.

2.11.2 Field Duplicates

There were no field duplicate pairs associated with these SDGs.



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 2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

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

Project ID: Routine Outfall 018

Report Number: IOB1008

Sampled: 02/11/05
 Received: 02/11/05

DRAFT: INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOB1008-01 (DRAFT: Outfall 018 - Water) - cont.									
Reporting Units: mg/l									
Ammonia-N (Distilled)	EPA 350.2	5B15110	0.30	0.50	ND	1	02/15/05	02/15/05	U
Biochemical Oxygen Demand	EPA 405.1	5B11108	0.59	2.0	2.8	1	02/11/05	02/16/05	
Chloride	EPA 300.0	5B11120	0.26	0.50	6.2	1	02/11/05	02/12/05	
Total Cyanide	EPA 335.2	5B12048	0.0022	0.0050	ND	1	02/12/05	02/12/05	U
Nitrate/Nitrite-N	EPA 300.0	5B11120	0.075	0.26	0.29	1	02/11/05	02/12/05	
Oil & Grease	EPA 413.1	5B14044	0.94	5.0	ND	1	02/14/05	02/14/05	U
Sulfate	EPA 300.0	5B11120	0.18	0.50	20	1	02/11/05	02/12/05	
Surfactants (MBAS)	EPA 425.1	5B12050	0.088	0.20	0.088	2	02/12/05	02/12/05	J RL- JDNQ
Total Dissolved Solids	EPA 160.1	5B16119	10	10	110	1	02/16/05	02/16/05	
Total Suspended Solids	EPA 160.2	5B17069	10	10	230	1	02/17/05	02/17/05	
Sample ID: IOB1008-01 (DRAFT: Outfall 018 - Water)									
Reporting Units: ml/hr									
Total Settleable Solids	EPA 160.5	5B11129	0.10	0.10	ND	1	02/11/05	02/11/05	U
Sample ID: IOB1008-01 (DRAFT: Outfall 018 - Water)									
Reporting Units: NTU									
Turbidity	EPA 180.1	5B12055	0.20	5.0	100	5	02/12/05	02/12/05	
Sample ID: IOB1008-01 (DRAFT: Outfall 018 - Water)									
Reporting Units: ug/l									
Perchlorate	EPA 314.0	5B16069	0.80	4.0	ND	1	02/16/05	02/17/05	*
Sample ID: IOB1008-01 (DRAFT: Outfall 018 - Water)									
Reporting Units: umbos/cm									
Specific Conductance	EPA 120.1	5B16120	1.0	1.0	140	1	02/16/05	02/16/05	

AMEC VALIDATED

LEVEL IV

*Analysis Not Validated

DRAFT REPORT
 DRAFT REPORT
 DATA SUBJECT TO CHANGE

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CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

AMEC Earth & Environmental
 550 South Wadsworth Boulevard
 Suite 500
 Lakewood, CO 80226

Package ID T711WC87
 Task Order 313150010
 SDG No. IOB1008

No. of Analyses 1

Laboratory Del Mar Analytical

Date: 03/25/05

Reviewer L. Jarusewic

Reviewer's Signature

Analysis/Method Perchlorate

L. Jarusewic

ACTION ITEMS^a

- | | |
|----|---|
| 1. | Case Narrative Deficiencies |
| 2. | Out of Scope Analyses |
| 3. | Analyses Not Conducted |
| 4. | Missing Hardcopy Deliverables |
| 5. | Incorrect Hardcopy Deliverables |
| 6. | Deviations from Analysis Protocol, e.g.,

Holding Times
GC/MS Tune/Inst. Performance
Calibrations
Blanks
Surrogates
Matrix Spike/Dup LCS
Field QC
Internal Standard Performance
Compound Identification and Quantitation
System Performance |

COMMENTS^b	Acceptable as reviewed.
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^a 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

ANALYSIS: PERCHLORATE

SAMPLE DELIVERY GROUP: IOB1008

Prepared by

AMEC—Denver Operations
550 South Wadsworth Boulevard, Suite 500
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title: NPDES Monitoring
Contract Task Order #: 313150010
Sample Delivery Group #: IOB1008
Project Manager: B. McIlvaine
Matrix: Water
Analysis: Perchlorate
QC Level: Level IV
No. of Samples: 1
Reviewer: L. Jarusewic
Date of Review: March 25, 2005

The sample listed in Table 1 was validated based on the guidelines outlined in the AMEC *Data Validation Procedures SOP DVP-6, Rev. 2, USEPA Methods for Chemical Analysis of Water and Wastes Method 314.0, and 120.1*, 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 I as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

Table 1. Sample identification

Client ID	EPA ID	Laboratory ID	Matrix	COC Method
Outfall 018	Outfall 018	IOB1008-01	Water	Perchlorate

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

Following are findings associated with sample management:

2.1.1 Sample Preservation, Handling, and Transport

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

2.1.3 Holding Times

The holding time was assessed by comparing the date of collection with the date of analysis. The 28-day analytical holding time for perchlorate was met, and no qualifications were required.

2.2 CALIBRATION

The initial calibration correlation coefficient was ≥ 0.995 . The IPC-MA recovery was within the control limits of 80-120%. The ICV, CCV and IPC recoveries were within the control limits of 90-110%. No qualifications were required.

2.3 BLANKS

The method blank and CCB results reported on the summary forms and in the raw data for blank analyses associated with the sample were nondetects at the reporting limit. No qualifications were required.

2.4 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

The laboratory control sample recovery was within the method control limits of 85-115%. No qualifications were required.

2.5 SURROGATES RECOVERY

Surrogate recovery is not applicable to the analysis presented in this SDG.

2.6 LABORATORY DUPLICATES

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

2.7 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

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

2.8 FURNACE ATOMIC ABSORPTION QC

Furnace atomic absorption was not utilized for the analysis of this sample; therefore, furnace atomic absorption QC is not applicable.

2.9 ICP SERIAL DILUTION

ICP serial dilution is not applicable to the analysis presented in this data validation report.

2.10 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 was verified against the raw data. No transcription errors or calculation errors were noted. No qualifications were required.

2.11 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. The following are findings associated with field QC samples:

2.11.1 Field Blanks and Equipment Rinsates

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

2.11.2 Field Duplicates

There were no field duplicate pairs associated with this SDG.



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 2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

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

Project ID: Routine Outfall 018

Report Number: IOB1008

Sampled: 02/11/05
 Received: 02/11/05

DRAFT: INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
									REV QUAL
									QUAL CODE
Sample ID: IOB1008-01 (DRAFT: Outfall 018 - Water) - cont.									
Reporting Units: mg/l									
Ammonia-N (Distilled)	EPA 350.2	5B15110	0.30	0.50	ND	1	02/15/05	02/15/05	*
Biochemical Oxygen Demand	EPA 405.1	5B11108	0.59	2.0	2.8	1	02/11/05	02/16/05	
Chloride	EPA 300.0	5B11120	0.26	0.50	6.2	1	02/11/05	02/12/05	
Total Cyanide	EPA 335.2	5B12048	0.0022	0.0050	ND	1	02/12/05	02/12/05	
Nitrate/Nitrite-N	EPA 300.0	5B11120	0.075	0.26	0.29	1	02/11/05	02/12/05	
Oil & Grease	EPA 413.1	5B14044	0.94	5.0	ND	1	02/14/05	02/14/05	
Sulfate	EPA 300.0	5B11120	0.18	0.50	20	1	02/11/05	02/12/05	
Surfactants (MBAS)	EPA 425.1	5B12050	0.088	0.20	0.088	2	02/12/05	02/12/05	
Total Dissolved Solids	EPA 160.1	5B16119	10	10	110	1	02/16/05	02/16/05	RL-1 J
Total Suspended Solids	EPA 160.2	5B17069	10	10	230	1	02/17/05	02/17/05	
Sample ID: IOB1008-01 (DRAFT: Outfall 018 - Water)									
Reporting Units: ml/hr									
Total Settleable Solids	EPA 160.5	5B11129	0.10	0.10	ND	1	02/11/05	02/11/05	
Sample ID: IOB1008-01 (DRAFT: Outfall 018 - Water)									
Reporting Units: NTU									
Turbidity	EPA 180.1	5B12055	0.20	5.0	100	5	02/12/05	02/12/05	
Sample ID: IOB1008-01 (DRAFT: Outfall 018 - Water)									
Reporting Units: ug/l									
Perchlorate	EPA 314.0	5B16069	0.80	4.0	ND	1	02/16/05	02/17/05	U
Sample ID: IOB1008-01 (DRAFT: Outfall 018 - Water)									
Reporting Units: umhos/cm									
Specific Conductance	EPA 120.1	5B16120	1.0	1.0	140	1	02/16/05	02/16/05	*

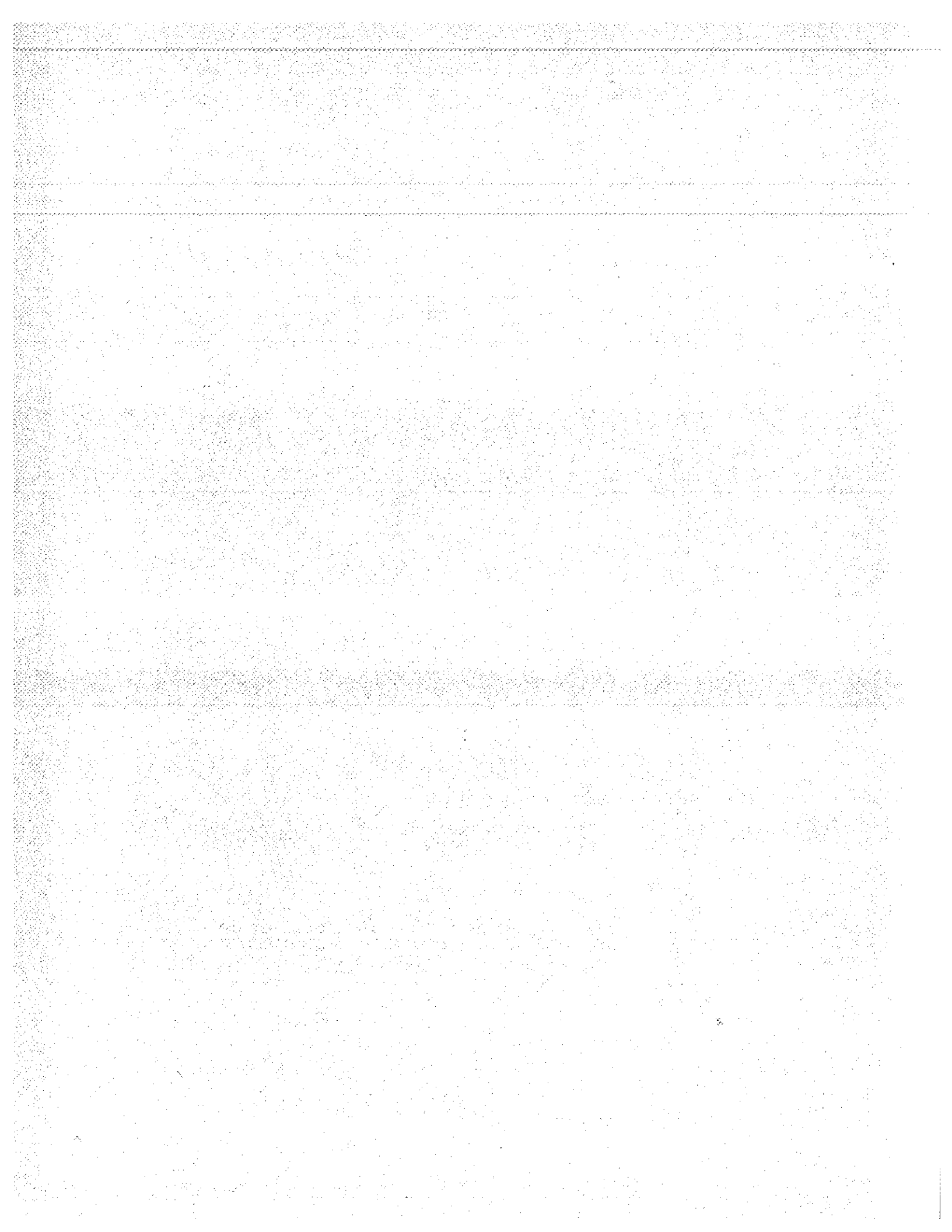
AMEC VALIDATED

LEVEL IV

*Analysis Not Validated

DRAFT REPORT
 DRAFT REPORT
 DATA SUBJECT TO CHANGE

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LABORATORY REPORT

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

Project: Routine Outfall 018

Sampled: 02/11/05
Received: 02/11/05
Issued: 04/02/05 13:51

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, 8 pages, are included and are an integral part of this report.
This entire report was reviewed and approved for release.*

SAMPLE CROSS REFERENCE

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

LABORATORY ID	CLIENT ID	MATRIX
IOB1008-01	Outfall 018	Water
IOB1008-02	Trip Blanks	Water

Reviewed By:

Del Mar Analytical, Irvine
Michele Harper
Project Manager



Del Mar Analytical

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

Project ID: Routine Outfall 018

Report Number: IOB1008

Sampled: 02/11/05
 Received: 02/11/05

PURGEABLES BY GC/MS (EPA 624)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOB1008-01 (Outfall 018 - Water)									
Reporting Units: ug/l									
Benzene	EPA 624	5B18019	0.28	2.0	ND	1	02/18/05	02/18/05	M1
Carbon tetrachloride	EPA 624	5B18019	0.28	5.0	ND	1	02/18/05	02/18/05	
Chloroform	EPA 624	5B18019	0.33	2.0	ND	1	02/18/05	02/18/05	
1,1-Dichloroethane	EPA 624	5B18019	0.27	2.0	ND	1	02/18/05	02/18/05	
1,2-Dichloroethane	EPA 624	5B18019	0.28	2.0	ND	1	02/18/05	02/18/05	
1,1-Dichloroethene	EPA 624	5B18019	0.32	3.0	ND	1	02/18/05	02/18/05	
Ethylbenzene	EPA 624	5B18019	0.25	2.0	ND	1	02/18/05	02/18/05	
Tetrachloroethene	EPA 624	5B18019	0.32	2.0	ND	1	02/18/05	02/18/05	
Toluene	EPA 624	5B18019	0.36	2.0	ND	1	02/18/05	02/18/05	
1,1,1-Trichloroethane	EPA 624	5B18019	0.30	2.0	ND	1	02/18/05	02/18/05	
1,1,2-Trichloroethane	EPA 624	5B18019	0.30	2.0	ND	1	02/18/05	02/18/05	
Trichloroethene	EPA 624	5B18019	0.26	5.0	ND	1	02/18/05	02/18/05	
Trichlorofluoromethane	EPA 624	5B18019	0.34	5.0	ND	1	02/18/05	02/18/05	
Vinyl chloride	EPA 624	5B18019	0.26	5.0	ND	1	02/18/05	02/18/05	M1
Xylenes, Total	EPA 624	5B18019	0.52	4.0	ND	1	02/18/05	02/18/05	
Surrogate: Dibromofluoromethane (80-120%)					111 %				
Surrogate: Toluene-d8 (80-120%)					102 %				
Surrogate: 4-Bromofluorobenzene (80-120%)					96 %				

Sample ID: IOB1008-02 (Trip Blanks - Water)

Reporting Units: ug/l

Benzene	EPA 624	5B17014	0.28	2.0	ND	1	02/17/05	02/17/05	
Carbon tetrachloride	EPA 624	5B17014	0.28	5.0	ND	1	02/17/05	02/17/05	
Chloroform	EPA 624	5B17014	0.33	2.0	ND	1	02/17/05	02/17/05	
1,1-Dichloroethane	EPA 624	5B17014	0.27	2.0	ND	1	02/17/05	02/17/05	
1,2-Dichloroethane	EPA 624	5B17014	0.28	2.0	ND	1	02/17/05	02/17/05	
1,1-Dichloroethene	EPA 624	5B17014	0.32	3.0	ND	1	02/17/05	02/17/05	
Ethylbenzene	EPA 624	5B17014	0.25	2.0	ND	1	02/17/05	02/17/05	
Tetrachloroethene	EPA 624	5B17014	0.32	2.0	ND	1	02/17/05	02/17/05	
Toluene	EPA 624	5B17014	0.36	2.0	ND	1	02/17/05	02/17/05	
1,1,1-Trichloroethane	EPA 624	5B17014	0.30	2.0	ND	1	02/17/05	02/17/05	
1,1,2-Trichloroethane	EPA 624	5B17014	0.30	2.0	ND	1	02/17/05	02/17/05	
Trichloroethene	EPA 624	5B17014	0.26	5.0	ND	1	02/17/05	02/17/05	
Trichlorofluoromethane	EPA 624	5B17014	0.34	5.0	ND	1	02/17/05	02/17/05	
Vinyl chloride	EPA 624	5B17014	0.26	5.0	ND	1	02/17/05	02/17/05	
Xylenes, Total	EPA 624	5B17014	0.52	4.0	ND	1	02/17/05	02/17/05	
Surrogate: Dibromofluoromethane (80-120%)					108 %				
Surrogate: Toluene-d8 (80-120%)					101 %				
Surrogate: 4-Bromofluorobenzene (80-120%)					97 %				

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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: IOB1008

Sampled: 02/11/05
 Received: 02/11/05

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

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOB1008-01 (Outfall 018 - Water)									
Reporting Units: ug/l									
Bis(2-ethylhexyl)phthalate	EPA 625	5B14010	1.1	5.0	ND	0.957	02/14/05	02/18/05	
2,4-Dinitrotoluene	EPA 625	5B14010	0.23	9.0	ND	0.957	02/14/05	02/18/05	
N-Nitrosodimethylamine	EPA 625	5B14010	0.22	8.0	ND	0.957	02/14/05	02/18/05	C
Pentachlorophenol	EPA 625	5B14010	0.78	8.0	ND	0.957	02/14/05	02/18/05	
2,4,6-Trichlorophenol	EPA 625	5B14010	0.10	6.0	ND	0.957	02/14/05	02/18/05	
Surrogate: 2-Fluorophenol (35-120%)									73 %
Surrogate: Phenol-d6 (45-120%)									76 %
Surrogate: 2,4,6-Tribromophenol (50-125%)									85 %
Surrogate: Nitrobenzene-d5 (45-120%)									75 %
Surrogate: 2-Fluorobiphenyl (45-120%)									77 %
Surrogate: Terphenyl-d14 (45-135%)									73 %

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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: IOB1008	Sampled: 02/11/05 Received: 02/11/05
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ORGANOCHLORINE PESTICIDES (EPA 608)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOB1008-01 (Outfall 018 - Water) - cont.									
Reporting Units: ug/l									
alpha-BHC	EPA 608	5B13028	0.0010	0.010	ND	0.99	02/13/05	02/14/05	
Surrogate: Decachlorobiphenyl (45-120%)					62 %				
Surrogate: Tetrachloro-m-xylene (35-120%)					50 %				

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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: IOB1008	Sampled: 02/11/05 Received: 02/11/05
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METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOB1008-01 (Outfall 018 - Water) - cont.									
Reporting Units: ug/l									
Copper	EPA 200.8	5B12041	0.49	2.0	8.9	1	02/12/05	02/14/05	
Lead	EPA 200.8	5B12041	0.13	1.0	6.0	1	02/12/05	02/14/05	
Mercury	EPA 245.1	5B12033	0.063	0.20	0.15	1	02/12/05	02/12/05	J

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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: IOB1008	Sampled: 02/11/05 Received: 02/11/05
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INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOB1008-01 (Outfall 018 - Water) - cont.									
Reporting Units: mg/l									
Ammonia-N (Distilled)	EPA 350.2	5B15110	0.30	0.50	ND	1	02/15/05	02/15/05	
Biochemical Oxygen Demand	EPA 405.1	5B11108	0.59	2.0	2.8	1	02/11/05	02/16/05	
Chloride	EPA 300.0	5B11120	0.26	0.50	6.2	1	02/11/05	02/12/05	
Nitrate/Nitrite-N	EPA 300.0	5B11120	0.075	0.26	0.29	1	02/11/05	02/12/05	
Oil & Grease	EPA 413.1	5B14044	0.94	5.0	ND	1	02/14/05	02/14/05	
Sulfate	EPA 300.0	5B11120	0.18	0.50	20	1	02/11/05	02/12/05	
Surfactants (MBAS)	EPA 425.1	5B12050	0.088	0.20	0.088	2	02/12/05	02/12/05	RL-1, J
Total Dissolved Solids	EPA 160.1	5B16119	10	10	110	1	02/16/05	02/16/05	
Total Suspended Solids	EPA 160.2	5B17069	10	10	230	1	02/17/05	02/17/05	
Sample ID: IOB1008-01 (Outfall 018 - Water)									
Reporting Units: ml/l/hr									
Total Settleable Solids	EPA 160.5	5B11129	0.10	0.10	ND	1	02/11/05	02/11/05	
Sample ID: IOB1008-01 (Outfall 018 - Water)									
Reporting Units: NTU									
Turbidity	EPA 180.1	5B12055	0.20	5.0	100	5	02/12/05	02/12/05	
Sample ID: IOB1008-01 (Outfall 018 - Water)									
Reporting Units: ug/l									
Total Cyanide	EPA 335.2	5B12048	2.2	5.0	ND	1	02/12/05	02/12/05	
Perchlorate	EPA 314.0	5B16069	0.80	4.0	ND	1	02/16/05	02/17/05	
Sample ID: IOB1008-01 (Outfall 018 - Water)									
Reporting Units: umhos/cm									
Specific Conductance	EPA 120.1	5B16120	1.0	1.0	140	1	02/16/05	02/16/05	

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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: IOB1008

Sampled: 02/11/05
 Received: 02/11/05

SHORT HOLD TIME DETAIL REPORT

Sample ID: Outfall 018 (IOB1008-01) - Water	Hold Time (in days)	Date/Time Sampled	Date/Time Received	Date/Time Extracted	Date/Time Analyzed
EPA 160.5	2	02/11/2005 13:32	02/11/2005 20:30	02/11/2005 22:30	02/11/2005 23:00
EPA 180.1	2	02/11/2005 13:32	02/11/2005 20:30	02/12/2005 12:00	02/12/2005 13:00
EPA 300.0	2	02/11/2005 13:32	02/11/2005 20:30	02/11/2005 23:00	02/12/2005 06:49
EPA 405.1	2	02/11/2005 13:32	02/11/2005 20:30	02/11/2005 23:50	02/16/2005 13:30
EPA 425.1	2	02/11/2005 13:32	02/11/2005 20:30	02/12/2005 13:09	02/12/2005 17:41

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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: IOB1008	Sampled: 02/11/05 Received: 02/11/05
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METHOD BLANK/QC DATA

PURGEABLES BY GC/MS (EPA 624)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC Limits	RPD RPD	Limit	Data Qualifiers
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Batch: 5B17014 Extracted: 02/17/05

Blank Analyzed: 02/17/2005 (5B17014-BLK1)

Benzene	ND	2.0	0.28	ug/l						
Trichlorotrifluoroethane (Freon 113)	ND	5.0	1.2	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	0.32	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	0.52	ug/l						
Surrogate: Dibromofluoromethane	26.4			ug/l	25.0		106	80-120		
Surrogate: Toluene-d8	25.1			ug/l	25.0		100	80-120		
Surrogate: 4-Bromofluorobenzene	24.2			ug/l	25.0		97	80-120		

LCS Analyzed: 02/17/2005 (5B17014-BS1)

Benzene	24.9	2.0	0.28	ug/l	25.0		100	70-120		
Carbon tetrachloride	26.2	5.0	0.28	ug/l	25.0		105	70-140		
Chloroform	26.2	2.0	0.33	ug/l	25.0		105	75-130		
1,1-Dichloroethane	25.5	2.0	0.27	ug/l	25.0		102	70-135		
1,2-Dichloroethane	25.9	2.0	0.28	ug/l	25.0		104	60-150		
1,1-Dichloroethene	24.6	3.0	0.32	ug/l	25.0		98	75-135		
Ethylbenzene	26.4	2.0	0.25	ug/l	25.0		106	80-120		
Tetrachloroethene	23.2	2.0	0.32	ug/l	25.0		93	75-125		
Toluene	24.6	2.0	0.36	ug/l	25.0		98	75-120		
1,1,1-Trichloroethane	27.1	2.0	0.30	ug/l	25.0		108	75-140		
1,1,2-Trichloroethane	24.9	2.0	0.30	ug/l	25.0		100	70-125		
Trichloroethene	23.4	5.0	0.26	ug/l	25.0		94	80-120		
Trichlorofluoromethane	28.0	5.0	0.34	ug/l	25.0		112	65-145		
Vinyl chloride	27.7	5.0	0.26	ug/l	25.0		111	50-130		
Surrogate: Dibromofluoromethane	26.4			ug/l	25.0		106	80-120		

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 Michele Harper
 Project Manager



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

Project ID: Routine Outfall 018

Report Number: IOB1008

Sampled: 02/11/05
 Received: 02/11/05

METHOD BLANK/QC DATA

PURGEABLES BY GC/MS (EPA 624)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5B17014 Extracted: 02/17/05										
LCS Analyzed: 02/17/2005 (5B17014-BS1)										
Surrogate: Toluene-d8	25.3			ug/l	25.0		101 80-120			
Surrogate: 4-Bromofluorobenzene	26.9			ug/l	25.0		108 80-120			
Matrix Spike Analyzed: 02/17/2005 (5B17014-MS1) Source: IOB1001-01										
Benzene	25.2	2.0	0.28	ug/l	25.0	ND	101 70-120			
Carbon tetrachloride	26.8	5.0	0.28	ug/l	25.0	ND	107 70-145			
Chloroform	26.9	2.0	0.33	ug/l	25.0	ND	108 70-135			
1,1-Dichloroethane	26.4	2.0	0.27	ug/l	25.0	ND	106 65-135			
1,2-Dichloroethane	27.2	2.0	0.28	ug/l	25.0	ND	109 60-150			
1,1-Dichloroethene	25.2	3.0	0.32	ug/l	25.0	ND	101 65-140			
Ethylbenzene	26.1	2.0	0.25	ug/l	25.0	ND	104 70-130			
Tetrachloroethene	22.7	2.0	0.32	ug/l	25.0	ND	91 70-130			
Toluene	25.2	2.0	0.36	ug/l	25.0	ND	101 70-120			
1,1,1-Trichloroethane	28.0	2.0	0.30	ug/l	25.0	ND	112 75-140			
1,1,2-Trichloroethane	25.1	2.0	0.30	ug/l	25.0	ND	100 60-135			
Trichloroethene	23.5	5.0	0.26	ug/l	25.0	ND	94 70-125			
Trichlorofluoromethane	28.7	5.0	0.34	ug/l	25.0	ND	115 55-145			
Vinyl chloride	26.3	5.0	0.26	ug/l	25.0	ND	105 40-135			
Surrogate: Dibromofluoromethane	27.5			ug/l	25.0		110 80-120			
Surrogate: Toluene-d8	25.7			ug/l	25.0		103 80-120			
Surrogate: 4-Bromofluorobenzene	26.5			ug/l	25.0		106 80-120			
Matrix Spike Dup Analyzed: 02/17/2005 (5B17014-MSD1) Source: IOB1001-01										
Benzene	25.1	2.0	0.28	ug/l	25.0	ND	100 70-120	0	20	
Carbon tetrachloride	26.5	5.0	0.28	ug/l	25.0	ND	106 70-145	1	25	
Chloroform	26.4	2.0	0.33	ug/l	25.0	ND	106 70-135	2	20	
1,1-Dichloroethane	26.1	2.0	0.27	ug/l	25.0	ND	104 65-135	1	20	
1,2-Dichloroethane	24.5	2.0	0.28	ug/l	25.0	ND	98 60-150	10	20	
1,1-Dichloroethene	24.9	3.0	0.32	ug/l	25.0	ND	100 65-140	1	20	
Ethylbenzene	27.0	2.0	0.25	ug/l	25.0	ND	108 70-130	3	20	
Tetrachloroethene	23.9	2.0	0.32	ug/l	25.0	ND	96 70-130	5	20	
Toluene	24.9	2.0	0.36	ug/l	25.0	ND	100 70-120	1	20	
1,1,1-Trichloroethane	27.8	2.0	0.30	ug/l	25.0	ND	111 75-140	1	20	
1,1,2-Trichloroethane	22.8	2.0	0.30	ug/l	25.0	ND	91 60-135	10	25	
Trichloroethene	23.5	5.0	0.26	ug/l	25.0	ND	94 70-125	0	20	
Trichlorofluoromethane	28.5	5.0	0.34	ug/l	25.0	ND	114 55-145	1	25	

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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: IOB1008	Sampled: 02/11/05 Received: 02/11/05
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METHOD BLANK/QC DATA

PURGEABLES BY GC/MS (EPA 624)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5B17014 Extracted: 02/17/05											
Matrix Spike Dup Analyzed: 02/17/2005 (5B17014-MSD1)						Source: IOB1001-01					
Vinyl chloride	30.0	5.0	0.26	ug/l	25.0	ND	120	40-135	13	30	
Surrogate: Dibromofluoromethane	26.5			ug/l	25.0		106	80-120			
Surrogate: Toluene-d8	25.2			ug/l	25.0		101	80-120			
Surrogate: 4-Bromofluorobenzene	26.4			ug/l	25.0		106	80-120			

Batch: 5B18019 Extracted: 02/18/05

Blank Analyzed: 02/18/2005 (5B18019-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	0.32	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	0.52	ug/l							
Surrogate: Dibromofluoromethane	27.4			ug/l	25.0		110	80-120			
Surrogate: Toluene-d8	25.6			ug/l	25.0		102	80-120			
Surrogate: 4-Bromofluorobenzene	24.4			ug/l	25.0		98	80-120			

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Michele Harper
Project Manager

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

Project ID: Routine Outfall 018

Report Number: IOB1008

Sampled: 02/11/05
Received: 02/11/05

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

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5B18019 Extracted: 02/18/05											
LCS Analyzed: 02/18/2005 (5B18019-BS1)											
Benzene	26.4	2.0	0.28	ug/l	25.0		106	70-120			
Carbon tetrachloride	27.9	5.0	0.28	ug/l	25.0		112	70-140			
Chloroform	28.4	2.0	0.33	ug/l	25.0		114	75-130			
1,1-Dichloroethane	28.0	2.0	0.27	ug/l	25.0		112	70-135			
1,2-Dichloroethane	29.7	2.0	0.28	ug/l	25.0		119	60-150			
1,1-Dichloroethene	27.4	3.0	0.32	ug/l	25.0		110	75-135			
Ethylbenzene	27.3	2.0	0.25	ug/l	25.0		109	80-120			
Tetrachloroethene	23.4	2.0	0.32	ug/l	25.0		94	75-125			
Toluene	26.2	2.0	0.36	ug/l	25.0		105	75-120			
1,1,1-Trichloroethane	29.0	2.0	0.30	ug/l	25.0		116	75-140			
1,1,2-Trichloroethane	29.4	2.0	0.30	ug/l	25.0		118	70-125			
Trichloroethene	24.6	5.0	0.26	ug/l	25.0		98	80-120			
Trichlorofluoromethane	30.3	5.0	0.34	ug/l	25.0		121	65-145			
Vinyl chloride	27.1	5.0	0.26	ug/l	25.0		108	50-130			
Surrogate: Dibromofluoromethane	28.0			ug/l	25.0		112	80-120			
Surrogate: Toluene-d8	25.5			ug/l	25.0		102	80-120			
Surrogate: 4-Bromofluorobenzene	27.5			ug/l	25.0		110	80-120			

Matrix Spike Analyzed: 02/18/2005 (5B18019-MS1)
Source: IOB1008-01

Benzene	27.9	2.0	0.28	ug/l	25.0	ND	112	70-120			
Carbon tetrachloride	29.6	5.0	0.28	ug/l	25.0	ND	118	70-145			
Chloroform	30.6	2.0	0.33	ug/l	25.0	ND	122	70-135			
1,1-Dichloroethane	30.2	2.0	0.27	ug/l	25.0	ND	121	65-135			
1,2-Dichloroethane	31.0	2.0	0.28	ug/l	25.0	ND	124	60-150			
1,1-Dichloroethene	29.2	3.0	0.32	ug/l	25.0	ND	117	65-140			
Ethylbenzene	29.0	2.0	0.25	ug/l	25.0	ND	116	70-130			
Tetrachloroethene	25.4	2.0	0.32	ug/l	25.0	ND	102	70-130			
Toluene	27.7	2.0	0.36	ug/l	25.0	ND	111	70-120			
1,1,1-Trichloroethane	31.6	2.0	0.30	ug/l	25.0	ND	126	75-140			
1,1,2-Trichloroethane	29.5	2.0	0.30	ug/l	25.0	ND	118	60-135			
Trichloroethene	26.2	5.0	0.26	ug/l	25.0	ND	105	70-125			
Trichlorofluoromethane	32.8	5.0	0.34	ug/l	25.0	ND	131	55-145			
Vinyl chloride	29.6	5.0	0.26	ug/l	25.0	ND	118	40-135			
Surrogate: Dibromofluoromethane	28.5			ug/l	25.0		114	80-120			
Surrogate: Toluene-d8	25.2			ug/l	25.0		101	80-120			
Surrogate: 4-Bromofluorobenzene	27.1			ug/l	25.0		108	80-120			

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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: IOB1008

Sampled: 02/11/05
 Received: 02/11/05

METHOD BLANK/QC DATA

PURGEABLES BY GC/MS (EPA 624)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5B18019 Extracted: 02/18/05											
Matrix Spike Dup Analyzed: 02/18/2005 (5B18019-MSD1)						Source: IOB1008-01					
Benzene	30.6	2.0	0.28	ug/l	25.0	ND	122	70-120	9	20	MI
Carbon tetrachloride	32.2	5.0	0.28	ug/l	25.0	ND	129	70-145	8	25	
Chloroform	32.7	2.0	0.33	ug/l	25.0	ND	131	70-135	7	20	
1,1-Dichloroethane	32.5	2.0	0.27	ug/l	25.0	ND	130	65-135	7	20	
1,2-Dichloroethane	32.5	2.0	0.28	ug/l	25.0	ND	130	60-150	5	20	
1,1-Dichloroethene	31.4	3.0	0.32	ug/l	25.0	ND	126	65-140	7	20	
Ethylbenzene	31.4	2.0	0.25	ug/l	25.0	ND	126	70-130	8	20	
Tetrachloroethene	28.4	2.0	0.32	ug/l	25.0	ND	114	70-130	11	20	
Toluene	30.0	2.0	0.36	ug/l	25.0	ND	120	70-120	8	20	
1,1,1-Trichloroethane	33.7	2.0	0.30	ug/l	25.0	ND	135	75-140	6	20	
1,1,2-Trichloroethane	31.4	2.0	0.30	ug/l	25.0	ND	126	60-135	6	25	
Trichloroethene	28.4	5.0	0.26	ug/l	25.0	ND	114	70-125	8	20	
Trichlorofluoromethane	34.5	5.0	0.34	ug/l	25.0	ND	138	55-145	5	25	
Vinyl chloride	35.0	5.0	0.26	ug/l	25.0	ND	140	40-135	17	30	MI
Surrogate: Dibromofluoromethane	27.3			ug/l	25.0		109	80-120			
Surrogate: Toluene-d8	25.2			ug/l	25.0		101	80-120			
Surrogate: 4-Bromofluorobenzene	25.9			ug/l	25.0		104	80-120			

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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: IOB1008	Sampled: 02/11/05 Received: 02/11/05
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METHOD BLANK/QC DATA

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

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	RPD RPD	RPD Limit	Data Qualifiers
Batch: 5B14010 Extracted: 02/14/05										
Blank Analyzed: 02/18/2005 (5B14010-BLK1)										
Bis(2-ethylhexyl)phthalate	ND	5.0	1.1	ug/l						
2,4-Dinitrotoluene	ND	9.0	0.23	ug/l						
N-Nitrosodimethylamine	ND	8.0	0.22	ug/l						
Pentachlorophenol	ND	8.0	0.78	ug/l						
2,4,6-Trichlorophenol	ND	6.0	0.10	ug/l						
Surrogate: 2-Fluorophenol	15.9			ug/l	20.0		80		35-120	
Surrogate: Phenol-d6	15.5			ug/l	20.0		78		45-120	
Surrogate: 2,4,6-Tribromophenol	14.0			ug/l	20.0		70		50-125	
Surrogate: Nitrobenzene-d5	7.44			ug/l	10.0		74		45-120	
Surrogate: 2-Fluorobiphenyl	7.50			ug/l	10.0		75		45-120	
Surrogate: Terphenyl-d14	8.10			ug/l	10.0		81		45-135	
LCS Analyzed: 02/18/2005 (5B14010-BS1)										
Bis(2-ethylhexyl)phthalate	7.70	5.0	1.1	ug/l	10.0	77	65-125			M-NRI
2,4-Dinitrotoluene	6.68	9.0	0.23	ug/l	10.0	67	60-140			J
N-Nitrosodimethylamine	5.44	8.0	0.22	ug/l	10.0	54	40-120			J
Pentachlorophenol	7.14	8.0	0.78	ug/l	10.0	71	50-125			J
2,4,6-Trichlorophenol	7.90	6.0	0.10	ug/l	10.0	79	60-120			
Surrogate: 2-Fluorophenol	13.9			ug/l	20.0	70	35-120			
Surrogate: Phenol-d6	14.3			ug/l	20.0	72	45-120			
Surrogate: 2,4,6-Tribromophenol	14.7			ug/l	20.0	74	50-125			
Surrogate: Nitrobenzene-d5	7.24			ug/l	10.0	72	45-120			
Surrogate: 2-Fluorobiphenyl	7.38			ug/l	10.0	74	45-120			
Surrogate: Terphenyl-d14	6.90			ug/l	10.0	69	45-135			
LCS Dup Analyzed: 02/18/2005 (5B14010-BSD1)										
Bis(2-ethylhexyl)phthalate	7.78	5.0	1.1	ug/l	10.0	78	65-125	1	20	
2,4-Dinitrotoluene	7.20	9.0	0.23	ug/l	10.0	72	60-140	7	20	J
N-Nitrosodimethylamine	8.36	8.0	0.22	ug/l	10.0	84	40-120	42	20	R-7
Pentachlorophenol	7.76	8.0	0.78	ug/l	10.0	78	50-125	8	25	J
2,4,6-Trichlorophenol	8.22	6.0	0.10	ug/l	10.0	82	60-120	4	20	
Surrogate: 2-Fluorophenol	14.0			ug/l	20.0	70	35-120			
Surrogate: Phenol-d6	15.1			ug/l	20.0	76	45-120			
Surrogate: 2,4,6-Tribromophenol	15.1			ug/l	20.0	76	50-125			
Surrogate: Nitrobenzene-d5	7.54			ug/l	10.0	75	45-120			
Surrogate: 2-Fluorobiphenyl	7.30			ug/l	10.0	73	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: IOB1008	Sampled: 02/11/05 Received: 02/11/05
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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: 5B14010 Extracted: 02/14/05											
LCS Dup Analyzed: 02/18/2005 (5B14010-BSD1)											
Surrogate: Terphenyl-d14	7.24			ug/l	10.0		72	45-135			

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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: IOB1008	Sampled: 02/11/05 Received: 02/11/05
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METHOD BLANK/QC DATA

ORGANOCHLORINE PESTICIDES (EPA 608)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5B13028 Extracted: 02/13/05										
Blank Analyzed: 02/14/2005 (5B13028-BLK1)										
alpha-BHC	ND	0.010	0.0010	ug/l						
Surrogate: Decachlorobiphenyl	0.423			ug/l	0.500		85 45-120			
Surrogate: Tetrachloro-m-xylene	0.341			ug/l	0.500		68 35-120			
LCS Analyzed: 02/14/2005 (5B13028-BS1)										
alpha-BHC	0.378	0.010	0.0010	ug/l	0.500		76 45-115			M-NR1
Surrogate: Decachlorobiphenyl	0.377			ug/l	0.500		75 45-120			
Surrogate: Tetrachloro-m-xylene	0.314			ug/l	0.500		63 35-120			
LCS Dup Analyzed: 02/14/2005 (5B13028-BSD1)										
alpha-BHC	0.427	0.010	0.0010	ug/l	0.500		85 45-115	12	30	
Surrogate: Decachlorobiphenyl	0.428			ug/l	0.500		86 45-120			
Surrogate: Tetrachloro-m-xylene	0.315			ug/l	0.500		63 35-120			

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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: IOB1008	Sampled: 02/11/05 Received: 02/11/05
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METHOD BLANK/QC DATA

METALS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	RPD Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5B12033 Extracted: 02/12/05											
Blank Analyzed: 02/12/2005 (5B12033-BLK1)											
Mercury	ND	0.20	0.063	ug/l							
LCS Analyzed: 02/12/2005 (5B12033-BS1)											
Mercury	7.92	0.20	0.063	ug/l	8.00		99	85-115			
Matrix Spike Analyzed: 02/12/2005 (5B12033-MS1)											
						Source: IOB0983-01					
Mercury	8.00	0.20	0.063	ug/l	8.00	ND	100	70-130			
Matrix Spike Dup Analyzed: 02/12/2005 (5B12033-MSD1)											
						Source: IOB0983-01					
Mercury	7.77	0.20	0.063	ug/l	8.00	ND	97	70-130	3	20	
Batch: 5B12041 Extracted: 02/12/05											
Blank Analyzed: 02/14/2005 (5B12041-BLK1)											
Copper	ND	2.0	0.49	ug/l							
Lead	ND	1.0	0.13	ug/l							
LCS Analyzed: 02/14/2005 (5B12041-BS1)											
Copper	81.5	2.0	0.49	ug/l	80.0		102	85-115			
Lead	83.2	1.0	0.13	ug/l	80.0		104	85-115			
Matrix Spike Analyzed: 02/14/2005 (5B12041-MS1)											
						Source: IOB0878-01					
Copper	81.6	2.0	0.49	ug/l	80.0	ND	102	70-130			
Lead	85.4	1.0	0.13	ug/l	80.0	ND	107	70-130			
Matrix Spike Analyzed: 02/14/2005 (5B12041-MS2)											
						Source: IOB0573-02					
Copper	90.6	2.0	0.49	ug/l	80.0	14	96	70-130			
Lead	81.3	1.0	0.13	ug/l	80.0	0.28	101	70-130			

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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: IOB1008

Sampled: 02/11/05
 Received: 02/11/05

METHOD BLANK/QC DATA

METALS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	RPD Limits	RPD RPD	RPD Limit	Data Qualifiers
Batch: 5B12041 Extracted: 02/12/05											
Matrix Spike Dup Analyzed: 02/14/2005 (5B12041-MSD1)						Source: IOB0878-01					
Copper	79.9	2.0	0.49	ug/l	80.0	ND	100	70-130	2	20	
Lead	83.8	1.0	0.13	ug/l	80.0	ND	105	70-130	2	20	

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 300 North Lake Avenue, Suite 1200
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 Attention: Bronwyn Kelly

Project ID: Routine Outfall 018

Report Number: IOB1008

Sampled: 02/11/05
 Received: 02/11/05

METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	RPD Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5B11108 Extracted: 02/11/05											
Blank Analyzed: 02/16/2005 (5B11108-BLK1)											
Biochemical Oxygen Demand	ND	2.0	0.59	mg/l							
LCS Analyzed: 02/16/2005 (5B11108-BS1)											
Biochemical Oxygen Demand	206	100	30	mg/l	198		104	85-115			
LCS Dup Analyzed: 02/16/2005 (5B11108-BSD1)											
Biochemical Oxygen Demand	204	100	30	mg/l	198		103	85-115	1	20	
Batch: 5B11120 Extracted: 02/11/05											
Blank Analyzed: 02/11/2005 (5B11120-BLK1)											
Chloride	ND	0.50	0.26	mg/l							
Nitrate/Nitrite-N	ND	0.26	0.072	mg/l							
Sulfate	ND	0.50	0.18	mg/l							
LCS Analyzed: 02/11/2005 (5B11120-BS1)											
Chloride	4.84	0.50	0.26	mg/l	5.00		97	90-110			
Sulfate	10.0	0.50	0.18	mg/l	10.0		100	90-110			
Matrix Spike Analyzed: 02/12/2005 (5B11120-MS1) Source: IOB0980-01											
Chloride	15.6	0.50	0.26	mg/l	5.00	11	92	80-120			
Sulfate	38.7	0.50	0.18	mg/l	10.0	29	97	80-120			
Matrix Spike Dup Analyzed: 02/12/2005 (5B11120-MSD1) Source: IOB0980-01											
Chloride	15.8	0.50	0.26	mg/l	5.00	11	96	80-120	1	20	
Sulfate	39.3	0.50	0.18	mg/l	10.0	29	103	80-120	2	20	

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 Michele Harper
 Project Manager



Del Mar Analytical

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 2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

MWH-Pasadena/Boeing 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Attention: Bronwyn Kelly	Project ID: Routine Outfall 018 Report Number: IOB1008	Sampled: 02/11/05 Received: 02/11/05
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METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	Limit	RPD	RPD Limit	Data Qualifiers
Batch: 5B12048 Extracted: 02/12/05											
Blank Analyzed: 02/12/2005 (5B12048-BLK1)											
Total Cyanide	ND	5.0	2.2	ug/l							
LCS Analyzed: 02/12/2005 (5B12048-BS1)											
Total Cyanide	192	5.0	2.2	ug/l	200		96	90-110			
Matrix Spike Analyzed: 02/12/2005 (5B12048-MS1)											
						Source: IOB0928-01					
Total Cyanide	162	5.0	2.2	ug/l	200	ND	81	70-115			
Matrix Spike Dup Analyzed: 02/12/2005 (5B12048-MSD1)											
						Source: IOB0928-01					
Total Cyanide	147	5.0	2.2	ug/l	200	ND	74	70-115	10	15	
Batch: 5B12050 Extracted: 02/12/05											
Blank Analyzed: 02/12/2005 (5B12050-BLK1)											
Surfactants (MBAS)	ND	0.10	0.044	mg/l							
LCS Analyzed: 02/12/2005 (5B12050-BS1)											
Surfactants (MBAS)	0.247	0.10	0.044	mg/l	0.250		99	90-110			
Matrix Spike Analyzed: 02/12/2005 (5B12050-MS1)											
						Source: IOB1021-01					
Surfactants (MBAS)	0.315	0.10	0.044	mg/l	0.250	0.084	92	50-125			
Matrix Spike Dup Analyzed: 02/12/2005 (5B12050-MSD1)											
						Source: IOB1021-01					
Surfactants (MBAS)	0.284	0.10	0.044	mg/l	0.250	0.084	80	50-125	10	20	
Batch: 5B12055 Extracted: 02/12/05											
Blank Analyzed: 02/12/2005 (5B12055-BLK1)											
Turbidity	0.0400	1.0	0.040	NTU							J

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 2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

MWH-Pasadena/Boeing 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Attention: Bronwyn Kelly	Project ID: Routine Outfall 018 Report Number: IOB1008	Sampled: 02/11/05 Received: 02/11/05
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METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5B12055 Extracted: 02/12/05										
Duplicate Analyzed: 02/12/2005 (5B12055-DUP1)					Source: IOB0952-01					
Turbidity	48.8	2.0	0.080	NTU		48		2	20	
Batch: 5B14044 Extracted: 02/14/05										
Blank Analyzed: 02/14/2005 (5B14044-BLK1)										
Oil & Grease	ND	5.0	0.94	mg/l						
LCS Analyzed: 02/14/2005 (5B14044-BS1)										
Oil & Grease	19.8	5.0	0.94	mg/l	20.0		99	65-120		M-NR1
LCS Dup Analyzed: 02/14/2005 (5B14044-BSD1)										
Oil & Grease	19.3	5.0	0.94	mg/l	20.0		96	65-120	3	20
Batch: 5B15110 Extracted: 02/15/05										
Blank Analyzed: 02/15/2005 (5B15110-BLK1)										
Ammonia-N (Distilled)	ND	0.50	0.30	mg/l						
LCS Analyzed: 02/15/2005 (5B15110-BS1)										
Ammonia-N (Distilled)	9.80	0.50	0.30	mg/l	10.0		98	80-115		
Matrix Spike Analyzed: 02/15/2005 (5B15110-MS1)										
Ammonia-N (Distilled)	10.1	0.50	0.30	mg/l	10.0	ND	101	70-120		
Matrix Spike Dup Analyzed: 02/15/2005 (5B15110-MSD1)										
Ammonia-N (Distilled)	9.52	0.50	0.30	mg/l	10.0	ND	95	70-120	6	15

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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: IOB1008	Sampled: 02/11/05 Received: 02/11/05
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METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	RPD Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5B16069 Extracted: 02/16/05											
Blank Analyzed: 02/16/2005 (5B16069-BLK1)											
Perchlorate	ND	4.0	0.80	ug/l							
LCS Analyzed: 02/16/2005 (5B16069-BS1)											
Perchlorate	52.0	4.0	0.80	ug/l	50.0		104	85-115			
Matrix Spike Analyzed: 02/16/2005 (5B16069-MS1)											
						Source: IOB1060-02					
Perchlorate	51.9	4.0	0.80	ug/l	50.0	ND	104	80-120			
Matrix Spike Dup Analyzed: 02/16/2005 (5B16069-MSD1)											
						Source: IOB1060-02					
Perchlorate	51.6	4.0	0.80	ug/l	50.0	ND	103	80-120	1	20	
Batch: 5B16119 Extracted: 02/16/05											
Blank Analyzed: 02/16/2005 (5B16119-BLK1)											
Total Dissolved Solids	ND	10	10	mg/l							
LCS Analyzed: 02/16/2005 (5B16119-BS1)											
Total Dissolved Solids	988	10	10	mg/l	1000		99	90-110			
Duplicate Analyzed: 02/16/2005 (5B16119-DUP1)											
						Source: IOB1106-12					
Total Dissolved Solids	1280	10	10	mg/l		1300			2	10	
Batch: 5B16120 Extracted: 02/16/05											
Duplicate Analyzed: 02/16/2005 (5B16120-DUP1)											
						Source: IOB0937-02					
Specific Conductance	95.3	1.0	1.0	umhos/cm		95			0	5	

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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: IOB1008	Sampled: 02/11/05 Received: 02/11/05
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METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	RPD Limits	RPD RPD	RPD Limit	Data Qualifiers
Batch: 5B17069 Extracted: 02/17/05											
Blank Analyzed: 02/17/2005 (5B17069-BLK1)											
Total Suspended Solids	ND	10	10	mg/l							
LCS Analyzed: 02/17/2005 (5B17069-BS1)											
Total Suspended Solids	977	10	10	mg/l	1000		98	85-115			
Duplicate Analyzed: 02/17/2005 (5B17069-DUP1)											
Total Suspended Solids	ND	10	10	mg/l		Source: IOB0990-01				10	

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 Project Manager

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

Project ID: Routine Outfall 018

Report Number: IOB1008

Sampled: 02/11/05
Received: 02/11/05

DATA QUALIFIERS AND DEFINITIONS

- C** Calibration Verification recovery was above the method control limit for this analyte. Analyte not detected, data not impacted.
- J** Estimated value. Analyte detected at a level less than the Reporting Limit (RL) and greater than or equal to the Method Detection Limit (MDL). The user of this data should be aware that this data is of unknown quality.
- M1** The MS and/or MSD were above the acceptance limits due to sample matrix interference. 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.
- R-7** LFB/LFBD RPD exceeded the method control limit. Recovery met acceptance criteria.
- RL-1** Reporting limit raised 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



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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: IOB1008

Sampled: 02/11/05
 Received: 02/11/05

Certification Summary

Del Mar Analytical, Irvine

Method	Matrix	Nelac	California
EPA 120.1	Water	X	X
EPA 160.1	Water	X	X
EPA 160.2	Water	X	X
EPA 160.5	Water	X	X
EPA 180.1	Water	X	X
EPA 200.8	Water	X	X
EPA 245.1	Water	X	X
EPA 300.0	Water	X	X
EPA 314.0	Water	X	X
EPA 335.2	Water	X	X
EPA 350.2	Water	X	X
EPA 405.1	Water	X	X
EPA 413.1	Water	X	X
EPA 425.1	Water	X	X
EPA 608	Water	X	X
EPA 624	Water	X	X
EPA 625	Water	X	X

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.dmalabs.com.

Subcontracted Laboratories

Alta Analytical Perspectives

Analysis Performed: 1613-Dioxin-HR
 Samples: IOB1008-01

Analysis Performed: EDD + Level 4
 Samples: IOB1008-01

Del Mar Analytical, Irvine
 Michele Harper
 Project Manager

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JOB 1008

CHAIN OF CUSTODY FORM

Del Mar Analytical Version 5/8/2004
 Client Name/Address: **MWH-Pasadena**
 300 North Lake Avenue, Suite 1200
 Pasadena, CA 91101
 Project Manager: **Bronwyn Kelly**
 Sampler: **Rick BARNETT**
Ruben Barnato
 Project: **Boeing-SSFL NPDES Annual Outfall 018**
 Phone Number: (626) 568-6691
 Fax Number: (626) 568-6515

Sample Description	Sample Matrix	Container Type	# of Cont.	Sampling Date/Time	Preservative	Bottle #	ANALYSIS REQUIRED														Field readings:				
							Total Recoverable Metals: Cu, Pb, Hg, B, Ba, Fe, Mn, Sb, As, Be, Cd, Cr, Ni, Se, Ag, Ti, Zn, Co, V	Settleable Solids	VOCs 624 + xylenes + Freon 113, Freon 123A, Cyclohexane	TCDD (and all congeners)	Oil & Grease (EPA 413.1)	Cyanide (total recoverable)	BOD5(20 degrees C)	Surfactants (MBAS)	Cl-, SO4, NO3+NO2-N, F, Perchlorate	Turbidity, TDS, TSS, Conductivity	Ammonia-N	2,4,6 Trichlorophenol, 2,4 Dinitrotoluene, Bis(2-ethylhexyl)phthalate, NDMA, pentachlorophenol (EPA 625) + PP	Comments						
Outfall 018	W	Poly-1L	1	2-11-05	HNO3	1A	X																	Temp = 56.1 pH = 6.8	
Outfall 018-Dup	W	Poly-1L	1		HNO3	1B	X																		24 TAT
Outfall 018	W	Poly-1L	1		None	2																			24 TAT
Outfall 018	W	VOAs	5		HCl	3A, 3B, 3C, 3D, 3E				X															
Outfall 018	W	1L Amber	2		None	4A, 4B				X															
Outfall 018	W	1L Amber	2		HCl	5A, 5B																			24 TAT
Outfall 018	W	Poly-500 ml	1		NaOH	6				X															24 TAT
Outfall 018	W	Poly-1L	1		None	7				X															
Outfall 018	W	Poly-500 ml	2		None	8A, 8B									X										
Outfall 018	W	Poly-500 ml	2		None	9A, 9B									X										
Outfall 018	W	Poly-500 ml	2		None	10A, 10B																			
Outfall 018	W	Poly-500 ml	1		H2SO4	11																			
Outfall 018	W	1L Amber	2		None	12A, 12B																			
Outfall 018	W	1L Amber	2		None	13A, 13B																			
Trip Blank	W	VOAs	3		HCl	14A, 14B, 14C																			

Relinquished By: *[Signature]* Date/Time: 2-11-05 17:00
 Received By: *[Signature]* Date/Time: 2-11-05 17:00
 Relinquished By: *[Signature]* Date/Time: 2-11-05 17:00
 Received By: *[Signature]* Date/Time: 2-11-05 17:00
 Relinquished By: *[Signature]* Date/Time: 2-11-05 17:00
 Received By: *[Signature]* Date/Time: 2-11-05 17:00

Turn around Time (check):
 24 Hours _____ 5 Days _____
 48 Hours _____ 10 Days _____
 72 Hours _____ Normal _____
 Perchlorate Only 72 Hours _____
 Metals Only 72 Hours _____
 Sample Integrity: (Check) Intact On Ice:
 37

Job 1008

CHAIN OF CUSTODY FORM

Del Mar Analytical Version 5/8/12/04

Client Name/Address:		Project:		ANALYSIS REQUIRED										Turn around Time: (check)								
MWH-Pasadena 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101		Boeing-SSFL NPDES Annual Outfall 018		Sample Description		Container Type	# of Cont.	Sampling Date/Time	Preservative	Bottle #	1,4-Dioxane	Total Organic Carbon	Total Residual Chlorine	Gross Alpha, Gross Beta, Tritium (906.0), Sr-90 (905.0), Total Combined Radium 226 & Radium 228	PCBs	TPH = all fuels, gas, diesel, and jet fuel; modified 8015 and 418.1	Monomethylhydrazine	Acute and Chronic toxicity	VOCs 624 +A+A+2CVE	Comments		
Outfall 018	W	VOAs	3		HCl	15A, 15B, 15C				X												
Outfall 018	W	VOAs	2		HCl	16A, 16B				X												
Outfall 018	W	Poly-150 ml	1		None	17																
Outfall 018	W	Poly-1Gal VOAs	1		None	18A, 18C					X										Analyze for Total Combined RA-226&228 only if Gross Alpha > 15pCi/L	
Outfall 018	W	1L Amber	2		None	19A, 19B							X									
Outfall 018	W	VOAs	3		HCl	20A, 20B, 20C																
Outfall 018	W	1L Amber	2		HCl	20D, 20E							X									
Outfall 018	W	1L Amber	2		None	20F, 20G																
Outfall 018	W	1L Amber	2		None	21A, 21B																
Outfall 018	W	1 Gal	2		None	22A, 22B																
Outfall 018	W	VOAs	3		None	23A, 23B, 23C																
Trip Blank	W	VOAs	3		None	24A, 24B, 24C																
Relinquished By	Date/Time: 2-11-05 1700		Received By		Date/Time: 2/11/05 1700		Relinquished By		Date/Time: 2/11/05 2030		Received By		Date/Time: 2/11/05 2030		Perchlorate Only 72 Hours		Metals Only 72 Hours		Sample Integrity: (Check) Intact <input checked="" type="checkbox"/>		On Ice: <input checked="" type="checkbox"/>	

F A X



300 N. Lake Ave., Suite 1200
Pasadena, California 91101
Tel: 626-568-6691
Fax: 626-568-6515

Date: 02/17/05

To: Michele Harper / Del Mar Analytical

Fax No: 949-260-3297

Patti Meeks / AMEC

303-935-6575

Krissi McIlvenna / MWH

925-975-3412

From: Bronwyn K. Kelly

 sign: 

Subject: Chain-of-Custody Form Analytical Request Change

 No. of Pages: 2
(including cover)
Per Request:

Please make the changes listed below to the chain-of-custody analytical request form. Include this form with the final deliverables for these samples.

Del Mar Work Order #	Sample ID	Date Collected	Change(s) Requested, Not Completed	Change(s) and Method (s) Now Requested
IOB0988	Outfall 003	02/11/05	Annual Constituents per 2004 NPDES Permit - Total Recoverable Metals: Sb, Cd, Cu, Pb, Hg, B, V, Al, +PP; TCDD (and all congeners); Oil and Grease (EPA 413.1); Cl-, SO ₄ , N ₃ +NO ₂ -N, Perchlorate; TDS, TSS VOCs (624); VOCs, A+A+2C _{VE} ; NPDES + PP; Pesticides/PCBs-PP; Gross Alpha, Gross Beta, Tritium (906.0), Sr-90, Total Combined Radium 226&228; SVOCs - PP; Acute toxicity; Cyanide.	Routine Constituents per 2004 NPDES Permit - Total Recoverable Metals: Sb, Cd, Cu, Pb, Hg; TCDD (and all congeners); Oil and Grease (EPA 413.1); TDS, TSS.
IOB1002	Outfall 004	02/11/05	Annual Constituents per 2004 NPDES Permit - Total Recoverable Metals: Sb, Cd, Cu, Pb, Hg, B, V, Al, +PP; TCDD (and all congeners); Oil and Grease (EPA 413.1); Cl-, SO ₄ , N ₃ +NO ₂ -N, Perchlorate; TDS, TSS VOCs (624); VOCs, A+A+2C _{VE} ; NPDES + PP; Pesticides/PCBs-PP; Gross Alpha, Gross Beta, Tritium (906.0), Sr-90, Total Combined Radium 226&228; SVOCs - PP; Acute toxicity; Cyanide.	Routine Constituents per 2004 NPDES Permit - Total Recoverable Metals: Sb, Cd, Cu, Pb, Hg; TCDD (and all congeners); Oil and Grease (EPA 413.1); TDS, TSS.
IOB0990	Outfall 005	02/11/05	Annual Constituents per 2004 NPDES Permit - Total Recoverable Metals: Sb, Cd, Cu, Pb, Hg, B, V, Al, +PP; TCDD (and all congeners); Oil and Grease (EPA 413.1); Cl-, SO ₄ , N ₃ +NO ₂ -N, Perchlorate; TDS, TSS VOCs (624); VOCs, A+A+2C _{VE} ; NPDES + PP; Pesticides/PCBs-PP; Gross Alpha, Gross Beta, Tritium (906.0), Sr-90, Total Combined Radium 226&228; SVOCs - PP; Acute toxicity; Cyanide.	Routine Constituents per 2004 NPDES Permit - Total Recoverable Metals: Sb, Cd, Cu, Pb, Hg; TCDD (and all congeners); Oil and Grease (EPA 413.1); TDS, TSS.

IOB0992	Outfall 006	02/11/05	Annual Constituents per 2004 NPDES Permit – Total Recoverable Metals: Sb, Cd, Cu, Pb, Hg, B, V, Al, +PP; TCDD (and all congeners); Oil and Grease (EPA 413.1); Cl-, SO4, N)3+NO2-N, Perchlorate; TDS, TSS VOCs (624); VOCs, A+A+2CVE; NPDES + PP; Pesticides/PCBs-PP; Gross Alpha, Gross Beta, Tritium (906.0), Sr-90, Total Combined Radium 226&228; SVOCs – PP; Acute toxicity; Cyanide.	Routine Constituents per 2004 NPDES Permit – Total Recoverable Metals: Sb, Cd, Cu, Pb, Hg; TCDD (and all congeners); Oil and Grease (EPA 413.1); TDS, TSS.
IOB1008	Outfall 018	02/11/05	Annual Constituents per 2004 NPDES Permit – Total Recoverable Metals: Sb, Cd, Cu, Pb, Hg, B, V, Al, +PP; TCDD (and all congeners); Oil and Grease (EPA 413.1); Cl-, SO4, N)3+NO2-N, Perchlorate; TDS, TSS VOCs (624); VOCs, A+A+2CVE; NPDES + PP; Pesticides/PCBs-PP; Gross Alpha, Gross Beta, Tritium (906.0), Sr-90, Total Combined Radium 226&228; SVOCs – PP; Acute toxicity; Cyanide.	Routine Constituents per 2004 NPDES Permit – Total Recoverable Metals: Sb, Cd, Cu, Pb, Hg; TCDD (and all congeners); Oil and Grease (EPA 413.1); TDS, TSS.
IOB1014	Outfall 011	02/11/04	Chromium IV	
IOA0131	Outfall 011 -- Composite	01/04/05		Ammonia, BOD, Chloride, Nitrate/Nitrite as N, Oil and Grease, Sulfate, MBAS, TDS, TSS, TOC, Settleable Solids, Turbidity, Cr, Cyanide, perchlorate, Conductivity, Cu, Hg, TCDD
IOA0121	Outfall 011 – Grab	01/04/05		Total Recoverable Hydrocarbons, Extractable Fuel Hydrocarbons, GRO, Fluoride, Residual Chlorine, TOC, Cr VI, 1,4-Dioxane, Monomethyl Hydrazine, Bioassays, SVOC (625)-PP list, Pest/PCB-PP list (608), Total Recoverable Metals, Cyclohexane & Freon 123a & A+A+2CVE (624), Radchem

The reason for these changes:

Incorrectly marked on COC form

Lack of sample volume

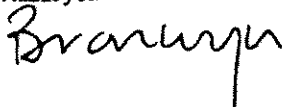
MWH office personnel require this change

Other: Containers mislabeled

_____ x
 _____ x

This Change Order supersedes all previous change orders submitted.

Thank you





2852 Alton Ave., Irvine CA 92606 (949) 261-1022 FAX (949) 261-1228
1014 E. Cooley Dr., Suite A, Colton, CA 92324 (909) 370-4667 FAX (949) 370-1046
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2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

March 24, 2005

MWH-Pasadena/ Boeing
300 North Lake Avenue, Suite 1200
Pasadena, CA 91101

Attention: Bronwyn Kelly
Project: Routine Outfall 018
Sampled: 02/11/05
Del Mar Analytical Number: IOB1008

Dear Ms. Kelly:

Alta Analytical Perspectives performed the EPA Method 1613B Dioxin analysis for the project referenced above. Please use the following cross-reference table when reviewing your results.

MWH ID	DEL MAR ID	ALTA ID
Outfall 018	IOB1008-01	P5072_2989_008

Attached is the original report from the subcontract laboratory. If you have any questions or require further assistance, please do not hesitate to contact me at (949) 261-1022 at extension 215.

Sincerely yours,
DEL MAR ANALYTICAL

Michele Harper
Project Manager


ALTA ANALYTICAL PERSPECTIVES

3 March 2005

Scott Unze
 Pace Analytical Services
 1700 Elm Street
 Minneapolis, MN 55414

Ph.: 612-607-1700
 Fax: 612-607-6444

Subject: Certificate of Results

Dear Scott;

Attached to this narrative are the analytical results you requested on the samples submitted for the determination of polychlorinated dibenzo-*p*-dioxins and dibenzofurans. The insert below summarizes the relevant information pertaining to your project. In particular, the QC annotations bring to your attention specific analytical observations and assessments made during the sample handling and data interpretation phases. A brief description of the report's components is provided on the next page.

Project Information Summary	When applicable, see QC Annotations for details
Client Project No.	
AAP Project No.	P5072
Analytical Protocol	Method 1613B
No. Samples Submitted	13
No. Samples Analyzed	13
No. Laboratory Method Blanks	1
No. OPRs / Batch CS3	1
No. Outstanding Samples	0
Date Received	1-Mar-2005
Condition Received	good
Temperature upon Receipt (C)	1-3
Extraction within Holding Time	yes
Analysis within Holding Time	yes
Data meet QA/QC Requirements	yes
Exceptions	none
Analytical Difficulties	none

2714 EXCHANGE DRIVE
 WILMINGTON
 NORTH CAROLINA 28405
 TEL: 910-794-1613 FAX 910-794-3919

QC Annotations:

1. A "J" data qualifier is used for analytes with a concentration below the reporting limit.

Alta Analytical Perspectives remains committed to serving you in the most effective manner. Should you have any questions or need additional information and technical support, please, do not hesitate to contact us. We wanted to thank you for choosing Alta Analytical Perspectives as part of your analytical support team.


Sincerely,



Amy J. Boehm
Project Manager

Sample ID: IOB1008-01

Method 1613

Client Data		Sample Data		Laboratory Data			
Name:	Pace Inc.	Matrix:	Aqueous	Project No.:	P5072	Date Received:	01 Mar 05
Project ID:	General Analytical HRMS	Weight/Volume:	1.03 L	Sample ID:	P5072_2989_008	Date Extracted:	01 Mar 05
Date Collected:	11 Feb 05	pH	6	QC Batch No.:	2989	Date Analyzed:	03 Mar 05
Analyte	Conc. pg/L	DL pg/L	EMPC pg/L	Qualifier	Recoveries		
					ES	CS	
2,3,7,8-TCDD	ND	1.81			72	81.4	
1,2,3,7,8-PeCDD	ND	1.62			71.7	83.2	
1,2,3,4,7,8-HxCDD	3.57	3.44		J	80.8	84.2	
1,2,3,6,7,8-HxCDD	8.47	3.3		J	85.5	84.2	
1,2,3,7,8,9-HxCDD	5.27	4.06		J	81.4	84.2	
1,2,3,4,8,7,8-HpCDD	207	13.7			68.6	69	
OCDD	2,120	5.72			61.7	69	
2,3,7,8-TCDF	ND	1.49			74.2	81.4	
1,2,3,7,8-PeCDF	ND	2.35			78.4	80.4	
2,3,4,7,8-PeCDF	ND	2.31			72.3	80.4	
1,2,3,4,7,8-HxCDF	ND	0.97			74.1	84.2	
1,2,3,6,7,8-HxCDF	ND	0.898			85.5	84.2	
2,3,4,6,7,8-HxCDF	ND	1.1			75.4	84.2	
1,2,3,7,8,9-HxCDF	ND	1.7			70.7	84.2	
1,2,3,4,6,7,8-HpCDF	27.2	2.79			63.2	69	
1,2,3,4,7,8,9-HpCDF	ND	4.43			60.4	69	
OCDF	67.1	12.5			60.2	69	
Totals & TEQs							
TCDDs	4.77	1.61			 ALTA ANALYTICAL PERSPECTIVES 2714 Exchange Drive Wilmington North Carolina 28405 USA Tel: 910 794-1813 Fax: 910 794-3919 e-mail: yt@ultratrace.com web: www.ultratrace.com		
PeCDDs	15.5	1.62					
HxCDDs	39.8	3.61	65.1				
HpCDDs	415	13.7					
TCDFs	6.53	1.49					
PeCDFs	2.57	2.33					
HxCDFs	32.8	1.13					
HpCDFs	98.7	3.53					
Total PCDD/Fs	2,800		2,830				


Checkcode: 0335

AAP 2005 Rev. B

Reviewer: *[Signature]*
 Date: 03 Mar 05

Sample ID: 0_2989_MB001

Method 1613

Client Data		Sample Data		Laboratory Data			
Name:	Pace Inc.	Matrix:	Aqueous	Project No.:	P5072	Date Received:	n/a
Project ID:	General Analytical HRMS	Weight/Volume:	1.00 L	Sample ID:	0_2989_MB001	Date Extracted:	01 Mar 05
Data Collected:	n/a	pH	6	QC Batch No.:	2989	Date Analyzed:	02 Mar 05
Analyte	Conc. pg/L	DL pg/L	EMPC pg/L	Qualifier	Recoveries		
					ES	CS	
2,3,7,8-TCDD	ND	1.65			75.2	80.6	
1,2,3,7,8-PeCDD	ND	1.55			70.5	83.7	
1,2,3,4,7,8-HxCDD	ND	2.57			80	86.4	
1,2,3,6,7,8-HxCDD	ND	2.4			91.5	86.4	
1,2,3,7,8,9-HxCDD	ND	2.8			86	86.4	
1,2,3,4,6,7,8-HpCDD	ND	1.98			74.9	69.8	
OCDD	ND	4.78			67.4	69.8	
2,3,7,8-TCDF	ND	1.04			81.1	80.6	
1,2,3,7,8-PeCDF	ND	1.91			85.1	82.9	
2,3,4,7,8-PeCDF	ND	1.98			76.6	82.9	
1,2,3,4,7,8-HxCDF	ND	0.812			79.4	86.4	
1,2,3,6,7,8-HxCDF	ND	0.764			86.7	86.4	
2,3,4,6,7,8-HxCDF	ND	1.01			77.8	86.4	
1,2,3,7,8,9-HxCDF	ND	1.42			75.6	86.4	
1,2,3,4,6,7,8-HpCDF	ND	1.78			64.7	69.8	
1,2,3,4,7,8,9-HpCDF	ND	2.67			85.1	69.8	
OCDF	ND	11.1			67.2	69.8	
Totals & TEQs							
TCDDs	ND	1.65			 <p>ALTA ANALYTICAL PERSPECTIVES</p> <p>2714 Exchange Drive Wilmington North Carolina 28405 USA</p> <p>Tel: 910 794-1613 Fax: 910 794-3919 e-mail: yt@ultratrace.com web: www.ultratrace.com</p>		
PeCDDs	ND	1.55					
HxCDDs	ND	2.59					
HpCDDs	ND	1.98					
TCDFs	ND	1.04					
PeCDFs	ND	1.94					
HxCDFs	ND	0.974					
HpCDFs	ND	2.19					
Total PCDD/Fs	0		0				

Checkcode: 3385

AAP 2005 Rev. B

Reviewer: *[Signature]*
Date: 02 Mar 05

Sample Summary Part 1		Method 1613												
Analyte	0_2988_MS 001	IOB1001-01	IOB0993-01	IOB0996-01	IOB0997-01	IOB1014-01	IOB0990-01	IOB0988-01	IOB1008-01	IOB1002-01	IOB0992-01	IOB1004-01	IOB0988-01	IOB0991-01
	pp/L	pp/L	pp/L	pp/L	pp/L	pp/L	pp/L	pp/L	pp/L	pp/L	pp/L	pp/L	pp/L	pp/L
2,3,7,8-TCDF	(1.04)	(1.24)	(1.64)	(1.85)	(0.996)	(2.08)	(1.37)	(1.64)	(1.49)	(1.03)	(2.58)	(2.71)	(2.39)	(2.61)
1,2,3,7,8-PeCDD	(1.91)	(1.79)	(2.75)	(1.44)	(2.33)	(1.84)	(3.71)	(1.98)	(2.36)	(2.11)	(4.02)	(2.62)	(2.98)	(2.48)
1,2,3,4,7,8-HxCDD	(1.98)	(1.66)	(2.8)	(1.48)	(2.42)	(1.69)	(3.69)	(2.03)	(2.31)	(1.96)	(3.97)	(2.53)	(3)	(2.49)
1,2,3,7,8-HxCDD	(0.812)	(0.967)	(0.9)	(0.785)	(0.943)	(1.36)	(1.38)	(1.47)	(0.97)	(0.815)	(1.89)	(0.86)	(1.62)	(1.13)
1,2,3,4,6,7,8-HpCDD	(0.784)	(0.843)	(0.827)	(0.708)	(0.871)	(1.31)	(1.3)	(1.51)	(0.898)	(0.78)	(1.42)	(0.824)	(1.53)	(1.19)
OCDD	(1.01)	(1.12)	(1.04)	(0.933)	(1.12)	(1.66)	(1.73)	(1.8)	(1.1)	(0.99)	(1.91)	(0.23)	(2.03)	(1.48)
2,3,4,6,7,8-HxCDF	(1.42)	(1.67)	(1.58)	(1.47)	(1.73)	(2.41)	(2.59)	(2.86)	(1.7)	(1.61)	(2.81)	(1.24)	(2.74)	(2.03)
1,2,3,7,8-HxCDF	(1.78)	16.8	(1.89)	(4.57)	(1.9)	4.04	(3.28)	10.8	27.2	(1.69)	(4.39)	(3.42)	(2.05)	(3.28)
1,2,3,4,6,7,8-HpCDF	(2.87)	(3.48)	(2.95)	(7.47)	(3.25)	(2.83)	(4.59)	(2.68)	(4.43)	(2.59)	(7.3)	(5.49)	(3.04)	(4.88)
OCDF	(11.1)	195	(11)	(22.4)	(12.4)	(9.53)	(14.9)	34.9	87.1	(10.1)	(7.89)	(20.8)	(13.1)	(8.89)
Checkcode	3385	4361	4681	4986	5236	5527	5797	0067	0335	0612	3629	4355	4622	4900

() = DL
 () = EMPC

Reviewer: *[Signature]*
 Date: *02/10/05*

P5072 - Totals
Project ID: General Analytical HRMS

Analyte	ALTA ANALYTICAL PERSPECTIVES													
	0_2989_MB001	IOB1001-01	IOB0993-01	IOB0996-01	IOB0997-01	IOB1014-01	IOB0990-01	IOB0980-01	IOB1008-01	IOB1002-01	IOB0992-01	IOB1004-01	IOB0988-01	IOB0981-01
	pp/L	pp/L	pp/L	pp/L	pp/L	pp/L	pp/L	pp/L	pp/L	pp/L	pp/L	pp/L	pp/L	pp/L
Totals														
TCDDs	0	0	0	0	0	0	0	0	4.77	0	0	0	0	0
PeCDDs	0	0	0	0	0	0	0	0	15.5	0	0	0	0	0
HxCDDs	0	7.38	4.44	0	0	0	0	0	39.8	0	0	0	0	0
HpCDDs	0	153	65.1	25.2	9.46	29.6	0	101	415	12.1	0	43.1	12.2	0
OCDD	0	883	267	134	70.4	157	58.1	471	2120	163	70.2	213	50.3	50
TCDFs	0	0	0	0	0	0	0	0	6.53	0	0	0	0	0
PeCDFs	0	0	0.858	0	0	0.76	0.256	0	2.57	0	0.456	0	0	0
HxCDFs	0	2.68	0	0	0	0	0	4.13	32.8	0	0	0	0	0
HpCDFs	0	92.9	0	0	0	10.2	0	36.5	98.7	5.96	0	0	0	0
OCDF	0	155	0	0	0	0	0	34.9	87.1	0	0	0	0	0
Total PCDD/Fs (ND=0; EMPC=0)	0.00	1,290	338	159	79.9	197	56.4	646	2,800	182	70.7	256	62.6	50
Total PCDD/Fs (ND=0; EMPC=EMPC)	0.00	1,300	342	160	79.9	197	56.4	663	2,836	193	70.7	258	62.6	50
Total PCDD/Fs (2378-X ND=DL; EMPC=EMPC)	42.2	1,330	381	215	128	238	119	691	2,840	229	144	370	121	114
Total 2378s (ND=0; EMPC=0)	0.00	1,130	298	144	70.4	173	58.1	567	2,440	176	70.2	234	50.3	50
Total 2378s (ND=0.5; EMPC=0)	21.1	1,140	319	172	94.6	193	87.5	581	2,450	193	107	291	79.5	82
Total 2378s (ND=1; EMPC=0)	42.2	1,180	338	200	119	214	119	595	2,450	211	144	348	109	114
Total 2378s (ND=0; EMPC=1)	0.00	1,130	299	144	70.4	173	58.1	567	2,440	176	70.2	234	50.3	50
Total 2378s (ND=0.5; EMPC=1)	21.1	1,140	319	172	94.6	193	87.5	581	2,450	193	107	291	79.5	82
Total 2378s (ND=1; EMPC=1)	42.2	1,180	338	200	119	214	119	595	2,450	211	144	348	109	114
Checkcode	3395	4361	4681	4965	5239	5527	5797	0067	0335	0612	3928	4355	4622	4900

Total 2378s = Sum of 17 2378-substituted PCDD/PCDF congeners (SARA 313)

() = DL
 [] = EMPC

Reviewer: 
 Date: 05/04/05

P5072 - Others
Project ID: General Analytical HRMS

Sample Summary
Part 3

ALTA ANALYTICAL PERSPECTIVES

Method 1613

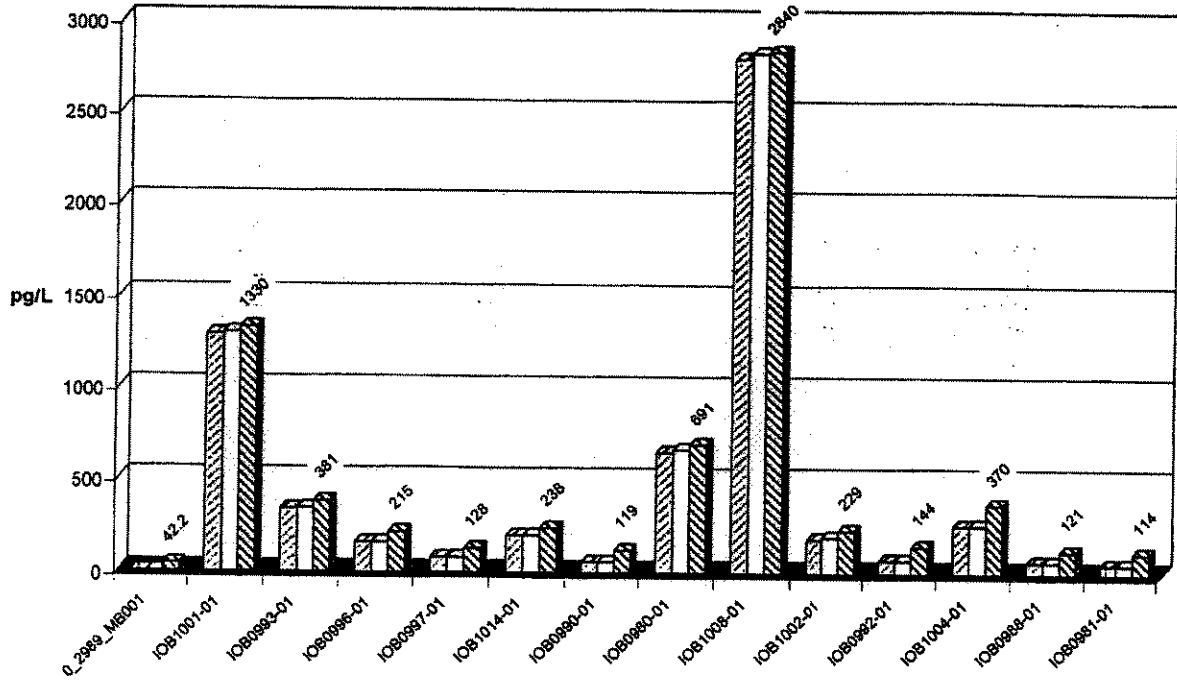
Analyte	0_2888_MB001	IOB1001-01	IOB0993-01	IOB0996-01	IOB0997-01	IOB1014-01	IOB0990-01	IOB0880-01	IOB1006-01	IOB1002-01	IOB0992-01	IOB1004-01	IOB0995-01	IOB0991-01
	pg/L	pg/L	pg/L	pg/L	pg/L	pg/L	pg/L	pg/L	pg/L	pg/L	pg/L	pg/L	pg/L	pg/L
Other PCDD/Fs (ND=0, EMPC=0)														
Other TCDD	0	0	0	0	0	0	0	0	4.77	0	0	0	0	0
Other PeCDD	0	0	0	0	0	0	0	0	15.5	0	0	0	0	0
Other HxCDD	0	7.38	4.44	0	0	0	0	0	22.5	0	0	0	0	0
Other HpCDD	0	77.2	33.6	15.2	9.46	17.4	0	51.5	206	0	0	22.3	12.2	0
Other TCDF	0	0	0	0	0	0	0	0	6.53	0	0	0	0	0
Other PeCDF	0	0	0.858	0	0	0.76	0.256	0	2.57	0	0.456	0	0	0
Other HxCDF	0	2.68	0	0	0	0	0	4.13	32.8	0	0	0	0	0
Other HpCDF	0	76.1	0	0	0	6.16	0	25.7	71.6	5.96	0	0	0	0
Other PCDD/Fs (ND=0, EMPC=EMPC)														
Other TCDD	0	0	0	0	0	0	0	0	4.77	0	0	0	0	0
Other PeCDD	0	0	0	0	0	0	0	0	15.5	0	0	0	0	0
Other HxCDD	0	7.38	8.57	0	0	0	0	8.86	47.7	0	0	0	0	0
Other HpCDD	0	77.2	33.6	15.2	9.46	17.4	0	51.5	206	11.3	0	22.3	12.2	0
Other TCDF	0	0	0	0	0	0	0	2.21	6.53	0	0	0	0	0
Other PeCDF	0	0	0.858	0.213	0	0.76	0.256	0.368	2.57	0	0.456	0	0	0
Other HxCDF	0	9.88	0	0	0	0	0	7.22	32.8	0	0	0	0	0
Other HpCDF	0	76.1	0	0	0	6.16	0	25.7	71.6	5.96	0	0	0	0
Checkcode	3385	4361	4881	4985	5239	5527	5797	0067	0335	0612	3929	4355	4822	4900

() = DL
 [] = EMPC

Reviewer: **TA**
 Date: **03/02/03**

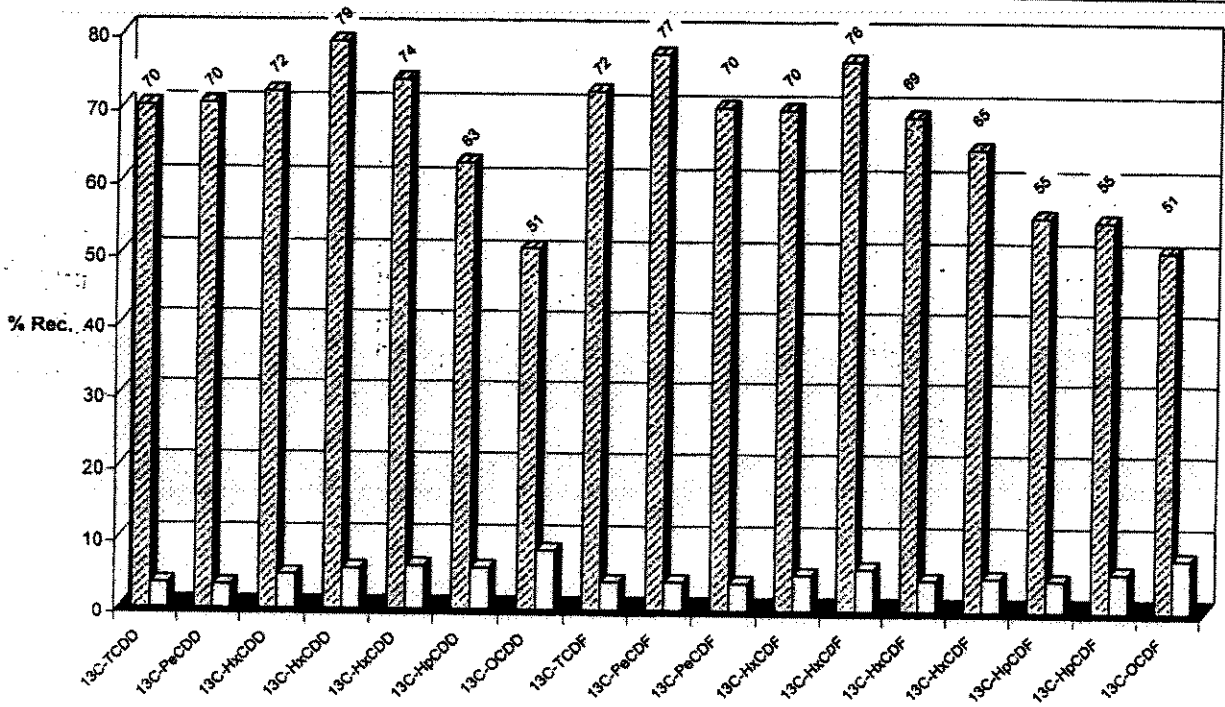
Totals
Project ID: General Analytical HRMS
P5072

▨ Total PCDD/Fs (ND=0; EMPC=0)
 □ Total PCDD/Fs (ND=0; EMPC=EMPC)
 ▩ Total PCDD/Fs (2378-X ND=DL; EMPC=EMPC)



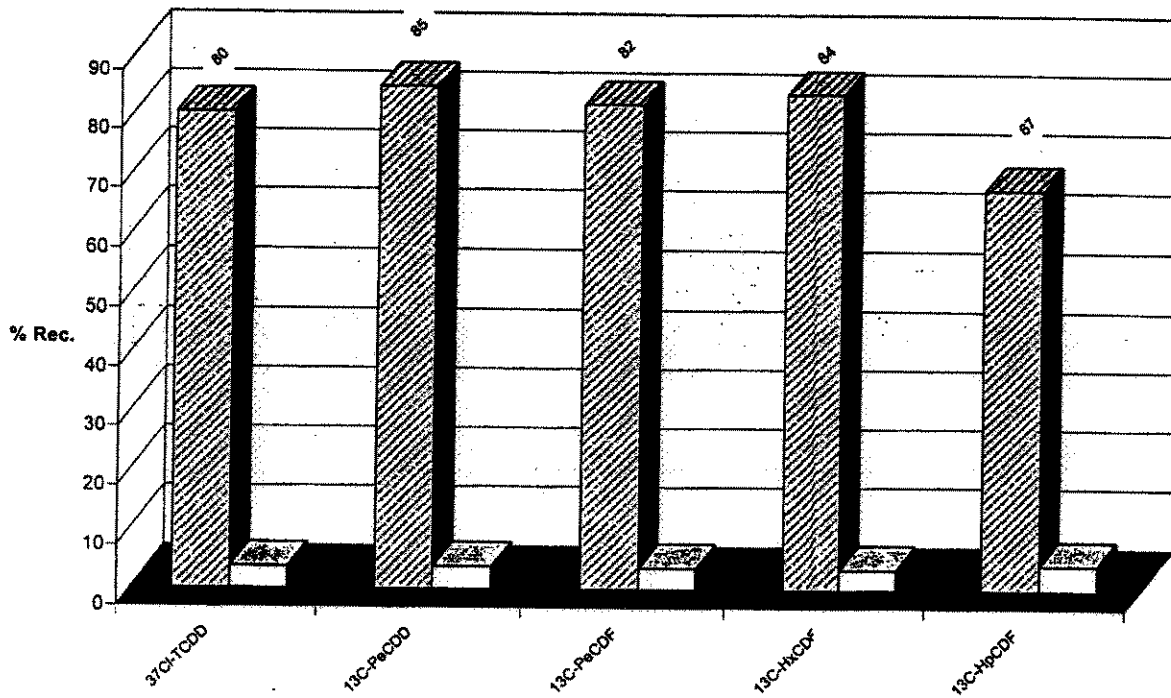
Mean Recoveries of Extraction Standards (N=14)
Project ID: General Analytical HRMS
P5072

▨ Mean □ Std. Dev.



Mean Recoveries of Clean-Up Standards (N=14)
Project ID: General Analytical HRMS
P5072

Mean Std. Dev.





17461 Derian Ave., Suite 100, Irvine, CA 92614 Ph (949) 261-1022 Fax (949) 261-1228
 1014 E. Cooley Dr., Suite A, Colton, CA 92324 Ph (909) 370-4667 Fax (909) 370-1046
 9484 Chesapeake Drive, Suite 805, San Diego, CA 92123 Ph (619) 505-9596 Fax (619) 505-9889
 9830 South 51st Street, Suite B-120, Phoenix, AZ 85044 Ph (480) 785-0043 Fax (480) 785-0851
 2520 E. Sunset Rd., Suite #3, Las Vegas, NV 89120 Ph (702) 798-3620 Fax (702) 798-3621

SUBCONTRACT ORDER - PROJECT # IOB1008

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 Harper	Pace Analytical, MN- SUB 1700 Elm Street, Ste 200 Minneapolis, MN 55414 Phone : (612) 607-1700 Fax: (612) 607-6444 <div style="text-align: right; font-size: 1.2em; margin-top: 10px;">107697</div>

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

Analysis	Expiration	Comments
Sample ID: IOB1008-01 Water Sampled: 02/11/05 13:32		
1613-Dioxin-HR	02/18/05 13:32	J flags, 17 congeners, no TEQ, sub to Pace-MN
EDD + Level 4	03/11/05 13:32	Excel EDD email to pm, Include Std logs for Lvl IV
Containers Supplied:		
1 L Amber (IOB1008-01I)		001
1 L Amber (IOB1008-01J)		

SAMPLE INTEGRITY:

All containers intact: Yes No
 Sample labels/COC agree: Yes No
 Samples Received On Ice: Yes No
 Custody Seals Present: Yes No
 Samples Preserved Properly: Yes No
 Samples Received at (temp): 3

	2-14-05	1700	Bright Flex	2-5-05	9:00
Released By	Date	Time	Received By	Date	Time



CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Required Client Information: **Section A** Company: **PACE** Address: **1700 Elm St. Suite 200** Phone: **416.1.22.55414** Fax:

Required Client Information: **Section B** Report To: **SCOTT UNZE** Copy To: Invoice To: P.O. Project Name: Project Number:

Required Client Information: **Section C** To Be Completed by Pace Analytical and Client Quote Reference: **814593** Project Manager: **SCOTT UNZE** Project #: Profile #:

Client Information (Check quote/contract): Requested Due Date: **3 Day**

* Turn around time less than 14 days subject to laboratory and contractual obligations and may result in a Rush Turnaround Surcharge.

Turn Around Time (TAT) in calendar days.

ITEM #	SAMPLE ID	MATRIX CODE	Valid Matrix Codes	DATE COLLECTED	TIME COLLECTED	# Containers	Preservatives							Remarks / Lab ID	
							Unpreserved	H ₂ SO ₄	HNO ₃	HCl	NaOH	Na ₂ S ₂ O ₈	Methanol		Other
1	I0B1001-01	WT	WT	02/10/05	15:30	1X									X
2	I0B0993-01				10:50										
3	I0B0996-01				12:15										
4	I0B0997-01				15:16										
5	I0B1014-01				12:20										
6	I0B0990-01				08:55										
7	I0B0980-01				10:56										
8	I0B1008-01				13:32										
9	I0B1002-01				14:25										
10	I0B0992-01				10:15										
11	I0B1004-01				16:00										
12	I0B0988-01				11:44	46									

REGULATORY AGENCY: NC SC GA Other: NPDES GROUND WATER DRINKING WATER UST RCRA Other

SAMPLE NOTES: **Temp in °C 3,1**
Received on Ice Y/N
Sealed Cooler Y/N
Samples Intact Y/N

Additional Comments: **Sample 1081002-01 & 1080988-01 are both dated 02/10/05**

REGULATORY AGENCY: NC SC GA Other: NPDES GROUND WATER DRINKING WATER UST RCRA Other

SAMPLE NOTES: **Temp in °C 3,1**
Received on Ice Y/N
Sealed Cooler Y/N
Samples Intact Y/N

Additional Comments: **Sample 1081002-01 & 1080988-01 are both dated 02/10/05**

RELINQUISHED BY / AFFILIATION: **Scott Unze / Pace** DATE: **2/10/05** TIME: **15:20**

ACCEPTED BY / AFFILIATION: **Scott Unze / Pace** DATE: **2-10-05** TIME: **11:35**

SAMPLER NAME AND SIGNATURE: **Scott Unze**

PRINT Name of SAMPLER: **Scott Unze**

SIGNATURE of SAMPLER: **Scott Unze**

DATE Signed: **02/10/05**



CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Required Client Information: **Section A** Company: pace **Section B** Report To: SCOTT UNZE Section C To Be Completed by Pace Analytical and Client: **814592** Quote Reference: **Section C**

Copy To: SCOTT UNZE Project Manager: SCOTT UNZE
 Invoice To: 1700 Elm Street Project #: 1612-PC00/DR
 P.O. Suite 200 Profile #: 3 Day
 Project Name: Mpls, MN 55414 Requested Analysis: CS - TOXIC LABS (see TOXIC LABS APT TEST)
 Project Number: 55414 Turn Around Time (TAT) in calendar days: 3 Day

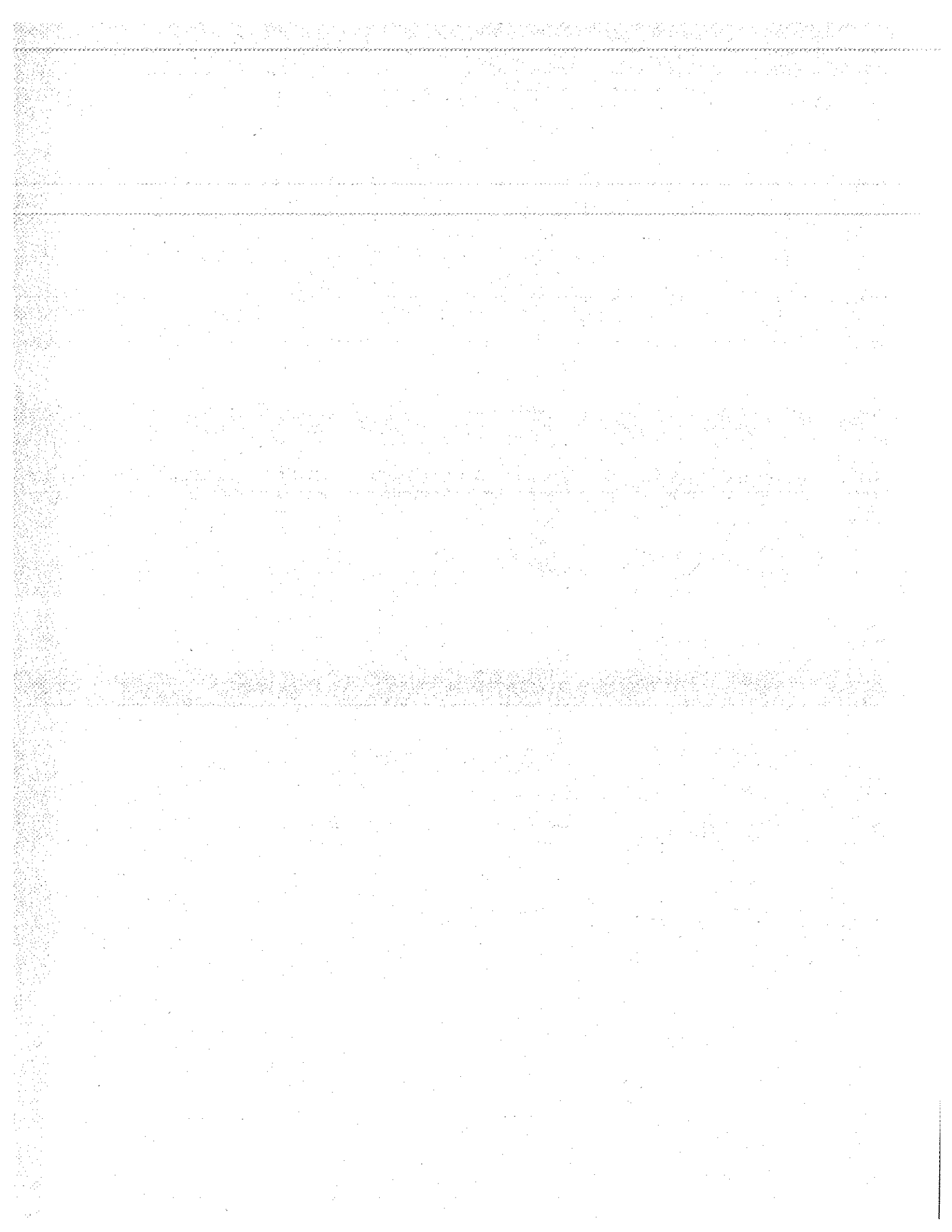
ITEM #	Section D SAMPLE ID One character per box. (A-Z, 0-9 / -)	Matrix Code	Valid Matrix Codes	DATE COLLECTED	TIME COLLECTED	# Containers	Preservatives						Remarks / Lab ID												
							WT	SL	CL	WP	AR	TS		OT	Unpreserved	H ₂ SO ₄	HNO ₃	HOAc	NaOH	NaNO ₂	NaNO ₃	Other			
1	10B0931-01	WT	WT	2/11/05	08:21	1	X																		
2																									
3																									
4																									
5																									
6																									
7																									
8																									
9																									
10																									
11																									
12																									

REGULATORY AGENCY: NC SC GA NPDES GROUND WATER DRINKING WATER Other

SAMPLE NOTES: Email to: Scott.Unze@pacelabs.com

SAMPLER NAME AND SIGNATURE: Scott Unze DATE SIGNATURE: 2/11/05

SIGNATURE OF SAMPLER: Scott Unze DATE SIGNATURE: 2/11/05

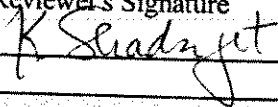


CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

AMEC Earth & Environmental
 550 South Wadsworth Boulevard
 Suite 500
 Lakewood, CO 80226

Package ID T711DF28
 Task Order 313150010
 SDG No. Multiple
 No. of Analyses 6

Laboratory Alta
 Reviewer K. Shadowlight
 Analysis/Method Dioxins

Date: March 7, 2005
 Reviewer's Signature


ACTION ITEMS ^a	
1. Case Narrative Deficiencies	
2. Out of Scope Analyses	
3. Analyses Not Conducted	
4. Missing Hardcopy Deliverables	
5. Incorrect Hardcopy Deliverables	
6. Deviations from Analysis Protocol, e.g.,	Qualifications were assigned for the following:
Holding Times	* EMPCs
GC/MS Tune/Inst. Performance	* Detects below the lower method calibration level
Calibration	* Diphenyl ether interference
Method blanks	
Surrogates	
Matrix Spike/Dup LCS	
Field QC	
Internal Standard Performance	
Compound Identification and Quantitation	
System Performance	
COMMENTS ^b	

^a 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

ANALYSIS: DIOXINS/FURANS

SAMPLE DELIVERY GROUPS: Multiple SDGs

Prepared by

AMEC—Denver Operations
550 South Wadsworth Boulevard, Suite 500
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title: NPDES Monitoring
Contract Task Order #: 313150010
Sample Delivery Group #: Multiple SDGs
Project Manager: B. McIlvaine
Matrix: Water
Analysis: Dioxins/Furans
QC Level: Level IV
No. of Samples: 6
No. of Reanalyses/Dilutions: 0
Reviewer: K. Shadowlight
Date of Review: March 4, 2005

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

Table 1. Sample Identification

Client ID	Laboratory ID (Del Mar)	Laboratory ID (Alta)	Matrix	COC Method
Outfall 002	IOB1562-01	25779-001	water	1613
Outfall 003	IOB1571-01	25780-001	water	1613
Outfall 007	IOB1572-01	25782-001	water	1613
Outfall 008	IOB1573-01	25783-001	water	1613
Outfall 011	IOB1565-01	25781-001	water	1613
Outfall 018	IOB1570-01	25778-001	water	1613

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

Following are findings associated with sample management:

2.1.1 Sample Preservation, Handling, and Transport

All of the samples in these SDGs were received at Del Mar Analytical within the temperature limits of $4^{\circ}\text{C} \pm 2^{\circ}\text{C}$. The samples were shipped to Alta for dioxin/furan analyses and were received below the temperature limits at 0.8°C ; however, as none of the samples were noted to have been frozen or damaged, no qualifications were required. According to the laboratory login sheets, all samples were received intact and in good condition at both laboratories. No qualifications were required.

2.1.2 Chain of Custody

The COCs and transfer COCs were legible and signed by the appropriate field and laboratory personnel, and accounted for the analyses presented in these SDGs. As the samples were couriered directly to Del Mar Analytical, custody seals were not required. The coolers received by Alta had custody seals present and intact; however, custody seals were not present on the sample containers. The EPA IDs were added to the sample result summary report by the reviewer. No qualifications were required.

2.1.3 Holding Times

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

2.2 INSTRUMENT PERFORMANCE

Following are findings associated with instrument performance:

2.2.1 GC Column Performance

A Windows Defining Mix (WDM) containing the first and last eluting congeners of each descriptor and isomer specificity compounds was not analyzed prior to the initial calibration sequence or at the beginning of each analytical sequence; however, the first and last eluting congeners and isomer specificity compounds were added to the midpoint of the initial calibration and to the continuing calibration standards (see section 2.3.2). The GC column performance in the calibrations was acceptable, with the height of the valley between the closely eluting isomers and 2,3,7,8-TCDD reported as less than 25%. No qualifications were required.

2.2.2 Mass Spectrometer Performance

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

2.3 CALIBRATION

2.3.1 Initial Calibration

There were two initial calibrations, analyzed 08/30/04 and 10/04/04. The calibrations each 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 15 native compounds (calibration by isotope dilution) and $\leq 35\%$ for the two 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 VERs were acceptable with the concentrations within the acceptance criteria listed in Table 6 of EPA Method 1613. The ion abundance ratios and relative retention times were within the method QC limits. 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 standards 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 (6543-MB001) was extracted and analyzed with the samples in these SDGs. There were no detects reported 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 Ongoing Precision Recovery (OPR) sample (6543-OPR001) was extracted and analyzed with the samples in these SDGs. All recoveries were within the acceptance criteria listed in Table 6 of the Method 1613. No qualifications were required.

2.6 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

MS/MSD analyses were not performed in these SDGs. 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 samples in these SDGs had no associated field QC samples. No qualifications were required.

2.7.2 Field Duplicates

No field duplicate samples were identified for these SDGs.

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. Compounds flagged by the laboratory with a "D" qualifier indicated possible diphenylether interference and were qualified as estimated, "J." Any reported EMPC was qualified as an estimated nondetect, "UJ." Any detects below the lower method calibration level (MCL) were qualified as estimated, "J;" however, as Alta analyzed an additional calibration standard, not all results below the method calibration level were appropriately qualified by the laboratory. These results were qualified as estimated, "J," by the reviewer. No further qualifications were required.



Sample ID: IOB1570-01 <i>Outfall 018</i>		EPA Method 1613				
Client Data		Sample Data		Laboratory Data		
Name: Del Mar Analytical, Irvine	Matrix: Aqueous	Lab Sample: 25778-001	Date Received: 24-Feb-05			
Project: IOB1570	Sample Size: 1.029 L	QC Batch No.: 6543	Date Extracted: 25-Feb-05			
Date Collected: 18-Feb-05		Date Analyzed DB-5: 1-Mar-05	Date Analyzed DB-225: NA			
Time Collected: 1128						
Analyte	Conc. (pg/L)	DL ^a	EMPC ^b	Labeled Standard	%R	LCL-UCL ^d Qualifiers
2,3,7,8-TCDD	ND	1.58		IS 13C-2,3,7,8-TCDD	67.1	25 - 164
1,2,3,7,8-PeCDD	ND	2.31		13C-1,2,3,7,8-PeCDD	59.9	25 - 181
1,2,3,4,7,8-HxCDD	ND	3.59		13C-1,2,3,4,7,8-HxCDD	67.2	32 - 141
1,2,3,6,7,8-HxCDD	ND	3.51		13C-1,2,3,6,7,8-HxCDD	74.1	28 - 130
1,2,3,7,8,9-HxCDD	ND	3.53		13C-1,2,3,4,6,7,8-HpCDD	66.6	23 - 140
1,2,3,4,6,7,8-HpCDD	67.1			13C-OCDD	52.9	17 - 157
OCDD	749			13C-2,3,7,8-TCDF	68.4	24 - 169
2,3,7,8-TCDF	ND	1.80		13C-1,2,3,7,8-PeCDF	54.7	24 - 185
1,2,3,7,8-PeCDF	ND	3.14		13C-2,3,4,7,8-PeCDF	57.1	21 - 178
2,3,4,7,8-PeCDF	ND	2.59		13C-1,2,3,4,7,8-HxCDF	58.9	26 - 152
1,2,3,4,7,8-HxCDF	ND	1.61		13C-1,2,3,6,7,8-HxCDF	69.5	26 - 123
1,2,3,6,7,8-HxCDF	ND	1.51		13C-2,3,4,6,7,8-HxCDF	69.2	28 - 136
2,3,4,6,7,8-HxCDF	ND	1.63		13C-1,2,3,7,8,9-HxCDF	66.3	29 - 147
1,2,3,7,8,9-HxCDF	ND	2.48		13C-1,2,3,4,6,7,8-HpCDF	66.3	28 - 143
1,2,3,4,6,7,8-HpCDF	11.7		J	13C-1,2,3,4,7,8,9-HpCDF	68.6	26 - 138
1,2,3,4,7,8,9-HpCDF	ND	1.96		13C-OCDF	62.6	17 - 157
OCDF	27.1		J	CRS 37Cl-2,3,7,8-TCDD	76.0	35 - 197
Totals						
Total TCDD	ND	1.58				
Total PeCDD	ND	2.31				
Total HxCDD	8.65		14.9			
Total HpCDD	152					
Total TCDF	ND	1.80				
Total PeCDF	2.57					
Total HxCDF	8.83		13.3			
Total HpCDF	34.4					

Footnotes

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

Approved By: William J. Luksemburg 02-Mar-2005 08:47


Analysis: **AMEC VALIDATED LEVEL IV**

Project 25778

CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

AMEC Earth & Environmental
 550 South Wadsworth Boulevard
 Suite 500
 Lakewood, CO 80226

Package ID T711HZ9
 Task Order 313150010
 SDG No. IOB1570

No. of Analyses 1
 Date: 03/31/05
 Reviewer's Signature


Laboratory Truesdail

Reviewer P. Meeks

Analysis/Method Hydrazines

ACTION ITEMS ^a	
1. Case Narrative Deficiencies	
2. Out of Scope Analyses	
3. Analyses Not Conducted	
4. Missing Hardcopy Deliverables	
5. Incorrect Hardcopy Deliverables	
6. Deviations from Analysis Protocol, e.g.,	<p>Qualifications applied for exceeded extraction holding times.</p> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>
Holding Times.	
GC/MS Tune/Inst. Performance	
Calibrations	
Blanks	
Surrogates	
Matrix Spike/Dup LCS	
Field QC	
Internal Standard Performance	
Compound Identification and Quantitation	
System Performance	

COMMENTS ^b

^a 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

ANALYSIS: HYDRAZINES

SAMPLE DELIVERY GROUP: IOB1570

Prepared by

AMEC—Denver Operations
550 South Wadsworth Boulevard, Suite 500
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title: NPDES Monitoring
Contract Task Order #: 313150010
Sample Delivery Group #: IOB1570
Project Manager: B. McIlvaine
Matrix: Water
Analysis: Hydrazines
QC Level: Level IV
No. of Samples: 1
Reviewer: P. Meeks
Date of Review: March 31, 2005

The samples listed in Table 1 were validated based on the general guidelines outlined in the USEPA *Contract Laboratory Program National Functional Guidelines for Organic Data Review (2/94)*, and USEPA SW-846 Method 8315. Any deviations from these procedures and guidelines are documented herein. Qualifiers were applied in cases where the data did not meet the required QC criteria or where special consideration by the data user is required. Data qualifiers were placed on Form Is with the associated qualification codes. Analytes that were rejected for any reason are denoted on the Form I as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

Table 1. Sample identification

EPA ID	Del Mar ID	Laboratory ID	Matrix	COC Method
Outfall 018	IOB1570-01	939965	water	Hydrazines by 8315

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 and the subcontract laboratory, Truesdail Laboratories, within the temperature limits of $4^{\circ}\text{C} \pm 2^{\circ}\text{C}$. The analysis did not require preservation, and no preservation was noted in the field. The case narratives for this SDG noted that the sample was received intact at both laboratories. No qualifications were required.

2.1.2 Chain of Custody

The COC from the field to Del Mar was signed and dated by field and laboratory personnel, and the transfer COC from Del Mar to Truesdail Laboratories was signed and dated by personnel from both laboratories. Both the original COC and transfer COCs requested only monomethyl hydrazine analysis; however, unsymmetrical dimethyl hydrazine and hydrazine were also reported. As the sample was transported to Del Mar and then to Truesdail by courier, no custody seals were required. Truesdail Laboratories did not list the Outfall 018 ID on the Form I; therefore, the reviewer hand-corrected the Form I to include this information. No qualifications were required.

2.1.3 Holding Times

The holding time was assessed by comparing the date of collection with the date of analysis. The sample was received at Truesdail one day beyond the three-day extraction holding time; therefore, the nondetected results for Outfall 018 were qualified as estimated, "UJ." The sample was analyzed within three days of extraction. No further qualifications were required.

2.2 CALIBRATION

The five-point initial calibrations were analyzed 02/22/05, with correlation coefficients of ≥ 0.995 for the hydrazines. The ICV and CCV bracketing the sample analysis had recoveries for the hydrazines within the QC limits of 85-115%. No qualifications were required.

2.3 BLANKS

One method blank was analyzed with this SDG. The results reported on the method blank summary form and in the raw data for the instrument and method blank analyses associated with the sample were nondetects at the reporting limit. No qualifications were required.

2.4 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

One laboratory control sample/laboratory control sample duplicate was analyzed with this SDG. The hydrazines were recovered within the laboratory-established control limits of 70%-130%, and the RPDs were within the control limit of $\leq 20\%$. No qualifications were required.

2.5 SURROGATES RECOVERY

Surrogates were not utilized in this analysis. No qualifications were required.

2.6 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

MSD/MSD analyses were performed on Outfall 018. The recoveries for the hydrazines were within the laboratory QC limits of 0-150%; however, both recoveries were $\geq 10\%$. The RPDs were within the QC limit of $\leq 20\%$. No qualifications were required.

2.7 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 sample. Following are findings associated with field QC samples:

2.7.1 Field Blanks and Equipment Rinsates

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

2.7.2 Field Duplicates

There were no field duplicate samples in this SDG.

2.8 COMPOUND IDENTIFICATION

The sample was analyzed by HPLC for monomethyl hydrazine, unsymmetrical dimethyl hydrazine, and hydrazine by Method 8315. Compound identification was verified, and review of the raw data indicated no compound identification errors. No qualifications were required.

2.9 COMPOUND QUANTIFICATION AND REPORTED DETECTION LIMITS

Compound quantification was verified from the raw data at a Level IV data validation by recalculating LCS/LCSD and MS/MSD detects, as there were no sample detects. No compound quantitation problems were noted. The hydrazine reporting limits were supported by the lower levels of the initial calibration. No qualifications were required.



Established 1937

14201 FRANKLIN AVENUE · TUSTIN, CALIFORNIA 92780-7003
(714) 730-6239 · FAX (714) 730-6462 · www.truesdail.com

Client: Del Mar Analytical
17461 Certan Ave., Suite 100
Irvine, CA 92614

Attention: Michele Harper
Liquid / 1 Sample

Project Name: IOB1570

P.O. Number: IOB1570

Method Number: 8315 (Modified)

Investigation: Hydrazines in Liquid

REPORT

Laboratory No: 939965

Report Date: February 28, 2005

Sampling Date: February 18, 2005

Receiving Date: February 22, 2005

Extraction Date: February 22, 2005

Analysis Date: February 23, 2005

Units: µg/L

Dilution Factor: 1

Reported By: JS

Analytical Results

Sample ID	Sample Description	Monomethyl Hydrazine		Unsymmetrical Dimethyl Hydrazine		Hydrazine	
		µg/L	Qual Code	µg/L	Qual Code	µg/L	Qual Code
704793-MB	Method Blank	ND	*	ND	*	ND	*
939965*	Outfall 018 IOB1570-01	ND	US	ND	US	ND	US
MDL		1.2	H	0.27	H	0.39	H
PQL		5.0		5.0		1.0	

* Sample was received past the holding time of 3 days.

MDL: Method Detection Limit, µg/L
PQL: Practical Quantitation Limit, µg/L
ND: Not Detected at or above the MDL value.
N/A: Not Applicable

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

AMEC VALIDATED

Xuan Dang, Project Manager
Environmental Services

LEVEL IV

This report applies only to the sample or samples investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from these laboratories.

CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

AMEC Earth & Environmental
 550 South Wadsworth Boulevard
 Suite 500
 Lakewood, CO 80226

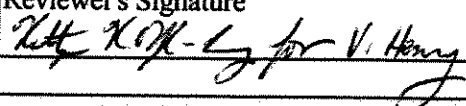
Package ID T711MT63
 Task Order 313150010, 313150012
 SDG No. IOB1570, IOB1571

No. of Analyses 2

Laboratory Del Mar Analytical

Reviewer V. Henry

Analysis/Method Metals

Date: 3/31/05
 Reviewer's Signature


ACTION ITEMS ^a	
1. Case Narrative Deficiencies	
2. Out of Scope Analyses	
3. Analyses Not Conducted	
4. Missing Hardcopy Deliverables	
5. Incorrect Hardcopy Deliverables	
6. Deviations from Analysis Protocol, e.g., Holding Times GC/MS Tune/Inst. Perform Calibrations Blanks Surrogates Matrix Spike/Dup LCS Field QC Internal Standard Performance Compound Identification and Quantitation System Performance	Qualifications applied for: Analytes detected below the reporting limit were qualified as estimated, "J." Detects and negative results in the associated method blanks and CCBs The MDLs for antimony and thallium were raised to the level of the associated blank detects for those analytes.
COMMENTS ^b	
^a 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 Qualifier Reference Table

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

Qualification Code Reference Table

Qualifier	Organics	Inorganics
H	Holding times were exceeded.	Holding times were exceeded.
S	Surrogate recovery was outside QC limits.	The sequence or number of standards used for the calibration was incorrect
C	Calibration %RSD or %D were noncompliant.	Correlation coefficient is <0.995.
R	Calibration RRF was <0.05.	%R for calibration is not within control limits.
B	Presumed contamination from preparation (method) blank.	Presumed contamination from preparation (method) or calibration blank.
L	Laboratory Blank Spike/Blank Spike Duplicate %R was not within control limits.	Laboratory Control Sample %R was not within control limits.
Q	MS/MSD recovery was poor or RPD high.	MS recovery was poor.
E	Not applicable.	Duplicates showed poor agreement.
I	Internal standard performance was unsatisfactory.	ICP ICS results were unsatisfactory.
A	Not applicable.	ICP Serial Dilution %D were not within control limits.
M	Tuning (BFB or DFPP) was noncompliant.	Not applicable.
T	Presumed contamination from trip blank.	Not applicable.
+	False positive – reported compound was not present. Not applicable.	
-	False negative – compound was present but not reported.	Not applicable.
F	Presumed contamination from FB, or ER.	Presumed contamination from FB or ER.
\$	Reported result or other information was incorrect.	Reported result or other information was incorrect.
?	TIC identity or reported retention time has been changed.	Not applicable.
D	The analysis with this flag should not be used because another more technically sound analysis is available.	The analysis with this flag should not be used because another more technically sound analysis is available.
P	Instrument performance for pesticides was poor.	Post Digestion Spike recovery was not within control limits.
DNQ	The compound was detected between the MDL and the RL and, by definition, is considered an estimated value.	The compound was detected between the MDL and the RL and, by definition, is considered an estimated value.

***#**

Unusual problems found with the data that have been described in Section 2.#, "Data Validation Findings." The number following the asterisk (*) will indicate the subsection where a description of the problem can be found (eg. *1 would indicate a sample was not within temperature limits).

Unusual problems found with the data that have been described in Section 2.#, "Data Validation Findings." The number following the asterisk (*) will indicate the subsection where a description of the problem can be found (eg. *1 would indicate a sample was not within temperature limits).



DATA VALIDATION REPORT

NPDES
Monitoring

ANALYSIS: METALS

SAMPLE DELIVERY GROUPS: IOB1570 & IOB1571

Prepared by

AMEC—Denver Operations
550 South Wadsworth Boulevard, Suite 500
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title: NPDES Monitoring
Contract Task Order #: 313150010, 313150012
SDG#: IOB1570, IOB1571
Project Manager: B. McIlvaine
Matrix: Water
Analysis: Metals
QC Level: Level IV
No. of Samples: 2
No. of Reanalyses/Dilutions: 0
Reviewer: V. Henry
Date of Review: March 31, 2005

The samples listed in Table 1 were validated based on the guidelines outlined in the *AMEC Data Validation Procedure for Levels III and IV ICP-MS Metals, (DVP-5-A, Rev.0)*, *AMEC Data Validation Procedure for Levels III and IV ICP Metals (DVP-5, Rev. 0)*, *SW-846 Method 6020B for Inductively Coupled Plasma – Mass Spectrometry*, *SW-846 Method 6010B for Inductively Coupled Plasma*, *SW-846 Method 7471A for Mercury (Manual Cold-Vapor Technique)*, and validation guidelines outlined in the *USEPA CLP National Functional Guidelines for Inorganic Data Review (2/94)*. Any deviations from these procedures and guidelines are documented herein. Qualifiers were applied in cases where the data did not meet the required QC criteria or where special consideration by the data user is required. Data qualifiers were placed on Form Is with the associated qualification codes. Analytes that were rejected for any reason are denoted on the Form I as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

Table 1. Sample identification

Client ID	EPA ID	Laboratory ID	Matrix	COC Method
Outfall 018	Outfall 018	IOB1570-01	water	ILM04
Outfall 003	Outfall 003	IOB1571-01	water	ILM04

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

Following are findings associated with sample management:

2.1.1 Sample Preservation, Handling, and Transport

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

2.1.2 Chain of Custody

The COCs were signed and dated by field and laboratory personnel. The requested analytes for Outfall 018 were changed in a memo from MWH personnel dated 02/17/05. The COCs accounted for the remaining samples and analyses presented in these SDGs. Duplicate samples were submitted for all samples in these SDGs; however, duplicate analyses were not required. No sample qualifications were required.

2.1.3 Holding Times

The dates of collection recorded on the COCs 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 and ICP/MS metals and 28 days for mercury. No qualifications were required.

2.2 ICP-MS TUNING

A precalibration routine must be completed prior to calibrating the instrument, which consists of analyzing a tuning solution to verify resolution, mass calibration, and thermal stability. The solution must be analyzed a minimum of five times and must contain isotopes representing all mass regions of interest. All %RSDs were less than 5%. The mass calibrations were within 0.1 amu of the true mass and the instrument resolutions were less than 0.75 amu at 5 percent peak height for all analytes in the tune solution. No site sample qualifications were required.

2.3 CALIBRATION

The ICV and CCV results showed acceptable recoveries, 90-110% for ICP and ICP/MS metals and 80-120% for mercury. Arsenic and silver were recovered below the control limit in the ICP reporting limit check standard associated with Outfall 003; therefore, nondetected arsenic and silver in the sample was qualified as estimated, "UJ." The ICP/MS reporting limit check standards associated with Outfall 018 were recovered within the AMEC control limits of 70-130%. The ICP/MS reporting limit check standards associated with Outfall 003 were evaluated because the standards were not included in the raw data. No further sample qualifications were required.

2.4 BLANKS

Zinc was detected in method blank 5B24093-BLK1 at 0.0078 mg/L; therefore, zinc detected in Outfall 003 was qualified as estimated, "UJ." Thallium and antimony were detected in the CCBs bracketing Outfall 018 at approximately 0.159 and 0.95 µg/L, respectively, and thallium and antimony were detected in Outfall 018 at concentrations below the level reported in the CCBs. The CCB detects indicated the laboratory could not detect antimony at the reported MDL. The reviewer raised the MDLs in the site samples to the level reported in the respective CCBs and qualified the results as estimated, "UJ." No further qualifications were required due to the method and calibration blank results.

2.5 ICP INTERFERENCE CHECK SAMPLE (ICS A/AB)

ICSA and ICSAB analyses were included in the raw data for the ICP-MS analyses. Results were not provided for spiked interferents sulfur, phosphorus, carbon, and chloride. Cadmium was detected above the applicable reporting limit in the ICSA associated with Outfall 018. The results for aluminum, sodium and potassium were above the calibration range of the instrument in all the ICSA and ICSAB analyses associated with Outfall 003 and Outfall 018; however, as these analytes were not reported in the site samples, no qualifications were required. The validator reviewed the raw data for the site sample ICP/MS analyses for the level of reported interferents, Al, Ca, Fe, and Mg, and determined that the level of reported interferents were not high enough to cause matrix affects. No assessment could be made with respect to possible interference from sulfur, phosphorus, carbon, and chloride.

ICSA and ICSAB analyses were included in the raw data for the ICP analyses, but were not run on the days the site samples were analyzed. The recoveries for the interferents and the other spiked analytes were within the control limits of 80-120%. In the ICSA analyses there were negative results for boron and chromium and positive results for zinc that were above the absolute value of the applicable reporting limits. The validator reviewed the raw data for the site sample ICP analyses for the level of reported interferents, Al, Ca, Fe, and Mg, and determined that the level of reported interferents were not high enough to cause matrix affects. No qualifications were required.

2.6 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

The ICP/MS LCS samples were identified as 5B18140-BS1 and 5B24099-BS1 and the ICP LCS samples were identified as 5B18141-BS1 and 5B24093-BS1. The mercury LCS sample was identified as 5B22045-BS1. The LCS results on the summary forms and in the raw data were within the laboratory-established ICP, ICP/MS, and mercury control limits of 85-115%. No qualifications were required.

2.7 LABORATORY DUPLICATES

The matrix spike/matrix spike duplicate analyses were performed on sample Outfall 018 for ICP only. There were no laboratory duplicate samples associated with the ICP/MS or mercury analyses. All %RPDs were within the established control limit of ± 20 and no sample qualifications were required. There were no matrix QC analyses applicable to sample Outfall 003.

2.8 MATRIX SPIKE

The matrix spike/matrix spike duplicate analyses were performed on sample Outfall 018 for ICP only. There were no laboratory duplicate samples associated with the ICP/MS or mercury analyses. All percent recoveries were within the AMEC established control limits of 75-125% with the exception of iron at 132%. However, the matrix spike analysis is not applicable for iron because the sample concentration exceeds the spike amount by a factor of four or more. There were no matrix QC analyses applicable to sample Outfall 003. No sample qualifications were required.

2.9 FURNACE ATOMIC ABSORPTION QC

Furnace atomic absorption was not utilized for the analysis of these samples; therefore, furnace atomic absorption QC is not applicable.

2.10 ICP/MS AND ICP SERIAL DILUTION

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

2.11 INTERNAL STANDARDS PERFORMANCE

The ICP-MS internal standard recoveries for the site samples and associated QC sample analyses were within the 60-125% control limits and no qualifications were required.

2.12 SAMPLE RESULT VERIFICATION

A Level IV review was performed for the samples in these data packages. Calculations were verified, and the sample results reported on the Form Is were verified against the raw data. No transcription errors or calculation errors were noted. Analytes detected below the reporting limit were qualified as estimated, "J." No further qualifications were required.

2.13 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.

2.13.1 Field Blanks and Equipment Rinsates

The samples in these SDGs had no associated field QC samples. No qualifications were required.

2.13.2 Field Duplicates

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



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

Project ID: Annual Outfall 018

Report Number: IOB1570

Sampled: 02/18/05
 Received: 02/18/05

DRAFT: METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers	Lab Qual	Qual Code		
Sample ID: IOB1570-01 (DRAFT: Outfall 018 - Water) - cont.													
Reporting Units: ug/l													
Antimony	EPA 200.8	5B18140	0.18 0.95	2.0	0.44	0.95	1	02/18/05	02/20/05	J	UJ	\$B-DNQ	
Arsenic	EPA 200.7	5B18141	3.8	5.0	ND	1	02/18/05	02/20/05			UJ		
Beryllium	EPA 200.7	5B18141	0.62	2.0	ND	1	02/18/05	02/20/05			UJ		
Cadmium	EPA 200.8	5B18140	0.015	1.0	0.18	1	02/18/05	02/20/05	J		J	DNQ	
Chromium	EPA 200.7	5B18141	0.68	5.0	3.3	1	02/18/05	02/20/05	J		J	DNQ	
Cobalt	EPA 200.7	5B18141	0.89	10	1.0	1	02/18/05	02/20/05	J		J	DNQ	
Copper	EPA 200.8	5B18140	0.49	2.0	3.6	1	02/18/05	02/20/05	J		J	DNQ	
Lead	EPA 200.8	5B18140	0.13	1.0	2.0	1	02/18/05	02/22/05					
Manganese	EPA 200.7	5B18141	3.2	20	93	1	02/18/05	02/20/05					
Mercury	EPA 245.1	5B22045	0.063	0.20	0.15	1	02/22/05	02/22/05	J		J	DNQ	
Nickel	EPA 200.7	5B18141	2.0	10	3.1	1	02/18/05	02/20/05	J		J	DNQ	
Selenium	EPA 200.8	5B18140	0.36	2.0	ND	1	02/18/05	02/20/05			UJ	DNQ	
Silver	EPA 200.8	5B18140	0.089	1.0	0.14	1	02/18/05	02/20/05	J		J	DNQ	
Thallium	EPA 200.8	5B18140	0.075 0.15	1.0	0.093	0.16	1	02/18/05	02/20/05	J		J	DNQ
Vanadium	EPA 200.7	5B18141	1.4	10	5.9	1	02/18/05	02/20/05	J		J	\$B-DNQ	
Zinc	EPA 200.7	5B18141	3.7	20	31	1	02/18/05	02/20/05	J		J	DNQ	

AMEC VALIDATED

Level IV

DRAFT REPORT
 DRAFT REPORT
 DATA SUBJECT TO CHANGE

Amec Validated - Level IV
 3/31/05

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

Project ID: Annual Outfall 018

Report Number: IOB1570

Sampled: 02/18/05

Received: 02/18/05

DRAFT: METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers	<i>Qual</i>	<i>Qual</i>
Sample ID: IOB1570-01 (DRAFT: Outfall 018 - Water) - cont.											
Reporting Units: mg/l											
Barium	EPA 200.7	5B18141	0.0028	0.010	0.031	1	02/18/05	02/20/05			
Boron	EPA 200.7	5B18141	0.0074	0.050	0.050	1	02/18/05	02/20/05			
Iron	EPA 200.7	5B18141	0.0088	0.040	2.6	1	02/18/05	02/20/05	M1		

Qual
Qual
Qual

AMEC VALIDATED

Level IV

DRAFT REPORT
 DRAFT REPORT
 DATA SUBJECT TO CHANGE

Amec Validated - Level 4
 3/31/05

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IOB1570 <Page 28 of 61>

CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

AMEC Earth & Environmental
 550 South Wadsworth Boulevard
 Suite 500
 Lakewood, CO 80226

Package ID T711PP25
 Task Order 313150010
 SDG No. IOB1570, IOB1571

No. of Analyses 2

Laboratory Del Mar Analytical

Date: April 4, 2005

Reviewer L. Calvin

Reviewer's Signature


Analysis/Method Pesticides/PCBs by Method 608

ACTION ITEMS ^a	
1. Case Narrative Deficiencies	
2. Out of Scope Analyses	
3. Analyses Not Conducted	
4. Missing Hardcopy Deliverables	
5. Incorrect Hardcopy Deliverables	
6. Deviations from Analysis	Qualifications 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	
COMMENTS^b	

^a 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

ANALYSIS: PESTICIDES/PCBs

SAMPLE DELIVERY GROUP: IOB1570, IOB1571

Prepared by

AMEC Denver Operations
550 South Wadsworth Boulevard, Suite 500
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title: NPDES Monitoring
Contract Task Order #: 313150010
SDG#: IOB1570, IOB1571
Project Manager: B. McIlvaine
Matrix: Water
Analysis: Pesticides/PCBs
QC Level: Level IV
No. of Samples: 2
No. of Reanalyses/Dilutions: 0
Reviewer: L. Calvin
Date of Review: April 4, 2005

The samples listed in Table 1 were validated based on the general guidelines outlined in the *AMEC Data Validation Procedures (DVP-4, Rev.2)*, *EPA Method 608*, 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 summary form as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

Table 1. Sample identification

Client ID	EPA ID	Laboratory ID	Matrix	Method
Outfall 018	Outfall 018	IOB1570-01	water	608
Outfall 003	Outfall 003	IOB1571-01	water	608

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

The following are findings associated with sample management:

2.1.1 Sample Preservation, Handling, and Transport

The samples were received at the laboratory within the temperature limits of $4^{\circ}\text{C} \pm 2^{\circ}\text{C}$. The analysis did not require preservation, and no preservation was noted in the field. The COCs noted that the samples were received intact. No qualifications were required.

2.1.2 Chain of Custody

The COCs were signed and dated by both field and laboratory personnel. The COCs accounted for the analyses presented in these SDGs. As the samples were couriered directly to the laboratory, custody seals were not required. No qualifications were required.

2.1.3 Holding Times

The water samples were extracted within seven days of sample collection and analyzed within 40 days of extraction. No qualifications were required.

2.2 PESTICIDES INSTRUMENT PERFORMANCE

No resolution check standards or breakdown check standards are required by Method 608 for pesticides, and according to the raw data provided, a resolution check standard was not analyzed by the laboratory. The laboratory did analyze a breakdown check standard with a breakdown of $\leq 20\%$ for individual components (4,4-DDT and endrin) and $\leq 30\%$ for the total, as suggested in the National Functional Guidelines. A review of the raw data indicated that the analytical run time was of sufficient length to provide adequate standard separation. The two analytical columns used in the analyses were within the guidelines specified in the methods.

According to the laboratory SOP and the initial calibration raw data, the retention time windows are ± 0.10 minutes for both surrogates and target compound calibration standards. A review of the raw data indicated that the laboratory retention time criteria were met for the surrogates and pesticide calibration standards. No qualifications were required.

2.3 CALIBRATION

2.3.1 Analytical Sequence

Based on the data provided, the analytical sequences were in accordance with the requirements of Method 608. No qualifications were required.

2.3.2 Initial Calibration

There were two initial calibrations dated 02/12/05 and 02/22/05 associated with the pesticide analyses of the samples in these SDGs, which consisted of six point calibrations for all pesticide target compounds on two analytical columns. The %RSDs were within the EPA Method 608 QC limit of $\leq 10\%$ or the r^2 values were ≥ 0.995 on both analytical columns. There was one initial calibration dated 02/11/05 associated with the PCB analyses of the samples in these SDGs which consisted of five points for Aroclor 1016 and Aroclor 1260. Single point calibrations for Aroclor 1242, Aroclor 1248, and Aroclor 1254 were also analyzed. The average %RSDs for the individual peaks of Aroclor 1016 and Aroclor 1260 were $\leq 10\%$ or the r^2 values were ≥ 0.995 on both analytical columns. An ICV was analyzed immediately following each of the initial calibrations. The %Ds for all target compounds were within the QC limits of 15% on both analytical columns. A representative number of %RSDs and ICV %Ds were recalculated from the raw data and no transcription or calculation errors were noted. No qualifications were required.

2.3.3 Continuing Calibration

Of the continuing calibrations associated with the pesticide analyses for the samples in these SDGs there were several %D outliers. The %Ds for heptachlor and endrin in the continuing calibration analyzed 02/23/05 (GC43) and for heptachlor, endrin, and 4,4'-DDD in the continuing calibration analyzed 02/23/05 (GC54) exceeded 15% on the primary channel; therefore, nondetects for heptachlor and endrin in both samples and for 4,4'-DDD in sample Outfall 003 were qualified as estimated, "UJ." The remaining applicable %Ds were within the Method QC limit of $\leq 15\%$ for the remaining calibrations. The CCVs bracketing the PCB analyses of the samples had %Ds $\leq 15\%$ for Aroclor 1016 and Aroclor 1260. A representative number of %Ds were recalculated from the raw data and no transcription or calculation errors were noted. No further qualifications were required.

2.4 BLANKS

2.4.1 Instrument Blanks

An instrument blank was analyzed at the beginning of each analytical sequence. Cross-contamination was not evident in the samples. No qualifications were necessary.

2.4.2 Method Blanks

One water method blank (5B22041-BLK1) was extracted and analyzed with these SDGs. There were no pesticide target compounds or Aroclors detected in the method blank. Review of the chromatograms showed no false negatives. No qualifications were required.

2.5 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

One blank spike/blank spike duplicate pair (5B22041-BS1/BSD1) were extracted and analyzed with these SDGs. The recoveries for all spiked pesticide target compounds and Aroclors were within the laboratory-established QC limits and the RPDs were $\leq 30\%$. A representative number of recoveries were checked from the raw data, and no calculation or transcription errors were noted. No qualifications were required.

2.6 SURROGATE RECOVERY

The sample and all QC samples were fortified with the surrogate compounds decachlorobiphenyl and tetrachloro-m-xylene. Surrogate recoveries for the pesticide and PCB analyses of the samples were within the laboratory-established. The recoveries were calculated from the raw data and no transcription or calculation errors were noted. No qualifications were required.

2.7 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

There were no MS/MSD analyses associated with these SDGs. Method accuracy and precision were assessed based on the blank spike/blank spike duplicate results. No qualifications were required.

2.8 SAMPLE CLEANUP PERFORMANCE

According to the laboratory extraction benchsheets, no cleanups were performed on the water samples. No qualifications were required.

2.9 FIELD QC SAMPLES

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

2.9.1 Field Blanks and Equipment Rinsates

There were no field QC samples associated with the samples in these SDGs. No qualifications were required.

2.9.2 Field Duplicates

There were no field duplicate samples associated with the sample in these SDGs.

2.10 COMPOUND IDENTIFICATION

The laboratory analyzed for pesticide target compounds and PCBs by EPA Method 608. Compound identification is verified at a Level IV validation. Review of chromatograms and retention times indicated no problems with compound identification for the samples in these SDGs. No qualifications were required.

2.11 COMPOUND QUANTIFICATION AND REPORTED DETECTION LIMITS

Compound quantification was verified for these SDGs; however, as there were no detects reported in the samples, quantitation was verified by recalculating a representative number of blank spike and surrogate recoveries. Reporting limits were supported by the low level standard

DATA VALIDATION REPORT

Project: NPDES
SDG: IOB1570, 1571
Analysis: Pest/PCB

of the initial calibration and the laboratory MDL studies. The water reporting limits were not adjusted for sample amounts on the result summaries; however, the dilution factors listed on the summaries reflected the sample volume extracted. Results were reported in ug/L (ppb). No qualifications were required.



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

Project ID: Annual Outfall 018

Report Number: IOB1570

Sampled: 02/18/05
 Received: 02/18/05

DRAFT: ORGANOCHLORINE PESTICIDES (EPA 608)

*Red
Qual*
*Qual
Code*

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers	<i>Red Qual</i>	<i>Qual Code</i>
Sample ID: IOB1570-01 (DRAFT: Outfall 018 - Water) - cont. Reporting Units: ug/l											
Aldrin	EPA 608	5B22041	0.030	0.10	ND	0.962	02/22/05	02/23/05			
alpha-BHC	EPA 608	5B22041	0.00049	0.010	ND	0.962	02/22/05	02/23/05			
beta-BHC	EPA 608	5B22041	0.015	0.10	ND	0.962	02/22/05	02/23/05			
delta-BHC	EPA 608	5B22041	0.020	0.20	ND	0.962	02/22/05	02/23/05			
gamma-BHC (Lindane)	EPA 608	5B22041	0.015	0.10	ND	0.962	02/22/05	02/23/05			
Chlordane	EPA 608	5B22041	0.20	1.0	ND	0.962	02/22/05	02/23/05			
4,4'-DDD	EPA 608	5B22041	0.015	0.10	ND	0.962	02/22/05	02/23/05			
4,4'-DDE	EPA 608	5B22041	0.020	0.10	ND	0.962	02/22/05	02/23/05			
4,4'-DDT	EPA 608	5B22041	0.030	0.10	ND	0.962	02/22/05	02/23/05			
Dieldrin	EPA 608	5B22041	0.015	0.10	ND	0.962	02/22/05	02/23/05			
Endosulfan I	EPA 608	5B22041	0.015	0.10	ND	0.962	02/22/05	02/23/05			
Endosulfan II	EPA 608	5B22041	0.040	0.10	ND	0.962	02/22/05	02/23/05			
Endosulfan sulfate	EPA 608	5B22041	0.015	0.20	ND	0.962	02/22/05	02/23/05			
Endrin	EPA 608	5B22041	0.015	0.10	ND	0.962	02/22/05	02/23/05			
Endrin aldehyde	EPA 608	5B22041	0.045	0.10	ND	0.962	02/22/05	02/23/05			
Endrin ketone	EPA 608	5B22041	0.020	0.10	ND	0.962	02/22/05	02/23/05			
Heptachlor	EPA 608	5B22041	0.030	0.10	ND	0.962	02/22/05	02/23/05			
Heptachlor epoxide	EPA 608	5B22041	0.020	0.10	ND	0.962	02/22/05	02/23/05			
Methoxychlor	EPA 608	5B22041	0.035	0.10	ND	0.962	02/22/05	02/23/05			
Toxaphene	EPA 608	5B22041	1.5	5.0	ND	0.962	02/22/05	02/23/05			
Surrogate: Tetrachloro-m-xylene (35-120%)											
Surrogate: Decachlorobiphenyl (45-120%)											
Surrogate: Tetrachloro-m-xylene (35-120%)											
Surrogate: Decachlorobiphenyl (45-120%)											

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AMEC VALIDATED

LEVEL IV

DRAFT REPORT
 DRAFT REPORT
 DATA SUBJECT TO CHANGE

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

Project ID: Annual Outfall 018

Report Number: IOB1570

Sampled: 02/18/05
 Received: 02/18/05

DRAFT: TOTAL PCBS (EPA 608)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers	Per Qual	Qual Code
Sample ID: IOB1570-01 (DRAFT: Outfall 018 - Water) - cont.											
Reporting Units: ug/l											
Aroclor 1016	EPA 608	5B22041	0.20	1.0	ND	0.962	02/22/05	02/23/05		u ↓	
Aroclor 1221	EPA 608	5B22041	0.10	1.0	ND	0.962	02/22/05	02/23/05			
Aroclor 1232	EPA 608	5B22041	0.15	1.0	ND	0.962	02/22/05	02/23/05			
Aroclor 1242	EPA 608	5B22041	0.15	1.0	ND	0.962	02/22/05	02/23/05			
Aroclor 1248	EPA 608	5B22041	0.25	1.0	ND	0.962	02/22/05	02/23/05			
Aroclor 1254	EPA 608	5B22041	0.25	1.0	ND	0.962	02/22/05	02/23/05			
Aroclor 1260	EPA 608	5B22041	0.40	1.0	ND	0.962	02/22/05	02/23/05			
Surrogate: Decachlorobiphenyl (45-120%) 70 %											

AMEC VALIDATED LEVEL IV

DRAFT REPORT
 DRAFT REPORT
 DATA SUBJECT TO CHANGE

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

AMEC Earth & Environmental
 550 South Wadsworth Boulevard
 Suite 500
 Lakewood, CO 80226

Package ID T711RA5
 Task Order 313150010
 SDG No. Multiple
 No. of Analyses 8

Laboratory Eberline
 Reviewer P. Meeks
 Analysis/Method Radionuclides

Date: 03/28/05
 Reviewer's Signature
P. Meeks

ACTION ITEMS^a	
1. Case Narrative Deficiencies	
2. Out of Scope Analyses	
3. Analyses Not Conducted	
4. Missing Hardcopy Deliverables	
5. Incorrect Hardcopy Deliverables	
6. Deviations from Analysis Protocol, e.g.,	Qualifications applied for:
Holding Times	<u>1. Detector efficiency outliers.</u>
GC/MS Tune/Inst. Performance	<u>2. Exceeded holding imtes.</u>
Calibrations	
Blanks	
Surrogates	
Matrix Spike/Dup LCS	
Field QC	
Internal Standard Performance	
Compound Identification and Quantitation	
System Performance	
COMMENTS^b	
<small>^a Subcontracted analytical laboratory is not meeting contract and/or method requirements.</small> <small>^b Differences in protocol have been adopted by the laboratory but no action against the laboratory is required.</small>	

Data Qualifier Reference Table

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

Qualification Code Reference Table

Qualifier	Organics	Inorganics
H	Holding times were exceeded.	Holding times were exceeded.
S	Surrogate recovery was outside QC limits.	The sequence or number of standards used for the calibration was incorrect
C	Calibration %RSD or %D were noncompliant.	Correlation coefficient is <0.995.
R	Calibration RRF was <0.05.	%R for calibration is not within control limits.
B	Presumed contamination from preparation (method) blank.	Presumed contamination from preparation (method) or calibration blank.
L	Laboratory Blank Spike/Blank Spike Duplicate %R was not within control limits.	Laboratory Control Sample %R was not within control limits.
Q	MS/MSD recovery was poor or RPD high.	MS recovery was poor.
E	Not applicable.	Duplicates showed poor agreement.
I	Internal standard performance was unsatisfactory.	ICP ICS results were unsatisfactory.
A	Not applicable.	ICP Serial Dilution %D were not within control limits.
M	Tuning (BFB or DFTPP) was noncompliant.	Not applicable.
T	Presumed contamination from trip blank.	Not applicable.
+	False positive – reported compound was not present. Not applicable.	
-	False negative – compound was present but not reported.	Not applicable.
F	Presumed contamination from FB, or ER.	Presumed contamination from FB or ER.
\$	Reported result or other information was incorrect.	Reported result or other information was incorrect.
?	TIC identity or reported retention time has been changed.	Not applicable.
D	The analysis with this flag should not be used because another more technically sound analysis is available.	The analysis with this flag should not be used because another more technically sound analysis is available.
P	Instrument performance for pesticides was poor.	Post Digestion Spike recovery was not within control limits.
DNQ	The compound was detected between the MDL and the RL and, by definition, is considered an estimated value.	The compound was detected between the MDL and the RL and, by definition, is considered an estimated value.

Unusual problems found with the data that have been described in Section 2.#, "Data Validation Findings." The number following the asterisk () will indicate the subsection where a description of the problem can be found (eg. *1 would indicate a sample was not within temperature limits).

Unusual problems found with the data that have been described in Section 2.#, "Data Validation Findings." The number following the asterisk (*) will indicate the subsection where a description of the problem can be found (eg. *1 would indicate a sample was not within temperature limits).



DATA VALIDATION REPORT

NPDES
Monitoring

ANALYSIS: RADIONUCLIDES

SAMPLE DELIVERY GROUPS:

IOB1556, IOB1557, IOB1559, IOB1570, IOB1571, IOB1576

Prepared by

AMEC—Denver Operations
550 South Wadsworth Boulevard, Suite 500
Lakewood, Colorado 80226

Table 1. Sample identification

Client ID	Del Mar ID	Eberline ID	Matrix	COC Method
Outfall 004	IOB1556-01	8289-001	water	900.0, 905.0, 906.0
Outfall 005	IOB1557-01	8290-001	water	900.0, 905.0, 906.0
Outfall 006	IOB1559-01	8291-001	water	900.0, 905.0, 906.0
Outfall 018	IOB1570-01	8292-001	water	900.0, 905.0, 906.0
Outfall 003	IOB1571-01	8293-001	water	900.0, 905.0, 906.0
Outfall 003 Filtered	IOB1576-01	8294-001	water	900.0, 905.0, 906.0
Outfall 003 Unfiltered	IOB1576-02	8294-002	water	900.0, 905.0, 906.0
Outfall 003 Substrate	IOB1576-03	8295-001	solid	901.1

1. INTRODUCTION

Task Order Title: NPDES Monitoring
Contract Task Order #: 313150010
SDG#: IOB1556, IOB1557, IOB1559, IOB1570, IOB1571, IOB1576
Project Manager: B. McIlvaine
Matrix: Water
Analysis: Radionuclides
QC Level: Level IV
No. of Samples: 8
No. of Reanalyses/Dilutions: 0
Reviewer: P. Meeks
Date of Review: March 24, 2005

The samples listed in Table 1 were validated based on the guidelines outlined in the *EPA Prescribed Procedures for Measurements of Radioactivity in Drinking Water, Methods 900.0, 905.0, and 906.0*, and validation procedures 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.

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

Following are findings associated with sample management:

2.1.1 Sample Preservation, Handling, and Transport

All the samples in these SDGs were received at Del Mar Analytical within the temperature limits of $4\pm 2^{\circ}\text{C}$. No temperature information was provided by Eberline, the subcontract laboratory; however, as it is not necessary to chill radiological samples, no qualifications were required. The samples were noted to have been received intact and in good condition. All tritium samples were received unpreserved in glass containers. All gross alpha, gross beta, and strontium samples were preserved, except for the Outfall 003 samples in SDG IOB1556. Outfall 003 Filtered, was filtered by Eberline and then preserved. Outfall 003 Unfiltered was not preserved. According to the Los Angeles Water Quality Control Board (LARWQCB) guidance letter dated 01/12/05, unfiltered samples should not be preserved. No qualifications were required.

2.1.2 Chain of Custody

The original COCs were signed and dated by field and laboratory personnel. The transfer COCs were signed by personnel from both laboratories, except for the COC listing Outfall 003 in SDG IOB1571, which was not signed as received by Eberline. Eberline did not list the MWH IDs on the Form Is; therefore, the reviewer edited the Form Is to reflect these IDs. No qualifications were required.

2.1.3 Holding Times

The tritium and preserved gross alpha, gross beta, and strontium samples were analyzed within 180 days of collection. The Outfall 003 Unfiltered gross alpha and gross beta samples were analyzed beyond the five day holding time for unpreserved samples; therefore, these gross alpha and gross beta results were qualified as estimated, "J." No further qualifications were necessary.

2.2 CALIBRATION

The laboratory calibration information included the standard certificates and applicable preparation/dilutions logs for NIST-traceability.

Gross Alpha and Gross Beta

The initial calibration included with the data was performed in February 2003. The detector efficiencies for Outfall 006, Outfall 018, Outfall 003, Outfall 003 Filtered, and Outfall 003 Unfiltered were less than 20%; therefore, these results were qualified as estimated, "UJ," for nondetects and, "J," for detects. The remaining detector efficiencies were above 20%.

Tritium

No calibration standards were analyzed for this method. According to the laboratory, every sample was spiked for efficiency determination; therefore, no calibration is necessary. All detector efficiencies in the samples were at least 20% and were considered acceptable. All internal spike efficiency to default efficiency ratios were near 1, indicating that quenching did not occur.

Strontium-90

The initial calibrations were performed in June 1995. All strontium chemical yields were at least 80% and were considered acceptable. The strontium continuing calibration results were within the laboratory control limits. No qualifications were necessary.

Cesium

The reviewer confirmed that the 662 KeV peak was used for quantitation, with a branch efficiency of 85%. No qualifications were necessary.

2.3 BLANKS

No measurable activities were detected in the method blanks; therefore, no qualifications were necessary.

2.4 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

Two blank spikes (8294-002 and 8295-002) were analyzed in association with the samples in these SDGs. All blank spike results were within the 3-sigma limits. No qualifications were necessary.

2.5 LABORATORY DUPLICATES

The laboratory performed duplicate analysis on Outfall 003 Filtered and Outfall 003 Substrate. All results were within the 3-sigma limits and all RPDs were $\leq 20\%$. No qualifications were necessary.

2.6 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

The laboratory performed matrix spike analyses on Outfall 003 Unfiltered for gross alpha, gross beta, and tritium. The recovery for gross alpha was above 3-sigma; however, as the recovery of 118% was considered acceptable, no qualifications were required. The remaining recoveries were within the 3-sigma limits. No qualifications were necessary.

2.7 SAMPLE RESULT VERIFICATION

An EPA Level IV review was performed for the samples in these data packages. Sample results and MDAs reported on the sample result forms were verified against the raw data and no calculation or transcription errors were noted. No qualifications were necessary.

2.8 FIELD QC SAMPLES

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

DATA VALIDATION REPORT

Project: NPDES
SDG No.: Multiple
Analysis: RAD

2.8.1 Field Blanks and Equipment Rinsates

The samples in these SDGs had no associated field QC samples. No qualifications were required.

2.8.2 Field Duplicates

There were no field duplicate samples in these SDGs.

Eberline Services

ANALYSIS RESULTS

SDG <u>8292</u>	Client <u>DEL MAR ANAL</u>
Work Order <u>R502213-01</u>	Contract <u>PROJECT# 10B1570</u>
Received Date <u>02/23/05</u>	Matrix <u>WATER</u>

Client	Lab	Sample ID	Collected	Analyzed	Nuclide	Results ± 2σ	Units	MDA	Rev Qual	Qual Code
Outfall 018 10B1570-01 PM 3/24/05	8292-001		02/18/05	03/08/05	GrossAlpha	1.82 ± 1.0	pCi/L	1.11	J	R
				03/08/05	Gross Beta	3.97 ± 1.3	pCi/L	1.84		
				03/12/05	H3	-31.5 ± 150	pCi/L	254	U	
				03/12/05	Sr90	-0.052 ± 0.21	pCi/L	0.278	U	

AMEC VALIDATED

LEVEL IV

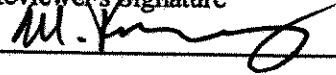
Certified by <u><i>[Signature]</i></u>
Report Date <u>03/15/05</u>
Page 1

CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

AMEC Earth & Environmental
 550 South Wadsworth Boulevard
 Suite 500
 Lakewood, CO 80226

Package ID T711SV42
 Task Order 313150010, 313150012
 SDG No. IOB1570, IOB1571
 No. of Analyses 2

Laboratory Del Mar
 Reviewer M. Pokorny
 Analysis/Method Semivolatiles

Date: April 1, 2005
 Reviewer's Signature


ACTION ITEMS ^a	
1. Case Narrative Deficiencies	
2. Out of Scope Analyses	
3. Analyses Not Conducted	
4. Missing Hardcopy Deliverables	
5. Incorrect Hardcopy Deliverables	
6. Deviations from Analysis	Qualifications required for calibration, LCS, and internal standard outliers.
Protocol, e.g.,	
Holding Times	
GC/MS Tune/Inst. Perform	
Calibrations	
Blanks	
Surrogates	
Matrix Spike/Dup LCS	
Field QC	
Internal Standard Performance	
Compound Identification and Quantitation	
System Performance	
COMMENTS ^b	

^a 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

ANALYSIS: SEMIVOLATILES

SAMPLE DELIVERY GROUP: IOB1570, IOB1571

Prepared by

AMEC Denver Operations
550 South Wadsworth Boulevard, Suite 500
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title: NPDES Monitoring
Contract Task Order #: 313150010
SDG#: IOB1570, IOB1571
Project Manager: B. McIlvaine
Matrix: Water
Analysis: Semivolatiles
QC Level: Level IV
No. of Samples: 2
No. of Reanalyses/Dilutions: 0
Reviewer: M. Pokorny
Date of Review: April 1, 2005

The samples listed in Table 1 were validated based on the guidelines outlined in the *AMEC Data Validation Procedure for Levels C and D Semivolatile Organics (DVP-3, Rev. 2)*, *EPA Method 625*, and the *National Functional Guidelines For Organic Data Review (2/94)*. Any deviations from these procedures are documented herein. Qualifiers were applied in cases where the data did not meet the required QC criteria or where special consideration by the data user is required. Data qualifiers were placed on Form Is with the associated qualification codes. Analytes that were rejected for any reason are denoted on the Form I as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

Table 1. Sample identification

Client ID	EPA ID	Lab No.	Matrix	Method
Outfall 018	Outfall 018	IOB1570-01	water	625
Outfall 003	Outfall 003	IOB1571-01	water	625

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

The samples in these SDGs were received at the laboratory within the temperature limits of $4^{\circ}\text{C} \pm 2^{\circ}\text{C}$. The analysis did not require preservation, and no preservation was noted in the field. The COCs noted that the samples were received intact. No qualifications were required.

2.1.2 Chain of Custody

The COCs were signed and dated by both field and laboratory personnel. The COCs accounted for the analyses presented in these SDGs. As the samples were couriered directly to the laboratory, custody seals were not required. No qualifications were required.

2.1.3 Holding Times

The water samples were extracted within seven days of collection and analyzed within 40 days of collection. No qualifications were required.

2.2 GC/MS TUNING

The DFTPP tunes met the criteria specified in Method 625, and the samples were analyzed within 12 hours of the DFTPP injection time. No qualifications were required.

2.3 CALIBRATION

The initial calibrations associated with this SDG were dated 02/24/05 and 02/25/05. For the initial calibration dated 02/24/05, the average RRFs for were ≥ 0.05 and the %RSDs were $\leq 35\%$ or $r^2 \geq 0.995$ for all target compounds except for the r^2 values for benzoic acid, 4-nitroaniline, and benzidine. Benzoic acid, 4-nitroaniline, and benzidine were qualified as estimated nondetects, "UJ," in sample Outfall 018, unless otherwise rejected. For the initial calibration dated 02/25/05, the average RRFs for were ≥ 0.05 and the %RSDs were $\leq 35\%$ or $r^2 \geq 0.995$ for all target compounds except for the r^2 value for benzoic acid. Benzoic acid was qualified as an estimated nondetect, "UJ," in sample Outfall 003. A representative number of average RRFs and %RSDs were checked from the raw data, and no calculation or transcription errors were noted.

The continuing calibration associated with the sample analyses were analyzed 02/24/05 and 02/25/05. For the continuing calibration dated 02/24/05, the RRFs for all target compounds were ≥ 0.05 , and the %Ds were $\leq 20\%$, except for the %Ds for 2,4-dinitrophenol and 4-nitrophenol. 2,4-dinitrophenol and 4-nitrophenol were qualified as estimated nondetects, "UJ," in sample Outfall 018. For the continuing calibration dated 02/25/05, the RRFs for all target compounds were ≥ 0.05 , and the %Ds were $\leq 20\%$, except for the %D for benzidine. Benzidine was qualified as an estimated nondetect, "UJ," in sample Outfall 003. A representative number of RRFs and %Ds were checked from the raw data, and no calculation or transcription errors were noted. No further qualifications were required.

2.4 BLANKS

Two method blanks (5B22042-BLK1 and 5B22043-BLK1) were extracted and analyzed with these SDGs. No target compounds were detected in the method blanks. Review of the raw data indicated no reportable false negatives. No qualifications were required.

2.5 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

Two blank spike/ blank spike duplicate pairs (5B22042-BS1/BSD1 and 5B22043- BS1/BSD1) were extracted and analyzed with these SDGs. For blank spike/blank spike duplicate pairs, qualifications are applied, if necessary, to the associated samples based on those recoveries consistently outside of the laboratory-established QC limits in both the blank spike and blank spike duplicate. Results for those compounds with recoveries not consistent within the pair, with RPDs above the QC limit, are qualified as estimated, "UJ" for nondetects and "J" for detects, in the associated samples.

For the 5B22042-BS1/BSD1 pair, all percent recoveries and RPDs were within the laboratory QC limits except for benzidine which was not recovered in the BS or BSD and the RPDs for benzidine and aniline, benzoic acid, and NDMA. Sample Outfall 018 had benzidine rejected, "R," and aniline, benzoic acid, and NDMA qualified as estimated nondetects, "UJ."

For the 5B22043-BS1/BSD1 pair, all percent recoveries and RPDs were within the laboratory QC limits except for benzidine which was not recovered in the BSD and the RPD for benzidine. Sample Outfall 003 had benzidine qualified as an estimated nondetect, "UJ."

A representative number of recoveries and RPDs were calculated from the raw data and no calculation or transcription errors were found. No further qualifications were required.

2.6 SURROGATE RECOVERY

The sample surrogate recoveries were within the laboratory QC limits. A representative number of recoveries were calculated from the raw data, and no transcription or calculation errors were noted. No qualifications were required.

2.7 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

No MS/MSD analyses were associated with these SDGs. Evaluation of method accuracy and precision was based on blank spike/blank spike duplicate 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 Field Blanks and Equipment Rinsates

There were no field QC samples associated with these SDGs. No qualifications were required.

2.8.2 Field Duplicates

There were no field duplicate samples associated with these SDGs. No qualifications were required.

2.9 INTERNAL STANDARDS PERFORMANCE

The internal standard area counts and retention times were within the control limits established by the continuing calibration standards: -50%/+100% for internal standard areas and ± 30 seconds for retention times except for the area count for perylene-d12 for sample Outfall 003. Sample Outfall 003 had the target compounds associated with perylene-d12 qualified as estimated nondetects, "UJ." A representative number of recoveries were checked from the raw data, and no transcription or calculation errors were noted. No further qualifications were required.

2.10 COMPOUND IDENTIFICATION

The laboratory analyzed for the semivolatile target compounds by EPA Method 625. Review of the sample chromatogram, 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 level of the initial calibration and the method detection limit study. No qualifications were required.

2.12 TENTATIVELY IDENTIFIED COMPOUNDS

TICs were not reported by the laboratory for these SDGs. No qualifications were required.

2.13 SYSTEM PERFORMANCE

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



Del Mar Analytical

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 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: Annual Outfall 018

Report Number: IOB1570

Sampled: 02/18/05
 Received: 02/18/05

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

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers	Raw Data	Anal Code
Sample ID: IOB1570-01 (DRAFT: Outfall 018 - Water)											
Reporting Units: ug/l											
Acenaphthene	EPA 625	5B22042	0.10	0.50	ND	0.943	02/22/05	02/24/05			
Acenaphthylene	EPA 625	5B22042	0.10	0.50	ND	0.943	02/22/05	02/24/05			
Aniline	EPA 625	5B22042	2.9	10	ND	0.943	02/22/05	02/24/05			
Anthracene	EPA 625	5B22042	0.083	0.50	ND	0.943	02/22/05	02/24/05			
Benzo(a)anthracene	EPA 625	5B22042	2.4	5.0	ND	0.943	02/22/05	02/24/05	L2		
Benzo(a)pyrene	EPA 625	5B22042	0.038	5.0	ND	0.943	02/22/05	02/24/05			
Benzo(b)fluoranthene	EPA 625	5B22042	0.14	2.0	ND	0.943	02/22/05	02/24/05			
Benzo(g,h,i)perylene	EPA 625	5B22042	0.050	2.0	ND	0.943	02/22/05	02/24/05			
Benzo(k)fluoranthene	EPA 625	5B22042	0.059	5.0	ND	0.943	02/22/05	02/24/05			
Benzyl alcohol	EPA 625	5B22042	0.053	0.50	ND	0.943	02/22/05	02/24/05			
Bis(2-chloroethoxy)methane	EPA 625	5B22042	0.21	5.0	ND	0.943	02/22/05	02/24/05			
Bis(2-chloroethyl)ether	EPA 625	5B22042	0.072	0.50	ND	0.943	02/22/05	02/24/05			
Bis(2-chloroisopropyl)ether	EPA 625	5B22042	0.084	0.50	ND	0.943	02/22/05	02/24/05			
Bis(2-ethylhexyl)phthalate	EPA 625	5B22042	0.11	0.50	ND	0.943	02/22/05	02/24/05			
Bis(2-ethylhexyl)phthalate	EPA 625	5B22042	1.1	5.0	ND	0.943	02/22/05	02/24/05			
4-Bromophenyl phenyl ether	EPA 625	5B22042	0.12	1.0	ND	0.943	02/22/05	02/24/05			
Butyl benzyl phthalate	EPA 625	5B22042	0.12	1.0	ND	0.943	02/22/05	02/24/05			
4-Chloroaniline	EPA 625	5B22042	0.34	5.0	ND	0.943	02/22/05	02/24/05			
2-Chloronaphthalene	EPA 625	5B22042	0.20	2.0	ND	0.943	02/22/05	02/24/05			
4-Chloro-3-methylphenol	EPA 625	5B22042	0.059	0.50	ND	0.943	02/22/05	02/24/05			
4-Chlorophenyl phenyl ether	EPA 625	5B22042	0.34	2.0	ND	0.943	02/22/05	02/24/05			
2-Chlorophenol	EPA 625	5B22042	0.056	0.50	ND	0.943	02/22/05	02/24/05			
Chrysene	EPA 625	5B22042	0.12	1.0	ND	0.943	02/22/05	02/24/05			
Dibenz(a,h)anthracene	EPA 625	5B22042	0.072	0.50	ND	0.943	02/22/05	02/24/05			
Dibenzofuran	EPA 625	5B22042	0.083	0.50	ND	0.943	02/22/05	02/24/05			
Di-n-butyl phthalate	EPA 625	5B22042	0.075	0.50	ND	0.943	02/22/05	02/24/05			
1,2-Dichlorobenzene	EPA 625	5B22042	0.26	2.0	ND	0.943	02/22/05	02/24/05			
1,3-Dichlorobenzene	EPA 625	5B22042	0.11	0.50	ND	0.943	02/22/05	02/24/05			
1,4-Dichlorobenzene	EPA 625	5B22042	0.13	0.50	ND	0.943	02/22/05	02/24/05			
3,3-Dichlorobenzidine	EPA 625	5B22042	0.050	0.50	ND	0.943	02/22/05	02/24/05			
2,4-Dichlorophenol	EPA 625	5B22042	0.93	5.0	ND	0.943	02/22/05	02/24/05			
Diethyl phthalate	EPA 625	5B22042	0.21	2.0	ND	0.943	02/22/05	02/24/05			
2,4-Dimethylphenol	EPA 625	5B22042	0.12	1.0	ND	0.943	02/22/05	02/24/05			
Dimethyl phthalate	EPA 625	5B22042	0.31	2.0	ND	0.943	02/22/05	02/24/05			
4,6-Dinitro-2-methylphenol	EPA 625	5B22042	0.081	0.50	ND	0.943	02/22/05	02/24/05			
2,4-Dinitrophenol	EPA 625	5B22042	0.38	5.0	ND	0.943	02/22/05	02/24/05			
2,4-Dinitrotoluene	EPA 625	5B22042	2.7	5.0	ND	0.943	02/22/05	02/24/05			
2,6-Dinitrotoluene	EPA 625	5B22042	0.23	5.0	ND	0.943	02/22/05	02/24/05			
Di-n-octyl phthalate	EPA 625	5B22042	0.24	5.0	ND	0.943	02/22/05	02/24/05			
1,2-Diphenylhydrazine/Azobenzene	EPA 625	5B22042	0.17	5.0	ND	0.943	02/22/05	02/24/05			
			0.087	1.0	ND	0.943	02/22/05	02/24/05			

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

Project ID: Annual Outfall 018

Report Number: IOB1570

Sampled: 02/18/05
Received: 02/18/05

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

Table with columns: Analyte, Method, Batch, MDL Limit, Reporting Limit, Sample Result, Dilution Factor, Date Extracted, Date Analyzed, Data Qualifiers, and Qual Code. Includes handwritten 'C' and 'U' markings and a vertical line.

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DATA SUBJECT TO CHANGE

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LEVEL IV

CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

AMEC Earth & Environmental
 550 South Wadsworth Boulevard
 Suite 500
 Lakewood, CO 80226

Package ID T711TF48
 Task Order 313150010
 SDG No. IOB1570
 No. of Analyses 1

Laboratory Del Mar Analytical
 Reviewer L. Calvin
 Analysis/Method EFH by Method 8015B

Date: April 6, 2005
 Reviewer's Signature 

ACTION ITEMS ^a	
1. Case Narrative Deficiencies	
2. Out of Scope Analyses	
3. Analyses Not Conducted	
4. Missing Hardcopy Deliverables	
5. Incorrect Hardcopy Deliverables	
6. Deviations from Analysis Protocol, e.g., Holding Times GC/MS Tune/Inst. Performance Calibration Method blanks Surrogates Matrix Spike/Dup LCS Field QC Internal Standard Performance Compound Identification Quantitation System Performance	
COMMENTS ^b	Acceptable as reviewed.
^a 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

ANALYSIS: TPH/EXTRACTABLE

SAMPLE DELIVERY GROUP: IOB1570

Prepared by

AMEC Denver Operations
550 South Wadsworth Boulevard, Suite 500
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title: NPDES Monitoring
Contract Task Order #: 313150010
SDG#: IOB1570
Project Manager: B. McIlvaine
Matrix: Water
Analysis: TPH-Extractable
QC Level: Level IV
No. of Samples: 1
No. of Reanalyses/Dilutions: 0
Reviewer: L. Calvin
Date of Review: April 6, 2005

The samples listed in Table 1 were validated based on the general guidelines outlined in the *AMEC Data Validation Procedure for Levels C and D Extractable Total Fuel Hydrocarbons by GC (DVP-8, Rev. 2)*, USEPA SW-846 Method 8015M, and validation guidelines outlined in the *USEPA CLP National Functional Guidelines for Organic Data Review (2/94)*. Any deviations from these procedures are documented herein. Qualifiers were applied in cases where the data did not meet the required QC criteria or where special consideration by the data user is required. Data qualifiers were placed on Form Is with the associated qualification codes. Analytes that were rejected for any reason are denoted on the Form I as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

Table 1. Sample identification

Client ID	EPA ID	Lab No.	Matrix	Method
Outfall 018	Outfall 018	IOB1570-01	water	8015M/EFH

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

The 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 laboratory on ice within the temperature limits of $4^{\circ}\text{C} \pm 2^{\circ}\text{C}$. The Del Mar Analytical case narrative noted that the sample containers were received intact. No qualifications were required.

2.1.2 Chain of Custody

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

2.1.3 Holding Times

The sample was extracted within seven days of sample collection and analyzed within 40 days of extraction. No qualifications were required.

2.2 CALIBRATION

The initial calibration associated with the sample analysis was analyzed on 02/08/05. The %RSD was within the QC limit of $\leq 20\%$. The %Ds for the initial calibration verification (ICV) and continuing calibrations associated with the sample analysis were $\leq 15\%$. The %RSD and %Ds were recalculated from the raw data and no transcription or calculation errors were noted. No qualifications were required.

2.4 METHOD BLANKS

One method blank (5B19002-BLK1) was extracted and analyzed with the sample in this SDG. EFH (C13-C22) was not present above the MDL in the method blank or in the instrument blank analyzed at the beginning of the analytical sequence. Review of the chromatograms showed no false negatives. No qualifications were required.

2.5 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

One method blank spike/blank spike duplicate pair (5B19002-BS1/BSD1) was extracted and analyzed with the sample in this SDG. The recoveries of alkane range C13-C22 from spiked diesel were within the laboratory-established QC limits of 40-120%, and the RPD was within the QC limit of $\leq 25\%$. The recoveries and RPD were checked from the raw data, and no calculation or transcription errors were noted. No qualifications were required.

2.6 SURROGATE RECOVERY

The sample was fortified with the surrogate compound n-octacosane. The sample surrogate recovery was within the laboratory-established QC of 40-125%. The recovery was calculated from the raw data and no transcription or calculation errors were noted. No qualifications were required.

2.7 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

There were no MS/MSD analyses associated with the sample of this SDG. Evaluation of method accuracy and precision was based on the BS/BSD results. No qualifications were required.

2.8 FIELD QC SAMPLES

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

2.9.1 Field Blanks and Equipment Rinsates

There were no field blank or equipment rinsate samples associated with the site sample in this SDG. No qualifications were required.

2.9.2 Field Duplicates

There were no field duplicate samples associated with the samples in this SDG.

2.10 COMPOUND IDENTIFICATION

The laboratory analyzed for EFH n-alkane range C13-C22 by EPA SW846 Method 8015M. Compound identification is verified at a Level IV validation. Review of chromatograms and retention times indicated no problems with compound identification for this SDG. No qualifications were required.

2.11 COMPOUND QUANTIFICATION AND REPORTED DETECTION LIMITS

Compound quantification was verified for this SDG by recalculating any sample detect, blank spike recoveries, and a representative number of surrogate recoveries. Reporting limits were supported by the low level standard of the initial calibration and by the laboratory MDL. The reporting limit was not adjusted for sample amount; however, the dilution factor on the sample result summary reflected the sample amount extracted. No qualifications were required.



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

Project ID: Annual Outfall 018

Report Number: IOB1570

Sampled: 02/18/05
 Received: 02/18/05

DRAFT: EXTRACTABLE FUEL HYDROCARBONS (CADHS/8015 Modified)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Analyzed	Date Analyzed	Data Qualifiers
Sample ID: IOB1570-01 (DRAFT: Outfall 018 - Water) - cont. Reporting Units: mg/l									
EFH (C13 - C22) Surrogate: n-Octacosane (40-125%)	EPA 8015B	5B19002	0.082	0.50	ND 49%	0.943	02/19/05	02/22/05	u

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CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

AMEC Earth & Environmental
 550 South Wadsworth Boulevard
 Suite 500
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Package ID T711TF49
 Task Order 313150010
 SDG No. IOB1570

No. of Analyses 1

Laboratory Del Mar Analytical

Reviewer L. Calvin

Analysis/Method GRO by Method 8015M

Date: April 6, 2005

Reviewer's Signature

L. Calvin

ACTION ITEMS^a

1. Case Narrative Deficiencies	
2. Out of Scope Analyses	
3. Analyses Not Conducted	
4. Missing Hardcopy Deliverables	
5. Incorrect Hardcopy Deliverables	
6. Deviations from Analysis	
Protocol, e.g.,	
Holding Times	
GC/MS Tune/Inst. Performance	
Calibration	
Method blanks	
Surrogates	
Matrix Spike/Dup LCS	
Field QC	
Internal Standard Performance	
Compound Identification	
Quantitation	
System Performance	

COMMENTS^b

Acceptable as reviewed.

^a 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

ANALYSIS: Total Petroleum Hydrocarbons: Purgeable

SAMPLE DELIVERY GROUP: IOB1570

Prepared by

AMEC Denver Operations
550 South Wadsworth Boulevard, Suite 500
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title: NPDES Monitoring
Contract Task Order #: 313150010
SDG#: IOB1570
Project Manager: B. McIlvaine
Matrix: Water
Analysis: TPH-Purgeable
QC Level: Level IV
No. of Samples: 1
No. of Reanalyses/Dilutions: 0
Reviewer: L. Calvin
Date of Review: April 6, 2005

The samples listed in Table 1 were validated based on the general guidelines outlined in the *AMEC Data Validation Procedure for Levels C and D Extractable Total Fuel Hydrocarbons by GC (DVP-8, Rev. 2)*, USEPA SW-846 Method 8015M, and validation guidelines outlined in the *USEPA CLP National Functional Guidelines for Organic Data Review (2/94)*. Any deviations from these procedures are documented herein. Qualifiers were applied in cases where the data did not meet the required QC criteria or where special consideration by the data user is required. Data qualifiers were placed on Form Is with the associated qualification codes. Analytes that were rejected for any reason are denoted on the Form I as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

Table 1. Sample identification

Client ID	EPA ID	Lab No.	Matrix	Method
Outfall 018	Outfall 018	IOB1570-01	water	8015M/GRO

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

The 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 laboratory on ice within the temperature limits of $4^{\circ}\text{C} \pm 2^{\circ}\text{C}$. The Del Mar Analytical case narrative noted that the sample containers were received intact, and the COC indicated the sample was properly preserved. No qualifications were required.

2.1.2 Chain of Custody

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

2.1.3 Holding Times

The water sample was analyzed within 14 days of collection. No qualifications were required.

2.2 CALIBRATION

One gasoline standard initial calibration dated 08/26/04 was associated with the sample analysis. The %RSD for GRO (C4-C12) was within the QC limit of $\leq 20\%$. An initial calibration verification (ICV) was not provided in the data package. The %Ds for both CCVs bracketing the sample analysis were within the Method QC limit of $\leq 15\%$. The %RSD and %Ds were recalculated from the raw data and no transcription or calculation errors were noted. No qualifications were required.

2.4 METHOD BLANKS

One water method blank (5B25003-BLK1) was associated with the sample analysis. GRO (C4-C12) was not detected above the MDL in the method blank. Review of the raw data indicated no false negative result. No qualifications were necessary.

2.5 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

One water method blank spike (5B25003-BS1) was associated with the sample analyses. GRO (C4-C12) was recovered within the laboratory-established QC limits of 70-140% in the blank spike. The recovery was checked from the raw data, and no calculation or transcription errors were noted. No qualifications were required.

2.6 SURROGATE RECOVERY

The sample was fortified with the surrogate compound 4-bromofluorobenzene (BFB). The surrogate recovery was within the laboratory-established QC of 65-140%. The recovery was calculated from the raw data and no transcription or calculation errors were noted. No qualifications were required.

2.7 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

MS/MSD analyses were not performed on the sample in this SDG; therefore, evaluation of method accuracy was based on the blank spike result. No qualifications were required.

2.8 FIELD QC SAMPLES

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

2.9.1 Trip Blanks, Field Blanks, and Equipment Rinsates

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

2.9.2 Field Duplicates

There were no field duplicate samples in this SDG.

2.10 COMPOUND IDENTIFICATION

The laboratory analyzed for GRO (C4-C12) by EPA SW-846 Method 8015M. Compound identification is verified at a Level IV validation. Review of chromatograms and retention times indicated no problems with compound identification for the sample in this SDG. No qualifications were required.

2.11 COMPOUND QUANTIFICATION AND REPORTED DETECTION LIMITS

Compound quantification was verified for this SDG by recalculating any sample detect, blank spike recoveries, and a representative number of surrogate recoveries. Reporting limits were supported by the low level standard of the initial calibrations and by the laboratory MDL. No qualifications were required.



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

Project ID: Annual Outfall 018

Report Number: IOB1570

Sampled: 02/18/05
 Received: 02/18/05

DRAFT: VOLATILE FUEL HYDROCARBONS (EPA 5030/CADHS Mod. 8015)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOB1570-01 (DRAFT: Outfall 018 - Water) - cont.									
Reporting Units: mg/l									
GRO (C4 - C12)	EPA 8015 Mod.	SB25003	0.050	0.10	ND	1	02/25/05	02/25/05	u
Surrogate: 4-BFB (FID) (65-140%)									
					85 %				

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DRAFT REPORT
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CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA


AMEC Earth & Environmental
 550 South Wadsworth Boulevard
 Suite 500
 Lakewood, CO 80226

Package ID T711VO73
 Task Order 313150010, 313150012
 SDG No. IOB1570, IOB1571
 No. of Analyses 4

Laboratory Del Mar

Reviewer M. Pokorny

Analysis/Method Volatiles

Date: April 4, 2005
 Reviewer's Signature 

ACTION ITEMS ^a	
1. Case Narrative Deficiencies	
2. Out of Scope Analyses	
3. Analyses Not Conducted	
4. Missing Hardcopy Deliverables	
5. Incorrect Hardcopy Deliverables	
6. Deviations from Analysis Protocol, e.g., Holding Times GC/MS Tune/Inst. Perform Calibrations Blanks Surrogates Matrix Spike/Dup LCS Field QC Internal Standard Performance Compound Identification and Quantitation System Performance	Qualifications required for calibration outliers and trip blank contamination.
COMMENTS ^b	

^a 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

ANALYSIS: VOLATILES

SAMPLE DELIVERY GROUP: IOB1570, IOB1571

Prepared by

AMEC Denver Operations
550 South Wadsworth Boulevard, Suite 500
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title: NPDES Monitoring
Contract Task Order #: 313150010
SDG#: IOB1570, IOB1571
Project Manager: B. McIlvaine
Matrix: Water
Analysis: Volatiles
QC Level: Level IV
No. of Samples: 4
No. of Reanalyses/Dilutions: 0
Reviewer: M. Pokorny
Date of Review: April 4, 2005

The samples listed in Table 1 were validated based on the guidelines outlined in the *AMEC Data Validation Procedure for Levels C and D Volatile Organics (DVP-2, Rev. 2)*, *EPA Method 624*, *EPA SW-846 Method 8260B*, 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 summary forms as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

Table 1. Sample identification

Client ID	EPA ID	Lab No.	Matrix	Method
Outfall 018	Outfall 018	IOB1570-01	water	624
Trip Blank	Trip Blank	IOB1570-02	water	624
Outfall 003	Outfall 003	IOB1571-01	water	624
Trip Blank	Trip Blank	IOB1571-02	water	624

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

The following are findings associated with sample management:

2.1.1 Sample Preservation, Handling, and Transport

The samples in these SDGs were received at the laboratory within the temperature limits of $4^{\circ}\text{C} \pm 2^{\circ}\text{C}$. The samples were properly preserved. The COCs noted that the samples were received intact; however, information regarding absence of headspace was not provided. No qualifications were required.

2.1.2 Chain of Custody

The COCs were signed and dated by both field and laboratory personnel. The COCs accounted for the analyses presented in these SDGs. As the samples were couriered directly to the laboratory, custody seals were not required. No qualifications were required.

2.1.3 Holding Times

The samples were analyzed within 14 days of collection. No qualifications were required.

2.2 GC/MS TUNING

The ion abundance windows shown on the quantitation reports were consistent with those specified in the EPA Method 624, and all ion abundances were within the established windows. The samples and associated QC were analyzed within 12 hours of the BFB injection times. The Form Vs were verified from the raw data and no discrepancies between the summary forms and the raw data were noted. No qualifications were required.

2.3 CALIBRATION

Two initial calibrations dated 10/14/04 (acrolein and acrylonitrile only) and 02/07/05 were associated with this SDG. The average RRFs were ≥ 0.05 for all compounds listed on the sample result summaries except for the RRF for acrolein. Acrolein was rejected, "R," in all of the samples of this SDG. The %RSDs were $\leq 35\%$ for the target compounds analyzed by EPA Method 624. Two continuing calibrations associated with the sample analyses were analyzed 02/19/05 (09:11 and 09:42). The RRFs were ≥ 0.05 in all of the continuing calibrations, except for the RRF for acrolein. Acrolein was rejected, "R," in all of the samples of this SDG. The %Ds for acrolein and 1,1,1-trichloroethane exceeded 20% in the continuing calibration; therefore, the nondetect result for 1,1,1-trichloroethane were qualified as estimated, "UJ," in the site samples of these SDGs. As acrolein was previously rejected, it did not require further qualification. No qualifications were required for the Trip blanks. The %Ds were $\leq 20\%$ for the remaining target compounds listed on the result summaries. A representative number of %RSDs and average RRFs from the initial

calibrations, and %Ds and RRFs from the continuing calibrations were recalculated from the raw data, and no calculation or transcription errors were found. No further qualifications were required.

2.4 BLANKS

One water method blank (5B19020-BLK1) was associated with the sample analyses. There were no detects above the MDLs for the target compounds listed on the sample result summaries. The method blank raw data showed no evidence of false negatives. No qualifications were required.

2.5 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

One water blank spike (5B19020-BS1) was associated with the sample analyses. All recoveries were within the laboratory-established QC limits. A representative number of recoveries were recalculated from the raw data and no calculation or transcription errors were found. No qualifications were required.

2.6 SURROGATE RECOVERY

The surrogates were recovered within the QC limits of 80-120% in the samples and associated QC. A representative number of surrogate recoveries were recalculated from the raw data and no calculation or transcription errors were found. No qualifications were required.

2.7 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

An MS/MSD analyses were not performed with the samples of these SDGs. Method accuracy was based on LCS performance. 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

Samples Trip Blank (IOB1570-02) and Trip Blank (IOB1571-02) were the trip blanks associated with these SDGs. Methylene chloride was reported in both of the Trip Blanks. Methylene chloride detects in the site samples of these SDGs were qualified as nondetects, "U." No further qualifications were required.

2.8.2 Field Blanks and Equipment Rinsates

There were no field QC samples associated with these SDGs. No qualifications were required.

2.8.3 Field Duplicates

There were no field duplicate samples associated with these SDGs. No qualifications were required.

2.9 INTERNAL STANDARDS PERFORMANCE

Internal standard area counts and retention times for the samples in this SDG were within the control limits established by the continuing calibration standards: +100%/-50% for internal standard areas and ± 0.50 minutes for retention times. A representative number of internal standard areas and retention times were verified from the raw data, and no calculation or transcription errors were noted. No qualifications were required.

2.10 COMPOUND IDENTIFICATION

Target compound identification was verified at a Level IV data validation. The laboratory analyzed the volatile target compounds by EPA Method 624. A TIC search was performed for requested target compounds 1,2-dichloro-1,1,2-trifluoroethane and cyclohexane, as these compounds were not included in the calibration (see section 2.11). Neither compound was detected as a TIC. Chromatograms, retention times, and spectra for the samples and QC were examined and no target compound identification problems were noted. No qualifications were required.

2.11 COMPOUND QUANTIFICATION AND REPORTED DETECTION LIMITS

Compound quantification is verified at a Level IV data validation. The reporting limits were supported by the lowest concentrations of the initial calibration standards and by the MDL study. Calibration was not performed for target compounds 1,2-dichloro-1,1,2-trifluoroethane and cyclohexane; therefore, the laboratory performed only a TIC search for those compounds. Nondetects for both compounds were qualified as estimated, "UJ," in the site samples of these SDGs. Compound quantitation was verified by recalculating any sample detects and a representative number of blank spike and surrogate recoveries from the raw data. Results were reported in $\mu\text{g/L}$ (ppb). No calculation or transcription errors were noted. No further qualifications were required.

2.12 TENTATIVELY IDENTIFIED COMPOUNDS

The laboratory did not provide TICs for these SDGs. No qualifications were required.

2.13 SYSTEM PERFORMANCE

A review of the chromatograms and other raw data showed no identifiable problems with system performance. No qualifications were required.



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

Project ID: Annual Outfall 018

Report Number: IOB1570

Sampled: 02/18/05
 Received: 02/18/05

DRAFT: PURGEABLES BY GC/MS (EPA 624)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers	
									REV	QUAL CODE
Sample ID: IOB1570-01 (DRAFT: Outfall 018 - Water) - cont.										
Reporting Units: ug/l										
Benzene	EPA 624	5B19020	0.28	2.0	ND	1	02/19/05	02/19/05	U	
Trichlorotrifluoroethane (Freon 113)	EPA 624	5B19020	1.2	5.0	ND	1	02/19/05	02/19/05	U	
Carbon tetrachloride	EPA 624	5B19020	0.28	5.0	ND	1	02/19/05	02/19/05	U	
Chloroform	EPA 624	5B19020	0.33	2.0	ND	1	02/19/05	02/19/05	U	
1,1-Dichloroethane	EPA 624	5B19020	0.27	2.0	ND	1	02/19/05	02/19/05	U	
1,2-Dichloroethane	EPA 624	5B19020	0.28	2.0	ND	1	02/19/05	02/19/05	U	
1,1-Dichloroethene	EPA 624	5B19020	0.32	3.0	ND	1	02/19/05	02/19/05	U	
Ethylbenzene	EPA 624	5B19020	0.25	2.0	ND	1	02/19/05	02/19/05	U	
Tetrachloroethene	EPA 624	5B19020	0.32	2.0	ND	1	02/19/05	02/19/05	U	
Toluene	EPA 624	5B19020	0.36	2.0	ND	1	02/19/05	02/19/05	U	
1,1,1-Trichloroethane	EPA 624	5B19020	0.30	2.0	ND	1	02/19/05	02/19/05	U	
1,1,2-Trichloroethane	EPA 624	5B19020	0.30	2.0	ND	1	02/19/05	02/19/05	U	C
Trichloroethene	EPA 624	5B19020	0.26	5.0	ND	1	02/19/05	02/19/05	U	
Trichlorofluoromethane	EPA 624	5B19020	0.34	5.0	ND	1	02/19/05	02/19/05	U	
Vinyl chloride	EPA 624	5B19020	0.26	5.0	ND	1	02/19/05	02/19/05	U	
Xylenes, Total	EPA 624	5B19020	0.52	4.0	ND	1	02/19/05	02/19/05	U	
Surrogate: Dibromofluoromethane (80-120%)										104 %
Surrogate: Toluene-d8 (80-120%)										105 %
Surrogate: 4-Bromofluorobenzene (80-120%)										96 %

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 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: Annual Outfall 018

Report Number: IOB1570

Sampled: 02/18/05
 Received: 02/18/05

DRAFT: PURGEABLES BY GC/MS (EPA 624)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers	QUAL CODE
Sample ID: IOB1570-02 (DRAFT: Trip Blank - Water)										
Reporting Units: ug/l										
Benzene	EPA 624	5B19020	0.28	2.0	ND	1	02/19/05	02/19/05	ND	
Trichlorotrifluoroethane (Freon 113)	EPA 624	5B19020	1.2	5.0	ND	1	02/19/05	02/19/05	ND	
Carbon tetrachloride	EPA 624	5B19020	0.28	5.0	ND	1	02/19/05	02/19/05	ND	
Chloroform	EPA 624	5B19020	0.33	2.0	ND	1	02/19/05	02/19/05	ND	
1,1-Dichloroethane	EPA 624	5B19020	0.27	2.0	ND	1	02/19/05	02/19/05	ND	
1,2-Dichloroethane	EPA 624	5B19020	0.28	2.0	ND	1	02/19/05	02/19/05	ND	
1,1-Dichloroethene	EPA 624	5B19020	0.32	3.0	ND	1	02/19/05	02/19/05	ND	
Ethylbenzene	EPA 624	5B19020	0.25	2.0	ND	1	02/19/05	02/19/05	ND	
Tetrachloroethene	EPA 624	5B19020	0.32	2.0	ND	1	02/19/05	02/19/05	ND	
Toluene	EPA 624	5B19020	0.36	2.0	ND	1	02/19/05	02/19/05	ND	
1,1,1-Trichloroethane	EPA 624	5B19020	0.30	2.0	ND	1	02/19/05	02/19/05	ND	
1,1,2-Trichloroethane	EPA 624	5B19020	0.30	2.0	ND	1	02/19/05	02/19/05	ND	
Trichloroethene	EPA 624	5B19020	0.26	5.0	ND	1	02/19/05	02/19/05	ND	
Trichlorofluoromethane	EPA 624	5B19020	0.34	5.0	ND	1	02/19/05	02/19/05	ND	
Vinyl chloride	EPA 624	5B19020	0.26	5.0	ND	1	02/19/05	02/19/05	ND	
Xylenes, Total	EPA 624	5B19020	0.52	4.0	ND	1	02/19/05	02/19/05	ND	
Surrogate: Dibromofluoromethane (80-120%)					100 %					
Surrogate: Toluene-d8 (80-120%)					104 %					
Surrogate: 4-Bromofluorobenzene (80-120%)					96 %					

Handwritten notes: "QUAL CODE" with a vertical line and a downward arrow. "ND" is written in the Data Qualifiers column for all analytes.

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

Project ID: Annual Outfall 018

Report Number: IOB1570

Sampled: 02/18/05
 Received: 02/18/05

DRAFT: PURGEABLES BY GC/MS (EPA 624)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers	QUAL	QUAL CODE
Sample ID: IOB1570-01 (DRAFT: Outfall 018 - Water)											
Reporting Units: ug/l											
Bromodichloromethane	EPA 624	5B19020	0.30	2.0	ND	1	02/19/05	02/19/05		U	
Bromoform	EPA 624	5B19020	0.32	5.0	ND	1	02/19/05	02/19/05		U	
Bromomethane	EPA 624	5B19020	0.34	5.0	ND	1	02/19/05	02/19/05		U	
Chlorobenzene	EPA 624	5B19020	0.36	2.0	ND	1	02/19/05	02/19/05		U	
Chloroethane	EPA 624	5B19020	0.33	5.0	ND	1	02/19/05	02/19/05		U	
Chloromethane	EPA 624	5B19020	0.30	5.0	ND	1	02/19/05	02/19/05		U	
Dibromochloromethane	EPA 624	5B19020	0.28	2.0	ND	1	02/19/05	02/19/05		U	
1,2-Dichlorobenzene	EPA 624	5B19020	0.32	2.0	ND	1	02/19/05	02/19/05		U	
1,3-Dichlorobenzene	EPA 624	5B19020	0.35	2.0	ND	1	02/19/05	02/19/05		U	
1,4-Dichlorobenzene	EPA 624	5B19020	0.37	2.0	ND	1	02/19/05	02/19/05		U	
trans-1,2-Dichloroethene	EPA 624	5B19020	0.27	2.0	ND	1	02/19/05	02/19/05		U	
1,2-Dichloropropane	EPA 624	5B19020	0.35	2.0	ND	1	02/19/05	02/19/05		U	
cis-1,3-Dichloropropene	EPA 624	5B19020	0.22	2.0	ND	1	02/19/05	02/19/05		U	
trans-1,3-Dichloropropene	EPA 624	5B19020	0.24	2.0	ND	1	02/19/05	02/19/05		U	
Methylene chloride	EPA 624	5B19020	0.48	5.0	0.95	1	02/19/05	02/19/05		U	T
1,1,2,2-Tetrachloroethane	EPA 624	5B19020	0.24	2.0	ND	1	02/19/05	02/19/05		U	
Toluene	EPA 624	5B19020	0.36	2.0	ND	1	02/19/05	02/19/05		U	
Surrogate: Dibromofluoromethane (80-120%)										U	
Surrogate: Toluene-d8 (80-120%)										U	
Surrogate: 4-Bromofluorobenzene (80-120%)										U	
Sample ID: IOB1570-02 (DRAFT: Trip Blank - Water)											
Reporting Units: ug/l											
Bromodichloromethane	EPA 624	5B19020	0.30	2.0	ND	1	02/19/05	02/19/05		U	
Bromoform	EPA 624	5B19020	0.32	5.0	ND	1	02/19/05	02/19/05		U	
Bromomethane	EPA 624	5B19020	0.34	5.0	ND	1	02/19/05	02/19/05		U	
Chlorobenzene	EPA 624	5B19020	0.36	2.0	ND	1	02/19/05	02/19/05		U	
Chloroethane	EPA 624	5B19020	0.33	5.0	ND	1	02/19/05	02/19/05		U	
Chloromethane	EPA 624	5B19020	0.30	5.0	ND	1	02/19/05	02/19/05		U	
Dibromochloromethane	EPA 624	5B19020	0.28	2.0	ND	1	02/19/05	02/19/05		U	
1,2-Dichlorobenzene	EPA 624	5B19020	0.32	2.0	ND	1	02/19/05	02/19/05		U	
1,3-Dichlorobenzene	EPA 624	5B19020	0.35	2.0	ND	1	02/19/05	02/19/05		U	
1,4-Dichlorobenzene	EPA 624	5B19020	0.37	2.0	ND	1	02/19/05	02/19/05		U	
trans-1,2-Dichloroethene	EPA 624	5B19020	0.27	2.0	ND	1	02/19/05	02/19/05		U	
1,2-Dichloropropane	EPA 624	5B19020	0.35	2.0	ND	1	02/19/05	02/19/05		U	
cis-1,3-Dichloropropene	EPA 624	5B19020	0.22	2.0	ND	1	02/19/05	02/19/05		U	
trans-1,3-Dichloropropene	EPA 624	5B19020	0.24	2.0	ND	1	02/19/05	02/19/05		U	
Methylene chloride	EPA 624	5B19020	0.48	5.0	1.4	1	02/19/05	02/19/05		U	DND
1,1,2,2-Tetrachloroethane	EPA 624	5B19020	0.24	2.0	ND	1	02/19/05	02/19/05		U	
Surrogate: Dibromofluoromethane (80-120%)										U	
Surrogate: Toluene-d8 (80-120%)										U	

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

Project ID: Annual Outfall 018

Report Number: IOB1570

Sampled: 02/18/05
 Received: 02/18/05

DRAFT: PURGEABLES BY GC/MS (EPA 624)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Analyzed	Data Qualifiers
---------	--------	-------	-----------	-----------------	---------------	-----------------	---------------	-----------------

Sample ID: IOB1570-02 (DRAFT: Trip Blank - Water) - cont.
 Reporting Units: ug/l

Surrogate: 4-Bromofluorobenzene (80-120%)

96 %

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

Project ID: Annual Outfall 018

Report Number: IOB1570

Sampled: 02/18/05
 Received: 02/18/05

DRAFT: PURGEABLES BY GC/MS (EPA 624)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers	
									REL QUAL	QUAL CODE
Sample ID: IOB1570-01 (DRAFT: Outfall 018 - Water)										
Reporting Units: ug/l										
Acrolein	EPA 624	5B19020	4.6	50	ND	1	02/19/05	02/19/05	R	R
Acrylonitrile	EPA 624	5B19020	5.1	50	ND	1	02/19/05	02/19/05	U	
2-Chloroethyl vinyl ether	EPA 624	5B19020	1.3	5.0	ND	1	02/19/05	02/19/05	U	
Surrogate: Dibromofluoromethane (80-120%)					104 %					
Surrogate: Toluene-d8 (80-120%)					105 %					
Surrogate: 4-Bromofluorobenzene (80-120%)					96 %					
Sample ID: IOB1570-02 (DRAFT: Trip Blank - Water)										
Reporting Units: ug/l										
Acrolein	EPA 624	5B19020	4.6	50	ND	1	02/19/05	02/19/05	R	R
Acrylonitrile	EPA 624	5B19020	5.1	50	ND	1	02/19/05	02/19/05	U	
2-Chloroethyl vinyl ether	EPA 624	5B19020	1.3	5.0	ND	1	02/19/05	02/19/05	U	
Surrogate: Dibromofluoromethane (80-120%)					100 %					
Surrogate: Toluene-d8 (80-120%)					104 %					
Surrogate: 4-Bromofluorobenzene (80-120%)					96 %					

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

Project ID: Annual Outfall 018

Report Number: IOB1570

Sampled: 02/18/05
 Received: 02/18/05

DRAFT: PURGEABLES BY GC/MS, TENTATIVELY IDENTIFIED COMPOUNDS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers	REV QUAL	QUAL CODE
Sample ID: IOB1570-01 (DRAFT: Outfall 018 - Water)											
Reporting Units: ug/l											
1,2-Dichloro-1,1,2-trifluoroethane	EPA 624 (MOD.)	5B19020	N/A	2.5	ND	1	02/19/05	02/19/05		UJ	*11
Cyclohexane	EPA 624 (MOD.)	5B19020	N/A	2.5	ND	1	02/19/05	02/19/05		UJ	*11
Sample ID: IOB1570-02 (DRAFT: Trip Blank - Water)											
Reporting Units: ug/l											
1,2-Dichloro-1,1,2-trifluoroethane	EPA 624 (MOD.)	5B19020	N/A	2.5	ND	1	02/19/05	02/19/05		UJ	*11
Cyclohexane	EPA 624 (MOD.)	5B19020	N/A	2.5	ND	1	02/19/05	02/19/05		U	

WMP
 4-4-05

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LEVEL IV

CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

AMEC Earth & Environmental
550 South Wadsworth Boulevard
Suite 500
Lakewood, CO 80226

Package ID T711VO74

Task Order 313150010

SDG No. IOB1570

No. of Analyses 1

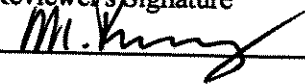
Laboratory Del Mar

Reviewer M. Pokorny

Analysis/Method Volatiles (1,4-dioxane)

Date: April 4, 2005

Reviewer's Signature



ACTION ITEMS*

1. **Case Narrative**
Deficiencies

2. **Out of Scope**
Analyses

3. **Analyses Not Conducted**

4. **Missing Hardcopy**
Deliverables

5. **Incorrect Hardcopy**
Deliverables

6. **Deviations from Analysis**
Protocol, e.g.,
Holding Times
GC/MS Tune/Inst. Perform
Calibrations
Blanks
Surrogates
Matrix Spike/Dup LCS
Field QC
Internal Standard Performance
Compound Identification and
Quantitation
System Performance

COMMENTS^b Acceptable as reviewed.

^a 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

ANALYSIS: VOLATILES

SAMPLE DELIVERY GROUP: IOB1570

Prepared by

AMEC—Denver Operations
550 South Wadsworth Boulevard, Suite 500
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title: NPDES Monitoring
Contract Task Order #: 313150010
Sample Delivery Group #: IOB1570
Project Manager: B. McIlvaine
Matrix: Water
Analysis: Volatiles (1,4-dioxane)
QC Level: Level IV
No. of Samples: 1
No. of Reanalyses/Dilutions: 0
Reviewer: M. Pokorny
Date of Review: April 4, 2005

The samples listed in Table 1 were validated based on the guidelines outlined in the *AMEC Data Validation Procedure for Levels C and D Volatile Organics (DVP-2, Rev. 2)*, *EPA Method SW-846 8260B* and the *National Functional Guidelines For Organic Data Review (2/94)*. Any deviations from these procedures and guidelines are documented herein. Qualifiers were applied in cases where the data did not meet the required QC criteria or where special consideration by the data user is required. Data qualifiers were placed on Form Is with the associated qualification codes. Analytes that were rejected for any reason are denoted on the Form I as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

Table 1. Sample identification

Client ID	EPA ID	Lab No.	Matrix	Method
Outfall 018	Outfall 018	IOB1570-01	water	624

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 Del Mar within the temperature limits of $4^{\circ}\text{C} \pm 2^{\circ}\text{C}$. The sample was properly preserved. The COC noted that the sample was received intact; however, information regarding absence of headspace was not provided. No qualifications were required.

2.1.2 Chain of Custody

The COC was signed by field and laboratory personnel. The COC accounted for the analysis presented in this SDG. According to the sample login sheet, custody seals were not present on the cooler. The sample summary form did not have the Oufall 018 ID printed on it; the ID was added by the reviewer. No qualifications were required.

2.1.3 Holding Times

The sample was analyzed within 14 days of collection. No qualifications were required.

2.2 GC/MS TUNING

The ion abundance windows were consistent with those specified in EPA Method 8260B. All ion abundances were within the established windows, and the sample was analyzed within 12 hours of the BFB injection time. No qualifications were required.

2.3 CALIBRATION

One initial calibration, dated 02/16/05, was associated with this SDG. The average RRF for 1,4-dioxane was ≥ 0.05 and the r^2 value was ≤ 0.995 . One continuing calibration, dated 02/16/05 was associated with this SDG. The RRF for 1,4-dioxane was ≥ 0.05 and the %D was $\leq 20\%$. The r^2 value and average RRF for 1,4-dioxane in the initial calibration, and the %D and RRF for 1,4-dioxane in the continuing calibration were recalculated from the raw data, and no calculation or transcription errors were found. No qualifications were required.

2.4 BLANKS

One water method blank (P5B2515-BLK1) was associated with this SDG. Target compound 1,4-dioxane was not detected in the method blank. The method blank raw data showed no evidence of a false negative. No qualifications were required.

2.5 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

The laboratory analyzed a blank spike/blank spike duplicate pair (P5B2515-BS1/BS1D) with this SDG. The recoveries and RPD for 1,4-dioxane were within the laboratory QC limits. A representative recovery was recalculated from the raw data and no calculation or transcription errors were found. No qualifications were required.

2.6 SURROGATE RECOVERY

The samples and QC were fortified with dibromofluoromethane. The surrogate was recovered within the laboratory QC limits of 80-125%. The surrogate recovery for this sample was recalculated from the raw data and no calculation or transcription errors were found. No qualifications were required.

2.7 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

No MS/MSD analyses were associated with this SDG. Evaluation of method accuracy and precision were based on blank spike and blank spike duplicate 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 sample. Following are findings associated with field QC samples:

2.8.1 Trip Blanks

The samples in this SDG had no associated trip blank. No qualifications were required.

2.8.1 Field Blanks and Equipment Rinsates

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

2.8.2 Field Duplicates

There were no field duplicate samples associated with this SDG.

2.9 INTERNAL STANDARDS PERFORMANCE

Internal standard area counts and retention times for the sample was within the control limits established by the continuing calibration standards, of +100%/-50% for internal standard areas and ± 0.50 minutes for retention times. Internal standard areas and retention times were verified from the raw data, and no calculation or transcription errors were noted. No qualifications were required.

2.10 COMPOUND IDENTIFICATION

Target compound identification was verified at a Level IV data validation. The laboratory analyzed for 1,4-dioxane by Method 8260B/SIM. Chromatograms, retention times, and spectra for the sample and QC were examined and no target compound identification problems were noted. No qualifications were required.

2.11 COMPOUND QUANTIFICATION AND REPORTED DETECTION LIMITS

Compound quantification is verified at a Level IV data validation. The reporting limit was supported by the lowest concentration of the initial calibration standards and by the undated MDL supplied by the laboratory. Compound quantitation was verified by recalculating blank spike and surrogate recoveries from the raw data. No calculation or transcription errors were noted. No qualifications were required.

2.12 TENTATIVELY IDENTIFIED COMPOUNDS

TICs are not typically reported for SIM methods.

2.13 SYSTEM PERFORMANCE

A review of the chromatograms and other raw data showed no identifiable problems with system performance. No qualifications were required.



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Del Mar Analytical - Irvine
 17461 Derian Ave., Suite 100
 Irvine, CA 92614
 Attention: Michele Harper

Project ID: IOB1570
 Report Number: POB0652
OUTFALL 018

Sampled: 02/18/05
 Received: 02/25/05

1,4-DIOXANE BY GC/MS (EPA 5030B/8260B)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers	
									REV	QUAL CODE
Sample ID: POB0652-01 (IOB1570-01 - Water)										
Reporting Units: ug/l										
1,4-Dioxane	EPA 8260B	P5B2515	0.49	1.0	ND	1	02/25/05	02/25/05	U	
Surrogate: Dibromofluoromethane (80-125%)										
					114 %					

AMEC VALIDATED

Del Mar Analytical - Phoenix
 Karen Maxwell
 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

AMEC Earth & Environmental
 550 South Wadsworth Boulevard
 Suite 500
 Lakewood, CO 80226

Package ID T711WC102
 Task Order 313150010
 SDG No. IOB1570, IOB1571
 No. of Analyses 2

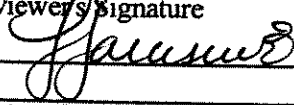
Laboratory Del Mar Analytical

Reviewer L. Jarusewic

Analysis/Method General Minerals

Date: 03/31/05

Reviewer's Signature



ACTION ITEMS*

1. Case Narrative
 Deficiencies

2. Out of Scope
 Analyses

3. Analyses Not
 Conducted

4. Missing Hardcopy
 Deliverables

5. Incorrect Hardcopy
 Deliverables

6. Deviations from
 Analysis Protocol, e.g.,

Qualifications were applied for:

1) Detects below the reporting limit

2) Reviewer raised cyanide MDL to level of interference

Holding Times
 GC/MS Tune/Inst.
 Performance

Calibrations

Blanks

Surrogates

Matrix Spike/Dup LCS

Field QC

Internal Standard

Performance

Compound Identification
 and Quantitation

System Performance

COMMENTS^b

* 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

ANALYSIS: GENERAL MINERALS

SAMPLE DELIVERY GROUPS: IOB1570 & IOB1571

Prepared by

AMEC—Denver Operations
550 South Wadsworth Boulevard, Suite 500
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title: NPDES Monitoring
Contract Task Order #: 313150010
Sample Delivery Group #: IOB1570, IOB1571
Project Manager: B. McIlvaine
Matrix: Water
Analysis: General Minerals
QC Level: Level IV
No. of Samples: 2
Reviewer: L. Jarusewic
Date of Review: March 31, 2005

The samples listed in Table 1 was validated based on the guidelines outlined in the AMEC *Data Validation Procedures SOP DVP-6, Rev. 2, USEPA Methods for Chemical Analysis of Water and Wastes Method 300.0, 330.5, 405.1, 335.2, 418.1, 350.2, 413.1, 415.1, 160.5, 120.1, 160.2, and 180.1. Standard Methods for the Examination of Water and Wastewater Method SM5540-C and SM2540C*, 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 I as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

Table 1. Sample identification

Client ID	EPA ID	Laboratory ID	Matrix	COC Method
Outfall 003	Outfall 003	IOB1571-01	Water	General Minerals
Outfall 018	Outfall 018	IOB1570-01	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 samples in these SDGs were received at the laboratory within the temperature limits of $4^{\circ}\text{C} \pm 2^{\circ}\text{C}$. No preservation problems were noted by the laboratory. No qualifications were required.

2.1.2 Chain of Custody

The COCs were signed and dated by field and laboratory personnel. The COCs accounted for the analyses and samples presented in these SDGs. No qualifications were required.

2.1.3 Holding Times

The holding times were assessed by comparing the date of collection with the dates of analyses. The 28-day analytical holding time for oil and grease, chloride, sulfate, fluoride, total organic carbon, conductivity, ammonia, and total recoverable hydrocarbons, the 14-day holding time for cyanide, the seven-day holding time for total suspended solids and total dissolved solids, the 48-hour holding time for turbidity, nitrate/nitrite, total settleable solids, surfactants, and biological oxygen demand, and the 24-hour residual chlorine holding times were met. No qualifications were required.

2.2 CALIBRATION

For the applicable analyses, the initial calibration correlation coefficients were ≥ 0.995 . The initial and continuing calibration verification information was acceptable with recoveries within the control limits of 90-110%. For BOD, no information regarding the calibration of the oxygen meter was provided; however, as the LCS recovery was within the CCV control limits, no qualifications were required. For ammonia, no information regarding the standardization of the titrant was provided; however, as the LCS recovery was within the CCV control limits, no qualifications were required. The reporting limit check standards for cyanide were within the control limits of 70-130%. Calibration is not applicable to residual chlorine, oil and grease, total dissolved solids, total settleable solids, or total suspended solids. No qualifications were required.

2.3 BLANKS

Turbidity was detected in method blank 5B19043-BLK1 at 0.0500 NTU; however, the method blank result was insufficient to qualify the Outfall 018 result. Oil and grease was detected in method blank 5B22082-BLK1 at 1.00 mg/L; however, as oil and grease was not detected in sample Outfall 018, no qualifications were required. Sulfate was detected in a bracketing CCB at 0.33 mg/L; however, the CCB result was insufficient to qualify the Outfall 018 result. Cyanide was reported in method blank 5B25064-BLK1 -3.9 $\mu\text{g/L}$; therefore, nondetected cyanide in sample Outfall 018 was qualified as estimated, "UJ."

The remaining method blank and CCB results reported on the summary forms and in the raw data for blank analyses associated with the samples were nondetects at the reporting limit. Blank analyses are not applicable to residual chlorine, conductivity, and total settleable solids. No qualifications were required.

2.4 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

The laboratory control sample and laboratory control sample duplicate (BOD, total recoverable hydrocarbons, and oil and grease only) recoveries were within the laboratory-established control limits. The LCS is not applicable to turbidity, total settleable solids, or residual chlorine. No qualifications were required.

2.5 SURROGATES RECOVERY

Surrogate recovery is not applicable to the analyses presented in these SDGs.

2.6 LABORATORY DUPLICATES

MS/MSD analyses were performed on sample Outfall 018 for surfactants. The RPD was within the control limit of $\leq 20\%$. No qualifications were required.

2.7 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

MS/MSD analyses were performed on sample Outfall 018 for surfactants. The recoveries were within the laboratory-established control limits and no qualifications were required.

2.8 FURNACE ATOMIC ABSORPTION QC

Furnace atomic absorption was not utilized for the analyses of these samples; therefore, furnace atomic absorption QC is not applicable.

2.9 ICP SERIAL DILUTION

ICP serial dilution is not applicable to the analyses presented in this data validation report.

2.10 SAMPLE RESULT VERIFICATION

A Level IV review was performed for the samples in these data packages. Calculations were verified, and the sample results reported on the Form Is were verified against the raw data. Cyanide in Outfall 018 was reported in the raw data at $-3.7 \mu\text{g/L}$ and the method blank associated with Outfall 018 was reported at $-3.9 \mu\text{g/L}$. Due to these negative results, the reviewer raised the MDL on the Form I to the level of

interference. No transcription errors or calculation errors were noted. Flouride detected below the reporting limit in sample Outfall 018 was qualified as estimated, "J." No further qualifications were required.

2.11 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. The following are findings associated with field QC samples:

2.11.1 Field Blanks and Equipment Rinsates

The samples in these SDGs had no associated field QC samples. No qualifications were required.

2.11.2 Field Duplicates

There were no field duplicate pairs associated with these SDGs.



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

Project ID: Annual Outfall 018

Report Number: IOB1570

Sampled: 02/18/05
 Received: 02/18/05

DRAFT: INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOB1570-01 (DRAFT: Outfall 018 - Water) - cont.									
Reporting Units: ml/hr									
Total Settleable Solids	EPA 160.5	5B18145	0.10	0.10	0.10	1	02/18/05	02/18/05	DEV QUAL CODE

AMEC VALIDATED

LEVEL IV

DRAFT REPORT
 DRAFT REPORT
 DATA SUBJECT TO CHANGE

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

Project ID: Annual Outfall 018

Report Number: IOB1570

Sampled: 02/18/05
 Received: 02/18/05

DRAFT: INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOB1570-01 (DRAFT: Outfall 018 - Water) - cont. Reporting Units: NTU									
Turbidity	EPA 180.1	5B19043	0.080	2.0	50	2	02/19/05	02/19/05	BY QWL COW

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

Project ID: Annual Outfall 018

Report Number: IOB1570

Sampled: 02/18/05
 Received: 02/18/05

DRAFT: INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOB1570-01 (DRAFT: Outfall 018 - Water) - cont.									
Reporting Units: ug/l									
Total Cyanide	EPA 335.2	5B22061	22 39	5.0	ND	1	02/22/05	02/22/05	WJ
Perchlorate	EPA 314.0	5B25064	0.80	4.0	ND	1	02/25/05	02/26/05	*

HJ 3/31/05

AMEC VALIDATED

LEVEL IV

**Analysis Not Validated*

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

Project ID: Annual Outfall 018

Report Number: IOB1570

Sampled: 02/18/05
 Received: 02/18/05

DRAFT: INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOB1570-01 (DRAFT: Outfall 018 - Water) - cont.									
Reporting Units: umhos/cm									
Specific Conductance	EPA 120.1	5B24133	1.0	1.0	200	1	02/24/05	02/24/05	REV QUAL CODE

AMEC VALIDATED

LEVEL IV

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

Project ID: Annual Outfall 018

Report Number: IOB1570

Sampled: 02/18/05
 Received: 02/18/05

DRAFT: TOTAL RECOVERABLE PETROLEUM HYDROCARBONS (EPA 418.1)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data	Qualifiers
Sample ID: IOB1570-01 (DRAFT: Outfall 018 - Water)										
Reporting Units: mg/l										
Total Recoverable Hydrocarbons	EPA 418.1	5B22081	0.31	1.0	ND	1	02/22/05	02/22/05		U

REV
SUM
CODE

AMEC VALIDATED

LEVEL IV

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

Project ID: Annual Outfall 018

Report Number: IOB1570

Sampled: 02/18/05
 Received: 02/18/05

DRAFT: INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOB1570-01 (DRAFT: Outfall 018 - Water) - cont. Reporting Units: mg/l									
Ammonia-N (Distilled)	EPA 350.2	5B23079	0.30	0.50	ND	1	02/23/05	02/23/05	U
Biochemical Oxygen Demand	EPA 405.1	5B18080	0.59	2.0	2.7	1	02/18/05	02/23/05	U
Chloride	EPA 300.0	5B18129	0.26	0.50	8.3	1	02/18/05	02/23/05	U
Fluoride	EPA 300.0	5B18129	0.10	0.50	0.20	1	02/18/05	02/19/05	J
Nitrate/Nitrite-N	EPA 300.0	5B18129	0.072	0.11	0.22	1	02/18/05	02/19/05	J
Oil & Grease	EPA 413.1	5B22082	0.94	5.0	ND	1	02/18/05	02/19/05	U
Residual Chlorine	EPA 330.5	5B18083	0.10	0.10	ND	1	02/22/05	02/22/05	U
Sulfate	EPA 300.0	5B18129	0.18	0.50	25	1	02/18/05	02/18/05	U
Surfactants (MBAS)	SM5540-C	5B18136	0.088	0.20	ND	1	02/18/05	02/19/05	U
Total Dissolved Solids	SM2540C	5B24111	10	10	150	2	02/18/05	02/19/05	U RI-1
Total Organic Carbon	EPA 415.1	5B23104	0.25	1.0	9.1	1	02/24/05	02/24/05	U
Total Suspended Solids	EPA 160.2	5B25089	10	10	33	1	02/23/05	02/24/05	U
							02/25/05	02/25/05	U

AMEC VALIDATED

LEVEL IV

DRAFT REPORT
 DRAFT REPORT
 DATA SUBJECT TO CHANGE

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CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

AMEC Earth & Environmental
 550 South Wadsworth Boulevard
 Suite 500
 Lakewood, CO 80226

Package ID T711WC103

Task Order 313150010

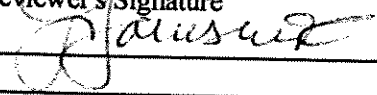
SDG No. IOB1570

No. of Analyses 1

Laboratory Del Mar Analytical

Date: 03/31/05

Reviewer L. Jarusewic

Reviewer's Signature


Analysis/Method Perchlorate

ACTION ITEMS*

- 1. Case Narrative Deficiencies
- 2. Out of Scope Analyses
- 3. Analyses Not Conducted
- 4. Missing Hardcopy Deliverables
- 5. Incorrect Hardcopy Deliverables
- 6. Deviations from Analysis Protocol, e.g.,
 - Holding Times
 - GC/MS Tune/Inst. Performance
 - Calibrations
 - Blanks
 - Surrogates
 - Matrix Spike/Dup LCS
 - Field QC
 - Internal Standard Performance
 - Compound Identification and Quantitation
 - System Performance

COMMENTS^b

Acceptable as reviewed.

* 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

ANALYSIS: PERCHLORATE

SAMPLE DELIVERY GROUP: IOB1570

Prepared by

AMEC—Denver Operations
550 South Wadsworth Boulevard, Suite 500
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title: NPDES Monitoring
Contract Task Order #: 313150010
Sample Delivery Group #: IOB1570
Project Manager: B. McIlvaine
Matrix: Water
Analysis: Perchlorate
QC Level: Level IV
No. of Samples: 1
Reviewer: L. Jarusewic
Date of Review: March 31, 2005

The samples listed in Table 1 was validated based on the guidelines outlined in the AMEC *Data Validation Procedures SOP DVP-6, Rev. 2, USEPA Methods for Chemical Analysis of Water and Wastes Method 314.0*, 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 I as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

Table 1. Sample identification

Client ID	EPA ID	Laboratory ID	Matrix	COC Method
Outfall 018	Outfall 018	IOB1570-01	Water	Perchlorate

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

Following are findings associated with sample management:

2.1.1 Sample Preservation, Handling, and Transport

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

2.1.3 Holding Times

The holding time was assessed by comparing the date of collection with the date of analysis. The 28-day analytical holding time for perchlorate was met, and no qualifications were required.

2.2 CALIBRATION

The initial calibration correlation coefficient was ≥ 0.995 . The IPC-MA recovery was within the control limits of 80-120%. The ICV, CCV and IPC recoveries were within the control limits of 90-110%. No qualifications were required.

2.3 BLANKS

The method blank and CCB results reported on the summary forms and in the raw data for blank analyses associated with the sample were nondetects at the reporting limit. No qualifications were required.

2.4 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

The laboratory control sample recovery was within the method control limits of 85-115%. No qualifications were required.

2.5 SURROGATES RECOVERY

Surrogate recovery is not applicable to the analysis presented in this SDG.

2.6 LABORATORY DUPLICATES

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

2.7 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

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

2.8 FURNACE ATOMIC ABSORPTION QC

Furnace atomic absorption was not utilized for the analysis of this sample; therefore, furnace atomic absorption QC is not applicable.

2.9 ICP SERIAL DILUTION

ICP serial dilution is not applicable to the analysis presented in this data validation report.

2.10 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 was verified against the raw data. No transcription errors or calculation errors were noted. No qualifications were required.

2.11 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. The following are findings associated with field QC samples:

2.11.1 Field Blanks and Equipment Rinsates

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

2.11.2 Field Duplicates

There were no field duplicate pairs associated with this SDG.



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

Project ID: Annual Outfall 018

Report Number: IOB1570

Sampled: 02/18/05
 Received: 02/18/05

DRAFT: INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOB1570-01 (DRAFT: Outfall 018 - Water) - cont.									
Reporting Units: ug/l									
Total Cyanide	EPA 335.2	5B22061	2.2	5.0	ND	1	02/22/05	02/22/05	* U
Perchlorate	EPA 314.0	5B25064	0.80	4.0	ND	1	02/25/05	02/26/05	* U

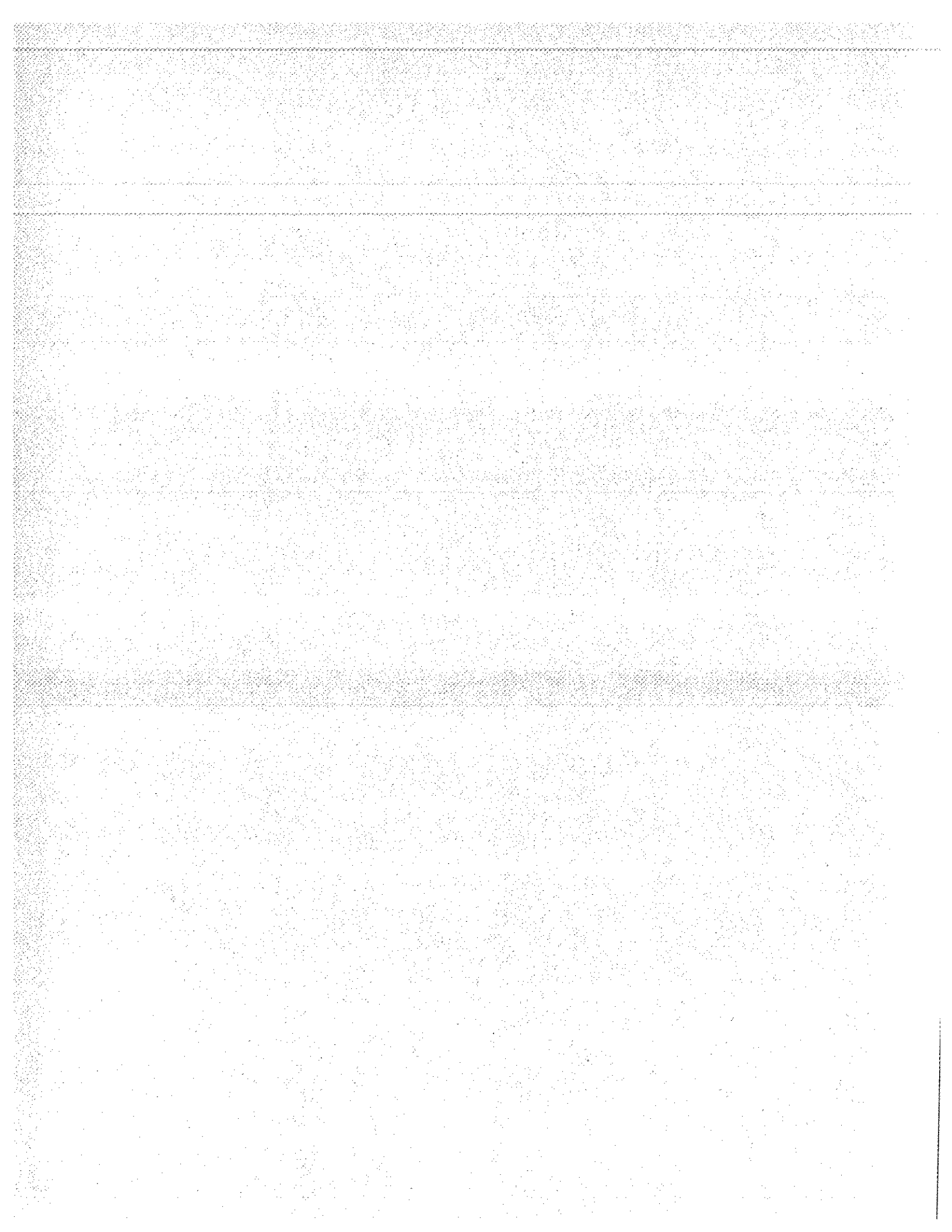
AMEC VALIDATED

LEVEL IV

*Analysis Not Validated

DRAFT REPORT
 DRAFT REPORT
 DATA SUBJECT TO CHANGE

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LABORATORY REPORT

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

Project: Annual Outfall 018

Sampled: 02/18/05
Received: 02/18/05
Issued: 04/07/05 11:39

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, 5 pages, are included and are an integral part of this report.
This entire report was reviewed and approved for release.*

SAMPLE CROSS REFERENCE

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

LABORATORY ID	CLIENT ID	MATRIX
IOB1570-01	Outfall 018	Water
IOB1570-02	Trip Blank	Water

Reviewed By:

Del Mar Analytical, Irvine
Michele Harper
Project Manager



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

Project ID: Annual Outfall 018

Report Number: IOB1570

Sampled: 02/18/05
Received: 02/18/05

CORRECTIVE ACTION REPORT

Department: Extractions

Date: 02/25/2005

Method: EPA 625

Matrix: Water

QC Batch: 5B22042

Identification and Definition of Problem:

The percent recoveries for benzidine in the LCS/LCSD were below method acceptance limits.

Determination of the Cause of the Problem:

A definitive cause for the QC failure has not been determined.

Corrective Action Taken:

All results reported for benzidine are potentially biased low and can be considered estimates only.

Quality Assurance Approval:

Dave Dawes

Date: 03/04/2005 10:17 AM

Del Mar Analytical, Irvine
Michele Harper
Project Manager



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

Project ID: Annual Outfall 018

Report Number: IOB1570

Sampled: 02/18/05
Received: 02/18/05

CORRECTIVE ACTION REPORT

Department: GCMS-Semivolatiles

Date: 02/25/2005

Method: EPA 625

Matrix: Water

QC Batch: 5B22042

Identification and Definition of Problem:

The LCS and LCSD results for benzoic acid were below the statistically-derived MDL but were fully quantifiable (above noise level, all ions detected) and had percent recoveries within method acceptance limits.

Determination of the Cause of the Problem:

The current MDL in place for benzoic acid is not representative of laboratory capabilities.

Corrective Action Taken:

The LCS and LCSD have been reported based upon the low calibration standard of 2 ug/L rather than the MDL of 3.7 ug/L. The determination of a new MDL for benzoic acid is in progress.

Quality Assurance Approval:

Dave Dawes

Date: 02/28/2005 04:50 PM

Del Mar Analytical, Irvine
Michele Harper
Project Manager



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Project ID: Annual Outfall 018

Report Number: IOB1570

Sampled: 02/18/05

Received: 02/18/05

TOTAL RECOVERABLE PETROLEUM HYDROCARBONS (EPA 418.1)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOB1570-01 (Outfall 018 - Water)									
Reporting Units: mg/l									
Total Recoverable Hydrocarbons	EPA 418.1	5B22081	0.31	1.0	ND	1	02/22/05	02/22/05	

Del Mar Analytical, Irvine
 Michele Harper
 Project Manager

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Report Number: IOB1570

Sampled: 02/18/05

Received: 02/18/05

EXTRACTABLE FUEL HYDROCARBONS (CADHS/8015 Modified)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOB1570-01 (Outfall 018 - Water) - cont.									
Reporting Units: mg/l									
EFH (C13 - C22)	EPA 8015B	5B19002	0.082	0.50	ND	0.943	02/19/05	02/22/05	
Surrogate: n-Octacosane (40-125%)					49 %				

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 Project Manager

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 Attention: Bronwyn Kelly

Project ID: Annual Outfall 018

Report Number: IOB1570

Sampled: 02/18/05

Received: 02/18/05

VOLATILE FUEL HYDROCARBONS (EPA 5030/CADHS Mod. 8015)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOB1570-01 (Outfall 018 - Water) - cont.									
Reporting Units: mg/l									
GRO (C4 - C12)	EPA 8015 Mod.	5B25003	0.050	0.10	ND	1	02/25/05	02/25/05	
Surrogate: 4-BFB (FID) (65-140%)					85 %				

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 Attention: Bronwyn Kelly

Project ID: Annual Outfall 018

Report Number: IOB1570

Sampled: 02/18/05
 Received: 02/18/05

PURGEABLES BY GC/MS (EPA 624)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOB1570-01 (Outfall 018 - Water) - cont.									
Reporting Units: ug/l									
Benzene	EPA 624	5B19020	0.28	2.0	ND	1	02/19/05	02/19/05	
Trichlorotrifluoroethane (Freon 113)	EPA 624	5B19020	1.2	5.0	ND	1	02/19/05	02/19/05	
Carbon tetrachloride	EPA 624	5B19020	0.28	5.0	ND	1	02/19/05	02/19/05	
Chloroform	EPA 624	5B19020	0.33	2.0	ND	1	02/19/05	02/19/05	
1,1-Dichloroethane	EPA 624	5B19020	0.27	2.0	ND	1	02/19/05	02/19/05	
1,2-Dichloroethane	EPA 624	5B19020	0.28	2.0	ND	1	02/19/05	02/19/05	
1,1-Dichloroethene	EPA 624	5B19020	0.32	3.0	ND	1	02/19/05	02/19/05	
Ethylbenzene	EPA 624	5B19020	0.25	2.0	ND	1	02/19/05	02/19/05	
Tetrachloroethene	EPA 624	5B19020	0.32	2.0	ND	1	02/19/05	02/19/05	
Toluene	EPA 624	5B19020	0.36	2.0	ND	1	02/19/05	02/19/05	
1,1,1-Trichloroethane	EPA 624	5B19020	0.30	2.0	ND	1	02/19/05	02/19/05	
1,1,2-Trichloroethane	EPA 624	5B19020	0.30	2.0	ND	1	02/19/05	02/19/05	
Trichloroethene	EPA 624	5B19020	0.26	5.0	ND	1	02/19/05	02/19/05	
Trichlorofluoromethane	EPA 624	5B19020	0.34	5.0	ND	1	02/19/05	02/19/05	
Vinyl chloride	EPA 624	5B19020	0.26	5.0	ND	1	02/19/05	02/19/05	
Xylenes, Total	EPA 624	5B19020	0.52	4.0	ND	1	02/19/05	02/19/05	
Surrogate: Dibromofluoromethane (80-120%)									104 %
Surrogate: Toluene-d8 (80-120%)									105 %
Surrogate: 4-Bromofluorobenzene (80-120%)									96 %

Del Mar Analytical, Irvine
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 Attention: Bronwyn Kelly

Project ID: Annual Outfall 018

Report Number: IOB1570

Sampled: 02/18/05

Received: 02/18/05

PURGEABLES BY GC/MS (EPA 624)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOB1570-02 (Trip Blank - Water)									
Reporting Units: ug/l									
Benzene	EPA 624	5B19020	0.28	2.0	ND	1	02/19/05	02/19/05	
Trichlorotrifluoroethane (Freon 113)	EPA 624	5B19020	1.2	5.0	ND	1	02/19/05	02/19/05	
Carbon tetrachloride	EPA 624	5B19020	0.28	5.0	ND	1	02/19/05	02/19/05	
Chloroform	EPA 624	5B19020	0.33	2.0	ND	1	02/19/05	02/19/05	
1,1-Dichloroethane	EPA 624	5B19020	0.27	2.0	ND	1	02/19/05	02/19/05	
1,2-Dichloroethane	EPA 624	5B19020	0.28	2.0	ND	1	02/19/05	02/19/05	
1,1-Dichloroethene	EPA 624	5B19020	0.32	3.0	ND	1	02/19/05	02/19/05	
Ethylbenzene	EPA 624	5B19020	0.25	2.0	ND	1	02/19/05	02/19/05	
Tetrachloroethene	EPA 624	5B19020	0.32	2.0	ND	1	02/19/05	02/19/05	
Toluene	EPA 624	5B19020	0.36	2.0	ND	1	02/19/05	02/19/05	
1,1,1-Trichloroethane	EPA 624	5B19020	0.30	2.0	ND	1	02/19/05	02/19/05	
1,1,2-Trichloroethane	EPA 624	5B19020	0.30	2.0	ND	1	02/19/05	02/19/05	
Trichloroethene	EPA 624	5B19020	0.26	5.0	ND	1	02/19/05	02/19/05	
Trichlorofluoromethane	EPA 624	5B19020	0.34	5.0	ND	1	02/19/05	02/19/05	
Vinyl chloride	EPA 624	5B19020	0.26	5.0	ND	1	02/19/05	02/19/05	
Xylenes, Total	EPA 624	5B19020	0.52	4.0	ND	1	02/19/05	02/19/05	
Surrogate: Dibromofluoromethane (80-120%)					100 %				
Surrogate: Toluene-d8 (80-120%)					104 %				
Surrogate: 4-Bromofluorobenzene (80-120%)					96 %				

Del Mar Analytical, Irvine
 Michele Harper
 Project Manager

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PURGEABLES BY GC/MS (EPA 624)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOB1570-01 (Outfall 018 - Water)									
Reporting Units: ug/l									
Bromodichloromethane	EPA 624	5B19020	0.30	2.0	ND	1	02/19/05	02/19/05	
Bromoform	EPA 624	5B19020	0.32	5.0	ND	1	02/19/05	02/19/05	
Bromomethane	EPA 624	5B19020	0.34	5.0	ND	1	02/19/05	02/19/05	
Chlorobenzene	EPA 624	5B19020	0.36	2.0	ND	1	02/19/05	02/19/05	
Chloroethane	EPA 624	5B19020	0.33	5.0	ND	1	02/19/05	02/19/05	
Chloromethane	EPA 624	5B19020	0.30	5.0	ND	1	02/19/05	02/19/05	
Dibromochloromethane	EPA 624	5B19020	0.28	2.0	ND	1	02/19/05	02/19/05	
1,2-Dichlorobenzene	EPA 624	5B19020	0.32	2.0	ND	1	02/19/05	02/19/05	
1,3-Dichlorobenzene	EPA 624	5B19020	0.35	2.0	ND	1	02/19/05	02/19/05	
1,4-Dichlorobenzene	EPA 624	5B19020	0.37	2.0	ND	1	02/19/05	02/19/05	
trans-1,2-Dichloroethene	EPA 624	5B19020	0.27	2.0	ND	1	02/19/05	02/19/05	
1,2-Dichloropropane	EPA 624	5B19020	0.35	2.0	ND	1	02/19/05	02/19/05	
cis-1,3-Dichloropropene	EPA 624	5B19020	0.22	2.0	ND	1	02/19/05	02/19/05	
trans-1,3-Dichloropropene	EPA 624	5B19020	0.24	2.0	ND	1	02/19/05	02/19/05	
Methylene chloride	EPA 624	5B19020	0.48	5.0	0.96	1	02/19/05	02/19/05	J
1,1,2,2-Tetrachloroethane	EPA 624	5B19020	0.24	2.0	ND	1	02/19/05	02/19/05	
Toluene	EPA 624	5B19020	0.36	2.0	ND	1	02/19/05	02/19/05	
<i>Surrogate: Dibromofluoromethane (80-120%)</i>					104 %				
<i>Surrogate: Toluene-d8 (80-120%)</i>					105 %				
<i>Surrogate: 4-Bromofluorobenzene (80-120%)</i>					96 %				

Sample ID: IOB1570-02 (Trip Blank - Water)

Reporting Units: ug/l

Bromodichloromethane	EPA 624	5B19020	0.30	2.0	ND	1	02/19/05	02/19/05	
Bromoform	EPA 624	5B19020	0.32	5.0	ND	1	02/19/05	02/19/05	
Bromomethane	EPA 624	5B19020	0.34	5.0	ND	1	02/19/05	02/19/05	
Chlorobenzene	EPA 624	5B19020	0.36	2.0	ND	1	02/19/05	02/19/05	
Chloroethane	EPA 624	5B19020	0.33	5.0	ND	1	02/19/05	02/19/05	
Chloromethane	EPA 624	5B19020	0.30	5.0	ND	1	02/19/05	02/19/05	
Dibromochloromethane	EPA 624	5B19020	0.28	2.0	ND	1	02/19/05	02/19/05	
1,2-Dichlorobenzene	EPA 624	5B19020	0.32	2.0	ND	1	02/19/05	02/19/05	
1,3-Dichlorobenzene	EPA 624	5B19020	0.35	2.0	ND	1	02/19/05	02/19/05	
1,4-Dichlorobenzene	EPA 624	5B19020	0.37	2.0	ND	1	02/19/05	02/19/05	
trans-1,2-Dichloroethene	EPA 624	5B19020	0.27	2.0	ND	1	02/19/05	02/19/05	
1,2-Dichloropropane	EPA 624	5B19020	0.35	2.0	ND	1	02/19/05	02/19/05	
cis-1,3-Dichloropropene	EPA 624	5B19020	0.22	2.0	ND	1	02/19/05	02/19/05	
trans-1,3-Dichloropropene	EPA 624	5B19020	0.24	2.0	ND	1	02/19/05	02/19/05	
Methylene chloride	EPA 624	5B19020	0.48	5.0	1.4	1	02/19/05	02/19/05	J
1,1,2,2-Tetrachloroethane	EPA 624	5B19020	0.24	2.0	ND	1	02/19/05	02/19/05	
<i>Surrogate: Dibromofluoromethane (80-120%)</i>					100 %				
<i>Surrogate: Toluene-d8 (80-120%)</i>					104 %				

Del Mar Analytical, Irvine
 Michele Harper
 Project Manager

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

Project ID: Annual Outfall 018

Report Number: IOB1570

Sampled: 02/18/05

Received: 02/18/05

PURGEABLES BY GC/MS (EPA 624)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOB1570-02 (Trip Blank - Water) - cont.									
Reporting Units: ug/l									
Surrogate: 4-Bromofluorobenzene (80-120%)					96 %				

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Sampled: 02/18/05
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PURGEABLES BY GC/MS (EPA 624)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOB1570-01 (Outfall 018 - Water)									
Reporting Units: ug/l									
Acrolein	EPA 624	5B19020	4.6	50	ND	1	02/19/05	02/19/05	
Acrylonitrile	EPA 624	5B19020	5.1	50	ND	1	02/19/05	02/19/05	
2-Chloroethyl vinyl ether	EPA 624	5B19020	1.3	5.0	ND	1	02/19/05	02/19/05	
<i>Surrogate: Dibromofluoromethane (80-120%)</i>					104 %				
<i>Surrogate: Toluene-d8 (80-120%)</i>					105 %				
<i>Surrogate: 4-Bromofluorobenzene (80-120%)</i>					96 %				
Sample ID: IOB1570-02 (Trip Blank - Water)									
Reporting Units: ug/l									
Acrolein	EPA 624	5B19020	4.6	50	ND	1	02/19/05	02/19/05	
Acrylonitrile	EPA 624	5B19020	5.1	50	ND	1	02/19/05	02/19/05	
2-Chloroethyl vinyl ether	EPA 624	5B19020	1.3	5.0	ND	1	02/19/05	02/19/05	
<i>Surrogate: Dibromofluoromethane (80-120%)</i>					100 %				
<i>Surrogate: Toluene-d8 (80-120%)</i>					104 %				
<i>Surrogate: 4-Bromofluorobenzene (80-120%)</i>					96 %				

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 Michele Harper
 Project Manager

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

Project ID: Annual Outfall 018

Report Number: IOB1570

Sampled: 02/18/05
 Received: 02/18/05

PURGEABLES BY GC/MS, TENTATIVELY IDENTIFIED COMPOUNDS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOB1570-01 (Outfall 018 - Water)									
Reporting Units: ug/l									
1,2-Dichloro-1,1,2-trifluoroethane	EPA 624 (MOD.)	5B19020	N/A	2.5	ND	1	02/19/05	02/19/05	
Cyclohexane	EPA 624 (MOD.)	5B19020	N/A	2.5	ND	1	02/19/05	02/19/05	
Sample ID: IOB1570-02 (Trip Blank - Water)									
Reporting Units: ug/l									
1,2-Dichloro-1,1,2-trifluoroethane	EPA 624 (MOD.)	5B19020	N/A	2.5	ND	1	02/19/05	02/19/05	
Cyclohexane	EPA 624 (MOD.)	5B19020	N/A	2.5	ND	1	02/19/05	02/19/05	

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

Project ID: Annual Outfall 018

Report Number: IOB1570

Sampled: 02/18/05
 Received: 02/18/05

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

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOB1570-01 (Outfall 018 - Water)									
Reporting Units: ug/l									
Acenaphthene	EPA 625	5B22042	0.10	0.50	ND	0.943	02/22/05	02/24/05	
Acenaphthylene	EPA 625	5B22042	0.10	0.50	ND	0.943	02/22/05	02/24/05	
Aniline	EPA 625	5B22042	2.9	10	ND	0.943	02/22/05	02/24/05	
Anthracene	EPA 625	5B22042	0.083	0.50	ND	0.943	02/22/05	02/24/05	
Benzidine	EPA 625	5B22042	2.4	5.0	ND	0.943	02/22/05	02/24/05	
Benzoic acid	EPA 625	5B22042	3.7	20	ND	0.943	02/22/05	02/24/05	L2
Benzo(a)anthracene	EPA 625	5B22042	0.038	5.0	ND	0.943	02/22/05	02/24/05	
Benzo(a)pyrene	EPA 625	5B22042	0.14	2.0	ND	0.943	02/22/05	02/24/05	
Benzo(b)fluoranthene	EPA 625	5B22042	0.050	2.0	ND	0.943	02/22/05	02/24/05	
Benzo(g,h,i)perylene	EPA 625	5B22042	0.059	5.0	ND	0.943	02/22/05	02/24/05	
Benzo(k)fluoranthene	EPA 625	5B22042	0.053	0.50	ND	0.943	02/22/05	02/24/05	
Benzyl alcohol	EPA 625	5B22042	0.21	5.0	ND	0.943	02/22/05	02/24/05	
Bis(2-chloroethoxy)methane	EPA 625	5B22042	0.072	0.50	ND	0.943	02/22/05	02/24/05	
Bis(2-chloroethyl)ether	EPA 625	5B22042	0.084	0.50	ND	0.943	02/22/05	02/24/05	
Bis(2-chloroisopropyl)ether	EPA 625	5B22042	0.11	0.50	ND	0.943	02/22/05	02/24/05	
Bis(2-ethylhexyl)phthalate	EPA 625	5B22042	1.1	5.0	ND	0.943	02/22/05	02/24/05	
4-Bromophenyl phenyl ether	EPA 625	5B22042	0.12	1.0	ND	0.943	02/22/05	02/24/05	
Butyl benzyl phthalate	EPA 625	5B22042	0.34	5.0	ND	0.943	02/22/05	02/24/05	
4-Chloroaniline	EPA 625	5B22042	0.20	2.0	ND	0.943	02/22/05	02/24/05	
2-Chloronaphthalene	EPA 625	5B22042	0.059	0.50	ND	0.943	02/22/05	02/24/05	
4-Chloro-3-methylphenol	EPA 625	5B22042	0.34	2.0	ND	0.943	02/22/05	02/24/05	
4-Chlorophenyl phenyl ether	EPA 625	5B22042	0.056	0.50	ND	0.943	02/22/05	02/24/05	
2-Chlorophenol	EPA 625	5B22042	0.12	1.0	ND	0.943	02/22/05	02/24/05	
Chrysene	EPA 625	5B22042	0.072	0.50	ND	0.943	02/22/05	02/24/05	
Dibenz(a,h)anthracene	EPA 625	5B22042	0.083	0.50	ND	0.943	02/22/05	02/24/05	
Dibenzofuran	EPA 625	5B22042	0.075	0.50	ND	0.943	02/22/05	02/24/05	
Di-n-butyl phthalate	EPA 625	5B22042	0.26	2.0	ND	0.943	02/22/05	02/24/05	
1,2-Dichlorobenzene	EPA 625	5B22042	0.11	0.50	ND	0.943	02/22/05	02/24/05	
1,3-Dichlorobenzene	EPA 625	5B22042	0.13	0.50	ND	0.943	02/22/05	02/24/05	
1,4-Dichlorobenzene	EPA 625	5B22042	0.050	0.50	ND	0.943	02/22/05	02/24/05	
3,3-Dichlorobenzidine	EPA 625	5B22042	0.93	5.0	ND	0.943	02/22/05	02/24/05	
2,4-Dichlorophenol	EPA 625	5B22042	0.21	2.0	ND	0.943	02/22/05	02/24/05	
Diethyl phthalate	EPA 625	5B22042	0.12	1.0	ND	0.943	02/22/05	02/24/05	
2,4-Dimethylphenol	EPA 625	5B22042	0.31	2.0	ND	0.943	02/22/05	02/24/05	
Dimethyl phthalate	EPA 625	5B22042	0.081	0.50	ND	0.943	02/22/05	02/24/05	
4,6-Dinitro-2-methylphenol	EPA 625	5B22042	0.38	5.0	ND	0.943	02/22/05	02/24/05	
2,4-Dinitrophenol	EPA 625	5B22042	2.7	5.0	ND	0.943	02/22/05	02/24/05	
2,4-Dinitrotoluene	EPA 625	5B22042	0.23	5.0	ND	0.943	02/22/05	02/24/05	
2,6-Dinitrotoluene	EPA 625	5B22042	0.24	5.0	ND	0.943	02/22/05	02/24/05	
Di-n-octyl phthalate	EPA 625	5B22042	0.17	5.0	ND	0.943	02/22/05	02/24/05	
1,2-Diphenylhydrazine/Azobenzene	EPA 625	5B22042	0.087	1.0	ND	0.943	02/22/05	02/24/05	

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

Project ID: Annual Outfall 018

Report Number: IOB1570

Sampled: 02/18/05

Received: 02/18/05

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

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOB1570-01 (Outfall 018 - Water) - cont.									
Reporting Units: ug/l									
Fluoranthene	EPA 625	5B22042	0.089	0.50	ND	0.943	02/22/05	02/24/05	
Fluorene	EPA 625	5B22042	0.075	0.50	ND	0.943	02/22/05	02/24/05	
Hexachlorobenzene	EPA 625	5B22042	0.13	1.0	ND	0.943	02/22/05	02/24/05	
Hexachlorobutadiene	EPA 625	5B22042	0.38	2.0	ND	0.943	02/22/05	02/24/05	
Hexachlorocyclopentadiene	EPA 625	5B22042	1.8	5.0	ND	0.943	02/22/05	02/24/05	
Hexachloroethane	EPA 625	5B22042	0.51	3.0	ND	0.943	02/22/05	02/24/05	
Indeno(1,2,3-cd)pyrene	EPA 625	5B22042	0.19	2.0	ND	0.943	02/22/05	02/24/05	
Isophorone	EPA 625	5B22042	0.059	1.0	ND	0.943	02/22/05	02/24/05	
2-Methylnaphthalene	EPA 625	5B22042	0.13	1.0	ND	0.943	02/22/05	02/24/05	
2-Methylphenol	EPA 625	5B22042	0.28	2.0	ND	0.943	02/22/05	02/24/05	
4-Methylphenol	EPA 625	5B22042	0.20	5.0	ND	0.943	02/22/05	02/24/05	
Naphthalene	EPA 625	5B22042	0.13	1.0	ND	0.943	02/22/05	02/24/05	
2-Nitroaniline	EPA 625	5B22042	0.18	5.0	ND	0.943	02/22/05	02/24/05	
3-Nitroaniline	EPA 625	5B22042	0.35	5.0	ND	0.943	02/22/05	02/24/05	
4-Nitroaniline	EPA 625	5B22042	0.49	5.0	ND	0.943	02/22/05	02/24/05	
Nitrobenzene	EPA 625	5B22042	0.10	1.0	ND	0.943	02/22/05	02/24/05	
2-Nitrophenol	EPA 625	5B22042	0.23	2.0	ND	0.943	02/22/05	02/24/05	
4-Nitrophenol	EPA 625	5B22042	0.73	5.0	ND	0.943	02/22/05	02/24/05	
N-Nitrosodimethylamine	EPA 625	5B22042	0.22	2.0	ND	0.943	02/22/05	02/24/05	
N-Nitroso-di-n-propylamine	EPA 625	5B22042	0.18	2.0	ND	0.943	02/22/05	02/24/05	
N-Nitrosodiphenylamine	EPA 625	5B22042	0.077	1.0	ND	0.943	02/22/05	02/24/05	
Pentachlorophenol	EPA 625	5B22042	0.78	2.0	ND	0.943	02/22/05	02/24/05	
Phenanthrene	EPA 625	5B22042	0.071	0.50	ND	0.943	02/22/05	02/24/05	
Phenol	EPA 625	5B22042	0.14	1.0	ND	0.943	02/22/05	02/24/05	
Pyrene	EPA 625	5B22042	0.059	0.50	ND	0.943	02/22/05	02/24/05	
1,2,4-Trichlorobenzene	EPA 625	5B22042	0.10	1.0	ND	0.943	02/22/05	02/24/05	
2,4,5-Trichlorophenol	EPA 625	5B22042	0.075	2.0	ND	0.943	02/22/05	02/24/05	
2,4,6-Trichlorophenol	EPA 625	5B22042	0.10	1.0	ND	0.943	02/22/05	02/24/05	
Surrogate: 2-Fluorophenol (35-120%)									74 %
Surrogate: Phenol-d6 (45-120%)									48 %
Surrogate: 2,4,6-Tribromophenol (50-125%)									95 %
Surrogate: Nitrobenzene-d5 (45-120%)									82 %
Surrogate: 2-Fluorobiphenyl (45-120%)									76 %
Surrogate: Terphenyl-d14 (45-135%)									77 %

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 Michele Harper
 Project Manager

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

Project ID: Annual Outfall 018

Report Number: IOB1570

Sampled: 02/18/05
Received: 02/18/05

ORGANOCHLORINE PESTICIDES (EPA 608)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOB1570-01 (Outfall 018 - Water) - cont.									
Reporting Units: ug/l									
Aldrin	EPA 608	5B22041	0.030	0.10	ND	0.962	02/22/05	02/23/05	
alpha-BHC	EPA 608	5B22041	0.00049	0.010	ND	0.962	02/22/05	02/23/05	
beta-BHC	EPA 608	5B22041	0.015	0.10	ND	0.962	02/22/05	02/23/05	
delta-BHC	EPA 608	5B22041	0.020	0.20	ND	0.962	02/22/05	02/23/05	
gamma-BHC (Lindane)	EPA 608	5B22041	0.015	0.10	ND	0.962	02/22/05	02/23/05	
Chlordane	EPA 608	5B22041	0.20	1.0	ND	0.962	02/22/05	02/23/05	
4,4'-DDD	EPA 608	5B22041	0.015	0.10	ND	0.962	02/22/05	02/23/05	
4,4'-DDE	EPA 608	5B22041	0.020	0.10	ND	0.962	02/22/05	02/23/05	
4,4'-DDT	EPA 608	5B22041	0.030	0.10	ND	0.962	02/22/05	02/23/05	
Dieldrin	EPA 608	5B22041	0.015	0.10	ND	0.962	02/22/05	02/23/05	
Endosulfan I	EPA 608	5B22041	0.015	0.10	ND	0.962	02/22/05	02/23/05	
Endosulfan II	EPA 608	5B22041	0.040	0.10	ND	0.962	02/22/05	02/23/05	
Endosulfan sulfate	EPA 608	5B22041	0.015	0.20	ND	0.962	02/22/05	02/23/05	
Endrin	EPA 608	5B22041	0.015	0.10	ND	0.962	02/22/05	02/23/05	
Endrin aldehyde	EPA 608	5B22041	0.045	0.10	ND	0.962	02/22/05	02/23/05	
Endrin ketone	EPA 608	5B22041	0.020	0.10	ND	0.962	02/22/05	02/23/05	
Heptachlor	EPA 608	5B22041	0.030	0.10	ND	0.962	02/22/05	02/23/05	
Heptachlor epoxide	EPA 608	5B22041	0.020	0.10	ND	0.962	02/22/05	02/23/05	
Methoxychlor	EPA 608	5B22041	0.035	0.10	ND	0.962	02/22/05	02/23/05	
Toxaphene	EPA 608	5B22041	1.5	5.0	ND	0.962	02/22/05	02/23/05	
Surrogate: Tetrachloro-m-xylene (35-120%)									44 %
Surrogate: Decachlorobiphenyl (45-120%)									69 %
Surrogate: Tetrachloro-m-xylene (35-120%)									44 %
Surrogate: Decachlorobiphenyl (45-120%)									69 %

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Michele Harper
Project Manager

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

Project ID: Annual Outfall 018

Report Number: IOB1570

Sampled: 02/18/05

Received: 02/18/05

TOTAL PCBS (EPA 608)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOB1570-01 (Outfall 018 - Water) - cont.									
Reporting Units: ug/l									
Aroclor 1016	EPA 608	5B22041	0.20	1.0	ND	0.962	02/22/05	02/23/05	
Aroclor 1221	EPA 608	5B22041	0.10	1.0	ND	0.962	02/22/05	02/23/05	
Aroclor 1232	EPA 608	5B22041	0.15	1.0	ND	0.962	02/22/05	02/23/05	
Aroclor 1242	EPA 608	5B22041	0.15	1.0	ND	0.962	02/22/05	02/23/05	
Aroclor 1248	EPA 608	5B22041	0.25	1.0	ND	0.962	02/22/05	02/23/05	
Aroclor 1254	EPA 608	5B22041	0.25	1.0	ND	0.962	02/22/05	02/23/05	
Aroclor 1260	EPA 608	5B22041	0.40	1.0	ND	0.962	02/22/05	02/23/05	
<i>Surrogate: Decachlorobiphenyl (45-120%)</i>					70 %				

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

Project ID: Annual Outfall 018

Report Number: IOB1570

Sampled: 02/18/05

Received: 02/18/05

METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOB1570-01 (Outfall 018 - Water) - cont.									
Reporting Units: mg/l									
Barium	EPA 200.7	5B18141	0.0028	0.010	0.031	1	02/18/05	02/20/05	
Boron	EPA 200.7	5B18141	0.0074	0.050	0.050	1	02/18/05	02/20/05	
Iron	EPA 200.7	5B18141	0.0088	0.040	2.6	1	02/18/05	02/20/05	MI

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 Pasadena, CA 91101
 Attention: Bronwyn Kelly

Project ID: Annual Outfall 018

Report Number: IOB1570

Sampled: 02/18/05

Received: 02/18/05

METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOB1570-01 (Outfall 018 - Water) - cont.									
Reporting Units: ug/l									
Antimony	EPA 200.8	5B18140	0.18	2.0	0.44	1	02/18/05	02/20/05	J
Arsenic	EPA 200.7	5B18141	3.8	5.0	ND	1	02/18/05	02/20/05	
Beryllium	EPA 200.7	5B18141	0.62	2.0	ND	1	02/18/05	02/20/05	
Cadmium	EPA 200.8	5B18140	0.015	1.0	0.18	1	02/18/05	02/20/05	J
Chromium	EPA 200.7	5B18141	0.68	5.0	3.3	1	02/18/05	02/20/05	J
Cobalt	EPA 200.7	5B18141	0.89	10	1.0	1	02/18/05	02/20/05	J
Copper	EPA 200.8	5B18140	0.49	2.0	3.6	1	02/18/05	02/20/05	
Lead	EPA 200.8	5B18140	0.13	1.0	2.0	1	02/18/05	02/22/05	
Manganese	EPA 200.7	5B18141	3.2	20	93	1	02/18/05	02/20/05	
Mercury	EPA 245.1	5B22045	0.063	0.20	0.15	1	02/22/05	02/22/05	J
Nickel	EPA 200.7	5B18141	2.0	10	3.1	1	02/18/05	02/20/05	J
Selenium	EPA 200.8	5B18140	0.36	2.0	ND	1	02/18/05	02/20/05	
Silver	EPA 200.8	5B18140	0.089	1.0	0.14	1	02/18/05	02/20/05	J
Thallium	EPA 200.8	5B18140	0.075	1.0	0.093	1	02/18/05	02/20/05	J
Vanadium	EPA 200.7	5B18141	1.4	10	5.9	1	02/18/05	02/20/05	J
Zinc	EPA 200.7	5B18141	3.7	20	31	1	02/18/05	02/20/05	

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

Project ID: Annual Outfall 018

Report Number: IOB1570

Sampled: 02/18/05

Received: 02/18/05

INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOB1570-01 (Outfall 018 - Water) - cont.									
Reporting Units: mg/l									
Ammonia-N (Distilled)	EPA 350.2	5B23079	0.30	0.50	ND	1	02/23/05	02/23/05	
Biochemical Oxygen Demand	EPA 405.1	5B18080	0.59	2.0	2.7	1	02/18/05	02/23/05	
Chloride	EPA 300.0	5B18129	0.26	0.50	8.3	1	02/18/05	02/19/05	
Fluoride	EPA 300.0	5B18129	0.10	0.50	0.20	1	02/18/05	02/19/05	J
Nitrate/Nitrite-N	EPA 300.0	5B18129	0.072	0.11	0.22	1	02/18/05	02/19/05	
Oil & Grease	EPA 413.1	5B22082	0.94	5.0	ND	1	02/22/05	02/22/05	
Residual Chlorine	EPA 330.5	5B18083	0.10	0.10	ND	1	02/18/05	02/18/05	
Sulfate	EPA 300.0	5B18129	0.18	0.50	25	1	02/18/05	02/19/05	
Surfactants (MBAS)	SM5540-C	5B18136	0.088	0.20	ND	2	02/18/05	02/19/05	RL-1
Total Dissolved Solids	SM2540C	5B24111	10	10	150	1	02/24/05	02/24/05	
Total Organic Carbon	EPA 415.1	5B23104	0.25	1.0	9.1	1	02/23/05	02/24/05	
Total Suspended Solids	EPA 160.2	5B25089	10	10	33	1	02/25/05	02/25/05	

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MWH-Pasadena/Boeing 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Attention: Bronwyn Kelly	Project ID: Annual Outfall 018 Report Number: IOB1570	Sampled: 02/18/05 Received: 02/18/05
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INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOB1570-01 (Outfall 018 - Water) - cont.									
Reporting Units: ml/l/hr									
Total Settleable Solids	EPA 160.5	5B18145	0.10	0.10	0.10	1	02/18/05	02/18/05	

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Project ID: Annual Outfall 018

Report Number: IOB1570

Sampled: 02/18/05

Received: 02/18/05

INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOB1570-01 (Outfall 018 - Water) - cont.									
Reporting Units: NTU									
Turbidity	EPA 180.1	5B19043	0.080	2.0	50	2	02/19/05	02/19/05	

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Sampled: 02/18/05

Received: 02/18/05

INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOB1570-01 (Outfall 018 - Water) - cont.									
Reporting Units: ug/l									
Total Cyanide	EPA 335.2	5B22061	2.2	5.0	ND	1	02/22/05	02/22/05	
Perchlorate	EPA 314.0	5B25064	0.80	4.0	ND	1	02/25/05	02/26/05	

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MWH-Pasadena/Boeing 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Attention: Bronwyn Kelly	Project ID: Annual Outfall 018 Report Number: IOB1570	Sampled: 02/18/05 Received: 02/18/05
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INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOB1570-01 (Outfall 018 - Water) - cont.									
Reporting Units: umhos/cm									
Specific Conductance	EPA 120.1	5B24133	1.0	1.0	200	1	02/24/05	02/24/05	

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1,4-DIOXANE BY GC/MS (EPA 5030B/8260B)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOB1570-01 (Outfall 018 - Water) - cont.									
Reporting Units: ug/l									
1,4-Dioxane	EPA 8260B	P5B2515	0.49	1.0	ND	1	02/25/05	02/25/05	
Surrogate: Dibromofluoromethane (80-125%)					114 %				

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MWH-Pasadena/Boeing 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Attention: Bronwyn Kelly	Project ID: Annual Outfall 018 Report Number: IOB1570	Sampled: 02/18/05 Received: 02/18/05
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SHORT HOLD TIME DETAIL REPORT

Sample ID	Hold Time (in days)	Date/Time Sampled	Date/Time Received	Date/Time Extracted	Date/Time Analyzed
Sample ID: Outfall 018 (IOB1570-01) - Water					
EPA 160.5	2	02/18/2005 11:28	02/18/2005 18:30	02/18/2005 22:00	02/18/2005 23:00
EPA 180.1	2	02/18/2005 11:28	02/18/2005 18:30	02/19/2005 08:00	02/19/2005 12:30
EPA 300.0	2	02/18/2005 11:28	02/18/2005 18:30	02/18/2005 22:00	02/19/2005 00:54
EPA 330.5	1	02/18/2005 11:28	02/18/2005 18:30	02/18/2005 22:50	02/18/2005 23:00
EPA 405.1	2	02/18/2005 11:28	02/18/2005 18:30	02/18/2005 21:15	02/23/2005 10:30
EPA 624	3	02/18/2005 11:28	02/18/2005 18:30	02/19/2005 00:00	02/19/2005 18:30
SM5540-C	2	02/18/2005 11:28	02/18/2005 18:30	02/18/2005 21:06	02/19/2005 12:04
Sample ID: Trip Blank (IOB1570-02) - Water					
EPA 624	3	02/18/2005 14:50	02/18/2005 18:30	02/19/2005 00:00	02/19/2005 16:26

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Pasadena, CA 91101
Attention: Bronwyn Kelly

Project ID: Annual Outfall 018

Report Number: IOB1570

Sampled: 02/18/05
Received: 02/18/05

METHOD BLANK/QC DATA

TOTAL RECOVERABLE PETROLEUM HYDROCARBONS (EPA 418.1)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	Limit	RPD	RPD Limit	Data Qualifiers
Batch: 5B22081 Extracted: 02/22/05											
Blank Analyzed: 02/22/2005 (5B22081-BLK1)											
Total Recoverable Hydrocarbons	ND	1.0	0.31	mg/l							
LCS Analyzed: 02/22/2005 (5B22081-BS1)											
Total Recoverable Hydrocarbons	4.62	1.0	0.31	mg/l	5.00		92	65-120			M-NR1
LCS Dup Analyzed: 02/22/2005 (5B22081-BSD1)											
Total Recoverable Hydrocarbons	4.32	1.0	0.31	mg/l	5.00		86	65-120	7	20	

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Report Number: IOB1570

Sampled: 02/18/05
Received: 02/18/05

METHOD BLANK/QC DATA

EXTRACTABLE FUEL HYDROCARBONS (CADHS/8015 Modified)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	Limits	RPD RPD	RPD Limit	Data Qualifiers
Batch: 5B19002 Extracted: 02/19/05											
Blank Analyzed: 02/22/2005 (5B19002-BLK1)											
EFH (C13 - C22)	ND	0.50	0.082	mg/l							
EFH (C13 - C40)	ND	0.50	0.082	mg/l							
Surrogate: n-Octacosane	0.0978			mg/l	0.200		49	40-125			
LCS Analyzed: 02/22/2005 (5B19002-BS1)											
EFH (C13 - C40)	0.441	0.50	0.082	mg/l	0.775		57	40-120			M-NRI
Surrogate: n-Octacosane	0.0983			mg/l	0.200		49	40-125			J
LCS Dup Analyzed: 02/22/2005 (5B19002-BSD1)											
EFH (C13 - C40)	0.380	0.50	0.082	mg/l	0.775		49	40-120	15	25	J
Surrogate: n-Octacosane	0.0860			mg/l	0.200		43	40-125			

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 300 North Lake Avenue, Suite 1200
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 Attention: Bronwyn Kelly

Project ID: Annual Outfall 018

Report Number: IOB1570

Sampled: 02/18/05
 Received: 02/18/05

METHOD BLANK/QC DATA

VOLATILE FUEL HYDROCARBONS (EPA 5030/CADHS Mod. 8015)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	RPD RPD	RPD Limit	Data Qualifiers
Batch: 5B25003 Extracted: 02/25/05										
Blank Analyzed: 02/25/2005 (5B25003-BLK1)										
GRO (C4 - C12)	ND	0.10	0.050	mg/l						
Surrogate: 4-BFB (FID)	0.00927			mg/l	0.0100		93		65-140	
LCS Analyzed: 02/25/2005 (5B25003-BS1)										
GRO (C4 - C12)	0.652	0.10	0.050	mg/l	0.800		82		70-140	
Surrogate: 4-BFB (FID)	0.0266			mg/l	0.0300		89		65-140	
Matrix Spike Analyzed: 02/25/2005 (5B25003-MS1) Source: IOB1494-05										
GRO (C4 - C12)	0.217	0.10	0.050	mg/l	0.220	ND	99		60-140	
Surrogate: 4-BFB (FID)	0.0103			mg/l	0.0100		103		65-140	
Matrix Spike Dup Analyzed: 02/25/2005 (5B25003-MSD1) Source: IOB1494-05										
GRO (C4 - C12)	0.211	0.10	0.050	mg/l	0.220	ND	96	3	60-140	20
Surrogate: 4-BFB (FID)	0.0100			mg/l	0.0100		100		65-140	

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METHOD BLANK/QC DATA

PURGEABLES BY GC/MS (EPA 624)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	RPD Limits	RPD RPD	RPD Limit	Data Qualifiers
Batch: 5B19020 Extracted: 02/19/05											
Blank Analyzed: 02/19/2005 (5B19020-BLK1)											
Benzene	ND	2.0	0.28	ug/l							
Trichlorotrifluoroethane (Freon 113)	ND	5.0	1.2	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	0.32	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	0.52	ug/l							
Surrogate: Dibromofluoromethane	24.9			ug/l	25.0		100	80-120			
Surrogate: Toluene-d8	26.8			ug/l	25.0		107	80-120			
Surrogate: 4-Bromofluorobenzene	25.2			ug/l	25.0		101	80-120			
LCS Analyzed: 02/19/2005 (5B19020-BS1)											
Benzene	25.3	2.0	0.28	ug/l	25.0		101	70-120			
Carbon tetrachloride	22.7	5.0	0.28	ug/l	25.0		91	70-140			
Chloroform	23.2	2.0	0.33	ug/l	25.0		93	75-130			
1,1-Dichloroethane	23.4	2.0	0.27	ug/l	25.0		94	70-135			
1,2-Dichloroethane	22.7	2.0	0.28	ug/l	25.0		91	60-150			
1,1-Dichloroethene	25.6	3.0	0.32	ug/l	25.0		102	75-135			
Ethylbenzene	25.2	2.0	0.25	ug/l	25.0		101	80-120			
Tetrachloroethene	23.8	2.0	0.32	ug/l	25.0		95	75-125			
Toluene	25.0	2.0	0.36	ug/l	25.0		100	75-120			
1,1,1-Trichloroethane	21.8	2.0	0.30	ug/l	25.0		87	75-140			
1,1,2-Trichloroethane	25.2	2.0	0.30	ug/l	25.0		101	70-125			
Trichloroethene	24.4	5.0	0.26	ug/l	25.0		98	80-120			
Trichlorofluoromethane	21.9	5.0	0.34	ug/l	25.0		88	65-145			
Vinyl chloride	24.1	5.0	0.26	ug/l	25.0		96	50-130			
Surrogate: Dibromofluoromethane	25.2			ug/l	25.0		101	80-120			

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Report Number: IOB1570

Sampled: 02/18/05
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METHOD BLANK/QC DATA

PURGEABLES BY GC/MS (EPA 624)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
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Batch: 5B19020 Extracted: 02/19/05

LCS Analyzed: 02/19/2005 (5B19020-BS1)

Surrogate: Toluene-d8	27.1			ug/l	25.0		108	80-120			
Surrogate: 4-Bromofluorobenzene	25.9			ug/l	25.0		104	80-120			

Matrix Spike Analyzed: 02/19/2005 (5B19020-MS1)

Source: IOB1556-01

Benzene	22.7	2.0	0.28	ug/l	25.0	ND	91	70-120			
Carbon tetrachloride	20.8	5.0	0.28	ug/l	25.0	ND	83	70-145			
Chloroform	21.0	2.0	0.33	ug/l	25.0	ND	84	70-135			
1,1-Dichloroethane	21.3	2.0	0.27	ug/l	25.0	ND	85	65-135			
1,2-Dichloroethane	19.6	2.0	0.28	ug/l	25.0	ND	78	60-150			
1,1-Dichloroethene	22.6	3.0	0.32	ug/l	25.0	ND	90	65-140			
Ethylbenzene	23.3	2.0	0.25	ug/l	25.0	ND	93	70-130			
Tetrachloroethene	21.3	2.0	0.32	ug/l	25.0	ND	85	70-130			
Toluene	22.5	2.0	0.36	ug/l	25.0	ND	90	70-120			
1,1,1-Trichloroethane	20.3	2.0	0.30	ug/l	25.0	0.76	78	75-140			
1,1,2-Trichloroethane	20.9	2.0	0.30	ug/l	25.0	ND	84	60-135			
Trichloroethene	22.1	5.0	0.26	ug/l	25.0	0.66	86	70-125			
Trichlorofluoromethane	19.6	5.0	0.34	ug/l	25.0	ND	78	55-145			
Vinyl chloride	21.6	5.0	0.26	ug/l	25.0	ND	86	40-135			
Surrogate: Dibromofluoromethane	24.1			ug/l	25.0		96	80-120			
Surrogate: Toluene-d8	25.9			ug/l	25.0		104	80-120			
Surrogate: 4-Bromofluorobenzene	24.6			ug/l	25.0		98	80-120			

Matrix Spike Dup Analyzed: 02/19/2005 (5B19020-MSD1)

Source: IOB1556-01

Benzene	24.4	2.0	0.28	ug/l	25.0	ND	98	70-120	7	20	
Carbon tetrachloride	22.1	5.0	0.28	ug/l	25.0	ND	88	70-145	6	25	
Chloroform	22.2	2.0	0.33	ug/l	25.0	ND	89	70-135	6	20	
1,1-Dichloroethane	22.5	2.0	0.27	ug/l	25.0	ND	90	65-135	5	20	
1,2-Dichloroethane	23.3	2.0	0.28	ug/l	25.0	ND	93	60-150	17	20	
1,1-Dichloroethene	24.3	3.0	0.32	ug/l	25.0	ND	97	65-140	7	20	
Ethylbenzene	24.8	2.0	0.25	ug/l	25.0	ND	99	70-130	6	20	
Tetrachloroethene	23.0	2.0	0.32	ug/l	25.0	ND	92	70-130	8	20	
Toluene	24.0	2.0	0.36	ug/l	25.0	ND	96	70-120	6	20	
1,1,1-Trichloroethane	21.7	2.0	0.30	ug/l	25.0	0.76	84	75-140	7	20	
1,1,2-Trichloroethane	23.3	2.0	0.30	ug/l	25.0	ND	93	60-135	11	25	
Trichloroethene	23.0	5.0	0.26	ug/l	25.0	0.66	89	70-125	4	20	
Trichlorofluoromethane	20.7	5.0	0.34	ug/l	25.0	ND	83	55-145	5	25	

Del Mar Analytical, Irvine
 Michele Harper
 Project Manager

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

Project ID: Annual Outfall 018

Report Number: IOB1570

Sampled: 02/18/05

Received: 02/18/05

METHOD BLANK/QC DATA

PURGEABLES BY GC/MS (EPA 624)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5B19020 Extracted: 02/19/05											
Matrix Spike Dup Analyzed: 02/19/2005 (5B19020-MSD1)						Source: IOB1556-01					
Vinyl chloride	22.8	5.0	0.26	ug/l	25.0	ND	91	40-135	5	30	
Surrogate: Dibromofluoromethane	24.1			ug/l	25.0		96	80-120			
Surrogate: Toluene-d8	25.8			ug/l	25.0		103	80-120			
Surrogate: 4-Bromofluorobenzene	24.9			ug/l	25.0		100	80-120			

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Sampled: 02/18/05
 Received: 02/18/05

METHOD BLANK/QC DATA

PURGEABLES BY GC/MS (EPA 624)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	RPD	Data Qualifiers
Batch: 5B19020 Extracted: 02/19/05									
Blank Analyzed: 02/19/2005 (5B19020-BLK1)									
Benzene	ND	1.0	0.28	ug/l					
Bromodichloromethane	ND	2.0	0.30	ug/l					
Bromoform	ND	5.0	0.32	ug/l					
Bromomethane	ND	5.0	0.34	ug/l					
Carbon tetrachloride	ND	0.50	0.28	ug/l					
Chlorobenzene	ND	2.0	0.36	ug/l					
Chloroethane	ND	5.0	0.33	ug/l					
Chloroform	ND	2.0	0.33	ug/l					
Chloromethane	ND	5.0	0.30	ug/l					
Dibromochloromethane	ND	2.0	0.28	ug/l					
1,2-Dichlorobenzene	ND	2.0	0.32	ug/l					
1,3-Dichlorobenzene	ND	2.0	0.35	ug/l					
1,4-Dichlorobenzene	ND	2.0	0.37	ug/l					
1,1-Dichloroethane	ND	2.0	0.27	ug/l					
1,2-Dichloroethane	ND	0.50	0.28	ug/l					
1,1-Dichloroethene	ND	5.0	0.32	ug/l					
trans-1,2-Dichloroethene	ND	2.0	0.27	ug/l					
1,2-Dichloropropane	ND	2.0	0.35	ug/l					
cis-1,3-Dichloropropene	ND	2.0	0.22	ug/l					
trans-1,3-Dichloropropene	ND	2.0	0.24	ug/l					
Ethylbenzene	ND	2.0	0.25	ug/l					
Methylene chloride	ND	5.0	0.48	ug/l					
1,1,2,2-Tetrachloroethane	ND	2.0	0.24	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	2.0	0.26	ug/l					
Trichlorofluoromethane	ND	5.0	0.34	ug/l					
Vinyl chloride	ND	0.50	0.26	ug/l					
Xylenes, Total	ND	4.0	0.52	ug/l					
Surrogate: Dibromofluoromethane	24.9			ug/l	25.0	100	80-120		
Surrogate: Toluene-d8	26.8			ug/l	25.0	107	80-120		
Surrogate: 4-Bromofluorobenzene	25.2			ug/l	25.0	101	80-120		

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Attention: Bronwyn Kelly

Project ID: Annual Outfall 018

Report Number: IOB1570

Sampled: 02/18/05
Received: 02/18/05

METHOD BLANK/QC DATA

PURGEABLES BY GC/MS (EPA 624)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5B19020 Extracted: 02/19/05											
LCS Analyzed: 02/19/2005 (5B19020-BS1)											
Benzene	25.3	1.0	0.28	ug/l	25.0		101	70-120			
Bromodichloromethane	22.8	2.0	0.30	ug/l	25.0		91	70-140			
Bromoform	24.9	5.0	0.32	ug/l	25.0		100	55-135			
Bromomethane	26.0	5.0	0.34	ug/l	25.0		104	60-140			
Carbon tetrachloride	22.7	0.50	0.28	ug/l	25.0		91	70-140			
Chlorobenzene	24.2	2.0	0.36	ug/l	25.0		97	80-125			
Chloroethane	25.4	5.0	0.33	ug/l	25.0		102	60-145			
Chloroform	23.2	2.0	0.33	ug/l	25.0		93	75-130			
Chloromethane	25.1	5.0	0.30	ug/l	25.0		100	40-145			
Dibromochloromethane	24.2	2.0	0.28	ug/l	25.0		97	65-145			
1,2-Dichlorobenzene	24.5	2.0	0.32	ug/l	25.0		98	80-120			
1,3-Dichlorobenzene	23.7	2.0	0.35	ug/l	25.0		95	80-120			
1,4-Dichlorobenzene	23.9	2.0	0.37	ug/l	25.0		96	80-120			
1,1-Dichloroethane	23.4	2.0	0.27	ug/l	25.0		94	70-135			
1,2-Dichloroethane	22.7	0.50	0.28	ug/l	25.0		91	60-150			
1,1-Dichloroethene	25.6	5.0	0.32	ug/l	25.0		102	75-135			
trans-1,2-Dichloroethene	24.9	2.0	0.27	ug/l	25.0		100	70-130			
1,2-Dichloropropane	25.2	2.0	0.35	ug/l	25.0		101	70-120			
cis-1,3-Dichloropropene	25.2	2.0	0.22	ug/l	25.0		101	75-130			
trans-1,3-Dichloropropene	25.6	2.0	0.24	ug/l	25.0		102	75-135			
Ethylbenzene	25.2	2.0	0.25	ug/l	25.0		101	80-120			
Methylene chloride	24.7	5.0	0.48	ug/l	25.0		99	60-135			
1,1,2,2-Tetrachloroethane	27.6	2.0	0.24	ug/l	25.0		110	60-135			
Tetrachloroethene	23.8	2.0	0.32	ug/l	25.0		95	75-125			
Toluene	25.0	2.0	0.36	ug/l	25.0		100	75-120			
1,1,1-Trichloroethane	21.8	2.0	0.30	ug/l	25.0		87	75-140			
1,1,2-Trichloroethane	25.2	2.0	0.30	ug/l	25.0		101	70-125			
Trichloroethene	24.4	2.0	0.26	ug/l	25.0		98	80-120			
Trichlorofluoromethane	21.9	5.0	0.34	ug/l	25.0		88	65-145			
Vinyl chloride	24.1	0.50	0.26	ug/l	25.0		96	50-130			
Surrogate: Dibromofluoromethane	25.2			ug/l	25.0		101	80-120			
Surrogate: Toluene-d8	27.1			ug/l	25.0		108	80-120			
Surrogate: 4-Bromofluorobenzene	25.9			ug/l	25.0		104	80-120			

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Michele Harper
Project Manager



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

Project ID: Annual Outfall 018

Report Number: IOB1570

Sampled: 02/18/05

Received: 02/18/05

METHOD BLANK/QC DATA

PURGEABLES BY GC/MS (EPA 624)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	RPD RPD	RPD Limit	Data Qualifiers
Batch: 5B19020 Extracted: 02/19/05										
Matrix Spike Analyzed: 02/19/2005 (5B19020-MS1)										
Source: IOB1556-01										
Benzene	22.7	1.0	0.28	ug/l	25.0	ND	91	70-120		
Bromodichloromethane	20.2	2.0	0.30	ug/l	25.0	ND	81	70-140		
Bromoform	20.2	5.0	0.32	ug/l	25.0	ND	81	55-140		
Bromomethane	23.0	5.0	0.34	ug/l	25.0	ND	92	50-145		
Carbon tetrachloride	20.8	0.50	0.28	ug/l	25.0	ND	83	70-145		
Chlorobenzene	21.9	2.0	0.36	ug/l	25.0	ND	88	80-125		
Chloroethane	22.3	5.0	0.33	ug/l	25.0	ND	89	50-145		
Chloroform	21.0	2.0	0.33	ug/l	25.0	ND	84	70-135		
Chloromethane	21.8	5.0	0.30	ug/l	25.0	ND	87	35-145		
Dibromochloromethane	21.0	2.0	0.28	ug/l	25.0	ND	84	65-145		
1,2-Dichlorobenzene	22.2	2.0	0.32	ug/l	25.0	ND	89	75-130		
1,3-Dichlorobenzene	22.0	2.0	0.35	ug/l	25.0	ND	88	75-130		
1,4-Dichlorobenzene	22.0	2.0	0.37	ug/l	25.0	ND	88	80-120		
1,1-Dichloroethane	21.3	2.0	0.27	ug/l	25.0	ND	85	65-135		
1,2-Dichloroethane	19.6	0.50	0.28	ug/l	25.0	ND	78	60-150		
1,1-Dichloroethene	22.6	5.0	0.32	ug/l	25.0	ND	90	65-140		
trans-1,2-Dichloroethene	22.5	2.0	0.27	ug/l	25.0	ND	90	65-135		
1,2-Dichloropropane	22.1	2.0	0.35	ug/l	25.0	ND	88	65-130		
cis-1,3-Dichloropropene	22.2	2.0	0.22	ug/l	25.0	ND	89	70-140		
trans-1,3-Dichloropropene	21.7	2.0	0.24	ug/l	25.0	ND	87	70-140		
Ethylbenzene	23.3	2.0	0.25	ug/l	25.0	ND	93	70-130		
Methylene chloride	22.7	5.0	0.48	ug/l	25.0	0.95	87	60-135		
1,1,2,2-Tetrachloroethane	22.8	2.0	0.24	ug/l	25.0	ND	91	60-145		
Tetrachloroethene	21.3	2.0	0.32	ug/l	25.0	ND	85	70-130		
Toluene	22.5	2.0	0.36	ug/l	25.0	ND	90	70-120		
1,1,1-Trichloroethane	20.3	2.0	0.30	ug/l	25.0	0.76	78	75-140		
1,1,2-Trichloroethane	20.9	2.0	0.30	ug/l	25.0	ND	84	60-135		
Trichloroethene	22.1	2.0	0.26	ug/l	25.0	0.66	86	70-125		
Trichlorofluoromethane	19.6	5.0	0.34	ug/l	25.0	ND	78	55-145		
Vinyl chloride	21.6	0.50	0.26	ug/l	25.0	ND	86	40-135		
Surrogate: Dibromofluoromethane	24.1			ug/l	25.0		96	80-120		
Surrogate: Toluene-d8	25.9			ug/l	25.0		104	80-120		
Surrogate: 4-Bromofluorobenzene	24.6			ug/l	25.0		98	80-120		

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 Michele Harper
 Project Manager

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

Project ID: Annual Outfall 018

Report Number: IOB1570

Sampled: 02/18/05
 Received: 02/18/05

METHOD BLANK/QC DATA

PURGEABLES BY GC/MS (EPA 624)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	RPD Limits	RPD RPD	RPD Limit	Data Qualifiers
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Batch: 5B19020 Extracted: 02/19/05

Matrix Spike Dup Analyzed: 02/19/2005 (5B19020-MSD1)

Source: IOB1556-01

Benzene	24.4	1.0	0.28	ug/l	25.0	ND	98	70-120	7	20	
Bromodichloromethane	21.5	2.0	0.30	ug/l	25.0	ND	86	70-140	6	20	
Bromoform	22.7	5.0	0.32	ug/l	25.0	ND	91	55-140	12	25	
Bromomethane	24.8	5.0	0.34	ug/l	25.0	ND	99	50-145	8	25	
Carbon tetrachloride	22.1	0.50	0.28	ug/l	25.0	ND	88	70-145	6	25	
Chlorobenzene	23.4	2.0	0.36	ug/l	25.0	ND	94	80-125	7	20	
Chloroethane	23.8	5.0	0.33	ug/l	25.0	ND	95	50-145	7	25	
Chloroform	22.2	2.0	0.33	ug/l	25.0	ND	89	70-135	6	20	
Chloromethane	23.2	5.0	0.30	ug/l	25.0	ND	93	35-145	6	25	
Dibromochloromethane	22.8	2.0	0.28	ug/l	25.0	ND	91	65-145	8	25	
1,2-Dichlorobenzene	23.3	2.0	0.32	ug/l	25.0	ND	93	75-130	5	20	
1,3-Dichlorobenzene	22.9	2.0	0.35	ug/l	25.0	ND	92	75-130	4	20	
1,4-Dichlorobenzene	23.0	2.0	0.37	ug/l	25.0	ND	92	80-120	4	20	
1,1-Dichloroethane	22.5	2.0	0.27	ug/l	25.0	ND	90	65-135	5	20	
1,2-Dichloroethane	23.3	0.50	0.28	ug/l	25.0	ND	93	60-150	17	20	
1,1-Dichloroethene	24.3	5.0	0.32	ug/l	25.0	ND	97	65-140	7	20	
trans-1,2-Dichloroethene	24.0	2.0	0.27	ug/l	25.0	ND	96	65-135	6	20	
1,2-Dichloropropane	23.7	2.0	0.35	ug/l	25.0	ND	95	65-130	7	20	
cis-1,3-Dichloropropene	23.9	2.0	0.22	ug/l	25.0	ND	96	70-140	7	20	
trans-1,3-Dichloropropene	23.7	2.0	0.24	ug/l	25.0	ND	95	70-140	9	25	
Ethylbenzene	24.8	2.0	0.25	ug/l	25.0	ND	99	70-130	6	20	
Methylene chloride	24.2	5.0	0.48	ug/l	25.0	0.95	93	60-135	6	20	
1,1,2,2-Tetrachloroethane	25.3	2.0	0.24	ug/l	25.0	ND	101	60-145	10	30	
Tetrachloroethene	23.0	2.0	0.32	ug/l	25.0	ND	92	70-130	8	20	
Toluene	24.0	2.0	0.36	ug/l	25.0	ND	96	70-120	6	20	
1,1,1-Trichloroethane	21.7	2.0	0.30	ug/l	25.0	0.76	84	75-140	7	20	
1,1,2-Trichloroethane	23.3	2.0	0.30	ug/l	25.0	ND	93	60-135	11	25	
Trichloroethene	23.0	2.0	0.26	ug/l	25.0	0.66	89	70-125	4	20	
Trichlorofluoromethane	20.7	5.0	0.34	ug/l	25.0	ND	83	55-145	5	25	
Vinyl chloride	22.8	0.50	0.26	ug/l	25.0	ND	91	40-135	5	30	
Surrogate: Dibromofluoromethane	24.1			ug/l	25.0		96	80-120			
Surrogate: Toluene-d8	25.8			ug/l	25.0		103	80-120			
Surrogate: 4-Bromofluorobenzene	24.9			ug/l	25.0		100	80-120			

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Project ID: Annual Outfall 018

Report Number: IOB1570

Sampled: 02/18/05
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METHOD BLANK/QC DATA

PURGEABLES BY GC/MS (EPA 624)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	Limit	RPD	RPD Limit	Data Qualifiers
Batch: 5B19020 Extracted: 02/19/05											
Blank Analyzed: 02/19/2005 (5B19020-BLK1)											
Acrolein	ND	50	4.6	ug/l							
Acrylonitrile	ND	50	5.1	ug/l							
2-Chloroethyl vinyl ether	ND	5.0	1.3	ug/l							
Surrogate: Dibromofluoromethane	24.9			ug/l	25.0		100	80-120			
Surrogate: Toluene-d8	26.8			ug/l	25.0		107	80-120			
Surrogate: 4-Bromofluorobenzene	25.2			ug/l	25.0		101	80-120			
LCS Analyzed: 02/19/2005 (5B19020-BS1)											
2-Chloroethyl vinyl ether	28.8	5.0	1.3	ug/l	25.0		115	20-175			
Surrogate: Dibromofluoromethane	25.2			ug/l	25.0		101	80-120			
Surrogate: Toluene-d8	27.1			ug/l	25.0		108	80-120			
Surrogate: 4-Bromofluorobenzene	25.9			ug/l	25.0		104	80-120			
Matrix Spike Analyzed: 02/19/2005 (5B19020-MS1)											
						Source: IOB1556-01					
2-Chloroethyl vinyl ether	21.2	5.0	1.3	ug/l	25.0	ND	85	20-175			
Surrogate: Dibromofluoromethane	24.1			ug/l	25.0		96	80-120			
Surrogate: Toluene-d8	25.9			ug/l	25.0		104	80-120			
Surrogate: 4-Bromofluorobenzene	24.6			ug/l	25.0		98	80-120			
Matrix Spike Dup Analyzed: 02/19/2005 (5B19020-MSD1)											
						Source: IOB1556-01					
2-Chloroethyl vinyl ether	24.9	5.0	1.3	ug/l	25.0	ND	100	20-175	16	25	
Surrogate: Dibromofluoromethane	24.1			ug/l	25.0		96	80-120			
Surrogate: Toluene-d8	25.8			ug/l	25.0		103	80-120			
Surrogate: 4-Bromofluorobenzene	24.9			ug/l	25.0		100	80-120			

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 Michele Harper
 Project Manager

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

Project ID: Annual Outfall 018

Report Number: IOB1570

Sampled: 02/18/05
Received: 02/18/05

METHOD BLANK/QC DATA

PURGEABLES BY GC/MS, TENTATIVELY IDENTIFIED COMPOUNDS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	RPD Limits	RPD RPD	Data Qualifiers
Batch: 5B19020 Extracted: 02/19/05										
Blank Analyzed: 02/19/2005 (5B19020-BLK1)										
1,2-Dichloro-1,1,2-trifluoroethane	ND	2.5	N/A	ug/l						
Cyclohexane	ND	2.5	N/A	ug/l						

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Michele Harper
Project Manager



MWH-Pasadena/Boeing 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Attention: Bronwyn Kelly	Project ID: Annual Outfall 018 Report Number: IOB1570	Sampled: 02/18/05 Received: 02/18/05
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METHOD BLANK/QC DATA

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

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	RPD RPD	RPD Limit	Data Qualifiers
Batch: 5B22042 Extracted: 02/22/05										
Blank Analyzed: 02/24/2005 (5B22042-BLK1)										
Acenaphthene	ND	0.50	0.10	ug/l						
Acenaphthylene	ND	0.50	0.10	ug/l						
Aniline	ND	10	2.9	ug/l						
Anthracene	ND	0.50	0.083	ug/l						
Benzidine	ND	5.0	2.4	ug/l						
Benzoic acid	ND	20	3.7	ug/l						
Benzo(a)anthracene	ND	5.0	0.038	ug/l						
Benzo(a)pyrene	ND	2.0	0.14	ug/l						
Benzo(b)fluoranthene	ND	2.0	0.050	ug/l						
Benzo(g,h,i)perylene	ND	5.0	0.059	ug/l						
Benzo(k)fluoranthene	ND	0.50	0.053	ug/l						
Benzyl alcohol	ND	5.0	0.21	ug/l						
Bis(2-chloroethoxy)methane	ND	0.50	0.072	ug/l						
Bis(2-chloroethyl)ether	ND	0.50	0.084	ug/l						
Bis(2-chloroisopropyl)ether	ND	0.50	0.11	ug/l						
Bis(2-ethylhexyl)phthalate	ND	5.0	1.1	ug/l						
4-Bromophenyl phenyl ether	ND	1.0	0.12	ug/l						
Butyl benzyl phthalate	ND	5.0	0.34	ug/l						
4-Chloroaniline	ND	2.0	0.20	ug/l						
2-Chloronaphthalene	ND	0.50	0.059	ug/l						
4-Chloro-3-methylphenol	ND	2.0	0.34	ug/l						
4-Chlorophenyl phenyl ether	ND	0.50	0.056	ug/l						
2-Chlorophenol	ND	1.0	0.12	ug/l						
Chrysene	ND	0.50	0.072	ug/l						
Dibenz(a,h)anthracene	ND	0.50	0.083	ug/l						
Dibenzofuran	ND	0.50	0.075	ug/l						
Di-n-butyl phthalate	ND	2.0	0.26	ug/l						
1,2-Dichlorobenzene	ND	0.50	0.11	ug/l						
1,3-Dichlorobenzene	ND	0.50	0.13	ug/l						
1,4-Dichlorobenzene	ND	0.50	0.050	ug/l						
3,3-Dichlorobenzidine	ND	5.0	0.93	ug/l						
2,4-Dichlorophenol	ND	2.0	0.21	ug/l						
Diethyl phthalate	ND	1.0	0.12	ug/l						
2,4-Dimethylphenol	ND	2.0	0.31	ug/l						
Dimethyl phthalate	ND	0.50	0.081	ug/l						

Del Mar Analytical, Irvine
Michele Harper
Project Manager



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

Project ID: Annual Outfall 018

Report Number: IOB1570

Sampled: 02/18/05

Received: 02/18/05

METHOD BLANK/QC DATA

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

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	RPD Limits	RPD RPD	Data Qualifiers
Batch: 5B22042 Extracted: 02/22/05										
Blank Analyzed: 02/24/2005 (5B22042-BLK1)										
4,6-Dinitro-2-methylphenol	ND	5.0	0.38	ug/l						
2,4-Dinitrophenol	ND	5.0	2.7	ug/l						
2,4-Dinitrotoluene	ND	5.0	0.23	ug/l						
2,6-Dinitrotoluene	ND	5.0	0.24	ug/l						
Di-n-octyl phthalate	ND	5.0	0.17	ug/l						
1,2-Diphenylhydrazine/Azobenzene	ND	1.0	0.087	ug/l						
Fluoranthene	ND	0.50	0.089	ug/l						
Fluorene	ND	0.50	0.075	ug/l						
Hexachlorobenzene	ND	1.0	0.13	ug/l						
Hexachlorobutadiene	ND	2.0	0.38	ug/l						
Hexachlorocyclopentadiene	ND	5.0	1.8	ug/l						
Hexachloroethane	ND	3.0	0.51	ug/l						
Indeno(1,2,3-cd)pyrene	ND	2.0	0.19	ug/l						
Isophorone	ND	1.0	0.059	ug/l						
2-Methylnaphthalene	ND	1.0	0.13	ug/l						
2-Methylphenol	ND	2.0	0.28	ug/l						
4-Methylphenol	ND	5.0	0.20	ug/l						
Naphthalene	ND	1.0	0.13	ug/l						
2-Nitroaniline	ND	5.0	0.18	ug/l						
3-Nitroaniline	ND	5.0	0.35	ug/l						
4-Nitroaniline	ND	5.0	0.49	ug/l						
Nitrobenzene	ND	1.0	0.10	ug/l						
2-Nitrophenol	ND	2.0	0.23	ug/l						
4-Nitrophenol	ND	5.0	0.73	ug/l						
N-Nitrosodimethylamine	ND	2.0	0.22	ug/l						
N-Nitroso-di-n-propylamine	ND	2.0	0.18	ug/l						
N-Nitrosodiphenylamine	ND	1.0	0.077	ug/l						
Pentachlorophenol	ND	2.0	0.78	ug/l						
Phenanthrene	ND	0.50	0.071	ug/l						
Phenol	ND	1.0	0.14	ug/l						
Pyrene	ND	0.50	0.059	ug/l						
1,2,4-Trichlorobenzene	ND	1.0	0.10	ug/l						
2,4,5-Trichlorophenol	ND	2.0	0.075	ug/l						
2,4,6-Trichlorophenol	ND	1.0	0.10	ug/l						
Surrogate: 2-Fluorophenol	13.0			ug/l	20.0	65	35-120			

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 Michele Harper
 Project Manager

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

Project ID: Annual Outfall 018

Report Number: IOB1570

Sampled: 02/18/05

Received: 02/18/05

METHOD BLANK/QC DATA

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

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	RPD Limits	RPD RPD	Data Limit	Qualifiers
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Batch: 5B22042 Extracted: 02/22/05

Blank Analyzed: 02/24/2005 (5B22042-BLK1)

Surrogate: Phenol-d6	13.6			ug/l	20.0		68	45-120			
Surrogate: 2,4,6-Tribromophenol	15.2			ug/l	20.0		76	50-125			
Surrogate: Nitrobenzene-d5	7.02			ug/l	10.0		70	45-120			
Surrogate: 2-Fluorobiphenyl	7.04			ug/l	10.0		70	45-120			
Surrogate: Terphenyl-d14	7.78			ug/l	10.0		78	45-135			

LCS Analyzed: 02/24/2005 (5B22042-BS1)

Acenaphthene	7.74	0.50	0.10	ug/l	10.0		77	55-120			M-NR1
Acenaphthylene	7.98	0.50	0.10	ug/l	10.0		80	55-120			
Aniline	4.70	10	2.9	ug/l	10.0		47	30-120			J
Anthracene	8.14	0.50	0.083	ug/l	10.0		81	60-120			
Benzidine	ND	5.0	2.4	ug/l	10.0			20-180			L2
Benzoic acid	3.28	20	2.0	ug/l	10.0		33	30-125			A-01, J
Benzo(a)anthracene	8.30	5.0	0.038	ug/l	10.0		83	65-120			
Benzo(a)pyrene	8.80	2.0	0.14	ug/l	10.0		88	55-125			
Benzo(b)fluoranthene	7.96	2.0	0.050	ug/l	10.0		80	50-125			
Benzo(g,h,i)perylene	8.78	5.0	0.059	ug/l	10.0		88	35-160			
Benzo(k)fluoranthene	8.26	0.50	0.053	ug/l	10.0		83	50-125			
Benzyl alcohol	7.96	5.0	0.21	ug/l	10.0		80	40-130			
Bis(2-chloroethoxy)methane	7.72	0.50	0.072	ug/l	10.0		77	55-120			
Bis(2-chloroethyl)ether	6.78	0.50	0.084	ug/l	10.0		68	50-120			
Bis(2-chloroisopropyl)ether	7.52	0.50	0.11	ug/l	10.0		75	50-120			
Bis(2-ethylhexyl)phthalate	8.16	5.0	1.1	ug/l	10.0		82	65-125			
4-Bromophenyl phenyl ether	7.62	1.0	0.12	ug/l	10.0		76	55-125			
Butyl benzyl phthalate	7.94	5.0	0.34	ug/l	10.0		79	60-125			
4-Chloroaniline	7.42	2.0	0.20	ug/l	10.0		74	55-120			
2-Chloronaphthalene	7.76	0.50	0.059	ug/l	10.0		78	60-120			
4-Chloro-3-methylphenol	8.30	2.0	0.34	ug/l	10.0		83	60-120			
4-Chlorophenyl phenyl ether	8.06	0.50	0.056	ug/l	10.0		81	55-120			
2-Chlorophenol	7.10	1.0	0.12	ug/l	10.0		71	45-120			
Chrysene	8.06	0.50	0.072	ug/l	10.0		81	65-120			
Dibenz(a,h)anthracene	9.08	0.50	0.083	ug/l	10.0		91	40-160			
Dibenzofuran	7.72	0.50	0.075	ug/l	10.0		77	60-120			
Di-n-butyl phthalate	7.72	2.0	0.26	ug/l	10.0		77	65-125			
1,2-Dichlorobenzene	6.34	0.50	0.11	ug/l	10.0		63	40-120			
1,3-Dichlorobenzene	6.22	0.50	0.13	ug/l	10.0		62	40-120			

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 Michele Harper
 Project Manager

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

Project ID: Annual Outfall 018

Report Number: IOB1570

Sampled: 02/18/05
 Received: 02/18/05

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	RPD Limit	Data Qualifiers
Batch: 5B22042 Extracted: 02/22/05										
LCS Analyzed: 02/24/2005 (5B22042-BS1)										
1,4-Dichlorobenzene	6.22	0.50	0.050	ug/l	10.0		62 40-120			M-NRI
3,3-Dichlorobenzidine	7.52	5.0	0.93	ug/l	10.0		75 50-170			
2,4-Dichlorophenol	7.76	2.0	0.21	ug/l	10.0		78 55-120			
Diethyl phthalate	7.74	1.0	0.12	ug/l	10.0		77 60-120			
2,4-Dimethylphenol	7.24	2.0	0.31	ug/l	10.0		72 35-120			
Dimethyl phthalate	7.68	0.50	0.081	ug/l	10.0		77 60-120			
4,6-Dinitro-2-methylphenol	7.24	5.0	0.38	ug/l	10.0		72 55-120			
2,4-Dinitrophenol	6.00	5.0	2.7	ug/l	10.0		60 40-140			
2,4-Dinitrotoluene	7.46	5.0	0.23	ug/l	10.0		75 60-140			
2,6-Dinitrotoluene	7.58	5.0	0.24	ug/l	10.0		76 65-125			
Di-n-octyl phthalate	8.14	5.0	0.17	ug/l	10.0		81 60-130			
1,2-Diphenylhydrazine/Azobenzene	8.26	1.0	0.087	ug/l	10.0		83 60-120			
Fluoranthene	8.38	0.50	0.089	ug/l	10.0		84 55-125			
Fluorene	8.12	0.50	0.075	ug/l	10.0		81 60-120			
Hexachlorobenzene	8.18	1.0	0.13	ug/l	10.0		82 50-120			
Hexachlorobutadiene	6.22	2.0	0.38	ug/l	10.0		62 45-120			
Hexachlorocyclopentadiene	6.44	5.0	1.8	ug/l	10.0		64 10-130			
Hexachloroethane	6.42	3.0	0.51	ug/l	10.0		64 40-120			
Indeno(1,2,3-cd)pyrene	8.64	2.0	0.19	ug/l	10.0		86 35-150			
Isophorone	7.34	1.0	0.059	ug/l	10.0		73 55-120			
2-Methylnaphthalene	7.82	1.0	0.13	ug/l	10.0		78 50-120			
2-Methylphenol	7.62	2.0	0.28	ug/l	10.0		76 45-120			
4-Methylphenol	7.86	5.0	0.20	ug/l	10.0		79 45-120			
Naphthalene	7.16	1.0	0.13	ug/l	10.0		72 50-120			
2-Nitroaniline	8.10	5.0	0.18	ug/l	10.0		81 60-130			
3-Nitroaniline	7.68	5.0	0.35	ug/l	10.0		77 50-140			
4-Nitroaniline	8.08	5.0	0.49	ug/l	10.0		81 45-160			
Nitrobenzene	6.78	1.0	0.10	ug/l	10.0		68 50-120			
2-Nitrophenol	7.32	2.0	0.23	ug/l	10.0		73 55-120			
4-Nitrophenol	8.08	5.0	0.73	ug/l	10.0		81 50-135			
N-Nitrosodimethylamine	6.54	2.0	0.22	ug/l	10.0		65 40-120			
N-Nitroso-di-n-propylamine	7.50	2.0	0.18	ug/l	10.0		75 50-120			
N-Nitrosodiphenylamine	7.50	1.0	0.077	ug/l	10.0		75 60-120			
Pentachlorophenol	7.80	2.0	0.78	ug/l	10.0		78 50-125			
Phenanthrene	7.72	0.50	0.071	ug/l	10.0		77 55-120			

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

Project ID: Annual Outfall 018

Report Number: IOB1570

Sampled: 02/18/05

Received: 02/18/05

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: 5B22042 Extracted: 02/22/05										
LCS Analyzed: 02/24/2005 (5B22042-BS1)										
Phenol	7.26	1.0	0.14	ug/l	10.0	73	45-120			M-NR1
Pyrene	8.18	0.50	0.059	ug/l	10.0	82	50-120			
1,2,4-Trichlorobenzene	6.34	1.0	0.10	ug/l	10.0	63	50-120			
2,4,5-Trichlorophenol	8.06	2.0	0.075	ug/l	10.0	81	60-120			
2,4,6-Trichlorophenol	7.92	1.0	0.10	ug/l	10.0	79	60-120			
Surrogate: 2-Fluorophenol	12.9			ug/l	20.0	64	35-120			
Surrogate: Phenol-d6	13.5			ug/l	20.0	68	45-120			
Surrogate: 2,4,6-Tribromophenol	16.1			ug/l	20.0	80	50-125			
Surrogate: Nitrobenzene-d5	6.86			ug/l	10.0	69	45-120			
Surrogate: 2-Fluorobiphenyl	7.12			ug/l	10.0	71	45-120			
Surrogate: Terphenyl-d14	7.40			ug/l	10.0	74	45-135			
LCS Dup Analyzed: 02/24/2005 (5B22042-BSD1)										
Acenaphthene	7.80	0.50	0.10	ug/l	10.0	78	55-120	1	20	
Acenaphthylene	7.88	0.50	0.10	ug/l	10.0	79	55-120	1	20	
Aniline	6.18	10	2.9	ug/l	10.0	62	30-120	27	25	R-7, J
Anthracene	8.30	0.50	0.083	ug/l	10.0	83	60-120	2	20	
Benzidine	ND	5.0	2.4	ug/l	10.0		20-180		35	L2
Benzoic acid	5.26	20	2.0	ug/l	10.0	53	30-125	46	30	R-7, J
Benzo(a)anthracene	7.96	5.0	0.038	ug/l	10.0	80	65-120	4	20	
Benzo(a)pyrene	8.58	2.0	0.14	ug/l	10.0	86	55-125	3	25	
Benzo(b)fluoranthene	7.70	2.0	0.050	ug/l	10.0	77	50-125	3	25	
Benzo(g,h,i)perylene	8.40	5.0	0.059	ug/l	10.0	84	35-160	4	25	
Benzo(k)fluoranthene	7.98	0.50	0.053	ug/l	10.0	80	50-125	3	20	
Benzyl alcohol	8.02	5.0	0.21	ug/l	10.0	80	40-130	1	20	
Bis(2-chloroethoxy)methane	7.94	0.50	0.072	ug/l	10.0	79	55-120	3	20	
Bis(2-chloroethyl)ether	7.16	0.50	0.084	ug/l	10.0	72	50-120	5	20	
Bis(2-chloroisopropyl)ether	7.90	0.50	0.11	ug/l	10.0	79	50-120	5	20	
Bis(2-ethylhexyl)phthalate	8.52	5.0	1.1	ug/l	10.0	85	65-125	4	20	
4-Bromophenyl phenyl ether	7.76	1.0	0.12	ug/l	10.0	78	55-125	2	25	
Butyl benzyl phthalate	8.02	5.0	0.34	ug/l	10.0	80	60-125	1	20	
4-Chloroaniline	7.28	2.0	0.20	ug/l	10.0	73	55-120	2	25	
2-Chloronaphthalene	7.60	0.50	0.059	ug/l	10.0	76	60-120	2	20	
4-Chloro-3-methylphenol	8.40	2.0	0.34	ug/l	10.0	84	60-120	1	25	
4-Chlorophenyl phenyl ether	8.04	0.50	0.056	ug/l	10.0	80	55-120	0	20	
2-Chlorophenol	7.44	1.0	0.12	ug/l	10.0	74	45-120	5	25	

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

Project ID: Annual Outfall 018

Report Number: IOB1570

Sampled: 02/18/05
 Received: 02/18/05

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	RPD Limit	Data Qualifiers
Batch: 5B22042 Extracted: 02/22/05										
LCS Dup Analyzed: 02/24/2005 (5B22042-BSD1)										
Chrysene	7.70	0.50	0.072	ug/l	10.0	77	65-120	5	20	
Dibenz(a,h)anthracene	8.86	0.50	0.083	ug/l	10.0	89	40-160	2	25	
Dibenzofuran	7.80	0.50	0.075	ug/l	10.0	78	60-120	1	20	
Di-n-butyl phthalate	7.88	2.0	0.26	ug/l	10.0	79	65-125	2	20	
1,2-Dichlorobenzene	6.70	0.50	0.11	ug/l	10.0	67	40-120	6	25	
1,3-Dichlorobenzene	6.48	0.50	0.13	ug/l	10.0	65	40-120	4	25	
1,4-Dichlorobenzene	6.56	0.50	0.050	ug/l	10.0	66	40-120	5	25	
3,3-Dichlorobenzidine	7.56	5.0	0.93	ug/l	10.0	76	50-170	1	25	
2,4-Dichlorophenol	7.80	2.0	0.21	ug/l	10.0	78	55-120	1	20	
Diethyl phthalate	7.74	1.0	0.12	ug/l	10.0	77	60-120	0	20	
2,4-Dimethylphenol	6.68	2.0	0.31	ug/l	10.0	67	35-120	8	25	
Dimethyl phthalate	7.34	0.50	0.081	ug/l	10.0	73	60-120	5	20	
4,6-Dinitro-2-methylphenol	7.24	5.0	0.38	ug/l	10.0	72	55-120	0	25	
2,4-Dinitrophenol	6.76	5.0	2.7	ug/l	10.0	68	40-140	12	25	
2,4-Dinitrotoluene	6.96	5.0	0.23	ug/l	10.0	70	60-140	7	20	
2,6-Dinitrotoluene	7.42	5.0	0.24	ug/l	10.0	74	65-125	2	20	
Di-n-octyl phthalate	8.34	5.0	0.17	ug/l	10.0	83	60-130	2	20	
1,2-Diphenylhydrazine/Azobenzene	8.14	1.0	0.087	ug/l	10.0	81	60-120	1	25	
Fluoranthene	8.54	0.50	0.089	ug/l	10.0	85	55-125	2	20	
Fluorene	8.18	0.50	0.075	ug/l	10.0	82	60-120	1	20	
Hexachlorobenzene	8.12	1.0	0.13	ug/l	10.0	81	50-120	1	20	
Hexachlorobutadiene	6.96	2.0	0.38	ug/l	10.0	70	45-120	11	25	
Hexachlorocyclopentadiene	6.48	5.0	1.8	ug/l	10.0	65	10-130	1	30	
Hexachloroethane	6.84	3.0	0.51	ug/l	10.0	68	40-120	6	25	
Indeno(1,2,3-cd)pyrene	8.70	2.0	0.19	ug/l	10.0	87	35-150	1	25	
Isophorone	6.70	1.0	0.059	ug/l	10.0	67	55-120	9	20	
2-Methylnaphthalene	8.00	1.0	0.13	ug/l	10.0	80	50-120	2	20	
2-Methylphenol	7.78	2.0	0.28	ug/l	10.0	78	45-120	2	20	
4-Methylphenol	7.50	5.0	0.20	ug/l	10.0	75	45-120	5	20	
Naphthalene	7.66	1.0	0.13	ug/l	10.0	77	50-120	7	20	
2-Nitroaniline	7.66	5.0	0.18	ug/l	10.0	77	60-130	6	20	
3-Nitroaniline	7.22	5.0	0.35	ug/l	10.0	72	50-140	6	25	
4-Nitroaniline	7.74	5.0	0.49	ug/l	10.0	77	45-160	4	20	
Nitrobenzene	7.16	1.0	0.10	ug/l	10.0	72	50-120	5	25	
2-Nitrophenol	7.32	2.0	0.23	ug/l	10.0	73	55-120	0	25	

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

Project ID: Annual Outfall 018

Report Number: IOB1570

Sampled: 02/18/05
 Received: 02/18/05

METHOD BLANK/QC DATA

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

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	Limit	RPD	RPD Limit	Data Qualifiers
Batch: 5B22042 Extracted: 02/22/05											
LCS Dup Analyzed: 02/24/2005 (5B22042-BSD1)											
4-Nitrophenol	8.24	5.0	0.73	ug/l	10.0	82	50-135	2	25		
N-Nitrosodimethylamine	8.44	2.0	0.22	ug/l	10.0	84	40-120	25	20		R-7
N-Nitroso-di-n-propylamine	7.44	2.0	0.18	ug/l	10.0	74	50-120	1	20		
N-Nitrosodiphenylamine	7.50	1.0	0.077	ug/l	10.0	75	60-120	0	20		
Pentachlorophenol	8.40	2.0	0.78	ug/l	10.0	84	50-125	7	25		
Phenanthrene	7.96	0.50	0.071	ug/l	10.0	80	55-120	3	20		
Phenol	7.44	1.0	0.14	ug/l	10.0	74	45-120	2	25		
Pyrene	8.06	0.50	0.059	ug/l	10.0	81	50-120	1	25		
1,2,4-Trichlorobenzene	6.82	1.0	0.10	ug/l	10.0	68	50-120	7	20		
2,4,5-Trichlorophenol	7.82	2.0	0.075	ug/l	10.0	78	60-120	3	20		
2,4,6-Trichlorophenol	7.92	1.0	0.10	ug/l	10.0	79	60-120	0	20		
Surrogate: 2-Fluorophenol	13.3			ug/l	20.0	66	35-120				
Surrogate: Phenol-d6	14.4			ug/l	20.0	72	45-120				
Surrogate: 2,4,6-Tribromophenol	16.5			ug/l	20.0	82	50-125				
Surrogate: Nitrobenzene-d5	7.52			ug/l	10.0	75	45-120				
Surrogate: 2-Fluorobiphenyl	7.36			ug/l	10.0	74	45-120				
Surrogate: Terphenyl-d14	7.84			ug/l	10.0	78	45-135				

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 Attention: Bronwyn Kelly

Project ID: Annual Outfall 018

Report Number: IOB1570

Sampled: 02/18/05
 Received: 02/18/05

METHOD BLANK/QC DATA

ORGANOCHLORINE PESTICIDES (EPA 608)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC Limits	RPD RPD	RPD Limit	Data Qualifiers
Batch: 5B22041 Extracted: 02/22/05										
Blank Analyzed: 02/23/2005 (5B22041-BLK1)										
Aldrin	ND	0.10	0.030	ug/l						
alpha-BHC	ND	0.010	0.00049	ug/l						
alpha-BHC	ND	0.10	0.015	ug/l						
beta-BHC	ND	0.10	0.015	ug/l						
delta-BHC	ND	0.20	0.020	ug/l						
gamma-BHC (Lindane)	ND	0.10	0.015	ug/l						
Chlordane	ND	1.0	0.20	ug/l						
4,4'-DDD	ND	0.10	0.015	ug/l						
4,4'-DDE	ND	0.10	0.020	ug/l						
4,4'-DDT	ND	0.10	0.030	ug/l						
Dieldrin	ND	0.10	0.015	ug/l						
Endosulfan I	ND	0.10	0.015	ug/l						
Endosulfan II	ND	0.10	0.040	ug/l						
Endosulfan sulfate	ND	0.20	0.015	ug/l						
Endrin	ND	0.10	0.015	ug/l						
Endrin aldehyde	ND	0.10	0.045	ug/l						
Endrin ketone	ND	0.10	0.020	ug/l						
Heptachlor	ND	0.10	0.030	ug/l						
Heptachlor epoxide	ND	0.10	0.020	ug/l						
Methoxychlor	ND	0.10	0.035	ug/l						
Toxaphene	ND	5.0	1.5	ug/l						
Surrogate: Tetrachloro-m-xylene	0.389			ug/l	0.500		78	35-120		
Surrogate: Decachlorobiphenyl	0.441			ug/l	0.500		88	45-120		
Surrogate: Tetrachloro-m-xylene	0.389			ug/l	0.500		78	35-120		
Surrogate: Decachlorobiphenyl	0.441			ug/l	0.500		88	45-120		
LCS Analyzed: 02/23/2005 (5B22041-BS1)										
Aldrin	0.415	0.10	0.030	ug/l	0.500		83	45-115		M-NR1
alpha-BHC	0.450	0.010	0.00049	ug/l	0.500		90	45-115		
alpha-BHC	0.450	0.10	0.015	ug/l	0.500		90	45-115		
beta-BHC	0.420	0.10	0.015	ug/l	0.500		84	50-115		
delta-BHC	0.435	0.20	0.020	ug/l	0.500		87	55-120		
gamma-BHC (Lindane)	0.453	0.10	0.015	ug/l	0.500		91	45-115		
4,4'-DDD	0.505	0.10	0.015	ug/l	0.500		101	60-120		
4,4'-DDE	0.478	0.10	0.020	ug/l	0.500		96	55-120		
4,4'-DDT	0.481	0.10	0.030	ug/l	0.500		96	60-130		

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

Project ID: Annual Outfall 018

Report Number: IOB1570

Sampled: 02/18/05

Received: 02/18/05

METHOD BLANK/QC DATA

ORGANOCHLORINE PESTICIDES (EPA 608)

Analyte Result Reporting Limit MDL Units Spike Level Source Result %REC %REC Limits RPD RPD Limit Data Qualifiers

Batch: 5B22041 Extracted: 02/22/05

LCS Analyzed: 02/23/2005 (5B22041-BS1)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Dieldrin	0.466	0.10	0.015	ug/l	0.500		93	55-120			M-NR1
Endosulfan I	0.437	0.10	0.015	ug/l	0.500		87	50-115			
Endosulfan II	0.459	0.10	0.040	ug/l	0.500		92	60-125			
Endosulfan sulfate	0.466	0.20	0.015	ug/l	0.500		93	60-120			
Endrin	0.518	0.10	0.015	ug/l	0.500		104	55-125			
Endrin aldehyde	0.444	0.10	0.045	ug/l	0.500		89	55-115			
Endrin ketone	0.457	0.10	0.020	ug/l	0.500		91	60-120			
Heptachlor	0.443	0.10	0.030	ug/l	0.500		89	45-115			
Heptachlor epoxide	0.425	0.10	0.020	ug/l	0.500		85	50-120			
Methoxychlor	0.525	0.10	0.035	ug/l	0.500		105	60-135			
Surrogate: Tetrachloro-m-xylene	0.381			ug/l	0.500		76	35-120			
Surrogate: Decachlorobiphenyl	0.440			ug/l	0.500		88	45-120			
Surrogate: Tetrachloro-m-xylene	0.381			ug/l	0.500		76	35-120			
Surrogate: Decachlorobiphenyl	0.440			ug/l	0.500		88	45-120			

LCS Dup Analyzed: 02/23/2005 (5B22041-BSD1)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Aldrin	0.371	0.10	0.030	ug/l	0.500		74	45-115	11	30	
alpha-BHC	0.449	0.10	0.015	ug/l	0.500		90	45-115	0	30	
alpha-BHC	0.449	0.010	0.00049	ug/l	0.500		90	45-115	0	30	
beta-BHC	0.419	0.10	0.015	ug/l	0.500		84	50-115	0	30	
delta-BHC	0.432	0.20	0.020	ug/l	0.500		86	55-120	1	30	
gamma-BHC (Lindane)	0.452	0.10	0.015	ug/l	0.500		90	45-115	0	30	
4,4'-DDD	0.496	0.10	0.015	ug/l	0.500		99	60-120	2	30	
4,4'-DDE	0.472	0.10	0.020	ug/l	0.500		94	55-120	1	30	
4,4'-DDT	0.481	0.10	0.030	ug/l	0.500		96	60-130	0	30	
Dieldrin	0.459	0.10	0.015	ug/l	0.500		92	55-120	2	30	
Endosulfan I	0.436	0.10	0.015	ug/l	0.500		87	50-115	0	30	
Endosulfan II	0.443	0.10	0.040	ug/l	0.500		89	60-125	4	30	
Endosulfan sulfate	0.461	0.20	0.015	ug/l	0.500		92	60-120	1	30	
Endrin	0.509	0.10	0.015	ug/l	0.500		102	55-125	2	30	
Endrin aldehyde	0.440	0.10	0.045	ug/l	0.500		88	55-115	1	30	
Endrin ketone	0.450	0.10	0.020	ug/l	0.500		90	60-120	2	30	
Heptachlor	0.446	0.10	0.030	ug/l	0.500		89	45-115	1	30	
Heptachlor epoxide	0.431	0.10	0.020	ug/l	0.500		86	50-120	1	30	
Methoxychlor	0.533	0.10	0.035	ug/l	0.500		107	60-135	2	30	
Surrogate: Tetrachloro-m-xylene	0.384			ug/l	0.500		77	35-120			

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METHOD BLANK/QC DATA

ORGANOCHLORINE PESTICIDES (EPA 608)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	RPD Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5B22041 Extracted: 02/22/05											
LCS Dup Analyzed: 02/23/2005 (5B22041-BSD1)											
Surrogate: Decachlorobiphenyl	0.442			ug/l	0.500		88	45-120			
Surrogate: Tetrachloro-m-xylene	0.384			ug/l	0.500		77	35-120			
Surrogate: Decachlorobiphenyl	0.442			ug/l	0.500		88	45-120			

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METHOD BLANK/QC DATA

TOTAL PCBS (EPA 608)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	Limit	RPD RPD	Limit	Data Qualifiers
Batch: 5B22041 Extracted: 02/22/05											
Blank Analyzed: 02/23/2005 (5B22041-BLK1)											
Aroclor 1016	ND	1.0	0.20	ug/l							
Aroclor 1221	ND	1.0	0.10	ug/l							
Aroclor 1232	ND	1.0	0.15	ug/l							
Aroclor 1242	ND	1.0	0.15	ug/l							
Aroclor 1248	ND	1.0	0.25	ug/l							
Aroclor 1254	ND	1.0	0.25	ug/l							
Aroclor 1260	ND	1.0	0.40	ug/l							
Surrogate: Decachlorobiphenyl	0.340			ug/l	0.500		68	45-120			
LCS Analyzed: 02/23/2005 (5B22041-BS2)											
Aroclor 1016	2.62	1.0	0.20	ug/l	4.00		66	50-115			M-NR1
Aroclor 1260	2.49	1.0	0.40	ug/l	4.00		62	60-115			
Surrogate: Decachlorobiphenyl	0.312			ug/l	0.500		62	45-120			
LCS Dup Analyzed: 02/23/2005 (5B22041-BSD2)											
Aroclor 1016	2.91	1.0	0.20	ug/l	4.00		73	50-115	10	30	
Aroclor 1260	2.67	1.0	0.40	ug/l	4.00		67	60-115	7	25	
Surrogate: Decachlorobiphenyl	0.418			ug/l	0.500		84	45-120			

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METHOD BLANK/QC DATA

METALS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC Limits	RPD RPD	RPD Limit	Data Qualifiers
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Batch: 5B18140 Extracted: 02/18/05

Blank Analyzed: 02/20/2005 (5B18140-BLK1)

Antimony	ND	2.0	0.18	ug/l						
Cadmium	ND	1.0	0.015	ug/l						
Copper	ND	2.0	0.49	ug/l						
Lead	ND	1.0	0.13	ug/l						
Selenium	ND	2.0	0.36	ug/l						
Silver	ND	1.0	0.089	ug/l						
Thallium	ND	1.0	0.075	ug/l						

LCS Analyzed: 02/20/2005-02/22/2005 (5B18140-BS1)

Antimony	89.1	2.0	0.18	ug/l	80.0		111	85-115		
Cadmium	86.3	1.0	0.015	ug/l	80.0		108	85-115		
Copper	74.7	2.0	0.49	ug/l	80.0		93	85-115		
Lead	86.9	1.0	0.13	ug/l	80.0		109	85-115		
Selenium	82.0	2.0	0.36	ug/l	80.0		102	85-115		
Silver	84.4	1.0	0.089	ug/l	80.0		106	85-115		
Thallium	81.4	1.0	0.075	ug/l	80.0		102	85-115		

Matrix Spike Analyzed: 02/20/2005-02/22/2005 (5B18140-MS1)

Source: IOB1560-01

Antimony	84.2	2.0	0.18	ug/l	80.0	0.45	105	70-130		
Cadmium	84.6	1.0	0.015	ug/l	80.0	0.15	106	70-130		
Copper	78.6	2.0	0.49	ug/l	80.0	4.6	92	70-130		
Lead	90.5	1.0	0.13	ug/l	80.0	2.7	110	70-130		
Selenium	78.3	2.0	0.36	ug/l	80.0	ND	98	70-130		
Silver	82.9	1.0	0.089	ug/l	80.0	0.16	103	70-130		
Thallium	83.9	1.0	0.075	ug/l	80.0	0.28	105	70-130		

Matrix Spike Dup Analyzed: 02/20/2005-02/22/2005 (5B18140-MSD1)

Source: IOB1560-01

Antimony	84.9	2.0	0.18	ug/l	80.0	0.45	106	70-130	1	20
Cadmium	85.8	1.0	0.015	ug/l	80.0	0.15	107	70-130	1	20
Copper	79.7	2.0	0.49	ug/l	80.0	4.6	94	70-130	1	20
Lead	90.6	1.0	0.13	ug/l	80.0	2.7	110	70-130	0	20
Selenium	80.2	2.0	0.36	ug/l	80.0	ND	100	70-130	2	20
Silver	83.5	1.0	0.089	ug/l	80.0	0.16	104	70-130	1	20
Thallium	85.8	1.0	0.075	ug/l	80.0	0.28	107	70-130	2	20

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

Project ID: Annual Outfall 018

Report Number: IOB1570

Sampled: 02/18/05
 Received: 02/18/05

METHOD BLANK/QC DATA

METALS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC Limits	RPD RPD	Data Qualifiers
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Batch: 5B18141 Extracted: 02/18/05

Blank Analyzed: 02/20/2005 (5B18141-BLK1)

Arsenic	ND	5.0	3.8	ug/l					
Barium	ND	0.010	0.0028	mg/l					
Beryllium	ND	2.0	0.62	ug/l					
Boron	ND	0.050	0.0074	mg/l					
Chromium	ND	5.0	0.68	ug/l					
Cobalt	ND	10	0.89	ug/l					
Iron	ND	0.040	0.0088	mg/l					
Manganese	ND	20	3.2	ug/l					
Nickel	ND	10	2.0	ug/l					
Vanadium	ND	10	1.4	ug/l					
Zinc	ND	20	3.7	ug/l					

LCS Analyzed: 02/20/2005 (5B18141-BS1)

Arsenic	498	5.0	3.8	ug/l	500		100	85-115	
Barium	0.502	0.010	0.0028	mg/l	0.500		100	85-115	
Beryllium	494	2.0	0.62	ug/l	500		99	85-115	
Boron	0.478	0.050	0.0074	mg/l	0.500		96	85-115	
Chromium	487	5.0	0.68	ug/l	500		97	85-115	
Cobalt	490	10	0.89	ug/l	500		98	85-115	
Iron	0.498	0.040	0.0088	mg/l	0.500		100	85-115	
Manganese	498	20	3.2	ug/l	500		100	85-115	
Nickel	491	10	2.0	ug/l	500		98	85-115	
Vanadium	502	10	1.4	ug/l	500		100	85-115	
Zinc	481	20	3.7	ug/l	500		96	85-115	

Matrix Spike Analyzed: 02/20/2005 (5B18141-MS1)

Source: IOB1570-01

Arsenic	503	5.0	3.8	ug/l	500	ND	101	70-130	
Barium	0.544	0.010	0.0028	mg/l	0.500	0.031	103	70-130	
Beryllium	509	2.0	0.62	ug/l	500	ND	102	70-130	
Boron	0.551	0.050	0.0074	mg/l	0.500	0.050	100	70-130	
Chromium	498	5.0	0.68	ug/l	500	3.3	99	70-130	
Cobalt	501	10	0.89	ug/l	500	1.0	100	70-130	
Iron	3.20	0.040	0.0088	mg/l	0.500	2.6	120	70-130	
Manganese	598	20	3.2	ug/l	500	93	101	70-130	
Nickel	510	10	2.0	ug/l	500	3.1	101	70-130	
Vanadium	526	10	1.4	ug/l	500	5.9	104	70-130	

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METHOD BLANK/QC DATA

METALS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	RPD Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5B18141 Extracted: 02/18/05											
Matrix Spike Analyzed: 02/20/2005 (5B18141-MS1)						Source: IOB1570-01					
Zinc	531	20	3.7	ug/l	500	31	100	70-130			
Matrix Spike Dup Analyzed: 02/20/2005 (5B18141-MSD1)						Source: IOB1570-01					
Arsenic	511	5.0	3.8	ug/l	500	ND	102	70-130	2	20	
Barium	0.544	0.010	0.0028	mg/l	0.500	0.031	103	70-130	0	20	
Beryllium	512	2.0	0.62	ug/l	500	ND	102	70-130	1	20	
Boron	0.550	0.050	0.0074	mg/l	0.500	0.050	100	70-130	0	20	
Chromium	501	5.0	0.68	ug/l	500	3.3	100	70-130	1	20	
Cobalt	498	10	0.89	ug/l	500	1.0	99	70-130	1	20	
Iron	3.26	0.040	0.0088	mg/l	0.500	2.6	132	70-130	2	20	M1
Manganese	598	20	3.2	ug/l	500	93	101	70-130	0	20	
Nickel	510	10	2.0	ug/l	500	3.1	101	70-130	0	20	
Vanadium	529	10	1.4	ug/l	500	5.9	105	70-130	1	20	
Zinc	532	20	3.7	ug/l	500	31	100	70-130	0	20	
Batch: 5B22045 Extracted: 02/22/05											
Blank Analyzed: 02/22/2005 (5B22045-BLK1)											
Mercury	ND	0.20	0.063	ug/l							
LCS Analyzed: 02/22/2005 (5B22045-BS1)											
Mercury	8.00	0.20	0.063	ug/l	8.00		100	85-115			
Matrix Spike Analyzed: 02/22/2005 (5B22045-MS1)						Source: IOB1580-01					
Mercury	2.98	0.20	0.063	ug/l	8.00	0.067	36	70-130			M2
Matrix Spike Dup Analyzed: 02/22/2005 (5B22045-MSD1)						Source: IOB1580-01					
Mercury	2.89	0.20	0.063	ug/l	8.00	0.067	35	70-130	3	20	M2

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MWH-Pasadena/Boeing 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Attention: Bronwyn Kelly	Project ID: Annual Outfall 018 Report Number: IOB1570	Sampled: 02/18/05 Received: 02/18/05
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METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	Limit	RPD	RPD Limit	Data Qualifiers
Batch: 5B18080 Extracted: 02/18/05											
Blank Analyzed: 02/23/2005 (5B18080-BLK1)											
Biochemical Oxygen Demand	ND	2.0	0.59	mg/l							
LCS Analyzed: 02/23/2005 (5B18080-BS1)											
Biochemical Oxygen Demand	200	100	30	mg/l	198		101	85-115			
LCS Dup Analyzed: 02/23/2005 (5B18080-BSD1)											
Biochemical Oxygen Demand	196	100	30	mg/l	198		99	85-115	2	20	
Batch: 5B18083 Extracted: 02/18/05											
Duplicate Analyzed: 02/18/2005 (5B18083-DUP1)											
Residual Chlorine	ND	0.10	0.10	mg/l		Source: IOB1413-01 ND				20	
Batch: 5B18129 Extracted: 02/18/05											
Blank Analyzed: 02/18/2005 (5B18129-BLK1)											
Chloride	ND	0.50	0.26	mg/l							
Fluoride	ND	0.50	0.10	mg/l							
Nitrate/Nitrite-N	ND	0.11	0.072	mg/l							
Sulfate	ND	0.50	0.18	mg/l							
LCS Analyzed: 02/18/2005 (5B18129-BS1)											
Chloride	5.11	0.50	0.26	mg/l	5.00		102	90-110			
Fluoride	4.97	0.50	0.10	mg/l	5.00		99	90-110			
Sulfate	10.6	0.50	0.18	mg/l	10.0		106	90-110			

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METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	RPD RPD	RPD Limit	Data Qualifiers
Batch: 5B18129 Extracted: 02/18/05										
Matrix Spike Analyzed: 02/18/2005 (5B18129-MS1)										
						Source: IOB1556-01				
Chloride	7.47	0.50	0.26	mg/l	5.00	2.1	107		80-120	
Fluoride	5.12	0.50	0.10	mg/l	5.00	0.11	100		80-120	
Sulfate	15.3	0.50	0.18	mg/l	10.0	4.7	106		80-120	
Matrix Spike Dup Analyzed: 02/18/2005 (5B18129-MSD1)										
						Source: IOB1556-01				
Chloride	7.43	0.50	0.26	mg/l	5.00	2.1	107	1	20	
Fluoride	5.11	0.50	0.10	mg/l	5.00	0.11	100	0	20	
Sulfate	14.3	0.50	0.18	mg/l	10.0	4.7	96	7	20	
Batch: 5B18136 Extracted: 02/18/05										
Blank Analyzed: 02/19/2005 (5B18136-BLK1)										
Surfactants (MBAS)	ND	0.10	0.044	mg/l						
LCS Analyzed: 02/19/2005 (5B18136-BS1)										
Surfactants (MBAS)	0.259	0.10	0.044	mg/l	0.250		104		90-110	
Matrix Spike Analyzed: 02/19/2005 (5B18136-MS1)										
						Source: IOB1570-01				
Surfactants (MBAS)	0.411	0.20	0.088	mg/l	0.500	ND	82		50-125	
Matrix Spike Dup Analyzed: 02/19/2005 (5B18136-MSD1)										
						Source: IOB1570-01				
Surfactants (MBAS)	0.404	0.20	0.088	mg/l	0.500	ND	81	2	20	
Batch: 5B19043 Extracted: 02/19/05										
Blank Analyzed: 02/19/2005 (5B19043-BLK1)										
Turbidity	0.0500	1.0	0.040	NTU						

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 Attention: Bronwyn Kelly

Project ID: Annual Outfall 018

Report Number: IOB1570

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Received: 02/18/05

METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5B19043 Extracted: 02/19/05											
Duplicate Analyzed: 02/19/2005 (5B19043-DUP1)											
Turbidity	118	5.0	0.20	NTU		Source: IOB1562-01 120			2	20	
Batch: 5B22061 Extracted: 02/22/05											
Blank Analyzed: 02/22/2005 (5B22061-BLK1)											
Total Cyanide	ND	5.0	2.2	ug/l							
LCS Analyzed: 02/22/2005 (5B22061-BS1)											
Total Cyanide	194	5.0	2.2	ug/l	200		97	90-110			
Matrix Spike Analyzed: 02/22/2005 (5B22061-MS1)											
Total Cyanide	190	5.0	2.2	ug/l	200	Source: IOB1557-01 ND	95	70-115			
Matrix Spike Dup Analyzed: 02/22/2005 (5B22061-MSD1)											
Total Cyanide	187	5.0	2.2	ug/l	200	Source: IOB1557-01 ND	94	70-115	2	15	
Batch: 5B22082 Extracted: 02/22/05											
Blank Analyzed: 02/22/2005 (5B22082-BLK1)											
Oil & Grease	1.00	5.0	0.94	mg/l							M-NR1 J
LCS Analyzed: 02/22/2005 (5B22082-BS1)											
Oil & Grease	18.6	5.0	0.94	mg/l	20.0		93	65-120			
LCS Dup Analyzed: 02/22/2005 (5B22082-BSD1)											
Oil & Grease	17.8	5.0	0.94	mg/l	20.0		89	65-120	4	20	

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INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD RPD	RPD Limit	Data Qualifiers
Batch: 5B23079 Extracted: 02/23/05											
Blank Analyzed: 02/23/2005 (5B23079-BLK1)											
Ammonia-N (Distilled)	ND	0.50	0.30	mg/l							
LCS Analyzed: 02/23/2005 (5B23079-BS1)											
Ammonia-N (Distilled)	9.52	0.50	0.30	mg/l	10.0		95	80-115			
Matrix Spike Analyzed: 02/23/2005 (5B23079-MS1)											
Ammonia-N (Distilled)	12.9	0.50	0.30	mg/l	10.0	1.7	112	70-120			
Matrix Spike Dup Analyzed: 02/23/2005 (5B23079-MSD1)											
Ammonia-N (Distilled)	12.3	0.50	0.30	mg/l	10.0	1.7	106	70-120	5	15	
Batch: 5B23104 Extracted: 02/23/05											
Blank Analyzed: 02/24/2005 (5B23104-BLK1)											
Total Organic Carbon	ND	1.0	0.25	mg/l							
LCS Analyzed: 02/24/2005 (5B23104-BS1)											
Total Organic Carbon	10.7	1.0	0.25	mg/l	10.0		107	90-110			
Matrix Spike Analyzed: 02/24/2005 (5B23104-MS1)											
Total Organic Carbon	10.4	1.0	0.25	mg/l	5.00	6.2	84	80-120			
Matrix Spike Dup Analyzed: 02/24/2005 (5B23104-MSD1)											
Total Organic Carbon	10.6	1.0	0.25	mg/l	5.00	6.2	88	80-120	2	20	
Batch: 5B24111 Extracted: 02/24/05											
Blank Analyzed: 02/24/2005 (5B24111-BLK1)											
Total Dissolved Solids	ND	10	10	mg/l							

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METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5B24111 Extracted: 02/24/05											
LCS Analyzed: 02/24/2005 (5B24111-BS1)											
Total Dissolved Solids	976	10	10	mg/l	1000		98	90-110			
Duplicate Analyzed: 02/24/2005 (5B24111-DUP1)											
Total Dissolved Solids	374	10	10	mg/l		Source: IOB1821-01 380			2	10	
Batch: 5B24133 Extracted: 02/24/05											
Duplicate Analyzed: 02/24/2005 (5B24133-DUP1)											
Specific Conductance	105	1.0	1.0	umhos/cm		Source: IOB1565-01 100			5	5	
Batch: 5B25064 Extracted: 02/25/05											
Blank Analyzed: 02/25/2005 (5B25064-BLK1)											
Perchlorate	ND	4.0	0.80	ug/l							
LCS Analyzed: 02/25/2005 (5B25064-BS1)											
Perchlorate	48.4	4.0	0.80	ug/l	50.0		97	85-115			
Matrix Spike Analyzed: 02/25/2005 (5B25064-MS1)											
Perchlorate	51.3	4.0	0.80	ug/l	50.0	Source: IOB1976-13 1.5	100	80-120			
Matrix Spike Dup Analyzed: 02/26/2005 (5B25064-MSD1)											
Perchlorate	51.4	4.0	0.80	ug/l	50.0	Source: IOB1976-13 1.5	100	80-120	0	20	
Batch: 5B25089 Extracted: 02/25/05											
Blank Analyzed: 02/25/2005 (5B25089-BLK1)											
Total Suspended Solids	ND	10	10	mg/l							

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 9484 Chesapeake Dr., Suite 805, San Diego, CA 92123 (858) 505-8596 FAX (858) 505-9689
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MWH-Pasadena/Boeing
 300 North Lake Avenue, Suite 1200
 Pasadena, CA 91101
 Attention: Bronwyn Kelly

Project ID: Annual Outfall 018

Report Number: IOB1570

Sampled: 02/18/05

Received: 02/18/05

METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5B25089 Extracted: 02/25/05											
LCS Analyzed: 02/25/2005 (5B25089-BS1)											
Total Suspended Solids	956	10	10	mg/l	1000		96	85-115			
Duplicate Analyzed: 02/25/2005 (5B25089-DUP1)											
Total Suspended Solids	ND	10	10	mg/l		Source: IOB1979-01 ND				10	

Del Mar Analytical, Irvine
 Michele Harper
 Project Manager

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

Project ID: Annual Outfall 018

Report Number: IOB1570

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Received: 02/18/05

METHOD BLANK/QC DATA

1,4-DIOXANE BY GC/MS (EPA 5030B/8260B)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD RPD	RPD Limit	Data Qualifiers
Batch: PSB2515 Extracted: 02/25/05											
Blank Analyzed: 02/25/2005 (PSB2515-BLK1)											
1,4-Dioxane	ND	1.0	0.49	ug/l							
Surrogate: Dibromofluoromethane	1.09			ug/l	1.00		109	80-125			
LCS Analyzed: 02/25/2005 (PSB2515-BS1)											
1,4-Dioxane	10.1	1.0	0.49	ug/l	10.0		101	70-130			
Surrogate: Dibromofluoromethane	1.13			ug/l	1.00		113	80-125			
LCS Dup Analyzed: 02/25/2005 (PSB2515-BSD1)											
1,4-Dioxane	9.82	1.0	0.49	ug/l	10.0		98	70-130	3	20	
Surrogate: Dibromofluoromethane	1.09			ug/l	1.00		109	80-125			
Matrix Spike Analyzed: 02/25/2005 (PSB2515-MS1)											
						Source: POB0530-01					
1,4-Dioxane	16.9	1.0	0.49	ug/l	10.0	7.2	97	70-150			
Surrogate: Dibromofluoromethane	1.09			ug/l	1.00		109	80-125			
Matrix Spike Dup Analyzed: 02/25/2005 (PSB2515-MSD1)											
						Source: POB0530-01					
1,4-Dioxane	16.1	1.0	0.49	ug/l	10.0	7.2	89	70-150	5	25	
Surrogate: Dibromofluoromethane	1.09			ug/l	1.00		109	80-125			

Del Mar Analytical, Irvine
 Michele Harper
 Project Manager

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

Project ID: Annual Outfall 018

Report Number: IOB1570

Sampled: 02/18/05
Received: 02/18/05

DATA QUALIFIERS AND DEFINITIONS

- A-01** Result is below calculated MDL. See CAR.
- 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 unknown quality.
- L2** Laboratory Control Sample recovery was below method control limits.
- M1** The MS and/or MSD were above the acceptance limits due to sample matrix interference. See Blank Spike (LCS).
- M2** The MS and/or MSD were below the acceptance limits due to sample matrix interference. 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.
- R-7** LFB/LFBD RPD exceeded the method control limit. Recovery met acceptance criteria.
- RL-1** Reporting limit raised 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

ADDITIONAL COMMENTS

For TICs:

All identifications are tentative and concentrations are estimates based upon spectral comparison to the EPA/NIH library.

For 1,2-Diphenylhydrazine:

The result for 1,2-Diphenylhydrazine is based upon the reading of its breakdown product, Azobenzene.

For GRO (C4-C12):

GRO (C4-C12) is quantitated against a gasoline standard. Quantitation begins immediately following the methanol peak.

For Extractable Fuel Hydrocarbons (EFH, DRO, ORO) :

Unless otherwise noted, Extractable Fuel Hydrocarbons (EFH, DRO, ORO) are quantitated against a Diesel Fuel Standard.

Del Mar Analytical, Irvine
Michele Harper
Project Manager



Del Mar Analytical

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

Project ID: Annual Outfall 018

Report Number: IOB1570

Sampled: 02/18/05

Received: 02/18/05

Certification Summary

Del Mar Analytical, Irvine

Method	Matrix	Nelac	California
EPA 120.1	Water	X	X
EPA 160.2	Water	X	X
EPA 160.5	Water	X	X
EPA 180.1	Water	X	X
EPA 200.7	Water	X	X
EPA 200.8	Water	X	X
EPA 245.1	Water	X	X
EPA 300.0	Water	X	X
EPA 314.0	Water	X	X
EPA 330.5	Water	X	X
EPA 335.2	Water	X	X
EPA 350.2	Water	X	X
EPA 405.1	Water	X	X
EPA 413.1	Water	X	X
EPA 415.1	Water	X	X
EPA 418.1	Water	X	X
EPA 608	Water	X	X
EPA 624 (MOD.)	Water	X	X
EPA 624	Water	X	X
EPA 625	Water	X	X
EPA 8015 Mod.	Water	X	X
EPA 8015B	Water	X	X
SM2540C	Water	X	X
SM5540-C	Water	X	X

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

Subcontracted Laboratories

Alta Analytical California Cert #1640

1104 Windfield Way - El Dorado Hills, CA 95762

Analysis Performed: 1613-Dioxin-HR

Samples: IOB1570-01

Analysis Performed: EDD + Level 4

Samples: IOB1570-01

Aquatic Testing Laboratories-SUB California Cert #1775

4350 Transport Street, Unit 107 - Ventura, CA 93003

Analysis Performed: Bioassay-7 dy Chnric

Samples: IOB1570-01

Analysis Performed: Bioassay-Acute 96hr

Del Mar Analytical, Irvine

Michele Harper

Project Manager

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Del Mar Analytical

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

Project ID: Annual Outfall 018

Report Number: IOB1570

Sampled: 02/18/05

Received: 02/18/05

Aquatic Testing Laboratories-SUB *California Cert #1775*

4350 Transport Street, Unit 107 - Ventura, CA 93003

Samples: IOB1570-01

Del Mar Analytical - Phoenix *NELAC Cert #01109CA, California Cert #2446*

9830 S. 51st Street, Suite B-120 - Phoenix, AZ 85044

Method Performed: EPA 8260B

Samples: IOB1570-01

Eberline Services - SUB

2030 Wright Avenue - Richmond, CA 94804

Analysis Performed: EDD + Level 4

Samples: IOB1570-01

Analysis Performed: Gross Alpha

Samples: IOB1570-01

Analysis Performed: Gross Beta

Samples: IOB1570-01

Analysis Performed: Radium, Combined

Samples: IOB1570-01

Analysis Performed: Strontium 90

Samples: IOB1570-01

Analysis Performed: Tritium

Samples: IOB1570-01

Truesdail Laboratories-SUB *California Cert #1237*

14201 Franklin Avenue - Tustin, CA 92680

Analysis Performed: Hydrazine

Samples: IOB1570-01

Analysis Performed: Level 4 Data Package

Samples: IOB1570-01

Del Mar Analytical, Irvine
 Michele Harper
 Project Manager

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CHAIN OF CUSTODY FORM

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

Project:
**Boeing-SSFL NPDES
 Annual Outfall 018**

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

Sampler: **RICK BANAGA**

Sample Description	Sample Matrix	Container Type	# of Cont.	Sampling Date/Time	Preservative	Bottle #	Total Recoverable Metals: Cu, Pb, Hg, B, Ba, Fe, Mn, Sb, As, Be, Cd, Cr, Ni, Se, Ag, Tl, Zn, Co, V	Settleable Solids	VOCs 624 + xylenes + Freon 113, Freon 123A, Cyclohexane	TCDD (and all congeners)	Oil & Grease (EPA 413.1)	Cyanide (total recoverable)	BOD5(20 degrees C)	Surfactants (MBAS)	Cl-, SO4, NO3+NO2-N, F, Perchlorate	Turbidity, TDS, TSS, Conductivity	Ammonia-N	Alpha BHC (608) + PP	2,4,6 Trichlorophenol, 2,4 Dinitrofluorene, Bis(2- ethylhexyl)phthalate, NDMA, pentachlorophenol (EPA 625) + PP	Field readings: Temp = 55.9 pH = 7.34	Comments
Outfall 018	W	Poly-1L	1	3-18-05 11:38	HNO3	1A	X														
Outfall 018-Dup	W	Poly-1L	1		HNO3	1B	X														24 TAT
Outfall 018	W	Poly-1L	1		None	2		X													24 TAT
Outfall 018	W	VOAs	5		HCl	3A,3B,3C, 3D, 3E			X												
Outfall 018	W	1L Amber	2		None	4A,4B				X											
Outfall 018	W	1L Amber	2		HCL	5A, 5B					X										
Outfall 018	W	Poly-500 ml	1		NaOH	6						X									24 TAT
Outfall 018	W	Poly-1L	1		None	7							X								24 TAT
Outfall 018	W	Poly-500 ml	2		None	8A,8B								X							
Outfall 018	W	Poly-500 ml	2		None	9A,9B									X						
Outfall 018	W	Poly-500 ml	2		None	10A, 10B										X					
Outfall 018	W	Poly-500 ml	1		H2SO4	11															
Outfall 018	W	1L Amber	2	3-18-05 11:28	None	12A, 12B															
Outfall 018	W	1L Amber	2		None	13A, 13B															
Trip Blank	W	VOAs	3		HCL	14A, 14B, 14C			X												

Date/Time: 2-18-05 1450

Received By: *[Signature]*

Date/Time: 2-18-05 1450

Relinquished By: *[Signature]*

Date/Time: 2-18-05 1450

Received By: *[Signature]*

Date/Time: 2-18-05 1830

Relinquished By: *[Signature]*

Date/Time: 2-18-05 1830

Received By: *[Signature]*

Date/Time: 2-18-05 1830

Relinquished By: *[Signature]*

Turn around Time: (check)
 24 Hours _____ 5 Days _____
 48 Hours _____ 10 Days _____
 72 Hours _____ Normal _____
 Perchlorate Only 72 Hours _____
 Metals Only 72 Hours _____
 Sample integrity: (Check) On Ice: 3C

CHAIN OF CUSTODY FORM

Version 5/8/12/04

Del Mar Analytical
Client Name/Address:

Project:
Boeing-SSFL NPDES
Annual Outfall 018

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

Project Manager: Bronwyn Kelly
Sampler: Rick Arriaga

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

Sample Description	Sample Matrix	Container Type	# of Cont.	Sampling Date/Time	Preservative	Bottle #	1,4-Dioxane	Total Organic Carbon	Total Residual Chlorine	Gross Alpha, Gross Beta, Tritium (906.0), Sr-90 (905.0), Total Combined Radium 226 & Radium 228	PCBs	TPH = all fuels, gas, diesel, and jet fuel; modified 8015 and 418.1	Monomethylhydrazine	Acute and Chronic toxicity	VOCS 624 +A+A+2CVE	Comments	
Outfall 018	W	VOAs	3	3-18-05 11:28	HCl	15A, 15B, 15C	X										
Outfall 018	W	VOAs	2	3-18-05 11:28	HCl	16A, 16B		X									
Outfall 018	W	Poly-150 ml	1		None	17			X								
Outfall 018	W	Poly-1Gal VOAs	1		None	18A, 18B, 18C				X							Analyze for Total Combined RA-226&228 only if Gross Alpha > 15pCi/L
Outfall 018	W	1L Amber	2	3-18-05 11:28	None	19A, 19B					X						
Outfall 018	W	VOAs	3		HCl	20A, 20B, 20C, 20D, 20E, 20F, 20G							X				
Outfall 018	W	1L Amber	2		None	21A, 21B								X			
Outfall 018	W	1 Gal	2	3-18-05 11:28	None	22A, 22B											
Outfall 018	W	VOAs	3		None	23A, 23B, 23C									X		
Trip Blank	W	VOAs	3		None	24A, 24B, 24C									X		
Relinquished By	[Signature]			Date/Time:	Received By: [Signature] Date/Time: 2-18-05												
Relinquished By	[Signature]			Date/Time:	Received By: [Signature] Date/Time: 2-18-05												
Relinquished By	[Signature]			Date/Time:	Received By: [Signature] Date/Time: 2-18-05												

Turn around Time: (check)
 24 Hours _____ 5 Days _____
 48 Hours _____ 10 Days _____
 72 Hours _____ Normal _____
 Perchlorate Only 72 Hours _____
 Metals Only 72 Hours _____
 Sample Integrity (Check) On Ice: _____
 Infract _____

1830
218/05
1830

March 31, 2005

MWH-Pasadena/ Boeing
300 North Lake Avenue, Suite 1200
Pasadena, CA 91101

Attention: Bronwyn Kelly
Project: Annual Outfall 018
Sampled: 02/18/05
Del Mar Analytical Number: IOB1570

Dear Ms. Kelly:

Alta Analytical Laboratory performed EPA Method 1613 for Dioxin, Aquatic Testing Laboratories tested the Fathead Minnow 96 hr Percent Survival Bioassay (EPA Method 2000.0) and *Ceriodaphnia dubia* Survival and Reproduction Test (EPA Method 1002), Eberline Services performed gross alpha/ gross beta (EPA 900.0), tritium (H-3, EPA906.0), and strontium-90 (Sr-90, EPA 905.0) and Truesdail Laboratories tested Hydrazines by EPA 8315 M for the project referenced above. Please use the following cross-reference table when reviewing your results.

MWH ID	Del Mar ID	ALTA ID	ATL ID	EBERLINE ID	TRUESDAIL ID
Outfall 018	IOB1570-01	25778-001	A-05021907-001/002	R502213-8292	939965-1

Attached are the original reports from the subcontract laboratories. If you have any questions or require further assistance, please do not hesitate to contact me at (949) 261-1022, extension 215.

Sincerely yours,
DEL MAR ANALYTICAL



Michele Harper
Project Manager



EBERLINE SERVICES

March 15, 2005

Ms. Michele Harper
Project Manager
Del Mar Analytical
17461 Derian Avenue, Suite 100
Irvine, CA 92614

Reference: Del Mar Analytical Project No. IOB1570
Eberline Services NELAP Cert #01120CA (exp. 01/31/06)
Eberline Services Report R502213-8292

Dear Ms. Harper:

Enclosed are results from the analyses of one water sample received at Eberline Services on February 23, 2005. The sample was analyzed according to the accompanying Del Mar Analytical Subcontract Order Form. The requested analyses were gross alpha/gross beta (EPA900.0), tritium (H-3, EPA906.0), and strontium-90 (Sr-90, EPA905.0). The QC LCS, blank analyses, sample duplicates, and matrix spike results for the analyses were within the limits defined in Eberline Services Quality Control Procedures Manual. Analyses that involve the yielding of an analytical tracer or carrier, such as Sr-90, do not require matrix spike analyses to be performed.

Please call me if you have any questions concerning this report.

Regards,

Melissa Mannion
Senior Program Manager

MCM/njv

Enclosure: Report
Subcontract Form
Receipt checklist
Invoice

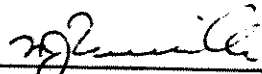
Analytical Services
2030 Wright Avenue
P.O. Box 4040
Richmond, California 94804-0040
(510) 235-2633 Fax (510) 235-0438
Toll Free (800) 841-5487
www.eberlineservices.com

Eberline Services

ANALYSIS RESULTS

SDG <u>8292</u>	Client <u>DEL MAR ANAL</u>
Work Order <u>R502213-01</u>	Contract <u>PROJECT# IOB1570</u>
Received Date <u>02/23/05</u>	Matrix <u>WATER</u>

<u>Client</u>	<u>Lab</u>	<u>Sample ID</u>	<u>Collected</u>	<u>Analyzed</u>	<u>Nuclide</u>	<u>Results ± 2σ</u>	<u>Units</u>	<u>MDA</u>
<u>IOB1570-01</u>		<u>8292-001</u>	<u>02/18/05</u>	<u>03/08/05</u>	GrossAlpha	1.82 ± 1.0	pCi/L	1.11
				<u>03/08/05</u>	Gross Beta	3.97 ± 1.3	pCi/L	1.84
				<u>03/12/05</u>	H3	-31.5 ± 150	pCi/L	254
				<u>03/12/05</u>	Sr-90	-0.052 ± 0.21	pCi/L	0.278

Certified by 
Report Date 03/15/05
Page 1

Eberline Services

QC RESULTS

SDG <u>8292</u>	Client <u>DEL MAR ANAL</u>
Work Order <u>R502213-01</u>	Contract <u>PROJECT# IOB1570</u>
Received Date <u>02/23/05</u>	Matrix <u>WATER</u>

Lab	Sample ID	Nuclide	Results	Units	Amount Added	MDA	Evaluation
<u>LCS</u>							
	8294-003	GrossAlpha	10.9 ± 1.2	pCi/Smpl	10.2	0.313	107% recovery
		Gross Beta	9.49 ± 0.74	pCi/Smpl	10.1	0.546	94% recovery
		H3	214 ± 23	pCi/Smpl	235	25.4	91% recovery
		Sr90	9.75 ± 0.32	pCi/Smpl	10.1	0.145	97% recovery
<u>BLANK</u>							
	8294-004	GrossAlpha	-0.034 ± 0.23	pCi/Smpl	NA	0.415	<MDA
		Gross Beta	-0.236 ± 0.29	pCi/Smpl	NA	0.551	<MDA
		H3	9.66 ± 15	pCi/Smpl	NA	25.1	<MDA
		Sr90	-0.064 ± 0.098	pCi/Smpl	NA	0.140	<MDA

<u>DUPLICATES</u>			
Sample ID	Nuclide	Results ± 2σ	MDA
8294-005	GrossAlpha	0.399 ± 0.53	0.874
	Gross Beta	2.91 ± 1.2	1.78
	H3	76.8 ± 150	254
	Sr90	0.884 ± 0.24	0.281

<u>ORIGINALS</u>						
Sample ID	Results ± 2σ	MDA	3σ	RPD (Tot)	Eval	
8294-001	0.904 ± 0.74	1.00	-	-	0 satis.	
	3.32 ± 1.2	1.79	13	88	satis.	
	-41.9 ± 150	254	-	0	satis.	
	0.901 ± 0.24	0.280	2	61	satis.	

<u>SPIKED SAMPLE</u>			
Sample ID	Nuclide	Results ± 2σ	MDA
8294-006	GrossAlpha	86.0 ± 5.3	0.881
	Gross Beta	72.1 ± 3.5	1.79
	H3	22300 ± 580	252

<u>ORIGINAL SAMPLE</u>						
Sample ID	Results ± 2σ	MDA	Added	%Recv		
8294-002	1.42 ± 0.93	1.19	71.5	118		
	3.75 ± 1.2	1.78	67.2	102		
	-77.0 ± 140	255	23600	95		

Certified by <u><i>[Signature]</i></u>
Report Date <u>03/15/05</u>
Page 2



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 1014 E. Cooley Dr., Suite A, Colton, CA 92324 Ph (909) 370-4657 Fax (909) 370-1046
 9484 Chesapeake Drive, Suite 805, San Diego, CA 92123 Ph (619) 505-9596 Fax (619) 505-9689
 9830 South 51st Street, Suite B-120, Phoenix, AZ 85044 Ph (480) 785-0043 Fax (480) 785-0851
 2520 E. Sunset Rd., Suite #3, Las Vegas, NV 89120 Ph (702) 798-3620 Fax (702) 798-3621

SUBCONTRACT ORDER - PROJECT # IOB1570

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 Harper

RECEIVING LABORATORY:

Eberline Services
 2030 Wright Avenue
 Richmond, CA 94804
 Phone: (510) 235-2633
 Fax: (510) 235-0438

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

Analysis	Expiration	Comments
Sample ID: IOB1570-01 Water	Sampled: 02/18/05 11:28	Instant Notification
EDD + Level 4	03/18/05 11:28	Excel EDD email to pm, Include Std logs for Lvl IV
Gross Alpha-O	02/18/06 11:28	900.0, IF RESULT > 15 pCi/L, run Radium 226 & 228
Gross Beta-O	02/18/06 11:28	900.0, IF RESULT > 15 pCi/L, run Radium 226 & 228
Radium, Combined-O	02/18/06 11:28	HOLD for Gross Alpha/Beta result; EPA 903.1 & 904.0
Strontium 90-O	02/18/06 11:28	905.0
Tritium-O	02/18/06 11:28	906

Containers Supplied:

1 gal Poly (IOB1570-01AF) *W/ANDS*
 40 ml Voa Vial (IOB1570-01AG)
 40 ml Voa Vial (IOB1570-01AH)

SAMPLE INTEGRITY:

All containers intact: Yes No Sample labels/COC agree: Yes No Samples Received On Ice: Yes No
 Custody Seals Present: Yes No Samples Preserved Properly: Yes No Samples Received at (temp): _____

[Signature] 2-22-05 1700 *[Signature]* 2/23/05 10:00
 Released By Date Time Received By Date Time

Released By Date Time Received By Date Time



RICHMOND, CA LABORATORY

SAMPLE RECEIPT CHECKLIST

Client: TEL. MAR City IRVINE State CA

Date/Time received 2/23/05 10:00 CoC No. 10B 1570

Container I.D. No. BASIC LAB Requested TAT (Days) 4 weeks P.O. Received Yes [] No []

INSPECTION

- 1. Custody seals on shipping container intact? Yes [] No [] N/A []
- 2. Custody seals on shipping container dated & signed? Yes [] No [] N/A []
- 3. Custody seals on sample containers intact? Yes [] No [] N/A []
- 4. Custody seals on sample containers dated & signed? Yes [] No [] N/A []
- 5. Packing material is: Wet [] Dry []
- 6. Number of samples in shipping container: 1 Sample Matrix WATER
- 7. Number of containers per sample: 3 (Or see CoC _____)
- 8. Samples are in correct container Yes [] No []
- 9. Paperwork agrees with samples? Yes [] No []
- 10. Samples have: Tape [] Hazard labels [] Rad labels [] Appropriate sample labels []
- 11. Samples are: In good condition [] Leaking [] Broken Container [] Missing []
- 12. Samples are: Preserved [] Not preserved [] pH 2 Preservative HNO3
- 13. Describe any anomalies: _____
- 14. Was P.M. notified of any anomalies? Yes [] No [] Date _____
- 15. Inspected by HK 2/23/05 Date: _____ Time: 10:00

Customer Sample No.	cpm	mR/hr	wipe	Customer Sample No.	cpm	mR/hr	wipe

Ion Chamber Ser. No. _____ Calibration date _____

Alpha Meter Ser. No. _____ Calibration date _____

Beta/Gamma Meter Ser. No. _____ Calibration date _____

LABORATORY REPORT

**Aquatic
Testing
Laboratories**



"dedicated to providing quality aquatic toxicity testing"

4350 Transport Street, Unit 107
Ventura, CA 93003

(805) 650-0546 FAX (805) 650-0756

CA DOHS ELAP Cert. No.: 1775

Date: February 25, 2005

Client: Del Mar Analytical, Irvine
17461 Derian Avenue, Suite 100
Irvine, CA 92614
Attn: Michele Harper

Laboratory No.: A-05021907-001/002
Sample I.D.: IOB1570-01

Sample Control: The sample was received by ATL chilled, with the chain of custody record attached.

Date Sampled: 02/18/05
Date Received: 02/19/05
Date Tested: 02/19/05 to 02/25/05

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

Fathead Minnow 96hr Percent Survival Bioassay (EPA Method 2000.0),
Ceriodaphnia dubia Survival and Reproduction Test (EPA Method 1002).

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

Result Summary:

Acute:	Survival	TUa
Fathead Minnow:	100%	0.0
Chronic:	NOEC	TUc
<i>Ceriodaphnia</i> Survival:	100%	1.0
<i>Ceriodaphnia</i> Reproduction:	100%	1.0

Quality Control: Reviewed and approved by:

Joseph A. LeMay
Laboratory Director

FATHEAD MINNOW PERCENT SURVIVAL TEST



Lab No.: A-05021907-001
 Client/ID: Del Mar IOB1570-01

Start Date: 02/19/2005

TEST SUMMARY

Species: *Pimephales promelas*.
 Age: 12 (1-14) days.
 Regulations: NPDES.
 Test solution volume: 250 ml.
 Feeding: prior to renewal at 48 hrs.
 Number of replicates: 2.
 Dilution water: Moderately hard reconstituted water.
 Photoperiod: 16/8 hrs light/dark.

Source: In-laboratory Culture.
 Test type: Static-Renewal.
 Test Protocol: EPA-821-R-02-012.
 Endpoints: Percent Survival at 96 hrs.
 Test chamber: 600 ml beakers.
 Temperature: 20 +/- 1°C.
 Number of fish per chamber: 10.
 QA/QC Batch No.: RT-050208.

TEST DATA

		°C	DO	pH	# Dead		Analyst & Time of Readings
					A	B	
INITIAL	Control	20.0	8.8	7.9	0	0	R 1330
	100%	20.0	9.5	6.8	0	0	
24 Hr	Control	19.3	7.0	7.9	0	0	R 1330
	100%	19.4	6.9	7.3	0	0	
48 Hr	Control	19.6	6.8	7.7	0	0	R 1330
	100%	19.2	5.5	7.1	0	0	
Renewal	Control	19.4	7.7	8.0	0	0	R 1300
	100%	19.6	8.3	7.2	0	0	
72 Hr	Control	19.1	6.8	7.6	0	0	R 1200
	100%	19.0	7.5	7.4	0	0	
96 Hr	Control	19.2	7.5	7.5	0	0	R 1200
	100%	19.1	7.9	7.3	0	0	

Comments:

Sample as received: Chlorine: 0 mg/l; pH: 6.8; Conductivity: 180 umho; Temp: 4°C;
 DO: 9.5 mg/l; Alkalinity: 47 mg/l; Hardness: 29 mg/l; NH₃-N: 0.3 mg/l.
 Sample aerated moderately (approx. 500 ml/min) to raise or lower DO? Yes / No
 Control: Alkalinity: 54 mg/l; Hardness: 92 mg/l; Conductivity: 280 umho.
 Test solution aerated (not to exceed 100 bubbles/min) to maintain DO > 4.0 mg/l? Yes / No
 Sample used for renewal is the original sample kept at 0-6°C with minimal headspace.

RESULTS

Percent Survival In: Control: 100 % 100% Sample: 100 %



1014 E. Cooley Dr., Suite A, Colton, CA 92324 Ph (909) 370-4887 Fax (909) 370-1046
 9484 Chesapeake Drive, Suite 805, San Diego, CA 92123 Ph (619) 505-9586 Fax (619) 505-9588
 9830 South 51st Street, Suite B-120, Phoenix, AZ 85044 Ph (480) 785-0043 Fax (480) 785-0851
 2520 E. Sunset Rd., Suite 83, Las Vegas, NV 89129 Ph (702) 798-3820 Fax (702) 798-3821

SUBCONTRACT ORDER - PROJECT # IOB1570

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 Harper	RECEIVING LABORATORY: Aquatic Testing Laboratories-SUB 4350 Transport Street, Unit 107 Ventura, CA 93003 Phone: (805) 650-0546 Fax: (805) 650-0756
---	--

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

Analysis	Expiration	Comments
Sample ID: IOB1570-01 Water	Sampled: 02/18/05 11:28	Instant Notification
Bioassay-7 dy Chronic	02/19/05 23:28	Cerio, EPA/821-R02-013, Sub to AqTox Labs
Bioassay-Acute 96hr	02/19/05 23:28	FH minnow, EPA/821-R02-012, Sub to AqTox Labs
Containers Supplied:		
1 gal Poly (IOB1570-01AT)		
1 gal Poly (IOB1570-01AU)		

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

	2/19/05 0830 <small>Date Time</small>		2/19/05 0830 <small>Date Time</small>
	2/19/05 1100 <small>Date Time</small>		2-19-05 1100 <small>Date Time</small>

TRUESDAIL LABORATORIES, INC.

INDEPENDENT TESTING, FORENSIC SCIENCE, AND ENVIRONMENTAL ANALYSES



Established 1931

February 28, 2005

14201 FRANKLIN AVENUE
TUSTIN, CALIFORNIA 92780-7008
(714) 730-6239 · FAX (714) 730-6462
www.truesdail.com

Client: Del Mar Analytical
17461 Derian Avenue, Suite 100
Irvine, CA 92614

Attention: Michele Harper

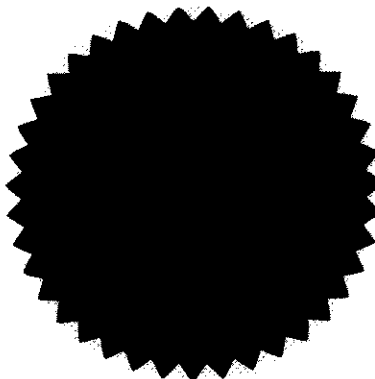
Project Name: IOB1570
Date Received: 02/22/05

Truesdail Project: 939965

Samples Cross-reference

<u>Truesdail ID</u>	<u>Client ID</u>	<u>Matrix</u>	<u>Date Sampled</u>	<u>Time Sampled</u>	<u>Analysis Requested</u>
939965-1	IOB1570-01	Water	02/18/05	1128	Hydrazines by EPA 8315M

Respectfully Submitted,
TRUESDAIL LABORATORIES, INC.

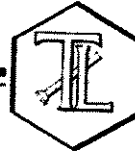


K. R. P. Iyer
K.R.P. Iyer
Quality Control/Quality Assurance Officer

Xuan Huong Dang
Xuan Huong Dang
Project Manager

TRUESDAIL LABORATORIES, INC.

INDEPENDENT TESTING, FORENSIC SCIENCE, AND ENVIRONMENTAL ANALYSES



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(714) 730-6239 · FAX (714) 730-6462
www.truesdail.com

Client: Del Mar Analytical
17461 Derian Avenue, Suite 100
Irvine, CA 92614
Attention: Michele Harper

Project Name: IOB1570
Date Received: 02/22/05

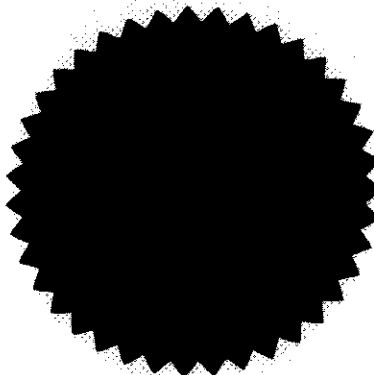
Truesdail Project: 939965

Case Narrative

- Sample Receipt** The sample was received in good condition and no anomalies were noted during check-in. The sample was kept in a locked refrigerator until analysis. Thereafter, it is being kept in ambient storage for an additional 2 months before disposal.
- Analysis** The analysis was performed as requested on the chain-of-custody.
- Quality Control** The analytical results for each batch of samples performed include a minimum of one set of laboratory control sample/laboratory control sample duplicate (LCS/LCSD), one matrix spike (MS) and a reagent blank (Method blank). Any exceptions or problems would be noted in the "comments" section.
- Comments** The test results in this report meet all quality assurance requirements set forth by the method specification and all quality control recoveries were within the laboratory acceptance limits. No anomalies or nonconformance events occurred during the course of analysis. The analytes were quantitated down to the Method Detection Limit (J flags) per client's request.
- The sample was received past the method specified 72-hour holding time but analysis was proceeded with Michele Harper's approval.

Respectfully Submitted,
TRUESDAIL LABORATORIES, INC.


K.R.P. Iyer
Quality Control/Quality Assurance Officer




Xuan Huong Dang
Project Manager

TRUESDAIL LABORATORIES, INC.

INDEPENDENT TESTING, FORENSIC SCIENCE, AND ENVIRONMENTAL ANALYSES



Established 1931

14201 FRANKLIN AVENUE · TUSTIN, CALIFORNIA 92780-7008
(714) 730-6239 · FAX (714) 730-6462 · www.truesdail.com

REPORT

Client: Del Mar Analytical
17461 Derjan Ave., Suite 100
Irvine, CA 92614

Attention: Michele Harper
Sample: Liquid / 1 Sample
Project Name: IOB1570
P.O. Number: IOB1570
Method Number: 8315 (Modified)
Investigation: Hydrazines in Liquid

Laboratory No: 939965
Report Date: February 28, 2005
Sampling Date: February 18, 2005
Receiving Date: February 22, 2005
Extraction Date: February 22, 2005
Analysis Date: February 23, 2005
Units: µg/L
Dilution Factor: 1
Reported By: JS

Analytical Results

Page 1 of 1

Sample ID	Sample Description	Monomethyl/		Unsymmetrical Dimethyl	Hydrazine
		Hydrazine	Hydrazine		
704793-MB	Method Blank	ND	ND	ND	ND
939965*	IOB1570-01	ND	ND	ND	ND
MDL		1.2	0.27		0.39
PQL		5.0	5.0		1.0

* Sample was received past the holding time of 3 days.

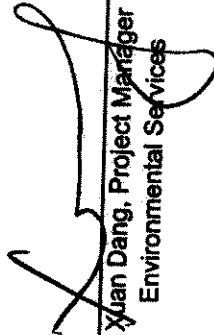
MDL: Method Detection Limit, ug/L

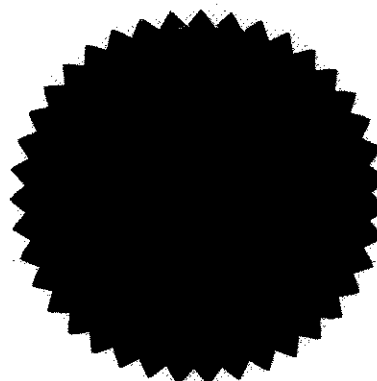
PQL: Practical Quantitation Limit, ug/L

ND: Not Detected at or above the MDL value.

N/A: Not Applicable

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


Xuan Dang, Project Manager
Environmental Services



This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from these laboratories.

TRUESDAIL LABORATORIES, INC.

INDEPENDENT TESTING, FORENSIC SCIENCE, AND ENVIRONMENTAL ANALYSES



Established 1931

14201 FRANKLIN AVENUE · TUSTIN, CALIFORNIA 92780-7008
(714) 730-6239 · FAX (714) 730-6462 · www.truesdail.com

Client: Del Mar Analytical
17461 Derian Ave., Suite 100
Irvine, CA 92614

Client Contact: Michele Harper
Sample: Liquid / 1 Sample
Sample ID: IOB1570
P.O. Number: IOB1570
Method Number: 8315 (Modified)
Run Batch No.: Extraction: 2985; Analysis: 367
Investigation: Hydrazines in Liquid

REPORT

QC Lab. No.: 704793
Project Lab. No.: 939865
Spiked Sample ID: 939865
Report Date: February 28, 2005
Sampling Date: February 18, 2005
Receiving Date: February 22, 2005
Extraction Date: February 22, 2005
Analysis Date: February 23, 2005
Units: µg/L
Reported By: JS

Quality Control/Quality Assurance Calibration Report

ICV

Parameter	Theoretical Value (ug/L)	Measured Value (ug/L)	% Rec.	Control Limits	Flag
Monomethyl Hydrazine	25.0	24.0	96.1	85-115	PASS
u-Dimethyl Hydrazine	25.0	24.5	98.1	85-115	PASS
Hydrazine	5.0	5.14	103	85-115	PASS

QCS

Parameter	Theoretical Value (ug/L)	Measured Value (ug/L)	% Rec.	Control Limits	Flag
Monomethyl Hydrazine	50.0	51.0	102	85-115	PASS
u-Dimethyl Hydrazine	50.0	53.9	108	85-115	PASS
Hydrazine	10.0	10.8	108	85-115	PASS

Quality Control/Quality Assurance Spikes Report MS/MSD

Parameter	Spiked Conc. ug/L	Recovered Concentration LCS	LCSD MB	Percent Recovery (%) LCS	LCSD %D	Flag	Control Limits
Monomethyl Hydrazine	50.0	51.8	52.3	0.0	104	105	0.96% PASS 20
u-Dimethyl Hydrazine	50.0	53.0	53.4	0.0	106	107	0.73% PASS 20
Hydrazine	10.0	10.6	10.7	0.0	106	107	0.94% PASS 20

Parameter	Spiked Conc. ug/L	Recovered Concentration MS	MSD	Percent Recovery (%) MS	MSD	% D	Accuracy Control Limits
Monomethyl Hydrazine	50.0	25.5	25.6	0.0	51.0	51.2	0.52% PASS 20
u-Dimethyl Hydrazine	50.0	33.2	32.8	0.0	66.4	65.7	1.10% PASS 20
Hydrazine	10.0	4.32	4.17	0.0	43.2	41.7	3.53% PASS 20

ICV: Initial Calibration Verification

QCS: Quality Control Standard

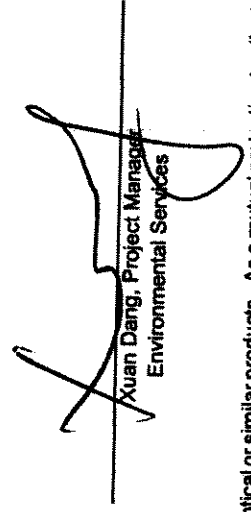
LCS: Laboratory Control Spike

MS: Matrix Spike

%D: Percent Difference

Flag: "Pass" if within Control Limits; otherwise "Fail"

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


Xuan Dang, Project Manager
Environmental Services

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from these laboratories.



Del Mar Analytical
939965

SUBCONTRACT ORDER - PROJECT # IOB1570

17461 Derian Ave, Suite 100, Irvine, CA 92614 Ph (949) 261-1022 Fax (949) 261-1228
 1014 E. Cooley Dr., Suite A, Colton, CA 92324 Ph (909) 370-4667 Fax (909) 370-1046
 9484 Chesapeake Drive, Suite 805, San Diego, CA 92123 Ph (619) 505-9598 Fax (619) 505-9689
 9830 South 61st Street, Suite B-120, Phoenix, AZ 85044 Ph (480) 785-0043 Fax (480) 785-0051
 2520 E. Sunset Rd., Suite #3, Las Vegas, NV 89120 Ph (702) 798-3820 Fax (702) 798-3821

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 Harper

RECEIVING LABORATORY:
 Truesdail Laboratories-SUB
 14201 Franklin Avenue
 Tustin, CA 92680
 Phone : (714) 730-6239
 Fax: (714) 730-6462

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

Analysis	Expiration	Comments
Sample ID: IOB1570-01 Water	Sampled: 02/18/05 11:28	Instant Notification
Hydrazine-OUT	02/21/05 11:28	Sub Truesdail for Monomethylhydrazine, J flags
Level 4 Data Package	03/18/05 11:28	

Containers Supplied:
 1 L Amber (IOB1570-01AR)
 1 L Amber (IOB1570-01AS)

ALERT!!
Level IV QC

Rec'd 02/22/05
 sla 939965

**For Sample Conditions
 See Form Attached**

SAMPLE INTEGRITY:

All containers intact: Yes No
 Sample labels/COC agree: Yes No
 Custody Seals Present: Yes No
 Samples Preserved Properly: Yes No
 Samples Received On Ice: Yes No
 Samples Received at (temp): _____

Released By: *[Signature]* Date: 2-22-05 Time: 8:30
 Received By: *[Signature]* Date: 2-22-05 Time: 8:30
 Released By: *[Signature]* Date: 2-22-05 Time: 8:45
 Received By: *[Signature]* Date: 2/22/05 Time: 8:45



TRUESDAIL LABORATORIES, INC.

Sample Integrity & Analysis Discrepancy Form

Client: Del Mar Analy

Lab # 939965

Date Delivered: 2/22/05 Time: 8:45 By: Mail Field Service Client

1. Was a Chain of Custody received and signed? Yes No N/A
2. Does Customer require an acknowledgement of the COC? Yes No N/A
3. Are there any special requirements or notes on the COC? Yes No N/A
4. If a letter was sent with the COC, does it match the COC? Yes No N/A
5. Were all requested analyses understood and acceptable? Yes No N/A
6. Were samples received in a chilled condition?
Temperature (if yes)? 4°C Yes No N/A
7. Were samples received intact
(i.e. broken bottles, leaks, air bubbles, etc.)? Yes No N/A
8. Were sample custody seals intact? Yes No N/A
9. Does the number of samples received agree with COC? Yes No N/A
10. Did sample labels correspond with the client ID's? Yes No N/A
11. Did sample labels indicate proper preservation?
Preserved (if yes) by: Truesdail Client Yes No N/A
12. Were samples pH checked? pH = NA Yes No N/A
13. Were all analyses within holding time at time of receipt?
If not, notify the Project Manager. Yes No N/A
14. Have Project due dates been checked and accepted?
Turn Around Time (TAT): RUSH Std Yes No N/A
15. **Sample Matrix:** Liquid Drinking Water Ground Water Waste Water
 Sludge Soil Wipe Paint Solid Other water
16. Comments: _____
17. Sample Check-In completed by Truesdail Log-In/Receiving: J Brown

ALERT
Level IV



TRUESDAIL LABORATORIES, INC.

Internal Chain of Custody Logbook

Lab Number:

939965

Storage Temperature:

4°C

Client Name:

Del Mar Analy

Bottle I.D.	Analysis Done	Date Out	Time Out	Date In	Time In	Amount Taken (g or ml)	Printed Name	Signature
				2/22/05	8:45		J. Brown	J. Brown
	Hydrozine	2/22/05	10 AM	2/22/05	11 AM	300 ml	JEFF SAUNDERS	J. Saunders

Storage Date	Shelf No. For Storage	Printed Name	Initials

Discharge Date	Printed Name	Initials

Bottle I.D.	Analysis Done	Date Out	Time Out	Date In	Time In	Amount Taken (g or ml)	Printed Name	Signature

Storage Date	Shelf No. For Storage	Printed Name	Initials

Discharge Date	Printed Name	Initials

Bottle I.D.	Analysis Done	Date Out	Time Out	Date In	Time In	Amount Taken (g or ml)	Printed Name	Signature

Storage Date	Shelf No. For Storage	Printed Name	Initials

Discharge Date	Printed Name	Initials

Bottle I.D.	Analysis Done	Date Out	Time Out	Date In	Time In	Amount Taken (g or ml)	Printed Name	Signature

Storage Date	Shelf No. For Storage	Printed Name	Initials

Discharge Date	Printed Name	Initials



March 02, 2005

Alta Project I.D.: 25778

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

Dear Ms. Harper,

Enclosed are the results for the one aqueous sample received at Alta Analytical Laboratory on February 24, 2005 under your Project Name "IOB1570". This sample was extracted and analyzed using EPA Method 1613 for tetra-through-octa chlorinated dioxins and furans. A rush 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,


Martha M. Maier
HRMS Services Director



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: 2/24/2005

Alta Lab. ID

Client Sample ID

25778-001

IOB1570-01

SECTION II



Method Blank		EPA Method 1613				
Matrix:	Aqueous	QC Batch No.:	6543	Lab Sample:	0-MB001	
Sample Size:	1.000 L	Date Extracted:	25-Feb-05	Date Analyzed DB-5:	28-Feb-05	
				Date Analyzed DB-225:	NA	
Analyte	Conc. (pg/L)	DL ^a	EMPC ^b	Labeled Standard	%R	LCL-UCL ^d Qualifiers
2,3,7,8-TCDD	ND	0.866		IS 13C-2,3,7,8-TCDD	75.9	25 - 164
1,2,3,7,8-PeCDD	ND	1.15		13C-1,2,3,7,8-PeCDD	73.9	25 - 181
1,2,3,4,7,8-HxCDD	ND	1.88		13C-1,2,3,4,7,8-HxCDD	70.6	32 - 141
1,2,3,6,7,8-HxCDD	ND	1.86		13C-1,2,3,6,7,8-HxCDD	73.4	28 - 130
1,2,3,7,8,9-HxCDD	ND	1.84		13C-1,2,3,4,6,7,8-HpCDD	67.4	23 - 140
1,2,3,4,6,7,8-HpCDD	ND	3.38		13C-OCDD	56.3	17 - 157
OCDD	ND	8.88		13C-2,3,7,8-TCDF	78.7	24 - 169
2,3,7,8-TCDF	ND	0.545		13C-1,2,3,7,8-PeCDF	68.1	24 - 185
1,2,3,7,8-PeCDF	ND	1.62		13C-2,3,4,7,8-PeCDF	73.3	21 - 178
2,3,4,7,8-PeCDF	ND	1.45		13C-1,2,3,4,7,8-HxCDF	60.2	26 - 152
1,2,3,4,7,8-HxCDF	ND	1.24		13C-1,2,3,6,7,8-HxCDF	64.3	26 - 123
1,2,3,6,7,8-HxCDF	ND	0.869		13C-2,3,4,6,7,8-HxCDF	63.5	28 - 136
2,3,4,6,7,8-HxCDF	ND	0.958		13C-1,2,3,7,8,9-HxCDF	65.2	29 - 147
1,2,3,7,8,9-HxCDF	ND	1.55		13C-1,2,3,4,6,7,8-HpCDF	54.3	28 - 143
1,2,3,4,6,7,8-HpCDF	ND	2.22		13C-1,2,3,4,7,8,9-HpCDF	59.8	26 - 138
1,2,3,4,7,8,9-HpCDF	ND	1.68		13C-OCDF	54.9	17 - 157
OCDF	ND	4.49		CRS 37Cl-2,3,7,8-TCDD	77.4	35 - 197
Totals				Footnotes		
Total TCDD	ND	0.866		a. Sample specific estimated detection limit.		
Total PeCDD	ND	1.15		b. Estimated maximum possible concentration.		
Total HxCDD	ND	1.86		c. Method detection limit.		
Total HpCDD	ND	3.38		d. Lower control limit - upper control limit.		
Total TCDF	ND	0.545				
Total PeCDF	ND	1.54				
Total HxCDF	ND	1.37				
Total HpCDF	ND	2.38				

Analyst: MAS

Approved By:

William J. Luksemburg 02-Mar-2005 08:47



EPA Method 1613

OPR Results		Lab Sample: 0-OPR001		Date Analyzed DB-5: 28-Feb-05		Date Analyzed DB-225: NA	
Matrix:	Aqueous	QC Batch No.:	6543 <th>Date Analyzed DB-5:</th> <td>28-Feb-05 <th>Date Analyzed DB-225:</th> <td>NA </td></td>	Date Analyzed DB-5:	28-Feb-05 <th>Date Analyzed DB-225:</th> <td>NA </td>	Date Analyzed DB-225:	NA
Sample Size:	1.000 L <th>Date Extracted:</th> <td>25-Feb-05 <th colspan="4"></th> </td>	Date Extracted:	25-Feb-05 <th colspan="4"></th>				
Analyte	Spike Conc.	Conc. (ng/mL)	OPR Limits	Labeled Standard	%R	LCL-UCL	
2,3,7,8-TCDD	10.0	8.67	6.7 - 15.8	IS 13C-2,3,7,8-TCDD	67.4	25 - 164	
1,2,3,7,8-PeCDD	50.0	43.8	35 - 71	13C-1,2,3,7,8-PeCDD	64.0	25 - 181	
1,2,3,4,7,8-HxCDD	50.0	42.5	35 - 82	13C-1,2,3,4,7,8-HxCDD	58.2	32 - 141	
1,2,3,6,7,8-HxCDD	50.0	43.5	38 - 67	13C-1,2,3,6,7,8-HxCDD	62.5	28 - 130	
1,2,3,7,8,9-HxCDD	50.0	43.7	32 - 81	13C-1,2,3,4,6,7,8-HpCDD	57.2	23 - 140	
1,2,3,4,6,7,8-HpCDD	50.0	42.5	35 - 70	13C-OCDD	51.4	17 - 157	
OCDD	100	87.0	78 - 144	13C-2,3,7,8-TCDF	72.5	24 - 169	
2,3,7,8-TCDF	10.0	7.98	7.5 - 15.8	13C-1,2,3,7,8-PeCDF	59.4	24 - 185	
1,2,3,7,8-PeCDF	50.0	41.4	40 - 67	13C-2,3,4,7,8-PeCDF	64.8	21 - 178	
2,3,4,7,8-PeCDF	50.0	42.3	34 - 80	13C-1,2,3,4,7,8-HxCDF	49.4	26 - 152	
1,2,3,4,7,8-HxCDF	50.0	42.0	36 - 67	13C-1,2,3,6,7,8-HxCDF	52.7	26 - 123	
1,2,3,6,7,8-HxCDF	50.0	43.0	42 - 65	13C-2,3,4,6,7,8-HxCDF	55.2	28 - 136	
2,3,4,6,7,8-HxCDF	50.0	42.3	35 - 78	13C-1,2,3,7,8,9-HxCDF	53.4	29 - 147	
1,2,3,7,8,9-HxCDF	50.0	43.5	39 - 65	13C-1,2,3,4,6,7,8-HpCDF	45.6	28 - 143	
1,2,3,4,6,7,8-HpCDF	50.0	41.8	41 - 61	13C-1,2,3,4,7,8,9-HpCDF	49.6	26 - 138	
1,2,3,4,7,8,9-HpCDF	50.0	42.7	39 - 69	13C-OCDF	49.0	17 - 157	
OCDF	100	88.8	63 - 170	CRS 37Cl-2,3,7,8-TCDD	76.2	35 - 197	

Analyst: MAS

Approved By: William J. Luksemburg 02-Mar-2005 08:47



Sample ID: IOB1570-01		EPA Method 1613						
Client Data		Laboratory Data						
Name: Del Mar Analytical, Irvine	Matrix: Aqueous	Lab Sample: 25778-001	Date Received: 24-Feb-05					
Project: IOB1570	Sample Size: 1.029 L	QC Batch No.: 6543	Date Extracted: 25-Feb-05					
Date Collected: 18-Feb-05		Date Analyzed DB-5: 1-Mar-05	Date Analyzed DB-225: NA					
Time Collected: 1128								
Analyte	Conc. (pg/L)	DL ^a	EMPC ^b	Qualifiers	Labeled Standard	%R	LCL-UCL ^d	Qualifiers
2,3,7,8-TCDD	ND	1.58			IS 13C-2,3,7,8-TCDD	67.1	25 - 164	
1,2,3,7,8-PeCDD	ND	2.31			13C-1,2,3,7,8-PeCDD	59.9	25 - 181	
1,2,3,4,7,8-HxCDD	ND	3.59			13C-1,2,3,4,7,8-HxCDD	67.2	32 - 141	
1,2,3,6,7,8-HxCDD	ND	3.51			13C-1,2,3,6,7,8-HxCDD	74.1	28 - 130	
1,2,3,7,8,9-HxCDD	ND	3.53			13C-1,2,3,4,6,7,8-HpCDD	66.6	23 - 140	
1,2,3,4,6,7,8-HpCDD	67.1				13C-OCDD	52.9	17 - 157	
OCDD	749				13C-2,3,7,8-TCDF	68.4	24 - 169	
2,3,7,8-TCDF	ND	1.80			13C-1,2,3,7,8-PeCDF	54.7	24 - 185	
1,2,3,7,8-PeCDF	ND	3.14			13C-2,3,4,7,8-PeCDF	57.1	21 - 178	
2,3,4,7,8-PeCDF	ND	2.59			13C-1,2,3,4,7,8-HxCDF	58.9	26 - 152	
1,2,3,4,7,8-HxCDF	ND	1.61			13C-1,2,3,6,7,8-HxCDF	69.5	26 - 123	
1,2,3,6,7,8-HxCDF	ND	1.51			13C-2,3,4,6,7,8-HxCDF	69.2	28 - 136	
2,3,4,6,7,8-HxCDF	ND	1.63			13C-1,2,3,7,8,9-HxCDF	66.3	29 - 147	
1,2,3,7,8,9-HxCDF	ND	2.48			13C-1,2,3,4,6,7,8-HpCDF	66.3	28 - 143	
1,2,3,4,6,7,8-HpCDF	11.7			J	13C-1,2,3,4,7,8,9-HpCDF	68.6	26 - 138	
1,2,3,4,7,8,9-HpCDF	ND	1.96			13C-OCDF	62.6	17 - 157	
OCDF	27.1			J	CRS 37Cl-2,3,7,8-TCDD	76.0	35 - 197	
Totals								
Total TCDD	ND	1.58						
Total PeCDD	ND	2.31						
Total HxCDD	8.65		14.9					
Total HpCDD	152							
Total TCDF	ND	1.80						
Total PeCDF	2.57							
Total HxCDF	8.83		13.3					
Total HpCDF	34.4							

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

Analyst: JMH

Approved By: William J. Luksemburg

02-Mar-2005 08:47

APPENDIX

DATA QUALIFIERS & ABBREVIATIONS

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

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

The control limits are “interim limits only” until in-house limits are utilized.



CURRENT CERTIFICATIONS

NELAP — (Primary AA: California, Certificate No. 02102CA)
Department of the Navy
U.S. Army Corps of Engineers
U.S. EPA Region 5
Bureau of Reclamation — Mid-Pacific Region — (MP-470, Res-1.10)
Commonwealth of Kentucky — (Certificate No. 90063)
Commonwealth of Virginia — (Certificate No. 00013)
State of Alaska, Department of Environmental Conservation — (Certificate No. OS-00197)
State of Arizona — (Certificate No. AZ0639)
State of Arkansas, Department of Health — (Approval granted through CA certification)
State of Arkansas, Department of Environmental Quality
State of California — (Certificate No. 1640)
State of Colorado
State of Connecticut — (Certificate No. PH-0182)
State of Florida — (Certificate No. 87456)
State of Louisiana, Department of Health and Hospitals — (Certificate No. LA000014)
State of Louisiana, Department of Environmental Quality
State of Maine
State of Michigan (Certificate No. 81178087)
State of Mississippi — (Approval granted through CA certification)
State of Nevada — (Certificate No. CA413)
State of New Jersey — (Certificate No. CA003)
State of New York, Department of Health — (Certificate No. 11411)
State of North Carolina — (Certification No. 06700)
State of North Dakota, Department of Health — (Certificate No. R-078)
State of New Mexico
State of Oklahoma — (D9919)
State of Oregon — (Certificate No. CA413)
State of Pennsylvania — (Certificate No. 68-490)
State of South Carolina — (Certificate No. 87002001)
State of Tennessee — (Certificate No. 02996)
State of Texas — (Certificate No. TX247-1000A)
State of Utah — (Certificate No. E-201)
State of Washington — (Certification No. C091)
State of Wisconsin — (Certificate No. 998036160)
State of Wyoming — (USEPA Region 8 Ref: 8TMS-Q)



17461 Derian Ave. Suite 100, Irvine, CA 92614 Ph (949) 261-1022 Fax (949) 261-1228
 1014 E. Cooley Dr., Suite A, Colton, CA 92324 Ph (909) 370-4667 Fax (909) 370-1046
 9484 Chesapeake Drive, Suite 805, San Diego, CA 92123 Ph (619) 605-9596 Fax (619) 605-9889
 9830 South Stat Street, Suite B-120, Phoenix, AZ 85044 Ph (480) 786-0043 Fax (480) 786-0851
 2620 E. Sunset Rd., Suite #3, Las Vegas, NV 89120 Ph (702) 798-3820 Fax (702) 798-3821

SUBCONTRACT ORDER - PROJECT # IOB1570

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 Harper	Alta Analytical 1104 Windfield Way El Dorado Hills, CA 95762 Phone: (916) 933-1640 Fax: (916) 933-0940 <div style="text-align: right; font-size: 1.5em; margin-top: 10px;"> 25778 0.8°C </div>

Standard TAT is requested unless specific due date is requested => Due Date: 2 weeks Initials: VB

Analysis	Expiration	Comments
Sample ID: IOB1570-01 Water 1613-Dioxin-HR EDD + Level 4-OUT	Sampled: 02/18/05 11:28 02/25/05 11:28 03/18/05 11:28	Instant Notification J flags, 17 congeners, no TEQ, sub to Alta **LEVEL IV QC, ACCESS 7 EDD**
Containers Supplied: 1 L Amber (IOB1570-01I) 1 L Amber (IOB1570-01J)		

SAMPLE INTEGRITY:

All containers intact: <input type="checkbox"/> Yes <input type="checkbox"/> No	Sample labels/COC agree: <input type="checkbox"/> Yes <input type="checkbox"/> No	Samples Received On Ice: <input type="checkbox"/> Yes <input type="checkbox"/> No
Custody Seals Present: <input type="checkbox"/> Yes <input type="checkbox"/> No	Samples Preserved Properly: <input type="checkbox"/> Yes <input type="checkbox"/> No	Samples Received at (temp): _____

[Signature] 2-23-05 1700 [Signature] 2/23/05 0905
 Released By _____ Date _____ Time _____ Received By _____ Date _____ Time _____

STANDARD OPERATING PROCEDURE

Attachment 10.B.1

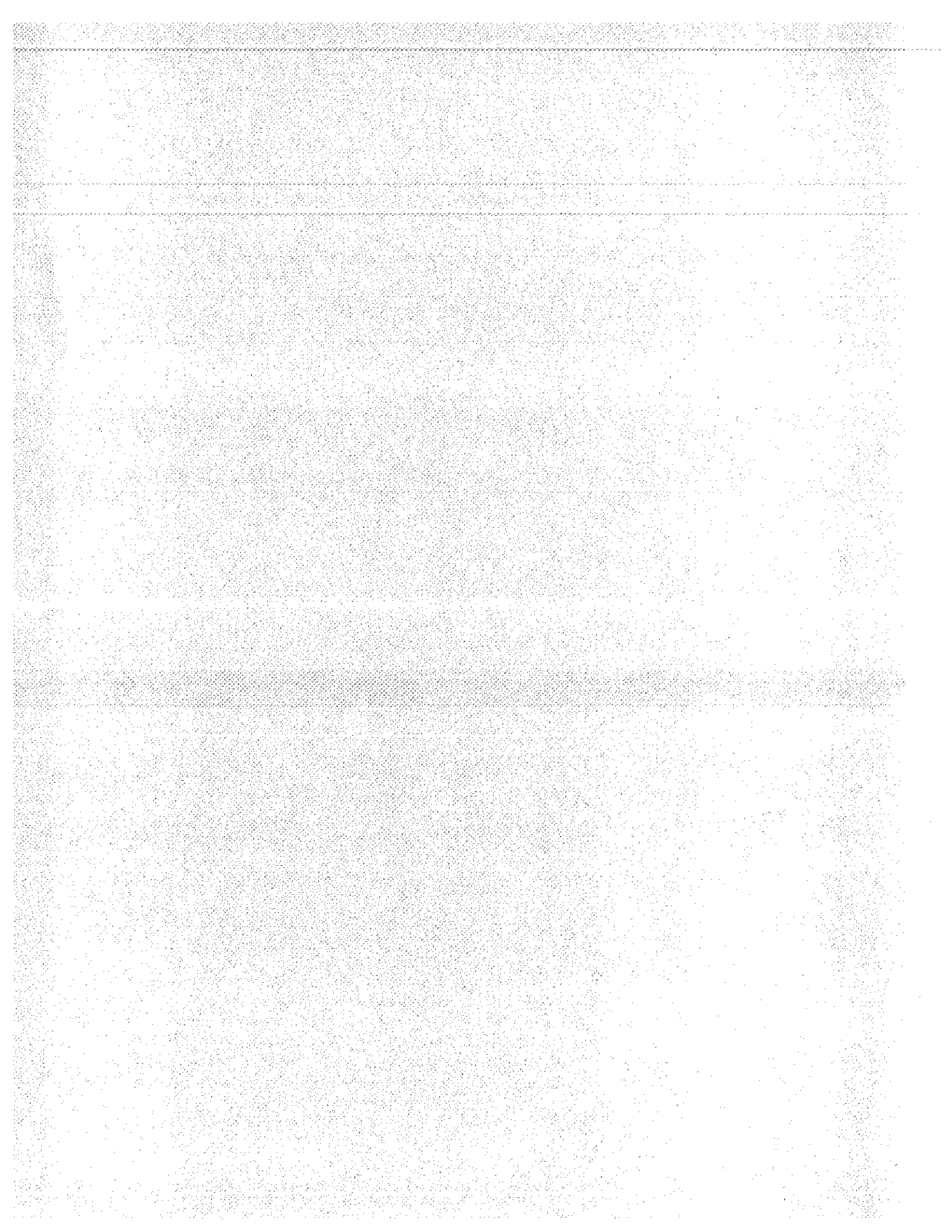
SAMPLE LOG-IN CHECKLIST

ALTA Project No.: 25778

1. Date Samples Arrived: <u>2/24/05</u> <u>0905</u> Initials: <u>AB</u> Location: <u>WR-2</u>			
2. Time / Date logged in: <u>1125</u> <u>2/24/05</u> Initials: <u>AB</u> Location: <u>WR-2</u>			
3. Samples Arrived By: (circle) <u>FedEx</u> UPS World Courier Other:			
4. Shipping Preservation: (circle) <u>Ice</u> <u>Blue Ice</u> / Dry Ice / None Temp °C <u>0.8</u>			
5. Shipping Container(s) Intact? If not, describe condition in comment section.	YES ✓	NO	NA
6. Shipping Container(s) Custody Seals Present? Intact? If not intact, describe condition in comment section.	✓		
7. Shipping Documentation Present? (circle) Shipping Label <u>Airbill</u> Tracking Number <u>7904 3642 7338</u>	✓		
8. Sample Custody Seal(s) Present? No. of Seals _____ or Seal No. _____ Intact? If not intact, describe condition in comment section.		✓	✓
9. Sample Container Intact? If no, indicate sample condition in comment section.	✓		
10. Chain of Custody (COC) or other Sample Documentation Present?	✓		
11. COC/Documentation Acceptable? If no, complete COC Anomaly Form.	✓		
12. Shipping Container (circle): ALTA <u>Client</u> Retain or <u>Return</u> or Disposed			
13. Container(s) and/or Bottle(s) Requested?		✓	
14. Drinking Water Sample? (HRMS Only) If yes, Acceptable Preservation? Y or N Preservation Info From? (circle) COC or Sample Container or None Noted			✓

Comments: Sampler's Initials found on sample label.

ALTA Analytical Laboratory
El Dorado Hills, CA 95762

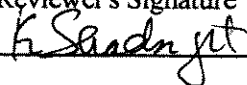


CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

AMEC Earth & Environmental
 550 South Wadsworth Boulevard
 Suite 500
 Lakewood, CO 80226

Package ID T711DF32
 Task Order 313150010
 SDG No. Multiple
 No. of Analyses 6

Laboratory Alta
 Reviewer K. Shadowlight
 Analysis/Method Dioxins

Date: March 16, 2005
 Reviewer's Signature


ACTION ITEMS*	
1. Case Narrative Deficiencies	
2. Out of Scope Analyses	
3. Analyses Not Conducted	
4. Missing Hardcopy Deliverables	
5. Incorrect Hardcopy Deliverables	
6. Deviations from Analysis Protocol, e.g.,	Qualifications were assigned for the following:
Holding Times	* Detects below the lower method calibration level
GC/MS Tune/Inst. Performance	
Calibration	
Method blanks	
Surrogates	
Matrix Spike/Dup LCS	
Field QC	
Internal Standard Performance	
Compound Identification and Quantitation	
System Performance	
COMMENTS ^b	
* 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

ANALYSIS: DIOXINS/FURANS

SAMPLE DELIVERY GROUPS: Multiple SDGs

Prepared by

AMEC—Denver Operations
550 South Wadsworth Boulevard, Suite 500
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title: NPDES Monitoring
Contract Task Order #: 313150010
Sample Delivery Group #: Multiple SDGs
Project Manager: B. McIlvaine
Matrix: Water
Analysis: Dioxins/Furans
QC Level: Level IV
No. of Samples: 6
No. of Reanalyses/Dilutions: 0
Reviewer: K. Shadowlight
Date of Review: March 16, 2005

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

Table 1. Sample Identification

Client ID	Laboratory ID (Del Mar)	Laboratory ID (Alta)	Matrix	COC Method
Outfall 001	IOB2098-01	25812-001	water	1613
Outfall 002	IOB2063-01	25811-001	water	1613
Outfall 011	IOB2066-01	25815-001	water	1613
Outfall 011 Composite	IOB2064-01	25816-001	water	1613
Outfall 011 Grab	IOB2065-01	25814-001	water	1613
Outfall 018	IOB2099-01	25813-001	water	1613

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

Following are findings associated with sample management:

2.1.1 Sample Preservation, Handling, and Transport

All of the samples in these SDGs were received at Del Mar Analytical within the temperature limits of $4^{\circ}\text{C} \pm 2^{\circ}\text{C}$. The samples were shipped to Alta for dioxin/furan analyses and the samples were received below the temperature limits at 0.8°C and 1.1°C ; however, as the samples were not noted to have been frozen or damaged, no qualifications were required. According to the laboratory login sheets, all samples were received intact and in good condition at both laboratories. No qualifications were required.

2.1.2 Chain of Custody

The COCs and transfer COCs were legible and signed by the appropriate field and laboratory personnel, and accounted for the analyses presented in these SDGs. The sample collector's name is not routinely provided on the transfer COC; however, the name of the sample collector was provided in the Sample Acceptance Form dated 03/01/05 for sample Outfall 011 Composite. As the samples were couriered directly to Del Mar Analytical, custody seals were not required. The coolers received by Alta had custody seals present and intact; however, custody seals were not present on the sample containers. The EPA 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 a year of collection. No qualifications were required.

2.2 INSTRUMENT PERFORMANCE

Following are findings associated with instrument performance:

2.2.1 GC Column Performance

A Windows Defining Mix (WDM) containing the first and last eluting congeners of each descriptor and isomer specificity compounds was not analyzed prior to the initial calibration sequence or at the beginning of each analytical sequence; however, the first and last eluting congeners and isomer specificity compounds were added to the midpoint of the initial calibration and to the continuing calibration standards (see section 2.3.2). The GC column performance in the calibrations was acceptable, with the height of the valley between the closely eluting isomers and 2,3,7,8-TCDD reported as less than 25%. No qualifications were required.

2.2.2 Mass Spectrometer Performance

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

2.3 CALIBRATION

2.3.1 Initial Calibration

There was one initial calibration, analyzed 08/30/04. The calibration consisted of six concentration level standards (CS0 through CS5) analyzed to verify instrument linearity. The initial calibration was acceptable with %RSDs $\leq 20\%$ for the 15 native compounds (calibration by isotope dilution) and $\leq 35\%$ for the two 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 VERs were acceptable with the concentrations within the acceptance criteria listed in Table 6 of EPA Method 1613. The ion abundance ratios and relative retention times were within the method QC limits. 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 standards 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 (6571-MB001) was extracted and analyzed with the samples in these SDGs. There were no detects reported 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 Ongoing Precision Recovery (OPR) sample (6571-OPR001) was extracted and analyzed with the samples in these SDGs. All recoveries were within the acceptance criteria listed in Table 6 of Method 1613. No qualifications were required.

2.6 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

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

DATA VALIDATION REPORT

2.7 FIELD QC SAMPLES

Following are findings associated with field QC:

2.7.1 Field Blanks and Equipment Rinsates

The samples in these SDGs had no associated field QC samples. No qualifications were required.

2.7.2 Field Duplicates

No field duplicate samples were identified for these SDGs.

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. Any detects below the lower method calibration level (MCL) were qualified as estimated, "J;" however, as Alta analyzed an additional calibration standard, not all results below the method calibration level were appropriately qualified by the laboratory. These results were qualified as estimated, "J," by the reviewer. No further qualifications were required.



EPA Method 1613

Sample ID: IOB2099-01 *Outfall 018*

Client Data
 Name: Del Mar Analytical, Irvine
 Project: IOB2099
 Date Collected: 26-Feb-05
 Time Collected: 0930

Laboratory Data
 Lab Sample: 25813-001
 QC Batch No.: 6571
 Date Analyzed DB-5: 8-Mar-05
 Date Received: 1-Mar-05
 Date Extracted: 4-Mar-05
 Date Analyzed DB-225: NA

Analyte	Conc. (pg/L)	DL ^a	EMPC ^b	Qualifiers	Labeled Standard	%R	LCL-UCL ^d	Qualifiers
2,3,7,8-TCDD	ND	0.958			13C-2,3,7,8-TCDD	76.5	25 - 164	
1,2,3,7,8-PeCDD	ND	1.02			13C-1,2,3,7,8-PeCDD	63.0	25 - 181	
1,2,3,4,7,8-HxCDD	ND	3.47			13C-1,2,3,4,7,8-HxCDD	64.7	32 - 141	
1,2,3,6,7,8-HxCDD	ND	3.48			13C-1,2,3,6,7,8-HxCDD	62.9	28 - 130	
1,2,3,7,8,9-HxCDD	ND	3.47			13C-1,2,3,4,6,7,8-HpCDD	62.6	23 - 140	
1,2,3,4,6,7,8-HpCDD	13.7			J	13C-OCDD	55.0	17 - 157	
OCDD	146				13C-2,3,7,8-TCDF	80.4	24 - 169	
2,3,7,8-TCDF	ND	1.30			13C-1,2,3,7,8-PeCDF	61.1	24 - 185	
1,2,3,7,8-PeCDF	ND	1.89			13C-2,3,4,7,8-PeCDF	64.1	21 - 178	
2,3,4,7,8-PeCDF	ND	1.64			13C-1,2,3,4,7,8-HxCDF	49.7	26 - 152	
1,2,3,4,7,8-HxCDF	ND	1.37			13C-1,2,3,6,7,8-HxCDF	55.4	26 - 123	
1,2,3,6,7,8-HxCDF	ND	1.26			13C-2,3,4,6,7,8-HxCDF	54.2	28 - 136	
2,3,4,6,7,8-HxCDF	ND	1.49			13C-1,2,3,7,8,9-HxCDF	54.2	29 - 147	
1,2,3,7,8,9-HxCDF	ND	2.11			13C-1,2,3,4,6,7,8-HpCDF	51.2	28 - 143	
1,2,3,4,6,7,8-HpCDF	2.74			J	13C-1,2,3,4,7,8,9-HpCDF	56.1	26 - 138	
1,2,3,4,7,8,9-HpCDF	ND	2.07			13C-OCDF	58.2	17 - 157	
OCDF	8.35			J	CRS 37Cl-2,3,7,8-TCDD	87.9	35 - 197	

Totals

Total TCDD	ND	0.958						
Total PeCDD	ND	1.02						
Total HxCDD	ND	3.48						
Total HpCDD	28.4							
Total TCDF	2.63							
Total PeCDF	ND	1.76						
Total HxCDF	ND	1.53						
Total HpCDF	2.74							7.18

Footnotes

- Sample specific estimated detection limit.
- Estimated maximum possible concentration.
- Method detection limit.
- Lower control limit - upper control limit.

Client Data
 Name: Del Mar Analytical, Irvine
 Project: IOB2099
 Date Collected: 26-Feb-05
 Time Collected: 0930


CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

AMEC Earth & Environmental
 550 South Wadsworth Boulevard
 Suite 500
 Lakewood, CO 80226

Package ID T711MT54
 Task Order 313150010
 SDG No. IOB2066, IOB2099

No. of Analyses 2

Laboratory Del Mar Analytical
 Reviewer K. Okonzak
 Analysis/Method Metals

Date: 3/30/05
 Reviewer's Signature


ACTION ITEMS ^a	
1. Case Narrative Deficiencies	
2. Out of Scope Analyses	
3. Analyses Not Conducted	
4. Missing Hardcopy Deliverables	
5. Incorrect Hardcopy Deliverables	
6. Deviations from Analysis Protocol, e.g., Holding Times	Qualifications applied for: Lead detected below the reporting limit was qualified as estimated, "J." Lead detected in Outfall 011 was qualified as estimated, "J," due to a negative result for a bracketing CCB.
GC/MS Tune/Inst. Perform	
Calibrations	
Blanks	
Surrogates	
Matrix Spike/Dup LCS	
Field QC	
Internal Standard Performance	
Compound Identification and Quantitation	
System Performance	

COMMENTS^b

^a 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 Qualifier Reference Table

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

Qualification Code Reference Table

Qualifier	Organics	Inorganics
H	Holding times were exceeded.	Holding times were exceeded.
S	Surrogate recovery was outside QC limits.	The sequence or number of standards used for the calibration was incorrect
C	Calibration %RSD or %D were noncompliant.	Correlation coefficient is <0.995.
R	Calibration RRF was <0.05.	%R for calibration is not within control limits.
B	Presumed contamination from preparation (method) blank.	Presumed contamination from preparation (method) or calibration blank.
L	Laboratory Blank Spike/Blank Spike Duplicate %R was not within control limits.	Laboratory Control Sample %R was not within control limits.
Q	MS/MSD recovery was poor or RPD high.	MS recovery was poor.
E	Not applicable.	Duplicates showed poor agreement.
I	Internal standard performance was unsatisfactory.	ICP ICS results were unsatisfactory.
A	Not applicable.	ICP Serial Dilution %D were not within control limits.
M	Tuning (BFB or DFTPP) was noncompliant.	Not applicable.
T	Presumed contamination from trip blank.	Not applicable.
+	False positive – reported compound was not present. Not applicable.	
-	False negative – compound was present but not reported.	Not applicable.
F	Presumed contamination from FB, or ER.	Presumed contamination from FB or ER.
\$	Reported result or other information was incorrect.	Reported result or other information was incorrect.
?	TIC identity or reported retention time has been changed.	Not applicable.
D	The analysis with this flag should not be used because another more technically sound analysis is available.	The analysis with this flag should not be used because another more technically sound analysis is available.
P	Instrument performance for pesticides was poor.	Post Digestion Spike recovery was not within control limits.
DNQ	The compound was detected between the MDL and the RL and, by definition, is considered an estimated value.	The compound was detected between the MDL and the RL and, by definition, is considered an estimated value.

***#** Unusual problems found with the data that have been described in Section 2.#, "Data Validation Findings." The number following the asterisk (*) will indicate the subsection where a description of the problem can be found (eg. *1 would indicate a sample was not within temperature limits).

Unusual problems found with the data that have been described in Section 2.#, "Data Validation Findings." The number following the asterisk (*) will indicate the subsection where a description of the problem can be found (eg. *1 would indicate a sample was not within temperature limits).



DATA VALIDATION REPORT

NPDES
Monitoring

ANALYSIS: METALS

SAMPLE DELIVERY GROUPS: IOB2066, IOB2099

Prepared by

AMEC—Denver Operations
550 South Wadsworth Boulevard, Suite 500
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title: NPDES Monitoring
Contract Task Order #: 313150010
SDG#: IOB2066, IOB2099
Project Manager: B. McIlvaine
Matrix: Water
Analysis: Metals
QC Level: Level IV
No. of Samples: 2
No. of Reanalyses/Dilutions: 0
Reviewer: K. Okonczak-Lowry
Date of Review: March 30, 2005

The samples listed in Table 1 were validated based on the guidelines outlined in the *AMEC Data Validation Procedure for Levels III and IV ICP-MS Metals, (DVP-5-A, Rev.0)*, *AMEC Data Validation Procedure for Levels III and IV ICP Metals (DVP-5, Rev. 0)*, *SW-846 Method 6020B for Inductively Coupled Plasma – Mass Spectrometry*, *SW-846 Method 7471A for Mercury (Manual Cold-Vapor Technique)*, and validation guidelines outlined in the *USEPA CLP National Functional Guidelines for Inorganic Data Review (2/94)*. Any deviations from these procedures and guidelines are documented herein. Qualifiers were applied in cases where the data did not meet the required QC criteria or where special consideration by the data user is required. Data qualifiers were placed on Form Is with the associated qualification codes. Analytes that were rejected for any reason are denoted on the Form I as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

Table 1. Sample identification

Client ID	EPA ID	Laboratory ID	Matrix	COC Method
Outfall 011	Outfall 011	IOB2066-01	water	ILM04
Outfall 018	Outfall 018	IOB2099-01	water	ILM04

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

Following are findings associated with sample management:

2.1.1 Sample Preservation, Handling, and Transport

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

2.1.2 Chain of Custody

The COCs were signed and dated by field and laboratory personnel. The COCs listed duplicate samples for both site samples; however, duplicate analyses were not required. No sample qualifications were required.

2.1.3 Holding Times

The dates of collection recorded on the COCs 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

A precalibration routine must be completed prior to calibrating the instrument, which consists of analyzing a tuning solution to verify resolution, mass calibration, and thermal stability. The solution must be analyzed a minimum of five times and must contain isotopes representing all mass regions of interest. The laboratory performed the required tune solution analyses. The %RSDs for the tune were all within the 5% control limit. The mass calibrations were within 0.1 amu of the true mass and the instrument resolutions were less than 0.75 amu at 5 percent peak height for all analytes in the tune solution. No site sample qualifications were required.

2.3 CALIBRATION

The ICV and CCV results showed acceptable recoveries, 90-110% for the ICP/MS and 80-120% for mercury. The applicable reporting limit check standards were recovered within the AMEC control limits of 70-130%. No qualifications were required.

2.4 BLANKS

The method blanks and bracketing ICBs/CCBs associated with the samples in these SDGs were nondetected at the laboratory MDL, with the exception of the ICP/MS CCBs for lead bracketing the Outfall 011 sample analysis. The lead CCBs were reported at -0.142 and -0.141 $\mu\text{g/L}$; therefore, the lead detected in sample Outfall 011 was qualified as estimated, "J." No further sample qualifications were required.

2.5 ICP INTERFERENCE CHECK SAMPLE (ICS A/AB)

ICSA and ICSAB analyses were included in the raw data for the ICP-MS analyses. Results were not provided for spiked interferents sulfur, phosphorus, carbon, and chloride, and lead was not spiked into the ICSAB solution. The results for potassium were above the calibration range of the instrument in all the ICSA and ICSAB analyses. Copper was detected at above the reporting limit in both ICSA analyses. The validator reviewed the raw data for the site sample ICP/MS analyses for the level of reported interferents, Al, Ca, Fe, and Mg, and determined that the level of reported interferents were not high enough to cause matrix affects. No assessment could be made with respect to possible interference from sulfur, phosphorus, carbon, and chloride. No sample qualifications were required.

2.6 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

The ICP/MS LCS sample was identified as 5C03085-BS1, and the mercury LCS samples were identified as 5C02118-BS1 and 5C02089-BS1. The LCS results on the summary forms and in the raw data were within the laboratory-established ICP/MS and mercury control limits of 85-115%. No qualifications were required.

2.7 LABORATORY DUPLICATES

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

2.8 MATRIX SPIKE

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

2.9 FURNACE ATOMIC ABSORPTION QC

Furnace atomic absorption was not utilized for the analysis of these samples; therefore, furnace atomic absorption QC is not applicable.

2.10 ICP/MS SERIAL DILUTION

No serial dilution analysis was performed in association with the samples in these SDGs; therefore, no assessment was made with respect to this criterion.

2.11 INTERNAL STANDARDS PERFORMANCE

The ICP-MS internal standard recoveries for the site samples and associated QC sample analyses were within the 60-125% control limits and no qualifications were required.

2.12 SAMPLE RESULT VERIFICATION

A Level IV review was performed for the samples in these data packages. Calculations were verified, and the sample results reported on the Form Is were verified against the raw data. No transcription errors or calculation errors were noted. Analytes detected below the reporting limit were qualified as estimated, "J." No qualifications were required.

2.13 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.

2.13.1 Field Blanks and Equipment Rinsates

The samples in these SDGs had no associated field QC samples. No qualifications were required.

2.13.2 Field Duplicates

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



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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: IOB2099

Sampled: 02/26/05
 Received: 02/26/05

DRAFT: METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data	Qualifiers
Sample ID: IOB2099-01 (DRAFT: Outfall 018 - Water) - cont.										
Reporting Units: ug/l										
Copper	EPA 200.8	5C03085	0.49	2.0	4.7	1	03/03/05	03/03/05		
Lead	EPA 200.8	5C03085	0.13	1.0	0.57	1	03/03/05	03/03/05	J J	DNQ
Mercury	EPA 245.1	5C02118	0.063	0.20	ND	1	03/02/05	03/03/05	u	

AMEC VALIDATED

Level IV

DRAFT REPORT
 DRAFT REPORT
 DATA SUBJECT TO CHANGE

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

AMEC Earth & Environmental
 550 South Wadsworth Boulevard
 Suite 500
 Lakewood, CO 80226

Package ID T711PP18
 Task Order 313150010
 SDG No. IOB2066, IOB2099

No. of Analyses 2

Laboratory Del Mar Analytical
 Reviewer L. Calvin
 Analysis/Method Pesticides by Method 608

Date: April 1, 2005
 Reviewer's Signature


ACTION ITEMS ^a	
1. Case Narrative Deficiencies	_____
2. Out of Scope Analyses	_____
3. Analyses Not Conducted	_____
4. Missing Hardcopy Deliverables	_____
5. Incorrect Hardcopy Deliverables	_____
6. Deviations from Analysis Protocol, e.g., Holding Times GC/MS Tune/Inst. Performance Calibration Method blanks Surrogates Matrix Spike/Dup LCS Field QC Internal Standard Performance Compound Identification Quantitation System Performance	_____
COMMENTS^b	Acceptable as reviewed.
^a 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

ANALYSIS: PESTICIDES

SAMPLE DELIVERY GROUPS: IOB2066, IOB2099

Prepared by

AMEC Denver Operations
550 South Wadsworth Boulevard, Suite 500
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title: NPDES Monitoring
Contract Task Order #: 313150010
SDG#: IOB2066, IOB2099
Project Manager: B. McIlvaine
Matrix: Water
Analysis: PCBs
QC Level: Level IV
No. of Samples: 2
No. of Reanalyses/Dilutions: 0
Reviewer: L. Calvin
Date of Review: April 1, 2005

The samples listed in Table 1 were validated based on the general guidelines outlined in the *AMEC Data Validation Procedures (DVP-4, Rev.2)*, *EPA Method 608*, 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 summary form as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

Table 1. Sample identification

Client ID	EPA ID	Laboratory ID	Matrix	Method
Outfall 011	Outfall 011	IOB2066-01	water	608
Outfall 018	Outfall 018	IOB2099-01	water	608

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

The following are findings associated with sample management:

2.1.1 Sample Preservation, Handling, and Transport

The samples in these SDGs were received at the laboratory within the temperature limits of $4^{\circ}\text{C} \pm 2^{\circ}\text{C}$. The analysis did not require preservation, and no preservation was noted in the field. The COCs noted that the samples were received intact. No qualifications were required.

2.1.2 Chain of Custody

The COCs were signed and dated by both field and laboratory personnel. The COCs accounted for the analysis presented in this SDG. As the samples were couriered directly to the laboratory, custody seals were not required. No qualifications were required.

2.1.3 Holding Times

The water samples were extracted within seven days of sample collection and analyzed within 40 days of extraction. No qualifications were required.

2.2 PESTICIDES INSTRUMENT PERFORMANCE

No resolution check standards or breakdown check standards are required by Method 608 for pesticides, and according to the raw data provided, a resolution check standard was not analyzed by the laboratory. The laboratory did analyze a breakdown check standard; however, as alpha-BHC was the only compound of interest, the breakdown check standard was not necessary. A review of the raw data indicated that the analytical run time was of sufficient length to provide adequate standard separation. The two analytical columns used in the analyses were within the guidelines specified in the methods.

According to the laboratory SOP and the initial calibration raw data, the retention time windows are ± 0.10 minutes for both surrogates and alpha-BHC calibration standards. A review of the raw data indicated that the laboratory retention time criteria were met for the surrogates and pesticide calibration standards. No qualifications were required.

2.3 CALIBRATION

2.3.1 Analytical Sequence

Based on the data provided, the analytical sequences were in accordance with the requirements of Method 608. No qualifications were required.

2.3.2 Initial Calibration

There was one initial calibration dated 03/02/05 associated with these SDGs, which consisted of six-point calibrations for alpha-BHC on two analytical columns. The laboratory provided an overlay of the sample chromatogram and the pesticide standard for identification purposes. The %RSD was within the EPA Method 608 QC limit of $\leq 10\%$ on channel B, and the r^2 was ≥ 0.995 on channel A. An ICV was analyzed immediately following the initial calibration. The %D for alpha-BHC was within the QC limit of $\leq 15\%$ on both analytical columns. The %RSD, r^2 , and ICV %D for alpha-BHC were recalculated from the raw data and no transcription or calculation errors were noted. No qualifications were required.

2.3.3 Continuing Calibration

The sample analyses of these SDGs were bracketed by the daily ICV and two closing continuing calibration standards. The applicable %Ds were within the Method QC limit of $\pm 15\%$ for both calibrations. A representative number of %Ds were recalculated from the raw data and no transcription or calculation errors were noted. No qualifications were required.

2.4 BLANKS

2.4.1 Instrument Blanks

An instrument blank was analyzed at the beginning of the analytical sequence. Cross-contamination was not evident in the sample. No qualifications were necessary.

2.4.2 Method Blanks

One water method blank (5C01050-BLK1) was extracted and analyzed with these SDGs. Target compound alpha-BHC was not detected in the method blank. Review of the chromatograms showed no false negative. No qualifications were required.

2.5 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

One blank spike/blank spike duplicate pair (5C01050-BS1/5C01050-BSD1) was extracted and analyzed with these SDGs. The recoveries for alpha-BHC were within the laboratory-established QC limits of 45-115% and the RPD was $\leq 30\%$. The recoveries were checked from the raw data, and no calculation or transcription errors were noted. No qualifications were required.

2.6 SURROGATE RECOVERY

The samples and all QC samples were fortified with the surrogate compounds decachlorobiphenyl and tetrachloro-m-xylene. Surrogate recoveries for both samples were within the laboratory-established QC limits. The recoveries were calculated from the raw data and no transcription or calculation errors were noted. No qualifications were required.

2.7 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

There were no MS/MSD analyses associated with these SDGs. Accuracy and precision were assessed based on the blank spike/blank spike duplicate results. No qualifications were required.

2.8 SAMPLE CLEANUP PERFORMANCE

According to the laboratory extraction benchsheet, no cleanups were performed on the water samples. No qualifications were required.

2.9 FIELD QC SAMPLES

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

2.9.1 Field Blanks and Equipment Rinsates

There were no field QC samples associated with the samples in these SDGs. No qualifications were required.

2.9.2 Field Duplicates

There were no field duplicate samples associated with the samples in these SDGs.

2.10 COMPOUND IDENTIFICATION

The laboratory analyzed for alpha-BHC by EPA Method 608. Compound identification is verified at a Level IV validation. Review of chromatograms and retention times indicated no problems with compound identification for the samples in these SDGs. No qualifications were required.

2.11 COMPOUND QUANTIFICATION AND REPORTED DETECTION LIMITS

Compound quantification was verified for these SDGs; however, as there were no reported detects, quantitation was verified by recalculating blank spike and surrogate recoveries. Reporting limits were supported by the low level standard of the initial calibration and the laboratory MDL study. The reporting limit for alpha-BHC was not adjusted for sample amount on the result summary; however, the dilution factor listed on the summary reflected the sample volume extracted. Results were reported in ug/L (ppb). No qualifications were required.



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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: IOB2099

Sampled: 02/26/05

Received: 02/26/05

DRAFT: ORGANOCHLORINE PESTICIDES (EPA 608)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOB2099-01 (DRAFT: Outfall 018 - Water) - cont.									
Reporting Units: ug/l									
alpha-BHC	EPA 608	5C01050	0.0010	0.010	ND	0.962	03/01/05	03/03/05	
Surrogate: Decachlorobiphenyl (45-120%)					57 %				
Surrogate: Tetrachloro-m-xylene (35-120%)					52 %				

Rev
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Code
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AMEC VALIDATED

LEVEL IV

DRAFT REPORT
 DRAFT REPORT
 DATA SUBJECT TO CHANGE

CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

AMEC Earth & Environmental
 550 South Wadsworth Boulevard
 Suite 500
 Lakewood, CO 80226

Package ID T711SV33
 Task Order 313150010
 SDG No. IOB2066, IOB2099

No. of Analyses 2

Laboratory Del Mar Analytical
 Reviewer L. Calvin
 Analysis/Method Semivolatiles by Method 625

Date: <u>April 1, 2005</u>
Reviewer's Signature <i>L. Calvin</i>

ACTION ITEMS^a	
1. Case Narrative Deficiencies	_____
2. Out of Scope Analyses	_____
3. Analyses Not Conducted	_____
4. Missing Hardcopy Deliverables	_____
5. Incorrect Hardcopy Deliverables	_____
6. Deviations from Analysis Protocol, e.g., Holding Times GC/MS Tune/Inst. Performance Calibration Method blanks Surrogates Matrix Spike/Dup LCS Field QC Internal Standard Performance Compound Identification Quantitation System Performance	_____
COMMENTS^b	Acceptable as reviewed.
<p>^a 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.</p>	



DATA VALIDATION REPORT

NPDES Monitoring

ANALYSIS: SEMIVOLATILES

SAMPLE DELIVERY GROUP: IOB2066, IOB2099

Prepared by

AMEC Denver Operations
550 South Wadsworth Boulevard, Suite 500
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title: NPDES Monitoring
Contract Task Order #: 313150010
SDG#: IOB2066, IOB2099
Project Manager: B. McIlvaine
Matrix: Water
Analysis: Semivolatiles
QC Level: Level IV
No. of Samples: 2
No. of Reanalyses/Dilutions: 0
Reviewer: L. Calvin
Date of Review: April 1, 2005

The samples listed in Table 1 were validated based on the guidelines outlined in the *AMEC Data Validation Procedure for Levels C and D Semivolatile Organics (DVP-3, Rev. 2)*, *EPA Method 625*, and the *National Functional Guidelines For Organic Data Review (2/94)*. Any deviations from these procedures are documented herein. Qualifiers were applied in cases where the data did not meet the required QC criteria or where special consideration by the data user is required. Data qualifiers were placed on Form Is with the associated qualification codes. Analytes that were rejected for any reason are denoted on the Form I as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

Table 1. Sample identification

Client ID	EPA ID	Lab No.	Matrix	Method
Outfall 011	Outfall 011	IOB2066-01	water	625
Outfall 018	Outfall 018	IOB2099-01	water	625

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

The samples in these SDGs were received at the laboratory within the temperature limits of $4^{\circ}\text{C} \pm 2^{\circ}\text{C}$. The analysis did not require preservation, and no preservation was noted in the field. The COCs noted that the samples were received intact. No qualifications were required.

2.1.2 Chain of Custody

The COCs were signed and dated by both field and laboratory personnel. The COCs accounted for the analyses presented in these SDGs. As the samples were couriered directly to the laboratory, custody seals were not required. No qualifications were required.

2.1.3 Holding Times

The samples were extracted within seven days of collection and analyzed within 40 days of extraction. No qualifications were required.

2.2 GC/MS TUNING

The DFTPP tunes met the ion abundance criteria specified in Method 625. No qualifications were required.

2.3 CALIBRATION

The initial calibration associated with these SDGs was dated 02/24/05. The average RRFs for were ≥ 0.05 and the %RSDs were $\leq 35\%$ for all applicable target compounds. The continuing calibration associated with the sample analyses was analyzed 03/02/05. The RRFs for all target compounds were ≥ 0.05 , and the %Ds were $\leq 20\%$. A representative number of average RRFs, %RSDs, and r^2 s for the initial calibration and RRFs and %Ds for the continuing calibration were checked from the raw data, and no calculation or transcription errors were noted. No qualifications were required.

2.4 BLANKS

One method blank (5B28001-BLK1) were extracted and analyzed with these SDGs. There were no detects above the MDLs for any target compounds. Review of the raw data indicated no false negatives. No qualifications were required.

2.5 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

One blank spike/ blank spike duplicate pair (5B28001-BS1/BSD1) was extracted and analyzed with these SDGs. Recoveries and RPDs for all target compounds were within the laboratory-established QC limits. No qualifications were required.

2.6 SURROGATE RECOVERY

The surrogate recoveries for both samples were within the laboratory QC limits. A representative number of recoveries were calculated from the raw data, and no transcription or calculation errors were noted. No qualifications were required.

2.7 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

No MS/MSD analyses were associated with these SDGs. Evaluation of method accuracy and precision was based on blank spike/blank spike duplicate 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 Field Blanks and Equipment Rinsates

There were no field QC samples associated with these SDGs. No qualifications were required.

2.8.2 Field Duplicates

There were no field duplicate samples associated with these SDGs.

2.9 INTERNAL STANDARDS PERFORMANCE

The internal standard area counts and retention times were within the control limits established by the continuing calibration standards: -50%/+100% for internal standard areas and ± 30 seconds for retention times. A representative number of recoveries 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 semivolatile target compounds by EPA Method 625. Review of the sample chromatogram, 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 level of the initial calibration and the method detection limit study. The reporting limits were not adjusted for sample amount; however, the dilution factors on the sample result summaries reflected the sample amount extracted. Results were reported in $\mu\text{g/L}$ (ppb). No qualifications were required.

2.12 TENTATIVELY IDENTIFIED COMPOUNDS

TICs were not reported by the laboratory for these SDGs. No qualifications were required.

2.13 SYSTEM PERFORMANCE

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



Del Mar Analytical

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

Project ID: Routine Outfall 018

Report Number: IOB2099

Sampled: 02/26/05

Received: 02/26/05

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

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers	Per Qual	Qual Code
Sample ID: IOB2099-01 (DRAFT: Outfall 018 - Water)											
Reporting Units: ug/l											
Bis(2-ethylhexyl)phthalate	EPA 625	5B28001	1.1	5.0	ND	0.962	02/28/05	03/02/05		u ↓	
2,4-Dinitrotoluene	EPA 625	5B28001	0.23	9.0	ND	0.962	02/28/05	03/02/05			
N-Nitrosodimethylamine	EPA 625	5B28001	0.22	8.0	ND	0.962	02/28/05	03/02/05			
Pentachlorophenol	EPA 625	5B28001	0.78	8.0	ND	0.962	02/28/05	03/02/05			
2,4,6-Trichlorophenol	EPA 625	5B28001	0.10	6.0	ND	0.962	02/28/05	03/02/05			
Surrogate: 2-Fluorophenol (30-120%)					57 %						
Surrogate: Phenol-d6 (35-120%)					44 %						
Surrogate: 2,4,6-Tribromophenol (45-120%)					89 %						
Surrogate: Nitrobenzene-d5 (45-120%)					66 %						
Surrogate: 2-Fluorobiphenyl (45-120%)					74 %						
Surrogate: Terphenyl-d14 (45-120%)					85 %						

AMEC VALIDATED

LEVEL II

DRAFT REPORT
 DRAFT REPORT
 DATA SUBJECT TO CHANGE

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

AMEC Earth & Environmental
 550 South Wadsworth Boulevard
 Suite 500
 Lakewood, CO 80226


Package ID T711VO62
 Task Order 313150010
 SDG No. IOB2066, IOB2099

No. of Analyses 2

Laboratory Del Mar Analytical

Reviewer L. Calvin

Analysis/Method Volatiles by Method 624

Date: April 1, 2005
 Reviewer's Signature 

ACTION ITEMS^a	
1. Case Narrative Deficiencies	<hr/>
	<hr/>
2. Out of Scope Analyses	<hr/>
	<hr/>
	<hr/>
3. Analyses Not Conducted	<hr/>
	<hr/>
4. Missing Hardcopy Deliverables	<hr/>
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5. Incorrect Hardcopy Deliverables	<hr/>
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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	<hr/>
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COMMENTS^b	Acceptable as reviewed.
<hr/>	
<hr/>	
^a 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

ANALYSIS: VOLATILES

SAMPLE DELIVERY GROUP: IOB2066, IOB2099

Prepared by

AMEC Denver Operations
550 South Wadsworth Boulevard, Suite 500
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title: NPDES Monitoring
Contract Task Order #: 313150010
SDG#: IOB2066, IOB2099
Project Manager: B. McIlvaine
Matrix: Water
Analysis: Volatiles
QC Level: Level IV
No. of Samples: 4
No. of Reanalyses/Dilutions: 0
Reviewer: L. Calvin
Date of Review: April 1, 2005

The samples listed in Table 1 were validated based on the guidelines outlined in the *AMEC Data Validation Procedure for Levels C and D Volatile Organics (DVP-2, Rev. 2)*, *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 summary forms as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

Table 1. Sample identification

Client ID	EPA ID	Lab No.	Matrix	Method
Outfall 011	Outfall 011	IOB2066-01	water	624
Trip Blank	Trip Blank	IOB2066-02	water	624
Outfall 018	Outfall 018	IOB2099-01	water	624
Trip Blank	Trip Blank	IOB2099-02	water	624

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

The following are findings associated with sample management:

2.1.1 Sample Preservation, Handling, and Transport

The samples in these SDGs were received at the laboratory within the temperature limits of $4^{\circ}\text{C} \pm 2^{\circ}\text{C}$. The samples were properly preserved. The COCs noted that the samples were received intact; however, information regarding absence of headspace was not provided. No qualifications were required.

2.1.2 Chain of Custody

The COCs were signed and dated by both field and laboratory personnel. The COCs accounted for the analyses presented in these SDGs. As the samples were couriered directly to the laboratory, custody seals were not required. No qualifications were required.

2.1.3 Holding Times

The samples were analyzed within 14 days of collection. No qualifications were required.

2.2 GC/MS TUNING

The ion abundance windows shown on the quantitation report were consistent with those specified in the EPA Method 624, and all ion abundances were within the established windows. The samples and associated QC were analyzed within 12 hours of the BFB injection times. The Form Vs were verified from the raw data and no discrepancies between the summary forms and the raw data were noted. No qualifications were required.

2.3 CALIBRATION

One initial calibration dated 01/11/05, was associated with these SDGs. The average RRFs were ≥ 0.05 and the %RSDs were $\leq 35\%$ for the target compounds listed on the sample result summaries. One continuing calibration analyzed 02/28/05, was associated with the sample analyses. The %Ds were $\leq 20\%$ and the RRFs for all target compounds were ≥ 0.05 . A representative number of %RSDs and average RRFs from the initial calibration, and %Ds and RRFs from the continuing calibration were recalculated from the raw data, and no calculation or transcription errors were found. No qualifications were required.

2.4 BLANKS

One water method blank (5B28023-BLK1) was associated with these SDGs. There were no detects above the MDLs for the target compounds listed on the sample result summaries. The method blank raw data showed no evidence of false negatives. No qualifications were required.

2.5 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

One water blank spike (5B28023-BS1) was associated with these SDGs. All recoveries were within the laboratory-established QC limits. A representative number of recoveries were recalculated from the raw data and no calculation or transcription errors were found. No qualifications were required.

2.6 SURROGATE RECOVERY

The surrogates were recovered within the QC limits of 80-120% in the samples and associated QC. A representative number of surrogate recoveries were recalculated from the raw data and no calculation or transcription errors were found. No qualifications were required.

2.7 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

MS/MSD analyses were not performed on the samples in these SDGs. 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

Samples Trip Blank (IOB2066) and Trip Blank (IOB2099) were the trip blanks associated with the site samples in these SDGs. There were no target compounds detected above the MDLs in the either of the trip blanks. No qualifications were required.

2.8.2 Field Blanks and Equipment Rinsates

There were no other field QC samples associated with these SDGs. No qualifications were required.

2.8.3 Field Duplicates

There were no field duplicate samples associated with these SDGs.

2.9 INTERNAL STANDARDS PERFORMANCE

Internal standard area counts and retention times for the samples in these SDGs were within the control limits established by the continuing calibration standards: +100%/-50% for internal standard areas and ± 0.50 minutes for retention times. A representative number of internal standard areas and retention times were verified from the raw data, and no calculation or transcription errors were noted. No qualifications were required.

2.10 COMPOUND IDENTIFICATION

Target compound identification was verified at a Level IV data validation. The laboratory analyzed for volatile target compounds by EPA Method 624. Chromatograms, retention times, and spectra for the samples and QC were examined and no target compound identification problems were noted. No qualifications were required.

2.11 COMPOUND QUANTIFICATION AND REPORTED DETECTION LIMITS

Compound quantification is verified at a Level IV data validation. The reporting limits were supported by the lowest concentrations of the initial calibration standards and by the MDL study. Compound quantitation was verified by recalculating any sample detects and a representative number of blank spike and surrogate recoveries from the raw data. Results were reported in ug/L (ppm). No calculation or transcription errors were noted. Any detect between the MDL and the reporting limit was qualified as estimated, "J," by the laboratory. No further qualifications were required.

2.12 TENTATIVELY IDENTIFIED COMPOUNDS

The laboratory did not provide TICs for these SDGs. No qualifications were required.

2.13 SYSTEM PERFORMANCE

A review of the chromatograms and other raw data showed no identifiable problems with system performance. No qualifications were required.



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 5830 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) 798-2620 FAX (702) 798-3621

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

Project ID: Routine Outfall 018

Report Number: IOB2099

Sampled: 02/26/05
 Received: 02/26/05

PURGEABLES BY GC/MS (EPA 624)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOB2099-01 (Outfall 018 - Water)									
Reporting Units: ug/l									
Benzene	EPA 624	5B28023	0.28	2.0	ND	1	02/28/05	02/28/05	u
Carbon tetrachloride	EPA 624	5B28023	0.28	5.0	ND	1	02/28/05	02/28/05	u
Chloroform	EPA 624	5B28023	0.33	2.0	ND	1	02/28/05	02/28/05	u
1,1-Dichloroethane	EPA 624	5B28023	0.27	2.0	ND	1	02/28/05	02/28/05	u
1,2-Dichloroethane	EPA 624	5B28023	0.28	2.0	ND	1	02/28/05	02/28/05	u
1,1-Dichloroethene	EPA 624	5B28023	0.32	3.0	ND	1	02/28/05	02/28/05	u
Ethylbenzene	EPA 624	5B28023	0.25	2.0	ND	1	02/28/05	02/28/05	u
Tetrachloroethene	EPA 624	5B28023	0.32	2.0	ND	1	02/28/05	02/28/05	u
Toluene	EPA 624	5B28023	0.36	2.0	ND	1	02/28/05	02/28/05	u
1,1,1-Trichloroethane	EPA 624	5B28023	0.30	2.0	ND	1	02/28/05	02/28/05	u
1,1,2-Trichloroethane	EPA 624	5B28023	0.30	2.0	ND	1	02/28/05	02/28/05	u
Trichloroethene	EPA 624	5B28023	0.26	5.0	0.70	1	02/28/05	02/28/05	u
Trichlorofluoromethane	EPA 624	5B28023	0.34	5.0	ND	1	02/28/05	02/28/05	u
Vinyl chloride	EPA 624	5B28023	0.26	5.0	ND	1	02/28/05	02/28/05	u
Xylenes, Total	EPA 624	5B28023	0.52	4.0	ND	1	02/28/05	02/28/05	u
Surrogate: Dibromofluoromethane (80-120%)					109 %				
Surrogate: Toluene-d8 (80-120%)					94 %				
Surrogate: 4-Bromofluorobenzene (80-120%)					97 %				
Sample ID: IOB2099-02 (Trip Blanks - Water)									
Reporting Units: ug/l									
Benzene	EPA 624	5B28023	0.28	2.0	ND	1	02/28/05	02/28/05	u
Carbon tetrachloride	EPA 624	5B28023	0.28	5.0	ND	1	02/28/05	02/28/05	u
Chloroform	EPA 624	5B28023	0.33	2.0	ND	1	02/28/05	02/28/05	u
1,1-Dichloroethane	EPA 624	5B28023	0.27	2.0	ND	1	02/28/05	02/28/05	u
1,2-Dichloroethane	EPA 624	5B28023	0.28	2.0	ND	1	02/28/05	02/28/05	u
1,1-Dichloroethene	EPA 624	5B28023	0.32	3.0	ND	1	02/28/05	02/28/05	u
Ethylbenzene	EPA 624	5B28023	0.25	2.0	ND	1	02/28/05	02/28/05	u
Tetrachloroethene	EPA 624	5B28023	0.32	2.0	ND	1	02/28/05	02/28/05	u
Toluene	EPA 624	5B28023	0.36	2.0	ND	1	02/28/05	02/28/05	u
1,1,1-Trichloroethane	EPA 624	5B28023	0.30	2.0	ND	1	02/28/05	02/28/05	u
1,1,2-Trichloroethane	EPA 624	5B28023	0.30	2.0	ND	1	02/28/05	02/28/05	u
Trichloroethene	EPA 624	5B28023	0.26	5.0	ND	1	02/28/05	02/28/05	u
Trichlorofluoromethane	EPA 624	5B28023	0.34	5.0	ND	1	02/28/05	02/28/05	u
Vinyl chloride	EPA 624	5B28023	0.26	5.0	ND	1	02/28/05	02/28/05	u
Xylenes, Total	EPA 624	5B28023	0.52	4.0	ND	1	02/28/05	02/28/05	u
Surrogate: Dibromofluoromethane (80-120%)					102 %				
Surrogate: Toluene-d8 (80-120%)					94 %				
Surrogate: 4-Bromofluorobenzene (80-120%)					96 %				

Handwritten notes in the Data Qualifiers column:
 - "very qual good" (written vertically)
 - "qual good" (written vertically)
 - "DNG" (written vertically)
 - "u" (written vertically)
 - "u" (written vertically)
 - "u" (written vertically)

AMEC VALIDATED
LEVEL IV

Del Mar Analytical, Irvine
 Michele Harper
 Project Manager

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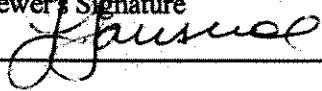
CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

AMEC Earth & Environmental
 550 South Wadsworth Boulevard
 Suite 500
 Lakewood, CO 80226

Package ID T711WC88
 Task Order 313150010
 SDG No. IOB2066/2099

No. of Analyses 2

Laboratory Del Mar Analytical
 Reviewer L. Jarusewic
 Analysis/Method General Minerals

Date: 03/25/05
 Reviewer's Signature


ACTION ITEMS^a

1. Case Narrative Deficiencies	
2. Out of Scope Analyses	
3. Analyses Not Conducted	
4. Missing Hardcopy Deliverables	
5. Incorrect Hardcopy Deliverables	
6. Deviations from Analysis Protocol, e.g.,	<u>Qualifications applied for detects below the reporting limit.</u>
Holding Times	
GC/MS Tune/Inst. Performance	
Calibrations	
Blanks	
Surrogates	
Matrix Spike/Dup LCS	
Field QC	
Internal Standard Performance	
Compound Identification and Quantitation	
System Performance	

COMMENTS^b

^a 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

ANALYSIS: GENERAL MINERALS

SAMPLE DELIVERY GROUPS: IOB2066 & IOB2099

Prepared by

AMEC—Denver Operations
550 South Wadsworth Boulevard, Suite 500
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title: NPDES Monitoring
Contract Task Order #: 313150010
Sample Delivery Group #: IOB2066, IOB2099
Project Manager: B. McIlvaine
Matrix: Water
Analysis: General Minerals
QC Level: Level IV
No. of Samples: 2
Reviewer: L. Jarusewic
Date of Review: March 25, 2005

The sample listed in Table 1 was validated based on the guidelines outlined in the AMEC *Data Validation Procedures SOP DVP-6, Rev. 2, USEPA Methods for Chemical Analysis of Water and Wastes Method 300.0, 350.2, 405.1, 335.2, 413.1, 425.1, 120.1, 160.2, 160.5, 180.1, and 160.1. Standard Methods for the Examination of Water and Wastewater Method SM2540C*, 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 I as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

Table 1. Sample identification

Client ID	EPA ID	Laboratory ID	Matrix	COC Method
Outfall 011	Outfall 011	IOB2066-01	Water	General Minerals
Outfall 018	Outfall 018	IOB2099-01	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 samples in these SDGs were received at the laboratory within the temperature limits of $4^{\circ}\text{C} \pm 2^{\circ}\text{C}$. No preservation problems were noted by the laboratory. No qualifications were required.

2.1.2 Chain of Custody

The COCs were signed and dated by field and laboratory personnel. The COCs accounted for all analyses present in these SDGs. No sample qualifications were required.

2.1.3 Holding Times

The holding times were assessed by comparing the dates of collection with the dates of analyses. The 28-day analytical holding time for ammonia, chloride, sulfate, conductivity, and oil and grease, the 14-day analytical holding time for cyanide, the seven-day holding time for total suspended solids and total dissolved solids, and the 48-hour holding time for surfactants, turbidity, nitrate/nitrite, biological oxygen demand, and total settleable solids were met. No qualifications were required.

2.2 CALIBRATION

For the applicable analyses, the initial calibration correlation coefficients were ≥ 0.995 . Initial and continuing calibration information was acceptable with %Rs within the control limits of 90-110% for all analytes. For ammonia, no information regarding the standardization of the titrant was provided; however, as the LCS recovery was within the CCV control limits, no qualifications were required. For BOD, no information regarding the calibration of the oxygen meter was provided; however, as the LCS recovery was within the CCV control limits, no qualifications were required. Calibration is not applicable to total settleable solids, total dissolved solids, and total suspended solids. The total cyanide reporting limit check standard was recovered within the control limits of 70-130%. No qualifications were required.

2.3 BLANKS

Turbidity was detected in method blank 5B26046-BLK1 associated with samples Outfall 011 and Outfall 018; however, the method blank result was insufficient to qualify samples Outfall 011 and Outfall 018. The remaining method blank and CCB results reported on the summary forms and in the raw data for blank analyses associated with the samples were nondetects at the reporting limit. No qualifications were required.

2.4 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

The laboratory control sample and laboratory control sample duplicate (BOD and oil and grease only) recoveries and RPDs were within the laboratory-established control limits. The LCS is not applicable to turbidity, conductivity, or settleable solids. No qualifications were required.

2.5 SURROGATES RECOVERY

Surrogate recovery is not applicable to the analyses presented in these SDGs.

2.6 LABORATORY DUPLICATES

Laboratory duplicate analyses were performed on sample Outfall 011 for total dissolved solids in association with the samples in these SDGs. The RPD was within the control limits of $\leq 10\%$ and no qualifications were required.

2.7 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

No MS/MSD analyses were performed in association with the samples in these SDGs; therefore, no assessment was made with respect to this criterion.

2.8 FURNACE ATOMIC ABSORPTION QC

Furnace atomic absorption was not utilized for the analyses of these samples; therefore, furnace atomic absorption QC is not applicable.

2.9 ICP SERIAL DILUTION

ICP serial dilution is not applicable to the analyses presented in this data validation report.

2.10 SAMPLE RESULT VERIFICATION

A Level IV review was performed for the samples in these data packages. Calculations were verified, and the sample results reported on the Form Is were verified against the raw data. No transcription errors or calculation errors were noted. Surfactant and cyanide in sample Outfall 011 and BOD, oil and grease, and cyanide in sample Outfall 018 detected below the reporting limit were qualified as estimated, "J." No further qualifications were required.

2.11 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. The following are findings associated with field QC samples:

2.11.1 Field Blanks and Equipment Rinsates

The samples in these SDGs had no associated field QC samples. No qualifications were required.

2.11.2 Field Duplicates

There were no field duplicate pairs associated with these SDGs.



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 2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

MWH-Pasadena/Boeing Project ID: Routine Outfall 018
 300 North Lake Avenue, Suite 1200
 Pasadena, CA 91101 Report Number: IOB2099
 Attention: Bronwyn Kelly
 Sampled: 02/26/05
 Received: 02/26/05

DRAFT: INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOB2099-01 (DRAFT: Outfall 018 - Water) - cont. Reporting Units: mg/l									
Ammonia-N (Distilled)	EPA 350.2	5C07070	0.30	0.50	2.5	1	03/07/05	03/07/05	
Biochemical Oxygen Demand	EPA 405.1	5B26045	0.59	2.0	0.94	1	02/26/05	03/03/05	J DNQ
Chloride	EPA 300.0	5B26021	0.26	0.50	11	1	02/26/05	02/26/05	
Total Cyanide	EPA 335.2	5B28115	0.0022	0.0050	0.0035	1	02/28/05	03/01/05	J DNQ
Nitrate/Nitrite-N	EPA 300.0	5B26021	0.075	0.26	0.47	1	02/26/05	02/26/05	
Oil & Grease	EPA 413.1	5C02094	0.94	5.0	1.1	1	03/02/05	03/02/05	J DNQ
Sulfate	EPA 300.0	5B26021	0.18	0.50	32	1	02/26/05	02/26/05	
Surfactants (MBAS)	EPA 425.1	5B28050	0.044	0.10	ND	1	02/28/05	02/28/05	U
Total Dissolved Solids	EPA 160.1	5C02106	10	10	190	1	03/02/05	03/02/05	
Total Suspended Solids	EPA 160.2	5C03074	10	10	ND	1	03/03/05	03/03/05	U
Sample ID: IOB2099-01 (DRAFT: Outfall 018 - Water) Reporting Units: ml/hr									
Total Settleable Solids	EPA 160.5	5B28051	0.10	0.10	ND	1	02/28/05	02/28/05	U
Sample ID: IOB2099-01 (DRAFT: Outfall 018 - Water) Reporting Units: NTU									
Turbidity	EPA 180.1	5B26046	0.040	1.0	8.4	1	02/26/05	02/26/05	
Sample ID: IOB2099-01 (DRAFT: Outfall 018 - Water) Reporting Units: ug/l									
Perchlorate	EPA 314.0	5C02057	0.80	4.0	ND	1	03/02/05	03/02/05	*
Sample ID: IOB2099-01 (DRAFT: Outfall 018 - Water) Reporting Units: umhos/cm									
Specific Conductance	EPA 120.1	5C02105	1.0	1.0	290	1	03/02/05	03/02/05	

AMEC VALIDATED

LEVEL 1

*Analysis Not Validated

DRAFT REPORT
 DRAFT REPORT
 DATA SUBJECT TO CHANGE

CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

AMEC Earth & Environmental
 550 South Wadsworth Boulevard
 Suite 500
 Lakewood, CO 80226

Package ID T711WC89
 Task Order 313150010
 SDG No. IOB2066/2099

No. of Analyses 2

Laboratory Del Mar Analytical

Date: 03/25/05

Reviewer L. Jarusewic

Reviewer's Signature


Analysis/Method Perchlorate

ACTION ITEMS^a

1. Case Narrative Deficiencies	
2. Out of Scope Analyses	
3. Analyses Not Conducted	
4. Missing Hardcopy Deliverables	
5. Incorrect Hardcopy Deliverables	
6. Deviations from Analysis Protocol, e.g.,	<u>Qualifications were applied for low ICCS recovery.</u>
Holding Times	
GC/MS Tune/Inst. Performance	
Calibrations	
Blanks	
Surrogates	
Matrix Spike/Dup LCS	
Field QC	
Internal Standard Performance	
Compound Identification and Quantitation	
System Performance	

COMMENTS^b

^a 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

ANALYSIS: PERCHLORATE

SAMPLE DELIVERY GROUPS: IOB2066 & IOB2099

Prepared by

AMEC—Denver Operations
550 South Wadsworth Boulevard, Suite 500
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title: NPDES Monitoring
Contract Task Order #: 313150010
Sample Delivery Group #: IOB2066, IOB2099
Project Manager: B. McIlvaine
Matrix: Water
Analysis: Perchlorate
QC Level: Level IV
No. of Samples: 2
Reviewer: L. Jarusewic
Date of Review: March 25, 2005

The sample listed in Table 1 was validated based on the guidelines outlined in the AMEC *Data Validation Procedures SOP DVP-6, Rev. 2, USEPA Methods for Chemical Analysis of Water and Wastes Method 314.0, and 120.1*, 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 I as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

Table 1. Sample identification

Client ID	EPA ID	Laboratory ID	Matrix	COC Method
Outfall 011	Outfall 011	IOB2066-01	Water	Perchlorate
Outfall 018	Outfall 018	IOB2099-01	Water	Perchlorate

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

Following are findings associated with sample management:

2.1.1 Sample Preservation, Handling, and Transport

The samples in these SDGs were received at the laboratory within the temperature limits of $4^{\circ}\text{C} \pm 2^{\circ}\text{C}$. No preservation problems were noted by the laboratory. No qualifications were required.

2.1.2 Chain of Custody

The COCs were signed and dated by field and laboratory personnel, and accounted for the samples and analysis presented in these SDGs. As the samples were couriered directly to the laboratory, custody seals were not required. No qualifications were required.

2.1.3 Holding Times

The holding time was assessed by comparing the dates of collection with the dates of analysis. The 28-day analytical holding time for perchlorate was met, and no qualifications were required.

2.2 CALIBRATION

The initial calibration correlation coefficients were ≥ 0.995 . The IPC-MA recoveries were within the control limits of 80-120%. The ICV, CCV and IPC recoveries were within the control limits of 90-110%. The ICCS associated with sample Outfall 018 was recovered below control limits; therefore, nondetected perchlorate in Outfall 018 was qualified as estimated, "UJ." No further qualifications were required.

2.3 BLANKS

The method blank and CCB results reported on the summary forms and in the raw data for blank analyses associated with the samples were nondetects at the reporting limit. No qualifications were required.

2.4 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

The laboratory control sample recoveries were within the method control limits of 85-115%. No qualifications were required.

2.5 SURROGATES RECOVERY

Surrogate recovery is not applicable to the analysis presented in these SDGs.

2.6 LABORATORY DUPLICATES

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

2.7 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

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

2.8 FURNACE ATOMIC ABSORPTION QC

Furnace atomic absorption was not utilized for the analysis of these samples; therefore, furnace atomic absorption QC is not applicable.

2.9 ICP SERIAL DILUTION

ICP serial dilution is not applicable to the analysis presented in this data validation report.

2.10 SAMPLE RESULT VERIFICATION

A Level IV review was performed for the samples in these data packages. Calculations were verified, and the sample results reported on the Form Is were verified against the raw data. No transcription errors or calculation errors were noted. No qualifications were required.

2.11 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. The following are findings associated with field QC samples:

2.11.1 Field Blanks and Equipment Rinsates

The samples in these SDGs had no associated field QC samples. No qualifications were required.

2.11.2 Field Duplicates

There were no field duplicate pairs associated with these SDGs.



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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: IOB2099

Sampled: 02/26/05
 Received: 02/26/05

DRAFT: INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOB2099-01 (DRAFT: Outfall 018 - Water) - cont.									
Reporting Units: mg/l									
Ammonia-N (Distilled)	EPA 350.2	5C07070	0.30	0.50	2.5	1	03/07/05	03/07/05	*
Biochemical Oxygen Demand	EPA 405.1	5B26045	0.59	2.0	0.94	1	02/26/05	03/03/05	
Chloride	EPA 300.0	5B26021	0.26	0.50	11	1	02/26/05	02/26/05	
Total Cyanide	EPA 335.2	5B28115	0.0022	0.0050	0.0035	1	02/28/05	03/01/05	
Nitrate/Nitrite-N	EPA 300.0	5B26021	0.075	0.26	0.47	1	02/26/05	02/26/05	
Oil & Grease	EPA 413.1	5C02094	0.94	5.0	1.1	1	03/02/05	03/02/05	
Sulfate	EPA 300.0	5B26021	0.18	0.50	32	1	02/26/05	02/26/05	
Surfactants (MBAS)	EPA 425.1	5B28050	0.044	0.10	ND	1	02/28/05	02/28/05	
Total Dissolved Solids	EPA 160.1	5C02106	10	10	190	1	03/02/05	03/02/05	
Total Suspended Solids	EPA 160.2	5C03074	10	10	ND	1	03/03/05	03/03/05	
Sample ID: IOB2099-01 (DRAFT: Outfall 018 - Water)									
Reporting Units: ml/hr									
Total Settleable Solids	EPA 160.5	5B28051	0.10	0.10	ND	1	02/28/05	02/28/05	
Sample ID: IOB2099-01 (DRAFT: Outfall 018 - Water)									
Reporting Units: NTU									
Turbidity	EPA 180.1	5B26046	0.040	1.0	8.4	1	02/26/05	02/26/05	
Sample ID: IOB2099-01 (DRAFT: Outfall 018 - Water)									
Reporting Units: ug/l									
Perchlorate	EPA 314.0	5C02057	0.80	4.0	ND	1	03/02/05	03/02/05	UJ R
Sample ID: IOB2099-01 (DRAFT: Outfall 018 - Water)									
Reporting Units: umhos/cm									
Specific Conductance	EPA 120.1	5C02105	1.0	1.0	290	1	03/02/05	03/02/05	*

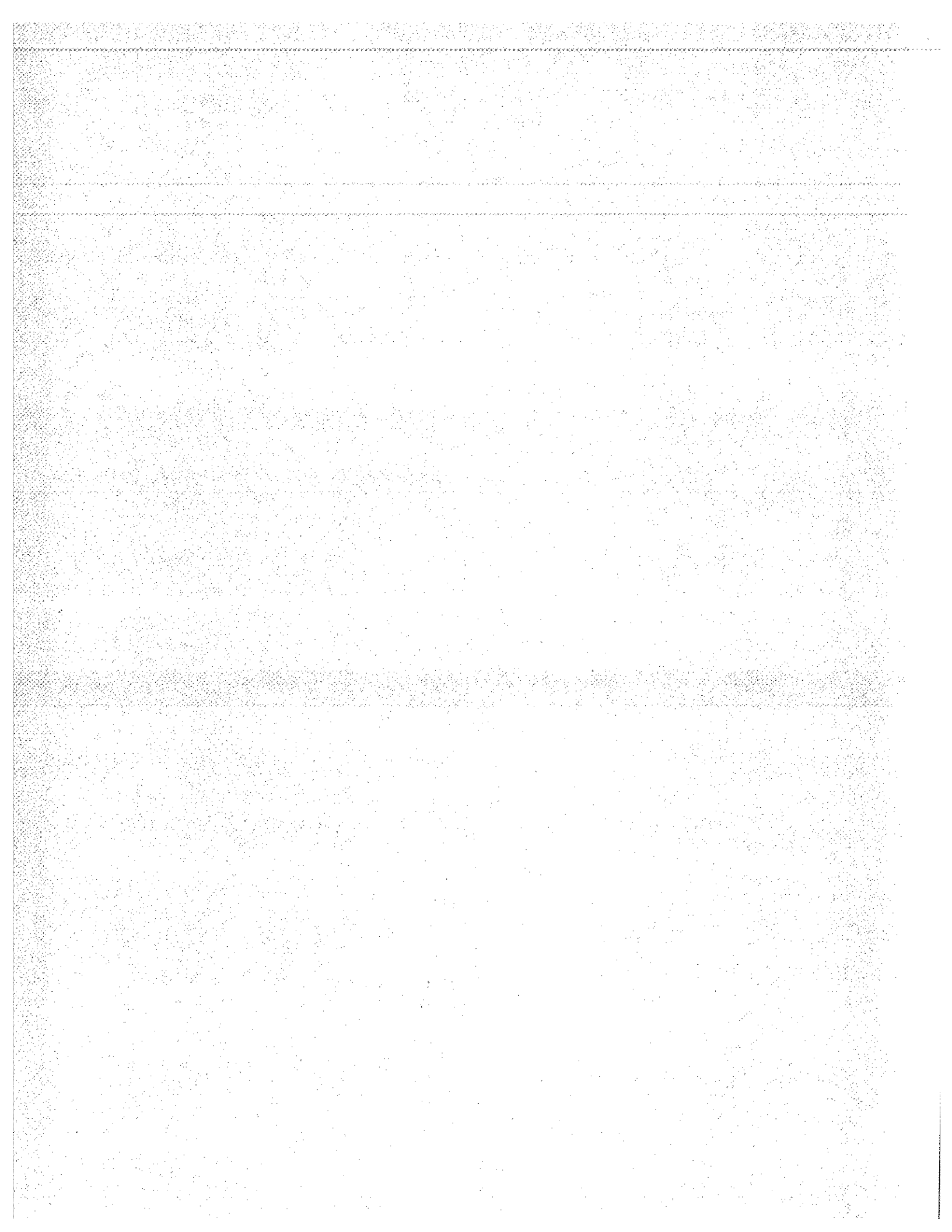
AMEC VALIDATED

LEVEL IV

*Analysis Not Validated

DRAFT REPORT
 DRAFT REPORT
 DATA SUBJECT TO CHANGE

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LABORATORY REPORT

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

Project: Routine Outfall 018

Sampled: 02/26/05
Received: 02/26/05
Issued: 04/02/05 14:25

NELAP #01108CA California ELAP#1197 CSDLAC #10117

The results listed within this Laboratory Report pertain only to the samples tested in the laboratory. The analyses contained in this report were performed in accordance with the applicable certifications as noted. All soil samples are reported on a wet weight basis unless otherwise noted in the report. This Laboratory Report is confidential and is intended for the sole use of Del Mar Analytical and its client. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical. The Chain of Custody, 1 page, is included and is an integral part of this report.

This entire report was reviewed and approved for release.

SAMPLE CROSS REFERENCE

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

LABORATORY ID	CLIENT ID	MATRIX
IOB2099-01	Outfall 018	Water
IOB2099-02	Trip Blanks	Water

Reviewed By:

Del Mar Analytical, Irvine
Michele Harper
Project Manager



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MWH-Pasadena/Boeing 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Attention: Bronwyn Kelly	Project ID: Routine Outfall 018 Report Number: IOB2099	Sampled: 02/26/05 Received: 02/26/05
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PURGEABLES BY GC/MS (EPA 624)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOB2099-01 (Outfall 018 - Water)									
Reporting Units: ug/l									
Benzene	EPA 624	5B28023	0.28	2.0	ND	1	02/28/05	02/28/05	
Carbon tetrachloride	EPA 624	5B28023	0.28	5.0	ND	1	02/28/05	02/28/05	
Chloroform	EPA 624	5B28023	0.33	2.0	ND	1	02/28/05	02/28/05	
1,1-Dichloroethane	EPA 624	5B28023	0.27	2.0	ND	1	02/28/05	02/28/05	
1,2-Dichloroethane	EPA 624	5B28023	0.28	2.0	ND	1	02/28/05	02/28/05	
1,1-Dichloroethene	EPA 624	5B28023	0.32	3.0	ND	1	02/28/05	02/28/05	
Ethylbenzene	EPA 624	5B28023	0.25	2.0	ND	1	02/28/05	02/28/05	
Tetrachloroethene	EPA 624	5B28023	0.32	2.0	ND	1	02/28/05	02/28/05	
Toluene	EPA 624	5B28023	0.36	2.0	ND	1	02/28/05	02/28/05	
1,1,1-Trichloroethane	EPA 624	5B28023	0.30	2.0	ND	1	02/28/05	02/28/05	
1,1,2-Trichloroethane	EPA 624	5B28023	0.30	2.0	ND	1	02/28/05	02/28/05	
Trichloroethene	EPA 624	5B28023	0.26	5.0	0.70	1	02/28/05	02/28/05	J
Trichlorofluoromethane	EPA 624	5B28023	0.34	5.0	ND	1	02/28/05	02/28/05	
Vinyl chloride	EPA 624	5B28023	0.26	5.0	ND	1	02/28/05	02/28/05	
Xylenes, Total	EPA 624	5B28023	0.52	4.0	ND	1	02/28/05	02/28/05	
Surrogate: Dibromofluoromethane (80-120%)					109 %				
Surrogate: Toluene-d8 (80-120%)					94 %				
Surrogate: 4-Bromofluorobenzene (80-120%)					97 %				
Sample ID: IOB2099-02 (Trip Blanks - Water)									
Reporting Units: ug/l									
Benzene	EPA 624	5B28023	0.28	2.0	ND	1	02/28/05	02/28/05	
Carbon tetrachloride	EPA 624	5B28023	0.28	5.0	ND	1	02/28/05	02/28/05	
Chloroform	EPA 624	5B28023	0.33	2.0	ND	1	02/28/05	02/28/05	
1,1-Dichloroethane	EPA 624	5B28023	0.27	2.0	ND	1	02/28/05	02/28/05	
1,2-Dichloroethane	EPA 624	5B28023	0.28	2.0	ND	1	02/28/05	02/28/05	
1,1-Dichloroethene	EPA 624	5B28023	0.32	3.0	ND	1	02/28/05	02/28/05	
Ethylbenzene	EPA 624	5B28023	0.25	2.0	ND	1	02/28/05	02/28/05	
Tetrachloroethene	EPA 624	5B28023	0.32	2.0	ND	1	02/28/05	02/28/05	
Toluene	EPA 624	5B28023	0.36	2.0	ND	1	02/28/05	02/28/05	
1,1,1-Trichloroethane	EPA 624	5B28023	0.30	2.0	ND	1	02/28/05	02/28/05	
1,1,2-Trichloroethane	EPA 624	5B28023	0.30	2.0	ND	1	02/28/05	02/28/05	
Trichloroethene	EPA 624	5B28023	0.26	5.0	ND	1	02/28/05	02/28/05	
Trichlorofluoromethane	EPA 624	5B28023	0.34	5.0	ND	1	02/28/05	02/28/05	
Vinyl chloride	EPA 624	5B28023	0.26	5.0	ND	1	02/28/05	02/28/05	
Xylenes, Total	EPA 624	5B28023	0.52	4.0	ND	1	02/28/05	02/28/05	
Surrogate: Dibromofluoromethane (80-120%)					102 %				
Surrogate: Toluene-d8 (80-120%)					94 %				
Surrogate: 4-Bromofluorobenzene (80-120%)					96 %				

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 Michele Harper
 Project Manager

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

Project ID: Routine Outfall 018

Report Number: IOB2099

Sampled: 02/26/05
 Received: 02/26/05

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

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOB2099-01 (Outfall 018 - Water)									
Reporting Units: ug/l									
Bis(2-ethylhexyl)phthalate	EPA 625	5B28001	1.1	5.0	ND	0.962	02/28/05	03/02/05	
2,4-Dinitrotoluene	EPA 625	5B28001	0.23	9.0	ND	0.962	02/28/05	03/02/05	
N-Nitrosodimethylamine	EPA 625	5B28001	0.22	8.0	ND	0.962	02/28/05	03/02/05	
Pentachlorophenol	EPA 625	5B28001	0.78	8.0	ND	0.962	02/28/05	03/02/05	
2,4,6-Trichlorophenol	EPA 625	5B28001	0.10	6.0	ND	0.962	02/28/05	03/02/05	
Surrogate: 2-Fluorophenol (30-120%)					57 %				
Surrogate: Phenol-d6 (35-120%)					44 %				
Surrogate: 2,4,6-Tribromophenol (45-120%)					89 %				
Surrogate: Nitrobenzene-d5 (45-120%)					66 %				
Surrogate: 2-Fluorobiphenyl (45-120%)					74 %				
Surrogate: Terphenyl-d14 (45-120%)					85 %				

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 2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

MWH-Pasadena/Boeing 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Attention: Bronwyn Kelly	Project ID: Routine Outfall 018 Report Number: IOB2099	Sampled: 02/26/05 Received: 02/26/05
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ORGANOCHLORINE PESTICIDES (EPA 608)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOB2099-01 (Outfall 018 - Water) - cont.									
Reporting Units: ug/l									
alpha-BHC	EPA 608	5C01050	0.0010	0.010	ND	0.962	03/01/05	03/03/05	
Surrogate: Decachlorobiphenyl (45-120%)					57 %				
Surrogate: Tetrachloro-m-xylene (35-120%)					52 %				

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 2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

MWH-Pasadena/Boeing 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Attention: Bronwyn Kelly	Project ID: Routine Outfall 018 Report Number: IOB2099	Sampled: 02/26/05 Received: 02/26/05
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METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOB2099-01 (Outfall 018 - Water) - cont.									
Reporting Units: ug/l									
Copper	EPA 200.8	5C03085	0.49	2.0	4.7	1	03/03/05	03/03/05	
Lead	EPA 200.8	5C03085	0.13	1.0	0.57	1	03/03/05	03/03/05	J
Mercury	EPA 245.1	5C02118	0.063	0.20	ND	1	03/02/05	03/03/05	

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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: IOB2099

Sampled: 02/26/05
 Received: 02/26/05

INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOB2099-01 (Outfall 018 - Water) - cont.									
Reporting Units: mg/l									
Ammonia-N (Distilled)	EPA 350.2	5C07070	0.30	0.50	2.5	1	03/07/05	03/07/05	
Biochemical Oxygen Demand	EPA 405.1	5B26045	0.59	2.0	0.94	1	02/26/05	03/03/05	J
Chloride	EPA 300.0	5B26021	0.26	0.50	11	1	02/26/05	02/26/05	
Nitrate/Nitrite-N	EPA 300.0	5B26021	0.075	0.26	0.47	1	02/26/05	02/26/05	
Oil & Grease	EPA 413.1	5C02094	0.94	5.0	1.1	1	03/02/05	03/02/05	J
Sulfate	EPA 300.0	5B26021	0.18	0.50	32	1	02/26/05	02/26/05	
Surfactants (MBAS)	EPA 425.1	5B28050	0.044	0.10	ND	1	02/28/05	02/28/05	
Total Dissolved Solids	EPA 160.1	5C02106	10	10	190	1	03/02/05	03/02/05	
Total Suspended Solids	EPA 160.2	5C03074	10	10	ND	1	03/03/05	03/03/05	
Sample ID: IOB2099-01 (Outfall 018 - Water)									
Reporting Units: ml/hr									
Total Settleable Solids	EPA 160.5	5B28051	0.10	0.10	ND	1	02/28/05	02/28/05	
Sample ID: IOB2099-01 (Outfall 018 - Water)									
Reporting Units: NTU									
Turbidity	EPA 180.1	5B26046	0.040	1.0	8.4	1	02/26/05	02/26/05	
Sample ID: IOB2099-01 (Outfall 018 - Water)									
Reporting Units: ug/l									
Total Cyanide	EPA 335.2	5B28115	2.2	5.0	3.5	1	02/28/05	03/01/05	J
Perchlorate	EPA 314.0	5C02057	0.80	4.0	ND	1	03/02/05	03/02/05	
Sample ID: IOB2099-01 (Outfall 018 - Water)									
Reporting Units: umhos/cm									
Specific Conductance	EPA 120.1	5C02105	1.0	1.0	290	1	03/02/05	03/02/05	

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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: IOB2099	Sampled: 02/26/05 Received: 02/26/05
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SHORT HOLD TIME DETAIL REPORT

Sample ID: Outfall 018 (IOB2099-01) - Water	Hold Time (in days)	Date/Time Sampled	Date/Time Received	Date/Time Extracted	Date/Time Analyzed
EPA 160.5	2	02/26/2005 09:30	02/26/2005 12:45	02/28/2005 07:00	02/28/2005 08:00
EPA 180.1	2	02/26/2005 09:30	02/26/2005 12:45	02/26/2005 17:00	02/26/2005 17:45
EPA 300.0	2	02/26/2005 09:30	02/26/2005 12:45	02/26/2005 17:00	02/26/2005 18:01
EPA 405.1	2	02/26/2005 09:30	02/26/2005 12:45	02/26/2005 16:15	03/03/2005 12:00
EPA 425.1	2	02/26/2005 09:30	02/26/2005 12:45	02/28/2005 08:23	02/28/2005 09:14

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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: IOB2099	Sampled: 02/26/05 Received: 02/26/05
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METHOD BLANK/QC DATA

PURGEABLES BY GC/MS (EPA 624)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	RPD Limits	RPD RPD	Data Qualifiers
Batch: 5B28023 Extracted: 02/28/05										
Blank Analyzed: 02/28/2005 (5B28023-BLK1)										
Benzene	ND	2.0	0.28	ug/l						
Trichlorotrifluoroethane (Freon 113)	ND	5.0	1.2	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	0.32	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	0.52	ug/l						
Surrogate: Dibromofluoromethane	23.9			ug/l	25.0		96	80-120		
Surrogate: Toluene-d8	22.6			ug/l	25.0		90	80-120		
Surrogate: 4-Bromofluorobenzene	23.5			ug/l	25.0		94	80-120		
LCS Analyzed: 02/28/2005 (5B28023-BS1)										
Benzene	25.6	2.0	0.28	ug/l	25.0		102	70-120		
Carbon tetrachloride	26.7	5.0	0.28	ug/l	25.0		107	70-140		
Chloroform	25.5	2.0	0.33	ug/l	25.0		102	75-130		
1,1-Dichloroethane	25.9	2.0	0.27	ug/l	25.0		104	70-135		
1,2-Dichloroethane	23.8	2.0	0.28	ug/l	25.0		95	60-150		
1,1-Dichloroethene	25.8	3.0	0.32	ug/l	25.0		103	75-135		
Ethylbenzene	27.2	2.0	0.25	ug/l	25.0		109	80-120		
Tetrachloroethene	27.1	2.0	0.32	ug/l	25.0		108	75-125		
Toluene	24.8	2.0	0.36	ug/l	25.0		99	75-120		
1,1,1-Trichloroethane	25.9	2.0	0.30	ug/l	25.0		104	75-140		
1,1,2-Trichloroethane	22.8	2.0	0.30	ug/l	25.0		91	70-125		
Trichloroethene	24.3	5.0	0.26	ug/l	25.0		97	80-120		
Trichlorofluoromethane	27.0	5.0	0.34	ug/l	25.0		108	65-145		
Vinyl chloride	27.5	5.0	0.26	ug/l	25.0		110	50-130		
Surrogate: Dibromofluoromethane	23.8			ug/l	25.0		95	80-120		

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MWH-Pasadena/Boeing Project ID: Routine Outfall 018
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Pasadena, CA 91101 Attention: Bronwyn Kelly
Sampled: 02/26/05
Received: 02/26/05

METHOD BLANK/QC DATA

PURGEABLES BY GC/MS (EPA 624)

Analyte Result Reporting Limit MDL Units Spike Level Source Result %REC Limits RPD RPD Limit Data Qualifiers

Batch: 5B28023 Extracted: 02/28/05

LCS Analyzed: 02/28/2005 (5B28023-BS1)

Surrogate: Toluene-d8 22.5 ug/l 25.0 90 80-120
Surrogate: 4-Bromofluorobenzene 22.9 ug/l 25.0 92 80-120

Matrix Spike Analyzed: 02/28/2005 (5B28023-MS1)

Source: IOB2063-01

Benzene 25.9 2.0 0.28 ug/l 25.0 ND 104 70-120
Carbon tetrachloride 25.7 5.0 0.28 ug/l 25.0 ND 103 70-145
Chloroform 28.0 2.0 0.33 ug/l 25.0 ND 112 70-135
1,1-Dichloroethane 26.2 2.0 0.27 ug/l 25.0 ND 105 65-135
1,2-Dichloroethane 25.7 2.0 0.28 ug/l 25.0 ND 103 60-150
1,1-Dichloroethene 27.3 3.0 0.32 ug/l 25.0 ND 109 65-140
Ethylbenzene 25.6 2.0 0.25 ug/l 25.0 ND 102 70-130
Tetrachloroethene 24.6 2.0 0.32 ug/l 25.0 ND 98 70-130
Toluene 24.9 2.0 0.36 ug/l 25.0 ND 100 70-120
1,1,1-Trichloroethane 25.9 2.0 0.30 ug/l 25.0 ND 104 75-140
1,1,2-Trichloroethane 27.4 2.0 0.30 ug/l 25.0 ND 110 60-135
Trichloroethene 24.3 5.0 0.26 ug/l 25.0 0.51 95 70-125
Trichlorofluoromethane 27.4 5.0 0.34 ug/l 25.0 ND 110 55-145
Vinyl chloride 23.1 5.0 0.26 ug/l 25.0 ND 92 40-135
Surrogate: Dibromofluoromethane 27.5 ug/l 25.0 110 80-120
Surrogate: Toluene-d8 22.8 ug/l 25.0 91 80-120
Surrogate: 4-Bromofluorobenzene 23.8 ug/l 25.0 95 80-120

Matrix Spike Dup Analyzed: 02/28/2005 (5B28023-MSD1)

Source: IOB2063-01

Benzene 26.0 2.0 0.28 ug/l 25.0 ND 104 70-120 0 20
Carbon tetrachloride 26.2 5.0 0.28 ug/l 25.0 ND 105 70-145 2 25
Chloroform 27.8 2.0 0.33 ug/l 25.0 ND 111 70-135 1 20
1,1-Dichloroethane 26.6 2.0 0.27 ug/l 25.0 ND 106 65-135 2 20
1,2-Dichloroethane 29.4 2.0 0.28 ug/l 25.0 ND 118 60-150 13 20
1,1-Dichloroethene 28.1 3.0 0.32 ug/l 25.0 ND 112 65-140 3 20
Ethylbenzene 27.0 2.0 0.25 ug/l 25.0 ND 108 70-130 5 20
Tetrachloroethene 25.6 2.0 0.32 ug/l 25.0 ND 102 70-130 4 20
Toluene 24.7 2.0 0.36 ug/l 25.0 ND 99 70-120 1 20
1,1,1-Trichloroethane 26.6 2.0 0.30 ug/l 25.0 ND 106 75-140 3 20
1,1,2-Trichloroethane 31.5 2.0 0.30 ug/l 25.0 ND 126 60-135 14 25
Trichloroethene 24.2 5.0 0.26 ug/l 25.0 0.51 95 70-125 0 20
Trichlorofluoromethane 27.7 5.0 0.34 ug/l 25.0 ND 111 55-145 1 25

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METHOD BLANK/QC DATA

PURGEABLES BY GC/MS (EPA 624)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5B28023 Extracted: 02/28/05											
Matrix Spike Dup Analyzed: 02/28/2005 (5B28023-MSD1)						Source: IOB2063-01					
Vinyl chloride	22.0	5.0	0.26	ug/l	25.0	ND	88	40-135	5	30	
Surrogate: Dibromofluoromethane	26.6			ug/l	25.0		106	80-120			
Surrogate: Toluene-d8	22.2			ug/l	25.0		89	80-120			
Surrogate: 4-Bromofluorobenzene	24.2			ug/l	25.0		97	80-120			

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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: IOB2099

Sampled: 02/26/05
 Received: 02/26/05

METHOD BLANK/QC DATA

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

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	RPD Limits	RPD RPD	Data Qualifiers
Batch: 5B28001 Extracted: 02/28/05										
Blank Analyzed: 03/02/2005 (SB28001-BLK1)										
Bis(2-ethylhexyl)phthalate	ND	5.0	1.1	ug/l						
2,4-Dinitrotoluene	ND	9.0	0.23	ug/l						
N-Nitrosodimethylamine	ND	8.0	0.22	ug/l						
Pentachlorophenol	ND	8.0	0.78	ug/l						
2,4,6-Trichlorophenol	ND	6.0	0.10	ug/l						
Surrogate: 2-Fluorophenol	14.4			ug/l	20.0		72	30-120		
Surrogate: Phenol-d6	14.6			ug/l	20.0		73	35-120		
Surrogate: 2,4,6-Tribromophenol	19.1			ug/l	20.0		96	45-120		
Surrogate: Nitrobenzene-d5	7.80			ug/l	10.0		78	45-120		
Surrogate: 2-Fluorobiphenyl	7.90			ug/l	10.0		79	45-120		
Surrogate: Terphenyl-d14	8.86			ug/l	10.0		89	45-120		
LCS Analyzed: 03/02/2005 (5B28001-BS1)										
Bis(2-ethylhexyl)phthalate	8.90	5.0	1.1	ug/l	10.0		89	60-130		M-NRI
2,4-Dinitrotoluene	7.92	9.0	0.23	ug/l	10.0		79	60-120		J
N-Nitrosodimethylamine	6.94	8.0	0.22	ug/l	10.0		69	40-120		J
Pentachlorophenol	8.46	8.0	0.78	ug/l	10.0		85	50-120		
2,4,6-Trichlorophenol	8.80	6.0	0.10	ug/l	10.0		88	60-120		
Surrogate: 2-Fluorophenol	15.0			ug/l	20.0		75	30-120		
Surrogate: Phenol-d6	14.6			ug/l	20.0		73	35-120		
Surrogate: 2,4,6-Tribromophenol	19.3			ug/l	20.0		96	45-120		
Surrogate: Nitrobenzene-d5	7.94			ug/l	10.0		79	45-120		
Surrogate: 2-Fluorobiphenyl	8.42			ug/l	10.0		84	45-120		
Surrogate: Terphenyl-d14	8.96			ug/l	10.0		90	45-120		
LCS Dup Analyzed: 03/02/2005 (5B28001-BSD1)										
Bis(2-ethylhexyl)phthalate	9.44	5.0	1.1	ug/l	10.0		94	60-130	6	20
2,4-Dinitrotoluene	7.70	9.0	0.23	ug/l	10.0		77	60-120	3	20
N-Nitrosodimethylamine	7.90	8.0	0.22	ug/l	10.0		79	40-120	13	20
Pentachlorophenol	8.76	8.0	0.78	ug/l	10.0		88	50-120	3	25
2,4,6-Trichlorophenol	8.64	6.0	0.10	ug/l	10.0		86	60-120	2	20
Surrogate: 2-Fluorophenol	14.4			ug/l	20.0		72	30-120		
Surrogate: Phenol-d6	15.0			ug/l	20.0		75	35-120		
Surrogate: 2,4,6-Tribromophenol	19.8			ug/l	20.0		99	45-120		
Surrogate: Nitrobenzene-d5	7.80			ug/l	10.0		78	45-120		
Surrogate: 2-Fluorobiphenyl	7.90			ug/l	10.0		79	45-120		

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METHOD BLANK/QC DATA

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

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5B28001 Extracted: 02/28/05											
LCS Dup Analyzed: 03/02/2005 (5B28001-BSD1)											
Surrogate: Terphenyl-d14	8.80			ug/l	10.0		88	45-120			

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MWH-Pasadena/Boeing
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 Attention: Bronwyn Kelly

Project ID: Routine Outfall 018

Report Number: IOB2099

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METHOD BLANK/QC DATA

ORGANOCHLORINE PESTICIDES (EPA 608)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5C01050 Extracted: 03/01/05										
Blank Analyzed: 03/03/2005 (5C01050-BLK1)										
alpha-BHC	ND	0.010	0.0010	ug/l						
Surrogate: Decachlorobiphenyl	0.449			ug/l	0.500		90 45-120			
Surrogate: Tetrachloro-m-xylene	0.349			ug/l	0.500		70 35-120			
LCS Analyzed: 03/03/2005 (5C01050-BS1)										
alpha-BHC	0.393	0.010	0.0010	ug/l	0.500		79 45-115			M-NRI
Surrogate: Decachlorobiphenyl	0.438			ug/l	0.500		88 45-120			
Surrogate: Tetrachloro-m-xylene	0.336			ug/l	0.500		67 35-120			
LCS Dup Analyzed: 03/03/2005 (5C01050-BSD1)										
alpha-BHC	0.391	0.010	0.0010	ug/l	0.500		78 45-115	1	30	
Surrogate: Decachlorobiphenyl	0.440			ug/l	0.500		88 45-120			
Surrogate: Tetrachloro-m-xylene	0.353			ug/l	0.500		71 35-120			

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METHOD BLANK/QC DATA

METALS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5C02118 Extracted: 03/02/05											
Blank Analyzed: 03/03/2005 (5C02118-BLK1)											
Mercury	ND	0.20	0.063	ug/l							
LCS Analyzed: 03/03/2005 (5C02118-BS1)											
Mercury	7.98	0.20	0.063	ug/l	8.00		100	85-115			
Matrix Spike Analyzed: 03/03/2005 (5C02118-MS1)											
						Source: IOB1943-07					
Mercury	7.76	0.20	0.063	ug/l	8.00	ND	97	70-130			
Matrix Spike Dup Analyzed: 03/03/2005 (5C02118-MSD1)											
						Source: IOB1943-07					
Mercury	7.79	0.20	0.063	ug/l	8.00	ND	97	70-130	0	20	
Batch: 5C03085 Extracted: 03/03/05											
Blank Analyzed: 03/03/2005 (5C03085-BLK1)											
Copper	ND	2.0	0.49	ug/l							
Lead	ND	1.0	0.13	ug/l							
LCS Analyzed: 03/03/2005 (5C03085-BS1)											
Copper	78.5	2.0	0.49	ug/l	80.0		98	85-115			
Lead	82.6	1.0	0.13	ug/l	80.0		103	85-115			
Matrix Spike Analyzed: 03/03/2005 (5C03085-MS1)											
						Source: IOB2069-01					
Copper	78.8	2.0	0.49	ug/l	80.0	1.2	97	70-130			
Lead	82.3	1.0	0.13	ug/l	80.0	ND	103	70-130			
Matrix Spike Analyzed: 03/03/2005 (5C03085-MS2)											
						Source: IOB2149-04					
Copper	75.9	2.0	0.49	ug/l	80.0	2.9	91	70-130			
Lead	78.9	1.0	0.13	ug/l	80.0	0.20	98	70-130			

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MWH-Pasadena/Boeing
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 Attention: Bronwyn Kelly

Project ID: Routine Outfall 018

Report Number: IOB2099

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METHOD BLANK/QC DATA

METALS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5C03085 Extracted: 03/03/05											
Matrix Spike Dup Analyzed: 03/03/2005 (5C03085-MSD1)						Source: IOB2069-01					
Copper	76.4	2.0	0.49	ug/l	80.0	1.2	94	70-130	3	20	
Lead	80.0	1.0	0.13	ug/l	80.0	ND	100	70-130	3	20	

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METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	Limit	RPD	RPD Limit	Data Qualifiers
Batch: 5B26021 Extracted: 02/25/05											
Blank Analyzed: 02/26/2005 (5B26021-BLK1)											
Chloride	ND	0.50	0.26	mg/l							
Nitrate/Nitrite-N	ND	0.26	0.072	mg/l							
Sulfate	ND	0.50	0.18	mg/l							
LCS Analyzed: 02/26/2005 (5B26021-BS1)											
Chloride	4.88	0.50	0.26	mg/l	5.00		98	90-110			M-3
Sulfate	9.88	0.50	0.18	mg/l	10.0		99	90-110			
Matrix Spike Analyzed: 02/26/2005 (5B26021-MS1)											
Sulfate	61.1	2.5	0.90	mg/l	10.0	50	111	80-120			
Matrix Spike Dup Analyzed: 02/26/2005 (5B26021-MSD1)											
Sulfate	60.7	2.5	0.90	mg/l	10.0	50	107	80-120	1	20	
Batch: 5B26045 Extracted: 02/26/05											
Blank Analyzed: 03/03/2005 (5B26045-BLK1)											
Biochemical Oxygen Demand	ND	2.0	0.59	mg/l							
LCS Analyzed: 03/03/2005 (5B26045-BS1)											
Biochemical Oxygen Demand	200	100	30	mg/l	198		101	85-115			
LCS Dup Analyzed: 03/03/2005 (5B26045-BSD1)											
Biochemical Oxygen Demand	194	100	30	mg/l	198		98	85-115	3	20	
Batch: 5B26046 Extracted: 02/26/05											
Blank Analyzed: 02/26/2005 (5B26046-BLK1)											
Turbidity	0.0500	1.0	0.040	NTU							J

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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: IOB2099	Sampled: 02/26/05 Received: 02/26/05
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METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	RPD Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5B26046 Extracted: 02/26/05											
Duplicate Analyzed: 02/26/2005 (5B26046-DUP1)						Source: IOB2071-01					
Turbidity	1.80	1.0	0.040	NTU		1.8			0	20	
Batch: 5B28050 Extracted: 02/28/05											
Blank Analyzed: 02/28/2005 (5B28050-BLK1)											
Surfactants (MBAS)	ND	0.10	0.044	mg/l							
LCS Analyzed: 02/28/2005 (5B28050-BS1)											
Surfactants (MBAS)	0.257	0.10	0.044	mg/l	0.250		103	90-110			
Matrix Spike Analyzed: 02/28/2005 (5B28050-MS1)						Source: IOB2098-01					
Surfactants (MBAS)	0.266	0.10	0.044	mg/l	0.250	ND	106	50-125			
Matrix Spike Dup Analyzed: 02/28/2005 (5B28050-MSD1)						Source: IOB2098-01					
Surfactants (MBAS)	0.280	0.10	0.044	mg/l	0.250	ND	112	50-125	5	20	
Batch: 5B28115 Extracted: 02/28/05											
Blank Analyzed: 03/01/2005 (5B28115-BLK1)											
Total Cyanide	ND	5.0	2.2	ug/l							
LCS Analyzed: 03/01/2005 (5B28115-BS1)											
Total Cyanide	197	5.0	2.2	ug/l	200		98	90-110			
Matrix Spike Analyzed: 03/01/2005 (5B28115-MS1)						Source: IOB2064-01					
Total Cyanide	202	5.0	2.2	ug/l	200	ND	101	70-115			

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 Michele Harper
 Project Manager



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MWH-Pasadena/Boeing 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Attention: Bronwyn Kelly	Project ID: Routine Outfall 018 Report Number: IOB2099	Sampled: 02/26/05 Received: 02/26/05
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METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	RPD RPD	RPD Limit	Data Qualifiers
Batch: 5B28115 Extracted: 02/28/05										
Matrix Spike Dup Analyzed: 03/01/2005 (5B28115-MSD1)					Source: IOB2064-01					
Total Cyanide	210	5.0	2.2	ug/l	200	ND	105	70-115	4	15
Batch: 5C02057 Extracted: 03/02/05										
Blank Analyzed: 03/02/2005 (5C02057-BLK1)										
Perchlorate	ND	4.0	0.80	ug/l						
LCS Analyzed: 03/02/2005 (5C02057-BS1)										
Perchlorate	50.9	4.0	0.80	ug/l	50.0		102	85-115		
Matrix Spike Analyzed: 03/02/2005 (5C02057-MS1)					Source: IOB1811-01					
Perchlorate	56.1	4.0	0.80	ug/l	50.0	ND	112	80-120		
Matrix Spike Dup Analyzed: 03/02/2005 (5C02057-MSD1)					Source: IOB1811-01					
Perchlorate	55.3	4.0	0.80	ug/l	50.0	ND	111	80-120	1	20
Batch: 5C02094 Extracted: 03/02/05										
Blank Analyzed: 03/02/2005 (5C02094-BLK1)										
Oil & Grease	ND	5.0	0.94	mg/l						
LCS Analyzed: 03/02/2005 (5C02094-BS1)										
Oil & Grease	18.5	5.0	0.94	mg/l	20.0		92	65-120		M-NR1
LCS Dup Analyzed: 03/02/2005 (5C02094-BSD1)										
Oil & Grease	17.2	5.0	0.94	mg/l	20.0		86	65-120	7	20

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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: IOB2099	Sampled: 02/26/05 Received: 02/26/05
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METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5C02105 Extracted: 03/02/05											
Duplicate Analyzed: 03/02/2005 (5C02105-DUP1)											
Specific Conductance	74.5	1.0	1.0	umhos/cm		Source: IOB1786-01 75			1	5	
Batch: 5C02106 Extracted: 03/02/05											
Blank Analyzed: 03/02/2005 (5C02106-BLK1)											
Total Dissolved Solids	ND	10	10	mg/l							
LCS Analyzed: 03/02/2005 (5C02106-BS1)											
Total Dissolved Solids	1030	10	10	mg/l	1000		103	90-110			
Duplicate Analyzed: 03/02/2005 (5C02106-DUP1)											
Total Dissolved Solids	1120	10	10	mg/l		Source: IOB1887-01 1100			2	10	
Batch: 5C03074 Extracted: 03/03/05											
Blank Analyzed: 03/03/2005 (5C03074-BLK1)											
Total Suspended Solids	ND	10	10	mg/l							
LCS Analyzed: 03/03/2005 (5C03074-BS1)											
Total Suspended Solids	983	10	10	mg/l	1000		98	85-115			
Duplicate Analyzed: 03/03/2005 (5C03074-DUP1)											
Total Suspended Solids	21.0	10	10	mg/l		Source: IOB2138-01 ND				10	
Batch: 5C07070 Extracted: 03/07/05											
Blank Analyzed: 03/07/2005 (5C07070-BLK1)											
Ammonia-N (Distilled)	ND	0.50	0.30	mg/l							

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 Michele Harper
 Project Manager

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

Project ID: Routine Outfall 018

Report Number: IOB2099

Sampled: 02/26/05
 Received: 02/26/05

METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5C07070 Extracted: 03/07/05											
LCS Analyzed: 03/07/2005 (5C07070-BS1)											
Ammonia-N (Distilled)	9.52	0.50	0.30	mg/l	10.0		95	80-115			
Matrix Spike Analyzed: 03/07/2005 (5C07070-MS1)											
Ammonia-N (Distilled)	9.80	0.50	0.30	mg/l	10.0	ND	98	70-120			
Matrix Spike Dup Analyzed: 03/07/2005 (5C07070-MSD1)											
Ammonia-N (Distilled)	9.52	0.50	0.30	mg/l	10.0	ND	95	70-120	3	15	

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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: IOB2099	Sampled: 02/26/05 Received: 02/26/05
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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 unknown quality.
- M-3** Results exceeded the linear range in the MS/MSD and therefore are not available for reporting. The batch was accepted based on acceptable recovery in the Blank Spike (LCS).
- M-NR1** There was no MS/MSD analyzed with this batch due to insufficient sample volume. See Blank Spike/Blank Spike Duplicate.
- ND** Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified.
- RPD** Relative Percent Difference

Del Mar Analytical, Irvine
Michele Harper
Project Manager



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

Project ID: Routine Outfall 018

Report Number: IOB2099

Sampled: 02/26/05
 Received: 02/26/05

Certification Summary

Del Mar Analytical, Irvine

Method	Matrix	Nelac	California
EPA 120.1	Water	X	X
EPA 160.1	Water	X	X
EPA 160.2	Water	X	X
EPA 160.5	Water	X	X
EPA 180.1	Water	X	X
EPA 200.8	Water	X	X
EPA 245.1	Water	X	X
EPA 300.0	Water	X	X
EPA 314.0	Water	X	X
EPA 335.2	Water	X	X
EPA 350.2	Water	X	X
EPA 405.1	Water	X	X
EPA 413.1	Water	X	X
EPA 425.1	Water	X	X
EPA 608	Water	X	X
EPA 624	Water	X	X
EPA 625	Water	X	X

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.dmalabs.com.

Subcontracted Laboratories

Alta Analytical California Cert #1640

1104 Windfield Way - El Dorado Hills, CA 95762

Analysis Performed: 1613-Dioxin-HR

Samples: IOB2099-01

Analysis Performed: EDD + Level 4

Samples: IOB2099-01

Del Mar Analytical, Irvine
 Michele Harper
 Project Manager

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March 24, 2005

MWH-Pasadena/ Boeing
300 North Lake Avenue, Suite 1200
Pasadena, CA 91101

Attention: Bronwyn Kelly
Project: Routine Outfall 018
Sampled: 02/26/05
Del Mar Analytical Number: IOB2099

Dear Ms. Kelly:

Alta Analytical Laboratory performed the EPA Method 1613B Dioxin analysis for the project referenced above. Please use the following cross-reference table when reviewing your results.

MWH ID	DEL MAR ID	ALTA ID
Outfall 018	IOB2099-01	25813-001

Attached is the original report from the subcontract laboratory. If you have any questions or require further assistance, please do not hesitate to contact me at (949) 261-1022 at extension 215.

Sincerely yours,
DEL MAR ANALYTICAL


Michele Harper
Project Manager



March 10, 2005

Alta Project I.D.: 25813

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

Dear Ms. Harper,

Enclosed are the results for the one aqueous sample received at Alta Analytical Laboratory on March 01, 2005 under your Project Name "IOB2099". 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,

Martha M. Maier
Director of HRMS Services



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: 3/1/2005

Alta Lab. ID

Client Sample ID

25813-001

IOB2099-01

SECTION II



Method Blank **EPA Method 1613**

Matrix:	Aqueous	QC Batch No.:	6571	Lab Sample:	0-MB001	Date Analyzed DB-5:	9-Mar-05	Date Analyzed DB-225:	NA
Sample Size:	1.000 L	Date Extracted:	4-Mar-05						
Analyte	Conc. (pg/L)	DL ^a	EMPC ^b	Qualifiers	Labeled Standard	%R	LCL-UCL ^d	Qualifiers	
2,3,7,8-TCDD	ND	3.17			IS 13C-2,3,7,8-TCDD	79.8	25 - 164		
1,2,3,7,8-PeCDD	ND	2.85			13C-1,2,3,7,8-PeCDD	67.3	25 - 181		
1,2,3,4,7,8-HxCDD	ND	7.88			13C-1,2,3,4,7,8-HxCDD	77.9	32 - 141		
1,2,3,6,7,8-HxCDD	ND	7.76			13C-1,2,3,6,7,8-HxCDD	88.2	28 - 130		
1,2,3,7,8,9-HxCDD	ND	7.78			13C-1,2,3,4,6,7,8-HpCDD	63.7	23 - 140		
1,2,3,4,6,7,8-HpCDD	ND	6.25			13C-OCDD	44.4	17 - 157		
OCDD	ND	15.4			13C-2,3,7,8-TCDF	79.2	24 - 169		
2,3,7,8-TCDF	ND	4.50			13C-1,2,3,7,8-PeCDF	66.2	24 - 185		
1,2,3,7,8-PeCDF	ND	5.76			13C-2,3,4,7,8-PeCDF	67.5	21 - 178		
2,3,4,7,8-PeCDF	ND	4.98			13C-1,2,3,4,7,8-HxCDF	72.8	26 - 152		
1,2,3,4,7,8-HxCDF	ND	3.01			13C-1,2,3,6,7,8-HxCDF	81.0	26 - 123		
1,2,3,6,7,8-HxCDF	ND	2.73			13C-2,3,4,6,7,8-HxCDF	80.3	28 - 136		
2,3,4,6,7,8-HxCDF	ND	3.11			13C-1,2,3,7,8,9-HxCDF	74.3	29 - 147		
1,2,3,7,8,9-HxCDF	ND	5.02			13C-1,2,3,4,6,7,8-HpCDF	65.7	28 - 143		
1,2,3,4,6,7,8-HpCDF	ND	4.70			13C-1,2,3,4,7,8,9-HpCDF	64.1	26 - 138		
1,2,3,4,7,8,9-HpCDF	ND	5.90			13C-OCDF	51.8	17 - 157		
OCDF	ND	15.0			CRS 37Cl-2,3,7,8-TCDD	84.6	35 - 197		
Totals					Footnotes				
Total TCDD	ND	3.17			a. Sample specific estimated detection limit.				
Total PeCDD	ND	2.85			b. Estimated maximum possible concentration.				
Total HxCDD	ND	7.80			c. Method detection limit.				
Total HpCDD	ND	6.25			d. Lower control limit - upper control limit.				
Total TCDF	ND	4.50							
Total PeCDF	ND	5.36							
Total HxCDF	ND	3.36							
Total HpCDF	ND	5.21							

Analyst: JMH

Approved By: Martha M. Maier 10-Mar-2005 09:31



OPR Results

EPA Method 1613

Matrix: Aqueous		QC Batch No.: 6571	Lab Sample: 0-OPR001
Sample Size: 1.000 L		Date Extracted: 4-Mar-05	Date Analyzed DB-5: 8-Mar-05
		Date Analyzed DB-225: NA	
Analyte	Spike Conc. (ng/mL)	OPR Limits	Labeled Standard
2,3,7,8-TCDD	10.0	6.7 - 15.8	IS 13C-2,3,7,8-TCDD
1,2,3,7,8-PeCDD	50.0	35 - 71	13C-1,2,3,7,8-PeCDD
1,2,3,4,7,8-HxCDD	50.0	35 - 82	13C-1,2,3,4,7,8-HxCDD
1,2,3,6,7,8-HxCDD	50.0	38 - 67	13C-1,2,3,6,7,8-HxCDD
1,2,3,7,8,9-HxCDD	50.0	32 - 81	13C-1,2,3,4,6,7,8-HpCDD
1,2,3,4,6,7,8-HpCDD	50.0	35 - 70	13C-OCDD
OCDD	100	78 - 144	13C-2,3,7,8-TCDF
2,3,7,8-TCDF	10.0	7.5 - 15.8	13C-1,2,3,7,8-PeCDF
1,2,3,7,8-PeCDF	50.0	40 - 67	13C-2,3,4,7,8-PeCDF
2,3,4,7,8-PeCDF	50.0	34 - 80	13C-1,2,3,4,7,8-HxCDF
1,2,3,4,7,8-HxCDF	50.0	36 - 67	13C-1,2,3,6,7,8-HxCDF
1,2,3,6,7,8-HxCDF	50.0	42 - 65	13C-2,3,4,6,7,8-HxCDF
2,3,4,6,7,8-HxCDF	50.0	35 - 78	13C-1,2,3,7,8,9-HxCDF
1,2,3,7,8,9-HxCDF	50.0	39 - 65	13C-1,2,3,4,6,7,8-HpCDF
1,2,3,4,6,7,8-HpCDF	50.0	41 - 61	13C-1,2,3,4,7,8,9-HpCDF
1,2,3,4,7,8,9-HpCDF	50.0	39 - 69	13C-OCDF
OCDF	100	63 - 170	CRS 37Cl-2,3,7,8-TCDD
			%R
			LCL-UCL
			67.1
			25 - 164
			61.4
			25 - 181
			60.9
			32 - 141
			67.6
			28 - 130
			66.0
			23 - 140
			64.3
			17 - 157
			72.7
			24 - 169
			58.0
			24 - 185
			60.4
			21 - 178
			46.8
			26 - 152
			52.4
			26 - 123
			53.1
			28 - 136
			55.3
			29 - 147
			57.2
			28 - 143
			60.2
			26 - 138
			66.3
			17 - 157
			80.8
			35 - 197

Analyst: JMH

Approved By: Martha M. Maier 10-Mar-2005 09:31



Sample ID: IOB2099-01

EPA Method 1613

Client Data		Laboratory Data	
Name: Del Mar Analytical, Irvine	Lab Sample: 25813-001	Date Received: 1-Mar-05	
Project: IOB2099	QC Batch No.: 6571	Date Extracted: 4-Mar-05	
Date Collected: 26-Feb-05	Date Analyzed DB-5: 8-Mar-05	Date Analyzed DB-225: NA	
Time Collected: 0930			

Analyte	Conc. (pg/L)	DL ^a	EMPC ^b	Qualifiers	Labeled Standard	%R	LCL-UCL ^d	Qualifiers
2,3,7,8-TCDD	ND	0.958			IS 13C-2,3,7,8-TCDD	76.5	25 - 164	
1,2,3,7,8-PeCDD	ND	1.02			13C-1,2,3,7,8-PeCDD	63.0	25 - 181	
1,2,3,4,7,8-HxCDD	ND	3.47			13C-1,2,3,4,7,8-HxCDD	64.7	32 - 141	
1,2,3,6,7,8-HxCDD	ND	3.48			13C-1,2,3,6,7,8-HxCDD	62.9	28 - 130	
1,2,3,7,8,9-HxCDD	ND	3.47			13C-1,2,3,4,6,7,8-HpCDD	62.6	23 - 140	
1,2,3,4,6,7,8-HpCDD	13.7			J	13C-OCDD	55.0	17 - 157	
OCDD	146				13C-2,3,7,8-TCDF	80.4	24 - 169	
2,3,7,8-TCDF	ND	1.30			13C-1,2,3,7,8-PeCDF	61.1	24 - 185	
1,2,3,7,8-PeCDF	ND	1.89			13C-2,3,4,7,8-PeCDF	64.1	21 - 178	
2,3,4,7,8-PeCDF	ND	1.64			13C-1,2,3,4,7,8-HxCDF	49.7	26 - 152	
1,2,3,4,7,8-HxCDF	ND	1.37			13C-1,2,3,6,7,8-HxCDF	55.4	26 - 123	
1,2,3,6,7,8-HxCDF	ND	1.26			13C-2,3,4,6,7,8-HxCDF	54.2	28 - 136	
2,3,4,6,7,8-HxCDF	ND	1.49			13C-1,2,3,7,8,9-HxCDF	54.2	29 - 147	
1,2,3,7,8,9-HxCDF	ND	2.11			13C-1,2,3,4,6,7,8-HpCDF	51.2	28 - 143	
1,2,3,4,6,7,8-HpCDF	2.74			J	13C-1,2,3,4,7,8,9-HpCDF	56.1	26 - 138	
1,2,3,4,7,8,9-HpCDF	ND	2.07			13C-OCDF	58.2	17 - 157	
OCDF	8.35			J	CRS 37Cl-2,3,7,8-TCDD	87.9	35 - 197	

Totals								
Total TCDD	ND	0.958						
Total PeCDD	ND	1.02						
Total HxCDD	ND	3.48						
Total HpCDD	28.4							
Total TCDF	2.63							
Total PeCDF	ND	1.76						
Total HxCDF	ND	1.53						
Total HpCDF	2.74		7.18					

Footnotes

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

Analyst: JMH

Approved By: Martha M. Maier 10-Mar-2005 09:31

APPENDIX

DATA QUALIFIERS & ABBREVIATIONS

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

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

The control limits are “interim limits only” until in-house limits are utilized.

CURRENT CERTIFICATIONS



NELAP — (Primary AA: California, Certificate No. 02102CA)
Department of the Navy
U.S. Army Corps of Engineers
U.S. EPA Region 5
Bureau of Reclamation — Mid-Pacific Region — (MP-470, Res-1.10)
Commonwealth of Kentucky — (Certificate No. 90063)
Commonwealth of Virginia — (Certificate No. 00013)
State of Alaska, Department of Environmental Conservation — (Certificate No. OS-00197)
State of Arizona — (Certificate No. AZ0639)
State of Arkansas, Department of Health — (Approval granted through CA certification)
State of Arkansas, Department of Environmental Quality
State of California — (Certificate No. 1640)
State of Colorado
State of Connecticut — (Certificate No. PH-0182)
State of Florida — (Certificate No. 87456)
State of Louisiana, Department of Health and Hospitals — (Certificate No. LA000014)
State of Louisiana, Department of Environmental Quality
State of Maine
State of Michigan (Certificate No. 81178087)
State of Mississippi — (Approval granted through CA certification)
State of Nevada — (Certificate No. CA413)
State of New Jersey — (Certificate No. CA003)
State of New York, Department of Health — (Certificate No. 11411)
State of North Carolina — (Certification No. 06700)
State of North Dakota, Department of Health — (Certificate No. R-078)
State of New Mexico
State of Oklahoma - (D9919)
State of Oregon - (Certificate No. CA413)
State of Pennsylvania — (Certificate No. 68-490)
State of South Carolina — (Certificate No. 87002001)
State of Tennessee — (Certificate No. 02996)
State of Texas — (Certificate No. TX247-1000A)
State of Utah — (Certificate No. E-201)
State of Washington - (Certification No. C091)
State of Wisconsin — (Certificate No. 998036160)
State of Wyoming — (USEPA Region 8 Ref: 8TMS-Q)

09/28/04



17461 Derian Ave. Suite 100, Irvine, CA 92614 Ph (949) 261-1022 Fax (949) 261-1228
 1014 E. Cooley Dr., Suite A, Colton, CA 92324 Ph (909) 370-4667 Fax (909) 370-1046
 9484 Chesapeake Drive, Suite 805, San Diego, CA 92123 Ph (619) 505-9596 Fax (619) 505-9589
 9830 South 51st Street, Suite B-120, Phoenix, AZ 85044 Ph (480) 785-0043 Fax (480) 785-0651
 2520 E. Sunset Rd., Suite #3, Las Vegas, NV 89120 Ph (702) 798-3820 Fax (702) 798-3821

SUBCONTRACT ORDER - PROJECT # IOB2099

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 Harper	Alta Analytical - SUB 1104 Windfield Way El Dorado Hills, CA 95762 Phone: (916) 933-1640 Fax: (916) 933-0940 <div style="float: right; font-size: 1.5em; margin-top: 10px;"> 25813 1.1°C </div>

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

Analysis	Expiration	Comments
Sample ID: IOB2099-01 Water	Sampled: 02/26/05 09:30	
1613-Dioxin-HR	03/05/05 09:30	I flags, 17 congeners, no TEQ, sub to Alta Excel EDD email to pm, Include Std logs for Lvl IV
EDD + Level 4	03/26/05 09:30	
Containers Supplied:		
1 L Amber (IOB2099-01G)		
1 L Amber (IOB2099-01H)		

SAMPLE INTEGRITY:

All containers intact: Yes No Sample labels/COC agree: Yes No Samples Received On Ice: Yes No
 Custody Seals Present: Yes No Samples Preserved Properly: Yes No Samples Received at (temp): _____

Frankie Cauds 2-28-05 1700 *Letitia J. Benedict* 3/1/05 0853
 Released By Date Time Received By Date Time

Released By Date Time Received By Date Time

STANDARD OPERATING PROCEDURE

Attachment 10.B.1

SAMPLE LOG-IN CHECKLIST

ALTA Project No.: 25813

1. Date Samples Arrived: <u>3/1/05 0953</u> Initials: <u>AB</u> Location: <u>WR-2</u>			
2. Time / Date logged in: <u>1343 3/1/05</u> Initials: <u>AB</u> Location: <u>WR-2</u>			
3. Samples Arrived By: (circle) <u>FedEx</u> UPS World Courier Other:			
4. Shipping Preservation: (circle) <u>Ice</u> <u>Blue Ice</u> Dry Ice / None Temp °C <u>1.1°C</u>			
5. Shipping Container(s) Intact? If not, describe condition in comment section.	YES ✓	NO	NA
6. Shipping Container(s) Custody Seals Present? Intact? If not intact, describe condition in comment section.	✓		
7. Shipping Documentation Present? (circle) Shipping Label Airbill Tracking Number <u>7909 3312 2398</u>	✓		
8. Sample Custody Seal(s) Present? No. of Seals _____ or Seal No. Intact? If not intact, describe condition in comment section.		✓	✓
9. Sample Container Intact? If no, indicate sample condition in comment section.	✓		
10. Chain of Custody (COC) or other Sample Documentation Present?	✓		
11. COC/Documentation Acceptable? If no, complete COC Anomaly Form.	✓		
12. Shipping Container (circle): ALTA <u>Client</u> Retain or <u>Return</u> or Disposed			
13. Container(s) and/or Bottle(s) Requested?		✓	
14. Drinking Water Sample? (HRMS Only) If yes, Acceptable Preservation? Y or N Preservation Info From? (circle) COC or Sample Container or None Noted			✓

Comments:

Samplers initials found on sample label

ALTA Analytical Laboratory
El Dorado Hills, CA 95762

APPENDIX G

Section 27

March Outfall 001

AMEC Data Validation Reports

Del Mar Analytical Laboratory Reports

CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

AMEC Earth & Environmental
550 South Wadsworth Boulevard
Suite 500
Lakewood, CO 80226

Package ID T711MT76
Task Order 313150010
SDG No. IOC0515

No. of Analyses 1
Date: 04/18/05
Reviewer's Signature
P. Meeks

Laboratory Del Mar
Reviewer P. Meeks
Analysis/Method Metals

ACTION ITEMS ^a	
1. Case Narrative Deficiencies	
2. Out of Scope Analyses	
3. Analyses Not Conducted	
4. Missing Hardcopy Deliverables	
5. Incorrect Hardcopy Deliverables	
6. Deviations from Analysis Protocol, e.g.,	Qualifications were applied for detects below the reporting limit.
Holding Times	
GC/MS Tune/Inst. Performance	
Calibrations	
Blanks	
Surrogates	
Matrix Spike/Dup LCS	
Field QC	
Internal Standard Performance	
Compound Identification and Quantitation	
System Performance	
COMMENTS ^b	
^a 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 Qualifier Reference Table

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

Qualification Code Reference Table

Qualifier	Organics	Inorganics
H	Holding times were exceeded.	Holding times were exceeded.
S	Surrogate recovery was outside QC limits.	The sequence or number of standards used for the calibration was incorrect
C	Calibration %RSD or %D were noncompliant.	Correlation coefficient is <0.995.
R	Calibration RRF was <0.05.	%R for calibration is not within control limits.
B	Presumed contamination from preparation (method) blank.	Presumed contamination from preparation (method) or calibration blank.
L	Laboratory Blank Spike/Blank Spike Duplicate %R was not within control limits.	Laboratory Control Sample %R was not within control limits.
Q	MS/MSD recovery was poor or RPD high.	MS recovery was poor.
E	Not applicable.	Duplicates showed poor agreement.
I	Internal standard performance was unsatisfactory.	ICP ICS results were unsatisfactory.
A	Not applicable.	ICP Serial Dilution %D were not within control limits.
M	Tuning (BFB or DFTPP) was noncompliant.	Not applicable.
T	Presumed contamination from trip blank.	Not applicable.
+	False positive – reported compound was not present. Not applicable.	
-	False negative – compound was present but not reported.	Not applicable.
F	Presumed contamination from FB, or ER.	Presumed contamination from FB or ER.
\$	Reported result or other information was incorrect.	Reported result or other information was incorrect.
?	TIC identity or reported retention time has been changed.	Not applicable.
D	The analysis with this flag should not be used because another more technically sound analysis is available.	The analysis with this flag should not be used because another more technically sound analysis is available.
P	Instrument performance for pesticides was poor.	Post Digestion Spike recovery was not within control limits.
DNQ	The compound was detected between the MDL and the RL and, by definition, is considered an estimated value.	The compound was detected between the MDL and the RL and, by definition, is considered an estimated value.
#	Unusual problems found with the data that have been described in Section 2.#, "Data Validation Findings." The number following the asterisk () will indicate the subsection where a description of the problem can be found (eg. *1 would indicate a sample was not within temperature limits).	Unusual problems found with the data that have been described in Section 2.#, "Data Validation Findings." The number following the asterisk (*) will indicate the subsection where a description of the problem can be found (eg. *1 would indicate a sample was not within temperature limits).



DATA VALIDATION REPORT

NPDES
Monitoring

ANALYSIS: METALS

SAMPLE DELIVERY GROUP: IOC0515

Prepared by

AMEC—Denver Operations
550 South Wadsworth Boulevard, Suite 500
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title: NPDES Monitoring
Contract Task Order #: 313150010
SDG#: IOC0515
Project Manager: B. McIlvaine
Matrix: Water
Analysis: Metals
QC Level: Level IV
No. of Samples: 1
No. of Reanalyses/Dilutions: 0
Reviewer: P. Meeks
Date of Review: April 18, 2005

The samples listed in Table 1 were validated based on the guidelines outlined in the *AMEC Data Validation Procedure for Levels III and IV ICP-MS Metals, (DVP-5-A, Rev.0)*, *AMEC Data Validation Procedure for Levels III and IV ICP Metals (DVP-5, Rev. 0)*, *SW-846 Method 6020B for Inductively Coupled Plasma – Mass Spectrometry*, *SW-846 Method 6010B for Inductively Coupled Plasma*, *SW-846 Method 7471A for Mercury (Manual Cold-Vapor Technique)*, 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.

DATA VALIDATION REPORT

Project: NPDES
SDG No.: IOC0515
Analysis: MET

Table 1. Sample identification

Client ID	EPA ID	Laboratory ID	Matrix	COC Method
Outfall 001	Outfall 001	IOC0515-01	water	ILM04

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

Following are findings associated with sample management:

2.1.1 Sample Preservation, Handling, and Transport

The sample in this SDG was received at the laboratory within the temperature limits of $4^{\circ}\text{C} \pm 2^{\circ}\text{C}$. 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. The metals analyses presented in this SDG were requested as per a telephone conversation between the laboratory and MWH personnel, dated 4/12/05. No sample qualifications were required.

2.1.3 Holding Times

The date of collection recorded on the COC and the date of analysis recorded in the raw data, documented that the sample analyses were performed within the specified holding times of six months for the ICP. No qualifications were required.

2.2 ICP-MS TUNING

As the sample was not analyzed by ICP/MS, ICP/MS tuning is not applicable.

2.3 CALIBRATION

The ICV and CCV results showed acceptable recoveries, 90-110% for the ICP. The reporting limit check standards were recovered within the AMEC control limits of 70-130%. No sample qualifications were required.

2.4 BLANKS

There were no metals detected in the method blank or CCBs associated with the sample analyses. No qualifications were required.

2.5 ICP INTERFERENCE CHECK SAMPLE (ICS A/AB)

ICSA and ICSAB analyses were included in the raw data for the ICP analyses. The recoveries were within the control limits of 80-120% and no qualifications were required.

2.6 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

The ICP LCS sample was identified as 5D12072-BS1. The LCS results on the summary forms and in the raw data were within the laboratory-established ICP control limits of 85-115%. No qualifications were required.

2.7 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.

2.8 MATRIX SPIKE

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

2.9 FURNACE ATOMIC ABSORPTION QC

Furnace atomic absorption was not utilized for the analysis of this sample; therefore, furnace atomic absorption QC is not applicable.

2.10 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.

2.11 INTERNAL STANDARDS PERFORMANCE

As the sample was not analyzed by ICP/MS, ICP/MS internal standards are not applicable.

2.12 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 transcription errors or

DATA VALIDATION REPORT

Project: NPDES
SDG No.: IOC0515
Analysis: MET

calculation errors were noted. Analytes detected below the reporting limit were qualified as estimated, "J." No further qualifications were required.

2.13 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.

2.13.1 Field Blanks and Equipment Rinsates

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

2.13.2 Field Duplicates

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



Del Mar Analytical

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 9484 Chesapeake Dr., Suite 805, San Diego, CA 92123 (619) 505-8596 FAX (619) 505-9689
 9830 Swah 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 001
 Report Number: IOC0515

Sampled: 03/05/05
 Received: 03/05/05

DRAFT: METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers	Data	
										Raw Qual	Qual Code
Sample ID: IOC0515-01 (DRAFT: Outfall 001 - Water)											
Reporting Units: mg/l											
Iron	EPA 200.7	5D12072	0.0088	0.040	0.22	1	04/12/05	04/12/05			
Sample ID: IOC0515-01 (DRAFT: Outfall 001 - Water)											
Reporting Units: ug/l											
Chromium	EPA 200.7	5D12072	0.68	5.0	1.8	1	04/12/05	04/12/05	J	J	DNG
Manganese	EPA 200.7	5D12072	3.2	20	8.7	1	04/12/05	04/12/05	J	J	DNG

AMEC VALIDATED

LEVEL IV

DRAFT REPORT
 DRAFT REPORT
 DATA SUBJECT TO CHANGE

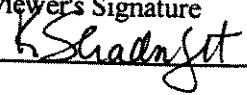
The results pertain only to the samples tested in the laboratory. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical.

CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

AMEC Earth & Environmental
 550 South Wadsworth Boulevard
 Suite 500
 Lakewood, CO 80226

Package ID T711DF34
 Task Order 313150010
 SDG No. Multiple
 No. of Analyses 4

Laboratory Alta
 Reviewer K. Shadowlight
 Analysis/Method Dioxins

Date: March 21, 2005
 Reviewer's Signature


ACTION ITEMS ^a	
1. Case Narrative Deficiencies	
2. Out of Scope Analyses	
3. Analyses Not Conducted	
4. Missing Hardcopy Deliverables	
5. Incorrect Hardcopy Deliverables	
6. Deviations from Analysis Protocol, e.g., Holding Times GC/MS Tune/Inst. Performance Calibration Method blanks Surrogates Matrix Spike/Dup LCS Field QC Internal Standard Performance Compound Identification and Quantitation System Performance	Qualifications were assigned for the following: * EMPCs * Detects below the lower method calibration level
COMMENTS ^b	
^a 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

ANALYSIS: DIOXINS/FURANS

SAMPLE DELIVERY GROUPS: Multiple SDGs

Prepared by

AMEC—Denver Operations
550 South Wadsworth Boulevard, Suite 500
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title: NPDES Monitoring
Contract Task Order #: 313150010
Sample Delivery Group #: Multiple
Project Manager: B. McIlvaine
Matrix: Water
Analysis: Dioxins/Furans
QC Level: Level IV
No. of Samples: 4
No. of Reanalyses/Dilutions: 0
Reviewer: K. Shadowlight
Date of Review: March 21, 2005

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

Table 1. Sample Identification

Client ID	Laboratory ID (Del Mar)	Laboratory ID (Alta)	Matrix	COC Method
Alpha Outfall 012	IOC0195-01	25837-001	water	1613
Outfall 001	IOC0515-01	25849-001	water	1613
Outfall 006	IOC0452-01	25851-001	water	1613
Outfall 008	IOC0454-01	25850-001	water	1613

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

Following are findings associated with sample management:

2.1.1 Sample Preservation, Handling, and Transport

All of the samples in these SDGs were received at Del Mar Analytical within the temperature limits of $4^{\circ}\text{C} \pm 2^{\circ}\text{C}$. The samples were shipped to Alta for dioxin/furan analyses and were received below the temperature limits at 1.3°C and 1.8°C ; however, as the samples were not noted to have been frozen or damaged, no qualifications were required. According to the laboratory login sheets, all samples were received intact and in good condition at both laboratories. No qualifications were required.

2.1.2 Chain of Custody

The COCs and transfer COCs were legible and signed by the appropriate field and laboratory personnel, and accounted for the analyses presented in these SDGs. As the samples were couriered directly to Del Mar Analytical, custody seals were not required. The coolers received by Alta had custody seals present and intact; however, custody seals were not present on the sample containers. The EPA 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 a year of collection. No qualifications were required.

2.2 INSTRUMENT PERFORMANCE

Following are findings associated with instrument performance:

2.2.1 GC Column Performance

A Windows Defining Mix (WDM) containing the first and last eluting congeners of each descriptor and isomer specificity compounds was not analyzed prior to the initial calibration sequence or at the beginning of each analytical sequence; however, the first and last eluting congeners and isomer specificity compounds were added to the midpoint of the initial calibration and to the continuing calibration standards (see section 2.3.2). The GC column performance in the calibrations was acceptable, with the height of the valley between the closely eluting isomers and 2,3,7,8-TCDD reported as less than 25%. No qualifications were required.

2.2.2 Mass Spectrometer Performance

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

2.3 CALIBRATION

2.3.1 Initial Calibration

There was one initial calibration, analyzed 08/30/04. The calibration consisted of six concentration level standards (CS0 through CS5) analyzed to verify instrument linearity. The initial calibration was acceptable with %RSDs $\leq 20\%$ for the 15 native compounds (calibration by isotope dilution) and $\leq 35\%$ for the two 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 VERs were acceptable with the concentrations within the acceptance criteria listed in Table 6 of EPA Method 1613. The ion abundance ratios and relative retention times were within the method QC limits. 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 standards 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 (6593-MB001) was extracted and analyzed with the samples in these SDGs. Total TCDF was reported at 1.4 pg/L and target compound 1,2,3,6,7,8-HxCDF was reported as an EMPC. There were no other detects reported in the method blank and neither of the target compounds reported in the method blank was reported in the associated samples. A review of the method blank raw data and chromatograms indicated no false negatives or false positives. No qualifications were required.

2.5 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

One Ongoing Precision Recovery (OPR) sample (6593-OPR001) was extracted and analyzed with the samples in these SDGs. All recoveries were within the acceptance criteria listed in Table 6 of Method 1613. No qualifications were required.

2.6 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

MS/MSD analyses were not performed in these SDGs. 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 samples in these SDGs had no associated field QC samples. No qualifications were required.

2.7.2 Field Duplicates

No field duplicate samples were identified for these SDGs.

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. Any reported EMPC was qualified as an estimated nondetect, "UJ." Any detects below the lower method calibration level (MCL) were qualified as estimated, "J," however, as Alta analyzed an additional calibration standard, not all results below the method calibration level were appropriately qualified by the laboratory. These results were qualified as estimated, "J," by the reviewer. No further qualifications were required.

Sample ID: IOC0515-01 Outfall 001

EPA Method 1613

Client Data
 Name: Del Mar Analytical, Irvine
 Project: IOC0515
 Date Collected: 5-Mar-08
 Time Collected: 0845

Sample Data
 Matrix: Aqueous
 Sample Size: 0.875 L

Laboratory Data
 Lab Sample: 25849-001 Date Received: 8-Mar-05
 QC Batch No.: 6593 Date Extracted: 11-Mar-05
 Date Analyzed DB-5: 15-Mar-05 Date Analyzed DB-225: NA

Analyte	Conc. (pg/L)	DL ^a	EMPC ^b	Qualifiers	Labeled Standard	%R	LCL-UCL ^d	Qualifiers
2,3,7,8-TCDD	ND	1.09			IS 13C-2,3,7,8-TCDD	65.9	25 - 164	
1,2,3,7,8-PeCDD	ND	0.581			13C-1,2,3,7,8-PeCDD	68.0	25 - 181	
1,2,3,4,7,8-HxCDD	ND	1.41			13C-1,2,3,4,7,8-HxCDD	79.6	32 - 141	
1,2,3,6,7,8-HxCDD	ND	1.44			13C-1,2,3,6,7,8-HxCDD	83.2	28 - 130	
1,2,3,7,8,9-HxCDD	ND	1.42			13C-1,2,3,4,6,7,8-HpCDD	82.2	23 - 140	
1,2,3,4,6,7,8-HpCDD	2.54			J	13C-OCDF	56.9	17 - 157	
OCDD	14.0			J	13C-2,3,7,8-TCDF	67.9	24 - 169	
2,3,7,8-TCDF	ND	0.986			13C-1,2,3,7,8-PeCDF	61.7	24 - 185	
1,2,3,7,8-PeCDF	ND	1.53			13C-2,3,4,7,8-PeCDF	65.5	21 - 178	
2,3,4,7,8-PeCDF	ND	1.28			13C-1,2,3,4,7,8-HxCDF	65.5	26 - 152	
1,2,3,4,7,8-HxCDF	ND	0.458			13C-1,2,3,6,7,8-HxCDF	71.6	26 - 123	
1,2,3,6,7,8-HxCDF	ND	0.456			13C-2,3,4,6,7,8-HxCDF	74.3	28 - 136	
2,3,4,6,7,8-HxCDF	ND	0.509			13C-1,2,3,7,8,9-HxCDF	73.9	29 - 147	
1,2,3,7,8,9-HxCDF	ND	0.713			13C-1,2,3,4,6,7,8-HpCDF	75.0	28 - 143	
1,2,3,4,6,7,8-HpCDF	ND	0.878			13C-1,2,3,4,7,8,9-HpCDF	81.7	26 - 138	
1,2,3,4,7,8,9-HpCDF	ND	0.964			13C-OCDF	63.1	17 - 157	
OCDF	ND	2.64			CRS 37Cl-2,3,7,8-TCDD	72.2	35 - 197	
Totals								
Total TCDD	ND	1.09						
Total PeCDD	ND	0.581						
Total HxCDD	ND	1.42						
Total HpCDD	4.64							
Total TCDF	ND	0.986						
Total PeCDF	ND	1.40						
Total HxCDF	ND	0.526						
Total HpCDF	ND	0.915						

Footnotes

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

Analyst: JMH

Project 25849

MEC VALIDATED

Approved By: 

Martha M. Maier 16-Mar-2005 11:05

CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

AMEC Earth & Environmental
 550 South Wadsworth Boulevard
 Suite 500
 Lakewood, CO 80226

Package ID T711VO63
 Task Order 313150010
 SDG No. IOC0447, IOC0515

No. of Analyses 4

Laboratory Del Mar

Reviewer M. Pokorny

Analysis/Method Volatiles

Date: April 6, 2005

Reviewer's Signature



ACTION ITEMS^a

1. **Case Narrative**
Deficiencies

2. **Out of Scope**
Analyses

3. **Analyses Not Conducted**

4. **Missing Hardcopy**
Deliverables

5. **Incorrect Hardcopy**
Deliverables

6. **Deviations from Analysis**

Qualifications were required for calibration outlier.

Protocol, e.g.,

Holding Times

GC/MS Tune/Inst. Perform

Calibrations

Blanks

Surrogates

Matrix Spike/Dup LCS

Field QC

Internal Standard Performance

Compound Identification and

Quantitation

System Performance

COMMENTS^b

^a 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

ANALYSIS: VOLATILES

SAMPLE DELIVERY GROUP: IOC0447, IOC0515

Prepared by

AMEC Denver Operations
550 South Wadsworth Boulevard, Suite 500
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title: NPDES Monitoring
Contract Task Order #: 313150010
SDG#: IOC0447, IOC0515
Project Manager: B. McIlvaine
Matrix: Water
Analysis: Volatiles
QC Level: Level IV
No. of Samples: 4
No. of Reanalyses/Dilutions: 0
Reviewer: M. Pokorny
Date of Review: April 6, 2005

The samples listed in Table 1 were validated based on the guidelines outlined in the *AMEC Data Validation Procedure for Levels C and D Volatile Organics (DVP-2, Rev. 2)*, *EPA Method 624, SW846 Method 8260B*, 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 summary forms as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

Table 1. Sample identification

Client ID	EPA ID	Lab No.	Matrix	Method
Outfall 002	Outfall 002	IOB0447-01	water	624
Trip Blank	Trip Blank	IOB0447-02	water	624
Outfall 001	Outfall 001	IOB0515-01	water	624
Trip Blank	Trip Blank	IOB0515-02	water	624

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

The following are findings associated with sample management:

2.1.1 Sample Preservation, Handling, and Transport

The samples in these SDGs were received at the laboratory within the temperature limits of $4^{\circ}\text{C} \pm 2^{\circ}\text{C}$. The samples were properly preserved. The COCs noted that the samples were received intact; however, information regarding absence of headspace was not provided. No qualifications were required.

2.1.2 Chain of Custody

The COCs were signed and dated by both field and laboratory personnel. The COCs accounted for the analyses presented in these SDGs. As the samples were couriered directly to the laboratory from the field, custody seals were not required. No qualifications were required.

2.1.3 Holding Times

The samples were analyzed within seven days of collection. No qualifications were required.

2.2 GC/MS TUNING

The ion abundance windows shown on the quantitation reports were consistent with those specified in EPA Method 624, and all ion abundances were within the established windows. The samples and associated QC were analyzed within 12 hours of the BFB injection times. The Form Vs were verified from the raw data and no discrepancies between the summary forms and the raw data were noted. No qualifications were required.

2.3 CALIBRATION

One initial calibration dated 02/19/05 was associated with these SDGs. The average RRFs were ≥ 0.05 for all compounds listed on the sample result summaries. The %RSDs were $\leq 35\%$ for all target compounds listed on the sample result summaries. There was one continuing calibration dated 03/07/05 associated with the sample analyses in these SDGs. The RRFs were ≥ 0.05 in the continuing calibration. The %D for trichlorofluoromethane exceeded 20% in the continuing calibration; therefore, the nondetect for trichlorofluoromethane was qualified as estimated, "UJ," in samples Outfall 001 and Outfall 002. No qualifications were required for the Trip Blank. The %Ds were $\leq 20\%$ for the remaining target compounds listed on the result summaries. A representative number of %RSDs and average RRFs from the initial calibrations, and %Ds and RRFs from the continuing calibrations were recalculated from the raw data, and no calculation or transcription errors were found. No further qualifications were required.

2.4 BLANKS

One water method blank (5C07026-BLK1) was associated with the sample analyses. There were no detects above the MDLs for the target compounds listed on the sample result summaries. The method blank raw data showed no evidence of false negatives. No qualifications were required.

2.5 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

One water blank spike (5C07026-BS1) was associated with the sample analyses. All recoveries were within the laboratory-established QC limits. A representative number of recoveries were recalculated from the raw data and no calculation or transcription errors were found. No qualifications were required.

2.6 SURROGATE RECOVERY

The surrogates were recovered within the QC limits of 80-120% in the samples and associated QC. A representative number of surrogate recoveries were recalculated from the raw data and no calculation or transcription errors were found. No qualifications were required.

2.7 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

There were no MS/MSD analyses associated with these SDGs. Evaluation of method accuracy was based on 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 (IOC0447-02) and Trip Blank (IOC0515-02) were the trip blanks associated with the site samples. There were no target compounds detected above the MDLs in the trip blanks. No qualifications were required.

2.8.2 Field Blanks and Equipment Rinsates

There were no field QC samples associated with these SDGs. No qualifications were required.

2.8.3 Field Duplicates

There were no field duplicate samples associated with these SDGs. No qualifications were required.

2.9 INTERNAL STANDARDS PERFORMANCE

Internal standard area counts and retention times for the samples in these SDGs were within the control limits established by the continuing calibration standards: +100%/-50% for internal standard areas and ± 0.50 minutes for retention times. A representative number of internal standard areas and retention times were verified from the raw data, and no calculation or transcription errors were noted. No qualifications were required.

2.10 COMPOUND IDENTIFICATION

Target compound identification was verified at a Level IV data validation. The laboratory analyzed volatile target compounds by EPA Method 624. Chromatograms, retention times, and spectra for the samples and QC were examined and no target compound identification problems were noted. No qualifications were required.

2.11 COMPOUND QUANTIFICATION AND REPORTED DETECTION LIMITS

Compound quantification is verified at a Level IV data validation. The reporting limits were supported by the lowest concentrations of the initial calibration standards and by the MDL study. Compound quantitation was verified by recalculating any sample detects and a representative number of blank spike and surrogate recoveries from the raw data. Results were reported in $\mu\text{g/L}$ (ppb). No calculation or transcription errors were noted. No qualifications were required.

2.12 TENTATIVELY IDENTIFIED COMPOUNDS

The laboratory did not provide TICs for these SDGs. No qualifications were required.

2.13 SYSTEM PERFORMANCE

A review of the chromatograms and other raw data showed no identifiable problems with system performance. No qualifications were required.



Del Mar Analytical

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

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

Project ID: Routine Outfall 001

Report Number: IOC0515

Sampled: 03/05/05
 Received: 03/05/05

DRAFT: PURGEABLES BY GC/MS (EPA 624)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers	
Sample ID: IOC0515-01 (DRAFT: Outfall 001 - Water)					Sampled: 03/05/05					REV QUAL
Reporting Units: ug/l										CODE
Benzene	EPA 624	5C07026	0.28	2.0	ND	1	03/07/05	03/08/05	U	
Carbon tetrachloride	EPA 624	5C07026	0.28	5.0	ND	1	03/07/05	03/08/05	U	
Chloroform	EPA 624	5C07026	0.33	2.0	ND	1	03/07/05	03/08/05	U	
1,1-Dichloroethane	EPA 624	5C07026	0.27	2.0	ND	1	03/07/05	03/08/05	U	
1,2-Dichloroethane	EPA 624	5C07026	0.28	2.0	ND	1	03/07/05	03/08/05	U	
1,1-Dichloroethene	EPA 624	5C07026	0.32	3.0	ND	1	03/07/05	03/08/05	U	
Ethylbenzene	EPA 624	5C07026	0.25	2.0	ND	1	03/07/05	03/08/05	U	
Tetrachloroethene	EPA 624	5C07026	0.32	2.0	ND	1	03/07/05	03/08/05	U	
Toluene	EPA 624	5C07026	0.36	2.0	ND	1	03/07/05	03/08/05	U	
1,1,1-Trichloroethane	EPA 624	5C07026	0.30	2.0	ND	1	03/07/05	03/08/05	U	
1,1,2-Trichloroethane	EPA 624	5C07026	0.30	2.0	ND	1	03/07/05	03/08/05	U	
Trichloroethene	EPA 624	5C07026	0.26	5.0	ND	1	03/07/05	03/08/05	U	
Trichlorofluoromethane	EPA 624	5C07026	0.34	5.0	ND	1	03/07/05	03/08/05	U	
Vinyl chloride	EPA 624	5C07026	0.26	5.0	ND	1	03/07/05	03/08/05	U	
Xylenes, Total	EPA 624	5C07026	0.52	4.0	ND	1	03/07/05	03/08/05	U	
Surrogate: Dibromofluoromethane (80-120%)					110 %					
Surrogate: Toluene-d8 (80-120%)					110 %					
Surrogate: 4-Bromofluorobenzene (80-120%)					107 %					
Sample ID: IOC0515-02 (DRAFT: Trip Blank - Water)					Sampled: 03/05/05					
Reporting Units: ug/l										
Benzene	EPA 624	5C07026	0.28	2.0	ND	1	03/07/05	03/07/05	U	
Carbon tetrachloride	EPA 624	5C07026	0.28	5.0	ND	1	03/07/05	03/07/05	U	
Chloroform	EPA 624	5C07026	0.33	2.0	ND	1	03/07/05	03/07/05	U	
1,1-Dichloroethane	EPA 624	5C07026	0.27	2.0	ND	1	03/07/05	03/07/05	U	
1,2-Dichloroethane	EPA 624	5C07026	0.28	2.0	ND	1	03/07/05	03/07/05	U	
1,1-Dichloroethene	EPA 624	5C07026	0.32	3.0	ND	1	03/07/05	03/07/05	U	
Ethylbenzene	EPA 624	5C07026	0.25	2.0	ND	1	03/07/05	03/07/05	U	
Tetrachloroethene	EPA 624	5C07026	0.32	2.0	ND	1	03/07/05	03/07/05	U	
Toluene	EPA 624	5C07026	0.36	2.0	ND	1	03/07/05	03/07/05	U	
1,1,1-Trichloroethane	EPA 624	5C07026	0.30	2.0	ND	1	03/07/05	03/07/05	U	
1,1,2-Trichloroethane	EPA 624	5C07026	0.30	2.0	ND	1	03/07/05	03/07/05	U	
Trichloroethene	EPA 624	5C07026	0.26	5.0	ND	1	03/07/05	03/07/05	U	
Trichlorofluoromethane	EPA 624	5C07026	0.34	5.0	ND	1	03/07/05	03/07/05	U	
Vinyl chloride	EPA 624	5C07026	0.26	5.0	ND	1	03/07/05	03/07/05	U	
Xylenes, Total	EPA 624	5C07026	0.52	4.0	ND	1	03/07/05	03/07/05	U	
Surrogate: Dibromofluoromethane (80-120%)					106 %					
Surrogate: Toluene-d8 (80-120%)					112 %					
Surrogate: 4-Bromofluorobenzene (80-120%)					103 %					

AMEC VALIDATED

DRAFT REPORT
 DRAFT REPORT
 DATA SUBJECT TO CHANGE

LEVEL IV

The results pertain only to the samples tested in the laboratory. This report shall not be reproduced.

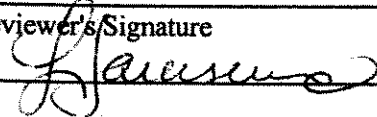
CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

AMEC Earth & Environmental
 550 South Wadsworth Boulevard
 Suite 500
 Lakewood, CO 80226

Package ID T711WC90
 Task Order 313150010
 SDG No. IOC0447, IOC0515

No. of Analyses 2

Laboratory Del Mar Analytical
 Reviewer L. Jarusewic
 Analysis/Method General Minerals

Date: 04/01/05
 Reviewer's Signature


ACTION ITEMS ^a	
1. Case Narrative Deficiencies	
2. Out of Scope Analyses	
3. Analyses Not Conducted	
4. Missing Hardcopy Deliverables	
5. Incorrect Hardcopy Deliverables	
6. Deviations from Analysis Protocol, e.g.,	
Holding Times	
GC/MS Tune/Inst. Performance	
Calibrations	
Blanks	
Surrogates	
Matrix Spike/Dup LCS	
Field QC	
Internal Standard Performance	
Compound Identification and Quantitation	
System Performance	
COMMENTS^b	Acceptable as reviewed.

^a 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

ANALYSIS: GENERAL MINERALS

SAMPLE DELIVERY GROUPS: IOC0447 & IOC0515

Prepared by

AMEC—Denver Operations
550 South Wadsworth Boulevard, Suite 500
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title: NPDES Monitoring
Contract Task Order #: 313150010
Sample Delivery Group #: IOC0447, IOC0515
Project Manager: B. McIlvaine
Matrix: Water
Analysis: General Minerals
QC Level: Level IV
No. of Samples: 2
Reviewer: L. Jarusewic
Date of Review: April 1, 2005

The sample listed in Table 1 was validated based on the guidelines outlined in the AMEC *Data Validation Procedures SOP DVP-6, Rev. 2, USEPA Methods for Chemical Analysis of Water and Wastes Method 350.2, 120.1, and 180.1*, 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 I as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

Table 1. Sample identification

Client ID	EPA ID	Laboratory ID	Matrix	COC Method
Outfall 001	Outfall 001	IOC0515-01	Water	General Minerals
Outfall 002	Outfall 002	IOC0447-01	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 samples in these SDGs were received at the laboratory within the temperature limits of $4^{\circ}\text{C} \pm 2^{\circ}\text{C}$. No preservation problems were noted by the laboratory. No qualifications were required.

2.1.2 Chain of Custody

The COCs were signed and dated by field and laboratory personnel. The COCs accounted for all analyses presented in these SDGs. No sample qualifications were required.

2.1.3 Holding Times

The holding times were assessed by comparing the dates of collection with the dates of analyses. The 28-day analytical holding time for ammonia and conductivity and the 48-hour holding time for turbidity were met. No qualifications were required.

2.2 CALIBRATION

For the applicable analyses, the initial calibration correlation coefficients were ≥ 0.995 . Initial and continuing calibration information was acceptable with recoveries within the control limits of 90-110%. For ammonia, no information regarding the standardization of the titrant was provided; however, as the LCS recovery was within the CCV control limits, no qualifications were required.

2.3 BLANKS

Turbidity was detected in method blank 5C05047-BLK1 at 0.050 NTU; however, the method blank result was insufficient to qualify the Outfall 001 or Outfall 002 results. The remaining method blank and CCB results reported on the summary forms and in the raw data for blank analyses associated with the samples were nondetects at the reporting limit. No qualifications were required.

2.4 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

The ammonia laboratory control sample recovery was within the laboratory-established control limits. The LCS is not applicable to turbidity or conductivity. No qualifications were required.

2.5 SURROGATES RECOVERY

Surrogate recovery is not applicable to the analyses presented in these SDGs.

2.6 LABORATORY DUPLICATES

There were no MS/MSD or duplicate analyses performed in association with the samples in these SDGs; therefore, no assessment was made with respect to this criterion.

2.7 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

There were no MS/MSD analyses performed in association with the samples in these SDGs; therefore, no assessment was made with respect to this criterion. Method accuracy was assessed based on LCS results.

2.8 FURNACE ATOMIC ABSORPTION QC

Furnace atomic absorption was not utilized for the analyses of these samples; therefore, furnace atomic absorption QC is not applicable.

2.9 ICP SERIAL DILUTION

ICP serial dilution is not applicable to the analyses presented in this data validation report.

2.10 SAMPLE RESULT VERIFICATION

A Level IV review was performed for the samples in these data packages. Calculations were verified, and the sample results reported on the Form Is were verified against the raw data. No transcription errors or calculation errors were noted. No qualifications were required.

2.11 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. The following are findings associated with field QC samples:

2.11.1 Field Blanks and Equipment Rinsates

The samples in these SDGs had no associated field QC samples. No qualifications were required.

2.11.2 Field Duplicates

There were no field duplicate pairs associated with these SDGs.



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 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 001

Report Number: IOC0515

Sampled: 03/05/05
 Received: 03/05/05

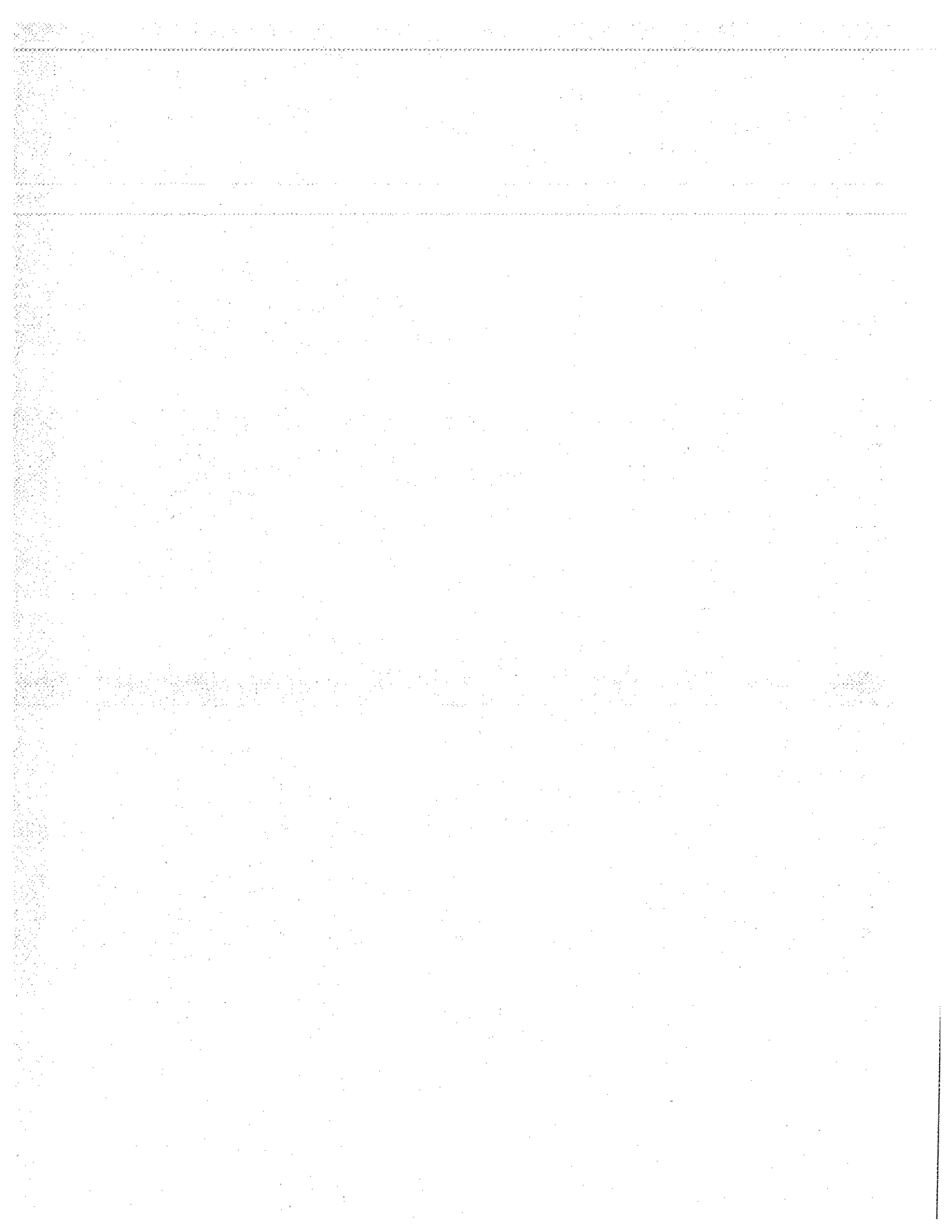
DRAFT: INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOC0515-01 (DRAFT: Outfall 001 - Water)					Sampled: 03/05/05				
Reporting Units: mg/l									
Ammonia-N (Distilled)	EPA 350.2	5C07070	0.30	0.50	ND	1	03/07/05	03/07/05	U
Sample ID: IOC0515-01 (DRAFT: Outfall 001 - Water)					Sampled: 03/05/05				
Reporting Units: NTU									
Turbidity	EPA 180.1	5C05047	0.040	1.0	2.2	1	03/05/05	03/05/05	
Sample ID: IOC0515-01 (DRAFT: Outfall 001 - Water)					Sampled: 03/05/05				
Reporting Units: umhos/cm									
Specific Conductance	EPA 120.1	5C09097	1.0	1.0	270	1	03/09/05	03/09/05	

AMEC VALIDATED

LEVEL IV

DRAFT REPORT
 DRAFT REPORT
 DATA SUBJECT TO CHANGE





LABORATORY REPORT

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

Project: Routine Outfall 001

Sampled: 03/05/05
Received: 03/05/05
Revised: 05/12/05 08:52

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.*

CASE NARRATIVE

- SAMPLE RECEIPT: Samples were received intact, at 6°C, on ice and with chain of custody documentation.
- HOLDING TIMES: All samples were analyzed within prescribed holding times and/or in accordance with the Del Mar Analytical Sample Acceptance Policy unless otherwise noted in the report.
- PRESERVATION: Samples requiring preservation were verified prior to sample analysis.
- QA/QC CRITERIA: All analyses met method criteria, except as noted in the report with data qualifiers.
- COMMENTS: Results that fall between the MDL and RL are 'J' flagged.
- SUBCONTRACTED: Refer to the last page for specific subcontract laboratory information included in this report.
- ADDITIONAL INFORMATION: The report has been revised to include all additional testing parameters. Due to non-compliance for the 2/11/05 sample, Cr, Fe, and Mn were analyzed. Also due to non-compliance, Gross Alpha was analyzed. Finally, enclosed are results for Ca, Mg, Na, K for reference only.

LABORATORY ID	CLIENT ID	MATRIX
IOC0515-01	Outfall 001	Water
IOC0515-02	Trip Blank	Water

Reviewed By:

Del Mar Analytical, Irvine
Michele Harper
Project Manager



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

Project ID: Routine Outfall 001

Report Number: IOC0515

Sampled: 03/05/05
 Received: 03/05/05

PURGEABLES BY GC/MS (EPA 624)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOC0515-01 (Outfall 001 - Water)					Sampled: 03/05/05				
Reporting Units: ug/l									
Benzene	EPA 624	5C07026	0.28	2.0	ND	1	03/07/05	03/08/05	
Carbon tetrachloride	EPA 624	5C07026	0.28	5.0	ND	1	03/07/05	03/08/05	
Chloroform	EPA 624	5C07026	0.33	2.0	ND	1	03/07/05	03/08/05	
1,1-Dichloroethane	EPA 624	5C07026	0.27	2.0	ND	1	03/07/05	03/08/05	
1,2-Dichloroethane	EPA 624	5C07026	0.28	2.0	ND	1	03/07/05	03/08/05	
1,1-Dichloroethene	EPA 624	5C07026	0.32	3.0	ND	1	03/07/05	03/08/05	
Ethylbenzene	EPA 624	5C07026	0.25	2.0	ND	1	03/07/05	03/08/05	
Tetrachloroethene	EPA 624	5C07026	0.32	2.0	ND	1	03/07/05	03/08/05	
Toluene	EPA 624	5C07026	0.36	2.0	ND	1	03/07/05	03/08/05	
1,1,1-Trichloroethane	EPA 624	5C07026	0.30	2.0	ND	1	03/07/05	03/08/05	
1,1,2-Trichloroethane	EPA 624	5C07026	0.30	2.0	ND	1	03/07/05	03/08/05	
Trichloroethene	EPA 624	5C07026	0.26	5.0	ND	1	03/07/05	03/08/05	
Trichlorofluoromethane	EPA 624	5C07026	0.34	5.0	ND	1	03/07/05	03/08/05	
Vinyl chloride	EPA 624	5C07026	0.26	5.0	ND	1	03/07/05	03/08/05	
Xylenes, Total	EPA 624	5C07026	0.52	4.0	ND	1	03/07/05	03/08/05	
<i>Surrogate: Dibromofluoromethane (80-120%)</i>					110 %				
<i>Surrogate: Toluene-d8 (80-120%)</i>					110 %				
<i>Surrogate: 4-Bromofluorobenzene (80-120%)</i>					107 %				
Sample ID: IOC0515-02 (Trip Blank - Water)					Sampled: 03/05/05				
Reporting Units: ug/l									
Benzene	EPA 624	5C07026	0.28	2.0	ND	1	03/07/05	03/07/05	
Carbon tetrachloride	EPA 624	5C07026	0.28	5.0	ND	1	03/07/05	03/07/05	
Chloroform	EPA 624	5C07026	0.33	2.0	ND	1	03/07/05	03/07/05	
1,1-Dichloroethane	EPA 624	5C07026	0.27	2.0	ND	1	03/07/05	03/07/05	
1,2-Dichloroethane	EPA 624	5C07026	0.28	2.0	ND	1	03/07/05	03/07/05	
1,1-Dichloroethene	EPA 624	5C07026	0.32	3.0	ND	1	03/07/05	03/07/05	
Ethylbenzene	EPA 624	5C07026	0.25	2.0	ND	1	03/07/05	03/07/05	
Tetrachloroethene	EPA 624	5C07026	0.32	2.0	ND	1	03/07/05	03/07/05	
Toluene	EPA 624	5C07026	0.36	2.0	ND	1	03/07/05	03/07/05	
1,1,1-Trichloroethane	EPA 624	5C07026	0.30	2.0	ND	1	03/07/05	03/07/05	
1,1,2-Trichloroethane	EPA 624	5C07026	0.30	2.0	ND	1	03/07/05	03/07/05	
Trichloroethene	EPA 624	5C07026	0.26	5.0	ND	1	03/07/05	03/07/05	
Trichlorofluoromethane	EPA 624	5C07026	0.34	5.0	ND	1	03/07/05	03/07/05	
Vinyl chloride	EPA 624	5C07026	0.26	5.0	ND	1	03/07/05	03/07/05	
Xylenes, Total	EPA 624	5C07026	0.52	4.0	ND	1	03/07/05	03/07/05	
<i>Surrogate: Dibromofluoromethane (80-120%)</i>					106 %				
<i>Surrogate: Toluene-d8 (80-120%)</i>					112 %				
<i>Surrogate: 4-Bromofluorobenzene (80-120%)</i>					103 %				

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MWH-Pasadena/Boeing
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Attention: Bronwyn Kelly

Project ID: Routine Outfall 001

Report Number: IOC0515

Sampled: 03/05/05
Received: 03/05/05

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

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOC0515-01 (Outfall 001 - Water)					Sampled: 03/05/05				
Reporting Units: ug/l									
Bis(2-ethylhexyl)phthalate	EPA 625	5C08046	1.1	5.0	1.4	0.943	03/08/05	03/17/05	B, J
2,4-Dinitrotoluene	EPA 625	5C08046	0.23	9.0	ND	0.943	03/08/05	03/17/05	
N-Nitrosodimethylamine	EPA 625	5C08046	0.22	8.0	ND	0.943	03/08/05	03/17/05	
Pentachlorophenol	EPA 625	5C08046	0.78	8.0	ND	0.943	03/08/05	03/17/05	
2,4,6-Trichlorophenol	EPA 625	5C08046	0.10	6.0	ND	0.943	03/08/05	03/17/05	
Surrogate: 2-Fluorophenol (30-120%)					65 %				
Surrogate: Phenol-d6 (35-120%)					68 %				
Surrogate: 2,4,6-Tribromophenol (45-120%)					85 %				
Surrogate: Nitrobenzene-d5 (45-120%)					69 %				
Surrogate: 2-Fluorobiphenyl (45-120%)					98 %				
Surrogate: Terphenyl-d14 (45-120%)					83 %				

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Pasadena, CA 91101
Attention: Bronwyn Kelly

Project ID: Routine Outfall 001

Report Number: IOC0515

Sampled: 03/05/05
Received: 03/05/05

ORGANOCHLORINE PESTICIDES (EPA 608)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOC0515-01 (Outfall 001 - Water) - cont.					Sampled: 03/05/05				
Reporting Units: ug/l									
alpha-BHC	EPA 608	5C07057	0.0010	0.010	ND	0.952	03/07/05	03/08/05	
Surrogate: Decachlorobiphenyl (45-120%)					70 %				
Surrogate: Tetrachloro-m-xylene (35-120%)					57 %				

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

Project ID: Routine Outfall 001

Report Number: IOC0515

Sampled: 03/05/05

Received: 03/05/05

METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOC0515-01 (Outfall 001 - Water) - cont.					Sampled: 03/05/05				
Reporting Units: mg/l									
Calcium	EPA 200.7	5D12072	0.015	0.10	22	1	04/12/05	04/12/05	
Iron	EPA 200.7	5D12072	0.0088	0.040	0.22	1	04/12/05	04/12/05	
Magnesium	EPA 200.7	5D12072	0.0030	0.020	7.5	1	04/12/05	04/12/05	
Potassium	EPA 200.7	5D12072	0.066	0.50	1.6	1	04/12/05	04/12/05	
Sodium	EPA 200.7	5D12072	0.095	0.50	17	1	04/12/05	04/12/05	
Sample ID: IOC0515-01 (Outfall 001 - Water)					Sampled: 03/05/05				
Reporting Units: ug/l									
Chromium	EPA 200.7	5D12072	0.68	5.0	1.8	1	04/12/05	04/12/05	J
Copper	EPA 200.8	5C05044	0.49	2.0	2.5	1	03/05/05	03/07/05	
Lead	EPA 200.8	5C05044	0.13	1.0	0.20	1	03/05/05	03/07/05	J
Manganese	EPA 200.7	5D12072	3.2	20	8.7	1	04/12/05	04/12/05	J
Mercury	EPA 245.1	5C07062	0.063	0.20	ND	1	03/07/05	03/07/05	

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Project ID: Routine Outfall 001

Report Number: IOC0515

Sampled: 03/05/05

Received: 03/05/05

INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOC0515-01 (Outfall 001 - Water) - cont.					Sampled: 03/05/05				
Reporting Units: mg/l									
Ammonia-N (Distilled)	EPA 350.2	5C07070	0.30	0.50	ND	1	03/07/05	03/07/05	
Biochemical Oxygen Demand	EPA 405.1	5C05045	0.59	2.0	ND	1	03/05/05	03/10/05	
Chloride	EPA 300.0	5C05022	0.26	0.50	14	1	03/05/05	03/05/05	
Nitrate/Nitrite-N	EPA 300.0	5C05022	0.072	0.11	0.20	1	03/05/05	03/05/05	
Oil & Grease	EPA 413.1	5C07071	0.94	5.0	ND	1	03/07/05	03/07/05	
Sulfate	EPA 300.0	5C05022	0.18	0.50	33	1	03/05/05	03/05/05	
Surfactants (MBAS)	SM5540-C	5C05043	0.044	0.10	0.045	1	03/05/05	03/05/05	
Total Dissolved Solids	SM2540C	5C09095	10	10	190	1	03/09/05	03/09/05	J
Total Suspended Solids	EPA 160.2	5C08093	10	10	ND	1	03/08/05	03/08/05	
Sample ID: IOC0515-01 (Outfall 001 - Water)					Sampled: 03/05/05				
Reporting Units: ml/l/hr									
Total Settleable Solids	EPA 160.5	5C05046	0.10	0.10	ND	1	03/05/05	03/05/05	
Sample ID: IOC0515-01 (Outfall 001 - Water)					Sampled: 03/05/05				
Reporting Units: NTU									
Turbidity	EPA 180.1	5C05047	0.040	1.0	2.2	1	03/05/05	03/05/05	
Sample ID: IOC0515-01 (Outfall 001 - Water)					Sampled: 03/05/05				
Reporting Units: ug/l									
Total Cyanide	EPA 335.2	5C09062	2.2	5.0	ND	1	03/09/05	03/09/05	
Perchlorate	EPA 314.0	5C08052	0.80	4.0	ND	1	03/08/05	03/08/05	
Sample ID: IOC0515-01 (Outfall 001 - Water)					Sampled: 03/05/05				
Reporting Units: umhos/cm									
Specific Conductance	EPA 120.1	5C09097	1.0	1.0	270	1	03/09/05	03/09/05	

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Attention: Bronwyn Kelly

Project ID: Routine Outfall 001

Report Number: IOC0515

Sampled: 03/05/05
Received: 03/05/05

SHORT HOLD TIME DETAIL REPORT

Sample ID: Outfall 001 (IOC0515-01) - Water	Hold Time (in days)	Date/Time Sampled	Date/Time Received	Date/Time Extracted	Date/Time Analyzed
EPA 160.5	2	03/05/2005 08:45	03/05/2005 13:10	03/05/2005 14:20	03/05/2005 15:45
EPA 180.1	2	03/05/2005 08:45	03/05/2005 13:10	03/05/2005 15:30	03/05/2005 15:30
EPA 300.0	2	03/05/2005 08:45	03/05/2005 13:10	03/05/2005 14:30	03/05/2005 14:33
EPA 405.1	2	03/05/2005 08:45	03/05/2005 13:10	03/05/2005 15:48	03/10/2005 15:00
SM5540-C	2	03/05/2005 08:45	03/05/2005 13:10	03/05/2005 15:25	03/05/2005 16:14

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 Attention: Bronwyn Kelly

Project ID: Routine Outfall 001

Report Number: IOC0515

Sampled: 03/05/05
 Received: 03/05/05

METHOD BLANK/QC DATA

PURGEABLES BY GC/MS (EPA 624)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	Limit	RPD	RPD Limit	Data Qualifiers
Batch: 5C07026 Extracted: 03/07/05											
Blank Analyzed: 03/07/2005 (5C07026-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	0.32	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	0.52	ug/l							
Surrogate: Dibromofluoromethane	27.2			ug/l	25.0		109	80-120			
Surrogate: Toluene-d8	27.7			ug/l	25.0		111	80-120			
Surrogate: 4-Bromofluorobenzene	27.0			ug/l	25.0		108	80-120			
LCS Analyzed: 03/07/2005 (5C07026-BS1)											
Benzene	27.0	2.0	0.28	ug/l	25.0		108	70-120			
Carbon tetrachloride	28.7	5.0	0.28	ug/l	25.0		115	70-140			M-3
Chloroform	28.2	2.0	0.33	ug/l	25.0		113	75-130			
1,1-Dichloroethane	28.3	2.0	0.27	ug/l	25.0		113	70-135			
1,2-Dichloroethane	26.6	2.0	0.28	ug/l	25.0		106	60-150			
1,1-Dichloroethene	29.2	3.0	0.32	ug/l	25.0		117	75-135			M-3
Ethylbenzene	28.2	2.0	0.25	ug/l	25.0		113	80-120			M-3
Tetrachloroethene	26.8	2.0	0.32	ug/l	25.0		107	75-125			
Toluene	27.4	2.0	0.36	ug/l	25.0		110	75-120			
1,1,1-Trichloroethane	28.4	2.0	0.30	ug/l	25.0		114	75-140			M-3
1,1,2-Trichloroethane	26.0	2.0	0.30	ug/l	25.0		104	70-125			
Trichloroethene	27.8	5.0	0.26	ug/l	25.0		111	80-120			
Trichlorofluoromethane	28.7	5.0	0.34	ug/l	25.0		115	65-145			
Vinyl chloride	31.8	5.0	0.26	ug/l	25.0		127	50-130			
Surrogate: Dibromofluoromethane	27.2			ug/l	25.0		109	80-120			
Surrogate: Toluene-d8	27.8			ug/l	25.0		111	80-120			

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 Attention: Bronwyn Kelly

Project ID: Routine Outfall 001

Report Number: IOC0515

Sampled: 03/05/05
 Received: 03/05/05

METHOD BLANK/QC DATA

PURGEABLES BY GC/MS (EPA 624)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	Limit	RPD	RPD Limit	Data Qualifiers
Batch: 5C07026 Extracted: 03/07/05											
LCS Analyzed: 03/07/2005 (5C07026-BS1)											
Surrogate: 4-Bromofluorobenzene	27.2			ug/l	25.0		109	80-120			
Matrix Spike Analyzed: 03/07/2005 (5C07026-MS1)											
						Source: IOC0391-11					
Carbon tetrachloride	20.7	5.0	0.28	ug/l	25.0	ND	83	70-145			
Chloroform	26.2	2.0	0.33	ug/l	25.0	ND	105	70-135			
1,1-Dichloroethane	25.9	2.0	0.27	ug/l	25.0	ND	104	65-135			
1,1-Dichloroethene	27.6	3.0	0.32	ug/l	25.0	1.7	104	65-140			
Tetrachloroethene	30.9	2.0	0.32	ug/l	25.0	0.54	121	70-130			
1,1,1-Trichloroethane	25.0	2.0	0.30	ug/l	25.0	ND	100	75-140			
1,1,2-Trichloroethane	31.6	2.0	0.30	ug/l	25.0	2.1	118	60-135			
Trichloroethene	111	5.0	0.26	ug/l	25.0	94	68	70-125			M2
Trichlorofluoromethane	24.0	5.0	0.34	ug/l	25.0	ND	96	55-145			
Vinyl chloride	39.2	5.0	0.26	ug/l	25.0	14	101	40-135			
Surrogate: Dibromofluoromethane	26.5			ug/l	25.0		106	80-120			
Surrogate: Toluene-d8	27.1			ug/l	25.0		108	80-120			
Surrogate: 4-Bromofluorobenzene	32.1			ug/l	25.0		128	80-120			ZX
Matrix Spike Dup Analyzed: 03/07/2005 (5C07026-MSD1)											
						Source: IOC0391-11					
Carbon tetrachloride	19.4	5.0	0.28	ug/l	25.0	ND	78	70-145	6	25	
Chloroform	26.3	2.0	0.33	ug/l	25.0	ND	105	70-135	0	20	
1,1-Dichloroethane	25.3	2.0	0.27	ug/l	25.0	ND	101	65-135	2	20	
1,1-Dichloroethene	28.6	3.0	0.32	ug/l	25.0	1.7	108	65-140	4	20	
Tetrachloroethene	29.5	2.0	0.32	ug/l	25.0	0.54	116	70-130	5	20	
1,1,1-Trichloroethane	24.6	2.0	0.30	ug/l	25.0	ND	98	75-140	2	20	
1,1,2-Trichloroethane	30.3	2.0	0.30	ug/l	25.0	2.1	113	60-135	4	25	
Trichloroethene	113	5.0	0.26	ug/l	25.0	94	76	70-125	2	20	
Trichlorofluoromethane	23.5	5.0	0.34	ug/l	25.0	ND	94	55-145	2	25	
Vinyl chloride	41.2	5.0	0.26	ug/l	25.0	14	109	40-135	5	30	
Surrogate: Dibromofluoromethane	26.1			ug/l	25.0		104	80-120			
Surrogate: Toluene-d8	27.2			ug/l	25.0		109	80-120			
Surrogate: 4-Bromofluorobenzene	30.2			ug/l	25.0		121	80-120			ZX

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300 North Lake Avenue, Suite 1200
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Attention: Bronwyn Kelly

Project ID: Routine Outfall 001

Report Number: IOC0515

Sampled: 03/05/05
Received: 03/05/05

METHOD BLANK/QC DATA

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

Analyte	Result	Reporting		Spike	Source	%REC		RPD	Data	
		Limit	MDL			Units	Level			Result
Batch: 5C08046 Extracted: 03/08/05										
Blank Analyzed: 03/16/2005 (5C08046-BLK1)										
Bis(2-ethylhexyl)phthalate	1.44	5.0	1.1	ug/l						J
2,4-Dinitrotoluene	ND	9.0	0.23	ug/l						
N-Nitrosodimethylamine	ND	8.0	0.22	ug/l						
Pentachlorophenol	ND	8.0	0.78	ug/l						
2,4,6-Trichlorophenol	ND	6.0	0.10	ug/l						
Surrogate: 2-Fluorophenol	13.0			ug/l	20.0	65	30-120			
Surrogate: Phenol-d6	14.0			ug/l	20.0	70	35-120			
Surrogate: 2,4,6-Tribromophenol	16.4			ug/l	20.0	82	45-120			
Surrogate: Nitrobenzene-d5	7.38			ug/l	10.0	74	45-120			
Surrogate: 2-Fluorobiphenyl	9.88			ug/l	10.0	99	45-120			
Surrogate: Terphenyl-d14	7.48			ug/l	10.0	75	45-120			
LCS Analyzed: 03/16/2005 (5C08046-BS1)										
Bis(2-ethylhexyl)phthalate	8.06	5.0	1.1	ug/l	10.0	81	60-130			M-NRI
2,4-Dinitrotoluene	6.14	9.0	0.23	ug/l	10.0	61	60-120			J
N-Nitrosodimethylamine	6.04	8.0	0.22	ug/l	10.0	60	40-120			J
Pentachlorophenol	7.92	8.0	0.78	ug/l	10.0	79	50-120			J
2,4,6-Trichlorophenol	7.30	6.0	0.10	ug/l	10.0	73	60-120			
Surrogate: 2-Fluorophenol	9.58			ug/l	20.0	48	30-120			
Surrogate: Phenol-d6	12.5			ug/l	20.0	62	35-120			
Surrogate: 2,4,6-Tribromophenol	14.2			ug/l	20.0	71	45-120			
Surrogate: Nitrobenzene-d5	6.16			ug/l	10.0	62	45-120			
Surrogate: 2-Fluorobiphenyl	7.48			ug/l	10.0	75	45-120			
Surrogate: Terphenyl-d14	7.64			ug/l	10.0	76	45-120			
LCS Dup Analyzed: 03/16/2005 (5C08046-BSD1)										
Bis(2-ethylhexyl)phthalate	8.62	5.0	1.1	ug/l	10.0	86	60-130	7	20	
2,4-Dinitrotoluene	7.66	9.0	0.23	ug/l	10.0	77	60-120	22	20	R-7, J
N-Nitrosodimethylamine	6.70	8.0	0.22	ug/l	10.0	67	40-120	10	20	J
Pentachlorophenol	9.16	8.0	0.78	ug/l	10.0	92	50-120	15	25	
2,4,6-Trichlorophenol	7.98	6.0	0.10	ug/l	10.0	80	60-120	9	20	
Surrogate: 2-Fluorophenol	12.9			ug/l	20.0	64	30-120			
Surrogate: Phenol-d6	13.1			ug/l	20.0	66	35-120			
Surrogate: 2,4,6-Tribromophenol	16.2			ug/l	20.0	81	45-120			
Surrogate: Nitrobenzene-d5	6.92			ug/l	10.0	69	45-120			
Surrogate: 2-Fluorobiphenyl	7.46			ug/l	10.0	75	45-120			

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Pasadena, CA 91101
Attention: Bronwyn Kelly

Project ID: Routine Outfall 001

Report Number: IOC0515

Sampled: 03/05/05
Received: 03/05/05

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: 5C08046 Extracted: 03/08/05											
LCS Dup Analyzed: 03/16/2005 (5C08046-BSD1)											
Surrogate: Terphenyl-d14	8.06			ug/l	10.0		81	45-120			

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METHOD BLANK/QC DATA

ORGANOCHLORINE PESTICIDES (EPA 608)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD RPD	RPD Limit	Data Qualifiers
Batch: 5C07057 Extracted: 03/07/05											
Blank Analyzed: 03/08/2005 (5C07057-BLK1)											
alpha-BHC	ND	0.010	0.0010	ug/l							
Surrogate: Decachlorobiphenyl	0.420			ug/l	0.500		84	45-120			
Surrogate: Tetrachloro-m-xylene	0.340			ug/l	0.500		68	35-120			
LCS Analyzed: 03/08/2005 (5C07057-BS1)											
alpha-BHC	0.392	0.010	0.0010	ug/l	0.500		78	45-115			M-NRI
Surrogate: Decachlorobiphenyl	0.415			ug/l	0.500		83	45-120			
Surrogate: Tetrachloro-m-xylene	0.334			ug/l	0.500		67	35-120			
LCS Dup Analyzed: 03/08/2005 (5C07057-BSD1)											
alpha-BHC	0.415	0.010	0.0010	ug/l	0.500		83	45-115	6	30	
Surrogate: Decachlorobiphenyl	0.418			ug/l	0.500		84	45-120			
Surrogate: Tetrachloro-m-xylene	0.351			ug/l	0.500		70	35-120			

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METHOD BLANK/QC DATA

METALS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD RPD	RPD Limit	Data Qualifiers
Batch: 5C05044 Extracted: 03/05/05											
Blank Analyzed: 03/07/2005 (5C05044-BLK1)											
Copper	ND	2.0	0.49	ug/l							
Lead	ND	1.0	0.13	ug/l							
LCS Analyzed: 03/07/2005 (5C05044-BS1)											
Copper	84.3	2.0	0.49	ug/l	80.0		105	85-115			
Lead	81.4	1.0	0.13	ug/l	80.0		102	85-115			
Matrix Spike Analyzed: 03/07/2005 (5C05044-MS1) Source: IOC0515-01											
Copper	80.3	2.0	0.49	ug/l	80.0	2.5	97	70-130			
Lead	82.1	1.0	0.13	ug/l	80.0	0.20	102	70-130			
Matrix Spike Dup Analyzed: 03/07/2005 (5C05044-MSD1) Source: IOC0515-01											
Copper	81.3	2.0	0.49	ug/l	80.0	2.5	98	70-130	1	20	
Lead	83.1	1.0	0.13	ug/l	80.0	0.20	104	70-130	1	20	
Batch: 5C07062 Extracted: 03/07/05											
Blank Analyzed: 03/07/2005 (5C07062-BLK1)											
Mercury	ND	0.20	0.063	ug/l							
LCS Analyzed: 03/07/2005 (5C07062-BS1)											
Mercury	7.98	0.20	0.063	ug/l	8.00		100	85-115			
Matrix Spike Analyzed: 03/07/2005 (5C07062-MS1) Source: IOC0447-01											
Mercury	8.04	0.20	0.063	ug/l	8.00	ND	100	70-130			
Matrix Spike Dup Analyzed: 03/07/2005 (5C07062-MSD1) Source: IOC0447-01											
Mercury	8.09	0.20	0.063	ug/l	8.00	ND	101	70-130	1	20	

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MWH-Pasadena/Boeing
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 Attention: Bronwyn Kelly

Project ID: Routine Outfall 001

Report Number: IOC0515

Sampled: 03/05/05
 Received: 03/05/05

METHOD BLANK/QC DATA

METALS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	RPD RPD	RPD Limit	Data Qualifiers	
Batch: 5D12072 Extracted: 04/12/05											
Blank Analyzed: 04/12/2005 (5D12072-BLK1)											
Calcium	ND	0.10	0.015	mg/l							
Chromium	ND	5.0	0.68	ug/l							
Iron	ND	0.040	0.0088	mg/l							
Magnesium	0.00720	0.020	0.0030	mg/l							
Manganese	ND	20	3.2	ug/l						J	
Potassium	ND	0.50	0.066	mg/l							
Sodium	ND	0.50	0.095	mg/l							
LCS Analyzed: 04/12/2005 (5D12072-BS1)											
Calcium	2.37	0.10	0.015	mg/l	2.50		95		85-115		
Chromium	493	5.0	0.68	ug/l	500		99		85-115		
Iron	0.505	0.040	0.0088	mg/l	0.500		101		85-115		
Magnesium	2.73	0.020	0.0030	mg/l	2.50		109		85-115		
Manganese	500	20	3.2	ug/l	500		100		85-115		
Potassium	4.97	0.50	0.066	mg/l	5.00		99		85-115		
Sodium	4.95	0.50	0.095	mg/l	5.00		99		85-115		
Matrix Spike Analyzed: 04/12/2005 (5D12072-MS1)											
Source: IOD0608-01											
Calcium	262	0.10	0.015	mg/l	2.50	260	80		70-130		
Chromium	518	5.0	0.68	ug/l	500	12	101		70-130	M-HA	
Iron	0.514	0.040	0.0088	mg/l	0.500	ND	103		70-130		
Magnesium	8.90	0.020	0.0030	mg/l	2.50	6.3	104		70-130		
Manganese	506	20	3.2	ug/l	500	ND	101		70-130		
Potassium	7.38	0.50	0.066	mg/l	5.00	2.0	108		70-130		
Sodium	178	0.50	0.095	mg/l	5.00	170	160		70-130	M-HA	
Matrix Spike Dup Analyzed: 04/12/2005 (5D12072-MSD1)											
Source: IOD0608-01											
Calcium	272	0.10	0.015	mg/l	2.50	260	480	70-130	4	20	M-HA
Chromium	530	5.0	0.68	ug/l	500	12	104	70-130	2	20	
Iron	0.527	0.040	0.0088	mg/l	0.500	ND	105	70-130	2	20	
Magnesium	9.16	0.020	0.0030	mg/l	2.50	6.3	114	70-130	3	20	
Manganese	516	20	3.2	ug/l	500	ND	103	70-130	2	20	
Potassium	7.70	0.50	0.066	mg/l	5.00	2.0	114	70-130	4	20	
Sodium	182	0.50	0.095	mg/l	5.00	170	240	70-130	2	20	M-HA

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METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD RPD	RPD Limit	Data Qualifiers
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Batch: 5C05022 Extracted: 03/05/05

Blank Analyzed: 03/05/2005 (5C05022-BLK1)

Chloride	ND	0.50	0.26	mg/l							
Nitrate/Nitrite-N	ND	0.11	0.072	mg/l							
Sulfate	ND	0.50	0.18	mg/l							

LCS Analyzed: 03/05/2005 (5C05022-BS1)

Chloride	4.98	0.50	0.26	mg/l	5.00		100	90-110			
Sulfate	10.0	0.50	0.18	mg/l	10.0		100	90-110			

Matrix Spike Analyzed: 03/05/2005 (5C05022-MS1)

					Source: IOC0463-01						
Chloride	12.5	0.50	0.26	mg/l	5.00	7.3	104	80-120			
Sulfate	15.4	0.50	0.18	mg/l	10.0	5.0	104	80-120			

Matrix Spike Dup Analyzed: 03/05/2005 (5C05022-MSD1)

					Source: IOC0463-01						
Chloride	12.5	0.50	0.26	mg/l	5.00	7.3	104	80-120	0	20	
Sulfate	15.5	0.50	0.18	mg/l	10.0	5.0	105	80-120	1	20	

Batch: 5C05043 Extracted: 03/05/05

Blank Analyzed: 03/05/2005 (5C05043-BLK1)

Surfactants (MBAS)	ND	0.10	0.044	mg/l							
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LCS Analyzed: 03/05/2005 (5C05043-BS1)

Surfactants (MBAS)	0.266	0.10	0.044	mg/l	0.250		106	90-110			
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Matrix Spike Analyzed: 03/05/2005 (5C05043-MS1)

					Source: IOC0515-01						
Surfactants (MBAS)	0.290	0.10	0.044	mg/l	0.250	0.045	98	50-125			

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METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD RPD	RPD Limit	Data Qualifiers
Batch: 5C05043 Extracted: 03/05/05											
Matrix Spike Dup Analyzed: 03/05/2005 (5C05043-MSD1)						Source: IOC0515-01					
Surfactants (MBAS)	0.292	0.10	0.044	mg/l	0.250	0.045	99	50-125	1	20	
Batch: 5C05045 Extracted: 03/05/05											
Blank Analyzed: 03/10/2005 (5C05045-BLK1)											
Biochemical Oxygen Demand	ND	2.0	0.59	mg/l							
LCS Analyzed: 03/10/2005 (5C05045-BS1)											
Biochemical Oxygen Demand	182	100	30	mg/l	198		92	85-115			
LCS Dup Analyzed: 03/10/2005 (5C05045-BS1)											
Biochemical Oxygen Demand	178	100	30	mg/l	198		90	85-115	2	20	
Batch: 5C05047 Extracted: 03/05/05											
Blank Analyzed: 03/05/2005 (5C05047-BLK1)											
Turbidity	0.0500	1.0	0.040	NTU							J
Duplicate Analyzed: 03/05/2005 (5C05047-DUP1)						Source: IOC0468-01					
Turbidity	1.79	1.0	0.040	NTU		1.8			1	20	
Batch: 5C07070 Extracted: 03/07/05											
Blank Analyzed: 03/07/2005 (5C07070-BLK1)											
Ammonia-N (Distilled)	ND	0.50	0.30	mg/l							

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METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	RPD RPD	RPD Limit	Data Qualifiers
Batch: 5C07070 Extracted: 03/07/05										
LCS Analyzed: 03/07/2005 (5C07070-BS1)										
Ammonia-N (Distilled)	9.52	0.50	0.30	mg/l	10.0		95		80-115	
Matrix Spike Analyzed: 03/07/2005 (5C07070-MS1)										
Ammonia-N (Distilled)	9.80	0.50	0.30	mg/l	10.0	ND	98		70-120	
Matrix Spike Dup Analyzed: 03/07/2005 (5C07070-MSD1)										
Ammonia-N (Distilled)	9.52	0.50	0.30	mg/l	10.0	ND	95	3	70-120	15
Batch: 5C07071 Extracted: 03/07/05										
Blank Analyzed: 03/07/2005 (5C07071-BLK1)										
Oil & Grease	ND	5.0	0.94	mg/l						
LCS Analyzed: 03/07/2005 (5C07071-BS1)										
Oil & Grease	19.1	5.0	0.94	mg/l	20.0		96		65-120	M-NR1
LCS Dup Analyzed: 03/07/2005 (5C07071-BSD1)										
Oil & Grease	18.8	5.0	0.94	mg/l	20.0		94	2	65-120	20
Batch: 5C08052 Extracted: 03/08/05										
Blank Analyzed: 03/08/2005 (5C08052-BLK1)										
Perchlorate	ND	4.0	0.80	ug/l						
LCS Analyzed: 03/08/2005 (5C08052-BS1)										
Perchlorate	50.0	4.0	0.80	ug/l	50.0		100		85-115	

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METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5C08052 Extracted: 03/08/05											
Matrix Spike Analyzed: 03/08/2005 (5C08052-MS1)						Source: IOC0163-01					
Perchlorate	57.4	4.0	0.80	ug/l	50.0	ND	115	80-120			
Matrix Spike Dup Analyzed: 03/08/2005 (5C08052-MSD1)						Source: IOC0163-01					
Perchlorate	57.2	4.0	0.80	ug/l	50.0	ND	114	80-120	0	20	
Batch: 5C08093 Extracted: 03/08/05											
Blank Analyzed: 03/08/2005 (5C08093-BLK1)											
Total Suspended Solids	ND	10	10	mg/l							
LCS Analyzed: 03/08/2005 (5C08093-BS1)											
Total Suspended Solids	1000	10	10	mg/l	1000		100	85-115			
Duplicate Analyzed: 03/08/2005 (5C08093-DUP1)						Source: IOC0557-01					
Total Suspended Solids	17.0	10	10	mg/l		12			34	10	R-4
Batch: 5C09062 Extracted: 03/09/05											
Blank Analyzed: 03/09/2005 (5C09062-BLK1)											
Total Cyanide	ND	5.0	2.2	ug/l							
LCS Analyzed: 03/09/2005 (5C09062-BS1)											
Total Cyanide	184	5.0	2.2	ug/l	200		92	90-110			
Matrix Spike Analyzed: 03/09/2005 (5C09062-MS1)						Source: IOC0366-02					
Total Cyanide	178	5.0	2.2	ug/l	200	5.9	86	70-115			

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METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	RPD Limits	RPD RPD	RPD Limit	Data Qualifiers
Batch: 5C09062 Extracted: 03/09/05											
Matrix Spike Dup Analyzed: 03/09/2005 (5C09062-MSD1)											
Total Cyanide	191	5.0	2.2	ug/l	200	5.9	93	70-115	7	15	
Source: IOC0366-02											
Batch: 5C09095 Extracted: 03/09/05											
Blank Analyzed: 03/09/2005 (5C09095-BLK1)											
Total Dissolved Solids	ND	10	10	mg/l							
LCS Analyzed: 03/09/2005 (5C09095-BS1)											
Total Dissolved Solids	1000	10	10	mg/l	1000		100	90-110			
Duplicate Analyzed: 03/09/2005 (5C09095-DUP1)											
Total Dissolved Solids	626	10	10	mg/l					1	10	
Source: IOC0687-01											
Batch: 5C09097 Extracted: 03/09/05											
Duplicate Analyzed: 03/09/2005 (5C09097-DUP1)											
Specific Conductance	636	1.0	1.0	umhos/cm					4	5	
Source: IOC0618-01											

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Compliance Check

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

LabNumber	Analysis	Analyte	Units	Result	MRL	Compliance Limit
IOC0515-01	413.1 Oil and Grease	Oil & Grease	mg/l	0.095	5.0	10.00
IOC0515-01	608-Pest Boeing 001/002 Q (LL)	alpha-BHC	ug/l	0.00078	0.010	0.0100
IOC0515-01	624-Boeing 001/002 Q (Fr113+X)	1,1-Dichloroethene	ug/l	0	3.0	3.20
IOC0515-01	624-Boeing 001/002 Q (Fr113+X)	Trichloroethene	ug/l	0	5.0	5.00
IOC0515-01	625-Boeing 001/002 Q-LL	2,4,6-Trichlorophenol	ug/l	0	6.0	6.50
IOC0515-01	625-Boeing 001/002 Q-LL	2,4-Dinitrotoluene	ug/l	0	9.0	9.10
IOC0515-01	625-Boeing 001/002 Q-LL	Bis(2-ethylhexyl)phthalate	ug/l	1.40	5.0	4.00
IOC0515-01	625-Boeing 001/002 Q-LL	N-Nitrosodimethylamine	ug/l	0	8.0	8.10
IOC0515-01	625-Boeing 001/002 Q-LL	Pentachlorophenol	ug/l	0	8.0	8.20
IOC0515-01	BOD	Biochemical Oxygen Demand	mg/l	0.15	2.0	20
IOC0515-01	Chloride - 300.0	Chloride	mg/l	14	0.50	150
IOC0515-01	Chromium-200.7	Chromium	ug/l	1.80	5.0	8.10
IOC0515-01	Copper-200.8	Copper	ug/l	2.50	2.0	7.10
IOC0515-01	Cyanide-335.2 5ppb	Total Cyanide	ug/l	0.57	5.0	4.30
IOC0515-01	Iron-200.7	Iron	mg/l	0.22	0.040	0.30
IOC0515-01	Lead-200.8	Lead	ug/l	0.20	1.0	2.60
IOC0515-01	Manganese-200.7	Manganese	ug/l	8.70	20	50*
IOC0515-01	MBAS - SM5540-C	Surfactants (MBAS)	mg/l	0.045	0.10	0.50
IOC0515-01	Mercury - 245.1	Mercury	ug/l	0.027	0.20	0.20
IOC0515-01	Nitrogen, NO3+NO2 -N	Nitrate/Nitrite-N	mg/l	0.20	0.11	8.00
IOC0515-01	Perchlorate 314.0	Perchlorate	ug/l	0	4.0	6.00
IOC0515-01	Sulfate-300.0	Sulfate	mg/l	33	0.50	300
IOC0515-01	TDS - SM 2540C	Total Dissolved Solids	mg/l	190	10	950
IOC0515-02	624-Boeing 001/002 Q (Fr113+X)	1,1-Dichloroethene	ug/l	0	3.0	3.20
IOC0515-02	624-Boeing 001/002 Q (Fr113+X)	Trichloroethene	ug/l	0	5.0	5.00

Del Mar Analytical, Irvine
 Michele Harper
 Project Manager

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



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

Project ID: Routine Outfall 001

Report Number: IOC0515

Sampled: 03/05/05
Received: 03/05/05

DATA QUALIFIERS AND DEFINITIONS

- B** Analyte was detected in the associated Method Blank.
- J** Estimated value. Analyte detected at a level less than the Reporting Limit (RL) and greater than or equal to the Method Detection Limit (MDL). The user of this data should be aware that this data is of unknown quality.
- 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.
- R-4** Due to the low levels of analyte in the sample, the duplicate RPD calculation does not provide useful information.
- R-7** LFB/LFBD RPD exceeded the method control limit. Recovery met acceptance criteria.
- ZX** Due to sample matrix effects, the surrogate recovery was outside the acceptance limits.
- ND** Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified.
- RPD** Relative Percent Difference

Del Mar Analytical, Irvine
Michele Harper
Project Manager



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

Project ID: Routine Outfall 001

Report Number: IOC0515

Sampled: 03/05/05
Received: 03/05/05

Certification Summary

Del Mar Analytical, Irvine

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

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

Subcontracted Laboratories

Alta Analytical California Cert #1640

1104 Windfield Way - El Dorado Hills, CA 95762

Analysis Performed: 1613-Dioxin-HR
Samples: IOC0515-01

Analysis Performed: EDD + Level 4
Samples: IOC0515-01

Eberline Services - SUB

2030 Wright Avenue - Richmond, CA 94804

Analysis Performed: EDD + Level 4
Samples: IOC0515-01

Analysis Performed: Gross Alpha
Samples: IOC0515-01

Analysis Performed: Radium, Combined
Samples: IOC0515-01

Del Mar Analytical, Irvine
Michele Harper
Project Manager

CHAIN OF CUSTODY FORM

Client Name/Address:		Project:		ANALYSIS REQUIRED												Field readings:	
MWH-Pasadena 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101		Boeing-SSFL NPDES Routine Outfall 001		Turbidity, TDS, TSS,	Conductivity	Ammonia-N	Alpha BHC (608)	2,4,6 Trichlorophenol, 2,4	Dinitrofluorene, Bis(2-	ethylnoxy)phthalate, NDMA,	pentachlorophenol (EPA 625)	Temp = 54.1 pH = 7.2		Comments			
Sample Description	Sample Matrix	Container Type	# of Cont.	Sampling Date/Time	Preservative	Bottle #	Total Recoverable Metals: Cu, Pb, Hg	Settleable Solids	VOCs 624 + xylenes	TCDD (and all congeners)	Oil & Grease (EPA 413.1)	Cyanide (total recoverable)	BOD5(20 degrees C)	Surfactants (MBAS)	Cl-, SO4, NO3+NO2-N,	Perchlorate	
Outfall 001	W	Poly-1L	1	3-5-05 08:45	HNO3	1A	X										
Outfall 001-Dup	W	Poly-1L	1		HNO3	1B	X										
Outfall 001	W	Poly-1L	1		None	2		X									
Outfall 001	W	VOAs	3		HCl	3A, 3B, 3C			X								
Outfall 001	W	1L Amber	2		None	4A, 4B				X							
Outfall 001	W	1L Amber	2		HCl	5A, 5B					X						
Outfall 001	W	Poly-500 ml	1		NaOH	6						X					
Outfall 001	W	Poly-1L	1		None	7							X				
Outfall 001	W	Poly-500 ml	2		None	8A, 8B								X			
Outfall 001	W	Poly-500 ml	2		None	9A, 9B									X		
Outfall 001	W	Poly-500 ml	2		None	10A, 10B										X	
Outfall 001	W	Poly-500 ml	1		H2SO4	11											X
Outfall 001	W	1L Amber	2		None	12A, 12B											
Outfall 001	W	1L Amber	2		None	13A, 13B											
Trip Blank	W	VOAs	3		HCl	14A, 14B, 14C			X								
Relinquished By				Date/Time: 3/5/05 1115	Received By												
Relinquished By				Date/Time: 3/5/05 1310	Received By												
Relinquished By				Date/Time:	Received By												

Turn around Time: (check)
 24 Hours _____ 5 Days _____
 48 Hours _____ 10 Days _____
 72 Hours _____ Normal _____
 Perchlorate Only 72 Hours _____
 Metals Only 72 Hours _____
 Sample Integrity: (Check) On Ice: 6°C

Date/Time: 3/5/05 1115
 Date/Time: 3/5/05 1310
 Date/Time: _____
 Date/Time: 3/6/05 1310

Received By: [Signature]
 Received By: [Signature]
 Received By: [Signature]

Field readings: Temp = 54.1, pH = 7.2
 Comments: 24 TAT, 24 TAT, 24 TAT, 24 TAT
 (Handwritten circled '11')

March 25, 2005

MWH-Pasadena/ Boeing
300 North Lake Avenue, Suite 1200
Pasadena, CA 91101

Attention: Bronwyn Kelly
Project: Routine Outfall 001
Sampled: 03/05/05
Del Mar Analytical Number: IOC0515

Dear Ms. Kelly:

Alta Analytical Laboratory performed the EPA Method 1613B Dioxin analysis for the project referenced above. Please use the following cross-reference table when reviewing your results.

MWH ID	DEL MAR ID	ALTA ID
Outfall 001	IOC0515-01	25849-001

Attached is the original report from the subcontract laboratory. If you have any questions or require further assistance, please do not hesitate to contact me at (949) 261-1022 at extension 215.

Sincerely yours,
DEL MAR ANALYTICAL



Michele Harper
Project Manager



March 16, 2005

Alta Project I.D.: 25849

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

Dear Ms. Harper,

Enclosed are the results for the one aqueous sample received at Alta Analytical Laboratory on March 08, 2005 under your Project Name "IOC0515". This sample was extracted and analyzed using EPA Method 1613 for tetra-through-octa chlorinated dioxins and furans. A rush 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,

Martha M. Maier
Director of HRMS Services



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: 3/8/2005

Alta Lab. ID

Client Sample ID

25849-001

IOC0515-01

SECTION II



Method Blank		EPA Method 1613						
Matrix:	Aqueous	QC Batch No.:	6593	Lab Sample:	0-MB001			
Sample Size:	1.000 L	Date Extracted:	11-Mar-05	Date Analyzed DB-5:	14-Mar-05			
				Date Analyzed DB-225:	NA			
Analyte	Conc. (pg/L)	DL ^a	EMPC ^b	Qualifiers	Labeled Standard	%R	LCL-UCL ^d	Qualifiers
2,3,7,8-TCDD	ND	1.27			13C-2,3,7,8-TCDD	61.5	25 - 164	
1,2,3,7,8-PeCDD	ND	1.50			13C-1,2,3,7,8-PeCDD	57.2	25 - 181	
1,2,3,4,7,8-HxCDD	ND	2.20			13C-1,2,3,4,7,8-HxCDD	67.8	32 - 141	
1,2,3,6,7,8-HxCDD	ND	2.32			13C-1,2,3,6,7,8-HxCDD	76.7	28 - 130	
1,2,3,7,8,9-HxCDD	ND	2.26			13C-1,2,3,4,6,7,8-HpCDD	56.6	23 - 140	
1,2,3,4,6,7,8-HpCDD	ND	3.00			13C-OCDD	26.9	17 - 157	
OCDD	ND	11.1			13C-2,3,7,8-TCDF	63.1	24 - 169	
2,3,7,8-TCDF	ND	1.37			13C-1,2,3,7,8-PeCDF	54.3	24 - 185	
1,2,3,7,8-PeCDF	ND	2.09			13C-2,3,4,7,8-PeCDF	58.1	21 - 178	
2,3,4,7,8-PeCDF	ND	1.73			13C-1,2,3,4,7,8-HxCDF	60.3	26 - 152	
1,2,3,4,7,8-HxCDF	ND	1.16	0.905		13C-1,2,3,6,7,8-HxCDF	70.6	26 - 123	
1,2,3,6,7,8-HxCDF	ND				13C-2,3,4,6,7,8-HxCDF	67.0	28 - 136	
2,3,4,6,7,8-HxCDF	ND	0.768			13C-1,2,3,7,8,9-HxCDF	62.8	29 - 147	
1,2,3,7,8,9-HxCDF	ND	1.22			13C-1,2,3,4,6,7,8-HpCDF	53.2	28 - 143	
1,2,3,4,6,7,8-HpCDF	ND	1.96			13C-1,2,3,4,7,8,9-HpCDF	57.7	26 - 138	
1,2,3,4,7,8,9-HpCDF	ND	1.38			13C-OCDF	32.9	17 - 157	
OCDF	ND	7.76			CRS 37Cl-2,3,7,8-TCDD	71.7	35 - 197	
Totals								
Total TCDD	ND	1.27						
Total PeCDD	ND	1.50						
Total HxCDD	ND	2.26						
Total HpCDD	ND	3.00						
Total TCDF	1.40		2.79	D				
Total PeCDF	ND	3.06						
Total HxCDF	ND		0.905					
Total HpCDF	ND	2.12						

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

Analyst: MAS

Approved By: Martha M. Maier 16-Mar-2005 11:05



OPR Results

EPA Method 1613					
Matrix: Aqueous	QC Batch No.: 6593	Lab Sample: 0-OPR001	Date Analyzed DB-5: 14-Mar-05	Date Analyzed DB-225: NA	
Sample Size: 1.000 L	Date Extracted: 11-Mar-05				
Analyte	Spike Conc.	Conc. (ng/mL)	OPR Limits	Labeled Standard	%R LCL-UCL
2,3,7,8-TCDD	10.0	9.28	6.7 - 15.8	<u>IS</u> 13C-2,3,7,8-TCDD	61.8 25 - 164
1,2,3,7,8-PeCDD	50.0	47.1	35 - 71	13C-1,2,3,7,8-PeCDD	62.9 25 - 181
1,2,3,4,7,8-HxCDD	50.0	49.1	35 - 82	13C-1,2,3,4,7,8-HxCDD	65.8 32 - 141
1,2,3,6,7,8-HxCDD	50.0	49.0	38 - 67	13C-1,2,3,6,7,8-HxCDD	77.0 28 - 130
1,2,3,7,8,9-HxCDD	50.0	49.4	32 - 81	13C-1,2,3,4,6,7,8-HpCDD	67.2 23 - 140
1,2,3,4,6,7,8-HpCDD	50.0	51.7	35 - 70	13C-OCDD	38.7 17 - 157
OCDD	100	104	78 - 144	13C-2,3,7,8-TCDF	63.1 24 - 169
2,3,7,8-TCDF	10.0	9.58	7.5 - 15.8	13C-1,2,3,7,8-PeCDF	59.0 24 - 185
1,2,3,7,8-PeCDF	50.0	51.8	40 - 67	13C-2,3,4,7,8-PeCDF	63.2 21 - 178
2,3,4,7,8-PeCDF	50.0	51.2	34 - 80	13C-1,2,3,4,7,8-HxCDF	57.9 26 - 152
1,2,3,4,7,8-HxCDF	50.0	53.8	36 - 67	13C-1,2,3,6,7,8-HxCDF	68.4 26 - 123
1,2,3,6,7,8-HxCDF	50.0	53.7	42 - 65	13C-2,3,4,6,7,8-HxCDF	67.7 28 - 136
2,3,4,6,7,8-HxCDF	50.0	53.8	35 - 78	13C-1,2,3,7,8,9-HxCDF	65.7 29 - 147
1,2,3,7,8,9-HxCDF	50.0	51.8	39 - 65	13C-1,2,3,4,6,7,8-HpCDF	63.1 28 - 143
1,2,3,4,6,7,8-HpCDF	50.0	54.5	41 - 61	13C-1,2,3,4,7,8,9-HpCDF	65.7 26 - 138
1,2,3,4,7,8,9-HpCDF	50.0	56.0	39 - 69	13C-OCDF	44.9 17 - 157
OCDF	100	109	63 - 170	<u>CRS</u> 37Cl-2,3,7,8-TCDD	72.7 35 - 197

Analyst: MAS

Approved By: Martha M. Maier 16-Mar-2005 11:05



Sample ID: IOC0515-01

EPA Method 1613

Client Data
 Name: Del Mar Analytical, Irvine
 Project: IOC0515
 Date Collected: 5-Mar-08
 Time Collected: 0845

Sample Data
 Matrix: Aqueous
 Sample Size: 0.875 L

Laboratory Data
 Lab Sample: 25849-001
 QC Batch No.: 6593
 Date Analyzed DB-5: 15-Mar-05
 Date Analyzed DB-225: NA

Analyte	Conc. (pg/L)	DL ^a	EMPC ^b	Qualifiers	Labeled Standard	%R	LCL-UCL ^d	Qualifiers
2,3,7,8-TCDD	ND	1.09			13C-2,3,7,8-TCDD	65.9	25 - 164	
1,2,3,7,8-PeCDD	ND	0.581			13C-1,2,3,7,8-PeCDD	68.0	25 - 181	
1,2,3,4,7,8-HxCDD	ND	1.41			13C-1,2,3,4,7,8-HxCDD	79.6	32 - 141	
1,2,3,6,7,8-HxCDD	ND	1.44			13C-1,2,3,6,7,8-HxCDD	83.2	28 - 130	
1,2,3,7,8,9-HxCDD	ND	1.42			13C-1,2,3,4,6,7,8-HpCDD	82.2	23 - 140	
1,2,3,4,6,7,8-HpCDD	2.54				13C-OCDD	56.9	17 - 157	
OCDD	14.0			J	13C-2,3,7,8-TCDF	67.9	24 - 169	
2,3,7,8-TCDF	ND	0.986			13C-1,2,3,7,8-PeCDF	61.7	24 - 185	
1,2,3,7,8-PeCDF	ND	1.53			13C-2,3,4,7,8-PeCDF	65.5	21 - 178	
2,3,4,7,8-PeCDF	ND	1.28			13C-1,2,3,4,7,8-HxCDF	65.5	26 - 152	
1,2,3,4,7,8-HxCDF	ND	0.458			13C-1,2,3,6,7,8-HxCDF	71.6	26 - 123	
1,2,3,6,7,8-HxCDF	ND	0.456			13C-2,3,4,6,7,8-HxCDF	74.3	28 - 136	
2,3,4,6,7,8-HxCDF	ND	0.509			13C-1,2,3,7,8,9-HxCDF	73.9	29 - 147	
1,2,3,7,8,9-HxCDF	ND	0.713			13C-1,2,3,4,6,7,8-HpCDF	75.0	28 - 143	
1,2,3,4,6,7,8-HpCDF	ND	0.878			13C-1,2,3,4,7,8,9-HpCDF	81.7	26 - 138	
1,2,3,4,7,8,9-HpCDF	ND	0.964			13C-OCDF	63.1	17 - 157	
OCDF	ND	2.64			CRS 37Cl-2,3,7,8-TCDD	72.2	35 - 197	

Totals

Total TCDD	ND	1.09						
Total PeCDD	ND	0.581						
Total HxCDD	ND	1.42						
Total HpCDD	4.64							
Total TCDF	ND	0.986						
Total PeCDF	ND	1.40						
Total HxCDF	ND	0.526						
Total HpCDF	ND	0.915						

Footnotes

- Sample specific estimated detection limit.
- Estimated maximum possible concentration.
- Method detection limit.
- Lower control limit - upper control limit.

Analyst: JMH

Approved By: Martha M. Maier 16-Mar-2005 11:05

APPENDIX

DATA QUALIFIERS & ABBREVIATIONS

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

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

The control limits are “interim limits only” until in-house limits are utilized.

CURRENT CERTIFICATIONS

NELAP — (Primary AA: California, Certificate No. 02102CA)
Department of the Navy
U.S. Army Corps of Engineers
U.S. EPA Region 5
Bureau of Reclamation — Mid-Pacific Region — (MP-470, Res-1.10)
Commonwealth of Kentucky — (Certificate No. 90063)
Commonwealth of Virginia — (Certificate No. 00013)
State of Alaska, Department of Environmental Conservation — (Certificate No. OS-00197)
State of Arizona — (Certificate No. AZ0639)
State of Arkansas, Department of Health — (Approval granted through CA certification)
State of Arkansas, Department of Environmental Quality
State of California — (Certificate No. 1640)
State of Colorado
State of Connecticut — (Certificate No. PH-0182)
State of Florida — (Certificate No. 87456)
State of Louisiana, Department of Health and Hospitals — (Certificate No. LA000014)
State of Louisiana, Department of Environmental Quality
State of Maine
State of Michigan (Certificate No. 81178087)
State of Mississippi — (Approval granted through CA certification)
State of Nevada — (Certificate No. CA413)
State of New Jersey — (Certificate No. CA003)
State of New York, Department of Health — (Certificate No. 11411)
State of North Carolina — (Certification No. 06700)
State of North Dakota, Department of Health — (Certificate No. R-078)
State of New Mexico
State of Oklahoma — (D9919)
State of Oregon — (Certificate No. CA413)
State of Pennsylvania — (Certificate No. 68-490)
State of South Carolina — (Certificate No. 87002001)
State of Tennessee — (Certificate No. 02996)
State of Texas — (Certificate No. TX247-1000A)
State of Utah — (Certificate No. E-201)
State of Washington — (Certification No. C091)
State of Wisconsin — (Certificate No. 998036160)
State of Wyoming — (USEPA Region 8 Ref: 8TMS-Q)

09/28/04

Project 25849 RLS Admin Files/Certifications/CERTSRPT.doc



17461 Derian Ave. Suite 100, Irvine, CA 92614 Ph (949) 261-1022 Fax (949) 261-1228
 1014 E. Cooley Dr., Suite A, Colton, CA 92324 Ph (909) 370-4667 Fax (909) 370-1046
 9484 Chesapeake Drive, Suite 805, San Diego, CA 92123 Ph (619) 505-9596 Fax (619) 505-9689
 9830 South 51st Street, Suite B-120, Phoenix, AZ 85044 Ph (480) 785-0643 Fax (480) 785-0861
 2520 E. Sunset Rd., Suite 23, Las Vegas, NV 89120 Ph (702) 798-3820 Fax (702) 798-3821

SUBCONTRACT ORDER - PROJECT # IOC0515

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 Harper	Alta Analytical - SUB 1104 Windfield Way El Dorado Hills, CA 95762 Phone: (916) 933-1640 Fax: (916) 933-0940 <div style="text-align: right; font-size: 1.5em; margin-top: 10px;"> 25849 1.3C </div>

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

Analysis	Expiration	Sampled:	Comments
Sample ID: IOC0515-01 Water		03/05/05 08:45	Instant Notification
1613-Dioxin-HR	03/12/05 08:45		J flags, 17 congeners, no TEQ, sub to Alta
EDD + Level 4	04/02/05 08:45		Excel EDD email to pm, Include Std logs for Lvl IV
Containers Supplied:			
1 L Amber (IOC0515-01G)			
1 L Amber (IOC0515-01H)			

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

Released By: Stacy Anderson ³⁻⁷⁻⁰⁵ Date: _____ Time: _____
 Received By: 1700 Bettina P. Benedict Date: 3/8/05 Time: 0939

Released By: _____ Date: _____ Time: _____ Received By: _____ Date: _____ Time: _____

STANDARD OPERATING PROCEDURE

Attachment 10.B.1

SAMPLE LOG-IN CHECKLIST

ALTA Project No.: 25849

1. Date Samples Arrived: <u>3/8/05 0939</u> Initials: <u>BBB</u> Location: <u>WR-2</u>			
2. Time / Date logged in: <u>1300 3/8/05</u> Initials: <u>BBB</u> Location: <u>WR-2</u>			
3. Samples Arrived By: (circle) <u>FedEx</u> DPS World Courier Other:			
4. Shipping Preservation: (circle) Ice <u>Blue Ice</u> Dry Ice / None Temp °C <u>1.3</u>			
5. Shipping Container(s) Intact? If not, describe condition in comment section.	YES	NO	NA
6. Shipping Container(s) Custody Seals Present? Intact? If not intact, describe condition in comment section.	✓		
7. Shipping Documentation Present? (circle) Shipping Label <u>Airbill</u> Tracking Number <u>7928 6415 1912</u>	✓		
8. Sample Custody Seal(s) Present? No. of Seals _____ or Seal No. _____ Intact? If not intact, describe condition in comment section.		✓	✓
9. Sample Container Intact? If no, indicate sample condition in comment section.	✓		
10. Chain of Custody (COC) or other Sample Documentation Present?	✓		
11. COC/Documentation Acceptable? If no, complete COC Anomaly Form.	✓		
12. Shipping Container (circle): ALTA <u>Client</u> Retain or <u>Return</u> or Disposed			
13. Container(s) and/or Bottle(s) Requested?		✓	
14. Drinking Water Sample? (HRMS Only) If yes, Acceptable Preservation? Y or N Preservation Info From? (circle) COC or Sample Container or None Noted			✓

Comments:

ALTA Analytical Laboratory
El Dorado Hills, CA 95762

SOP# CH10B_R18, Page 6 of 12



17461 Derian Ave. Suite 100, Irvine, CA 92614 Ph (949) 261-1022 Fax (949) 261-1228
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 9494 Chesapeake Drive, Suite 803, San Diego, CA 92123 Ph (619) 505-9595 Fax (619) 505-9589
 9820 South 51st Street, Suite B-120, Phoenix, AZ 85044 Ph (480) 785-0043 Fax (480) 785-0851
 2520 E. Sunset Rd., Suite 43, Las Vegas, NV 89120 Ph (702) 796-8820 Fax (702) 796-8821

SUBCONTRACT ORDER - PROJECT # IOC0515

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 Harper	Alta Analytical - SUB 1104 Windfield Way El Dorado Hills, CA 95762 Phone: (916) 933-1640 Fax: (916) 933-0940 <i>25849</i> <i>1.3°C</i>

Standard TAT is requested unless specific due date is requested => Due Date: 2 week Initials: MH

Analysis	Expiration	Comments
Sample ID: IOC0515-01 Water	Sampled: 03/05/05 08:45	Instant Notification
I613-Dioxin-HR	03/12/05 08:45	J.flags, 17 congeners, no TEQ, sub to Alta
EDD + Level 4	04/02/05 08:45	Excel EDD email to pm, include Std logs for Lvl IV
Containers Supplied:		
1 L Amber (IOC0515-01G)		
1 L Amber (IOC0515-01E)		

sampler = P.P.

MH 3/7/05

SAMPLE INTEGRITY:

All containers intact: <input type="checkbox"/> Yes <input type="checkbox"/> No	Sample labels/COC agreed: <input type="checkbox"/> Yes <input type="checkbox"/> No	Samples Received On Ice: <input type="checkbox"/> Yes <input type="checkbox"/> No
Custody Seals Present: <input type="checkbox"/> Yes <input type="checkbox"/> No	Samples Preserved Properly: <input type="checkbox"/> Yes <input type="checkbox"/> No	Samples Received at (temp): _____

Released By: Stacy Sunawata Date: _____ Time: _____ Received By: _____ Date: _____ Time: _____

Released By: _____ Date: _____ Time: _____ Received By: _____ Date: _____ Time: _____

May 6, 2005

MWH-Pasadena/Boeing
300 North Lake Avenue, Suite 1200
Pasadena, Ca.91101

Attention: Bronwyn Kelly
Project: Routine Outfall 001
Sampled: 03/05/05
Del Mar Analytical Number: IOC0515

Dear Ms. Kelly:

Eberline Services performed the gross alpha (EPA 900.0) analysis for the project referenced above. Please use the following cross-reference table when reviewing your results.

MWH ID	DEL MAR ID	Eberline ID
Outfall 001	IOC0515-001	R504072-8415

Attached is the original report from the subcontract laboratory. If you have any questions or require further assistance, please do not hesitate to contact me.

Sincerely yours,
DEL MAR ANALYTICAL


Michele Harper
Project Manager



EBERLINE SERVICES

May 3, 2005

Ms. Michele Harper
Project Manager
Del Mar Analytical
17461 Derian Avenue, Suite 100
Irvine, CA 92614

Reference: Del Mar Analytical Project No. IOC0515
Eberline Services NELAP Cert #01120CA (exp. 01/31/06)
Eberline Services Report R504072-8415

Dear Ms. Harper:

Enclosed are results from the analysis of one water sample received at Eberline Services on April 12, 2005. The sample was analyzed according to the accompanying Del Mar Analytical Subcontract Order Form. The requested analysis was gross alpha (EPA900.0). The QC LCS, blank analysis, sample duplicate, and matrix spike results for the analysis were within the limits defined in Eberline Services Quality Control Procedures Manual.

Please call me if you have any questions concerning this report.

Regards,

FMZ Melissa Mannion
Senior Program Manager

MCM/njv

*Enclosure: Report
Subcontract Form
Receipt checklist
Invoice*

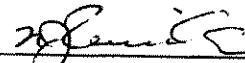
Analytical Services
2030 Wright Avenue
P.O. Box 4040
Richmond, California 94804-0040
(510) 235-2633 Fax (510) 235-0438
Toll Free (800) 841-5487
www.eberlineservices.com

Eberline Services

ANALYSIS RESULTS

SDG <u>8415</u>	Client <u>DEL MAR ANAL</u>
Work Order <u>R504072-01</u>	Contract <u>PROJECT# IOC0515</u>
Received Date <u>04/12/05</u>	Matrix <u>WATER</u>

<u>Client</u>	<u>Lab</u>	<u>Collected</u>	<u>Analyzed</u>	<u>Nuclide</u>	<u>Results ± 2σ</u>	<u>Units</u>	<u>MDA</u>
<u>Sample ID</u>	<u>Sample ID</u>						
IOC0515-01	8415-001	03/05/05	04/18/05	GrossAlpha	0.030 ± 0.55	pCi/L	1.21

Certified by 
Report Date 05/02/05
Page 1

Eberline Services

QC RESULTS

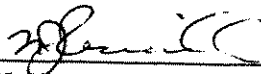
SDG <u>8415</u>	Client <u>DEL MAR ANAL</u>
Work Order <u>R504072-01</u>	Contract <u>PROJECT# IOC0515</u>
Received Date <u>04/12/05</u>	Matrix <u>WATER</u>

Lab

Sample ID	Nuclide	Results	Units	Amount Added	MDA	Evaluation
<u>LCS</u>						
8412-002	GrossAlpha	10.4 ± 1.2	pCi/Smpl	11.2	0.347	93% recovery
<u>BLANK</u>						
8412-003	GrossAlpha	-0.123 ± 0.13	pCi/Smpl	NA	0.408	<MDA

<u>DUPLICATES</u>				<u>ORIGINALS</u>			
Sample ID	Nuclide	Results ± 2σ	MDA	Sample ID	Results ± 2σ	MDA	3σ RPD (Tot) Eval
8412-004	GrossAlpha	0.674 ± 0.67	0.985	8412-001	0.976 ± 0.84	0.929	37 200 satis.

<u>SPIKED SAMPLE</u>				<u>ORIGINAL SAMPLE</u>				
Sample ID	Nuclide	Results ± 2σ	MDA	Sample ID	Results ± 2σ	MDA	Added	%Recy
8412-005	GrossAlpha	50.0 ± 4.3	0.939	8412-001	0.976 ± 0.84	0.929	76.6	64

Certified by 
 Report Date 05/02/05
 Page 2



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 9484 Chesapeake Drive, Suite 805, San Diego, CA 92123 Ph (619) 505-9596 Fax (619) 505-9689
 9830 South 51st Street, Suite B-120, Phoenix, AZ 85044 Ph (480) 785-0043 Fax (480) 785-0851
 2520 E. Sunset Rd., Suite #3, Las Vegas, NV 89120 Ph (702) 798-3620 Fax (702) 798-3621

SUBCONTRACT ORDER - PROJECT # IOC0515

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 Harper	Eberline Services 2030 Wright Avenue Richmond, CA 94804 Phone : (510) 235-2633 Fax: (510) 235-0438

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

Analysis	Expiration	Comments
----------	------------	----------

Sample ID: IOC0515-01	Water	Sampled: 03/05/05 08:45	Instant Notification
EDD + Level 4-OUT	04/02/05 08:45		**LEVEL IV QC, ACCESS 7 EDD**
Gross Alpha-O	03/05/06 08:45		900.0, IF RESULT > 15 pCi/L, run Radium 226 & 228
Radium, Combined-O	03/05/06 08:45		HOLD for Gross Alpha; EPA 903.1 & 904.0

Containers Supplied:
 1 liter Poly w/HNO3 (IOC0515-01A)
 1 liter Poly w/HNO3 (IOC0515-01B)
 500 ml Poly (IOC0515-01O)

Sample description - No visible ~~solids~~ residue solids
 Piece found in bottle - 01B
 0-size of lady-bug.
 MCM
 4/12/05

Alex K...

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

	4/11/05			4/12/05	10:00
Released By	Date	Time	Received By	Date	Time
Released By	Date	Time	Received By	Date	Time



RICHMOND, CA LABORATORY

SAMPLE RECEIPT CHECKLIST

Client: DEL. MAR ANALYTICAL City IRVINE State CA

Date/Time received 4/12/05 10:00 CoC No. JOC0515

Container I.D. No. DEL. MAR Requested TAT (Days) STAND P.O. Received Yes [] No []

INSPECTION

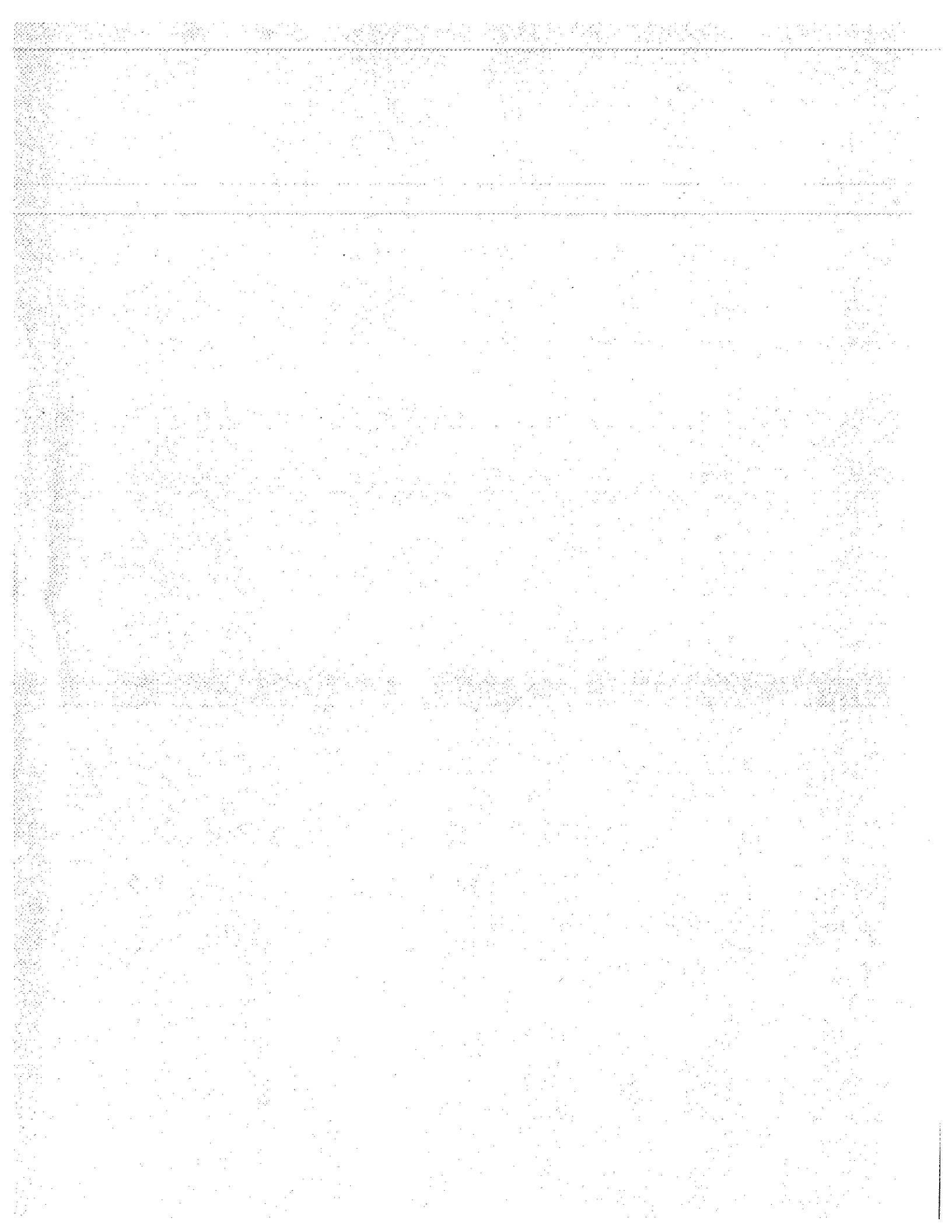
1. Custody seals on shipping container intact? Yes [] No [] N/A []
 2. Custody seals on shipping container dated & signed? Yes [] No [] N/A []
 3. Custody seals on sample containers intact? Yes [] No [] N/A []
 4. Custody seals on sample containers dated & signed? Yes [] No [] N/A []
 5. Packing material is: Wet [] Dry [] N/A []
 6. Number of samples in shipping container: 1 Sample Matrix WATER
 7. Number of containers per sample: 3 (Or see CoC _____)
 8. Samples are in correct container Yes [] No []
 9. Paperwork agrees with samples? Yes [] No []
 10. Samples have: Tape [] Hazard labels [] Rad labels [] Appropriate sample labels []
 11. Samples are: In good condition [] Leaking [] Broken Container [] Missing []
 12. Samples are: Preserved [] Not preserved [] pH _____ Preservative _____
 13. Describe any anomalies: PH=2 PH=7
14. Was P.M. notified of any anomalies? Yes [] No [] Date _____
15. Inspected by AK Date: 4/12/05 Time: 10:00

Customer Sample No.	cpm	mR/hr	Wipe	Customer Sample No.	cpm	mR/hr	wipe

Ion Chamber Ser. No. _____
Alpha Meter Ser. No. _____
Beta/Gamma Meter Ser. No. _____

Calibration date _____
Calibration date _____
Calibration date _____

AK
4/12/05
10:00



CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

AMEC Earth & Environmental
550 South Wadsworth Boulevard
Suite 500
Lakewood, CO 80226

Package ID T711MT767
Task Order 313150010
SDG No. IOC1042

No. of Analyses 1

Laboratory Del Mar

Date: 04/18/05

Reviewer P. Meeks

Reviewer's Signature

Analysis/Method Metals

P. Meeks

ACTION ITEMS^a	
1.	Case Narrative Deficiencies
2.	Out of Scope Analyses
3.	Analyses Not Conducted
4.	Missing Hardcopy Deliverables
5.	Incorrect Hardcopy Deliverables
6.	Deviations from Analysis Protocol, e.g., <u>Qualifications were applied for detects below the reporting limit.</u>
	Holding Times _____
	GC/MS Tune/Inst. Performance _____
	Calibrations _____
	Blanks _____
	Surrogates _____
	Matrix Spike/Dup LCS _____
	Field QC _____
	Internal Standard Performance _____
	Compound Identification and Quantitation _____
	System Performance _____

COMMENTS^b	
^a 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 Qualifier Reference Table

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

Qualification Code Reference Table

Qualifier	Organics	Inorganics
H	Holding times were exceeded.	Holding times were exceeded.
S	Surrogate recovery was outside QC limits.	The sequence or number of standards used for the calibration was incorrect
C	Calibration %RSD or %D were noncompliant.	Correlation coefficient is <0.995.
R	Calibration RRF was <0.05.	%R for calibration is not within control limits.
B	Presumed contamination from preparation (method) blank.	Presumed contamination from preparation (method) or calibration blank.
L	Laboratory Blank Spike/Blank Spike Duplicate %R was not within control limits.	Laboratory Control Sample %R was not within control limits.
Q	MS/MSD recovery was poor or RPD high.	MS recovery was poor.
E	Not applicable.	Duplicates showed poor agreement.
I	Internal standard performance was unsatisfactory.	ICP ICS results were unsatisfactory.
A	Not applicable.	ICP Serial Dilution %D were not within control limits.
M	Tuning (BFB or DFTPP) was noncompliant.	Not applicable.
T	Presumed contamination from trip blank.	Not applicable.
+	False positive - reported compound was not present. Not applicable.	
-	False negative - compound was present but not reported.	Not applicable.
F	Presumed contamination from FB, or ER.	Presumed contamination from FB or ER.
\$	Reported result or other information was incorrect.	Reported result or other information was incorrect.
?	TIC identity or reported retention time has been changed.	Not applicable.
D	The analysis with this flag should not be used because another more technically sound analysis is available.	The analysis with this flag should not be used because another more technically sound analysis is available.
P	Instrument performance for pesticides was poor.	Post Digestion Spike recovery was not within control limits.
DNQ	The compound was detected between the MDL and the RL and, by definition, is considered an estimated value.	The compound was detected between the MDL and the RL and, by definition, is considered an estimated value.
#	Unusual problems found with the data that have been described in Section 2.#, "Data Validation Findings." The number following the asterisk () will indicate the subsection where a description of the problem can be found (eg. *1 would indicate a sample was not within temperature limits).	Unusual problems found with the data that have been described in Section 2.#, "Data Validation Findings." The number following the asterisk (*) will indicate the subsection where a description of the problem can be found (eg. *1 would indicate a sample was not within temperature limits).



DATA VALIDATION REPORT

NPDES
Monitoring

ANALYSIS: METALS

SAMPLE DELIVERY GROUP: IOC1042

Prepared by

AMEC—Denver Operations
550 South Wadsworth Boulevard, Suite 500
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title: NPDES Monitoring
Contract Task Order #: 313150010
SDG#: IOC1042
Project Manager: B. McIlvaine
Matrix: Water
Analysis: Metals
QC Level: Level IV
No. of Samples: 1
No. of Reanalyses/Dilutions: 0
Reviewer: P. Meeks
Date of Review: April 18, 2005

The samples listed in Table 1 were validated based on the guidelines outlined in the *AMEC Data Validation Procedure for Levels III and IV ICP-MS Metals, (DVP-5-A, Rev.0)*, *AMEC Data Validation Procedure for Levels III and IV ICP Metals (DVP-5, Rev. 0)*, *SW-846 Method 6020B for Inductively Coupled Plasma – Mass Spectrometry*, *SW-846 Method 6010B for Inductively Coupled Plasma*, *SW-846 Method 7471A for Mercury (Manual Cold-Vapor Technique)*, 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.

DATA VALIDATION REPORT

Project: NPDES
SDG No.: IOC1042
Analysis: MET

Table 1. Sample identification

Client ID	EPA ID	Laboratory ID	Matrix	COC Method
Outfall 001	Outfall 001	IOC1042-01	water	ILM04

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

Following are findings associated with sample management:

2.1.1 Sample Preservation, Handling, and Transport

The sample in this SDG was received at the laboratory within the temperature limits of $4^{\circ}\text{C} \pm 2^{\circ}\text{C}$. 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. The metals analyses presented in this SDG were requested as per a telephone conversation between the laboratory and MWH personnel, dated 4/12/05. No sample qualifications were required.

2.1.3 Holding Times

The date of collection recorded on the COC and the date of analysis recorded in the raw data, documented that the sample analyses were performed within the specified holding times of six months for the ICP. No qualifications were required.

2.2 ICP-MS TUNING

As the sample was not analyzed by ICP/MS, ICP/MS tuning is not applicable.

2.3 CALIBRATION

The ICV and CCV results showed acceptable recoveries, 90-110% for the ICP. The reporting limit check standards were recovered within the AMEC control limits of 70-130%. No sample qualifications were required.

2.4 BLANKS

There were detects in the method blank and CCBs associated with the sample analyses, but none of sufficient concentration to require sample qualification. No qualifications were required.

2.5 ICP INTERFERENCE CHECK SAMPLE (ICS A/AB)

ICSA and ICSAB analyses were included in the raw data for the ICP analyses, but were not analyzed the same day as the site sample. The recoveries were within the control limits of 80-120% and no qualifications were required.

2.6 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

The ICP LCS sample was identified as 5D12071-BS1. The LCS results on the summary forms and in the raw data were within the laboratory-established ICP control limits of 85-115%. No qualifications were required.

2.7 LABORATORY DUPLICATES

MS/MSD analyses were performed on Outfall 001. The RPDs were within the control limit of 20% and no qualifications were required.

2.8 MATRIX SPIKE

MS/MSD analyses were performed on Outfall 001. The recoveries were within the AMEC control limits of 75-125%. No qualifications were required.

2.9 FURNACE ATOMIC ABSORPTION QC

Furnace atomic absorption was not utilized for the analysis of this sample; therefore, furnace atomic absorption QC is not applicable.

2.10 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.

2.11 INTERNAL STANDARDS PERFORMANCE

As the sample was not analyzed by ICP/MS, ICP/MS internal standards are not applicable.

2.12 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 transcription errors or

DATA VALIDATION REPORT

Project: NPDES
SDG No.: IOC1042
Analysis: MET

calculation errors were noted. Analytes detected below the reporting limit were qualified as estimated, "J."
No further qualifications were required.

2.13 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.

2.13.1 Field Blanks and Equipment Rinsates

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

2.13.2 Field Duplicates

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



Del Mar Analytical

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

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

Project ID: Routine Outfall 001

Report Number: IOC1042

Sampled: 03/12/05

Received: 03/12/05

DRAFT: METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers	Per Qual	Qual Code
Sample ID: IOC1042-01 (DRAFT: Outfall 001 - Water)											
Reporting Units: mg/l											
Iron	EPA 200.7	5D12071	0.0088	0.040	0.044	1	04/12/05	04/12/05			
Sample ID: IOC1042-01 (DRAFT: Outfall 001 - Water)											
Reporting Units: ug/l											
Chromium	EPA 200.7	5D12071	0.68	5.0	2.2	1	04/12/05	04/12/05	J	J	DNQ
Manganese	EPA 200.7	5D12071	3.2	20	4.7	1	04/12/05	04/12/05	J	J	DNQ

AMEC VALIDATED

LEVEL IV

DRAFT REPORT
 DRAFT REPORT
 DATA SUBJECT TO CHANGE

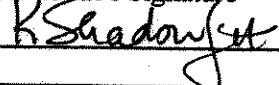
The results pertain only to the samples tested in the laboratory. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical.

CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

AMEC Earth & Environmental
 550 South Wadsworth Boulevard
 Suite 500
 Lakewood, CO 80226

Package ID T711DF36
 Task Order 313150010
 SDG No. Multiple
 No. of Analyses 4

Laboratory Alta
 Reviewer K. Shadowlight
 Analysis/Method Dioxins

Date: March 25, 2005
 Reviewer's Signature


ACTION ITEMS ^a	
1. Case Narrative Deficiencies	
2. Out of Scope Analyses	
3. Analyses Not Conducted	
4. Missing Hardcopy Deliverables	
5. Incorrect Hardcopy Deliverables	
6. Deviations from Analysis Protocol, e.g.,	Qualifications were assigned for the following:
Holding Times	* EMPCs
GC/MS Tune/Inst. Performance	* Detects below the lower method calibration level
Calibration	
Method blanks	
Surrogates	
Matrix Spike/Dup LCS	
Field QC	
Internal Standard Performance	
Compound Identification and Quantitation	
System Performance	
COMMENTS ^b	
^a 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

ANALYSIS: DIOXINS/FURANS

SAMPLE DELIVERY GROUPS: Multiple SDGs

Prepared by

AMEC—Denver Operations
550 South Wadsworth Boulevard, Suite 500
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title: NPDES Monitoring
Contract Task Order #: 313150010
Sample Delivery Group #: Multiple
Project Manager: B. McIlvaine
Matrix: Water
Analysis: Dioxins/Furans
QC Level: Level IV
No. of Samples: 4
No. of Reanalyses/Dilutions: 0
Reviewer: K. Shadowlight
Date of Review: March 25 2005

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

Table 1. Sample Identification

Client ID	Laboratory ID (Del Mar)	Laboratory ID (Alta)	Matrix	COC Method
Outfall 001	IOC1042-01	25897-001	water	1613
Outfall 002	IOC0995-01	25899-001	water	1613
Outfall 004	IOC0450-01	25848-001	water	1613
Outfall 011	IOC0996-01	25898-001	water	1613

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

Following are findings associated with sample management:

2.1.1 Sample Preservation, Handling, and Transport

All of the samples in these SDGs were received at Del Mar Analytical within the temperature limits of $4^{\circ}\text{C} \pm 2^{\circ}\text{C}$. The samples were shipped to Alta for dioxin/furan analyses and were received below the temperature limits at 1.2°C and 1.3°C ; however, as the samples were not noted to have been frozen or damaged, no qualifications were required. According to the laboratory login sheets, all samples were received intact and in good condition at both laboratories. No qualifications were required.

2.1.2 Chain of Custody

The COCs and transfer COCs were legible and signed by the appropriate field and laboratory personnel, and accounted for the analyses presented in these SDGs. As the samples were couriered directly to Del Mar Analytical, custody seals were not required. The coolers received by Alta had custody seals present and intact; however, custody seals were not present on the sample containers. The EPA 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 a year of collection. No qualifications were required.

2.2 INSTRUMENT PERFORMANCE

Following are findings associated with instrument performance:

2.2.1 GC Column Performance

A Windows Defining Mix (WDM) containing the first and last eluting congeners of each descriptor and isomer specificity compounds was not analyzed prior to the initial calibration sequence or at the beginning of each analytical sequence; however, the first and last eluting congeners and isomer specificity compounds were added to the midpoint of the initial calibration and to the continuing calibration standards (see section 2.3.2). The GC column performance in the calibrations was acceptable, with the height of the valley between the closely eluting isomers and 2,3,7,8-TCDD reported as less than 25%. No qualifications were required.

2.2.2 Mass Spectrometer Performance

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

2.3 CALIBRATION

2.3.1 Initial Calibration

There was one initial calibration, analyzed 08/30/04. The calibration consisted of six concentration level standards (CS0 through CS5) analyzed to verify instrument linearity. The initial calibration was acceptable with %RSDs $\leq 20\%$ for the 15 native compounds (calibration by isotope dilution) and $\leq 35\%$ for the two 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 VERs were acceptable with the concentrations within the acceptance criteria listed in Table 6 of EPA Method 1613. The ion abundance ratios and relative retention times were within the method QC limits. 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 standards 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 (6613-MB001) was extracted and analyzed with the samples in these SDGs. There were no target compound detects reported 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 Ongoing Precision Recovery (OPR) sample (6613-OPR001) was extracted and analyzed with the samples in these SDGs. All recoveries were within the acceptance criteria listed in Table 6 of Method 1613. No qualifications were required.

2.6 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

MS/MSD analyses were not performed in these SDGs. 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 samples in these SDGs had no associated field QC samples. No qualifications were required.

2.7.2 Field Duplicates

No field duplicate samples were identified for these SDGs.

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. Any reported EMPC was qualified as an estimated nondetect, "UJ." Any detects below the lower method calibration level (MCL) were qualified as estimated, "J." No further qualifications were required.



EPA Method 1613

Client Data		Sample Data		Laboratory Data				
Sample ID: IOC1042-01	Del Mar Analytical, Irvine	Matrix: Aqueous	Lab Sample: 25897-001	Date Received: 15-Mar-05				
Project: IOC1042	IOC1042	Sample Size: 1.041 L	QC Batch No.: 6613	Date Extracted: 18-Mar-05				
Date Collected: 12-Mar-05	12-Mar-05		Date Analyzed DB-5: 21-Mar-05	Date Analyzed DB-225: NA				
Time Collected: 0940	0940							
Analyte	Conc. (pg/L)	DL ^a	EMPC ^b	Qualifiers	Labeled Standard	%R	LCL-UCL ^d	Qualifiers
2,3,7,8-TCDD	ND	1.15			IS 13C-2,3,7,8-TCDD	70.9	25 - 164	
1,2,3,7,8-PeCDD	ND	0.966			13C-1,2,3,7,8-PeCDD	65.6	25 - 181	
1,2,3,4,7,8-HxCDD	ND	1.53			13C-1,2,3,4,7,8-HxCDD	69.8	32 - 141	
1,2,3,6,7,8-HxCDD	ND	1.50			13C-1,2,3,6,7,8-HxCDD	77.4	28 - 130	
1,2,3,7,8,9-HxCDD	ND	1.51			13C-1,2,3,4,6,7,8-HpCDD	80.8	23 - 140	
1,2,3,4,6,7,8-HpCDD	ND	2.48			13C-OCDD	65.4	17 - 157	
OCDD	ND		7.38		13C-2,3,7,8-TCDF	71.7	24 - 169	
2,3,7,8-TCDF	ND	1.28			13C-1,2,3,7,8-PeCDF	60.9	24 - 185	
1,2,3,7,8-PeCDF	ND	2.27			13C-2,3,4,7,8-PeCDF	62.4	21 - 178	
2,3,4,7,8-PeCDF	ND	2.01			13C-1,2,3,4,7,8-HxCDF	60.7	26 - 152	
1,2,3,4,7,8-HxCDF	ND	0.512			13C-1,2,3,6,7,8-HxCDF	67.7	26 - 123	
1,2,3,6,7,8-HxCDF	ND	0.500			13C-2,3,4,6,7,8-HxCDF	68.7	28 - 136	
2,3,4,6,7,8-HxCDF	ND	0.556			13C-1,2,3,7,8,9-HxCDF	68.6	29 - 147	
1,2,3,7,8,9-HxCDF	ND	0.841			13C-1,2,3,4,6,7,8-HpCDF	68.7	28 - 143	
1,2,3,4,6,7,8-HpCDF	ND	0.916			13C-1,2,3,4,7,8,9-HpCDF	81.6	26 - 138	
1,2,3,4,7,8,9-HpCDF	ND	0.958			13C-OCDF	74.3	17 - 157	
OCDF	ND	2.32			CRS 37Cl-2,3,7,8-TCDD	85.6	35 - 197	
Totals								
Total TCDD	ND	1.15						
Total PeCDD	ND	0.966						
Total HxCDD	ND	1.51						
Total HpCDD	ND	2.48						
Total TCDF	ND	1.28						
Total PeCDF	ND	2.13						
Total HxCDF	ND	0.591						
Total HpCDF	ND	0.932						
Footnotes								
a. Sample specific estimated detection limit.								
b. Estimated maximum possible concentration.								
c. Method detection limit.								
d. Lower control limit - upper control limit.								

100
600

*10

Approved By: Martha M. Maier 22-Mar-2005 09:31

UNVALIDATED

UNVALIDATED

CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

AMEC Earth & Environmental
 550 South Wadsworth Boulevard
 Suite 500
 Lakewood, CO 80226

Package ID T711VO70
 Task Order 313150010
 SDG No. IOC0995, IOC1042

No. of Analyses 4

Laboratory Del Mar Analytical

Date April 8, 2005

Reviewer K. Shadowlight

Reviewer's Signature 

Analysis/Method Volatiles by 624

ACTION ITEMS ^a	
1. Case Narrative	
Deficiencies	
2. Out of Scope	
Analyses	
3. Analyses Not Conducted	
4. Missing Hardcopy Deliverables	
5. Incorrect Hardcopy Deliverables	
6. Deviations from Analysis	Qualifications were assigned for continuing calibration %D outliers
GC/MS Tune/Inst. Perform	
Calibrations	
Blanks	
Surrogates	
Matrix Spike/Dup LCS	
Field QC	
Internal Standard Performance	
Compound Identification and Quantitation	
System Performance	
COMMENTS ^b	
^a 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

ANALYSIS: VOLATILES

SAMPLE DELIVERY GROUP: IOC0995, IOC1042

Prepared by

AMEC Denver Operations
550 South Wadsworth Boulevard, Suite 500
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title: NPDES Monitoring
Contract Task Order #: 313150010
SDG#: IOC0995, IOC1042
Project Manager: B. McIlvaine
Matrix: Water
Analysis: Volatiles
QC Level: Level IV
No. of Samples: 4
No. of Reanalyses/Dilutions: 0
Reviewer: K. Shadowlight
Date of Review: April 8, 2005

The samples listed in Table 1 were validated based on the guidelines outlined in the *AMEC Data Validation Procedure for Levels C and D Volatile Organics (DVP-2, Rev. 2)*, *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 summary forms as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

Table 1. Sample identification

Client ID	EPA ID	Lab No.	Matrix	Method
Outfall 001	Outfall 001	IOC1042-01	water	624
Trip Blank	Trip Blank	IOC1042-02	water	624
Outfall 002	Outfall 002	IOC0995-01	water	624
Trip Blank	Trip Blank	IOC0995-02	water	624

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

The following are findings associated with sample management:

2.1.1 Sample Preservation, Handling, and Transport

Samples Outfall 002 and Trip Blank (IOC0995) were received above the temperature limits of $4^{\circ}\text{C} \pm 2^{\circ}\text{C}$, at 7°C ; however, the samples were transported directly to the laboratory from the field, and had not completely cooled in transit. The remaining samples in these SDGs were received at the laboratory within the temperature limits of $4^{\circ}\text{C} \pm 2^{\circ}\text{C}$. The samples were properly preserved. The COCs noted that the samples were received intact; however, information regarding absence of headspace was not provided. No qualifications were required.

2.1.2 Chain of Custody

The COCs were signed and dated by both field and laboratory personnel. The COCs accounted for the analyses presented in these SDGs. As the samples were couriered directly to the laboratory, custody seals were not required. No qualifications were required.

2.1.3 Holding Times

The samples were analyzed within 14 days of collection. No qualifications were required.

2.2 GC/MS TUNING

The ion abundance windows shown on the quantitation report were consistent with those specified in the EPA Method 624, and all ion abundances were within the established windows. The samples and associated QC were analyzed within 12 hours of the BFB injection times. The Form Vs were verified from the raw data and no discrepancies between the summary forms and the raw data were noted. No qualifications were required.

2.3 CALIBRATION

Two initial calibrations dated 11/16/04 and 02/01/05, were associated with these SDGs. The average RRFs were ≥ 0.05 and the %RSDs were $\leq 35\%$ for the applicable target compounds. Three continuing calibrations analyzed 03/13/05 and 03/14/05 (GCMS33 and GCMS45); were associated with the sample analyses. The %D for vinyl chloride exceeded 20% in the continuing calibration dated 03/14/05 (GCMS33); therefore, the nondetect result for vinyl chloride was qualified as estimated, "UJ," in sample Outfall 002. The %Ds for trichlorofluoromethane, 1,1,1-trichloroethane, and carbon tetrachloride exceeded 20% in the continuing calibration dated 03/14/05 (GCMS45); therefore, the nondetect results for the aforementioned target compounds were qualified as estimated "UJ," in sample Outfall 001. The Trip Blank was not qualified for %D outliers. The remaining %Ds were $\leq 20\%$ and the RRFs for all target compounds were ≥ 0.05 . A representative number of %RSDs and average RRFs from the initial calibration, and %Ds and RRFs from the

continuing calibration were recalculated from the raw data, and no calculation or transcription errors were found. No further qualifications were required.

2.4 BLANKS

Three water method blanks (5C13007-BLK1, 5C14017-BLK1, and 5C14027-BLK1) were associated with these SDGs. There were no detects above the MDLs for the target compounds listed on the sample result summaries. The method blank raw data showed no evidence of false negatives. No qualifications were required.

2.5 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

Three water blank spikes (5C13007-BS1, 5C14017-BS1, and 5C14027-BS1) were associated with these SDGs. All recoveries were within the laboratory-established QC limits. A representative number of recoveries were recalculated from the raw data and no calculation or transcription errors were found. No qualifications were required.

2.6 SURROGATE RECOVERY

The surrogates were recovered within the QC limits of 80-120% in the samples and associated QC. A representative number of surrogate recoveries were recalculated from the raw data and no calculation or transcription errors were found. No qualifications were required.

2.7 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

MS/MSD analyses were not performed for the site samples in these SDGs. Evaluation of method accuracy was based on 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 (IOC0995) and Trip blank (IOC1042) were the trip blanks associated with the site samples in these SDGs. There were no target compounds detected above the MDLs in the either of the trip blanks. No qualifications were required.

2.8.2 Field Blanks and Equipment Rinsates

There were no other field QC samples associated with these SDGs. No qualifications were required.

2.8.3 Field Duplicates

There were no field duplicate samples associated with these SDGs.

2.9 INTERNAL STANDARDS PERFORMANCE

Internal standard area counts and retention times for the samples in this SDG were within the control limits established by the continuing calibration standards: +100%/-50% for internal standard areas and ± 0.50 minutes for retention times. A representative number of internal standard areas and retention times were verified from the raw data, and no calculation or transcription errors were noted. No qualifications were required.

2.10 COMPOUND IDENTIFICATION

Target compound identification was verified at a Level IV data validation. The laboratory analyzed for volatile target compounds by EPA Method 624. Chromatograms, retention times, and spectra for the samples and QC were examined and no target compound identification problems were noted. No qualifications were required.

2.11 COMPOUND QUANTIFICATION AND REPORTED DETECTION LIMITS

Compound quantification is verified at a Level IV data validation. The reporting limits were supported by the lowest concentrations of the initial calibration standards and by the MDL study. Compound quantitation was verified by recalculating any sample detects and a representative number of blank spike and surrogate recoveries from the raw data. Results were reported in ug/L (ppm). No calculation or transcription errors were noted. No qualifications were required.

2.12 TENTATIVELY IDENTIFIED COMPOUNDS

The laboratory did not provide TICs for these SDGs. No qualifications were required.

2.13 SYSTEM PERFORMANCE

A review of the chromatograms and other raw data showed no identifiable problems with system performance. No qualifications were required.



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

Project ID: Routine Outfall 001

Report Number: IOC1042

Sampled: 03/12/05

Received: 03/12/05

DRAFT: PURGEABLES BY GC/MS (EPA 624)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOC1042-01 (DRAFT: Outfall 001 - Water)									
Reporting Units: ug/l									
Benzene	EPA 624	5C14027	0.28	2.0	ND	1	03/14/05	03/14/05	US & C
Carbon tetrachloride	EPA 624	5C14027	0.28	5.0	ND	1	03/14/05	03/14/05	US C
Chloroform	EPA 624	5C14027	0.33	2.0	ND	1	03/14/05	03/14/05	U
1,1-Dichloroethane	EPA 624	5C14027	0.27	2.0	ND	1	03/14/05	03/14/05	
1,2-Dichloroethane	EPA 624	5C14027	0.28	2.0	ND	1	03/14/05	03/14/05	
1,1-Dichloroethene	EPA 624	5C14027	0.32	3.0	ND	1	03/14/05	03/14/05	
Ethylbenzene	EPA 624	5C14027	0.25	2.0	ND	1	03/14/05	03/14/05	
Tetrachloroethene	EPA 624	5C14027	0.32	2.0	ND	1	03/14/05	03/14/05	
Toluene	EPA 624	5C14027	0.36	2.0	ND	1	03/14/05	03/14/05	
1,1,1-Trichloroethane	EPA 624	5C14027	0.30	2.0	ND	1	03/14/05	03/14/05	US C
1,1,2-Trichloroethane	EPA 624	5C14027	0.30	2.0	ND	1	03/14/05	03/14/05	U
Trichloroethene	EPA 624	5C14027	0.26	5.0	ND	1	03/14/05	03/14/05	U
Trichlorofluoromethane	EPA 624	5C14027	0.34	5.0	ND	1	03/14/05	03/14/05	US C
Vinyl chloride	EPA 624	5C14027	0.26	5.0	ND	1	03/14/05	03/14/05	U
Xylenes, Total	EPA 624	5C14027	0.52	4.0	ND	1	03/14/05	03/14/05	U
Surrogate: Dibromofluoromethane (80-120%)							100 %		
Surrogate: Toluene-d8 (80-120%)							93 %		
Surrogate: 4-Bromofluorobenzene (80-120%)							97 %		

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOC1042-02 (DRAFT: Trip Blank - Water)									
Reporting Units: ug/l									
Benzene	EPA 624	5C14027	0.28	2.0	ND	1	03/14/05	03/14/05	U
Carbon tetrachloride	EPA 624	5C14027	0.28	5.0	ND	1	03/14/05	03/14/05	
Chloroform	EPA 624	5C14027	0.33	2.0	ND	1	03/14/05	03/14/05	
1,1-Dichloroethane	EPA 624	5C14027	0.27	2.0	ND	1	03/14/05	03/14/05	
1,2-Dichloroethane	EPA 624	5C14027	0.28	2.0	ND	1	03/14/05	03/14/05	
1,1-Dichloroethene	EPA 624	5C14027	0.32	3.0	ND	1	03/14/05	03/14/05	
Ethylbenzene	EPA 624	5C14027	0.25	2.0	ND	1	03/14/05	03/14/05	
Tetrachloroethene	EPA 624	5C14027	0.32	2.0	ND	1	03/14/05	03/14/05	
Toluene	EPA 624	5C14027	0.36	2.0	ND	1	03/14/05	03/14/05	
1,1,1-Trichloroethane	EPA 624	5C14027	0.30	2.0	ND	1	03/14/05	03/14/05	
1,1,2-Trichloroethane	EPA 624	5C14027	0.30	2.0	ND	1	03/14/05	03/14/05	
Trichloroethene	EPA 624	5C14027	0.26	5.0	ND	1	03/14/05	03/14/05	
Trichlorofluoromethane	EPA 624	5C14027	0.34	5.0	ND	1	03/14/05	03/14/05	
Vinyl chloride	EPA 624	5C14027	0.26	5.0	ND	1	03/14/05	03/14/05	
Xylenes, Total	EPA 624	5C14027	0.52	4.0	ND	1	03/14/05	03/14/05	
Surrogate: Dibromofluoromethane (80-120%)							96 %		
Surrogate: Toluene-d8 (80-120%)							94 %		
Surrogate: 4-Bromofluorobenzene (80-120%)							95 %		

AMEC VALIDATED

DRAFT REPORT
 DRAFT REPORT
 DATA SUBJECT TO CHANGE

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

LEVEL IV

100
04/07/05

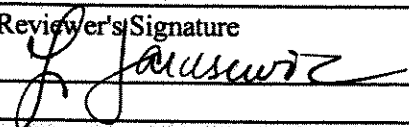
CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

AMEC Earth & Environmental
 550 South Wadsworth Boulevard
 Suite 500
 Lakewood, CO 80226

Package ID T711WC97
 Task Order 313150010
 SDG No. IOC0995, IOC1042

No. of Analyses 2

Laboratory Del Mar Analytical

Date: 04/05/05
 Reviewer's Signature


Reviewer L. Jarusewic

Analysis/Method General Minerals

ACTION ITEMS^a

1. **Case Narrative Deficiencies**
 2. **Out of Scope Analyses**
 3. **Analyses Not Conducted**
 4. **Missing Hardcopy Deliverables**
 5. **Incorrect Hardcopy Deliverables**
 6. **Deviations from Analysis Protocol, e.g.,**
- Holding Times
 - GC/MS Tune/Inst. Performance
 - Calibrations
 - Blanks
 - Surrogates
 - Matrix Spike/Dup LCS
 - Field QC
 - Internal Standard Performance
 - Compound Identification and Quantitation
 - System Performance

Qualifications applied for:
 1) Detects below the reporting limit

COMMENTS^b

^a 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

ANALYSIS: GENERAL MINERALS

SAMPLE DELIVERY GROUPS: IOC0995 & IOC1042

Prepared by

AMEC—Denver Operations
550 South Wadsworth Boulevard, Suite 500
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title: NPDES Monitoring
Contract Task Order #: 313150010
Sample Delivery Group #: IOC0995, IOC1042
Project Manager: B. McIlvaine
Matrix: Water
Analysis: General Minerals
QC Level: Level IV
No. of Samples: 2
Reviewer: L. Jarusewic
Date of Review: April 5, 2005

The samples listed in Table 1 was validated based on the guidelines outlined in the AMEC *Data Validation Procedures SOP DVP-6, Rev. 2, USEPA Methods for Chemical Analysis of Water and Wastes Method 350.2, 120.1, and 180.1*, 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 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.

DATA VALIDATION REPORT

Project: NPDES
SDG No.: IOC0995/1042
Analysis: General Minerals

Table 1. Sample identification

Client ID	EPA ID	Laboratory ID	Matrix	COC Method
Outfall 001	Outfall 001	IOC1042-01	Water	General Minerals
Outfall 002	Outfall 002	IOC0995-01	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

Sample Outfall 002 was received at the laboratory above the temperature limits of $4^{\circ}\text{C} \pm 2^{\circ}\text{C}$, at 7°C ; however, as the sample had insufficient time to cool in transit to the laboratory, no qualifications were required. Sample Outfall 001 was received at the laboratory within the temperature limits of $4^{\circ}\text{C} \pm 2^{\circ}\text{C}$. No preservation problems were noted by the laboratory. No qualifications were required.

2.1.2 Chain of Custody

The COCs were signed and dated by field and laboratory personnel. The COCs accounted for all analyses presented in this SDG. No sample qualifications were required.

2.1.3 Holding Times

The holding times were assessed by comparing the dates of collection with the dates of analyses. The 28-day analytical holding time for ammonia and conductivity and the 48-hour holding time for turbidity were met. No qualifications were required.

2.2 CALIBRATION

For the applicable analyses, the initial calibration correlation coefficients were ≥ 0.995 . The initial and continuing calibration information was acceptable with recoveries within the control limits of 90-110%. For ammonia, no information regarding the standardization of the titrant was provided; however, as the LCS recovery was within the CCV control limits, no qualifications were required.

2.3 BLANKS

The method blank and CCB results reported on the summary forms and in the raw data for blank analyses associated with the samples were nondetects at the reporting limit. No qualifications were required.

2.4 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

The ammonia laboratory control sample recovery was within the laboratory-established control limits. The LCS is not applicable to turbidity or conductivity. No qualifications were required.

2.5 SURROGATES RECOVERY

Surrogate recovery is not applicable to the analyses presented in these SDGs.

2.6 LABORATORY DUPLICATES

Laboratory duplicate analyses were performed on Outfall 001 for conductivity and Outfall 002 for turbidity. The RPDs were within laboratory-established control limits and no qualifications were required.

2.7 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

There were no MS/MSD analyses performed in association with the samples in these SDGs; therefore, no assessment was made with respect to this criterion. Ammonia method accuracy was assessed based on LCS results.

2.8 FURNACE ATOMIC ABSORPTION QC

Furnace atomic absorption was not utilized for the analyses of these samples; therefore, furnace atomic absorption QC is not applicable.

2.9 ICP SERIAL DILUTION

ICP serial dilution is not applicable to the analyses presented in this data validation report.

2.10 SAMPLE RESULT VERIFICATION

A Level IV review was performed for the samples in these data packages. Calculations were verified, and the sample results reported on the Form Is were verified against the raw data. No transcription errors or calculation errors were noted. Turbidity detected below the reporting limit in Outfall 002 was qualified as estimated, "J." No further qualifications were required.

2.11 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. The following are findings associated with field QC samples:

2.11.1 Field Blanks and Equipment Rinsates

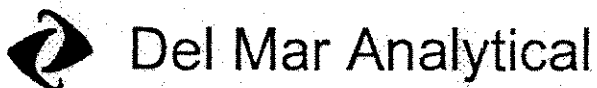
The samples in these SDGs had no associated field QC samples. No qualifications were required.

Project: NPDES
SDG No.: IOC0995/1042
Analysis: General Minerals

DATA VALIDATION REPORT

2.11.2 Field Duplicates

There were no field duplicate pairs associated with these SDGs.



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

Project ID: Routine Outfall 001

Report Number: IOC1042

Sampled: 03/12/05

Received: 03/12/05

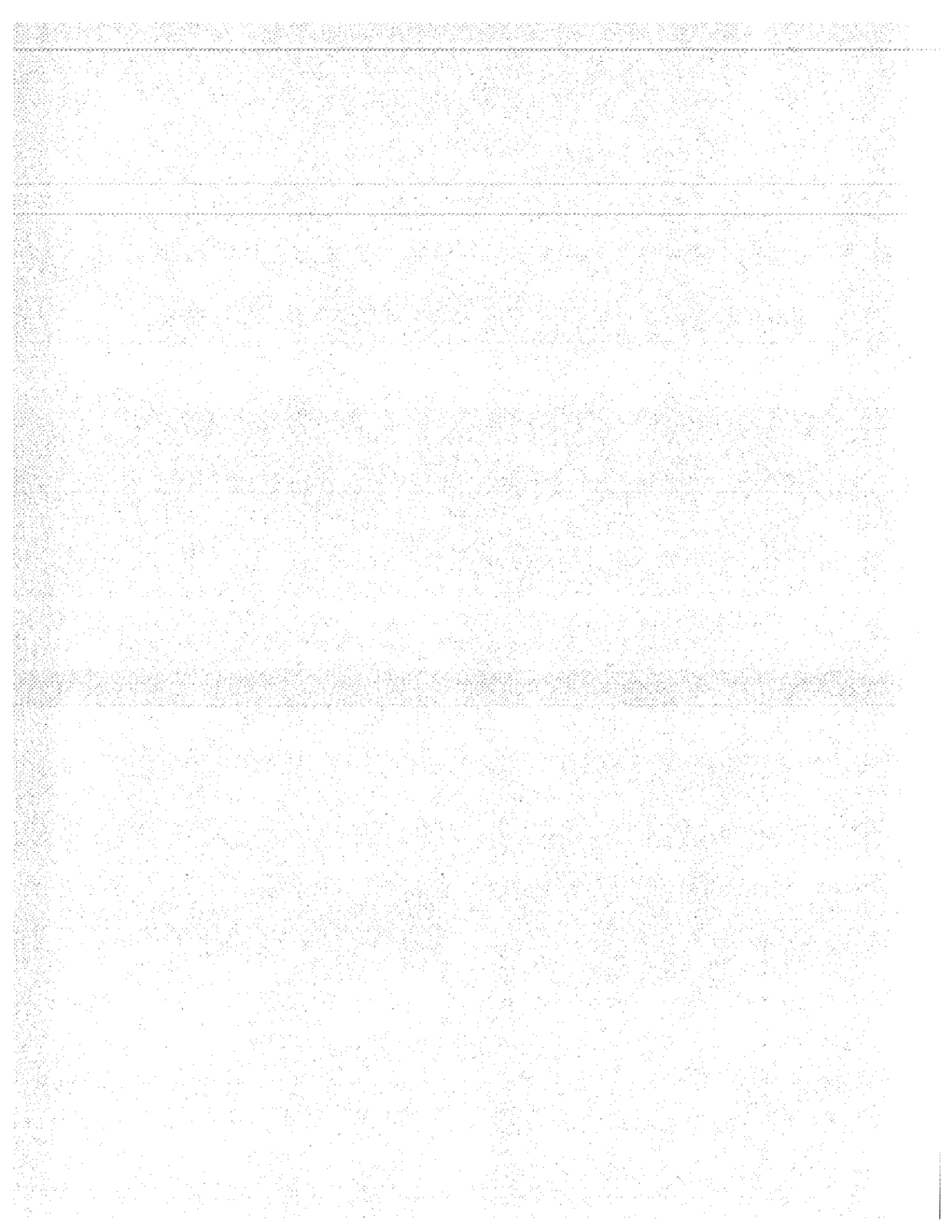
DRAFT: INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOC1042-01 (DRAFT: Outfall 001 - Water) Reporting Units: mg/l									
Ammonia-N (Distilled)	EPA 350.2	5C15088	0.30	0.50	ND	1	03/15/05	03/15/05	REV QUAL CODES
Sample ID: IOC1042-01 (DRAFT: Outfall 001 - Water) Reporting Units: NTU									
Turbidity	EPA 180.1	5C12043	0.040	1.0	1.1	1	03/12/05	03/12/05	
Sample ID: IOC1042-01 (DRAFT: Outfall 001 - Water) Reporting Units: umhos/cm									
Specific Conductance	EPA 120.1	5C14070	1.0	1.0	420	1	03/14/05	03/14/05	

AMEC VALIDATED

LEVEL IV

DRAFT REPORT
 DRAFT REPORT
 DATA SUBJECT TO CHANGE





LABORATORY REPORT

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

Project: Routine Outfall 001

Sampled: 03/12/05
Received: 03/12/05
Revised: 05/12/05 08:59

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.*

CASE NARRATIVE

- SAMPLE RECEIPT: Samples were received intact, at 5°C, on ice and with chain of custody documentation.
- HOLDING TIMES: All samples were analyzed within prescribed holding times and/or in accordance with the Del Mar Analytical Sample Acceptance Policy unless otherwise noted in the report.
- PRESERVATION: Samples requiring preservation were verified prior to sample analysis.
- QA/QC CRITERIA: All analyses met method criteria, except as noted in the report with data qualifiers.
- COMMENTS: Results that fall between the MDL and RL are 'J' flagged.
- SUBCONTRACTED: Refer to the last page for specific subcontract laboratory information included in this report.
- ADDITIONAL INFORMATION: The report has been revised to include all additional testing parameters. Due to non-compliance for the 2/11/05 sample, Cr, Fe, and Mn were analyzed. Also due to non-compliance, Gross Alpha was analyzed. Finally, enclosed are results for Ca, Mg, Na, K for reference only.

LABORATORY ID	CLIENT ID	MATRIX
IOC1042-01	Outfall 001	Water
IOC1042-02	Trip Blank	Water

Reviewed By:

Del Mar Analytical, Irvine
Michele Harper
Project Manager



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

Project ID: Routine Outfall 001

Report Number: IOC1042

Sampled: 03/12/05

Received: 03/12/05

PURGEABLES BY GC/MS (EPA 624)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOC1042-01 (Outfall 001 - Water)									
Reporting Units: ug/l									
Benzene	EPA 624	5C14027	0.28	2.0	ND	1	03/14/05	03/14/05	
Carbon tetrachloride	EPA 624	5C14027	0.28	5.0	ND	1	03/14/05	03/14/05	
Chloroform	EPA 624	5C14027	0.33	2.0	ND	1	03/14/05	03/14/05	
1,1-Dichloroethane	EPA 624	5C14027	0.27	2.0	ND	1	03/14/05	03/14/05	
1,2-Dichloroethane	EPA 624	5C14027	0.28	2.0	ND	1	03/14/05	03/14/05	
1,1-Dichloroethene	EPA 624	5C14027	0.32	3.0	ND	1	03/14/05	03/14/05	
Ethylbenzene	EPA 624	5C14027	0.25	2.0	ND	1	03/14/05	03/14/05	
Tetrachloroethene	EPA 624	5C14027	0.32	2.0	ND	1	03/14/05	03/14/05	
Toluene	EPA 624	5C14027	0.36	2.0	ND	1	03/14/05	03/14/05	
1,1,1-Trichloroethane	EPA 624	5C14027	0.30	2.0	ND	1	03/14/05	03/14/05	
1,1,2-Trichloroethane	EPA 624	5C14027	0.30	2.0	ND	1	03/14/05	03/14/05	
Trichloroethene	EPA 624	5C14027	0.26	5.0	ND	1	03/14/05	03/14/05	
Trichlorofluoromethane	EPA 624	5C14027	0.34	5.0	ND	1	03/14/05	03/14/05	
Vinyl chloride	EPA 624	5C14027	0.26	5.0	ND	1	03/14/05	03/14/05	
Xylenes, Total	EPA 624	5C14027	0.52	4.0	ND	1	03/14/05	03/14/05	
Surrogate: Dibromofluoromethane (80-120%)					100 %				
Surrogate: Toluene-d8 (80-120%)					93 %				
Surrogate: 4-Bromofluorobenzene (80-120%)					97 %				
Sample ID: IOC1042-02 (Trip Blank - Water)									
Reporting Units: ug/l									
Benzene	EPA 624	5C14027	0.28	2.0	ND	1	03/14/05	03/14/05	
Carbon tetrachloride	EPA 624	5C14027	0.28	5.0	ND	1	03/14/05	03/14/05	
Chloroform	EPA 624	5C14027	0.33	2.0	ND	1	03/14/05	03/14/05	
1,1-Dichloroethane	EPA 624	5C14027	0.27	2.0	ND	1	03/14/05	03/14/05	
1,2-Dichloroethane	EPA 624	5C14027	0.28	2.0	ND	1	03/14/05	03/14/05	
1,1-Dichloroethene	EPA 624	5C14027	0.32	3.0	ND	1	03/14/05	03/14/05	
Ethylbenzene	EPA 624	5C14027	0.25	2.0	ND	1	03/14/05	03/14/05	
Tetrachloroethene	EPA 624	5C14027	0.32	2.0	ND	1	03/14/05	03/14/05	
Toluene	EPA 624	5C14027	0.36	2.0	ND	1	03/14/05	03/14/05	
1,1,1-Trichloroethane	EPA 624	5C14027	0.30	2.0	ND	1	03/14/05	03/14/05	
1,1,2-Trichloroethane	EPA 624	5C14027	0.30	2.0	ND	1	03/14/05	03/14/05	
Trichloroethene	EPA 624	5C14027	0.26	5.0	ND	1	03/14/05	03/14/05	
Trichlorofluoromethane	EPA 624	5C14027	0.34	5.0	ND	1	03/14/05	03/14/05	
Vinyl chloride	EPA 624	5C14027	0.26	5.0	ND	1	03/14/05	03/14/05	
Xylenes, Total	EPA 624	5C14027	0.52	4.0	ND	1	03/14/05	03/14/05	
Surrogate: Dibromofluoromethane (80-120%)					96 %				
Surrogate: Toluene-d8 (80-120%)					94 %				
Surrogate: 4-Bromofluorobenzene (80-120%)					95 %				

Del Mar Analytical, Irvine
Michele Harper
Project Manager



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

Project ID: Routine Outfall 001

Report Number: IOC1042

Sampled: 03/12/05

Received: 03/12/05

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

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOC1042-01 (Outfall 001 - Water)									
Reporting Units: ug/l									
Bis(2-ethylhexyl)phthalate	EPA 625	5C13017	1.1	5.0	ND	0.952	03/13/05	03/18/05	
2,4-Dinitrotoluene	EPA 625	5C13017	0.23	9.0	ND	0.952	03/13/05	03/18/05	
N-Nitrosodimethylamine	EPA 625	5C13017	0.22	8.0	ND	0.952	03/13/05	03/18/05	
Pentachlorophenol	EPA 625	5C13017	0.78	8.0	ND	0.952	03/13/05	03/18/05	
2,4,6-Trichlorophenol	EPA 625	5C13017	0.10	6.0	ND	0.952	03/13/05	03/18/05	
Surrogate: 2-Fluorophenol (30-120%)					63 %				
Surrogate: Phenol-d6 (35-120%)					66 %				
Surrogate: 2,4,6-Tribromophenol (45-120%)					84 %				
Surrogate: Nitrobenzene-d5 (45-120%)					65 %				
Surrogate: 2-Fluorobiphenyl (45-120%)					72 %				
Surrogate: Terphenyl-d14 (45-120%)					77 %				

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MWH-Pasadena/Boeing 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Attention: Bronwyn Kelly	Project ID: Routine Outfall 001 Report Number: IOC1042	Sampled: 03/12/05 Received: 03/12/05
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ORGANOCHLORINE PESTICIDES (EPA 608)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOC1042-01 (Outfall 001 - Water) - cont.									
Reporting Units: ug/l									
alpha-BHC	EPA 608	5C14049	0.0010	0.010	ND	0.962	03/14/05	03/14/05	
Surrogate: Decachlorobiphenyl (45-120%)					75 %				
Surrogate: Tetrachloro-m-xylene (35-120%)					53 %				

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Project ID: Routine Outfall 001

Report Number: IOC1042

Sampled: 03/12/05

Received: 03/12/05

METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOC1042-01 (Outfall 001 - Water) - cont.									
Reporting Units: mg/l									
Calcium	EPA 200.7	5D12071	0.015	0.10	35	1	04/12/05	04/12/05	M-HA
Iron	EPA 200.7	5D12071	0.0088	0.040	0.044	1	04/12/05	04/12/05	
Magnesium	EPA 200.7	5D12071	0.0030	0.020	13	1	04/12/05	04/12/05	M-HA
Potassium	EPA 200.7	5D12071	0.066	0.50	1.7	1	04/12/05	04/12/05	
Sodium	EPA 200.7	5D12071	0.095	0.50	26	1	04/12/05	04/12/05	
Sample ID: IOC1042-01 (Outfall 001 - Water)									
Reporting Units: ug/l									
Chromium	EPA 200.7	5D12071	0.68	5.0	2.2	1	04/12/05	04/12/05	J
Copper	EPA 200.8	5C12041	0.49	2.0	1.5	1	03/12/05	03/12/05	J
Lead	EPA 200.8	5C12041	0.13	1.0	ND	1	03/12/05	03/12/05	
Manganese	EPA 200.7	5D12071	3.2	20	4.7	1	04/12/05	04/12/05	J
Mercury	EPA 245.1	5C14050	0.063	0.20	ND	1	03/14/05	03/14/05	

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Pasadena, CA 91101
Attention: Bronwyn Kelly

Project ID: Routine Outfall 001

Report Number: IOC1042

Sampled: 03/12/05

Received: 03/12/05

INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOC1042-01 (Outfall 001 - Water) - cont.									
Reporting Units: mg/l									
Ammonia-N (Distilled)	EPA 350.2	5C15088	0.30	0.50	ND	1	03/15/05	03/15/05	
Biochemical Oxygen Demand	EPA 405.1	5C12042	0.59	2.0	ND	1	03/12/05	03/17/05	
Chloride	EPA 300.0	5C12027	0.26	0.50	20	1	03/12/05	03/12/05	
Nitrate/Nitrite-N	EPA 300.0	5C12027	0.072	0.26	0.074	1	03/12/05	03/12/05	J
Oil & Grease	EPA 413.1	5C14065	0.94	5.0	ND	1	03/14/05	03/14/05	
Sulfate	EPA 300.0	5C12027	0.36	1.0	63	2	03/12/05	03/12/05	
Surfactants (MBAS)	SM5540-C	5C12045	0.044	0.10	ND	1	03/12/05	03/12/05	M2
Total Dissolved Solids	SM2540C	5C14069	10	10	280	1	03/14/05	03/14/05	
Total Suspended Solids	EPA 160.2	5C14073	10	10	ND	1	03/14/05	03/14/05	
Sample ID: IOC1042-01 (Outfall 001 - Water)									
Reporting Units: ml/hr									
Total Settleable Solids	EPA 160.5	5C12044	0.10	0.10	ND	1	03/12/05	03/12/05	
Sample ID: IOC1042-01 (Outfall 001 - Water)									
Reporting Units: NTU									
Turbidity	EPA 180.1	5C12043	0.040	1.0	1.1	1	03/12/05	03/12/05	
Sample ID: IOC1042-01 (Outfall 001 - Water)									
Reporting Units: ug/l									
Total Cyanide	EPA 335.2	5C14099	2.2	5.0	ND	1	03/14/05	03/14/05	
Perchlorate	EPA 314.0	5C14051	0.80	4.0	ND	1	03/14/05	03/14/05	
Sample ID: IOC1042-01 (Outfall 001 - Water)									
Reporting Units: umhos/cm									
Specific Conductance	EPA 120.1	5C14070	1.0	1.0	420	1	03/14/05	03/14/05	

Del Mar Analytical, Irvine
Michele Harper
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MWH-Pasadena/Boeing
300 North Lake Avenue, Suite 1200
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Attention: Bronwyn Kelly

Project ID: Routine Outfall 001

Report Number: IOC1042

Sampled: 03/12/05

Received: 03/12/05

SHORT HOLD TIME DETAIL REPORT

Sample ID: Outfall 001 (IOC1042-01) - Water	Hold Time (in days)	Date/Time Sampled	Date/Time Received	Date/Time Extracted	Date/Time Analyzed
EPA 160.5	2	03/12/2005 09:40	03/12/2005 13:20	03/12/2005 17:00	03/12/2005 18:00
EPA 180.1	2	03/12/2005 09:40	03/12/2005 13:20	03/12/2005 13:30	03/12/2005 14:30
EPA 300.0	2	03/12/2005 09:40	03/12/2005 13:20	03/12/2005 14:10	03/12/2005 14:25
EPA 405.1	2	03/12/2005 09:40	03/12/2005 13:20	03/12/2005 14:07	03/17/2005 10:30
SM5540-C	2	03/12/2005 09:40	03/12/2005 13:20	03/12/2005 17:04	03/12/2005 18:01

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 Attention: Bronwyn Kelly

Project ID: Routine Outfall 001

Report Number: IOC1042

Sampled: 03/12/05

Received: 03/12/05

METHOD BLANK/QC DATA

PURGEABLES BY GC/MS (EPA 624)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5C14027 Extracted: 03/14/05										
Blank Analyzed: 03/14/2005 (5C14027-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	0.32	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	0.52	ug/l						
Surrogate: Dibromofluoromethane	23.6			ug/l	25.0		94		80-120	
Surrogate: Toluene-d8	23.2			ug/l	25.0		93		80-120	
Surrogate: 4-Bromofluorobenzene	23.6			ug/l	25.0		94		80-120	
LCS Analyzed: 03/14/2005 (5C14027-BS1)										
Benzene	21.7	2.0	0.28	ug/l	25.0		87		70-120	
Carbon tetrachloride	29.4	5.0	0.28	ug/l	25.0		118		70-140	
Chloroform	24.5	2.0	0.33	ug/l	25.0		98		75-130	
1,1-Dichloroethane	21.2	2.0	0.27	ug/l	25.0		85		70-135	
1,2-Dichloroethane	27.1	2.0	0.28	ug/l	25.0		108		60-150	
1,1-Dichloroethene	19.8	3.0	0.32	ug/l	25.0		79		75-135	
Ethylbenzene	22.3	2.0	0.25	ug/l	25.0		89		80-120	
Tetrachloroethene	20.5	2.0	0.32	ug/l	25.0		82		75-125	
Toluene	21.8	2.0	0.36	ug/l	25.0		87		75-120	
1,1,1-Trichloroethane	26.2	2.0	0.30	ug/l	25.0		105		75-140	
1,1,2-Trichloroethane	23.5	2.0	0.30	ug/l	25.0		94		70-125	
Trichloroethene	21.7	5.0	0.26	ug/l	25.0		87		80-120	M-3
Trichlorofluoromethane	26.7	5.0	0.34	ug/l	25.0		107		65-145	
Vinyl chloride	17.4	5.0	0.26	ug/l	25.0		70		50-130	
Surrogate: Dibromofluoromethane	23.6			ug/l	25.0		94		80-120	
Surrogate: Toluene-d8	23.6			ug/l	25.0		94		80-120	

Del Mar Analytical, Irvine
 Michele Harper
 Project Manager



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

Project ID: Routine Outfall 001

Report Number: IOC1042

Sampled: 03/12/05

Received: 03/12/05

METHOD BLANK/QC DATA

PURGEABLES BY GC/MS (EPA 624)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	RPD Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5C14027 Extracted: 03/14/05											
LCS Analyzed: 03/14/2005 (5C14027-BS1)											
Surrogate: 4-Bromofluorobenzene	24.7			ug/l	25.0		99	80-120			
Matrix Spike Analyzed: 03/14/2005 (5C14027-MS1) Source: IOC0864-09											
Benzene	20.8	2.0	0.28	ug/l	25.0	ND	83	70-120			
Carbon tetrachloride	29.3	5.0	0.28	ug/l	25.0	0.31	116	70-145			
Chloroform	25.2	2.0	0.33	ug/l	25.0	1.2	96	70-135			
1,1-Dichloroethane	20.6	2.0	0.27	ug/l	25.0	ND	82	65-135			
1,2-Dichloroethane	25.2	2.0	0.28	ug/l	25.0	ND	101	60-150			
1,1-Dichloroethene	18.6	3.0	0.32	ug/l	25.0	ND	74	65-140			
Ethylbenzene	21.9	2.0	0.25	ug/l	25.0	ND	88	70-130			
Tetrachloroethene	101	2.0	0.32	ug/l	25.0	96	20	70-130			M2
Toluene	21.0	2.0	0.36	ug/l	25.0	ND	84	70-120			
1,1,1-Trichloroethane	25.9	2.0	0.30	ug/l	25.0	ND	104	75-140			
1,1,2-Trichloroethane	20.7	2.0	0.30	ug/l	25.0	ND	83	60-135			
Trichlorofluoromethane	25.6	5.0	0.34	ug/l	25.0	ND	102	55-145			
Vinyl chloride	16.0	5.0	0.26	ug/l	25.0	ND	64	40-135			
Surrogate: Dibromofluoromethane	23.8			ug/l	25.0		95	80-120			
Surrogate: Toluene-d8	23.6			ug/l	25.0		94	80-120			
Surrogate: 4-Bromofluorobenzene	24.9			ug/l	25.0		100	80-120			
Matrix Spike Dup Analyzed: 03/14/2005 (5C14027-MSD1) Source: IOC0864-09											
Benzene	21.9	2.0	0.28	ug/l	25.0	ND	88	70-120	5	20	
Carbon tetrachloride	30.4	5.0	0.28	ug/l	25.0	0.31	120	70-145	4	25	
Chloroform	26.4	2.0	0.33	ug/l	25.0	1.2	101	70-135	5	20	
1,1-Dichloroethane	21.7	2.0	0.27	ug/l	25.0	ND	87	65-135	5	20	
1,2-Dichloroethane	27.7	2.0	0.28	ug/l	25.0	ND	111	60-150	9	20	
1,1-Dichloroethene	19.9	3.0	0.32	ug/l	25.0	ND	80	65-140	7	20	
Ethylbenzene	22.8	2.0	0.25	ug/l	25.0	ND	91	70-130	4	20	
Tetrachloroethene	105	2.0	0.32	ug/l	25.0	96	36	70-130	4	20	M2
Toluene	22.2	2.0	0.36	ug/l	25.0	ND	89	70-120	6	20	
1,1,1-Trichloroethane	26.9	2.0	0.30	ug/l	25.0	ND	108	75-140	4	20	
1,1,2-Trichloroethane	23.7	2.0	0.30	ug/l	25.0	ND	95	60-135	14	25	
Trichlorofluoromethane	27.6	5.0	0.34	ug/l	25.0	ND	110	55-145	8	25	
Vinyl chloride	17.3	5.0	0.26	ug/l	25.0	ND	69	40-135	8	30	
Surrogate: Dibromofluoromethane	24.2			ug/l	25.0		97	80-120			
Surrogate: Toluene-d8	23.7			ug/l	25.0		95	80-120			

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PURGEABLES BY GC/MS (EPA 624)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5C14027 Extracted: 03/14/05											
Matrix Spike Dup Analyzed: 03/14/2005 (5C14027-MSD1)						Source: IOC0864-09					
Surrogate: 4-Bromofluorobenzene	25.1			ug/l	25.0		100	80-120			

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

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC Limits	RPD RPD	RPD Limit	Data Qualifiers
Batch: 5C13017 Extracted: 03/13/05										
Blank Analyzed: 03/18/2005 (5C13017-BLK1)										
Bis(2-ethylhexyl)phthalate	ND	5.0	1.1	ug/l						
2,4-Dinitrotoluene	ND	9.0	0.23	ug/l						
N-Nitrosodimethylamine	ND	8.0	0.22	ug/l						
Pentachlorophenol	ND	8.0	0.78	ug/l						
2,4,6-Trichlorophenol	ND	6.0	0.10	ug/l						
Surrogate: 2-Fluorophenol	11.4			ug/l	20.0		57 30-120			
Surrogate: Phenol-d6	11.9			ug/l	20.0		60 35-120			
Surrogate: 2,4,6-Tribromophenol	13.8			ug/l	20.0		69 45-120			
Surrogate: Nitrobenzene-d5	6.08			ug/l	10.0		61 45-120			
Surrogate: 2-Fluorobiphenyl	6.92			ug/l	10.0		69 45-120			
Surrogate: Terphenyl-d14	6.62			ug/l	10.0		66 45-120			
LCS Analyzed: 03/18/2005 (5C13017-BS1)										
Bis(2-ethylhexyl)phthalate	8.90	5.0	1.1	ug/l	10.0		89 60-130			M-NR1
2,4-Dinitrotoluene	8.00	9.0	0.23	ug/l	10.0		80 60-120			J
N-Nitrosodimethylamine	7.98	8.0	0.22	ug/l	10.0		80 40-120			J
Pentachlorophenol	8.64	8.0	0.78	ug/l	10.0		86 50-120			
2,4,6-Trichlorophenol	9.16	6.0	0.10	ug/l	10.0		92 60-120			
Surrogate: 2-Fluorophenol	14.4			ug/l	20.0		72 30-120			
Surrogate: Phenol-d6	14.7			ug/l	20.0		74 35-120			
Surrogate: 2,4,6-Tribromophenol	16.6			ug/l	20.0		83 45-120			
Surrogate: Nitrobenzene-d5	7.48			ug/l	10.0		75 45-120			
Surrogate: 2-Fluorobiphenyl	8.08			ug/l	10.0		81 45-120			
Surrogate: Terphenyl-d14	7.90			ug/l	10.0		79 45-120			
LCS Dup Analyzed: 03/18/2005 (5C13017-BSD1)										
Bis(2-ethylhexyl)phthalate	8.62	5.0	1.1	ug/l	10.0		86 60-130	3	20	
2,4-Dinitrotoluene	7.92	9.0	0.23	ug/l	10.0		79 60-120	1	20	J
N-Nitrosodimethylamine	7.66	8.0	0.22	ug/l	10.0		77 40-120	4	20	J
Pentachlorophenol	8.66	8.0	0.78	ug/l	10.0		87 50-120	0	25	
2,4,6-Trichlorophenol	8.76	6.0	0.10	ug/l	10.0		88 60-120	4	20	
Surrogate: 2-Fluorophenol	14.2			ug/l	20.0		71 30-120			
Surrogate: Phenol-d6	14.2			ug/l	20.0		71 35-120			
Surrogate: 2,4,6-Tribromophenol	16.6			ug/l	20.0		83 45-120			
Surrogate: Nitrobenzene-d5	7.52			ug/l	10.0		75 45-120			
Surrogate: 2-Fluorobiphenyl	7.60			ug/l	10.0		76 45-120			

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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: 5C13017 Extracted: 03/13/05											
LCS Dup Analyzed: 03/18/2005 (5C13017-BSD1)											
Surrogate: Terphenyl-d14	8.16			ug/l	10.0		82	45-120			

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ORGANOCHLORINE PESTICIDES (EPA 608)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5C14049 Extracted: 03/14/05											
Blank Analyzed: 03/14/2005 (5C14049-BLK1)											
alpha-BHC	ND	0.010	0.0010	ug/l							
Surrogate: Decachlorobiphenyl	0.381			ug/l	0.500		76	45-120			
Surrogate: Tetrachloro-m-xylene	0.267			ug/l	0.500		53	35-120			
LCS Analyzed: 03/14/2005 (5C14049-BS1)											
alpha-BHC	0.335	0.010	0.0010	ug/l	0.500		67	45-115			M-NRI
Surrogate: Decachlorobiphenyl	0.367			ug/l	0.500		73	45-120			
Surrogate: Tetrachloro-m-xylene	0.278			ug/l	0.500		56	35-120			
LCS Dup Analyzed: 03/14/2005 (5C14049-BSD1)											
alpha-BHC	0.353	0.010	0.0010	ug/l	0.500		71	45-115	5	30	
Surrogate: Decachlorobiphenyl	0.405			ug/l	0.500		81	45-120			
Surrogate: Tetrachloro-m-xylene	0.267			ug/l	0.500		53	35-120			

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METALS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	RPD Limits	RPD RPD	Data Limit	Qualifiers
Batch: 5C12041 Extracted: 03/12/05											
Blank Analyzed: 03/12/2005 (5C12041-BLK1)											
Copper	ND	2.0	0.49	ug/l							
Lead	ND	1.0	0.13	ug/l							
LCS Analyzed: 03/12/2005 (5C12041-BS1)											
Copper	76.1	2.0	0.49	ug/l	80.0		95	85-115			
Lead	80.9	1.0	0.13	ug/l	80.0		101	85-115			
Matrix Spike Analyzed: 03/12/2005 (5C12041-MS1) Source: IOC1042-01											
Copper	72.6	2.0	0.49	ug/l	80.0	1.5	89	70-130			
Lead	75.2	1.0	0.13	ug/l	80.0	ND	94	70-130			
Matrix Spike Dup Analyzed: 03/12/2005 (5C12041-MSD1) Source: IOC1042-01											
Copper	76.6	2.0	0.49	ug/l	80.0	1.5	94	70-130	5	20	
Lead	79.9	1.0	0.13	ug/l	80.0	ND	100	70-130	6	20	
Batch: 5C14050 Extracted: 03/14/05											
Blank Analyzed: 03/14/2005 (5C14050-BLK1)											
Mercury	ND	0.20	0.063	ug/l							
LCS Analyzed: 03/14/2005 (5C14050-BS1)											
Mercury	8.04	0.20	0.063	ug/l	8.00		100	85-115			
Matrix Spike Analyzed: 03/14/2005 (5C14050-MS1) Source: IOC0736-01											
Mercury	8.23	0.20	0.063	ug/l	8.00	ND	103	70-130			
Matrix Spike Dup Analyzed: 03/14/2005 (5C14050-MSD1) Source: IOC0736-01											
Mercury	8.19	0.20	0.063	ug/l	8.00	ND	102	70-130	1	20	

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METALS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	RPD RPD	Limit Limits	RPD Limit	Data Qualifiers
Batch: 5D12071 Extracted: 04/12/05											
Blank Analyzed: 04/12/2005 (5D12071-BLK1)											
Calcium	0.0186	0.10	0.015	mg/l							J
Chromium	ND	5.0	0.68	ug/l							
Iron	ND	0.040	0.0088	mg/l							
Magnesium	0.0149	0.020	0.0030	mg/l							J
Manganese	ND	20	3.2	ug/l							
Potassium	ND	0.50	0.066	mg/l							
Sodium	ND	0.50	0.095	mg/l							
LCS Analyzed: 04/12/2005 (5D12071-BS1)											
Calcium	0.977	0.10	0.015	mg/l	1.00		98		85-115		
Chromium	977	5.0	0.68	ug/l	1000		98		85-115		
Iron	0.986	0.040	0.0088	mg/l	1.00		99		85-115		
Magnesium	0.990	0.020	0.0030	mg/l	1.00		99		85-115		
Manganese	988	20	3.2	ug/l	1000		99		85-115		
Potassium	9.77	0.50	0.066	mg/l	10.0		98		85-115		
Sodium	9.68	0.50	0.095	mg/l	10.0		97		85-115		
Matrix Spike Analyzed: 04/12/2005 (5D12071-MS1) Source: IOC1042-01											
Calcium	34.9	0.10	0.015	mg/l	1.00	35	-10		70-130		M-HA
Chromium	968	5.0	0.68	ug/l	1000	2.2	97		70-130		
Iron	1.03	0.040	0.0088	mg/l	1.00	0.044	99		70-130		
Magnesium	13.8	0.020	0.0030	mg/l	1.00	13	80		70-130		M-HA
Manganese	972	20	3.2	ug/l	1000	4.7	97		70-130		
Potassium	11.6	0.50	0.066	mg/l	10.0	1.7	99		70-130		
Sodium	35.4	0.50	0.095	mg/l	10.0	26	94		70-130		
Matrix Spike Dup Analyzed: 04/12/2005 (5D12071-MSD1) Source: IOC1042-01											
Calcium	34.9	0.10	0.015	mg/l	1.00	35	-10	70-130	0	20	M-HA
Chromium	957	5.0	0.68	ug/l	1000	2.2	95	70-130	1	20	
Iron	1.01	0.040	0.0088	mg/l	1.00	0.044	97	70-130	2	20	
Magnesium	13.6	0.020	0.0030	mg/l	1.00	13	60	70-130	1	20	M-HA
Manganese	973	20	3.2	ug/l	1000	4.7	97	70-130	0	20	
Potassium	11.5	0.50	0.066	mg/l	10.0	1.7	98	70-130	1	20	
Sodium	34.6	0.50	0.095	mg/l	10.0	26	86	70-130	2	20	

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INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	RPD Limits	RPD Limit	Data Qualifiers
Batch: 5C12027 Extracted: 03/12/05										
Blank Analyzed: 03/12/2005 (5C12027-BLK1)										
Chloride	ND	0.50	0.26	mg/l						
Nitrate/Nitrite-N	ND	0.26	0.072	mg/l						
Sulfate	ND	0.50	0.18	mg/l						
LCS Analyzed: 03/12/2005 (5C12027-BS1)										
Chloride	4.81	0.50	0.26	mg/l	5.00		96	90-110		M-3
Sulfate	9.65	0.50	0.18	mg/l	10.0		96	90-110		
Matrix Spike Analyzed: 03/12/2005 (5C12027-MS1) Source: IOC1031-02										
Sulfate	11.3	0.50	0.18	mg/l	10.0	1.7	96	80-120		
Matrix Spike Dup Analyzed: 03/12/2005 (5C12027-MSD1) Source: IOC1031-02										
Sulfate	11.2	0.50	0.18	mg/l	10.0	1.7	95	80-120	1	20
Batch: 5C12042 Extracted: 03/12/05										
Blank Analyzed: 03/17/2005 (5C12042-BLK1)										
Biochemical Oxygen Demand	ND	2.0	0.59	mg/l						
LCS Analyzed: 03/17/2005 (5C12042-BS1)										
Biochemical Oxygen Demand	214	100	30	mg/l	198		108	85-115		
LCS Dup Analyzed: 03/17/2005 (5C12042-BSD1)										
Biochemical Oxygen Demand	210	100	30	mg/l	198		106	85-115	2	20
Batch: 5C12043 Extracted: 03/12/05										
Blank Analyzed: 03/12/2005 (5C12043-BLK1)										
Turbidity	ND	1.0	0.040	NTU						

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Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	RPD Limits	RPD RPD	Data Qualifiers
Batch: 5C12043 Extracted: 03/12/05										
Duplicate Analyzed: 03/12/2005 (5C12043-DUP1)					Source: IOC0995-01					
Turbidity	0.590	1.0	0.040	NTU		0.59			0 20	J
Batch: 5C12045 Extracted: 03/12/05										
Blank Analyzed: 03/12/2005 (5C12045-BLK1)										
Surfactants (MBAS)	ND	0.10	0.044	mg/l						
LCS Analyzed: 03/12/2005 (5C12045-BS1)										
Surfactants (MBAS)	0.271	0.10	0.044	mg/l	0.250		108	90-110		
Matrix Spike Analyzed: 03/12/2005 (5C12045-MS1)					Source: IOC1042-01					
Surfactants (MBAS)	0.0984	0.10	0.044	mg/l	0.250	ND	39	50-125		M2, J
Matrix Spike Dup Analyzed: 03/12/2005 (5C12045-MSD1)					Source: IOC1042-01					
Surfactants (MBAS)	0.0981	0.10	0.044	mg/l	0.250	ND	39	50-125	0 20	M2, J
Batch: 5C14051 Extracted: 03/14/05										
Blank Analyzed: 03/14/2005 (5C14051-BLK1)										
Perchlorate	ND	4.0	0.80	ug/l						
LCS Analyzed: 03/14/2005 (5C14051-BS1)										
Perchlorate	52.0	4.0	0.80	ug/l	50.0		104	85-115		
Matrix Spike Analyzed: 03/14/2005 (5C14051-MS1)					Source: IOC0666-01					
Perchlorate	62.5	4.0	0.80	ug/l	50.0	2.8	119	80-120		

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Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	RPD Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5C14051 Extracted: 03/14/05											
Matrix Spike Dup Analyzed: 03/14/2005 (5C14051-MSD1)						Source: IOC0666-01					
Perchlorate	64.7	4.0	0.80	ug/l	50.0	2.8	124	80-120	3	20	MI
Batch: 5C14065 Extracted: 03/14/05											
Blank Analyzed: 03/14/2005 (5C14065-BLK1)											
Oil & Grease	1.60	5.0	0.94	mg/l							J
LCS Analyzed: 03/14/2005 (5C14065-BS1)											
Oil & Grease	23.4	5.0	0.94	mg/l	20.0		117	65-120			M-NR1
LCS Dup Analyzed: 03/14/2005 (5C14065-BSD1)											
Oil & Grease	23.9	5.0	0.94	mg/l	20.0		120	65-120	2	20	
Batch: 5C14069 Extracted: 03/14/05											
Blank Analyzed: 03/14/2005 (5C14069-BLK1)											
Total Dissolved Solids	ND	10	10	mg/l							
LCS Analyzed: 03/14/2005 (5C14069-BS1)											
Total Dissolved Solids	970	10	10	mg/l	1000		97	90-110			
Duplicate Analyzed: 03/14/2005 (5C14069-DUP1)											
						Source: IOC1042-01					
Total Dissolved Solids	271	10	10	mg/l		280			3	10	
Batch: 5C14070 Extracted: 03/14/05											
Duplicate Analyzed: 03/14/2005 (5C14070-DUP1)											
						Source: IOC1042-01					
Specific Conductance	432	1.0	1.0	umhos/cm		420			3	5	

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Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5C14073 Extracted: 03/14/05											
Blank Analyzed: 03/14/2005 (5C14073-BLK1)											
Total Suspended Solids	ND	10	10	mg/l							
LCS Analyzed: 03/14/2005 (5C14073-BS1)											
Total Suspended Solids	941	10	10	mg/l	1000		94	85-115			
Duplicate Analyzed: 03/14/2005 (5C14073-DUP1)											
						Source: IOC0941-01					
Total Suspended Solids	ND	10	10	mg/l		ND				10	
Batch: 5C14099 Extracted: 03/14/05											
Blank Analyzed: 03/14/2005 (5C14099-BLK1)											
Total Cyanide	ND	5.0	2.2	ug/l							
LCS Analyzed: 03/14/2005 (5C14099-BS1)											
Total Cyanide	198	5.0	2.2	ug/l	200		99	90-110			
Matrix Spike Analyzed: 03/14/2005 (5C14099-MS1)											
						Source: IOC1060-02					
Total Cyanide	210	5.0	2.2	ug/l	200	ND	105	70-115			
Matrix Spike Dup Analyzed: 03/14/2005 (5C14099-MSD1)											
						Source: IOC1060-02					
Total Cyanide	199	5.0	2.2	ug/l	200	ND	100	70-115	5	15	
Batch: 5C15088 Extracted: 03/15/05											
Blank Analyzed: 03/15/2005 (5C15088-BLK1)											
Ammonia-N (Distilled)	ND	0.50	0.30	mg/l							

Del Mar Analytical, Irvine
 Michele Harper
 Project Manager

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



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

Project ID: Routine Outfall 001

Report Number: IOC1042

Sampled: 03/12/05

Received: 03/12/05

METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5C15088 Extracted: 03/15/05											
LCS Analyzed: 03/15/2005 (5C15088-BS1)											
Ammonia-N (Distilled)	9.52	0.50	0.30	mg/l	10.0		95	80-115			
Matrix Spike Analyzed: 03/15/2005 (5C15088-MS1)											
Ammonia-N (Distilled)	8.12	0.50	0.30	mg/l	10.0	ND	81	70-120			
Matrix Spike Dup Analyzed: 03/15/2005 (5C15088-MSD1)											
Ammonia-N (Distilled)	9.52	0.50	0.30	mg/l	10.0	ND	95	70-120	16	15	R

Del Mar Analytical, Irvine
Michele Harper
Project Manager



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

Project ID: Routine Outfall 001

Report Number: IOC1042

Sampled: 03/12/05

Received: 03/12/05

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
IOC1042-01	413.1 Oil and Grease	Oil & Grease	mg/l	-1	5.0	10.00
IOC1042-01	608-Pest Boeing 001/002 Q (LL)	alpha-BHC	ug/l	0	0.010	0.0100
IOC1042-01	624-Boeing 001/002 Q (Fr113+X)	1,1-Dichloroethene	ug/l	0	3.0	3.20
IOC1042-01	624-Boeing 001/002 Q (Fr113+X)	Trichloroethene	ug/l	0	5.0	5.00
IOC1042-01	625-Boeing 001/002 Q-LL	2,4,6-Trichlorophenol	ug/l	0	6.0	6.50
IOC1042-01	625-Boeing 001/002 Q-LL	2,4-Dinitrotoluene	ug/l	0	9.0	9.10
IOC1042-01	625-Boeing 001/002 Q-LL	Bis(2-ethylhexyl)phthalate	ug/l	0.78	5.0	4.00
IOC1042-01	625-Boeing 001/002 Q-LL	N-Nitrosodimethylamine	ug/l	0	8.0	8.10
IOC1042-01	625-Boeing 001/002 Q-LL	Pentachlorophenol	ug/l	0	8.0	8.20
IOC1042-01	BOD	Biochemical Oxygen Demand	mg/l	0.57	2.0	20
IOC1042-01	Chloride - 300.0	Chloride	mg/l	20	0.50	150
IOC1042-01	Chromium-200.7	Chromium	ug/l	2.20	5.0	8.10
IOC1042-01	Copper-200.8	Copper	ug/l	1.50	2.0	7.10
IOC1042-01	Cyanide-335.2 5ppb	Total Cyanide	ug/l	0.0100	5.0	4.30
IOC1042-01	Iron-200.7	Iron	mg/l	0.044	0.040	0.30
IOC1042-01	Lead-200.8	Lead	ug/l	0.059	1.0	2.60
IOC1042-01	Manganese-200.7	Manganese	ug/l	4.70	20	50
IOC1042-01	MBAS - SM5540-C	Surfactants (MBAS)	mg/l	0.020	0.10	0.50
IOC1042-01	Mercury - 245.1	Mercury	ug/l	0.016	0.20	0.20
IOC1042-01	Nitrogen, NO3+NO2 -N	Nitrate/Nitrite-N	mg/l	0.074	0.26	8.00
IOC1042-01	Perchlorate 314.0	Perchlorate	ug/l	0	4.0	6.00
IOC1042-01	Sulfate-300.0	Sulfate	mg/l	63	1.0	300
IOC1042-01	TDS - SM 2540C	Total Dissolved Solids	mg/l	280	10	950
IOC1042-02	624-Boeing 001/002 Q (Fr113+X)	1,1-Dichloroethene	ug/l	0	3.0	3.20
IOC1042-02	624-Boeing 001/002 Q (Fr113+X)	Trichloroethene	ug/l	0	5.0	5.00

Del Mar Analytical, Irvine
Michele Harper
Project Manager



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

Project ID: Routine Outfall 001

Report Number: IOC1042

Sampled: 03/12/05

Received: 03/12/05

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 unknown quality.
- M1** The MS and/or MSD were above the acceptance limits due to sample matrix interference. See Blank Spike (LCS).
- 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.
- R** The RPD exceeded the method control limit due to sample matrix effects. The individual analyte QA/QC recoveries, however, were within acceptance limits.
- ND** Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified.
- RPD** Relative Percent Difference

Del Mar Analytical, Irvine
Michele Harper
Project Manager

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

Project ID: Routine Outfall 001

Report Number: IOC1042

Sampled: 03/12/05

Received: 03/12/05

Certification Summary

Del Mar Analytical, Irvine

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

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

Subcontracted Laboratories

Alta Analytical California Cert #1640

1104 Windfield Way - El Dorado Hills, CA 95762

Analysis Performed: 1613-Dioxin-HR

Samples: IOC1042-01

Analysis Performed: EDD + Level 4

Samples: IOC1042-01

Eberline Services - SUB

2030 Wright Avenue - Richmond, CA 94804

Analysis Performed: EDD + Level 4

Samples: IOC1042-01

Analysis Performed: Gross Alpha

Samples: IOC1042-01

Analysis Performed: Radium, Combined

Samples: IOC1042-01

Del Mar Analytical, Irvine

Michele Harper

Project Manager

1021042
Page 1 of 1

Del Mar Analytical Version 02/17/05 CHAIN OF CUSTODY FORM

Client Name/Address:		Project:		ANALYSIS REQUIRED										Field readings:			
MWH-Pasadena 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101		Boeing-SSFL NPDES Routine Outfall 001		Total Recoverable Metals:	Settleable Solids	VOCs 624 + xylenes	TCDD (and all congeners)	Oil & Grease (EPA 413.1)	Cyanide (total recoverable)	BOD5(20 degrees C)	Surfactants (MBAS)	Ch, SO4, NO3+NO2-N, Perchlorate	Turbidity, TDS, TSS, Conductivity	Ammonia-N	2,4,6 Trichlorophenol, 2,4 Dinitrofluorene, Bis(2-ethylhexyl)phthalate, NDMA, pentachlorophenol (EPA 625)	Temp = 59.0 F pH = 7.7	
Sample Description	Sample Matrix	Container Type	# of Cont.	Sampling Date/Time	Preservative	Boil #	Cu, Pb, Hg	Oil & Grease (EPA 413.1)	Cyanide (total recoverable)	BOD5(20 degrees C)	Surfactants (MBAS)	Ch, SO4, NO3+NO2-N, Perchlorate	Turbidity, TDS, TSS, Conductivity	Ammonia-N	2,4,6 Trichlorophenol, 2,4 Dinitrofluorene, Bis(2-ethylhexyl)phthalate, NDMA, pentachlorophenol (EPA 625)	Comments	
Outfall 001	W	Poly-1L	1	3-12-05 09:40	HNO3	1A	X									24 TAT	
Outfall 001-Dup	W	Poly-1L	1		HNO3	1B	X									24 TAT	
Outfall 001	W	Poly-1L	1		None	2											
Outfall 001	W	VOAs	3		HCl	3A, 3B, 3C											
Outfall 001	W	1L Amber	2		None	4A, 4B		X									
Outfall 001	W	1L Amber	2		HCl	5A, 5B		X								24 TAT	
Outfall 001	W	Poly-500 ml	1		NaOH	6			X							24 TAT	
Outfall 001	W	Poly-1L	1		None	7				X							
Outfall 001	W	Poly-500 ml	2		None	8A, 8B					X						
Outfall 001	W	Poly-500 ml	2		None	9A, 9B						X					
Outfall 001	W	Poly-500 ml	2		None	10A, 10B											
Outfall 001	W	Poly-500 ml	1		H2SO4	11							X				
Outfall 001	W	1L Amber	2		None	12A, 12B											
Outfall 001	W	1L Amber	2		None	13A, 13B									X		
Trip Blank	W	VOAs	3		HCl	14A, 14B, 14C											
Relinquished By	[Signature]		Date/Time: 3-12-05 1000	Received By	[Signature]		Date/Time: 3-12-05 1000										Turn around Time: (check) 24 Hours _____ 5 Days _____ 48 Hours _____ 10 Days _____ 72 Hours _____ Normal _____
Relinquished By	[Signature]		Date/Time: 3-12-05 1320	Received By	[Signature]		Date/Time: 3/12/05 13:20										Perchlorate Only 72 Hours _____ Metals Only 72 Hours _____ Sample Integrity: (Check) _____ Intact _____ On Ice: 5°C

March 29, 2005

MWH-Pasadena/ Boeing
300 North Lake Avenue, Suite 1200
Pasadena, CA 91101

Attention: Bronwyn Kelly

Project: Routine Outfall 001
Sampled: 03/12/05
Del Mar Analytical Number: IOC1042


Dear Ms. Kelly:

Alta Analytical Laboratory performed the EPA Method 1613 for tetra-through-octa chlorinated dioxins and furans analysis for the project referenced above. Please use the following cross-reference table when reviewing your results.

MWH ID	DEL MAR ID	ALTA ID
Routine Outfall 001	IOC1042-01	25897-001

Attached is the original report from the subcontract laboratory. If you have any questions or require further assistance, please do not hesitate to contact me at (949) 261-1022 at extension 215.

Sincerely yours,
DEL MAR ANALYTICAL


Michele Harper
Project Manager



March 22, 2005

Alta Project I.D.: 25897

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

Dear Ms. Harper,

Enclosed are the results for the one aqueous sample received at Alta Analytical Laboratory on March 15, 2005 under your Project Name "IOC1042". This sample was extracted and analyzed using EPA Method 1613 for tetra-through-octa chlorinated dioxins and furans. A rush 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,

Martha M. Maier
Director of HRMS Services



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: 3/15/2005

Alta Lab. ID

Client Sample ID

25897-001

IOC1042-01

SECTION II



EPA Method 1613

Method Blank		Lab Sample: 0-MB001		Date Analyzed DB-5: 21-Mar-05		Date Analyzed DB-225: NA			
Matrix: Aqueous	QC Batch No.: 6613	Conc. (pg/L)	DL ^a	EMPC ^b	Qualifiers	Labeled Standard	%R	LCL-UCL ^d	Qualifiers
2,3,7,8-TCDD	ND	1.09				13C-2,3,7,8-TCDD	74.6	25 - 164	
1,2,3,7,8-PeCDD	ND	0.717				13C-1,2,3,7,8-PeCDD	72.8	25 - 181	
1,2,3,4,7,8-HxCDD	ND	1.85				13C-1,2,3,4,7,8-HxCDD	76.8	32 - 141	
1,2,3,6,7,8-HxCDD	ND	1.81				13C-1,2,3,6,7,8-HxCDD	82.6	28 - 130	
1,2,3,7,8,9-HxCDD	ND	1.82				13C-1,2,3,4,6,7,8-HpCDD	74.6	23 - 140	
1,2,3,4,6,7,8-HpCDD	ND	1.44				13C-OCDD	50.4	17 - 157	
OCDD	ND	3.04				13C-2,3,7,8-TCDF	78.4	24 - 169	
2,3,7,8-TCDF	ND	1.01				13C-1,2,3,7,8-PeCDF	69.0	24 - 185	
1,2,3,7,8-PeCDF	ND	2.09				13C-2,3,4,7,8-PeCDF	72.3	21 - 178	
2,3,4,7,8-PeCDF	ND	1.80				13C-1,2,3,4,7,8-HxCDF	65.8	26 - 152	
1,2,3,4,7,8-HxCDF	ND	0.708				13C-1,2,3,6,7,8-HxCDF	73.8	26 - 123	
1,2,3,6,7,8-HxCDF	ND	0.669				13C-2,3,4,6,7,8-HxCDF	75.2	28 - 136	
2,3,4,6,7,8-HxCDF	ND	0.730				13C-1,2,3,7,8,9-HxCDF	74.9	29 - 147	
1,2,3,7,8,9-HxCDF	ND	1.14				13C-1,2,3,4,6,7,8-HpCDF	70.1	28 - 143	
1,2,3,4,6,7,8-HpCDF	ND	1.12				13C-1,2,3,4,7,8,9-HpCDF	76.4	26 - 138	
1,2,3,4,7,8,9-HpCDF	ND	1.23				13C-OCDF	59.4	17 - 157	
OCDF	ND	2.41				CRS 37Cl-2,3,7,8-TCDD	74.7	35 - 197	
Totals						Footnotes			
Total TCDD	ND	1.09				a. Sample specific estimated detection limit.			
Total PeCDD	ND	0.717				b. Estimated maximum possible concentration.			
Total HxCDD	ND	1.83				c. Method detection limit.			
Total HpCDD	ND	1.44				d. Lower control limit - upper control limit.			
Total TCDF	ND	1.01							
Total PeCDF	ND	1.94							
Total HxCDF	ND	0.794							
Total HpCDF	ND	1.17							

Analyst: JMH

Approved By: Martha M. Maier 22-Mar-2005 09:31



OPR Results

EPA Method 1613

Matrix: Aqueous		QC Batch No.: 6613	Lab Sample: 0-OPR001		
Sample Size: 1.000 L		Date Extracted: 18-Mar-05	Date Analyzed DB-5: 21-Mar-05		
Analyte	Spike Conc. (ng/mL)	OPR Limits	Date Analyzed DB-225: NA		
			Labeled Standard		
			%R		
			LCL-UCL		
2,3,7,8-TCDD	10.0	6.7 - 15.8	IS 13C-2,3,7,8-TCDD	63.0	25 - 164
1,2,3,7,8-PeCDD	50.0	35 - 71	13C-1,2,3,7,8-PeCDD	54.1	25 - 181
1,2,3,4,7,8-HxCDD	50.0	35 - 82	13C-1,2,3,4,7,8-HxCDD	56.2	32 - 141
1,2,3,6,7,8-HxCDD	50.0	38 - 67	13C-1,2,3,6,7,8-HxCDD	60.8	28 - 130
1,2,3,7,8,9-HxCDD	50.0	32 - 81	13C-1,2,3,4,6,7,8-HpCDD	54.6	23 - 140
1,2,3,4,6,7,8-HpCDD	50.0	35 - 70	13C-OCDD	38.2	17 - 157
OCDD	100	78 - 144	13C-2,3,7,8-TCDF	63.7	24 - 169
2,3,7,8-TCDF	10.0	7.5 - 15.8	13C-1,2,3,7,8-PeCDF	51.3	24 - 185
1,2,3,7,8-PeCDF	50.0	40 - 67	13C-2,3,4,7,8-PeCDF	52.6	21 - 178
2,3,4,7,8-PeCDF	50.0	34 - 80	13C-1,2,3,4,7,8-HxCDF	49.8	26 - 152
1,2,3,4,7,8-HxCDF	50.0	36 - 67	13C-1,2,3,6,7,8-HxCDF	56.3	26 - 123
1,2,3,6,7,8-HxCDF	50.0	42 - 65	13C-2,3,4,6,7,8-HxCDF	56.1	28 - 136
2,3,4,6,7,8-HxCDF	50.0	35 - 78	13C-1,2,3,7,8,9-HxCDF	54.3	29 - 147
1,2,3,7,8,9-HxCDF	50.0	39 - 65	13C-1,2,3,4,6,7,8-HpCDF	52.5	28 - 143
1,2,3,4,6,7,8-HpCDF	50.0	41 - 61	13C-1,2,3,4,7,8,9-HpCDF	56.3	26 - 138
1,2,3,4,7,8,9-HpCDF	50.0	39 - 69	13C-OCDF	46.1	17 - 157
OCDF	100	63 - 170	CRS 37Cl-2,3,7,8-TCDD	82.8	35 - 197

Analyst: JMH

Approved By: Martha M. Maier 22-Mar-2005 09:31



Sample ID: **IOC1042-01**

EPA Method **1613**

Client Data		Sample Data		Laboratory Data	
Name:	Del Mar Analytical, Irvine	Matrix:	Aqueous	Lab Sample:	25897-001
Project:	IOC1042	Sample Size:	1.041 L	QC Batch No.:	6613
Date Collected:	12-Mar-05			Date Analyzed DB-5:	21-Mar-05
Time Collected:	0940			Date Analyzed DB-225:	NA
		DL ^a	EMPC ^b	Labeled Standard	%R LCL-UCL ^d Qualifiers
Analyte	Conc. (pg/L)	DL ^a	EMPC ^b	Labeled Standard	%R LCL-UCL ^d Qualifiers
2,3,7,8-TCDD	ND	1.15		IS 13C-2,3,7,8-TCDD	70.9 25 - 164
1,2,3,7,8-PeCDD	ND	0.966		13C-1,2,3,7,8-PeCDD	65.6 25 - 181
1,2,3,4,7,8-HxCDD	ND	1.53		13C-1,2,3,4,7,8-HxCDD	69.8 32 - 141
1,2,3,6,7,8-HxCDD	ND	1.50		13C-1,2,3,6,7,8-HxCDD	77.4 28 - 130
1,2,3,7,8,9-HxCDD	ND	1.51		13C-1,2,3,4,6,7,8-HpCDD	80.8 23 - 140
1,2,3,4,6,7,8-HpCDD	ND	2.48		13C-OCDD	65.4 17 - 157
OCDD			7.38	13C-2,3,7,8-TCDF	71.7 24 - 169
2,3,7,8-TCDF	ND	1.28		13C-1,2,3,7,8-PeCDF	60.9 24 - 185
1,2,3,7,8-PeCDF	ND	2.27		13C-2,3,4,7,8-PeCDF	62.4 21 - 178
2,3,4,7,8-PeCDF	ND	2.01		13C-1,2,3,4,7,8-HxCDF	60.7 26 - 152
1,2,3,4,7,8-HxCDF	ND	0.512		13C-1,2,3,6,7,8-HxCDF	67.7 26 - 123
1,2,3,6,7,8-HxCDF	ND	0.500		13C-2,3,4,6,7,8-HxCDF	68.7 28 - 136
2,3,4,6,7,8-HxCDF	ND	0.556		13C-1,2,3,7,8,9-HxCDF	68.6 29 - 147
1,2,3,7,8,9-HxCDF	ND	0.841		13C-1,2,3,4,6,7,8-HpCDF	68.7 28 - 143
1,2,3,4,6,7,8-HpCDF	ND	0.916		13C-1,2,3,4,7,8,9-HpCDF	81.6 26 - 138
1,2,3,4,7,8,9-HpCDF	ND	0.958		13C-OCDF	74.3 17 - 157
OCDF				CRS 37Cl-2,3,7,8-TCDD	85.6 35 - 197
Totals				Footnotes	
Total TCDD	ND	1.15		a. Sample specific estimated detection limit.	
Total PeCDD	ND	0.966		b. Estimated maximum possible concentration.	
Total HxCDD	ND	1.51		c. Method detection limit.	
Total HpCDD	ND	2.48		d. Lower control limit - upper control limit.	
Total TCDF	ND	1.28			
Total PeCDF	ND	2.13			
Total HxCDF	ND	0.591			
Total HpCDF	ND	0.932			

Analyst: **JMH**

Approved By: **Martha M. Maier** 22-Mar-2005 09:31

APPENDIX

DATA QUALIFIERS & ABBREVIATIONS

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

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

The control limits are “interim limits only” until in-house limits are utilized.

CURRENT CERTIFICATIONS



NELAP — (Primary AA: California, Certificate No. 02102CA)
Department of the Navy
U.S. Army Corps of Engineers
U.S. EPA Region 5
Bureau of Reclamation — Mid-Pacific Region — (MP-470, Res-1.10)
Commonwealth of Kentucky — (Certificate No. 90063)
Commonwealth of Virginia — (Certificate No. 00013)
State of Alaska, Department of Environmental Conservation — (Certificate No. OS-00197)
State of Arizona — (Certificate No. AZ0639)
State of Arkansas, Department of Health — (Approval granted through CA certification)
State of Arkansas, Department of Environmental Quality
State of California — (Certificate No. 1640)
State of Colorado
State of Connecticut — (Certificate No. PH-0182)
State of Florida — (Certificate No. 87456)
State of Louisiana, Department of Health and Hospitals — (Certificate No. LA000014)
State of Louisiana, Department of Environmental Quality
State of Maine
State of Michigan (Certificate No. 81178087)
State of Mississippi — (Approval granted through CA certification)
State of Nevada — (Certificate No. CA413)
State of New Jersey — (Certificate No. CA003)
State of New York, Department of Health — (Certificate No. 11411)
State of North Carolina — (Certification No. 06700)
State of North Dakota, Department of Health — (Certificate No. R-078)
State of New Mexico
State of Oklahoma — (D9919)
State of Oregon — (Certificate No. CA413)
State of Pennsylvania — (Certificate No. 68-490)
State of South Carolina — (Certificate No. 87002001)
State of Tennessee — (Certificate No. 02996)
State of Texas — (Certificate No. TX247-1000A)
State of Utah — (Certificate No. E-201)
State of Washington — (Certification No. C091)
State of Wisconsin — (Certificate No. 998036160)
State of Wyoming — (USEPA Region 8 Ref. 8TMS-Q)

09/28/04



1014 E. Cooley Dr., Suite A, Colton, CA 92324 Ph (909) 370-4667 Fax (909) 370-1046
 9484 Chesapeake Drive, Suite 805, San Diego, CA 92123 Ph (619) 505-9596 Fax (619) 505-9689
 9830 South 51st Street, Suite B-120, Phoenix, AZ 85044 Ph (480) 785-0043 Fax (480) 785-0851
 2520 E. Sunset Rd., Suite #3, Las Vegas, NV 89120 Ph (702) 798-3620 Fax (702) 798-3621

SUBCONTRACT ORDER - PROJECT # IOC1042

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 Harper

RECEIVING LABORATORY:
 Alta Analytical
 1104 Windfield Way
 El Dorado Hills, CA 95762
 Phone: (916) 933-1640
 Fax: (916) 933-0940

25897
1.2°C

Standard TAT is requested unless specific due date is requested => Due Date: 2 weeks Initials: _____

Analysis	Expiration	Comments
Sample ID: IOC1042-01 Water	Sampled: 03/12/05 09:40	Instant Notification
1613-Dioxin-FIR	03/19/05 09:40	J flags, 17 congeners, no TEQ, sub to Alta
EDD + Level 4	04/09/05 09:40	Excel EDD email to pm, Include Std logs for Lvl IV
Containers Supplied:		
1 L Amber (IOC1042-01G)		
1 L Amber (IOC1042-01H)		

SAMPLE INTEGRITY:

All containers intact: Yes No Sample labels/COC agree: Yes No Samples Received On Ice: Yes No
 Custody Seals Present: Yes No Samples Preserved Properly: Yes No Samples Received at (temp): _____

Released By: [Signature] Date: 3-14-05 Time: 1700 Received By: Bettina Benedict Date: 3/15/05 Time: 0945

Released By: _____ Date: _____ Time: _____ Received By: _____ Date: _____ Time: _____

SAMPLE LOG-IN CHECKLIST

ALTA Project No.: 25897

1. Date Samples Arrived: <u>3/15/05</u> <u>0925</u> Initials: <u>BSB</u> Location: <u>WR-2</u>			
2. Time / Date logged in: <u>1015</u> <u>3/15/05</u> Initials: <u>BSB</u> Location: <u>WR-2</u>			
3. Samples Arrived By: (circle) <u>FedEx</u> UPS World Courier Other:			
4. Shipping Preservation: (circle) <u>Ice / Blue Ice</u> Dry Ice / None Temp °C <u>1.2</u>			
5. Shipping Container(s) Intact? If not, describe condition in comment section.	YES	NO	NA
6. Shipping Container(s) Custody Seals Present? Intact? If not intact, describe condition in comment section.	✓		
7. Shipping Documentation Present? (circle) Shipping Label <u>Airbill</u> Tracking Number <u>7910 0653 3660</u>	✓		
8. Sample Custody Seal(s) Present? No. of Seals _____ or Seal No. Intact? If not intact, describe condition in comment section.		✓	✓
9. Sample Container Intact? If no, indicate sample condition in comment section.	✓		
10. Chain of Custody (COC) or other Sample Documentation Present?	✓		
11. COC/Documentation Acceptable? If no, complete COC Anomaly Form.	✓		
12. Shipping Container (circle): ALTA <u>Client</u> Retain or <u>Return</u> or Disposed			
13. Container(s) and/or Bottle(s) Requested?		✓	
14. Drinking Water Sample? (HRMS Only) If yes, Acceptable Preservation? Y or N Preservation Info From? (circle) COC or Sample Container or None Noted			✓

Comments:

Samplers initials found on sample label

ALTA Analytical Laboratory
El Dorado Hills, CA 95762

May 6, 2005

MWH-Pasadena/Boeing
300 North Lake Avenue
Pasadena, Ca. 91101

Attention: Bronwyn Kelly
Project: Routine Outfall 001
Sampled: 03/12/05
Del Mar Analytical Number: IOC1042

Dear Ms. Kelly:

Eberline Services performed the gross alpha (EPA 900.0) analysis for the project referenced above. Please use the following cross-reference table when reviewing your results.

MWH ID	DEL MAR ID	Eberline ID
Outfall 001	IOC1042-01	R504071-8414

Attached is the original report from the subcontract laboratory. If you have any questions or require further assistance, please do not hesitate to contact me.

Sincerely yours,
DEL MAR ANALYTICAL



Michele Harper
Project Manager



EBERLINE
SERVICES

May 3, 2005

Ms. Michele Harper
Project Manager
Del Mar Analytical
17461 Derian Avenue, Suite 100
Irvine, CA 92614

Reference: Del Mar Analytical Project No. IOC1042
Eberline Services NELAP Cert #01120CA (exp. 01/31/06)
Eberline Services Report R504071-8414

Dear Ms. Harper:

Enclosed are results from the analysis of one water sample received at Eberline Services on April 12, 2005. The sample was analyzed according to the accompanying Del Mar Analytical Subcontract Order Form. The requested analysis was gross alpha (EPA900.0). The QC LCS, blank analysis, sample duplicate, and matrix spike results for the analysis were within the limits defined in Eberline Services Quality Control Procedures Manual.

Please call me if you have any questions concerning this report.

Regards,

For Melissa Mannion
Senior Program Manager

MCManjv

*Enclosure: Report
Subcontract Form
Receipt checklist
Invoice*

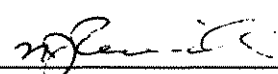
Analytical Services
2030 Wright Avenue
P.O. Box 4040
Richmond, California 94804-0040
(510) 235-2633 Fax (510) 235-0438
Toll Free (800) 841-5487
www.eberlineservices.com

Eberline Services

ANALYSIS RESULTS

SDG <u>8414</u>	Client <u>DEL MAR ANAL</u>
Work Order <u>R504071-01</u>	Contract <u>PROJECT# IOC1042</u>
Received Date <u>04/12/05</u>	Matrix <u>WATER</u>

<u>Client</u>	<u>Lab</u>	<u>Collected</u>	<u>Analyzed</u>	<u>Nuclide</u>	<u>Results ± 2σ</u>	<u>Units</u>	<u>MDA</u>
<u>Sample ID</u>	<u>Sample ID</u>						
IOC1042-01	8414-001	03/12/05	04/18/05	GrossAlpha	-0.218 ± 0.71	pCi/L	1.71

Certified by <u></u>
Report Date <u>05/02/05</u>
Page 1

Eberline Services

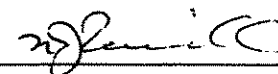
QC RESULTS

SDG <u>8414</u>	Client <u>DEL MAR ANAL</u>
Work Order <u>R504071-01</u>	Contract <u>PROJECT# IOC1042</u>
Received Date <u>04/12/05</u>	Matrix <u>WATER</u>

Lab	Sample ID	Nuclide	Results	Units	Amount Added	MDA	Evaluation
LCS	8412-002	GrossAlpha	10.4 ± 1.2	pCi/Smpl	11.2	0.347	93% recovery
BLANK	8412-003	GrossAlpha	-0.123 ± 0.13	pCi/Smpl	NA	0.408	<MDA

DUPLICATES				ORIGINALS			
Sample ID	Nuclide	Results ± 2σ	MDA	Sample ID	Results ± 2σ	MDA	RPD (Tot) Eval
8412-004	GrossAlpha	0.674 ± 0.67	0.985	8412-001	0.976 ± 0.84	0.929	37 200 satis.

SPIKED SAMPLE				ORIGINAL SAMPLE			
Sample ID	Nuclide	Results ± 2σ	MDA	Sample ID	Results ± 2σ	MDA	Added %Recv
8412-005	GrossAlpha	50.0 ± 4.3	0.939	8412-001	0.976 ± 0.84	0.929	76.6 64

Certified by 
 Report Date 05/02/05
 Page 2



17461 Derian Ave. Suite 100, Irvine, CA 92614 Ph (949) 261-1022 Fax (949) 261-1228

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9830 South 51st Street, Suite B-120, Phoenix, AZ 85044 Ph (480) 785-0043 Fax (480) 785-0851

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

SUBCONTRACT ORDER - PROJECT # IOC1042

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 Harper

RECEIVING LABORATORY:

Eberline Services
2030 Wright Avenue
Richmond, CA 94804
Phone : (510) 235-2633
Fax: (510) 235-0438

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

Analysis	Expiration	Comments
Sample ID: IOC1042-01 Water	Sampled: 03/12/05 09:40	Instant Notification
EDD + Level 4-OUT	04/09/05 09:40	**LEVEL IV QC, ACCESS 7 EDD**
Gross Alpha-O	03/12/06 09:40	900.0, IF RESULT>15 pCi/L, run Radium 226 & 228
Radium, Combined-O	03/12/06 09:40	HOLD for Gross Alpha; EPA 903.1 & 904.0

Containers Supplied:

- 1 liter Poly w/HNO3 (IOC1042-01A)
- 1 liter Poly w/HNO3 (IOC1042-01B)
- 500 ml Poly (IOC1042-01N)

*Sample description - No visible solids
No visible turbidity*

*MUM
4/12/05*

*[Signature]
4/12/05
10:00*

SAMPLE INTEGRITY:

All containers intact: Yes No Sample labels/COC agree: Yes No Samples Received On Ice: Yes No
 Custody Seals Present: Yes No Samples Preserved Properly: Yes No Samples Received at (temp): _____

[Signature] 4/11/05 *[Signature]* 4/12/05 10:00
 Released By Date Time Received By Date Time

Released By Date Time Received By Date Time



RICHMOND, CA LABORATORY

SAMPLE RECEIPT CHECKLIST

Client: DEL MAR ANAL. City IRVINE State CA

Date/Time received 4/12/05 10:00 CoC No. IDC 1042

Container I.D. No. DEL MAR Requested TAT (Days) STAND P.O. Received Yes [] No []

INSPECTION

1. Custody seals on shipping container intact? Yes [] No [] N/A [✓]
2. Custody seals on shipping container dated & signed? Yes [] No [] N/A [✓]
3. Custody seals on sample containers intact? Yes [] No [] N/A [✓]
4. Custody seals on sample containers dated & signed? Yes [] No [] N/A [✓]
5. Packing material is: Wet [] Dry []
6. Number of samples in shipping container: 1 Sample Matrix WATER
7. Number of containers per sample: 3 (Or see CoC _____)
8. Samples are in correct container Yes [✓] No []
9. Paperwork agrees with samples? Yes [✓] No []
10. Samples have: Tape [] Hazard labels [] Rad labels [] Appropriate sample labels [✓]
11. Samples are: In good condition [✓] Leaking [] Broken Container [] Missing []
12. Samples are: Preserved ^{2 x 1.0 L} [✓] Not preserved ^{1 x 0.5 L} [✓] pH _____ Preservative _____
13. Describe any anomalies: ^{PH=2} ^{PH=7}

14. Was P.M. notified of any anomalies? Yes [] No [] Date _____

15. Inspected by AK Date: 4/12/05 Time: 10:00

Customer Sample No.	cpm	mR/hr	Wipe	Customer Sample No.	cpm	mR/hr	wipe

Ion Chamber Ser. No. _____ Calibration date _____
 Alpha Meter Ser. No. _____ Calibration date _____
 Beta/Gamma Meter Ser. No. _____ Calibration date _____

AK
4/12/05
In.

Simon Bluestone

05/12/2005 09:34 AM

To: Stan J Hayes/User/Americas/Montgomery Watson@MW, Richard G
Andracheck/User/Americas/Montgomery Watson@MW, Wayne M
Dyok/User/Americas/Montgomery Watson@MW, Frank P
Tarn/User/Americas/Montgomery Watson@MW, Glenn
Mills/User/Americas/Montgomery Watson@MW, Daniel L
Wade/User/Americas/Montgomery Watson@MW, Larry N
Hottenstein/User/Americas/Montgomery Watson@MW
Subject: NRII West Planning Meeting - Practice Overview Presentation
Powerpoint Templates

Dear All,

Please find enclosed a standard 8 slide template for each of you to use in the preparation of your practice overview presentations for our meeting next week. This version was set up for the Dams / Hydropower team - please feel free to dup and revise and create content as you like.

As Bob requested, we'd like to keep the presentations short and sweet - about 8 to 10 minutes, leaving about 5 to 7 minutes for discussion.

Please send your final presentations to Frank Camacho and Dawn Greco, no later than noon on Wednesday 18 May.

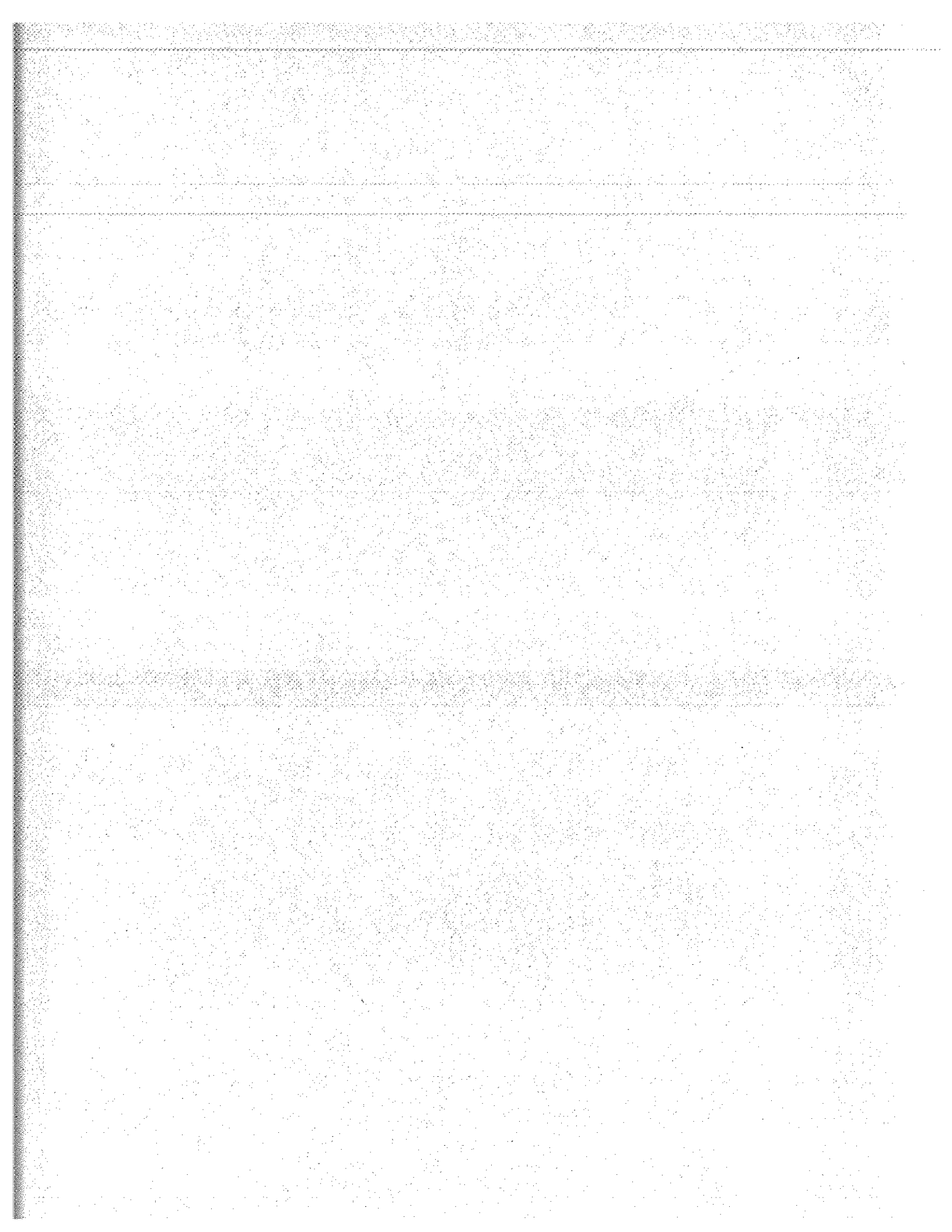
Thanks for your contributions and I look forward to hosting you and the rest of our team in Pasadena next week!

Regards,

Simon



NRII West Practices Template.ppt



CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA


AMEC Earth & Environmental
 550 South Wadsworth Boulevard
 Suite 500
 Lakewood, CO 80226

Package ID T711DF37
 Task Order 313150010
 SDG No. Multiple
 No. of Analyses 10

Laboratory Alta

Reviewer H. Chang

Analysis/Method Dioxin&Furans/1613

Date: April 4, 2005
 Reviewer's Signature


ACTION ITEMS^a	
1. Case Narrative	
Deficiencies	
2. Out of Scope	
Analyses	
3. Analyses Not Conducted	
4. Missing Hardcopy	
Deliverables	
5. Incorrect Hardcopy	
Deliverables	
6. Deviations from Analysis	Detects below the calibration range were qualified "J."
Protocol, e.g.,	
Holding Times	
GC/MS Tune/Inst. Perform	
Calibrations	
Blanks	
Surrogates	
Matrix Spike/Dup LCS	
Field QC	
Internal Standard Performance	
Compound Identification and	
Quantitation	
System Performance	
COMMENTS^b	
^a 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

ANALYSIS: DIOXINS/FURANS

SAMPLE DELIVERY GROUPS: Multiple SDGs

Prepared by

AMEC—Denver Operations
550 South Wadsworth Boulevard, Suite 500
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title: NPDES Monitoring
Contract Task Order #: 313150010
Sample Delivery Group #: Multiple
Project Manager: B. McIlvaine
Matrix: Water
Analysis: Dioxins/Furans
QC Level: Level IV
No. of Samples: 10
No. of Reanalyses/Dilutions: 0
Reviewer: H. Chang
Date of Review: April 4, 2005

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

Table 1. Sample Identification

Client ID	Laboratory ID (Del Mar)	Laboratory ID (Alta)	Matrix	COC Method
Outfall 002	IOC1521-01	25935-001	water	1613
Outfall 011	IOC1523-01	25936-001	water	1613
Outfall 005	IOC1524-01	25940-001	water	1613
Outfall 006	IOC1525-01	25937-001	water	1613
Outfall 011 Composite	IOC1526-01	25938-001	water	1613
Outfall 001	IOC1561-01	25941-001	water	1613
Outfall 004	IOC1563-01	25939-001	water	1613
Outfall 008	IOC1564-01	25942-001	water	1613
Outfall 003	IOC1565-01	25943-001	water	1613
Outfall 009	IOC1566-01	25944-001	water	1613

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

Following are findings associated with sample management:

2.1.1 Sample Preservation, Handling, and Transport

Samples Outfall 001, Outfall 004, and Outfall 008 were received at Del Mar Analytical outside the temperature limits of $4^{\circ}\text{C} \pm 2^{\circ}\text{C}$. Due to non-volatile nature of the target compounds, no qualifications were required. The other samples were received with cooler temperatures within the limits. According to the laboratory login sheets, all samples were received intact and in good condition at both laboratories. No qualifications were required.

2.1.2 Chain of Custody

The COCs and transfer COCs were legible and signed by the appropriate field and laboratory personnel, and accounted for the analyses presented in these SDGs. As the samples were couriered directly to Del Mar Analytical, custody seals were not required. The coolers received by Alta had custody seals present and intact. The EPA 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 a year of collection. No qualifications were required.

2.2 INSTRUMENT PERFORMANCE

Following are findings associated with instrument performance:

2.2.1 GC Column Performance

A Windows Defining Mix (WDM) containing the first and last eluting congeners of each descriptor and isomer specificity compounds was not analyzed prior to the initial calibration sequence or at the beginning of each analytical sequence; however, the first and last eluting congeners and isomer specificity compounds were added to the midpoint of the initial calibration and to the continuing calibration standards (see section 2.3.2). The GC column performance in the calibrations was acceptable, with the height of the valley between the closely eluting isomers and 2,3,7,8-TCDD reported as less than 25%. No qualifications were required.

2.2.2 Mass Spectrometer Performance

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

2.3 CALIBRATION

2.3.1 Initial Calibration

There was one initial calibration, analyzed 08/30/04. The calibration consisted of six concentration level standards (CS0 through CS5) analyzed to verify instrument linearity. The initial calibration was acceptable with %RSDs $\leq 20\%$ for the 16 native compounds (calibration by isotope dilution) and $\leq 35\%$ for the one native and all labeled compounds (calibration by internal standard). The relative retention times and ion abundance ratios were within the 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 VERs were acceptable with the concentrations within the acceptance criteria listed in Table 6 of EPA Method 1613. The ion abundance ratios and relative retention times were within the method QC limits. 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 standards 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_6624_MB001) was extracted and analyzed with the samples in these SDGs. There were no target compound detects reported 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 Ongoing Precision Recovery (OPR) sample (0_6624_OPR001) was extracted and analyzed with the samples in these SDGs. All recoveries were within the acceptance criteria listed in Table 6 of Method 1613. No qualifications were required.

2.6 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

MS/MSD analyses were not performed in these SDGs. 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 samples in these SDGs had no associated field QC samples. No qualifications were required.

2.7.2 Field Duplicates

No field duplicate samples were identified for these SDGs.

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. Any reported EMPC was qualified as an estimated nondetect, "UJ." Any detects below the lower method calibration level (MCL) were qualified as estimated, "J." No further qualifications were required.

Sample ID: IOC1561-01 <i>Outfall 001</i>		EPA Method 1613						
Client Data		Laboratory Data						
Name: Del Mar Analytical, Irvine	Project: IOC1561	Lab Sample: 25941-001	Date Received: 22-Mar-05					
Date Collected: 19-Mar-05	Time Collected: 1019	QC Batch No.: 6624	Date Extracted: 22-Mar-05					
Sample Data		Date Analyzed DB-5: 24-Mar-05	Date Analyzed DB-225: NA					
Matrix: Aqueous	Sample Size: 0.970 L							
Analyte	Conc. (pg/L)	DL ^a	EMPC ^b	Qualifiers	Labeled Standard	%R	LCL-UCL ^d	Qualifiers
2,3,7,8-TCDD	ND	0.808			IS 13C-2,3,7,8-TCDD	88.7	25 - 164	
1,2,3,7,8-PeCDD	ND	0.702			13C-1,2,3,7,8-PeCDD	87.4	25 - 181	
1,2,3,4,7,8-HxCDD	ND	1.24			13C-1,2,3,4,7,8-HxCDD	88.0	32 - 141	
1,2,3,6,7,8-HxCDD	ND	1.23			13C-1,2,3,6,7,8-HxCDD	92.6	28 - 130	
1,2,3,7,8,9-HxCDD	ND	1.23			13C-1,2,3,4,6,7,8-HpCDD	91.0	23 - 140	
1,2,3,4,6,7,8-HpCDD	ND	2.14			13C-OCDD	72.9	17 - 157	
OCDD	ND	8.17			13C-2,3,7,8-TCDF	91.1	24 - 169	
2,3,7,8-TCDF	ND	0.938			13C-1,2,3,7,8-PeCDF	83.3	24 - 185	
1,2,3,7,8-PeCDF	ND	1.48			13C-2,3,4,7,8-PeCDF	85.4	21 - 178	
2,3,4,7,8-PeCDF	ND	1.34			13C-1,2,3,4,7,8-HxCDF	69.3	26 - 152	
1,2,3,4,7,8-HxCDF	ND	0.433			13C-1,2,3,6,7,8-HxCDF	79.2	26 - 123	
1,2,3,6,7,8-HxCDF	ND	0.421			13C-2,3,4,6,7,8-HxCDF	79.0	28 - 136	
2,3,4,6,7,8-HxCDF	ND	0.471			13C-1,2,3,7,8,9-HxCDF	79.2	29 - 147	
1,2,3,7,8,9-HxCDF	ND	0.734			13C-1,2,3,4,6,7,8-HpCDF	82.4	28 - 143	
1,2,3,4,6,7,8-HpCDF	ND	0.621			13C-1,2,3,4,7,8,9-HpCDF	85.8	26 - 138	
1,2,3,4,7,8,9-HpCDF	ND	0.732			13C-OCDF	76.9	17 - 157	
OCDF	ND	2.35			CRS 37Cl-2,3,7,8-TCDD	87.8	35 - 197	
Totals								
Total TCDD	ND	0.808						
Total PeCDD	ND	0.702						
Total HxCDD	ND	1.23						
Total HpCDD	ND	2.14						
Total TCDF	ND	0.938						
Total PeCDF	ND	1.41						
Total HxCDF	ND	0.504						
Total HpCDF	ND	0.670						

Footnotes

a. Sample specific estimated detection limit.

b. Estimated maximum possible concentration.

c. Method detection limit.

d. Lower control limit - upper control limit.

Approved By: **Martha M. Maier** 24-Mar-2005 09:52

AMEC VALIDATED

LEVEL IV

Analyst: **JMH**

Project 25941

CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

AMEC Earth & Environmental
 550 South Wadsworth Boulevard
 Suite 500
 Lakewood, CO 80226


Package ID T711VO81
 Task Order 313150010
 SDG No. IOC1561

No. of Analyses 2

Laboratory Del Mar

Reviewer M. Pokorny

Analysis/Method Volatiles

Date: April 8, 2005
 Reviewer's Signature


ACTION ITEMS^a	
1. Case Narrative Deficiencies	_____
2. Out of Scope Analyses	_____
3. Analyses Not Conducted	_____
4. Missing Hardcopy Deliverables	_____
5. Incorrect Hardcopy Deliverables	_____
6. Deviations from Analysis Protocol, e.g.,	_____
Holding Times	_____
GC/MS Tune/Inst. Perform	_____
Calibrations	_____
Blanks	_____
Surrogates	_____
Matrix Spike/Dup LCS	_____
Field QC	_____
Internal Standard Performance	_____
Compound Identification and Quantitation	_____
System Performance	_____

COMMENTS^b Acceptable as reviewed.

^a 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

ANALYSIS: VOLATILES

SAMPLE DELIVERY GROUP: IOC1561

Prepared by

AMEC Denver Operations
550 South Wadsworth Boulevard, Suite 500
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title: NPDES Monitoring
Contract Task Order #: 313150010
SDG#: IOC1561
Project Manager: B. McIlvaine
Matrix: Water
Analysis: Volatiles
QC Level: Level IV
No. of Samples: 2
No. of Reanalyses/Dilutions: 0
Reviewer: M. Pokorny
Date of Review: April 8, 2005

The samples listed in Table 1 were validated based on the guidelines outlined in the *AMEC Data Validation Procedure for Levels C and D Volatile Organics (DVP-2, Rev. 2)*, *EPA Method 624*, *EPA SW-846 Method 8260B*, 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 summary forms as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

Table 1. Sample identification

Client ID	EPA ID	Lab No.	Matrix	Method
Outfall 001	Outfall 001	IOC1561-01	water	624
Trip Blank	Trip Blank	IOC1561-02	water	624

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

The following are findings associated with sample management:

2.1.1 Sample Preservation, Handling, and Transport

The samples in this SDG were received at the laboratory above the temperature limits of $4^{\circ}\text{C} \pm 2^{\circ}\text{C}$ at 7°C ; however, only five hours had elapsed between the time the samples were taken and when the samples were received at the laboratory. The samples did not have sufficient time to reach the required temperature, and were not qualified for the elevated sample receipt temperature. The COCs noted that the samples were received intact; however, information regarding absence of headspace was not provided. No qualifications were required.

2.1.2 Chain of Custody

The COCs were signed and dated by both field and laboratory personnel. The COCs accounted for the analyses presented in this SDG. As the samples were couriered directly to the laboratory, custody seals were not required. No qualifications were required.

2.1.3 Holding Times

The samples were analyzed within 14 days of collection. No qualifications were required.

2.2 GC/MS TUNING

The ion abundance windows shown on the quantitation reports were consistent with those specified in Method 8260B, and all ion abundances were within the established windows. The samples and associated QC were analyzed within 12 hours of the BFB injection times. The Form Vs were verified from the raw data and no discrepancies between the summary forms and the raw data were noted. No qualifications were required.

2.3 CALIBRATION

One initial calibration dated 03/13/05 was associated with this SDG. The average RRFs were ≥ 0.05 for all compounds listed on the sample result summaries. The %RSDs were $\leq 35\%$ for the target compounds analyzed by EPA Method 624. One continuing calibration associated with the sample analyses was analyzed 03/21/05. The RRFs were ≥ 0.05 in the continuing calibration. The %Ds for the continuing calibration associated with the samples were all $\leq 20\%$. A representative number of %RSDs and average RRFs from the initial calibrations, and %Ds and RRFs from the continuing calibrations were recalculated from the raw data, and no calculation or transcription errors were found. No qualifications were required.

2.4 BLANKS

One water method blank (5C21029-BLK1) was associated with the sample analyses. There were no detects above the MDLs for the target compounds listed on the sample result summaries. The method blank raw data showed no evidence of false negatives. No qualifications were required.

2.5 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

One water blank spike (5C21029-BS1) was associated with the sample analyses. All recoveries were within the laboratory-established QC limits. A representative number of recoveries were recalculated from the raw data and no calculation or transcription errors were found. No qualifications were required.

2.6 SURROGATE RECOVERY

The surrogates were recovered within the QC limits of 80-120% in the samples and associated QC. A representative number of surrogate recoveries were recalculated from the raw data and no calculation or transcription errors were found. No qualifications were required.

2.7 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

An MS/MSD analyses were not performed with this SDG. Evaluation of method accuracy was based on the LCS 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 sample. Following are findings associated with field QC samples:

2.8.1 Trip Blanks

Sample Trip Blank (IOC1561-02) was the trip blank associated with this SDG. No target compounds were reported in the Trip Blank. No qualifications were required.

2.8.2 Field Blanks and Equipment Rinsates

There were no field QC samples associated with this SDG. No qualifications were required.

2.8.3 Field Duplicates

There were no field duplicate samples associated with this SDG. No qualifications were required.

2.9 INTERNAL STANDARDS PERFORMANCE

Internal standard area counts and retention times for the samples in this SDG were within the control limits established by the continuing calibration standards: +100%/-50% for internal standard areas and ± 0.50 minutes for retention times. A representative number of internal standard areas and retention times were verified from the raw data, and no calculation or transcription errors were noted. No qualifications were required.

2.10 COMPOUND IDENTIFICATION

Target compound identification was verified at a Level IV data validation. The laboratory analyzed the volatile target compounds by EPA Method 624. Chromatograms, retention times, and spectra for the samples and QC were examined and no target compound identification problems were noted. No qualifications were required.

2.11 COMPOUND QUANTIFICATION AND REPORTED DETECTION LIMITS

Compound quantification is verified at a Level IV data validation. The reporting limits were supported by the lowest concentrations of the initial calibration standards and by the MDL study. Compound quantitation was verified by recalculating any sample detects and a representative number of blank spike and surrogate recoveries from the raw data. Results were reported in $\mu\text{g/L}$ (ppb). No calculation or transcription errors were noted. No qualifications were required.

2.12 TENTATIVELY IDENTIFIED COMPOUNDS

The laboratory did not provide TICs for this SDG. No qualifications were required.

2.13 SYSTEM PERFORMANCE

A review of the chromatograms and other raw data showed no identifiable problems with system performance. No qualifications were required.



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

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

Project ID: Routine Outfall 001

Report Number: IOC1561

Sampled: 03/19/05
 Received: 03/19/05

DRAFT: PURGEABLES BY GC/MS (EPA 624)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOC1561-01 (DRAFT: Outfall 001 - Water)									
Reporting Units: ug/l									
Benzene	EPA 624	5C21029	0.28	2.0	ND	1	03/21/05	03/21/05	REV QUAL
Carbon tetrachloride	EPA 624	5C21029	0.28	5.0	ND	1	03/21/05	03/21/05	QUAL CODE
Chloroform	EPA 624	5C21029	0.33	2.0	ND	1	03/21/05	03/21/05	
1,1-Dichloroethane	EPA 624	5C21029	0.27	2.0	ND	1	03/21/05	03/21/05	
1,2-Dichloroethane	EPA 624	5C21029	0.28	2.0	ND	1	03/21/05	03/21/05	
1,1-Dichloroethene	EPA 624	5C21029	0.32	3.0	ND	1	03/21/05	03/21/05	
Ethylbenzene	EPA 624	5C21029	0.25	2.0	ND	1	03/21/05	03/21/05	
Tetrachloroethene	EPA 624	5C21029	0.32	2.0	ND	1	03/21/05	03/21/05	
Toluene	EPA 624	5C21029	0.36	2.0	ND	1	03/21/05	03/21/05	
1,1,1-Trichloroethane	EPA 624	5C21029	0.30	2.0	ND	1	03/21/05	03/21/05	
1,1,2-Trichloroethane	EPA 624	5C21029	0.30	2.0	ND	1	03/21/05	03/21/05	
Trichloroethene	EPA 624	5C21029	0.26	5.0	ND	1	03/21/05	03/21/05	
Trichlorofluoromethane	EPA 624	5C21029	0.34	5.0	ND	1	03/21/05	03/21/05	
Vinyl chloride	EPA 624	5C21029	0.26	5.0	ND	1	03/21/05	03/21/05	
Xylenes, Total	EPA 624	5C21029	0.52	4.0	ND	1	03/21/05	03/21/05	
Surrogate: Dibromofluoromethane (80-120%)					115 %				
Surrogate: Toluene-d8 (80-120%)					113 %				
Surrogate: 4-Bromofluorobenzene (80-120%)					107 %				
Sample ID: IOC1561-02 (DRAFT: Trip Blank - Water)									
Reporting Units: ug/l									
Benzene	EPA 624	5C21029	0.28	2.0	ND	1	03/21/05	03/21/05	
Carbon tetrachloride	EPA 624	5C21029	0.28	5.0	ND	1	03/21/05	03/21/05	
Chloroform	EPA 624	5C21029	0.33	2.0	ND	1	03/21/05	03/21/05	
1,1-Dichloroethane	EPA 624	5C21029	0.27	2.0	ND	1	03/21/05	03/21/05	
1,2-Dichloroethane	EPA 624	5C21029	0.28	2.0	ND	1	03/21/05	03/21/05	
1,1-Dichloroethene	EPA 624	5C21029	0.32	3.0	ND	1	03/21/05	03/21/05	
Ethylbenzene	EPA 624	5C21029	0.25	2.0	ND	1	03/21/05	03/21/05	
Tetrachloroethene	EPA 624	5C21029	0.32	2.0	ND	1	03/21/05	03/21/05	
Toluene	EPA 624	5C21029	0.36	2.0	ND	1	03/21/05	03/21/05	
1,1,1-Trichloroethane	EPA 624	5C21029	0.30	2.0	ND	1	03/21/05	03/21/05	
1,1,2-Trichloroethane	EPA 624	5C21029	0.30	2.0	ND	1	03/21/05	03/21/05	
Trichloroethene	EPA 624	5C21029	0.26	5.0	ND	1	03/21/05	03/21/05	
Trichlorofluoromethane	EPA 624	5C21029	0.34	5.0	ND	1	03/21/05	03/21/05	
Vinyl chloride	EPA 624	5C21029	0.26	5.0	ND	1	03/21/05	03/21/05	
Xylenes, Total	EPA 624	5C21029	0.52	4.0	ND	1	03/21/05	03/21/05	
Surrogate: Dibromofluoromethane (80-120%)					112 %				
Surrogate: Toluene-d8 (80-120%)					114 %				
Surrogate: 4-Bromofluorobenzene (80-120%)					106 %				

DRAFT REPORT
 DRAFT REPORT
 DATA SUBJECT TO CHANGE

AMEC VALIDATED

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CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

AMEC Earth & Environmental
 550 South Wadsworth Boulevard
 Suite 500
 Lakewood, CO 80226

Package ID T711WC116
 Task Order 313150010
 SDG No. IOC1561

No. of Analyses 1

Laboratory Del Mar Analytical

Reviewer L. Jarusewic

Analysis/Method General Minerals

Date: 04/06/05

Reviewer's Signature



ACTION ITEMS^a

1. Case Narrative Deficiencies
2. Out of Scope Analyses
3. Analyses Not Conducted
4. Missing Hardcopy Deliverables
5. Incorrect Hardcopy Deliverables
6. Deviations from Analysis Protocol, e.g.,
 - Holding Times
 - GC/MS Tune/Inst. Performance
 - Calibrations
 - Blanks
 - Surrogates
 - Matrix Spike/Dup LCS
 - Field QC
 - Internal Standard Performance
 - Compound Identification and Quantitation
 - System Performance

Qualifications were applied for:

- 1) Detects below the reporting limit

COMMENTS^b

^a 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

ANALYSIS: GENERAL MINERALS

SAMPLE DELIVERY GROUP: IOC1561

Prepared by

AMEC—Denver Operations
550 South Wadsworth Boulevard, Suite 500
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title: NPDES Monitoring
Contract Task Order #: 313150010
Sample Delivery Group #: IOC1561
Project Manager: B. McIlvaine
Matrix: Water
Analysis: General Minerals
QC Level: Level IV
No. of Samples: 1
Reviewer: L. Jarusewic
Date of Review: April 6, 2005

The sample listed in Table 1 was validated based on the guidelines outlined in the AMEC *Data Validation Procedures* SOP DVP-6, Rev. 2, *USEPA Methods for Chemical Analysis of Water and Wastes Method 350.2, 120.1, and 180.1*, 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 I as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

Table 1. Sample identification

Client ID	EPA ID	Laboratory ID	Matrix	COC Method
Outfall 001	Outfall 001	IOC1561-01	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 above the temperature limits of $4^{\circ}\text{C} \pm 2^{\circ}\text{C}$ at 7°C ; however, as the sample had insufficient time to cool in transit to the laboratory, no qualifications were required. 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. The COC accounted for all analyses presented in this SDG. No sample qualifications were required.

2.1.3 Holding Times

The holding times were assessed by comparing the date of collection with the dates of analyses. The 28-day analytical holding time for ammonia and conductivity and the 48-hour holding time for turbidity were met. No qualifications were required.

2.2 CALIBRATION

For the applicable analyses, the initial calibration correlation coefficients were ≥ 0.995 . Initial and continuing calibration information was acceptable with recoveries within the control limits of 90-110%. For ammonia, no information regarding the standardization of the titrant was provided; however, as the LCS recovery was within the CCV control limits, no qualifications were required. No qualifications were required.

2.3 BLANKS

Turbidity was detected in method blank 5C21054-BLK1 at 0.040 NTU; however, the method blank result was insufficient to qualify the Outfall 001 result. The remaining method blank and CCB results reported on the summary forms and in the raw data for blank analyses associated with the sample were nondetects at the reporting limit. No qualifications were required.

2.4 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

The ammonia laboratory control sample recovery was within the laboratory-established control limits. The LCS is not applicable to turbidity or conductivity. No qualifications were required.

2.5 SURROGATES RECOVERY

Surrogate recovery is not applicable to the analyses presented in this SDG.

2.6 LABORATORY DUPLICATES

A laboratory duplicate analysis was performed on Outfall 001 for turbidity. The RPD was within the control limits of $\leq 20\%$ and no qualifications were required.

2.7 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

There were no MS/MSD analyses performed in association with the sample in this SDG; therefore, no assessment was made with respect to this criterion. Ammonia method accuracy was assessed based on LCS results.

2.8 FURNACE ATOMIC ABSORPTION QC

Furnace atomic absorption was not utilized for the analyses of this sample; therefore, furnace atomic absorption QC is not applicable.

2.9 ICP SERIAL DILUTION

ICP serial dilution is not applicable to the analyses presented in this data validation report.

2.10 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 transcription errors or calculation errors were noted. Turbidity detected below the reporting limit was qualified as estimated, "J." No further qualifications were required.

2.11 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:

2.11.1 Field Blanks and Equipment Rinsates

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

DATA VALIDATION REPORT

Project: NPDES
SDG No.: IOC1561
Analysis: General Minerals

2.11.2 Field Duplicates

There were no field duplicate pairs associated with this SDG.



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

Project ID: Routine Outfall 001

Report Number: IOC1561

Sampled: 03/19/05
 Received: 03/19/05

DRAFT: INORGANICS

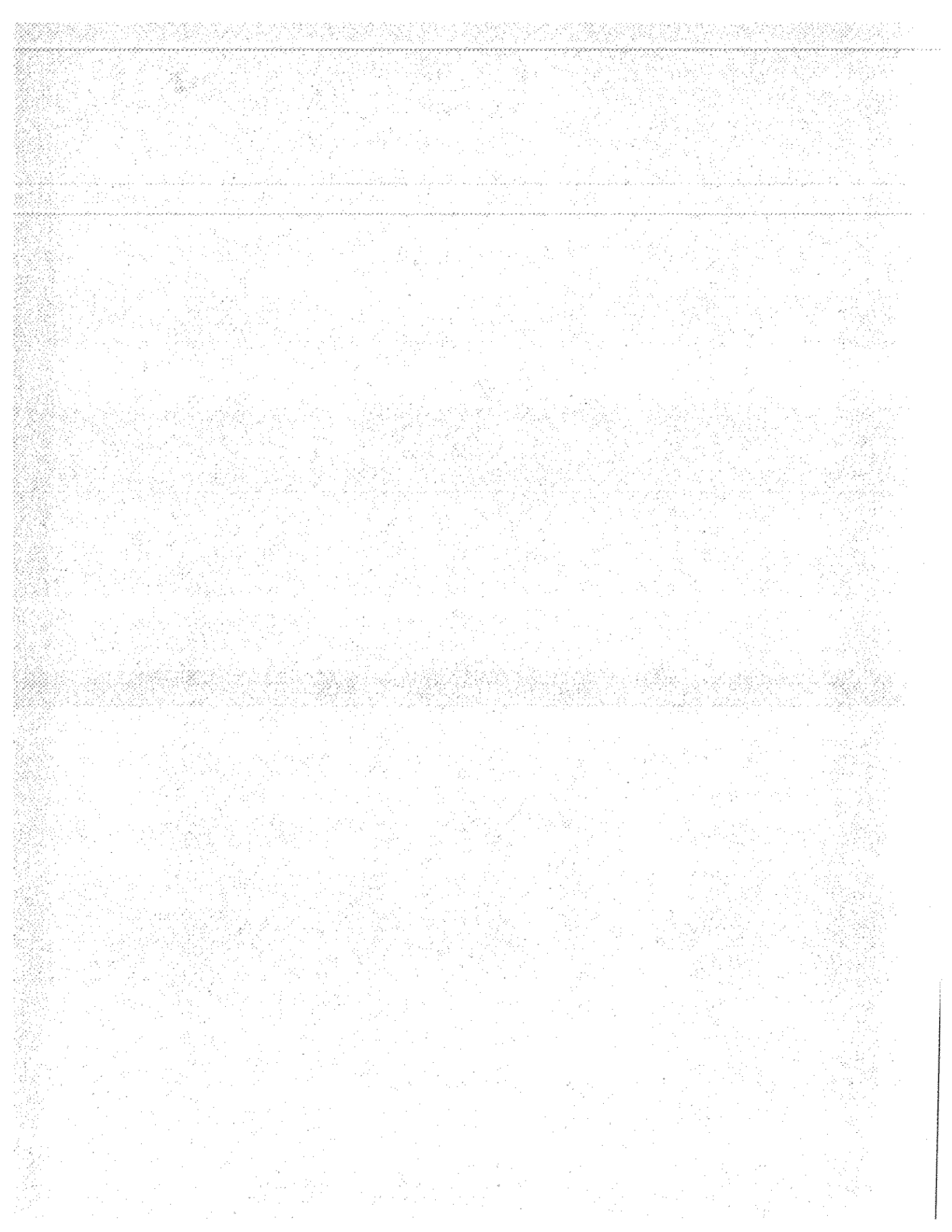
Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data	Qualifiers
Sample ID: IOC1561-01 (DRAFT: Outfall 001 - Water)										
Reporting Units: mg/l										
Ammonia-N (Distilled)	EPA 350.2	5C22089	0.30	0.50	ND	1	03/22/05	03/22/05	U	REV CUR CODE
Sample ID: IOC1561-01 (DRAFT: Outfall 001 - Water)										
Reporting Units: NTU										
Turbidity	EPA 180.1	5C21054	0.040	1.0	0.61	1	03/21/05	03/21/05	J	J DNR
Sample ID: IOC1561-01 (DRAFT: Outfall 001 - Water)										
Reporting Units: umhos/cm										
Specific Conductance	EPA 120.1	5C21077	1.0	1.0	540	1	03/21/05	03/21/05		

AMEC VALIDATED

LEVEL IV

DRAFT REPORT
 DRAFT REPORT
 DATA SUBJECT TO CHANGE

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LABORATORY REPORT

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

Project: Routine Outfall 001

Sampled: 03/19/05
Received: 03/19/05
Issued: 04/08/05 17:13

NELAP #01108CA California ELAP#1197 CSDLAC #10117

*The results listed within this Laboratory Report pertain only to the samples tested in the laboratory. The analyses contained in this report were performed in accordance with the applicable certifications as noted. All soil samples are reported on a wet weight basis unless otherwise noted in the report. This Laboratory Report is confidential and is intended for the sole use of Del Mar Analytical and its client. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical. The Chain of Custody, 1 page, is included and is an integral part of this report.
This entire report was reviewed and approved for release.*

SAMPLE CROSS REFERENCE

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

LABORATORY ID	CLIENT ID	MATRIX
IOC1561-01	Outfall 001	Water
IOC1561-02	Trip Blank	Water

Reviewed By:

Del Mar Analytical, Irvine
Michele Harper
Project Manager



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

Project ID: Routine Outfall 001

Report Number: IOC1561

Sampled: 03/19/05
Received: 03/19/05

PURGEABLES BY GC/MS (EPA 624)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOC1561-01 (Outfall 001 - Water)									
Reporting Units: ug/l									
Benzene	EPA 624	5C21029	0.28	2.0	ND	1	03/21/05	03/21/05	
Carbon tetrachloride	EPA 624	5C21029	0.28	5.0	ND	1	03/21/05	03/21/05	
Chloroform	EPA 624	5C21029	0.33	2.0	ND	1	03/21/05	03/21/05	
1,1-Dichloroethane	EPA 624	5C21029	0.27	2.0	ND	1	03/21/05	03/21/05	
1,2-Dichloroethane	EPA 624	5C21029	0.28	2.0	ND	1	03/21/05	03/21/05	
1,1-Dichloroethene	EPA 624	5C21029	0.32	3.0	ND	1	03/21/05	03/21/05	
Ethylbenzene	EPA 624	5C21029	0.25	2.0	ND	1	03/21/05	03/21/05	
Tetrachloroethene	EPA 624	5C21029	0.32	2.0	ND	1	03/21/05	03/21/05	
Toluene	EPA 624	5C21029	0.36	2.0	ND	1	03/21/05	03/21/05	
1,1,1-Trichloroethane	EPA 624	5C21029	0.30	2.0	ND	1	03/21/05	03/21/05	
1,1,2-Trichloroethane	EPA 624	5C21029	0.30	2.0	ND	1	03/21/05	03/21/05	
Trichloroethene	EPA 624	5C21029	0.26	5.0	ND	1	03/21/05	03/21/05	
Trichlorofluoromethane	EPA 624	5C21029	0.34	5.0	ND	1	03/21/05	03/21/05	
Vinyl chloride	EPA 624	5C21029	0.26	5.0	ND	1	03/21/05	03/21/05	
Xylenes, Total	EPA 624	5C21029	0.52	4.0	ND	1	03/21/05	03/21/05	
Surrogate: Dibromofluoromethane (80-120%)					115 %				
Surrogate: Toluene-d8 (80-120%)					113 %				
Surrogate: 4-Bromofluorobenzene (80-120%)					107 %				

Sample ID: IOC1561-02 (Trip Blank - Water)

Reporting Units: ug/l

Benzene	EPA 624	5C21029	0.28	2.0	ND	1	03/21/05	03/21/05	
Carbon tetrachloride	EPA 624	5C21029	0.28	5.0	ND	1	03/21/05	03/21/05	
Chloroform	EPA 624	5C21029	0.33	2.0	ND	1	03/21/05	03/21/05	
1,1-Dichloroethane	EPA 624	5C21029	0.27	2.0	ND	1	03/21/05	03/21/05	
1,2-Dichloroethane	EPA 624	5C21029	0.28	2.0	ND	1	03/21/05	03/21/05	
1,1-Dichloroethene	EPA 624	5C21029	0.32	3.0	ND	1	03/21/05	03/21/05	
Ethylbenzene	EPA 624	5C21029	0.25	2.0	ND	1	03/21/05	03/21/05	
Tetrachloroethene	EPA 624	5C21029	0.32	2.0	ND	1	03/21/05	03/21/05	
Toluene	EPA 624	5C21029	0.36	2.0	ND	1	03/21/05	03/21/05	
1,1,1-Trichloroethane	EPA 624	5C21029	0.30	2.0	ND	1	03/21/05	03/21/05	
1,1,2-Trichloroethane	EPA 624	5C21029	0.30	2.0	ND	1	03/21/05	03/21/05	
Trichloroethene	EPA 624	5C21029	0.26	5.0	ND	1	03/21/05	03/21/05	
Trichlorofluoromethane	EPA 624	5C21029	0.34	5.0	ND	1	03/21/05	03/21/05	
Vinyl chloride	EPA 624	5C21029	0.26	5.0	ND	1	03/21/05	03/21/05	
Xylenes, Total	EPA 624	5C21029	0.52	4.0	ND	1	03/21/05	03/21/05	
Surrogate: Dibromofluoromethane (80-120%)					112 %				
Surrogate: Toluene-d8 (80-120%)					114 %				
Surrogate: 4-Bromofluorobenzene (80-120%)					106 %				

Del Mar Analytical, Irvine
Michele Harper
Project Manager



MWH-Pasadena/Boeing Project ID: Routine Outfall 001
300 North Lake Avenue, Suite 1200 Report Number: IOC1561
Pasadena, CA 91101
Attention: Bronwyn Kelly
Sampled: 03/19/05
Received: 03/19/05

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

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOC1561-01 (Outfall 001 - Water)									
Reporting Units: ug/l									
Bis(2-ethylhexyl)phthalate	EPA 625	5C20022	4.4	20	ND	3.77	03/20/05	03/22/05	RL-3
2,4-Dinitrotoluene	EPA 625	5C20022	0.92	36	ND	3.77	03/20/05	03/22/05	
N-Nitrosodimethylamine	EPA 625	5C20022	0.88	32	ND	3.77	03/20/05	03/22/05	
Pentachlorophenol	EPA 625	5C20022	3.1	32	ND	3.77	03/20/05	03/22/05	
2,4,6-Trichlorophenol	EPA 625	5C20022	0.40	24	ND	3.77	03/20/05	03/22/05	
Surrogate: 2-Fluorophenol (30-120%)					67 %				
Surrogate: Phenol-d6 (35-120%)					66 %				
Surrogate: 2,4,6-Tribromophenol (45-120%)					74 %				
Surrogate: Nitrobenzene-d5 (45-120%)					67 %				
Surrogate: 2-Fluorobiphenyl (45-120%)					72 %				
Surrogate: Terphenyl-d14 (45-120%)					77 %				

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MWH-Pasadena/Boeing 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Attention: Bronwyn Kelly	Project ID: Routine Outfall 001 Report Number: IOC1561	Sampled: 03/19/05 Received: 03/19/05
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ORGANOCHLORINE PESTICIDES (EPA 608)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOC1561-01 (Outfall 001 - Water) - cont.									
Reporting Units: ug/l									
alpha-BHC	EPA 608	5C21069	0.0010	0.010	ND	0.952	03/21/05	03/21/05	
Surrogate: Decachlorobiphenyl (45-120%)					132 %				Z2
Surrogate: Tetrachloro-m-xylene (35-115%)					100 %				

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MWH-Pasadena/Boeing 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Attention: Bronwyn Kelly	Project ID: Routine Outfall 001 Report Number: IOC1561	Sampled: 03/19/05 Received: 03/19/05
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METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOC1561-01 (Outfall 001 - Water) - cont.									
Reporting Units: ug/l									
Copper	EPA 200.8	5C21088	0.49	2.0	1.9	1	03/21/05	03/21/05	J
Lead	EPA 200.8	5C21088	0.13	1.0	ND	1	03/21/05	03/21/05	
Mercury	EPA 245.1	5C21082	0.063	0.20	ND	1	03/21/05	03/21/05	

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

Project ID: Routine Outfall 001

Report Number: IOC1561

Sampled: 03/19/05
 Received: 03/19/05

INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOC1561-01 (Outfall 001 - Water) - cont.									
Reporting Units: mg/l									
Ammonia-N (Distilled)	EPA 350.2	5C22089	0.30	0.50	ND	1	03/22/05	03/22/05	
Biochemical Oxygen Demand	EPA 405.1	5C21055	0.59	2.0	ND	1	03/21/05	03/26/05	
Chloride	EPA 300.0	5C20029	0.26	0.50	28	1	03/20/05	03/20/05	
Nitrate/Nitrite-N	EPA 300.0	5C20029	0.072	0.11	ND	1	03/20/05	03/20/05	
Oil & Grease	EPA 413.1	5C21062	0.94	5.0	ND	1	03/21/05	03/21/05	
Sulfate	EPA 300.0	5C20029	0.36	1.0	88	2	03/20/05	03/20/05	
Surfactants (MBAS)	SM5540-C	5C20032	0.044	0.10	ND	1	03/20/05	03/20/05	
Total Dissolved Solids	SM2540C	5C21073	10	10	310	1	03/21/05	03/21/05	
Total Suspended Solids	EPA 160.2	5C21068	10	10	ND	1	03/21/05	03/21/05	
Sample ID: IOC1561-01 (Outfall 001 - Water)									
Reporting Units: ml/hr									
Total Settleable Solids	EPA 160.5	5C20031	0.10	0.10	ND	1	03/20/05	03/20/05	
Sample ID: IOC1561-01 (Outfall 001 - Water)									
Reporting Units: NTU									
Turbidity	EPA 180.1	5C21054	0.040	1.0	0.61	1	03/21/05	03/21/05	J
Sample ID: IOC1561-01 (Outfall 001 - Water)									
Reporting Units: ug/l									
Total Cyanide	EPA 335.2	5C21083	2.2	5.0	ND	1	03/21/05	03/21/05	
Perchlorate	EPA 314.0	5C21050	0.80	4.0	ND	1	03/21/05	03/21/05	
Sample ID: IOC1561-01 (Outfall 001 - Water)									
Reporting Units: umhos/cm									
Specific Conductance	EPA 120.1	5C21077	1.0	1.0	540	1	03/21/05	03/21/05	

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SHORT HOLD TIME DETAIL REPORT

Sample ID: Outfall 001 (IOC1561-01) - Water	Hold Time (in days)	Date/Time Sampled	Date/Time Received	Date/Time Extracted	Date/Time Analyzed
EPA 160.5	2	03/19/2005 10:19	03/19/2005 17:30	03/20/2005 15:00	03/20/2005 16:00
EPA 180.1	2	03/19/2005 10:19	03/19/2005 17:30	03/21/2005 08:00	03/21/2005 08:45
EPA 300.0	2	03/19/2005 10:19	03/19/2005 17:30	03/20/2005 13:30	03/20/2005 14:09
EPA 405.1	2	03/19/2005 10:19	03/19/2005 17:30	03/21/2005 09:15	03/26/2005 14:00
SM5540-C	2	03/19/2005 10:19	03/19/2005 17:30	03/20/2005 14:45	03/20/2005 15:29

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Attention: Bronwyn Kelly

Project ID: Routine Outfall 001

Report Number: IOC1561

Sampled: 03/19/05
Received: 03/19/05

METHOD BLANK/QC DATA

PURGEABLES BY GC/MS (EPA 624)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	RPD Limits	RPD RPD	Data Qualifiers
Batch: 5C21029 Extracted: 03/21/05										
Blank Analyzed: 03/21/2005 (5C21029-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	0.32	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	0.52	ug/l						
Surrogate: Dibromofluoromethane	27.4			ug/l	25.0		110	80-120		
Surrogate: Toluene-d8	28.5			ug/l	25.0		114	80-120		
Surrogate: 4-Bromofluorobenzene	26.4			ug/l	25.0		106	80-120		
LCS Analyzed: 03/21/2005 (5C21029-BS1)										
Benzene	24.9	2.0	0.28	ug/l	25.0		100	70-120		
Carbon tetrachloride	24.9	5.0	0.28	ug/l	25.0		100	70-140		
Chloroform	25.2	2.0	0.33	ug/l	25.0		101	75-130		
1,1-Dichloroethane	24.7	2.0	0.27	ug/l	25.0		99	70-135		
1,2-Dichloroethane	25.9	2.0	0.28	ug/l	25.0		104	60-150		
1,1-Dichloroethene	26.9	3.0	0.32	ug/l	25.0		108	75-135		
Ethylbenzene	25.2	2.0	0.25	ug/l	25.0		101	80-120		
Tetrachloroethene	23.8	2.0	0.32	ug/l	25.0		95	75-125		
Toluene	24.4	2.0	0.36	ug/l	25.0		98	75-120		
1,1,1-Trichloroethane	25.1	2.0	0.30	ug/l	25.0		100	75-140		
1,1,2-Trichloroethane	25.6	2.0	0.30	ug/l	25.0		102	70-125		
Trichloroethene	25.7	5.0	0.26	ug/l	25.0		103	80-120		
Trichlorofluoromethane	26.9	5.0	0.34	ug/l	25.0		108	65-145		
Vinyl chloride	26.0	5.0	0.26	ug/l	25.0		104	50-130		
Surrogate: Dibromofluoromethane	28.1			ug/l	25.0		112	80-120		
Surrogate: Toluene-d8	28.4			ug/l	25.0		114	80-120		

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Report Number: IOC1561

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Received: 03/19/05

METHOD BLANK/QC DATA

PURGEABLES BY GC/MS (EPA 624)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	Limit	RPD	RPD Limit	Data Qualifiers
Batch: 5C21029 Extracted: 03/21/05											
LCS Analyzed: 03/21/2005 (5C21029-BS1)											
Surrogate: 4-Bromofluorobenzene	27.4			ug/l	25.0		110	80-120			
Matrix Spike Analyzed: 03/21/2005 (5C21029-MS1)											
Source: IOC1444-02											
Benzene	25.3	2.0	0.28	ug/l	25.0	ND	101	70-120			
Carbon tetrachloride	24.9	5.0	0.28	ug/l	25.0	ND	100	70-145			
Chloroform	25.6	2.0	0.33	ug/l	25.0	ND	102	70-135			
1,1-Dichloroethane	24.7	2.0	0.27	ug/l	25.0	ND	99	65-135			
1,2-Dichloroethane	25.6	2.0	0.28	ug/l	25.0	ND	102	60-150			
1,1-Dichloroethene	26.9	3.0	0.32	ug/l	25.0	ND	108	65-140			
Ethylbenzene	25.7	2.0	0.25	ug/l	25.0	ND	103	70-130			
Tetrachloroethene	24.3	2.0	0.32	ug/l	25.0	ND	97	70-130			
Toluene	25.4	2.0	0.36	ug/l	25.0	ND	102	70-120			
1,1,1-Trichloroethane	25.3	2.0	0.30	ug/l	25.0	ND	101	75-140			
1,1,2-Trichloroethane	25.4	2.0	0.30	ug/l	25.0	ND	102	60-135			
Trichloroethene	25.2	5.0	0.26	ug/l	25.0	ND	101	70-125			
Trichlorofluoromethane	27.1	5.0	0.34	ug/l	25.0	ND	108	55-145			
Vinyl chloride	25.9	5.0	0.26	ug/l	25.0	ND	104	40-135			
Surrogate: Dibromofluoromethane	28.2			ug/l	25.0		113	80-120			
Surrogate: Toluene-d8	29.0			ug/l	25.0		116	80-120			
Surrogate: 4-Bromofluorobenzene	27.4			ug/l	25.0		110	80-120			
Matrix Spike Dup Analyzed: 03/21/2005 (5C21029-MSD1)											
Source: IOC1444-02											
Benzene	26.1	2.0	0.28	ug/l	25.0	ND	104	70-120	3	20	
Carbon tetrachloride	25.8	5.0	0.28	ug/l	25.0	ND	103	70-145	4	25	
Chloroform	26.7	2.0	0.33	ug/l	25.0	ND	107	70-135	4	20	
1,1-Dichloroethane	26.2	2.0	0.27	ug/l	25.0	ND	105	65-135	6	20	
1,2-Dichloroethane	27.5	2.0	0.28	ug/l	25.0	ND	110	60-150	7	20	
1,1-Dichloroethene	27.9	3.0	0.32	ug/l	25.0	ND	112	65-140	4	20	
Ethylbenzene	26.3	2.0	0.25	ug/l	25.0	ND	105	70-130	2	20	
Tetrachloroethene	25.3	2.0	0.32	ug/l	25.0	ND	101	70-130	4	20	
Toluene	26.0	2.0	0.36	ug/l	25.0	ND	104	70-120	2	20	
1,1,1-Trichloroethane	26.3	2.0	0.30	ug/l	25.0	ND	105	75-140	4	20	
1,1,2-Trichloroethane	27.6	2.0	0.30	ug/l	25.0	ND	110	60-135	8	25	
Trichloroethene	26.3	5.0	0.26	ug/l	25.0	ND	105	70-125	4	20	
Trichlorofluoromethane	28.3	5.0	0.34	ug/l	25.0	ND	113	55-145	4	25	
Vinyl chloride	26.4	5.0	0.26	ug/l	25.0	ND	106	40-135	2	30	

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METHOD BLANK/QC DATA

PURGEABLES BY GC/MS (EPA 624)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	Limit	RPD	RPD Limit	Data Qualifiers
Batch: 5C21029 Extracted: 03/21/05											
Matrix Spike Dup Analyzed: 03/21/2005 (5C21029-MSD1)						Source: IOC1444-02					
Surrogate: Dibromofluoromethane	29.0			ug/l	25.0		116	80-120			
Surrogate: Toluene-d8	28.8			ug/l	25.0		115	80-120			
Surrogate: 4-Bromofluorobenzene	27.2			ug/l	25.0		109	80-120			

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METHOD BLANK/QC DATA

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

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	RPD RPD	RPD Limit	Data Qualifiers
Batch: 5C20022 Extracted: 03/20/05										
Blank Analyzed: 03/22/2005 (5C20022-BLK1)										
Bis(2-ethylhexyl)phthalate	ND	5.0	1.1	ug/l						
2,4-Dinitrotoluene	ND	9.0	0.23	ug/l						
N-Nitrosodimethylamine	ND	8.0	0.22	ug/l						
Pentachlorophenol	ND	8.0	0.78	ug/l						
2,4,6-Trichlorophenol	ND	6.0	0.10	ug/l						
Surrogate: 2-Fluorophenol	12.3			ug/l	20.0		62		30-120	
Surrogate: Phenol-d6	12.0			ug/l	20.0		60		35-120	
Surrogate: 2,4,6-Tribromophenol	15.4			ug/l	20.0		77		45-120	
Surrogate: Nitrobenzene-d5	6.34			ug/l	10.0		63		45-120	
Surrogate: 2-Fluorobiphenyl	7.02			ug/l	10.0		70		45-120	
Surrogate: Terphenyl-d14	7.70			ug/l	10.0		77		45-120	
LCS Analyzed: 03/22/2005 (5C20022-BS1)										
Bis(2-ethylhexyl)phthalate	8.18	5.0	1.1	ug/l	10.0		82		60-130	M-NR1
2,4-Dinitrotoluene	6.94	9.0	0.23	ug/l	10.0		69		60-120	J
N-Nitrosodimethylamine	6.94	8.0	0.22	ug/l	10.0		69		40-120	J
Pentachlorophenol	8.06	8.0	0.78	ug/l	10.0		81		50-120	
2,4,6-Trichlorophenol	8.04	6.0	0.10	ug/l	10.0		80		60-120	
Surrogate: 2-Fluorophenol	13.1			ug/l	20.0		66		30-120	
Surrogate: Phenol-d6	13.0			ug/l	20.0		65		35-120	
Surrogate: 2,4,6-Tribromophenol	16.1			ug/l	20.0		80		45-120	
Surrogate: Nitrobenzene-d5	6.72			ug/l	10.0		67		45-120	
Surrogate: 2-Fluorobiphenyl	7.48			ug/l	10.0		75		45-120	
Surrogate: Terphenyl-d14	7.66			ug/l	10.0		77		45-120	
LCS Dup Analyzed: 03/22/2005 (5C20022-BSD1)										
Bis(2-ethylhexyl)phthalate	8.08	5.0	1.1	ug/l	10.0		81		60-130	1 20
2,4-Dinitrotoluene	6.92	9.0	0.23	ug/l	10.0		69		60-120	0 20 J
N-Nitrosodimethylamine	6.82	8.0	0.22	ug/l	10.0		68		40-120	2 20 J
Pentachlorophenol	7.92	8.0	0.78	ug/l	10.0		79		50-120	2 25 J
2,4,6-Trichlorophenol	7.78	6.0	0.10	ug/l	10.0		78		60-120	3 20
Surrogate: 2-Fluorophenol	12.8			ug/l	20.0		64		30-120	
Surrogate: Phenol-d6	12.9			ug/l	20.0		64		35-120	
Surrogate: 2,4,6-Tribromophenol	16.0			ug/l	20.0		80		45-120	
Surrogate: Nitrobenzene-d5	6.74			ug/l	10.0		67		45-120	
Surrogate: 2-Fluorobiphenyl	7.16			ug/l	10.0		72		45-120	

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Pasadena, CA 91101
Attention: Bronwyn Kelly

Project ID: Routine Outfall 001

Report Number: IOC1561

Sampled: 03/19/05
Received: 03/19/05

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: 5C20022 Extracted: 03/20/05											
LCS Dup Analyzed: 03/22/2005 (5C20022-BSD1)											
Surrogate: Terphenyl-d14	7.48			ug/l	10.0		75	45-120			

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METHOD BLANK/QC DATA

ORGANOCHLORINE PESTICIDES (EPA 608)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5C21069 Extracted: 03/21/05										
Blank Analyzed: 03/21/2005 (5C21069-BLK1)										
alpha-BHC	ND	0.010	0.0010	ug/l						
Surrogate: Decachlorobiphenyl	0.572			ug/l	0.500		114 45-120			
Surrogate: Tetrachloro-m-xylene	0.468			ug/l	0.500		94 35-115			
LCS Analyzed: 03/21/2005 (5C21069-BS1)										
alpha-BHC	0.493	0.010	0.0010	ug/l	0.500		99 45-115			M-NRI
Surrogate: Decachlorobiphenyl	0.647			ug/l	0.500		129 45-120			ZI
Surrogate: Tetrachloro-m-xylene	0.462			ug/l	0.500		92 35-115			
LCS Dup Analyzed: 03/21/2005 (5C21069-BSD1)										
alpha-BHC	0.473	0.010	0.0010	ug/l	0.500		95 45-115	4	30	
Surrogate: Decachlorobiphenyl	0.518			ug/l	0.500		104 45-120			
Surrogate: Tetrachloro-m-xylene	0.437			ug/l	0.500		87 35-115			

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

Project ID: Routine Outfall 001

Report Number: IOC1561

Sampled: 03/19/05
 Received: 03/19/05

METHOD BLANK/QC DATA

METALS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC Limits	RPD RPD	RPD Limit	Data Qualifiers
Batch: 5C21082 Extracted: 03/21/05										
Blank Analyzed: 03/21/2005 (5C21082-BLK1)										
Mercury	ND	0.20	0.063	ug/l						
LCS Analyzed: 03/21/2005 (5C21082-BS1)										
Mercury	7.98	0.20	0.063	ug/l	8.00		100 85-115			
Matrix Spike Analyzed: 03/21/2005 (5C21082-MS1) Source: IOC1561-01										
Mercury	7.93	0.20	0.063	ug/l	8.00	ND	99 70-130			
Matrix Spike Dup Analyzed: 03/21/2005 (5C21082-MSD1) Source: IOC1561-01										
Mercury	8.07	0.20	0.063	ug/l	8.00	ND	101 70-130	2	20	
Batch: 5C21088 Extracted: 03/21/05										
Blank Analyzed: 03/21/2005 (5C21088-BLK1)										
Copper	ND	2.0	0.49	ug/l						
Lead	ND	1.0	0.13	ug/l						
LCS Analyzed: 03/21/2005 (5C21088-BS1)										
Copper	81.1	2.0	0.49	ug/l	80.0		101 85-115			
Lead	84.0	1.0	0.13	ug/l	80.0		105 85-115			
Matrix Spike Analyzed: 03/21/2005 (5C21088-MS1) Source: IOC1561-01										
Copper	78.5	2.0	0.49	ug/l	80.0	1.9	96 70-130			
Lead	83.6	1.0	0.13	ug/l	80.0	ND	104 70-130			
Matrix Spike Analyzed: 03/21/2005 (5C21088-MS2) Source: IOC1563-01										
Copper	85.2	2.0	0.49	ug/l	80.0	7.7	97 70-130			
Lead	82.6	1.0	0.13	ug/l	80.0	0.83	102 70-130			

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 Attention: Bronwyn Kelly

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METHOD BLANK/QC DATA

METALS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	Limit	RPD	Limit	Data Qualifiers
Batch: 5C21088 Extracted: 03/21/05											
Matrix Spike Dup Analyzed: 03/21/2005 (5C21088-MSD1)						Source: IOC1561-01					
Copper	77.9	2.0	0.49	ug/l	80.0	1.9	95	70-130	1	20	
Lead	81.3	1.0	0.13	ug/l	80.0	ND	102	70-130	3	20	

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INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC Limits	RPD RPD	RPD Limit	Data Qualifiers
Batch: 5C20029 Extracted: 03/20/05										
Blank Analyzed: 03/20/2005 (5C20029-BLK1)										
Chloride	ND	0.50	0.26	mg/l						
Nitrate/Nitrite-N	ND	0.11	0.072	mg/l						
Sulfate	ND	0.50	0.18	mg/l						
LCS Analyzed: 03/20/2005 (5C20029-BS1)										
Chloride	4.65	0.50	0.26	mg/l	5.00		93 90-110			M-3
Sulfate	9.69	0.50	0.18	mg/l	10.0		97 90-110			M-3
Batch: 5C20032 Extracted: 03/20/05										
Blank Analyzed: 03/20/2005 (5C20032-BLK1)										
Surfactants (MBAS)	ND	0.10	0.044	mg/l						
LCS Analyzed: 03/20/2005 (5C20032-BS1)										
Surfactants (MBAS)	0.240	0.10	0.044	mg/l	0.250		96 90-110			
Matrix Spike Analyzed: 03/20/2005 (5C20032-MS1)										
						Source: IOC1561-01				
Surfactants (MBAS)	0.201	0.10	0.044	mg/l	0.250	ND	80 50-125			
Matrix Spike Dup Analyzed: 03/20/2005 (5C20032-MSD1)										
						Source: IOC1561-01				
Surfactants (MBAS)	0.215	0.10	0.044	mg/l	0.250	ND	86 50-125	7	20	
Batch: 5C21050 Extracted: 03/21/05										
Blank Analyzed: 03/21/2005 (5C21050-BLK1)										
Perchlorate	ND	4.0	0.80	ug/l						

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INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5C21050 Extracted: 03/21/05											
LCS Analyzed: 03/21/2005 (5C21050-BS1)											
Perchlorate	48.9	4.0	0.80	ug/l	50.0		98	85-115			
Matrix Spike Analyzed: 03/21/2005 (5C21050-MS1) Source: IOC1552-01											
Perchlorate	55.5	4.0	0.80	ug/l	50.0	1.7	108	80-120			
Matrix Spike Dup Analyzed: 03/21/2005 (5C21050-MSD1) Source: IOC1552-01											
Perchlorate	58.7	4.0	0.80	ug/l	50.0	1.7	114	80-120	6	20	
Batch: 5C21054 Extracted: 03/21/05											
Blank Analyzed: 03/21/2005 (5C21054-BLK1)											
Turbidity	0.0400	1.0	0.040	NTU							J
Duplicate Analyzed: 03/21/2005 (5C21054-DUP1) Source: IOC1561-01											
Turbidity	0.630	1.0	0.040	NTU		0.61			3	20	J
Batch: 5C21055 Extracted: 03/21/05											
Blank Analyzed: 03/26/2005 (5C21055-BLK1)											
Biochemical Oxygen Demand	ND	2.0	0.59	mg/l							
LCS Analyzed: 03/26/2005 (5C21055-BS1)											
Biochemical Oxygen Demand	206	100	30	mg/l	198		104	85-115			
LCS Dup Analyzed: 03/26/2005 (5C21055-BSD1)											
Biochemical Oxygen Demand	205	100	30	mg/l	198		104	85-115	1	20	

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METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	Limit	RPD	RPD Limit	Data Qualifiers
Batch: 5C21062 Extracted: 03/21/05											
Blank Analyzed: 03/21/2005 (5C21062-BLK1)											
Oil & Grease	ND	5.0	0.94	mg/l							
LCS Analyzed: 03/21/2005 (5C21062-BS1)											
Oil & Grease	17.1	5.0	0.94	mg/l	20.0		86	65-120			M-NR1
LCS Dup Analyzed: 03/21/2005 (5C21062-BSD1)											
Oil & Grease	16.0	5.0	0.94	mg/l	20.0		80	65-120	7	20	
Batch: 5C21068 Extracted: 03/21/05											
Blank Analyzed: 03/21/2005 (5C21068-BLK1)											
Total Suspended Solids	ND	10	10	mg/l							
LCS Analyzed: 03/21/2005 (5C21068-BS1)											
Total Suspended Solids	942	10	10	mg/l	1000		94	85-115			
Duplicate Analyzed: 03/21/2005 (5C21068-DUP1)											
Total Suspended Solids	ND	10	10	mg/l		Source: IOC1566-01				10	
Batch: 5C21073 Extracted: 03/21/05											
Blank Analyzed: 03/21/2005 (5C21073-BLK1)											
Total Dissolved Solids	ND	10	10	mg/l							
LCS Analyzed: 03/21/2005 (5C21073-BS1)											
Total Dissolved Solids	968	10	10	mg/l	1000		97	90-110			

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METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD RPD	RPD Limit	Data Qualifiers
Batch: 5C21073 Extracted: 03/21/05											
Duplicate Analyzed: 03/21/2005 (5C21073-DUP1)											
Total Dissolved Solids	320	10	10	mg/l		Source: IOC1566-01 300			6	10	
Batch: 5C21077 Extracted: 03/21/05											
Duplicate Analyzed: 03/21/2005 (5C21077-DUP1)											
Specific Conductance	244	1.0	1.0	umhos/cm		Source: IOC1480-01 240			2	5	
Batch: 5C21083 Extracted: 03/21/05											
Blank Analyzed: 03/21/2005 (5C21083-BLK1)											
Total Cyanide	ND	5.0	2.2	ug/l							
LCS Analyzed: 03/21/2005 (5C21083-BS1)											
Total Cyanide	203	5.0	2.2	ug/l	200		102	90-110			
Matrix Spike Analyzed: 03/21/2005 (5C21083-MS1)											
Total Cyanide	152	5.0	2.2	ug/l	200	ND	76	70-115			
Matrix Spike Dup Analyzed: 03/21/2005 (5C21083-MSD1)											
Total Cyanide	172	5.0	2.2	ug/l	200	ND	86	70-115	12	15	
Batch: 5C22089 Extracted: 03/22/05											
Blank Analyzed: 03/22/2005 (5C22089-BLK1)											
Ammonia-N (Distilled)	ND	0.50	0.30	mg/l							

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INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	Limit	RPD	RPD Limit	Data Qualifiers
Batch: 5C22089 Extracted: 03/22/05											
LCS Analyzed: 03/22/2005 (5C22089-BS1)											
Ammonia-N (Distilled)	9.24	0.50	0.30	mg/l	10.0		92	80-115			
Matrix Spike Analyzed: 03/22/2005 (5C22089-MS1) Source: IOC1175-01											
Ammonia-N (Distilled)	9.52	0.50	0.30	mg/l	10.0	1.1	84	70-120			
Matrix Spike Dup Analyzed: 03/22/2005 (5C22089-MSD1) Source: IOC1175-01											
Ammonia-N (Distilled)	10.1	0.50	0.30	mg/l	10.0	1.1	90	70-120	6	15	

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Compliance Check

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

LabNumber	Analysis	Analyte	Units	Result	MRL	Compliance Limit
IOC1561-01	413.1 Oil and Grease	Oil & Grease	mg/l	0.76	5.0	10.00
IOC1561-01	608-Pest Boeing 001/002 Q (LL)	alpha-BHC	ug/l	0	0.010	0.0100
IOC1561-01	624-Boeing 001/002 Q (Fr113+X)	1,1-Dichloroethene	ug/l	0	3.0	3.20
IOC1561-01	624-Boeing 001/002 Q (Fr113+X)	Trichloroethene	ug/l	0.16	5.0	5.00
IOC1561-01	625-Boeing 001/002 Q-LL	2,4,6-Trichlorophenol	ug/l	0	24	6.50
IOC1561-01	625-Boeing 001/002 Q-LL	2,4-Dinitrotoluene	ug/l	0	36	9.10
IOC1561-01	625-Boeing 001/002 Q-LL	Bis(2-ethylhexyl)phthalate	ug/l	2.30	20	4.00
IOC1561-01	625-Boeing 001/002 Q-LL	N-Nitrosodimethylamine	ug/l	0	32	8.10
IOC1561-01	625-Boeing 001/002 Q-LL	Pentachlorophenol	ug/l	0	32	8.20
IOC1561-01	BOD	Biochemical Oxygen Demand	mg/l	0.14	2.0	20
IOC1561-01	Chloride - 300.0	Chloride	mg/l	28	0.50	150
IOC1561-01	Copper-200.8	Copper	ug/l	1.90	2.0	7.10
IOC1561-01	Cyanide-335.2 5ppb	Total Cyanide	ug/l	-5	5.0	4.30
IOC1561-01	Lead-200.8	Lead	ug/l	0.058	1.0	2.60
IOC1561-01	MBAS - SM5540-C	Surfactants (MBAS)	mg/l	0.0014	0.10	0.50
IOC1561-01	Mercury - 245.1	Mercury	ug/l	0.011	0.20	0.20
IOC1561-01	Nitrogen, NO3+NO2 -N	Nitrate/Nitrite-N	mg/l	0.049	0.11	8.00
IOC1561-01	Perchlorate 314.0	Perchlorate	ug/l	0	4.0	6.00
IOC1561-01	Sulfate-300.0	Sulfate	mg/l	88	1.0	300
IOC1561-01	TDS - SM 2540C	Total Dissolved Solids	mg/l	310	10	950
IOC1561-02	624-Boeing 001/002 Q (Fr113+X)	1,1-Dichloroethene	ug/l	0	3.0	3.20
IOC1561-02	624-Boeing 001/002 Q (Fr113+X)	Trichloroethene	ug/l	0	5.0	5.00

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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 unknown quality.
- 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.
- RL-3** Reporting limit raised due to high concentrations of non-target analytes.
- Z1** Surrogate recovery was above acceptance limits.
- Z2** Surrogate recovery was above the acceptance limits. Data not impacted.
- ND** Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified.
- RPD** Relative Percent Difference

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MWH-Pasadena/Boeing 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Attention: Bronwyn Kelly	Project ID: Routine Outfall 001 Report Number: IOC1561	Sampled: 03/19/05 Received: 03/19/05
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Certification Summary

Del Mar Analytical, Irvine

Method	Matrix	Nelac	California
EPA 120.1	Water	X	X
EPA 160.2	Water	X	X
EPA 160.5	Water	X	X
EPA 180.1	Water	X	X
EPA 200.8	Water	X	X
EPA 245.1	Water	X	X
EPA 300.0	Water	X	X
EPA 314.0	Water	X	X
EPA 335.2	Water	X	X
EPA 350.2	Water	X	X
EPA 405.1	Water	X	X
EPA 413.1	Water	X	X
EPA 608	Water	X	X
EPA 624	Water	X	X
EPA 625	Water	X	X
SM2540C	Water	X	X
SM5540-C	Water	X	X

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

Subcontracted Laboratories

Alta Analytical California Cert #1640

1104 Windfield Way - El Dorado Hills, CA 95762

Analysis Performed: 1613-Dioxin-HR
 Samples: IOC1561-01

Analysis Performed: EDD + Level 4
 Samples: IOC1561-01

Del Mar Analytical, Irvine
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FOC 1561

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

Project Manager: *Rick Baranosa*
 Sampler: *Ruben Baranosa*

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Project:
**Boeing-SSFL NPDES
 Routine Outfall 001**

Sample Description	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	Cu, Pb, Hg, Total Recoverable Metals:	Settleable Solids	VOCs 624 + xylenes	TCDD (and all congeners)	Oil & Grease (EPA 413.1)	Cyanide (total recoverable)	BOD5(20 degrees C)	Surfactants (MBAS)	Ch, SO4, NO3+NO2-N, Perchlorate	Turbidity, TDS, TSS, Conductivity	Ammonia-N	2,4,6 Trichlorophenol, 2,4-Dinitrotoluene, Bis(2-ethylthio)phthalate, NDMA, pentachlorophenol (EPA 625)	Field readings: Temp = 56.7 pH = 7.1	Comments	
																				Sampling Date/Time
Outfall 001	W	Poly-1L	1	HNO3	1A	X														
Outfall 001-Dup	W	Poly-1L	1	HNO3	1B	X														24 TAT
Outfall 001	W	Poly-1L	1	None	2		X													24 TAT
Outfall 001	W	VOAs	3	HCl	3A, 3B, 3C			X												
Outfall 001	W	1L Amber	2	None	4A, 4B			X												
Outfall 001	W	1L Amber	2	HCl	5A, 5B				X											24 TAT
Outfall 001	W	Poly-500 ml	1	NaOH	6				X											24 TAT
Outfall 001	W	Poly-1L	1	None	7					X										
Outfall 001	W	Poly-500 ml	2	None	8A, 8B						X									
Outfall 001	W	Poly-500 ml	2	None	9A, 9B							X								
Outfall 001	W	Poly-500 ml	2	None	10A, 10B								X							
Outfall 001	W	Poly-500 ml	1	H2SO4	11										X					
Outfall 001	W	1L Amber	2	None	12A, 12B											X				
Outfall 001	W	1L Amber	2	None	13A, 13B												X			
Trip Blank	W	VOAs	3	HCl	14A, 14B, 14C															

Relinquished By: *[Signature]* Date/Time: 3-19-05 12:45
 Relinquished By: *[Signature]* Date/Time: 3/19/05 15:20
 Relinquished By: *[Signature]* Date/Time: 3/19/05 17:30
 Received By: *[Signature]* Date/Time: 3/19/05 12:45
 Received By: *[Signature]* Date/Time: 3/19/05 15:20
 Received By: *[Signature]* Date/Time: 3/17/05 17:30

Turn around Time: (check)
 24 Hours _____ 5 Days _____
 48 Hours _____ 10 Days _____
 72 Hours _____ Normal _____
 Perchlorate Only 72 Hours _____
 Metals Only 72 Hours _____
 Sample Integrity: (Check) On Ice

March 28, 2005

MWH-Pasadena/ Boeing
300 North Lake Avenue, Suite 1200
Pasadena, CA 91101

Attention: Bronwyn Kelly
Project: Routine Outfall 001
Sampled: 03/19/05
Del Mar Analytical Number: IOC1561

Dear Ms. Kelly:

Alta Analytical Laboratory performed the EPA Method 1613 for tetra-through-octa chlorinated dioxins and furans analysis for the project referenced above. Please use the following cross-reference table when reviewing your results.

MWH ID	DEL MAR ID	ALTA ID
Routine Outfall 001	IOC1561-01	25941-001

Attached is the original report from the subcontract laboratory. If you have any questions or require further assistance, please do not hesitate to contact me at (949) 261-1022 at extension 215.

Sincerely yours,
DEL MAR ANALYTICAL



Michele Harper
Project Manager



March 24, 2005

Alta Project I.D.: 25941

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

Dear Ms. Harper,

Enclosed are the results for the one aqueous sample received at Alta Analytical Laboratory on March 22, 2005 under your Project Name "IOC1561". This sample was extracted and analyzed using EPA Method 1613 for tetra-through-octa chlorinated dioxins and furans. A rush 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,

Martha M. Maier
Director of HRMS Services



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: 3/22/2005

Alta Lab. ID

Client Sample ID

25941-001

IOC1561-01

SECTION II



Method Blank

EPA Method 1613

Matrix: Aqueous
 Sample Size: 1.000 L
 Lab Sample: 0-MB001
 Date Analyzed DB-5: 23-Mar-05
 QC Batch No.: 6624
 Date Extracted: 22-Mar-05
 Date Analyzed DB-225: NA

Analyte	Conc. (pg/L)	DL ^a	EMPC ^b	Qualifiers	Labeled Standard	%R	LCL-UCL ^d	Qualifiers
2,3,7,8-TCDD	ND	0.841			13C-2,3,7,8-TCDD	79.3	25 - 164	
1,2,3,7,8-PeCDD	ND	0.749			13C-1,2,3,7,8-PeCDD	75.2	25 - 181	
1,2,3,4,7,8-HxCDD	ND	1.49			13C-1,2,3,4,7,8-HxCDD	74.0	32 - 141	
1,2,3,6,7,8-HxCDD	ND	1.52			13C-1,2,3,6,7,8-HxCDD	80.9	28 - 130	
1,2,3,7,8,9-HxCDD	ND	1.50			13C-1,2,3,4,6,7,8-HpCDD	72.5	23 - 140	
1,2,3,4,6,7,8-HpCDD	ND	1.17			13C-OCDD	55.5	17 - 157	
OCDD	ND	3.33			13C-2,3,7,8-TCDF	82.1	24 - 169	
2,3,7,8-TCDF	ND	0.795			13C-1,2,3,7,8-PeCDF	74.6	24 - 185	
1,2,3,7,8-PeCDF	ND	1.67			13C-2,3,4,7,8-PeCDF	77.9	21 - 178	
2,3,4,7,8-PeCDF	ND	1.39			13C-1,2,3,4,7,8-HxCDF	62.7	26 - 152	
1,2,3,4,7,8-HxCDF	ND	0.474			13C-1,2,3,6,7,8-HxCDF	73.0	26 - 123	
1,2,3,6,7,8-HxCDF	ND	0.442			13C-2,3,4,6,7,8-HxCDF	71.1	28 - 136	
2,3,4,6,7,8-HxCDF	ND	0.510			13C-1,2,3,7,8,9-HxCDF	67.2	29 - 147	
1,2,3,7,8,9-HxCDF	ND	0.820			13C-1,2,3,4,6,7,8-HpCDF	67.8	28 - 143	
1,2,3,4,6,7,8-HpCDF	ND	0.929			13C-1,2,3,4,7,8,9-HpCDF	71.3	26 - 138	
1,2,3,4,7,8,9-HpCDF	ND	1.13			13C-OCDF	58.9	17 - 157	
OCDF	ND	2.74			CRS 37Cl-2,3,7,8-TCDD	83.9	35 - 197	

Totals

Total TCDD	ND	0.841						
Total PeCDD	ND	0.749						
Total HxCDD	ND	1.51						
Total HpCDD	ND	1.17						
Total TCDF	ND	0.795						
Total PeCDF	ND	1.52						
Total HxCDF	ND	0.545						
Total HpCDF	ND	1.02						

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

Analyst: JMH

Approved By: Martha M. Maier 24-Mar-2005 09:52



OPR Results		EPA Method 1613				
Matrix:	Aqueous	QC Batch No.:	6624	Lab Sample:	0-OPR001	
Sample Size:	1,000 L	Date Extracted:	22-Mar-05	Date Analyzed DB-5:	23-Mar-05	
				Date Analyzed DB-225:	NA	
Analyte	Spike Conc.	Conc. (ng/mL)	OPR Limits	Labeled Standard	%R	LCL-UCL
2,3,7,8-TCDD	10.0	9.02	6.7 - 15.8	IS 13C-2,3,7,8-TCDD	86.2	25 - 164
1,2,3,7,8-PeCDD	50.0	44.9	35 - 71	13C-1,2,3,7,8-PeCDD	83.6	25 - 181
1,2,3,4,7,8-HxCDD	50.0	45.7	35 - 82	13C-1,2,3,4,7,8-HxCDD	83.1	32 - 141
1,2,3,6,7,8-HxCDD	50.0	47.1	38 - 67	13C-1,2,3,6,7,8-HxCDD	90.5	28 - 130
1,2,3,7,8,9-HxCDD	50.0	47.2	32 - 81	13C-1,2,3,4,6,7,8-HpCDD	80.1	23 - 140
1,2,3,4,6,7,8-HpCDD	50.0	49.7	35 - 70	13C-OCDD	60.0	17 - 157
OCDD	100	102	78 - 144	13C-2,3,7,8-TCDF	89.6	24 - 169
2,3,7,8-TCDF	10.0	9.28	7.5 - 15.8	13C-1,2,3,7,8-PeCDF	82.2	24 - 185
1,2,3,7,8-PeCDF	50.0	49.7	40 - 67	13C-2,3,4,7,8-PeCDF	86.0	21 - 178
2,3,4,7,8-PeCDF	50.0	48.9	34 - 80	13C-1,2,3,4,7,8-HxCDF	69.1	26 - 152
1,2,3,4,7,8-HxCDF	50.0	52.4	36 - 67	13C-1,2,3,6,7,8-HxCDF	83.1	26 - 123
1,2,3,6,7,8-HxCDF	50.0	51.4	42 - 65	13C-2,3,4,6,7,8-HxCDF	80.9	28 - 136
2,3,4,6,7,8-HxCDF	50.0	51.3	35 - 78	13C-1,2,3,7,8,9-HxCDF	77.1	29 - 147
1,2,3,7,8,9-HxCDF	50.0	51.3	39 - 65	13C-1,2,3,4,6,7,8-HpCDF	77.1	28 - 143
1,2,3,4,6,7,8-HpCDF	50.0	54.0	41 - 61	13C-1,2,3,4,7,8,9-HpCDF	78.6	26 - 138
1,2,3,4,7,8,9-HpCDF	50.0	53.2	39 - 69	13C-OCDF	65.1	17 - 157
OCDF	100	103	63 - 170	CRS 37Cl-2,3,7,8-TCDD	89.8	35 - 197

Analyst: JMH

Approved By: Martha M. Maier 24-Mar-2005 09:52



Sample ID: IOC1561-01		EPA Method 1613						
Client Data		Laboratory Data						
Name: Del Mar Analytical, Irvine	Project: IOC1561	Lab Sample: 25941-001	Date Received: 22-Mar-05					
Date Collected: 19-Mar-05	Time Collected: 1019	QC Batch No.: 6624	Date Extracted: 22-Mar-05					
		Date Analyzed DB-5: 24-Mar-05	Date Analyzed DB-225: NA					
Analyte	Conc. (pg/L)	DL ^a	EMPC ^b	Qualifiers	Labeled Standard	%R	LCL-UCL ^d	Qualifiers
2,3,7,8-TCDD	ND	0.808			IS 13C-2,3,7,8-TCDD	88.7	25 - 164	
1,2,3,7,8-PeCDD	ND	0.702			13C-1,2,3,7,8-PeCDD	87.4	25 - 181	
1,2,3,4,7,8-HxCDD	ND	1.24			13C-1,2,3,4,7,8-HxCDD	88.0	32 - 141	
1,2,3,6,7,8-HxCDD	ND	1.23			13C-1,2,3,6,7,8-HxCDD	92.6	28 - 130	
1,2,3,7,8,9-HxCDD	ND	1.23			13C-1,2,3,4,6,7,8-HpCDD	91.0	23 - 140	
1,2,3,4,6,7,8-HpCDD	ND	2.14			13C-OCDD	72.9	17 - 157	
OCDD	ND	8.17			13C-2,3,7,8-TCDF	91.1	24 - 169	
2,3,7,8-TCDF	ND	0.938			13C-1,2,3,7,8-PeCDF	83.3	24 - 185	
1,2,3,7,8-PeCDF	ND	1.48			13C-2,3,4,7,8-PeCDF	85.4	21 - 178	
2,3,4,7,8-PeCDF	ND	1.34			13C-1,2,3,4,7,8-HxCDF	69.3	26 - 152	
1,2,3,4,7,8-HxCDF	ND	0.433			13C-1,2,3,6,7,8-HxCDF	79.2	26 - 123	
1,2,3,6,7,8-HxCDF	ND	0.421			13C-2,3,4,6,7,8-HxCDF	79.0	28 - 136	
2,3,4,6,7,8-HxCDF	ND	0.471			13C-1,2,3,7,8,9-HxCDF	79.2	29 - 147	
1,2,3,7,8,9-HxCDF	ND	0.734			13C-1,2,3,4,6,7,8-HpCDF	82.4	28 - 143	
1,2,3,4,6,7,8-HpCDF	ND	0.621			13C-1,2,3,4,7,8,9-HpCDF	85.8	26 - 138	
1,2,3,4,7,8,9-HpCDF	ND	0.732			13C-OCDF	76.9	17 - 157	
OCDF	ND	2.35			CRS 37Cl-2,3,7,8-TCDD	87.8	35 - 197	
Totals								
Total TCDD	ND	0.808						
Total PeCDD	ND	0.702						
Total HxCDD	ND	1.23						
Total HpCDD	ND	2.14						
Total TCDF	ND	0.938						
Total PeCDF	ND	1.41						
Total HxCDF	ND	0.504						
Total HpCDF	ND	0.670						
Footnotes								
a. Sample specific estimated detection limit.								
b. Estimated maximum possible concentration.								
c. Method detection limit.								
d. Lower control limit - upper control limit.								

Analyst: JMH

Approved By:

Martha M. Maier 24-Mar-2005 09:52

APPENDIX

DATA QUALIFIERS & ABBREVIATIONS

B	This compound was also detected in the method blank.
D	The amount reported is the maximum possible concentration due to possible chlorinated diphenylether interference.
H	The signal-to-noise ratio is greater than 10:1.
I	Chemical Interference
J	The amount detected is below the Lower Calibration Limit of the instrument.
P	Homologue totals include any coplanar PCBs detected at concentrations less than the reporting limit.
*	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 correspond 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.

The control limits are “interim limits only” until in-house limits are utilized.

CURRENT CERTIFICATIONS



NELAP — (Primary AA: California, Certificate No. 02102CA)
Department of the Navy
U.S. Army Corps of Engineers
U.S. EPA Region 5

Bureau of Reclamation — Mid-Pacific Region — (MP-470, Res-1.10)
Commonwealth of Kentucky — (Certificate No. 90063)
Commonwealth of Virginia — (Certificate No. 00013)
State of Alaska, Department of Environmental Conservation — (Certificate No. OS-00197)
State of Arizona — (Certificate No. AZ0639)
State of Arkansas, Department of Health — (Approval granted through CA certification)
State of Arkansas, Department of Environmental Quality
State of California — (Certificate No. 1640)
State of Colorado
State of Connecticut — (Certificate No. PH-0182)
State of Florida — (Certificate No. 87456)
State of Louisiana, Department of Health and Hospitals — (Certificate No. LA000014)
State of Louisiana, Department of Environmental Quality
State of Maine
State of Michigan (Certificate No. 81178087)
State of Mississippi — (Approval granted through CA certification)
State of Nevada — (Certificate No. CA413)
State of New Jersey — (Certificate No. CA003)
State of New York, Department of Health — (Certificate No. 11411)
State of North Carolina — (Certification No. 06700)
State of North Dakota, Department of Health — (Certificate No. R-078)
State of New Mexico
State of Oklahoma — (D9919)
State of Oregon — (Certificate No. CA413)
State of Pennsylvania — (Certificate No. 68-490)
State of South Carolina — (Certificate No. 87002001)
State of Tennessee — (Certificate No. 02996)
State of Texas — (Certificate No. TX247-1000A)
State of Utah — (Certificate No. E-201)
State of Washington — (Certification No. C091)
State of Wisconsin — (Certificate No. 998036160)
State of Wyoming — (USEPA Region 8 Ref: 8TMS-Q)

09/28/04



Del Mar Analytical

17461 Derian Ave. Suite 100, Irvine, CA 92614 Ph (949) 261-1022 Fax (949) 261-1228

1014 E. Cooley Dr., Suite A, Colton, CA 92324 Ph (909) 370-4667 Fax (909) 370-1048

9494 Chesapeake Drive, Suite 205, San Diego, CA 92123 Ph (619) 505-9596 Fax (619) 505-9689

8830 South 61st Street, Suite B-120, Phoenix, AZ 85044 Ph (480) 785-0043 Fax (480) 785-0051

2520 E. Smead Rd., Suite #3, Las Vegas, NV 89120 Ph (702) 798-3820 Fax (702) 798-3821

SUBCONTRACT ORDER - PROJECT # IOC1561

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 Harper

RECEIVING LABORATORY:

Alta Analytical
1104 Windfield Way
El Dorado Hills, CA 95762
Phone: (916) 933-1640
Fax: (916) 933-0940

Standard TAT is requested unless specific due date is requested => Due Date: 5 day TAT Initials: _____

Analysis	Expiration	Comments
Sample ID: IOC1561-01 Water	Sampled: 03/19/05 10:19	Instant Notification
1613-Dioxin-HR	03/26/05 10:19	J flags, 17 congeners, no TEQ, sub to Alta
EDD + Level 4	04/16/05 10:19	Excel EDD email to pm, Include Std logs for Lvl IV
Containers Supplied:		
1 L Amber (IOC1561-01G)		
1 L Amber (IOC1561-01H)		

25941 2.9°

SAMPLE INTEGRITY:

All containers intact: Yes No Sample labels/COC agree: Yes No Samples Received On Ice: Yes No
 Custody Seals Present: Yes No Samples Preserved Properly: Yes No Samples Received at (temp): _____

Released By: [Signature] Date: 3-21-05 Time: 1700 Received By: Chris Noel Date: 3/22/05 Time: 0945

Released By: _____ Date: _____ Time: _____ Received By: _____ Date: _____ Time: _____

STANDARD OPERATING PROCEDURE

Attachment 10.B.1

SAMPLE LOG-IN CHECKLIST

ALTA Project No.: 25941

1. Date Samples Arrived: <u>3/22/05 0945</u> Initials: <u>CW</u> Location: <u>WR-2</u>			
2. Time / Date logged in: <u>3/22/05 1115</u> Initials: <u>CW</u> Location: <u>WR-2</u>			
3. Samples Arrived By: (circle) <u>FedEx</u> UPS World Courier Other:			
4. Shipping Preservation: (circle) <u>Ice</u> Blue Ice / Dry Ice / None Temp °C <u>2.9°</u>			
5. Shipping Container(s) Intact? If not, describe condition in comment section.	YES	NO	NA
6. Shipping Container(s) Custody Seals Present? Intact? If not intact, describe condition in comment section.	✓		
7. Shipping Documentation Present? (circle) Shipping Label <u>Airbill</u> Tracking Number <u>7915 78645670</u>	✓		
8. Sample Custody Seal(s) Present? No. of Seals _____ or Seal No. Intact? If not intact, describe condition in comment section.		✓	✓
9. Sample Container Intact? If no, indicate sample condition in comment section.	✓		
10. Chain of Custody (COC) or other Sample Documentation Present?	✓		
11. COC/Documentation Acceptable? If no, complete COC Anomaly Form.	✓		
12. Shipping Container (circle): ALTA <u>Client</u> Retain or <u>Return</u> or Disposed			
13. Container(s) and/or Bottle(s) Requested?		✓	
14. Drinking Water Sample? (HRMS Only) If yes, Acceptable Preservation? Y or N Preservation Info From? (circle) COC or Sample Container or None Noted			✓

Comments:

IOC1524-01
 IOC1561-01
 IOC1564-01
 IOC1565-01
 IOC1566-01

ALTA Analytical Laboratory
 El Dorado Hills, CA 95762

SOP# CH10B_R18, Page 6 of 12



LABORATORY REPORT

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

Project: Routine Outfall 001

Sampled: 03/19/05
Received: 03/19/05
Issued: 04/18/05 09:04

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.*

CASE NARRATIVE

- SAMPLE RECEIPT: Samples were received intact, at 7°C, on ice and with chain of custody documentation.
- HOLDING TIMES: All samples were analyzed within prescribed holding times and/or in accordance with the Del Mar Analytical Sample Acceptance Policy unless otherwise noted in the report.
- PRESERVATION: Samples requiring preservation were verified prior to sample analysis.
- QA/QC CRITERIA: All analyses met method criteria, except as noted in the report with data qualifiers.
- COMMENTS: Results that fall between the MDL and RL are 'J' flagged.
- SUBCONTRACTED: Refer to the last page for specific subcontract laboratory information included in this report.
- ADDITIONAL INFORMATION: Enclosed are results for Cr, Fe, and Mn for validation purposes.

LABORATORY ID
IOC1561-01

CLIENT ID
Outfall 001

MATRIX
Water

Reviewed By:

Del Mar Analytical, Irvine
Michele Harper
Project Manager



Del Mar Analytical

17461 Derian Ave., Suite 100, Irvine, CA 92614 (949) 261-1022 FAX (949) 260-3297
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 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 001

Report Number: IOC1561

Sampled: 03/19/05

Received: 03/19/05

METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOC1561-01 (Outfall 001 - Water)									
Reporting Units: mg/l									
Iron	EPA 200.7	5D15095	0.0088	0.040	0.071	1	04/15/05	04/15/05	
Sample ID: IOC1561-01 (Outfall 001 - Water)									
Reporting Units: ug/l									
Chromium	EPA 200.7	5D15095	0.68	5.0	2.8	1	04/15/05	04/15/05	J
Manganese	EPA 200.7	5D15095	3.2	20	5.8	1	04/15/05	04/15/05	B, J

Del Mar Analytical, Irvine
 Michele Harper
 Project Manager

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



Del Mar Analytical

17461 Derian Ave., Suite 100, Irvine, CA 92614 (949) 261-1022 FAX (949) 260-3297
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 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 001

Report Number: IOC1561

Sampled: 03/19/05

Received: 03/19/05

METHOD BLANK/QC DATA

METALS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5D15095 Extracted: 04/15/05											
Blank Analyzed: 04/15/2005 (5D15095-BLK1)											
Chromium	ND	5.0	0.68	ug/l							
Iron	ND	0.040	0.0088	mg/l							
Manganese	6.60	20	3.2	ug/l							J
LCS Analyzed: 04/15/2005 (5D15095-BS1)											
Chromium	482	5.0	0.68	ug/l	500		96	85-115			
Iron	0.494	0.040	0.0088	mg/l	0.500		99	85-115			
Manganese	481	20	3.2	ug/l	500		96	85-115			
Matrix Spike Analyzed: 04/15/2005 (5D15095-MS1)											
						Source: IOD0775-01					
Chromium	496	5.0	0.68	ug/l	500	4.3	98	70-130			
Iron	0.638	0.040	0.0088	mg/l	0.500	0.15	98	70-130			
Manganese	502	20	3.2	ug/l	500	13	98	70-130			
Matrix Spike Dup Analyzed: 04/15/2005 (5D15095-MSD1)											
						Source: IOD0775-01					
Chromium	497	5.0	0.68	ug/l	500	4.3	99	70-130	0	20	
Iron	0.640	0.040	0.0088	mg/l	0.500	0.15	98	70-130	0	20	
Manganese	507	20	3.2	ug/l	500	13	99	70-130	1	20	

Del Mar Analytical, Irvine
 Michele Harper
 Project Manager

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



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

Project ID: Routine Outfall 001

Report Number: IOC1561

Sampled: 03/19/05

Received: 03/19/05

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
IOC1561-01	Chromium-200.7	Chromium	ug/l	2.80	5.0	8.10
IOC1561-01	Iron-200.7	Iron	mg/l	0.071	0.040	0.30
IOC1561-01	Manganese-200.7	Manganese	ug/l	5.80	20	50

Del Mar Analytical, Irvine
Michele Harper
Project Manager



MWH-Pasadena/Boeing 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Attention: Bronwyn Kelly	Project ID: Routine Outfall 001 Report Number: IOC1561	Sampled: 03/19/05 Received: 03/19/05
--	---	---

DATA QUALIFIERS AND DEFINITIONS

- B** Analyte was detected in the associated Method Blank.
- J** Estimated value. Analyte detected at a level less than the Reporting Limit (RL) and greater than or equal to the Method Detection Limit (MDL). The user of this data should be aware that this data is of unknown quality.
- ND** Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified.
- RPD** Relative Percent Difference

Del Mar Analytical, Irvine
Michele Harper
Project Manager



Del Mar Analytical

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 9484 Chesapeake Dr., Suite 805, San Diego, CA 92123 (858) 505-8596 FAX (858) 505-9689
 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 001

Report Number: IOC1561

Sampled: 03/19/05

Received: 03/19/05

Certification Summary

Del Mar Analytical, Irvine

Method	Matrix	Nelac	California
EPA 200.7	Water	X	X

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

Del Mar Analytical, Irvine
 Michele Harper
 Project Manager

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

201561

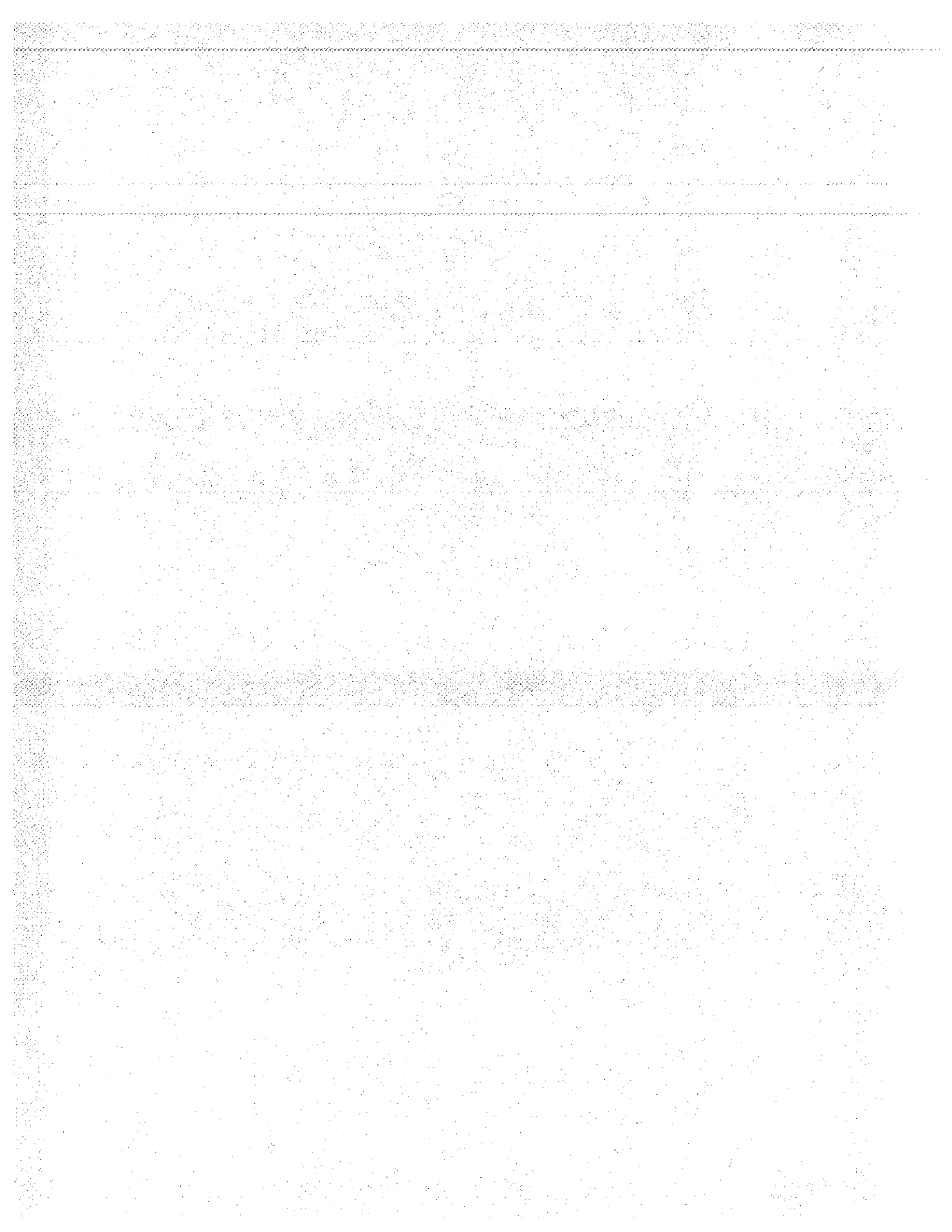
CHAIN OF CUSTODY FORM

Del Mar Analytical Version 02/17/05

Client Name/Address:		Project:		ANALYSIS REQUIRED												Field readings:		
MVH-Pasadena 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Project Manager: Bronwyn Kelly Sampler: Rick Barnaso Phone Number: (626) 568-6691 Fax Number: (626) 568-6515		Boeing-SSFL NPDES Routine Outfall 001		Total Recoverable Metals: Cu, Pb, Hg	Settleable Solids	VOCS 624 + xylenes	TCDD (and all congeners)	Oil & Grease (EPA 413.1)	Cyanide (total recoverable)	BOD5(20 degrees C)	Surfactants (MBAS)	Cl-, SO4, NO3+NO2-N, Perchlorate	Turbidity, TDS, TSS, Conductivity	Ammonia-N	Alpha BHC (608)	2,4,6-Trichlorophenol, 2,4-Dinitrochlorophenol, NDMA, edithoxy)phthalate, NDMA, perchlorophenol (EPA 625)	Temp = 56.7 pH = 7.1	Comments
Sample Description	Sample Matrix	Container Type	# of Cont.	Sampling Date/Time	Preservative	Bottle #												
Outfall 001	W	Poly-1L	1	3-19-05 10:19	HNO3	1A	X										24 TAT	
Outfall 001-Dup	W	Poly-1L	1		HNO3	1B	X										24 TAT	
Outfall 001	W	Poly-1L	1		None	2		X										
Outfall 001	W	VOAs	3		HCl	3A, 3B, 3C												
Outfall 001	W	1L Amber	2		None	4A, 4B		X										
Outfall 001	W	1L Amber	2		HCl	5A, 5B		X									24 TAT	
Outfall 001	W	Poly-500 ml	1		NaOH	6		X									24 TAT	
Outfall 001	W	Poly-1L	1		None	7			X									
Outfall 001	W	Poly-500 ml	2		None	8A, 8B				X								
Outfall 001	W	Poly-500 ml	2		None	9A, 9B					X							
Outfall 001	W	Poly-500 ml	2		None	10A, 10B						X						
Outfall 001	W	Poly-500 ml	1		H2SO4	11							X					
Outfall 001	W	1L Amber	2		None	12A, 12B								X				
Outfall 001	W	1L Amber	2	3-19-05 10:15	None	13A, 13B									X			
Trip Blank	W	VOAs	3		HCl	14A, 14B, 14C												

Relinquished By: <i>[Signature]</i>	Date/Time: 3-19-05 10:01	Received By: <i>[Signature]</i>	Date/Time: 3/19/05 12:45
Relinquished By: <i>[Signature]</i>	Date/Time: 3/19/05 3:20	Received By: <i>[Signature]</i>	Date/Time: 3/19/05 15:30
Relinquished By: <i>[Signature]</i>	Date/Time: 3/19/05 17:30	Received By: <i>[Signature]</i>	Date/Time: 3/17/05 17:30

Turn around Time: (check)	24 Hours	48 Hours	72 Hours	Perchlorate Only 72 Hours	Metals Only 72 Hours
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

AMEC Earth & Environmental
 550 South Wadsworth Boulevard
 Suite 500
 Lakewood, CO 80226

Package ID T711DF40
 Task Order 313150010
 SDG No. Multiple
 No. of Analyses 5

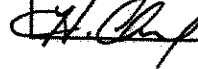
Laboratory Alta

Reviewer H. Chang

Analysis/Method Dioxins & Furans /1613

Date: April 7, 2005

Reviewer's Signature



ACTION ITEMS ^a	
1. Case Narrative Deficiencies	
2. Out of Scope Analyses	
3. Analyses Not Conducted	
4. Missing Hardcopy Deliverables	
5. Incorrect Hardcopy Deliverables	
6. Deviations from Analysis Protocol, e.g., Holding Times GC/MS Tune/Inst. Perform Calibrations Blanks Surrogates Matrix Spike/Dup LCS Field QC Internal Standard Performance Compound Identification and Quantitation System Performance	Detects below the method calibration level were qualified "J." EMPCs were qualified "UJ." Ether interference was qualified "UJ."
COMMENTS ^b	
^a 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

ANALYSIS: DIOXINS/FURANS

SAMPLE DELIVERY GROUPS: IOC0871, IOC2062, IOC2063,
IOC2064, IOC2093

Prepared by

AMEC—Denver Operations
550 South Wadsworth Boulevard, Suite 500
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title: NPDES Monitoring
Contract Task Order #: 313150010
Sample Delivery Group #: IOC0871, IOC2062, IOC2063, IOC2064, IOC2093
Project Manager: B. McIlvaine
Matrix: Water
Analysis: Dioxins/Furans
QC Level: Level IV
No. of Samples: 5
No. of Reanalyses/Dilutions: 0
Reviewer: H. Chang
Date of Review: April 7, 2005

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

Table 1. Sample Identification

Client ID	Laboratory ID (Del Mar)	Laboratory ID (Alta)	Matrix	COC Method
Outfall 018	IOC0871-01	25975-001	water	1613
Outfall 002	IOC2062-01	25969-001	water	1613
Outfall 011	IOC2063-01	25967-001	water	1613
Outfall 011 Composite	IOC2064-01	25968-001	water	1613
Outfall 001	IOC2093-01	25970-001	water	1613

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

Following are findings associated with sample management:

2.1.1 Sample Preservation, Handling, and Transport

All samples in these SDGs were received at Del Mar with cooler temperatures within the QC limits of $4^{\circ}\text{C} \pm 2^{\circ}\text{C}$ with the exception of sample Outfall 002 which was received at 8°C . The samples were received at 0.4°C at Alta. According to the laboratory login sheets, all samples were received intact and in good condition at both laboratories. Due to non-volatile nature of the target compounds and since all samples were received intact, no qualifications were required.

2.1.2 Chain of Custody

The COCs and transfer COCs were legible and signed by the appropriate field and laboratory personnel, and accounted for the analyses presented in these SDGs. As the samples were couriered directly to Del Mar Analytical, custody seals were not required. The coolers received by Alta had custody seals present and intact. The EPA 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 a year of collection. No qualifications were required.

2.2 INSTRUMENT PERFORMANCE

Following are findings associated with instrument performance:

2.2.1 GC Column Performance

A Windows Defining Mix (WDM) containing the first and last eluting congeners of each descriptor and isomer specificity compounds was not analyzed prior to the initial calibration sequence or at the beginning of each analytical sequence; however, the first and last eluting congeners and isomer specificity compounds were added to the midpoint of the initial calibration and to the continuing calibration standards (see section 2.3.2). The GC column performance in the calibrations was acceptable, with the height of the valley between the closely eluting isomers and 2,3,7,8-TCDD reported as less than 25%. No qualifications were required.

2.2.2 Mass Spectrometer Performance

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

2.3 CALIBRATION

2.3.1 Initial Calibration

There was one initial calibration, analyzed 01/21/05. The calibration consisted of six concentration level standards (CS0 through CS5) analyzed to verify instrument linearity. The initial calibration was acceptable with %RSDs $\leq 20\%$ for the 16 native compounds (calibration by isotope dilution) and $\leq 35\%$ for the one native and all labeled compounds (calibration by internal standard). The relative retention times and ion abundance ratios were within the 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 and end of each analytical sequence. The VERs were acceptable with the concentrations within the acceptance criteria listed in Table 6 of EPA Method 1613. The ion abundance ratios and relative retention times were within the method QC limits. 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 standards 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_6653_MB001) was extracted and analyzed with the samples in these SDGs. There were no target compound detects reported 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 Ongoing Precision Recovery (OPR) sample (0_6653_OPR001) was extracted and analyzed with the samples in these SDGs. All recoveries were within the acceptance criteria listed in Table 6 of Method 1613. No qualifications were required.

2.6 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

MS/MSD analyses were not performed in these SDGs. 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 samples in these SDGs had no associated field QC samples. No qualifications were required.

2.7.2 Field Duplicates

No field duplicate samples were identified for these SDGs.

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. Any results reported as Estimated Maximum Possible Concentration (EMPC) were qualified as estimated nondetects, "UJ." Any detects below the lower method calibration level (MCL) were qualified as estimated, "J;" however, as Alta analyzed an additional calibration standard, the results below the lower MCL but above the lower calibration level were flagged with "A" laboratory qualifier. These results were qualified as estimated, "J," by the reviewer.

2,3,7,8-TCDF was detected in sample Outfall 018; however, no confirmation was performed since the level of the detect was below the calibration range. This compound was qualified as estimated, "J."

The Total TCDF result in sample Outfall 011 was reported with "D" laboratory qualifier due to the presence of ether. Total TCDF was qualified as "J" in this sample. No further qualifications were required.



Sample ID: IOC2093-01 Outfall 001

Client Data		Sample Data		Laboratory Data		EPA Method 1613	
Name:	Del Mar Analytical, Irvine	Matrix:	Aqueous	Lab Sample:	25970-001	Date Received:	29-Mar-05
Date Collected:	IOC2093	Sample Size:	0.985 L	QC Batch No.:	6653	Date Extracted:	30-Mar-05
Time Collected:	26-Mar-05			Date Analyzed DB-5:	31-Mar-05	Date Analyzed DB-225:	NA
Analyte	Conc. (ug/L)	DL a	EMPC ^b	Labeled Standard	%R	LCL-UCL ^d	Qualifiers
2,3,7,8-TCDD	ND	0.000000609		IS 13C-2,3,7,8-TCDD	76.1	25 - 164	
1,2,3,7,8-PeCDD	ND	0.000000490		13C-1,2,3,7,8-PeCDD	76.0	25 - 181	
1,2,3,4,7,8-HxCDD	ND	0.00000101		13C-1,2,3,4,7,8-HxCDD	95.5	32 - 141	
1,2,3,6,7,8-HxCDD	ND	0.00000101		13C-1,2,3,6,7,8-HxCDD	108	28 - 130	
1,2,3,7,8,9-HxCDD	ND	0.000000998		13C-1,2,3,4,6,7,8-HpCDD	72.7	23 - 140	
1,2,3,4,6,7,8-HpCDD	0.00000495			13C-OCDD	34.5	17 - 157	
OCDD	0.0000539			13C-2,3,7,8-TCDF	83.8	24 - 169	
2,3,7,8-TCDF	ND	0.00000402	J	13C-1,2,3,7,8-PeCDF	77.5	24 - 185	
1,2,3,7,8-PeCDF	ND	0.00000809	A	13C-2,3,4,7,8-PeCDF	80.9	21 - 178	
2,3,4,7,8-PeCDF	ND	0.00000725		13C-1,2,3,4,7,8-HxCDF	94.1	26 - 152	
1,2,3,4,7,8-HxCDF	ND	0.00000300		13C-1,2,3,6,7,8-HxCDF	102	26 - 123	
1,2,3,6,7,8-HxCDF	ND	0.00000294		13C-2,3,4,6,7,8-HxCDF	91.0	28 - 136	
2,3,4,6,7,8-HxCDF	ND	0.00000334		13C-1,2,3,7,8,9-HxCDF	87.2	29 - 147	
1,2,3,7,8,9-HxCDF	ND	0.00000522		13C-1,2,3,4,6,7,8-HpCDF	69.2	28 - 143	
1,2,3,4,6,7,8-HpCDF	ND	0.00000690		13C-1,2,3,4,7,8,9-HpCDF	80.5	26 - 138	
1,2,3,4,7,8,9-HpCDF	ND	0.00000764		13C-OCDF	45.6	17 - 157	
OCDF	ND	0.00000352		CRS 37Cl-2,3,7,8-TCDD	82.0	35 - 197	
Totals							
Total TCDD	ND	0.000000609					
Total PeCDD	ND	0.000000490					
Total HxCDD	ND	0.00000132					
Total HpCDD	0.0000105						
Total TCDF	0.000000434						
Total PeCDF	ND	0.00000766	0.00000101				
Total HxCDF	0.000000579						
Total HpCDF	0.00000172		0.000000945				

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

Footnotes

Analyst: RAS

Approved By: William J. Luksemburg 01-Apr-2005 14:55

AMEC VALIDATED

Project 25970

LEVEL IV

CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

AMEC Earth & Environmental
 550 South Wadsworth Boulevard
 Suite 500
 Lakewood, CO 80226

Package ID T711VO90
 Task Order 313150010
 SDG No. IOC2093

Laboratory Del Mar

No. of Analyses 2

Reviewer M. Pokorny

Date: April 8, 2005
 Reviewer's Signature


Analysis/Method Volatiles

ACTION ITEMS^a

1. **Case Narrative**
Deficiencies
2. **Out of Scope**
Analyses
3. **Analyses Not Conducted**
4. **Missing Hardcopy**
Deliverables
5. **Incorrect Hardcopy**
Deliverables
6. **Deviations from Analysis**
Protocol, e.g.,
 Holding Times
 GC/MS Tune/Inst. Perform
 Calibrations
 Blanks
 Surrogates
 Matrix Spike/Dup LCS
 Field QC
 Internal Standard Performance
 Compound Identification and
 Quantitation
 System Performance

COMMENTS^b Acceptable as reviewed.

^a 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

ANALYSIS: VOLATILES

SAMPLE DELIVERY GROUP: IOC2093

Prepared by

AMEC Denver Operations
550 South Wadsworth Boulevard, Suite 500
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title: NPDES Monitoring
Contract Task Order #: 313150010
SDG#: IOC2093
Project Manager: B. McIlvaine
Matrix: Water
Analysis: Volatiles
QC Level: Level IV
No. of Samples: 2
No. of Reanalyses/Dilutions: 0
Reviewer: M. Pokorny
Date of Review: April 8, 2005

The samples listed in Table 1 were validated based on the guidelines outlined in the *AMEC Data Validation Procedure for Levels C and D Volatile Organics (DVP-2, Rev. 2)*, *EPA Method 624*, *EPA SW-846 Method 8260B*, 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 summary forms as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

Table 1. Sample identification

Client ID	EPA ID	Lab No.	Matrix	Method
Outfall 001	Outfall 001	IOC2093-01	water	624
Trip Blank	Trip Blank	IOC2093-02	water	624

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

The following are findings associated with sample management:

2.1.1 Sample Preservation, Handling, and Transport

The samples in this SDG were received at the laboratory within the temperature limits of 4°C ±2°C. The COCs noted that the samples were received intact; however, information regarding absence of headspace was not provided. No qualifications were required.

2.1.2 Chain of Custody

The COCs were signed and dated by both field and laboratory personnel. The COCs accounted for the analyses presented in this SDG. As the samples were couriered directly to the laboratory, custody seals were not required. No qualifications were required.

2.1.3 Holding Times

The samples were analyzed within 14 days of collection. No qualifications were required.

2.2 GC/MS TUNING

The ion abundance windows shown on the quantitation reports were consistent with those specified in EPA Method 624, and all ion abundances were within the established windows. The samples and associated QC were analyzed within 12 hours of the BFB injection times. The Form Vs were verified from the raw data and no discrepancies between the summary forms and the raw data were noted. No qualifications were required.

2.3 CALIBRATION

One initial calibration dated 03/04/05 was associated with this SDG. The average RRFs were ≥0.05 for all compounds listed on the sample result summaries. The %RSDs were ≤35% for the target compounds analyzed by EPA Method 624. One continuing calibration associated with the sample analyses was analyzed 03/28/05. The RRFs were ≥0.05 in the continuing calibration. The %Ds for the continuing calibrations associated with the site samples were all ≤20%. A representative number of %RSDs and average RRFs from the initial calibrations, and %Ds and RRFs from the continuing calibrations were recalculated from the raw data, and no calculation or transcription errors were found. No qualifications were required.

2.4 BLANKS

One water method blank (5C28023-BLK1) were associated with the sample analyses. There were no detects above the MDLs for the target compounds listed on the sample result summaries. The method blank raw data showed no evidence of false negatives. No qualifications were required.

2.5 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

One water blank spike (5C28023-BS1) was associated with the sample analyses. All recoveries were within the laboratory-established QC limits. A representative number of recoveries were recalculated from the raw data and no calculation or transcription errors were found. No qualifications were required.

2.6 SURROGATE RECOVERY

The surrogates were recovered within the QC limits of 80-120% in the samples and associated QC. A representative number of surrogate recoveries were recalculated from the raw data and no calculation or transcription errors were found. No qualifications were required.

2.7 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

Sample Outfall 001 was the MS/MSD analyses performed with this SDG. All percent recoveries and RPDs were within the QC limits. A representative number of recoveries and RPDs were recalculated from the raw data and no calculation or transcription errors were found. 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 sample. Following are findings associated with field QC samples:

2.8.1 Trip Blanks

Sample Trip Blank (IOC2093-02) was the trip blank associated with this SDG. No target compounds were reported in the Trip Blank. No qualifications were required.

2.8.2 Field Blanks and Equipment Rinsates

There were no field QC samples associated with this SDG. No qualifications were required.

2.8.3 Field Duplicates

There were no field duplicate samples associated with this SDG.

2.9 INTERNAL STANDARDS PERFORMANCE

Internal standard area counts and retention times for the samples in this SDG were within the control limits established by the continuing calibration standards: +100%/-50% for internal standard areas and ± 0.50 minutes for retention times. A representative number of internal standard areas and retention times were verified from the raw data, and no calculation or transcription errors were noted. No qualifications were required.

2.10 COMPOUND IDENTIFICATION

Target compound identification was verified at a Level IV data validation. The laboratory analyzed the volatile target compounds by EPA Method 624. Chromatograms, retention times, and spectra for the samples and QC were examined and no target compound identification problems were noted. No qualifications were required.

2.11 COMPOUND QUANTIFICATION AND REPORTED DETECTION LIMITS

Compound quantification is verified at a Level IV data validation. The reporting limits were supported by the lowest concentrations of the initial calibration standards and by the MDL study. Compound quantitation was verified by recalculating any sample detects and a representative number of blank spike and surrogate recoveries from the raw data. Results were reported in $\mu\text{g/L}$ (ppb). No calculation or transcription errors were noted. No qualifications were required.

2.12 TENTATIVELY IDENTIFIED COMPOUNDS

The laboratory did not provide TICs for this SDG. No qualifications were required.

2.13 SYSTEM PERFORMANCE

A review of the chromatograms and other raw data showed no identifiable problems with system performance. No qualifications were required.



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

Project ID: Routine Outfall 001

Report Number: IOC2093

Sampled: 03/26/05
 Received: 03/26/05

DRAFT: PURGEABLES BY GC/MS (EPA 624)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOC2093-01 (DRAFT: Outfall 001 - Water)									
Reporting Units: ug/l									
Benzene	EPA 624	5C28023	0.28	2.0	ND	1	03/28/05	03/28/05	REV QUAL QUAL CODE U ↓
Carbon tetrachloride	EPA 624	5C28023	0.28	5.0	ND	1	03/28/05	03/28/05	
Chloroform	EPA 624	5C28023	0.33	2.0	ND	1	03/28/05	03/28/05	
1,1-Dichloroethane	EPA 624	5C28023	0.27	2.0	ND	1	03/28/05	03/28/05	
1,2-Dichloroethane	EPA 624	5C28023	0.28	2.0	ND	1	03/28/05	03/28/05	
1,1-Dichloroethene	EPA 624	5C28023	0.32	3.0	ND	1	03/28/05	03/28/05	
Ethylbenzene	EPA 624	5C28023	0.25	2.0	ND	1	03/28/05	03/28/05	
Tetrachloroethene	EPA 624	5C28023	0.32	2.0	ND	1	03/28/05	03/28/05	
Toluene	EPA 624	5C28023	0.36	2.0	ND	1	03/28/05	03/28/05	
1,1,1-Trichloroethane	EPA 624	5C28023	0.30	2.0	ND	1	03/28/05	03/28/05	
1,1,2-Trichloroethane	EPA 624	5C28023	0.30	2.0	ND	1	03/28/05	03/28/05	
Trichloroethene	EPA 624	5C28023	0.26	5.0	ND	1	03/28/05	03/28/05	
Trichlorofluoromethane	EPA 624	5C28023	0.34	5.0	ND	1	03/28/05	03/28/05	
Vinyl chloride	EPA 624	5C28023	0.26	5.0	ND	1	03/28/05	03/28/05	
Xylenes, Total	EPA 624	5C28023	0.52	4.0	ND	1	03/28/05	03/28/05	
Surrogate: Dibromofluoromethane (80-120%)									106 %
Surrogate: Toluene-d8 (80-120%)									100 %
Surrogate: 4-Bromofluorobenzene (80-120%)									95 %
Sample ID: IOC2093-02 (DRAFT: Trip Blank - Water)									
Reporting Units: ug/l									
Benzene	EPA 624	5C28023	0.28	2.0	ND	1	03/28/05	03/28/05	U ↓
Carbon tetrachloride	EPA 624	5C28023	0.28	5.0	ND	1	03/28/05	03/28/05	
Chloroform	EPA 624	5C28023	0.33	2.0	ND	1	03/28/05	03/28/05	
1,1-Dichloroethane	EPA 624	5C28023	0.27	2.0	ND	1	03/28/05	03/28/05	
1,2-Dichloroethane	EPA 624	5C28023	0.28	2.0	ND	1	03/28/05	03/28/05	
1,1-Dichloroethene	EPA 624	5C28023	0.32	3.0	ND	1	03/28/05	03/28/05	
Ethylbenzene	EPA 624	5C28023	0.25	2.0	ND	1	03/28/05	03/28/05	
Tetrachloroethene	EPA 624	5C28023	0.32	2.0	ND	1	03/28/05	03/28/05	
Toluene	EPA 624	5C28023	0.36	2.0	ND	1	03/28/05	03/28/05	
1,1,1-Trichloroethane	EPA 624	5C28023	0.30	2.0	ND	1	03/28/05	03/28/05	
1,1,2-Trichloroethane	EPA 624	5C28023	0.30	2.0	ND	1	03/28/05	03/28/05	
Trichloroethene	EPA 624	5C28023	0.26	5.0	ND	1	03/28/05	03/28/05	
Trichlorofluoromethane	EPA 624	5C28023	0.34	5.0	ND	1	03/28/05	03/28/05	
Vinyl chloride	EPA 624	5C28023	0.26	5.0	ND	1	03/28/05	03/28/05	
Xylenes, Total	EPA 624	5C28023	0.52	4.0	ND	1	03/28/05	03/28/05	
Surrogate: Dibromofluoromethane (80-120%)									104 %
Surrogate: Toluene-d8 (80-120%)									101 %
Surrogate: 4-Bromofluorobenzene (80-120%)									96 %

AMEC VALIDATED

DRAFT REPORT
 DRAFT REPORT
 DATA SUBJECT TO CHANGE

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CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

AMEC Earth & Environmental
550 South Wadsworth Boulevard
Suite 500
Lakewood, CO 80226

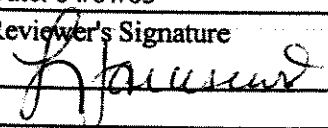
Package ID T711WC127
Task Order 313150010
SDG No. IOC2093

No. of Analyses 1

Laboratory Del Mar Analytical

Reviewer L. Jarusewic

Analysis/Method General Minerals

Date: 04/07/05
Reviewer's Signature


ACTION ITEMS*

- 1. Case Narrative Deficiencies
- 2. Out of Scope Analyses
- 3. Analyses Not Conducted
- 4. Missing Hardcopy Deliverables
- 5. Incorrect Hardcopy Deliverables
- 6. Deviations from Analysis Protocol, e.g.,
 - Holding Times
 - GC/MS Tune/Inst. Performance
 - Calibrations
 - Blanks
 - Surrogates
 - Matrix Spike/Dup LCS
 - Field QC
 - Internal Standard Performance
 - Compound Identification and Quantitation
 - System Performance

COMMENTS⁹

Acceptable as reviewed.

^a 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

ANALYSIS: GENERAL MINERALS
SAMPLE DELIVERY GROUP: IOC2093

Prepared by

AMEC—Denver Operations
550 South Wadsworth Boulevard, Suite 500
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title: NPDES Monitoring
Contract Task Order #: 313150010
Sample Delivery Group #: IOC2093
Project Manager: B. McIlvaine
Matrix: Water
Analysis: General Minerals
QC Level: Level IV
No. of Samples: 1
Reviewer: L. Jarusewic
Date of Review: April 7, 2005

The sample listed in Table 1 was validated based on the guidelines outlined in the AMEC *Data Validation Procedures SOP DVP-6, Rev. 2, USEPA Methods for Chemical Analysis of Water and Wastes Method 350.2, 120.1, and 180.1*, 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 I as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

Table 1. Sample identification

Client ID	EPA ID	Laboratory ID	Matrix	COC Method
Outfall 001	Outfall 001	IOC2093-01	Water	General Minerals

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

Following are findings associated with sample management:

2.1.1 Sample Preservation, Handling, and Transport

The sample in this SDG was received at the laboratory within the temperature limits of $4^{\circ}\text{C} \pm 2^{\circ}\text{C}$. 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. The COC accounted for all analyses presented in this SDG. No sample qualifications were required.

2.1.3 Holding Times

The holding times were assessed by comparing the date of collection with the dates of analyses. The 28-day analytical holding time for ammonia and conductivity and the 48-hour holding time for turbidity were met. No qualifications were required.

2.2 CALIBRATION

For the applicable analyses, the initial calibration correlation coefficients were ≥ 0.995 . The initial and continuing calibration information was acceptable with recoveries within the control limits of 90-110%. For ammonia, no information regarding the standardization of the titrant was provided; however, as the LCS recovery was within the CCV control limits, no qualifications were required.

2.3 BLANKS

Turbidity was detected in method blank 5C26056-BLK1 for at 0.050 NTU; however, the turbidity method blank result was insufficient to qualify the Outfall 001 result. The remaining method blank and CCB results reported on the summary forms and in the raw data for blank analyses associated with the sample were nondetects at the reporting limit. No qualifications were required.

2.4 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

The ammonia laboratory control sample recovery was within the laboratory-established control limits. The LCS is not applicable to turbidity or conductivity. No qualifications were required.

2.5 SURROGATES RECOVERY

Surrogate recovery is not applicable to the analyses presented in this SDG.

2.6 LABORATORY DUPLICATES

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

2.7 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

There were no MS/MSD analyses performed in association with the sample in this SDG; therefore, no assessment was made with respect to this criterion. Ammonia method accuracy was assessed based on LCS results.

2.8 FURNACE ATOMIC ABSORPTION QC

Furnace atomic absorption was not utilized for the analyses of this sample; therefore, furnace atomic absorption QC is not applicable.

2.9 ICP SERIAL DILUTION

ICP serial dilution is not applicable to the analyses presented in this data validation report.

2.10 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 transcription errors or calculation errors were noted. No qualifications were required.

2.11 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:

2.11.1 Field Blanks and Equipment Rinsates

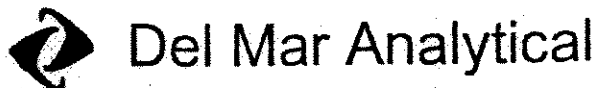
The sample in this SDG had no associated field QC samples. No qualifications were required.

DATA VALIDATION REPORT

Project: NPDES
SDG No.: IOC2093
Analysis: General Minerals

2.11.2 Field Duplicates

There were no field duplicate pairs associated with this SDG.



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

Project ID: Routine Outfall 001

Report Number: IOC2093

Sampled: 03/26/05

Received: 03/26/05

DRAFT: INORGANICS

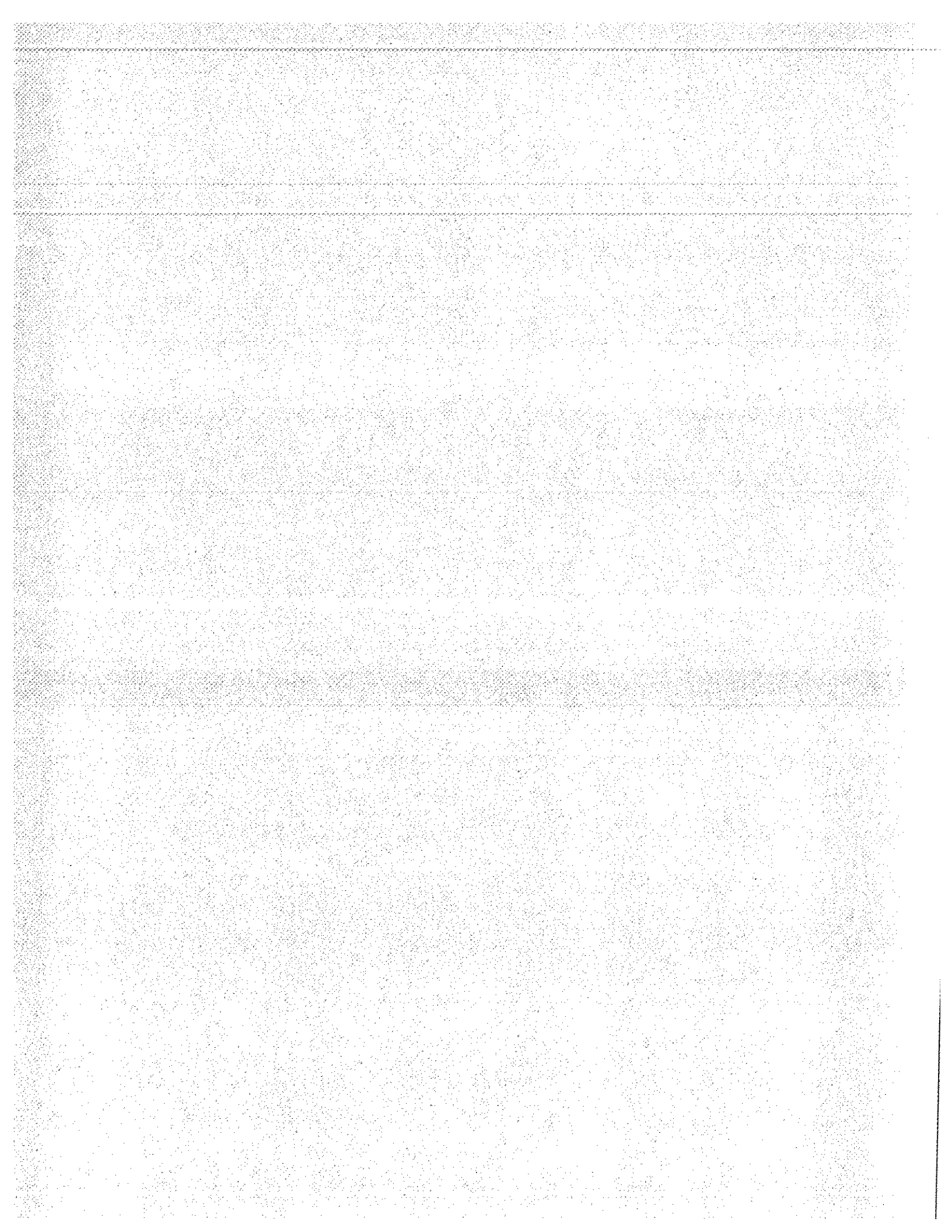
Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOC2093-01 (DRAFT: Outfall 001 - Water)									
Reporting Units: mg/l									
Ammonia-N (Distilled)	EPA 350.2	5C28067	0.30	0.50	ND	1	03/28/05	03/28/05	u
Sample ID: IOC2093-01 (DRAFT: Outfall 001 - Water)									
Reporting Units: NTU									
Turbidity	EPA 180.1	5C26056	0.040	1.0	5.1	1	03/26/05	03/26/05	B-1
Sample ID: IOC2093-01 (DRAFT: Outfall 001 - Water)									
Reporting Units: umhos/cm									
Specific Conductance	EPA 120.1	5C28081	1.0	1.0	290	1	03/28/05	03/28/05	

AMEC VALIDATED

LEVEL IV

DRAFT REPORT
 DRAFT REPORT
 DATA SUBJECT TO CHANGE

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LABORATORY REPORT

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

Project: Routine Outfall 001

Sampled: 03/26/05
Received: 03/26/05
Issued: 04/08/05 17:38

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 Del Mar Analytical and its client. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical. The Chain of Custody, 1 page, is included and is an integral part of this report.
This entire report was reviewed and approved for release.*

SAMPLE CROSS REFERENCE

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

LABORATORY ID	CLIENT ID	MATRIX
IOC2093-01	Outfall 001	Water
IOC2093-02	Trip Blank	Water

Reviewed By:

Del Mar Analytical, Irvine
Michele Harper
Project Manager



Del Mar Analytical

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

Project ID: Routine Outfall 001

Report Number: IOC2093

Sampled: 03/26/05
 Received: 03/26/05

PURGEABLES BY GC/MS (EPA 624)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOC2093-01 (Outfall 001 - Water)									
Reporting Units: ug/l									
Benzene	EPA 624	5C28023	0.28	2.0	ND	1	03/28/05	03/28/05	
Carbon tetrachloride	EPA 624	5C28023	0.28	5.0	ND	1	03/28/05	03/28/05	
Chloroform	EPA 624	5C28023	0.33	2.0	ND	1	03/28/05	03/28/05	
1,1-Dichloroethane	EPA 624	5C28023	0.27	2.0	ND	1	03/28/05	03/28/05	
1,2-Dichloroethane	EPA 624	5C28023	0.28	2.0	ND	1	03/28/05	03/28/05	
1,1-Dichloroethene	EPA 624	5C28023	0.32	3.0	ND	1	03/28/05	03/28/05	
Ethylbenzene	EPA 624	5C28023	0.25	2.0	ND	1	03/28/05	03/28/05	
Tetrachloroethene	EPA 624	5C28023	0.32	2.0	ND	1	03/28/05	03/28/05	
Toluene	EPA 624	5C28023	0.36	2.0	ND	1	03/28/05	03/28/05	
1,1,1-Trichloroethane	EPA 624	5C28023	0.30	2.0	ND	1	03/28/05	03/28/05	
1,1,2-Trichloroethane	EPA 624	5C28023	0.30	2.0	ND	1	03/28/05	03/28/05	
Trichloroethene	EPA 624	5C28023	0.26	5.0	ND	1	03/28/05	03/28/05	
Trichlorofluoromethane	EPA 624	5C28023	0.34	5.0	ND	1	03/28/05	03/28/05	
Vinyl chloride	EPA 624	5C28023	0.26	5.0	ND	1	03/28/05	03/28/05	
Xylenes, Total	EPA 624	5C28023	0.52	4.0	ND	1	03/28/05	03/28/05	
Surrogate: Dibromofluoromethane (80-120%)									106 %
Surrogate: Toluene-d8 (80-120%)									100 %
Surrogate: 4-Bromofluorobenzene (80-120%)									95 %
Sample ID: IOC2093-02 (Trip Blank - Water)									
Reporting Units: ug/l									
Benzene	EPA 624	5C28023	0.28	2.0	ND	1	03/28/05	03/28/05	
Carbon tetrachloride	EPA 624	5C28023	0.28	5.0	ND	1	03/28/05	03/28/05	
Chloroform	EPA 624	5C28023	0.33	2.0	ND	1	03/28/05	03/28/05	
1,1-Dichloroethane	EPA 624	5C28023	0.27	2.0	ND	1	03/28/05	03/28/05	
1,2-Dichloroethane	EPA 624	5C28023	0.28	2.0	ND	1	03/28/05	03/28/05	
1,1-Dichloroethene	EPA 624	5C28023	0.32	3.0	ND	1	03/28/05	03/28/05	
Ethylbenzene	EPA 624	5C28023	0.25	2.0	ND	1	03/28/05	03/28/05	
Tetrachloroethene	EPA 624	5C28023	0.32	2.0	ND	1	03/28/05	03/28/05	
Toluene	EPA 624	5C28023	0.36	2.0	ND	1	03/28/05	03/28/05	
1,1,1-Trichloroethane	EPA 624	5C28023	0.30	2.0	ND	1	03/28/05	03/28/05	
1,1,2-Trichloroethane	EPA 624	5C28023	0.30	2.0	ND	1	03/28/05	03/28/05	
Trichloroethene	EPA 624	5C28023	0.26	5.0	ND	1	03/28/05	03/28/05	
Trichlorofluoromethane	EPA 624	5C28023	0.34	5.0	ND	1	03/28/05	03/28/05	
Vinyl chloride	EPA 624	5C28023	0.26	5.0	ND	1	03/28/05	03/28/05	
Xylenes, Total	EPA 624	5C28023	0.52	4.0	ND	1	03/28/05	03/28/05	
Surrogate: Dibromofluoromethane (80-120%)									104 %
Surrogate: Toluene-d8 (80-120%)									101 %
Surrogate: 4-Bromofluorobenzene (80-120%)									96 %

Del Mar Analytical, Irvine
 Michele Harper
 Project Manager

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

Project ID: Routine Outfall 001

Report Number: IOC2093

Sampled: 03/26/05
 Received: 03/26/05

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

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOC2093-01 (Outfall 001 - Water)									
Reporting Units: ug/l									
Bis(2-ethylhexyl)phthalate	EPA 625	5C28041	1.1	5.0	ND	0.98	03/28/05	03/31/05	
2,4-Dinitrotoluene	EPA 625	5C28041	0.23	9.0	ND	0.98	03/28/05	03/31/05	
N-Nitrosodimethylamine	EPA 625	5C28041	0.22	8.0	ND	0.98	03/28/05	03/31/05	
Pentachlorophenol	EPA 625	5C28041	0.78	8.0	ND	0.98	03/28/05	03/31/05	
2,4,6-Trichlorophenol	EPA 625	5C28041	0.10	6.0	ND	0.98	03/28/05	03/31/05	
Surrogate: 2-Fluorophenol (30-120%)					68 %				
Surrogate: Phenol-d6 (35-120%)					69 %				
Surrogate: 2,4,6-Tribromophenol (45-120%)					86 %				
Surrogate: Nitrobenzene-d5 (45-120%)					73 %				
Surrogate: 2-Fluorobiphenyl (45-120%)					73 %				
Surrogate: Terphenyl-d14 (45-120%)					82 %				

Del Mar Analytical, Irvine
 Michele Harper
 Project Manager

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 300 North Lake Avenue, Suite 1200
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 Attention: Bronwyn Kelly

Project ID: Routine Outfall 001

Report Number: IOC2093

Sampled: 03/26/05
 Received: 03/26/05

ORGANOCHLORINE PESTICIDES (EPA 608)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOC2093-01 (Outfall 001 - Water) - cont.									
Reporting Units: ug/l									
alpha-BHC	EPA 608	5C28048	0.0010	0.010	ND	0.971	03/28/05	03/29/05	
Surrogate: Decachlorobiphenyl (45-120%)					57 %				
Surrogate: Tetrachloro-m-xylene (35-115%)					51 %				

Del Mar Analytical, Irvine
 Michele Harper
 Project Manager

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MWH-Pasadena/Boeing 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Attention: Bronwyn Kelly	Project ID: Routine Outfall 001 Report Number: IOC2093	Sampled: 03/26/05 Received: 03/26/05
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METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOC2093-01 (Outfall 001 - Water) - cont.									
Reporting Units: ug/l									
Copper	EPA 200.8	5C28060	0.49	2.0	2.7	1	03/28/05	03/28/05	
Lead	EPA 200.8	5C28060	0.13	1.0	0.33	1	03/28/05	03/28/05	J
Mercury	EPA 245.1	5C28057	0.063	0.20	ND	1	03/28/05	03/28/05	

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 Project Manager

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MWH-Pasadena/Boeing 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Attention: Bronwyn Kelly	Project ID: Routine Outfall 001 Report Number: IOC2093	Sampled: 03/26/05 Received: 03/26/05
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INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOC2093-01 (Outfall 001 - Water) - cont.									
Reporting Units: mg/l									
Ammonia-N (Distilled)	EPA 350.2	5C28067	0.30	0.50	ND	1	03/28/05	03/28/05	
Biochemical Oxygen Demand	EPA 405.1	5C26052	0.59	2.0	0.79	1	03/26/05	03/31/05	J
Chloride	EPA 300.0	5C26034	0.26	0.50	14	1	03/26/05	03/26/05	
Nitrate/Nitrite-N	EPA 300.0	5C26034	0.072	0.11	0.12	1	03/26/05	03/26/05	
Oil & Grease	EPA 413.1	5C28069	0.94	5.0	ND	1	03/28/05	03/28/05	
Sulfate	EPA 300.0	5C26034	0.18	0.50	39	1	03/26/05	03/26/05	
Surfactants (MBAS)	SM5540-C	5C26055	0.044	0.10	0.063	1	03/26/05	03/26/05	J
Total Dissolved Solids	SM2540C	5C28078	10	10	200	1	03/28/05	03/28/05	
Total Suspended Solids	EPA 160.2	5C29059	10	10	ND	1	03/29/05	03/29/05	
Sample ID: IOC2093-01 (Outfall 001 - Water)									
Reporting Units: ml/hr									
Total Settleable Solids	EPA 160.5	5C26051	0.10	0.10	ND	1	03/26/05	03/26/05	
Sample ID: IOC2093-01 (Outfall 001 - Water)									
Reporting Units: NTU									
Turbidity	EPA 180.1	5C26056	0.040	1.0	5.1	1	03/26/05	03/26/05	
Sample ID: IOC2093-01 (Outfall 001 - Water)									
Reporting Units: ug/l									
Total Cyanide	EPA 335.2	5C29055	2.2	5.0	ND	1	03/29/05	03/29/05	
Perchlorate	EPA 314.0	5C28053	0.80	4.0	ND	1	03/28/05	03/28/05	
Sample ID: IOC2093-01 (Outfall 001 - Water)									
Reporting Units: umhos/cm									
Specific Conductance	EPA 120.1	5C28081	1.0	1.0	290	1	03/28/05	03/28/05	

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

Project ID: Routine Outfall 001

Report Number: IOC2093

Sampled: 03/26/05
 Received: 03/26/05

SHORT HOLD TIME DETAIL REPORT

Sample ID: Outfall 001 (IOC2093-01) - Water	Hold Time (in days)	Date/Time Sampled	Date/Time Received	Date/Time Extracted	Date/Time Analyzed
EPA 160.5	2	03/26/2005 09:06	03/26/2005 12:50	03/26/2005 14:00	03/26/2005 15:00
EPA 180.1	2	03/26/2005 09:06	03/26/2005 12:50	03/26/2005 14:00	03/26/2005 15:00
EPA 300.0	2	03/26/2005 09:06	03/26/2005 12:50	03/26/2005 13:00	03/26/2005 15:51
EPA 405.1	2	03/26/2005 09:06	03/26/2005 12:50	03/26/2005 15:31	03/31/2005 09:30
SM5540-C	2	03/26/2005 09:06	03/26/2005 12:50	03/26/2005 16:00	03/26/2005 16:19

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MWH-Pasadena/Boeing 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Attention: Bronwyn Kelly	Project ID: Routine Outfall 001 Report Number: IOC2093	Sampled: 03/26/05 Received: 03/26/05
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METHOD BLANK/QC DATA

PURGEABLES BY GC/MS (EPA 624)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5C28023 Extracted: 03/28/05										
Blank Analyzed: 03/28/2005 (5C28023-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	0.32	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	0.52	ug/l						
Surrogate: Dibromofluoromethane	26.0			ug/l	25.0		104		80-120	
Surrogate: Toluene-d8	25.0			ug/l	25.0		100		80-120	
Surrogate: 4-Bromofluorobenzene	23.9			ug/l	25.0		96		80-120	
LCS Analyzed: 03/28/2005 (5C28023-BS1)										
Benzene	23.0	2.0	0.28	ug/l	25.0		92		70-120	
Carbon tetrachloride	23.3	5.0	0.28	ug/l	25.0		93		70-140	
Chloroform	23.9	2.0	0.33	ug/l	25.0		96		75-130	
1,1-Dichloroethane	24.0	2.0	0.27	ug/l	25.0		96		70-135	
1,2-Dichloroethane	26.1	2.0	0.28	ug/l	25.0		104		60-150	
1,1-Dichloroethene	23.8	3.0	0.32	ug/l	25.0		95		75-135	
Ethylbenzene	22.2	2.0	0.25	ug/l	25.0		89		80-120	
Tetrachloroethene	21.9	2.0	0.32	ug/l	25.0		88		75-125	
Toluene	22.9	2.0	0.36	ug/l	25.0		92		75-120	
1,1,1-Trichloroethane	22.9	2.0	0.30	ug/l	25.0		92		75-140	
1,1,2-Trichloroethane	24.4	2.0	0.30	ug/l	25.0		98		70-125	
Trichloroethene	23.7	5.0	0.26	ug/l	25.0		95		80-120	
Trichlorofluoromethane	24.3	5.0	0.34	ug/l	25.0		97		65-145	
Vinyl chloride	21.7	5.0	0.26	ug/l	25.0		87		50-130	
Surrogate: Dibromofluoromethane	26.3			ug/l	25.0		105		80-120	
Surrogate: Toluene-d8	25.1			ug/l	25.0		100		80-120	

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

Project ID: Routine Outfall 001

Report Number: IOC2093

Sampled: 03/26/05
 Received: 03/26/05

METHOD BLANK/QC DATA

PURGEABLES BY GC/MS (EPA 624)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5C28023 Extracted: 03/28/05										
LCS Analyzed: 03/28/2005 (5C28023-BS1)										
Surrogate: 4-Bromofluorobenzene	24.3			ug/l	25.0		97 80-120			
Matrix Spike Analyzed: 03/28/2005 (5C28023-MS1)										
Source: IOC2093-01										
Benzene	22.0	2.0	0.28	ug/l	25.0	ND	88 70-120			
Carbon tetrachloride	22.1	5.0	0.28	ug/l	25.0	ND	88 70-145			
Chloroform	23.1	2.0	0.33	ug/l	25.0	ND	92 70-135			
1,1-Dichloroethane	23.1	2.0	0.27	ug/l	25.0	ND	92 65-135			
1,2-Dichloroethane	25.3	2.0	0.28	ug/l	25.0	ND	101 60-150			
1,1-Dichloroethene	22.6	3.0	0.32	ug/l	25.0	ND	90 65-140			
Ethylbenzene	22.0	2.0	0.25	ug/l	25.0	ND	88 70-130			
Tetrachloroethene	21.6	2.0	0.32	ug/l	25.0	ND	86 70-130			
Toluene	21.9	2.0	0.36	ug/l	25.0	ND	88 70-120			
1,1,1-Trichloroethane	22.0	2.0	0.30	ug/l	25.0	ND	88 75-140			
1,1,2-Trichloroethane	23.5	2.0	0.30	ug/l	25.0	ND	94 60-135			
Trichloroethene	22.0	5.0	0.26	ug/l	25.0	ND	88 70-125			
Trichlorofluoromethane	23.0	5.0	0.34	ug/l	25.0	ND	92 55-145			
Vinyl chloride	17.8	5.0	0.26	ug/l	25.0	ND	71 40-135			
Surrogate: Dibromofluoromethane	26.7			ug/l	25.0		107 80-120			
Surrogate: Toluene-d8	25.1			ug/l	25.0		100 80-120			
Surrogate: 4-Bromofluorobenzene	24.6			ug/l	25.0		98 80-120			
Matrix Spike Dup Analyzed: 03/28/2005 (5C28023-MSD1)										
Source: IOC2093-01										
Benzene	22.3	2.0	0.28	ug/l	25.0	ND	89 70-120	1	20	
Carbon tetrachloride	22.7	5.0	0.28	ug/l	25.0	ND	91 70-145	3	25	
Chloroform	23.0	2.0	0.33	ug/l	25.0	ND	92 70-135	0	20	
1,1-Dichloroethane	22.8	2.0	0.27	ug/l	25.0	ND	91 65-135	1	20	
1,2-Dichloroethane	25.4	2.0	0.28	ug/l	25.0	ND	102 60-150	0	20	
1,1-Dichloroethene	21.9	3.0	0.32	ug/l	25.0	ND	88 65-140	3	20	
Ethylbenzene	22.3	2.0	0.25	ug/l	25.0	ND	89 70-130	1	20	
Tetrachloroethene	21.8	2.0	0.32	ug/l	25.0	ND	87 70-130	1	20	
Toluene	22.2	2.0	0.36	ug/l	25.0	ND	89 70-120	1	20	
1,1,1-Trichloroethane	22.9	2.0	0.30	ug/l	25.0	ND	92 75-140	4	20	
1,1,2-Trichloroethane	24.0	2.0	0.30	ug/l	25.0	ND	96 60-135	2	25	
Trichloroethene	22.4	5.0	0.26	ug/l	25.0	ND	90 70-125	2	20	
Trichlorofluoromethane	23.1	5.0	0.34	ug/l	25.0	ND	92 55-145	0	25	
Vinyl chloride	18.5	5.0	0.26	ug/l	25.0	ND	74 40-135	4	30	

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MWH-Pasadena/Boeing 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Attention: Bronwyn Kelly	Project ID: Routine Outfall 001	Report Number: IOC2093	Sampled: 03/26/05 Received: 03/26/05
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METHOD BLANK/QC DATA

PURGEABLES BY GC/MS (EPA 624)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	RPD	RPD Limit	Data Qualifiers
Batch: 5C28023 Extracted: 03/28/05										
Matrix Spike Dup Analyzed: 03/28/2005 (5C28023-MSD1)										
Surrogate: Dibromofluoromethane	26.1			ug/l	25.0	104	80-120			
Surrogate: Toluene-d8	25.1			ug/l	25.0	100	80-120			
Surrogate: 4-Bromofluorobenzene	24.6			ug/l	25.0	98	80-120			

Source: IOC2093-01

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

Project ID: Routine Outfall 001

Report Number: IOC2093

Sampled: 03/26/05

Received: 03/26/05

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	RPD Limit	Data Qualifiers
Batch: 5C28041 Extracted: 03/28/05										
Blank Analyzed: 03/31/2005 (5C28041-BLK1)										
Bis(2-ethylhexyl)phthalate	ND	5.0	1.1	ug/l						
2,4-Dinitrotoluene	ND	9.0	0.23	ug/l						
N-Nitrosodimethylamine	ND	8.0	0.22	ug/l						
Pentachlorophenol	ND	8.0	0.78	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	13.7			ug/l	20.0		68	35-120		
Surrogate: 2,4,6-Tribromophenol	16.5			ug/l	20.0		82	45-120		
Surrogate: Nitrobenzene-d5	6.94			ug/l	10.0		69	45-120		
Surrogate: 2-Fluorobiphenyl	7.28			ug/l	10.0		73	45-120		
Surrogate: Terphenyl-d14	8.40			ug/l	10.0		84	45-120		
LCS Analyzed: 03/31/2005 (5C28041-BS1)										
Bis(2-ethylhexyl)phthalate	9.16	5.0	1.1	ug/l	10.0		92	60-130		M-NR1
2,4-Dinitrotoluene	8.00	9.0	0.23	ug/l	10.0		80	60-120		J
N-Nitrosodimethylamine	7.40	8.0	0.22	ug/l	10.0		74	40-120		J
Pentachlorophenol	8.86	8.0	0.78	ug/l	10.0		89	50-120		
2,4,6-Trichlorophenol	8.76	6.0	0.10	ug/l	10.0		88	60-120		
Surrogate: 2-Fluorophenol	13.3			ug/l	20.0		66	30-120		
Surrogate: Phenol-d6	13.1			ug/l	20.0		66	35-120		
Surrogate: 2,4,6-Tribromophenol	16.0			ug/l	20.0		80	45-120		
Surrogate: Nitrobenzene-d5	6.70			ug/l	10.0		67	45-120		
Surrogate: 2-Fluorobiphenyl	7.58			ug/l	10.0		76	45-120		
Surrogate: Terphenyl-d14	8.10			ug/l	10.0		81	45-120		
LCS Dup Analyzed: 03/31/2005 (5C28041-BSD1)										
Bis(2-ethylhexyl)phthalate	9.30	5.0	1.1	ug/l	10.0		93	60-130	2	20
2,4-Dinitrotoluene	8.46	9.0	0.23	ug/l	10.0		85	60-120	6	20
N-Nitrosodimethylamine	7.56	8.0	0.22	ug/l	10.0		76	40-120	2	20
Pentachlorophenol	9.04	8.0	0.78	ug/l	10.0		90	50-120	2	25
2,4,6-Trichlorophenol	9.06	6.0	0.10	ug/l	10.0		91	60-120	3	20
Surrogate: 2-Fluorophenol	13.5			ug/l	20.0		68	30-120		
Surrogate: Phenol-d6	13.7			ug/l	20.0		68	35-120		
Surrogate: 2,4,6-Tribromophenol	16.7			ug/l	20.0		84	45-120		
Surrogate: Nitrobenzene-d5	7.00			ug/l	10.0		70	45-120		
Surrogate: 2-Fluorobiphenyl	7.96			ug/l	10.0		80	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 001 Report Number: IOC2093	Sampled: 03/26/05 Received: 03/26/05
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METHOD BLANK/QC DATA

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

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	RPD RPD	RPD Limit	Data Qualifiers
Batch: 5C28041 Extracted: 03/28/05										
LCS Dup Analyzed: 03/31/2005 (5C28041-BSD1)										
Surrogate: Terphenyl-d14	8.22			ug/l	10.0		82		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 001

Report Number: IOC2093

Sampled: 03/26/05
 Received: 03/26/05

METHOD BLANK/QC DATA

ORGANOCHLORINE PESTICIDES (EPA 608)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	Limit	RPD	RPD Limit	Data Qualifiers
Batch: 5C28048 Extracted: 03/28/05											
Blank Analyzed: 03/29/2005 (5C28048-BLK1)											
alpha-BHC	ND	0.010	0.0010	ug/l							
Surrogate: Decachlorobiphenyl	0.383			ug/l	0.500		77	45-120			
Surrogate: Tetrachloro-m-xylene	0.350			ug/l	0.500		70	35-115			
LCS Analyzed: 03/29/2005 (5C28048-BS1)											
alpha-BHC	0.372	0.010	0.0010	ug/l	0.500		74	45-115			M-NR1
Surrogate: Decachlorobiphenyl	0.372			ug/l	0.500		74	45-120			
Surrogate: Tetrachloro-m-xylene	0.337			ug/l	0.500		67	35-115			
LCS Dup Analyzed: 03/29/2005 (5C28048-BSD1)											
alpha-BHC	0.322	0.010	0.0010	ug/l	0.500		64	45-115	14	30	
Surrogate: Decachlorobiphenyl	0.344			ug/l	0.500		69	45-120			
Surrogate: Tetrachloro-m-xylene	0.289			ug/l	0.500		58	35-115			

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

Project ID: Routine Outfall 001

Report Number: IOC2093

Sampled: 03/26/05
 Received: 03/26/05

METHOD BLANK/QC DATA

METALS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	RPD Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5C28057 Extracted: 03/28/05											
Blank Analyzed: 03/28/2005 (5C28057-BLK1)											
Mercury	ND	0.20	0.063	ug/l							
LCS Analyzed: 03/28/2005 (5C28057-BS1)											
Mercury	7.91	0.20	0.063	ug/l	8.00		99	85-115			
Matrix Spike Analyzed: 03/28/2005 (5C28057-MS1)											
Mercury	7.22	0.20	0.063	ug/l	8.00	ND	90	70-130			
Matrix Spike Dup Analyzed: 03/28/2005 (5C28057-MSD1)											
Mercury	8.20	0.20	0.063	ug/l	8.00	ND	102	70-130	13	20	
Batch: 5C28060 Extracted: 03/28/05											
Blank Analyzed: 03/28/2005 (5C28060-BLK1)											
Copper	ND	2.0	0.49	ug/l							
Lead	ND	1.0	0.13	ug/l							
LCS Analyzed: 03/28/2005 (5C28060-BS1)											
Copper	80.0	2.0	0.49	ug/l	80.0		100	85-115			
Lead	86.0	1.0	0.13	ug/l	80.0		108	85-115			
Matrix Spike Analyzed: 03/28/2005 (5C28060-MS1)											
Copper	79.1	2.0	0.49	ug/l	80.0	2.7	96	70-130			
Lead	86.3	1.0	0.13	ug/l	80.0	0.33	107	70-130			
Matrix Spike Dup Analyzed: 03/28/2005 (5C28060-MSD1)											
Copper	78.7	2.0	0.49	ug/l	80.0	2.7	95	70-130	1	20	
Lead	87.3	1.0	0.13	ug/l	80.0	0.33	109	70-130	1	20	

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METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	RPD RPD	RPD Limit	Data Qualifiers
Batch: 5C26034 Extracted: 03/26/05										
Blank Analyzed: 03/26/2005 (5C26034-BLK1)										
Chloride	ND	0.50	0.26	mg/l						
Nitrate/Nitrite-N	ND	0.11	0.072	mg/l						
Sulfate	ND	0.50	0.18	mg/l						
LCS Analyzed: 03/26/2005 (5C26034-BS1)										
Chloride	5.08	0.50	0.26	mg/l	5.00		102		90-110	
Sulfate	10.5	0.50	0.18	mg/l	10.0		105		90-110	
Matrix Spike Analyzed: 03/26/2005 (5C26034-MS1)										
						Source: IOC2093-01				
Chloride	19.4	0.50	0.26	mg/l	5.00	14	108		80-120	
Sulfate	49.7	0.50	0.18	mg/l	10.0	39	107		80-120	
Matrix Spike Dup Analyzed: 03/26/2005 (5C26034-MSD1)										
						Source: IOC2093-01				
Chloride	19.3	0.50	0.26	mg/l	5.00	14	106		80-120	1 20
Sulfate	49.5	0.50	0.18	mg/l	10.0	39	105		80-120	0 20
Batch: 5C26052 Extracted: 03/26/05										
Blank Analyzed: 03/31/2005 (5C26052-BLK1)										
Biochemical Oxygen Demand	ND	2.0	0.59	mg/l						
LCS Analyzed: 03/31/2005 (5C26052-BS1)										
Biochemical Oxygen Demand	212	100	30	mg/l	198		107		85-115	
LCS Dup Analyzed: 03/31/2005 (5C26052-BSD1)										
Biochemical Oxygen Demand	210	100	30	mg/l	198		106		85-115	1 20

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METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	RPD Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5C26055 Extracted: 03/26/05											
Blank Analyzed: 03/26/2005 (5C26055-BLK1)											
Surfactants (MBAS)	ND	0.10	0.044	mg/l							
LCS Analyzed: 03/26/2005 (5C26055-BS1)											
Surfactants (MBAS)	0.249	0.10	0.044	mg/l	0.250		100	90-110			
Matrix Spike Analyzed: 03/26/2005 (5C26055-MS1)											
Surfactants (MBAS)	0.310	0.10	0.044	mg/l	0.250	0.063	99	50-125			
Matrix Spike Dup Analyzed: 03/26/2005 (5C26055-MSD1)											
Surfactants (MBAS)	0.304	0.10	0.044	mg/l	0.250	0.063	96	50-125	2	20	
Batch: 5C26056 Extracted: 03/26/05											
Blank Analyzed: 03/26/2005 (5C26056-BLK1)											
Turbidity	0.0500	1.0	0.040	NTU							J
Duplicate Analyzed: 03/26/2005 (5C26056-DUP1)											
Turbidity	11.9	1.0	0.040	NTU							
Batch: 5C28053 Extracted: 03/28/05											
Blank Analyzed: 03/28/2005 (5C28053-BLK1)											
Perchlorate	ND	4.0	0.80	ug/l							
LCS Analyzed: 03/28/2005 (5C28053-BS1)											
Perchlorate	49.9	4.0	0.80	ug/l	50.0		100	85-115			

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INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	RPD RPD	RPD Limit	Data Qualifiers
Batch: 5C28053 Extracted: 03/28/05										
Matrix Spike Analyzed: 03/28/2005 (5C28053-MS1)										
Perchlorate	50.2	4.0	0.80	ug/l	50.0	ND	100	80-120		
						Source: IOC2011-03				
Matrix Spike Dup Analyzed: 03/28/2005 (5C28053-MSD1)										
Perchlorate	51.6	4.0	0.80	ug/l	50.0	ND	103	80-120	3	20
						Source: IOC2011-03				
Batch: 5C28067 Extracted: 03/28/05										
Blank Analyzed: 03/28/2005 (5C28067-BLK1)										
Ammonia-N (Distilled)	ND	0.50	0.30	mg/l						
LCS Analyzed: 03/28/2005 (5C28067-BS1)										
Ammonia-N (Distilled)	9.80	0.50	0.30	mg/l	10.0		98	80-115		
						Source: IOC2120-01				
Matrix Spike Analyzed: 03/28/2005 (5C28067-MS1)										
Ammonia-N (Distilled)	9.80	0.50	0.30	mg/l	10.0	ND	98	70-120		
						Source: IOC2120-01				
Matrix Spike Dup Analyzed: 03/28/2005 (5C28067-MSD1)										
Ammonia-N (Distilled)	8.96	0.50	0.30	mg/l	10.0	ND	90	70-120	9	15
						Source: IOC2120-01				
Batch: 5C28069 Extracted: 03/28/05										
Blank Analyzed: 03/28/2005 (5C28069-BLK1)										
Oil & Grease	ND	5.0	0.94	mg/l						
LCS Analyzed: 03/28/2005 (5C28069-BS1)										
Oil & Grease	19.7	5.0	0.94	mg/l	20.0		98	65-120		M-NR1

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 Attention: Bronwyn Kelly

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METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	RPD RPD	RPD Limit	Data Qualifiers
Batch: 5C28069 Extracted: 03/28/05										
LCS Dup Analyzed: 03/28/2005 (5C28069-BSD1)										
Oil & Grease	19.1	5.0	0.94	mg/l	20.0		96	65-120	3	20
Batch: 5C28078 Extracted: 03/28/05										
Blank Analyzed: 03/28/2005 (5C28078-BLK1)										
Total Dissolved Solids	ND	10	10	mg/l						
LCS Analyzed: 03/28/2005 (5C28078-BS1)										
Total Dissolved Solids	956	10	10	mg/l	1000		96	90-110		
Duplicate Analyzed: 03/28/2005 (5C28078-DUP1)										
Total Dissolved Solids	288	10	10	mg/l		Source: IOC1740-01 280			3	10
Batch: 5C28081 Extracted: 03/28/05										
Duplicate Analyzed: 03/28/2005 (5C28081-DUP1)										
Specific Conductance	507	1.0	1.0	umhos/cm		Source: IOC1740-01 500			1	5
Batch: 5C29055 Extracted: 03/29/05										
Blank Analyzed: 03/29/2005 (5C29055-BLK1)										
Total Cyanide	ND	5.0	2.2	ug/l						
LCS Analyzed: 03/29/2005 (5C29055-BS1)										
Total Cyanide	192	5.0	2.2	ug/l	200		96	90-110		

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METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	RPD Limits	RPD RPD	RPD Limit	Data Qualifiers
Batch: 5C29055 Extracted: 03/29/05											
Matrix Spike Analyzed: 03/29/2005 (5C29055-MS1)											
Total Cyanide	171	5.0	2.2	ug/l	200	ND	86	70-115			
Matrix Spike Dup Analyzed: 03/29/2005 (5C29055-MSD1)											
Total Cyanide	191	5.0	2.2	ug/l	200	ND	96	70-115	11	15	
Batch: 5C29059 Extracted: 03/29/05											
Blank Analyzed: 03/29/2005 (5C29059-BLK1)											
Total Suspended Solids	ND	10	10	mg/l							
LCS Analyzed: 03/29/2005 (5C29059-BS1)											
Total Suspended Solids	945	10	10	mg/l	1000		94	85-115			
Duplicate Analyzed: 03/29/2005 (5C29059-DUP1)											
Total Suspended Solids	25.0	10	10	mg/l					33	10	R-9

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Compliance Check

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

LabNumber	Analysis	Analyte	Units	Result	MRL	Compliance Limit
IOC2093-01	413.1 Oil and Grease	Oil & Grease	mg/l	0	5.0	10.00
IOC2093-01	608-Pest Boeing 001/002 Q (LL)	alpha-BHC	ug/l	0	0.010	0.0100
IOC2093-01	624-Boeing 001/002 Q (Fr113+X)	1,1-Dichloroethene	ug/l	0	3.0	3.20
IOC2093-01	624-Boeing 001/002 Q (Fr113+X)	Trichloroethene	ug/l	0	5.0	5.00
IOC2093-01	625-Boeing 001/002 Q-LL	2,4,6-Trichlorophenol	ug/l	0	6.0	6.50
IOC2093-01	625-Boeing 001/002 Q-LL	2,4-Dinitrotoluene	ug/l	0	9.0	9.10
IOC2093-01	625-Boeing 001/002 Q-LL	Bis(2-ethylhexyl)phthalate	ug/l	0.88	5.0	4.00
IOC2093-01	625-Boeing 001/002 Q-LL	N-Nitrosodimethylamine	ug/l	0	8.0	8.10
IOC2093-01	625-Boeing 001/002 Q-LL	Pentachlorophenol	ug/l	0	8.0	8.20
IOC2093-01	BOD	Biochemical Oxygen Demand	mg/l	0.79	2.0	20
IOC2093-01	Chloride - 300.0	Chloride	mg/l	14	0.50	150
IOC2093-01	Copper-200.8	Copper	ug/l	2.70	2.0	7.10
IOC2093-01	Cyanide-335.2 5ppb	Total Cyanide	ug/l	-4	5.0	4.30
IOC2093-01	Lead-200.8	Lead	ug/l	0.33	1.0	2.60
IOC2093-01	MBAS - SM5540-C	Surfactants (MBAS)	mg/l	0.063	0.10	0.50
IOC2093-01	Mercury - 245.1	Mercury	ug/l	0.019	0.20	0.20
IOC2093-01	Nitrogen, NO3+NO2 -N	Nitrate/Nitrite-N	mg/l	0.12	0.11	8.00
IOC2093-01	Perchlorate 314.0	Perchlorate	ug/l	0.018	4.0	6.00
IOC2093-01	Sulfate-300.0	Sulfate	mg/l	39	0.50	300
IOC2093-01	TDS - SM 2540C	Total Dissolved Solids	mg/l	200	10	950
IOC2093-02	624-Boeing 001/002 Q (Fr113+X)	1,1-Dichloroethene	ug/l	0	3.0	3.20
IOC2093-02	624-Boeing 001/002 Q (Fr113+X)	Trichloroethene	ug/l	0	5.0	5.00

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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 unknown quality.
- M-NR1** There was no MS/MSD analyzed with this batch due to insufficient sample volume. See Blank Spike/Blank Spike Duplicate.
- R-9** Sample RPD exceeded the laboratory control limit.
- ND** Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified.
- RPD** Relative Percent Difference

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Certification Summary

Del Mar Analytical, Irvine

Method	Matrix	Nelac	California
EPA 120.1	Water	X	X
EPA 160.2	Water	X	X
EPA 160.5	Water	X	X
EPA 180.1	Water	X	X
EPA 200.8	Water	X	X
EPA 245.1	Water	X	X
EPA 300.0	Water	X	X
EPA 314.0	Water	X	X
EPA 335.2	Water	X	X
EPA 350.2	Water	X	X
EPA 405.1	Water	X	X
EPA 413.1	Water	X	X
EPA 608	Water	X	X
EPA 624	Water	X	X
EPA 625	Water	X	X
SM2540C	Water	X	X
SM5540-C	Water	X	X

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

Subcontracted Laboratories

Alta Analytical California Cert #1640

1104 Windfield Way - El Dorado Hills, CA 95762

Analysis Performed: 1613-Dioxin-HR
 Samples: IOC2093-01

Analysis Performed: EDD + Level 4
 Samples: IOC2093-01

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DOC20913

CHAIN OF CUSTODY FORM

Del Mar Analytical Version 02/17/05

Client Name/Address:		Project:		Project Manager:		Sampler:		Phone Number:		Fax Number:										
MWH-Pasadena 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101		Boeing-SSFL NPDES Routine Outfall 001		Bronwyn Kelly		B. Kelly		(626) 568-6691		(626) 568-6515										
Sample Description	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	Cu, Pb, Hg	Settleable Solids	VOCs 624 + xylenes	TCDD (and all congeners)	Oil & Grease (EPA 413.1)	Cyanide (total recoverable)	BOD5(20 degrees C)	Surfactants (MBAS)	Cl-, SO4, NO3+NO2-N, Perchlorate	Turbidity, TDS, TSS, Conductivity	Ammonia-N	2,4,6 Trichlorophenol, 2,4-Dinitrotoluene, Bis(2-ethylhexyl)phthalate, NDMA, pentachlorophenol (EPA 625)	Field readings: Temp = 55.8 pH = 6.8	Comments	
Outfall 001	W	Poly-1L	1	HNO3	1A	X														
Outfall 001-Dup	W	Poly-1L	1	HNO3	1B	X													24 TAT	
Outfall 001	W	Poly-1L	1	None	2		X												24 TAT	
Outfall 001	W	VOAs	3	HCl	3A, 3B, 3C			X												
Outfall 001	W	1L Amber	2	None	4A, 4B				X											
Outfall 001	W	1L Amber	2	HCl	5A, 5B					X									24 TAT	
Outfall 001	W	Poly-500 ml	1	NaOH	6						X								24 TAT	
Outfall 001	W	Poly-1L	1	None	7							X							24 TAT	
Outfall 001	W	Poly-500 ml	2	None	8A, 8B								X							
Outfall 001	W	Poly-500 ml	2	None	9A, 9B									X						
Outfall 001	W	Poly-500 ml	2	None	10A, 10B										X					
Outfall 001	W	Poly-500 ml	1	H2SO4	11											X				
Outfall 001	W	1L Amber	2	None	12A, 12B															
Outfall 001	W	1L Amber	2	None	13A, 13B												X			
Trip Blank	W	VOAs	3	HCl	14A, 14B, 14C			X												
Relinquished By	Date/Time:		Received By		Date/Time:		Date/Time:		Date/Time:		Date/Time:		Date/Time:		Date/Time:		Date/Time:		Date/Time:	
B. Kelly	3-26-05 10:42		J. Kelly		3-26-05 10:42		3-26-05		3-26-05		3-26-05		3-26-05		3-26-05		3-26-05		3-26-05	
J. Kelly	3-26-05 12:50		J. Kelly		3-26-05 12:50		3-26-05		3-26-05		3-26-05		3-26-05		3-26-05		3-26-05		3-26-05	
J. Kelly	3-26-05 12:50		J. Kelly		3-26-05 12:50		3-26-05		3-26-05		3-26-05		3-26-05		3-26-05		3-26-05		3-26-05	

VB

Vu Bank 3-26-05 12:50

Turn around Time: (check)
 24 Hours _____ 5 Days _____
 48 Hours _____ 10 Days _____
 72 Hours _____ Normal _____
 Perchlorate Only 72 Hours _____
 Metals Only 72 Hours _____
 Sample Integrity: (Check) On Ice: _____



2852 Alton Ave., Irvine CA 92606 (949) 261-1022 FAX (949) 261-1228
1014 E. Cooley Dr., Suite A, Colton, CA 92324 (909) 370-4667 FAX (949) 370-1046
9484 Chesapeake Dr., Suite 805, San Diego, CA 92123 (858) 505-8596 FAX (858) 505-9689
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

April 5, 2005

MWH-Pasadena/Boeing
300 North Lake Avenue, Suite 1200
Pasadena, CA 91101

Attention: Bronwyn Kelly
Projects: Routine Outfall 001
Sampled: 03/26/05
Del Mar Analytical Number: IOC2093

Dear Ms. Kelly:

Alta Analytical Laboratory performed EPA Method 1613 by Dioxin analyses for the project referenced above. Please use the following cross-reference table when reviewing your results.

MWH ID	DEL MAR ID	ALTA ID
Outfall 001	IOC2093-01	25970-001

Attached is the original report from the subcontract laboratory. If you have any questions or require further assistance, please do not hesitate to contact me.

Sincerely yours,
DEL MAR ANALYTICAL


Michele Harper
Project Manager



April 02, 2005

Alta Project I.D.: 25970

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

Dear Ms. Harper,

Enclosed are the results for the one aqueous sample received at Alta Analytical Laboratory on March 29, 2005 under your Project Name "IOC2093". This sample was extracted and analyzed using EPA Method 1613 for tetra-through-octa chlorinated dioxins and furans. A rush turnaround time was provided for this work.

Results qualified with an "A" are lower than the EPA Method 1613 Minimum Level, and above the lower calibration limit.

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. Maier
Director of HRMS Services



The Analytical Laboratory hereby certifies that the report on the above analysis was prepared in accordance with NELAP procedures and standards. This statement is subject to the conditions of the contract and without the written approval of NELAP.



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: 3/29/2005

Alta Lab. ID

Client Sample ID

25970-001

IOC2093-01

SECTION II



Method Blank **EPA Method 1613**

Matrix:	Aqueous	QC Batch No.:	6653	Lab Sample:	0-MB001
Sample Size:	1.000 L	Date Extracted:	30-Mar-05	Date Analyzed DB-5:	31-Mar-05
Analyte	Conc. (ug/L)	DL ^a	EMPC ^b	%R	LCL-UCL ^d Qualifiers
2,3,7,8-TCDD	ND	0.000000554		85.8	25 - 164
1,2,3,7,8-PeCDD	ND	0.000000438		89.3	25 - 181
1,2,3,4,7,8-HxCDD	ND	0.000000693		78.7	32 - 141
1,2,3,6,7,8-HxCDD	ND	0.000000669		92.3	28 - 130
1,2,3,7,8,9-HxCDD	ND	0.000000673		77.2	23 - 140
1,2,3,4,6,7,8-HpCDD	ND	0.000000795		50.0	17 - 157
OCDD	ND	0.00000232		91.1	24 - 169
2,3,7,8-TCDF	ND	0.000000436		89.9	24 - 185
1,2,3,7,8-PeCDF	ND	0.000000695		96.8	21 - 178
2,3,4,7,8-PeCDF	ND	0.000000592		77.8	26 - 152
1,2,3,4,7,8-HxCDF	ND	0.000000264		87.0	26 - 123
1,2,3,6,7,8-HxCDF	ND	0.000000253		84.8	28 - 136
2,3,4,6,7,8-HxCDF	ND	0.000000263		80.9	29 - 147
1,2,3,7,8,9-HxCDF	ND	0.000000408		72.1	28 - 143
1,2,3,4,6,7,8-HpCDF	ND	0.000000381		76.9	26 - 138
1,2,3,4,7,8,9-HpCDF	ND	0.000000359		57.9	17 - 157
OCDF	ND	0.00000147		90.5	35 - 197
Totals					
Total TCDD	ND	0.000000554			
Total PeCDD	ND	0.000000438			
Total HxCDD	ND	0.000000677			
Total HpCDD	ND	0.000000795			
Total TCDF	ND	0.000000436			
Total PeCDF	ND	0.000000642			
Total HxCDF	ND	0.000000291			
Total HpCDF	ND	0.000000450			

Footnotes

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

Analyst: RAS

Approved By: William J. Luksemburg 01-Apr-2005 14:55



EPA Method 1613

OPR Results

Matrix: Aqueous		QC Batch No.: 6653	Lab Sample: 0-OPR001
Sample Size: 1,000 L		Date Extracted: 30-Mar-05	Date Analyzed DB-5: 31-Mar-05
Analyte	Spike Conc. (ng/mL)	OPR Limits	Labeled Standard
2,3,7,8-TCDD	10.0	6.7 - 15.8	IS 13C-2,3,7,8-TCDD
1,2,3,7,8-PeCDD	50.0	35 - 71	13C-1,2,3,7,8-PeCDD
1,2,3,4,7,8-HxCDD	50.0	35 - 82	13C-1,2,3,4,7,8-HxCDD
1,2,3,6,7,8-HxCDD	50.0	38 - 67	13C-1,2,3,6,7,8-HxCDD
1,2,3,7,8,9-HxCDD	50.0	32 - 81	13C-1,2,3,4,6,7,8-HpCDD
1,2,3,4,6,7,8-HpCDD	50.0	35 - 70	13C-OCDD
OCDD	100	78 - 144	13C-2,3,7,8-TCDF
2,3,7,8-TCDF	10.0	7.5 - 15.8	13C-1,2,3,7,8-PeCDF
1,2,3,7,8-PeCDF	50.0	40 - 67	13C-2,3,4,7,8-PeCDF
2,3,4,7,8-PeCDF	50.0	34 - 80	13C-1,2,3,4,7,8-HxCDF
1,2,3,4,7,8-HxCDF	50.0	36 - 67	13C-1,2,3,6,7,8-HxCDF
1,2,3,6,7,8-HxCDF	50.0	42 - 65	13C-2,3,4,6,7,8-HxCDF
2,3,4,6,7,8-HxCDF	50.0	35 - 78	13C-1,2,3,7,8,9-HxCDF
1,2,3,7,8,9-HxCDF	50.0	39 - 65	13C-1,2,3,4,6,7,8-HpCDF
1,2,3,4,6,7,8-HpCDF	50.0	41 - 61	13C-1,2,3,4,7,8,9-HpCDF
1,2,3,4,7,8,9-HpCDF	50.0	39 - 69	13C-OCDF
OCDF	100	63 - 170	CRS 37Cl-2,3,7,8-TCDD
			%R
			LCL-UCL
			68.5
			25 - 164
			68.2
			25 - 181
			88.5
			32 - 141
			101
			28 - 130
			70.5
			23 - 140
			38.0
			17 - 157
			75.2
			24 - 169
			66.3
			24 - 185
			72.3
			21 - 178
			88.8
			26 - 152
			97.3
			26 - 123
			86.3
			28 - 136
			84.2
			29 - 147
			69.1
			28 - 143
			76.9
			26 - 138
			49.3
			17 - 157
			74.7
			35 - 197

Analyst: RAS

Approved By: William J. Luksemburg 01-Apr-2005 14:22



Sample ID: IOC2093-01

EPA Method 1613

Client Data		Sample Data		Laboratory Data	
Name:	Del Mar Analytical, Irvine	Matrix:	Aqueous	Lab Sample:	25970-001
Project:	IOC2093	Sample Size:	0.985 L	QC Batch No.:	6653
Date Collected:	26-Mar-05			Date Analyzed DB-5:	31-Mar-05
Time Collected:	0906			Date Analyzed DB-225:	NA
				Date Received:	29-Mar-05
				Date Extracted:	30-Mar-05

Analyte	Conc. (ug/L)	DL ^a	EMPC ^b	Qualifiers	Labeled Standard	%R	LCL-UCL ^d	Qualifiers
2,3,7,8-TCDD	ND	0.000000609			13C-2,3,7,8-TCDD	76.1	25 - 164	
1,2,3,7,8-PeCDD	ND	0.000000490			13C-1,2,3,7,8-PeCDD	76.0	25 - 181	
1,2,3,4,7,8-HxCDD	ND	0.00000101			13C-1,2,3,4,7,8-HxCDD	95.5	32 - 141	
1,2,3,6,7,8-HxCDD	ND	0.00000101			13C-1,2,3,6,7,8-HxCDD	108	28 - 130	
1,2,3,7,8,9-HxCDD	ND	0.000000998		J	13C-1,2,3,4,6,7,8-HpCDD	72.7	23 - 140	
1,2,3,4,6,7,8-HpCDD	0.00000495				13C-OCDD	34.5	17 - 157	
OCDD	0.0000539							
2,3,7,8-TCDF	ND	0.000000402		A	13C-2,3,7,8-TCDF	83.8	24 - 169	
1,2,3,7,8-PeCDF	ND	0.000000809			13C-1,2,3,7,8-PeCDF	77.5	24 - 185	
2,3,4,7,8-PeCDF	ND	0.000000725			13C-2,3,4,7,8-PeCDF	80.9	21 - 178	
1,2,3,4,7,8-HxCDF	ND	0.000000300			13C-1,2,3,4,7,8-HxCDF	94.1	26 - 152	
1,2,3,6,7,8-HxCDF	ND	0.00000294			13C-1,2,3,6,7,8-HxCDF	102	26 - 123	
2,3,4,6,7,8-HxCDF	ND	0.000000334			13C-2,3,4,6,7,8-HxCDF	91.0	28 - 136	
1,2,3,7,8,9-HxCDF	ND	0.000000522			13C-1,2,3,7,8,9-HxCDF	87.2	29 - 147	
1,2,3,4,6,7,8-HpCDF	ND	0.000000690			13C-1,2,3,4,6,7,8-HpCDF	69.2	28 - 143	
1,2,3,4,7,8,9-HpCDF	ND	0.000000764			13C-1,2,3,4,7,8,9-HpCDF	80.5	26 - 138	
OCDF	ND	0.00000352			13C-OCDF	45.6	17 - 157	
					CRS 37Cl-2,3,7,8-TCDD	82.0	35 - 197	

Totals				Footnotes	
Total TCDD	ND	0.000000609			a. Sample specific estimated detection limit.
Total PeCDD	ND	0.000000490			b. Estimated maximum possible concentration.
Total HxCDD	ND	0.00000132			c. Method detection limit.
Total HpCDD	0.0000105		0.00000101		d. Lower control limit - upper control limit.
Total TCDF	0.000000434				
Total PeCDF	ND	0.000000766			
Total HxCDF	0.000000579		0.000000945		
Total HpCDF	0.00000172				

Analyst: RAS

Approved By: William J. Luksemburg 01-Apr-2005 14:55

APPENDIX

DATA QUALIFIERS & ABBREVIATIONS

B	This compound was also detected in the method blank.
D	The amount reported is the maximum possible concentration due to possible chlorinated diphenylether interference.
H	The signal-to-noise ratio is greater than 10:1.
I	Chemical Interference
J	The amount detected is below the Lower Calibration Limit of the instrument.
P	Homologue totals include any coplanar PCBs detected at concentrations less than the reporting limit.
*	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 correspond 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.

The control limits are “interim limits only” until in-house limits are utilized.

CURRENT CERTIFICATIONS



NELAP — (Primary AA: California, Certificate No. 02102CA)
Department of the Navy
U.S. Army Corps of Engineers
U.S. EPA Region 5
Bureau of Reclamation — Mid-Pacific Region — (MP-470, Res-1.10)
Commonwealth of Kentucky — (Certificate No. 90063)
Commonwealth of Virginia — (Certificate No. 00013)
State of Alaska, Department of Environmental Conservation — (Certificate No. OS-00197)
State of Arizona — (Certificate No. AZ0639)
State of Arkansas, Department of Health — (Approval granted through CA certification)
State of Arkansas, Department of Environmental Quality
State of California — (Certificate No. 1640)
State of Colorado
State of Connecticut — (Certificate No. PH-0182)
State of Florida — (Certificate No. 87456)
State of Louisiana, Department of Health and Hospitals — (Certificate No. LA000014)
State of Louisiana, Department of Environmental Quality
State of Maine
State of Michigan (Certificate No. 81178087)
State of Mississippi — (Approval granted through CA certification)
State of Nevada — (Certificate No. CA413)
State of New Jersey — (Certificate No. CA003)
State of New York, Department of Health — (Certificate No. 11411)
State of North Carolina — (Certification No. 06700)
State of North Dakota, Department of Health — (Certificate No. R-078)
State of New Mexico
State of Oklahoma — (D9919)
State of Oregon — (Certificate No. CA413)
State of Pennsylvania — (Certificate No. 68-490)
State of South Carolina — (Certificate No. 87002001)
State of Tennessee — (Certificate No. 02996)
State of Texas — (Certificate No. TX247-1000A)
State of Utah — (Certificate No. E-201)
State of Washington — (Certification No. C091)
State of Wisconsin — (Certificate No. 998036160)
State of Wyoming — (USEPA Region 8 Ref: 8TMS-Q)

09/28/04



Del Mar Analytical

17461 Derian Ave. Suite 100, Irvine, CA 92614

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Ph (619) 505-9596 Fax (619) 505-9889

9830 South 51st Street, Suite B-120, Phoenix, AZ 85044

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

2220 E. Sunset Rd., Suite #3, Las Vegas, NV 89120

Ph (702) 798-3820 Fax (702) 798-3821

SUBCONTRACT ORDER - PROJECT # IOC2093

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 Harper

RECEIVING LABORATORY:

Alta Analytical
1104 Windfield Way
El Dorado Hills, CA 95762
Phone: (916) 933-1640
Fax: (916) 933-0940

25970
0.4

Standard TAT is requested unless specific due date is requested => Due Date: 5 day Initials: _____

Analysis	Expiration	Comments
Sample ID: IOC2093-01 Water	Sampled: 03/26/05 09:06	Instant Notification
1613-Dioxin-HR	04/02/05 09:06	J flags, 17 congeners, no TEQ, sub to Alta
EDD + Level 4	04/23/05 09:06	Excel EDD email to pm, Include Std logs for Lvl IV
Containers Supplied:		
1 L Amber (IOC2093-01G)		
1 L Amber (IOC2093-01H)		

SAMPLE INTEGRITY:

All containers intact: Yes No Sample labels/COC agree: Yes No Samples Received On Ice: Yes No
 Custody Seals Present: Yes No Samples Preserved Properly: Yes No Samples Received at (temp): _____

Va Bank 3-28-05 1700 Bethna P. Benedict 3/29/05 0915
 Released By _____ Date _____ Time _____ Received By _____ Date _____ Time _____

Released By _____ Date _____ Time _____ Received By _____ Date _____ Time _____

STANDARD OPERATING PROCEDURE

Attachment 10.B.1

SAMPLE LOG-IN CHECKLIST

ALTA Project No.: 25970

1. Date Samples Arrived: <u>3/29/05</u> <u>0915</u> Initials: <u>CBB</u> Location: <u>WR-2</u>			
2. Time / Date logged in: <u>1050</u> <u>3/29/05</u> Initials: <u>CBB</u> Location: <u>WR-2</u>			
3. Samples Arrived By: (circle) <u>FedEx</u> UPS World Courier Other:			
4. Shipping Preservation: (circle) <u>Ice</u> <u>Blue Ice</u> / Dry Ice / None Temp °C <u>0.9</u>			
5. Shipping Container(s) Intact? If not, describe condition in comment section.	YES	NO	NA
6. Shipping Container(s) Custody Seals Present? Intact? If not intact, describe condition in comment section.	✓		
7. Shipping Documentation Present? (circle) Shipping Label <u>Airbill</u> Tracking Number <u>7904 7041 3771</u>	✓		
8. Sample Custody Seal(s) Present? No. of Seals _____ or Seal No. Intact? If not intact, describe condition in comment section.		✓	✓
9. Sample Container Intact? If no, indicate sample condition in comment section.	✓		
10. Chain of Custody (COC) or other Sample Documentation Present?	✓		
11. COC/Documentation Acceptable? If no, complete COC Anomaly Form.	✓		
12. Shipping Container (circle): ALTA <u>Client</u> Retain or <u>Return</u> or Disposed			
13. Container(s) and/or Bottle(s) Requested?		✓	
14. Drinking Water Sample? (HRMS Only) If yes, Acceptable Preservation? Y or N Preservation Info From? (circle) COC or Sample Container or None Noted			✓

Comments:

Samplers initials found on sample label

ALTA Analytical Laboratory
El Dorado Hills, CA 95762



LABORATORY REPORT

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

Project: Routine Outfall 001

Sampled: 03/26/05
Received: 03/26/05
Issued: 04/18/05 09:25

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.*

CASE NARRATIVE

- SAMPLE RECEIPT: Samples were received intact, at 5°C, on ice and with chain of custody documentation.
- HOLDING TIMES: All samples were analyzed within prescribed holding times and/or in accordance with the Del Mar Analytical Sample Acceptance Policy unless otherwise noted in the report.
- PRESERVATION: Samples requiring preservation were verified prior to sample analysis.
- QA/QC CRITERIA: All analyses met method criteria, except as noted in the report with data qualifiers.
- COMMENTS: Results that fall between the MDL and RL are 'J' flagged.
- SUBCONTRACTED: Refer to the last page for specific subcontract laboratory information included in this report.
- ADDITIONAL INFORMATION: Enclosed are results for Fe for validation purposes.

LABORATORY ID
IOC2093-01

CLIENT ID
Outfall 001

MATRIX
Water

Reviewed By:

Del Mar Analytical, Irvine
Michele Harper
Project Manager



Del Mar Analytical

17461 Derian Ave., Suite 100, Irvine, CA 92614 (949) 261-1022 FAX (949) 260-3297
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 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 001

Report Number: IOC2093

Sampled: 03/26/05

Received: 03/26/05

METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOC2093-01 (Outfall 001 - Water)									
Reporting Units: mg/l									
Iron	EPA 200.7	5D15095	0.0088	0.040	0.42	1	04/15/05	04/15/05	

Del Mar Analytical, Irvine
 Michele Harper
 Project Manager

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



Del Mar Analytical

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 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 001

Report Number: IOC2093

Sampled: 03/26/05

Received: 03/26/05

METHOD BLANK/QC DATA

METALS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	RPD Limits	RPD RPD	RPD Limit	Data Qualifiers
Batch: 5D15095 Extracted: 04/15/05											
Blank Analyzed: 04/15/2005 (5D15095-BLK1)											
Iron	ND	0.040	0.0088	mg/l							
LCS Analyzed: 04/15/2005 (5D15095-BS1)											
Iron	0.494	0.040	0.0088	mg/l	0.500		99	85-115			
Matrix Spike Analyzed: 04/15/2005 (5D15095-MS1)											
Iron	0.638	0.040	0.0088	mg/l	0.500	0.15	98	70-130			
Matrix Spike Dup Analyzed: 04/15/2005 (5D15095-MSD1)											
Iron	0.640	0.040	0.0088	mg/l	0.500	0.15	98	70-130	0	20	

Del Mar Analytical, Irvine
 Michele Harper
 Project Manager

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Del Mar Analytical

17461 Derian Ave., Suite 100, Irvine, CA 92614 (949) 261-1022 FAX (949) 260-3297
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 9484 Chesapeake Dr., Suite 805, San Diego, CA 92123 (858) 505-8596 FAX (858) 505-9689
 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 001

Report Number: IOC2093

Sampled: 03/26/05

Received: 03/26/05

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
IOC2093-01	Iron-200.7	Iron	mg/l	0.42	0.040	0.30

Del Mar Analytical, Irvine
 Michele Harper
 Project Manager

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

Project ID: Routine Outfall 001

Report Number: IOC2093

Sampled: 03/26/05

Received: 03/26/05

DATA QUALIFIERS AND DEFINITIONS

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

Del Mar Analytical, Irvine
Michele Harper
Project Manager

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IOC2093 <Page 5 of 6>



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

Project ID: Routine Outfall 001

Report Number: IOC2093

Sampled: 03/26/05

Received: 03/26/05

Certification Summary

Del Mar Analytical, Irvine

Method	Matrix	Nelac	California
EPA 200.7	Water	X	X

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

Del Mar Analytical, Irvine
 Michele Harper
 Project Manager

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

IO020913

CHAIN OF CUSTODY FORM

Del Mar Analytical Version 02/17/05

Client Name/Address: MWH-Pasadena 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101			Project: Boeing-SSFL NPDES Routine Outfall 001			ANALYSIS REQUIRED										Field readings: Temp = 55.8 pH = 6.8 Comments									
Project Manager: Bronwyn Kelly Sampler: <i>B Kelly</i>			Phone Number: (626) 588-6891 Fax Number: (626) 588-6515			Total Recoverable Metals: Cu, Pb, Hg										2,4,6 Trichlorophenol, 2,4 Dinitrofluorene, Bis(2- ethylhexyl)phthalate, NDMA, perchlorophenol (EPA 625)									
Sample Description	Sample Mixture	Container Type	# of Cont.	Sampling Date/Time	Preservative	Bottle #	Settleable Solids	VOCs 624 + xylenes	TCDD (and all congeners)	Oil & Grease (EPA 413.1)	Cyanide (total recoverable)	BOD5(20 degrees C)	Surfactants (MBAS)	Cl, SO4, NO3+NO2-N, Perchlorate	Turbidity, TDS, TSS, Conductivity	Ammonia-N	Alpha BHC (608)	24 TAT							
Outfall 001	W	Poly-1L	1	3-26-05 10:42	HNO3	1A	X											24 TAT							
Outfall 001-Dup	W	Poly-1L	1		HNO3	1B	X											24 TAT							
Outfall 001	W	Poly-1L	1		None	2																			
Outfall 001	W	VOAs	3		HCl	3A, 3B, 3C		X																	
Outfall 001	W	1L Amber	2		None	4A, 4B			X									24 TAT							
Outfall 001	W	1L Amber	2		HCl	5A, 5B												24 TAT							
Outfall 001	W	Poly-500 ml	1		NaOH	6			X																
Outfall 001	W	Poly-1L	1		None	7					X														
Outfall 001	W	Poly-500 ml	2		None	8A, 8B						X													
Outfall 001	W	Poly-500 ml	2		None	9A, 9B							X												
Outfall 001	W	Poly-500 ml	2		None	10A, 10B								X											
Outfall 001	W	Poly-500 ml	1		H2SO4	11									X										
Outfall 001	W	1L Amber	2		None	12A, 12B																			
Outfall 001	W	1L Amber	2		None	13A, 13B																			
Trip Blank	W	VOAs	3		HCl	14A, 14B, 14C		X																	
Relinquished By: <i>[Signature]</i>	Date/Time: 3-26-05 10:42	Received By: <i>[Signature]</i>	Date/Time: 3-26-05																Turn around Time: (check) 24 Hours _____ 5 Days _____ 48 Hours _____ 10 Days _____ 72 Hours _____ Normal _____						
Relinquished By: <i>[Signature]</i>	Date/Time: 3-26-05 12:50	Received By: <i>[Signature]</i>	Date/Time: 3-26-05																Perchlorate Only 72 Hours _____ Metals Only 72 Hours _____						
Relinquished By:	Date/Time:	Received By:	Date/Time:																Sample Integrity: (Check) <input checked="" type="checkbox"/> On lot: <input checked="" type="checkbox"/>						
Un Bank			3-26-05			1250																		✓	

(Handwritten initials)

(Handwritten signature)

Un Bank 3-26-05 1250

APPENDIX G

Section 28

March Outfall 002

AMEC Data Validation Reports

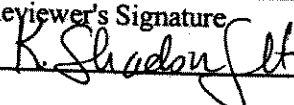
Del Mar Analytical Laboratory Reports

CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

AMEC Earth & Environmental
 550 South Wadsworth Boulevard
 Suite 500
 Lakewood, CO 80226

Package ID T711DF35
 Task Order 313150010
 SDG No. Multiple
 No. of Analyses 6

Laboratory Alta
 Reviewer K. Shadowlight
 Analysis/Method Dioxins

Date: March 23, 2005
 Reviewer's Signature


ACTION ITEMS ^a	
1. Case Narrative Deficiencies	
2. Out of Scope Analyses	
3. Analyses Not Conducted	
4. Missing Hardcopy Deliverables	
5. Incorrect Hardcopy Deliverables	
6. Deviations from Analysis Protocol, e.g.,	Qualifications were assigned for the following:
Holding Times	* EMPCs
GC/MS Tune/Inst. Performance	* Detects below the lower method calibration level
Calibration	
Method blanks	
Surrogates	
Matrix Spike/Dup LCS	
Field QC	
Internal Standard Performance	
Compound Identification and Quantitation	
System Performance	
COMMENTS ^b	

^a 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

ANALYSIS: DIOXINS/FURANS

SAMPLE DELIVERY GROUPS: Multiple SDGs

Prepared by

AMEC—Denver Operations
550 South Wadsworth Boulevard, Suite 500
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title: NPDES Monitoring
Contract Task Order #: 313150010
Sample Delivery Group #: Multiple
Project Manager: B. McIlvaine
Matrix: Water
Analysis: Dioxins/Furans
QC Level: Level IV
No. of Samples: 6
No. of Reanalyses/Dilutions: 0
Reviewer: K. Shadowlight
Date of Review: March 21, 2005

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

Table 1. Sample Identification

Client ID	Laboratory ID (Del Mar)	Laboratory ID (Alta)	Matrix	COC Method
Outfall 002	IOC0447-01	25853-001	water	1613
Outfall 003	IOC0449-01	25854-001	water	1613
Outfall 004	IOC0455-01	25855-001	water	1613
Outfall 005	IOC0451-01	25855-001	water	1613
Outfall 007	IOC0453-01	25856-001	water	1613
Outfall 011	IOC0448-01	25852-001	water	1613

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

Following are findings associated with sample management:

2.1.1 Sample Preservation, Handling, and Transport

All of the samples in these SDGs were received at Del Mar Analytical within the temperature limits of $4^{\circ}\text{C} \pm 2^{\circ}\text{C}$. The samples were shipped to Alta for dioxin/furan analyses and were received below the temperature limits at 1.3°C and 1.4°C ; however, as the samples were not noted to have been frozen or damaged, no qualifications were required. According to the laboratory login sheets, all samples were received intact and in good condition at both laboratories. No qualifications were required.

2.1.2 Chain of Custody

The COCs and transfer COCs were legible and signed by the appropriate field and laboratory personnel, and accounted for the analyses presented in these SDGs. As the samples were couriered directly to Del Mar Analytical, custody seals were not required. The coolers received by Alta had custody seals present and intact; however, custody seals were not present on the sample containers. The EPA 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 a year of collection. No qualifications were required.

2.2 INSTRUMENT PERFORMANCE

Following are findings associated with instrument performance:

2.2.1 GC Column Performance

A Windows Defining Mix (WDM) containing the first and last eluting congeners of each descriptor and isomer specificity compounds was not analyzed prior to the initial calibration sequence or at the beginning of each analytical sequence; however, the first and last eluting congeners and isomer specificity compounds were added to the midpoint of the initial calibration and to the continuing calibration standards (see section 2.3.2). The GC column performance in the calibrations was acceptable, with the height of the valley between the closely eluting isomers and 2,3,7,8-TCDD reported as less than 25%. No qualifications were required.

2.2.2 Mass Spectrometer Performance

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

2.3 CALIBRATION

2.3.1 Initial Calibration

There was one initial calibration, analyzed 08/30/04. The calibration consisted of six concentration level standards (CS0 through CS5) analyzed to verify instrument linearity. The initial calibration was acceptable with %RSDs $\leq 20\%$ for the 15 native compounds (calibration by isotope dilution) and $\leq 35\%$ for the two 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 VERs were acceptable with the concentrations within the acceptance criteria listed in Table 6 of EPA Method 1613. The ion abundance ratios and relative retention times were within the method QC limits. 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 standards 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 (6593-MB001) was extracted and analyzed with the samples in these SDGs. Total TCDF was reported at 1.4 pg/L and target compound 1,2,3,6,7,8-HxCDF was reported as an EMPC. The results for total TCDF in samples Outfall 003 and Outfall 011 were qualified as estimated nondetects "UJ," at the levels of interference. A review of the method blank raw data and chromatograms indicated no false negatives or false positives. No further qualifications were required.

2.5 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

One Ongoing Precision Recovery (OPR) sample (6593-OPR001) was extracted and analyzed with the samples in these SDGs. All recoveries were within the acceptance criteria listed in Table 6 of Method 1613. No qualifications were required.

2.6 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

MS/MSD analyses were not performed in these SDGs. 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 samples in these SDGs had no associated field QC samples. No qualifications were required.

2.7.2 Field Duplicates

No field duplicate samples were identified for these SDGs.

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. Any reported EMPC was qualified as an estimated nondetect, "UJ." Any detects below the lower method calibration level (MCL) were qualified as estimated, "J." The result for total TCDF in sample Outfall 003 was flagged by the laboratory with a "D" qualifier which indicated possible diphenylether interference; however, the result was qualified as a nondetect due to method blank contamination and no qualifications were required. No further qualifications were required.

Sample ID: IOC0447-01 outfall 002

EPA Method 1613

Client Data
 Name: Del Mar Analytical, Irvine
 Project: IOC0447
 Date Collected: 4-Mar-05
 Time Collected: 0926

Sample Data
 Matrix: Aqueous
 Sample Size: 0.988 L

Laboratory Data
 Lab Sample: 25853-001
 QC Batch No.: 6593
 Date Analyzed DB-5: 15-Mar-05
 Date Analyzed DB-225: NA

Date Received: 8-Mar-05
 Date Extracted: 11-Mar-05

Analyte	Conc. (pg/L)	DL ^a	EMPC ^b	Qualifiers	Labeled Standard	%R	LCL-UCL ^d	Qualifiers
2,3,7,8-TCDD	ND	0.877			IS 13C-2,3,7,8-TCDD	74.1	25 - 164	
1,2,3,7,8-PeCDD	ND	0.530			13C-1,2,3,7,8-PeCDD	73.1	25 - 181	
1,2,3,4,7,8-HxCDD	ND	1.15			13C-1,2,3,4,7,8-HxCDD	86.2	32 - 141	
1,2,3,6,7,8-HxCDD	ND	1.19			13C-1,2,3,6,7,8-HxCDD	94.1	28 - 130	
1,2,3,7,8,9-HxCDD	ND	1.17			13C-1,2,3,4,6,7,8-HpCDD	82.0	23 - 140	
1,2,3,4,6,7,8-HpCDD	0.862			J	13C-OCDD	56.0	17 - 157	
OCDD	6.50			J	13C-2,3,7,8-TCDF	77.3	24 - 169	
2,3,7,8-TCDF	ND	0.676			13C-1,2,3,7,8-PeCDF	67.5	24 - 185	
1,2,3,7,8-PeCDF	ND	1.16			13C-2,3,4,7,8-PeCDF	71.0	21 - 178	
2,3,4,7,8-PeCDF	ND	1.03			13C-1,2,3,4,7,8-HxCDF	74.3	26 - 152	
1,2,3,4,7,8-HxCDF	ND	0.324			13C-1,2,3,6,7,8-HxCDF	82.0	26 - 123	
1,2,3,6,7,8-HxCDF	ND	0.311			13C-2,3,4,6,7,8-HxCDF	80.7	28 - 136	
2,3,4,6,7,8-HxCDF	ND	0.359			13C-1,2,3,7,8,9-HxCDF	78.6	29 - 147	
1,2,3,7,8,9-HxCDF	ND	0.557			13C-1,2,3,4,6,7,8-HpCDF	76.6	28 - 143	
1,2,3,4,6,7,8-HpCDF	ND	0.799			13C-1,2,3,4,7,8,9-HpCDF	82.9	26 - 138	
1,2,3,4,7,8,9-HpCDF	ND	0.907			13C-OCDF	65.9	17 - 157	
OCDF	ND	2.67			CRS 37Cl-2,3,7,8-TCDD	76.7	35 - 197	

Totals

Total TCDD	ND	0.877		
Total PeCDD	ND	0.530		
Total HxCDD	ND	1.17		
Total HpCDD	1.66			
Total TCDF	ND	0.676		
Total PeCDF	ND	1.09		
Total HxCDF	ND	0.377		
Total HpCDF	ND	0.846		

Footnotes

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

Analyst: JMH
 Date Rec'd: 4/14/05
 Approved By: Martha M. Maier
 Date: 16-Mar-2005 13:04

Project 25853
 NOT VALIDATED

LABORATORY
 IV

CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

AMEC Earth & Environmental
550 South Wadsworth Boulevard
Suite 500
Lakewood, CO 80226

Package ID T711VO63
Task Order 313150010
SDG No. IOC0447, IOC0515


No. of Analyses 4

Laboratory Del Mar

Reviewer M. Pokorny

Analysis/Method Volatiles

Date: April 6, 2005

Reviewer's Signature


ACTION ITEMS^a

1. Case Narrative
Deficiencies

2. Out of Scope
Analyses

3. Analyses Not Conducted

4. Missing Hardcopy
Deliverables

5. Incorrect Hardcopy
Deliverables

6. Deviations from Analysis
Protocol, e.g.,
Holding Times
GC/MS Tune/Inst. Perform
Calibrations
Blanks
Surrogates
Matrix Spike/Dup LCS
Field QC
Internal Standard Performance
Compound Identification and
Quantitation
System Performance

Qualifications were required for calibration outlier.

COMMENTS^b

^a 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

ANALYSIS: VOLATILES

SAMPLE DELIVERY GROUP: IOC0447, IOC0515

Prepared by

AMEC Denver Operations
550 South Wadsworth Boulevard, Suite 500
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title: NPDES Monitoring
Contract Task Order #: 313150010
SDG#: IOC0447, IOC0515
Project Manager: B. McIlvaine
Matrix: Water
Analysis: Volatiles
QC Level: Level IV
No. of Samples: 4
No. of Reanalyses/Dilutions: 0
Reviewer: M. Pokorny
Date of Review: April 6, 2005

The samples listed in Table 1 were validated based on the guidelines outlined in the *AMEC Data Validation Procedure for Levels C and D Volatile Organics (DVP-2, Rev. 2)*, *EPA Method 624, SW846 Method 8260B*, 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 summary forms as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

Table 1. Sample identification

Client ID	EPA ID	Lab No.	Matrix	Method
Outfall 002	Outfall 002	IOB0447-01	water	624
Trip Blank	Trip Blank	IOB0447-02	water	624
Outfall 001	Outfall 001	IOB0515-01	water	624
Trip Blank	Trip Blank	IOB0515-02	water	624

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

The following are findings associated with sample management:

2.1.1 Sample Preservation, Handling, and Transport

The samples in these SDGs were received at the laboratory within the temperature limits of $4^{\circ}\text{C} \pm 2^{\circ}\text{C}$. The samples were properly preserved. The COCs noted that the samples were received intact; however, information regarding absence of headspace was not provided. No qualifications were required.

2.1.2 Chain of Custody

The COCs were signed and dated by both field and laboratory personnel. The COCs accounted for the analyses presented in these SDGs. As the samples were couriered directly to the laboratory from the field, custody seals were not required. No qualifications were required.

2.1.3 Holding Times

The samples were analyzed within seven days of collection. No qualifications were required.

2.2 GC/MS TUNING

The ion abundance windows shown on the quantitation reports were consistent with those specified in EPA Method 624, and all ion abundances were within the established windows. The samples and associated QC were analyzed within 12 hours of the BFB injection times. The Form Vs were verified from the raw data and no discrepancies between the summary forms and the raw data were noted. No qualifications were required.

2.3 CALIBRATION

One initial calibration dated 02/19/05 was associated with these SDGs. The average RRFs were ≥ 0.05 for all compounds listed on the sample result summaries. The %RSDs were $\leq 35\%$ for all target compounds listed on the sample result summaries. There was one continuing calibration dated 03/07/05 associated with the sample analyses in these SDGs. The RRFs were ≥ 0.05 in the continuing calibration. The %D for trichlorofluoromethane exceeded 20% in the continuing calibration; therefore, the nondetect for trichlorofluoromethane was qualified as estimated, "UJ," in samples Outfall 001 and Outfall 002. No qualifications were required for the Trip Blank. The %Ds were $\leq 20\%$ for the remaining target compounds listed on the result summaries. A representative number of %RSDs and average RRFs from the initial calibrations, and %Ds and RRFs from the continuing calibrations were recalculated from the raw data, and no calculation or transcription errors were found. No further qualifications were required.

2.4 BLANKS

One water method blank (5C07026-BLK1) was associated with the sample analyses. There were no detects above the MDLs for the target compounds listed on the sample result summaries. The method blank raw data showed no evidence of false negatives. No qualifications were required.

2.5 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

One water blank spike (5C07026-BS1) was associated with the sample analyses. All recoveries were within the laboratory-established QC limits. A representative number of recoveries were recalculated from the raw data and no calculation or transcription errors were found. No qualifications were required.

2.6 SURROGATE RECOVERY

The surrogates were recovered within the QC limits of 80-120% in the samples and associated QC. A representative number of surrogate recoveries were recalculated from the raw data and no calculation or transcription errors were found. No qualifications were required.

2.7 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

There were no MS/MSD analyses associated with these SDGs. Evaluation of method accuracy was based on 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 (IOC0447-02) and Trip Blank (IOC0515-02) were the trip blanks associated with the site samples. There were no target compounds detected above the MDLs in the trip blanks. No qualifications were required.

2.8.2 Field Blanks and Equipment Rinsates

There were no field QC samples associated with these SDGs. No qualifications were required.

2.8.3 Field Duplicates

There were no field duplicate samples associated with these SDGs. No qualifications were required.

2.9 INTERNAL STANDARDS PERFORMANCE

Internal standard area counts and retention times for the samples in these SDGs were within the control limits established by the continuing calibration standards: +100%/-50% for internal standard areas and ± 0.50 minutes for retention times. A representative number of internal standard areas and retention times were verified from the raw data, and no calculation or transcription errors were noted. No qualifications were required.

2.10 COMPOUND IDENTIFICATION

Target compound identification was verified at a Level IV data validation. The laboratory analyzed volatile target compounds by EPA Method 624. Chromatograms, retention times, and spectra for the samples and QC were examined and no target compound identification problems were noted. No qualifications were required.

2.11 COMPOUND QUANTIFICATION AND REPORTED DETECTION LIMITS

Compound quantification is verified at a Level IV data validation. The reporting limits were supported by the lowest concentrations of the initial calibration standards and by the MDL study. Compound quantitation was verified by recalculating any sample detects and a representative number of blank spike and surrogate recoveries from the raw data. Results were reported in $\mu\text{g/L}$ (ppb). No calculation or transcription errors were noted. No qualifications were required.

2.12 TENTATIVELY IDENTIFIED COMPOUNDS

The laboratory did not provide TICs for these SDGs. No qualifications were required.

2.13 SYSTEM PERFORMANCE

A review of the chromatograms and other raw data showed no identifiable problems with system performance. No qualifications were required.



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

Project ID: Routine Outfall 002
 Report Number: IOC0447

Sampled: 03/04/05
 Received: 03/04/05

DRAFT: PURGEABLES BY GC/MS (EPA 624)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers	
Sample ID: IOC0447-01 (DRAFT: Outfall 002 - Water)					Sampled: 03/04/05					12EV QUAL
Reporting Units: ug/l										QUAL CODE
Benzene	EPA 624	5C07026	0.28	2.0	ND	1	03/07/05	03/08/05	U	
Carbon tetrachloride	EPA 624	5C07026	0.28	5.0	ND	1	03/07/05	03/08/05		
Chloroform	EPA 624	5C07026	0.33	2.0	ND	1	03/07/05	03/08/05		
1,1-Dichloroethane	EPA 624	5C07026	0.27	2.0	ND	1	03/07/05	03/08/05		
1,2-Dichloroethane	EPA 624	5C07026	0.28	2.0	ND	1	03/07/05	03/08/05		
1,1-Dichloroethene	EPA 624	5C07026	0.32	3.0	ND	1	03/07/05	03/08/05		
Ethylbenzene	EPA 624	5C07026	0.25	2.0	ND	1	03/07/05	03/08/05		
Tetrachloroethene	EPA 624	5C07026	0.32	2.0	ND	1	03/07/05	03/08/05		
Toluene	EPA 624	5C07026	0.36	2.0	ND	1	03/07/05	03/08/05		
1,1,1-Trichloroethane	EPA 624	5C07026	0.30	2.0	ND	1	03/07/05	03/08/05		
1,1,2-Trichloroethane	EPA 624	5C07026	0.30	2.0	ND	1	03/07/05	03/08/05		
Trichloroethene	EPA 624	5C07026	0.26	5.0	ND	1	03/07/05	03/08/05		
Trichlorofluoromethane	EPA 624	5C07026	0.34	5.0	ND	1	03/07/05	03/08/05	UJC	
Vinyl chloride	EPA 624	5C07026	0.26	5.0	ND	1	03/07/05	03/08/05	U	
Xylenes, Total	EPA 624	5C07026	0.52	4.0	ND	1	03/07/05	03/08/05	U	
Surrogate: Dibromofluoromethane (80-120%)					109 %					
Surrogate: Toluene-d8 (80-120%)					113 %					
Surrogate: 4-Bromofluorobenzene (80-120%)					109 %					
Sample ID: IOC0447-02 (DRAFT: Trip Blank - Water)					Sampled: 03/04/05					
Reporting Units: ug/l										
Benzene	EPA 624	5C07026	0.28	2.0	ND	1	03/07/05	03/07/05	U	
Carbon tetrachloride	EPA 624	5C07026	0.28	5.0	ND	1	03/07/05	03/07/05		
Chloroform	EPA 624	5C07026	0.33	2.0	ND	1	03/07/05	03/07/05		
1,1-Dichloroethane	EPA 624	5C07026	0.27	2.0	ND	1	03/07/05	03/07/05		
1,2-Dichloroethane	EPA 624	5C07026	0.28	2.0	ND	1	03/07/05	03/07/05		
1,1-Dichloroethene	EPA 624	5C07026	0.32	3.0	ND	1	03/07/05	03/07/05		
Ethylbenzene	EPA 624	5C07026	0.25	2.0	ND	1	03/07/05	03/07/05		
Tetrachloroethene	EPA 624	5C07026	0.32	2.0	ND	1	03/07/05	03/07/05		
Toluene	EPA 624	5C07026	0.36	2.0	ND	1	03/07/05	03/07/05		
1,1,1-Trichloroethane	EPA 624	5C07026	0.30	2.0	ND	1	03/07/05	03/07/05		
1,1,2-Trichloroethane	EPA 624	5C07026	0.30	2.0	ND	1	03/07/05	03/07/05		
Trichloroethene	EPA 624	5C07026	0.26	5.0	ND	1	03/07/05	03/07/05		
Trichlorofluoromethane	EPA 624	5C07026	0.34	5.0	ND	1	03/07/05	03/07/05		
Vinyl chloride	EPA 624	5C07026	0.26	5.0	ND	1	03/07/05	03/07/05		
Xylenes, Total	EPA 624	5C07026	0.52	4.0	ND	1	03/07/05	03/07/05		
Surrogate: Dibromofluoromethane (80-120%)					105 %					
Surrogate: Toluene-d8 (80-120%)					112 %					
Surrogate: 4-Bromofluorobenzene (80-120%)					104 %					

AMEC VALIDATED

DRAFT REPORT
 DRAFT REPORT
 DATA SUBJECT TO CHANGE **LEVEL IV**

CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

AMEC Earth & Environmental
 550 South Wadsworth Boulevard
 Suite 500
 Lakewood, CO 80226

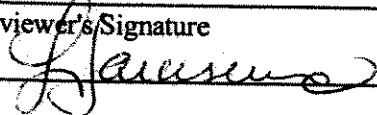
Package ID T711WC90
 Task Order 313150010
 SDG No. IOC0447, IOC0515

No. of Analyses 2

Laboratory Del Mar Analytical

Reviewer L. Jarusewic

Analysis/Method General Minerals

Date: 04/01/05
 Reviewer's Signature


ACTION ITEMS^a

1. **Case Narrative Deficiencies**
2. **Out of Scope Analyses**
3. **Analyses Not Conducted**
4. **Missing Hardcopy Deliverables**
5. **Incorrect Hardcopy Deliverables**
6. **Deviations from Analysis Protocol, e.g.,**
 - Holding Times _____
 - GC/MS Tune/Inst. Performance _____
 - Calibrations _____
 - Blanks _____
 - Surrogates _____
 - Matrix Spike/Dup LCS _____
 - Field QC _____
 - Internal Standard Performance _____
 - Compound Identification and Quantitation _____
 - System Performance _____

COMMENTS^b Acceptable as reviewed.

^a 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

ANALYSIS: GENERAL MINERALS

SAMPLE DELIVERY GROUPS: IOC0447 & IOC0515

Prepared by

AMEC—Denver Operations
550 South Wadsworth Boulevard, Suite 500
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title: NPDES Monitoring
Contract Task Order #: 313150010
Sample Delivery Group #: IOC0447, IOC0515
Project Manager: B. McIlvaine
Matrix: Water
Analysis: General Minerals
QC Level: Level IV
No. of Samples: 2
Reviewer: L. Jarusewic
Date of Review: April 1, 2005

The sample listed in Table 1 was validated based on the guidelines outlined in the AMEC *Data Validation Procedures SOP DVP-6, Rev. 2, USEPA Methods for Chemical Analysis of Water and Wastes Method 350.2, 120.1, and 180.1*, 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 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.

DATA VALIDATION REPORT

Project: NPDES
SDG No.: IOC0447/0515
Analysis: General Minerals

Table 1. Sample identification

Client ID	EPA ID	Laboratory ID	Matrix	COC Method
Outfall 001	Outfall 001	IOC0515-01	Water	General Minerals
Outfall 002	Outfall 002	IOC0447-01	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 samples in these SDGs were received at the laboratory within the temperature limits of $4^{\circ}\text{C} \pm 2^{\circ}\text{C}$. No preservation problems were noted by the laboratory. No qualifications were required.

2.1.2 Chain of Custody

The COCs were signed and dated by field and laboratory personnel. The COCs accounted for all analyses presented in these SDGs. No sample qualifications were required.

2.1.3 Holding Times

The holding times were assessed by comparing the dates of collection with the dates of analyses. The 28-day analytical holding time for ammonia and conductivity and the 48-hour holding time for turbidity were met. No qualifications were required.

2.2 CALIBRATION

For the applicable analyses, the initial calibration correlation coefficients were ≥ 0.995 . Initial and continuing calibration information was acceptable with recoveries within the control limits of 90-110%. For ammonia, no information regarding the standardization of the titrant was provided; however, as the LCS recovery was within the CCV control limits, no qualifications were required.

2.3 BLANKS

Turbidity was detected in method blank 5C05047-BLK1 at 0.050 NTU; however, the method blank result was insufficient to qualify the Outfall 001 or Outfall 002 results. The remaining method blank and CCB results reported on the summary forms and in the raw data for blank analyses associated with the samples were nondetects at the reporting limit. No qualifications were required.

2.4 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

The ammonia laboratory control sample recovery was within the laboratory-established control limits. The LCS is not applicable to turbidity or conductivity. No qualifications were required.

2.5 SURROGATES RECOVERY

Surrogate recovery is not applicable to the analyses presented in these SDGs.

2.6 LABORATORY DUPLICATES

There were no MS/MSD or duplicate analyses performed in association with the samples in these SDGs; therefore, no assessment was made with respect to this criterion.

2.7 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

There were no MS/MSD analyses performed in association with the samples in these SDGs; therefore, no assessment was made with respect to this criterion. Method accuracy was assessed based on LCS results.

2.8 FURNACE ATOMIC ABSORPTION QC

Furnace atomic absorption was not utilized for the analyses of these samples; therefore, furnace atomic absorption QC is not applicable.

2.9 ICP SERIAL DILUTION

ICP serial dilution is not applicable to the analyses presented in this data validation report.

2.10 SAMPLE RESULT VERIFICATION

A Level IV review was performed for the samples in these data packages. Calculations were verified, and the sample results reported on the Form Is were verified against the raw data. No transcription errors or calculation errors were noted. No qualifications were required.

2.11 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. The following are findings associated with field QC samples:

2.11.1 Field Blanks and Equipment Rinsates

The samples in these SDGs had no associated field QC samples. No qualifications were required.

DATA VALIDATION REPORT

Project: NPDES
SDG No.: IOC0447/0515
Analysis: General Minerals

2.11.2 Field Duplicates

There were no field duplicate pairs associated with these SDGs.



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

Project ID: Routine Outfall 002

Report Number: IOC0447

Sampled: 03/04/05
 Received: 03/04/05

DRAFT: INORGANICS

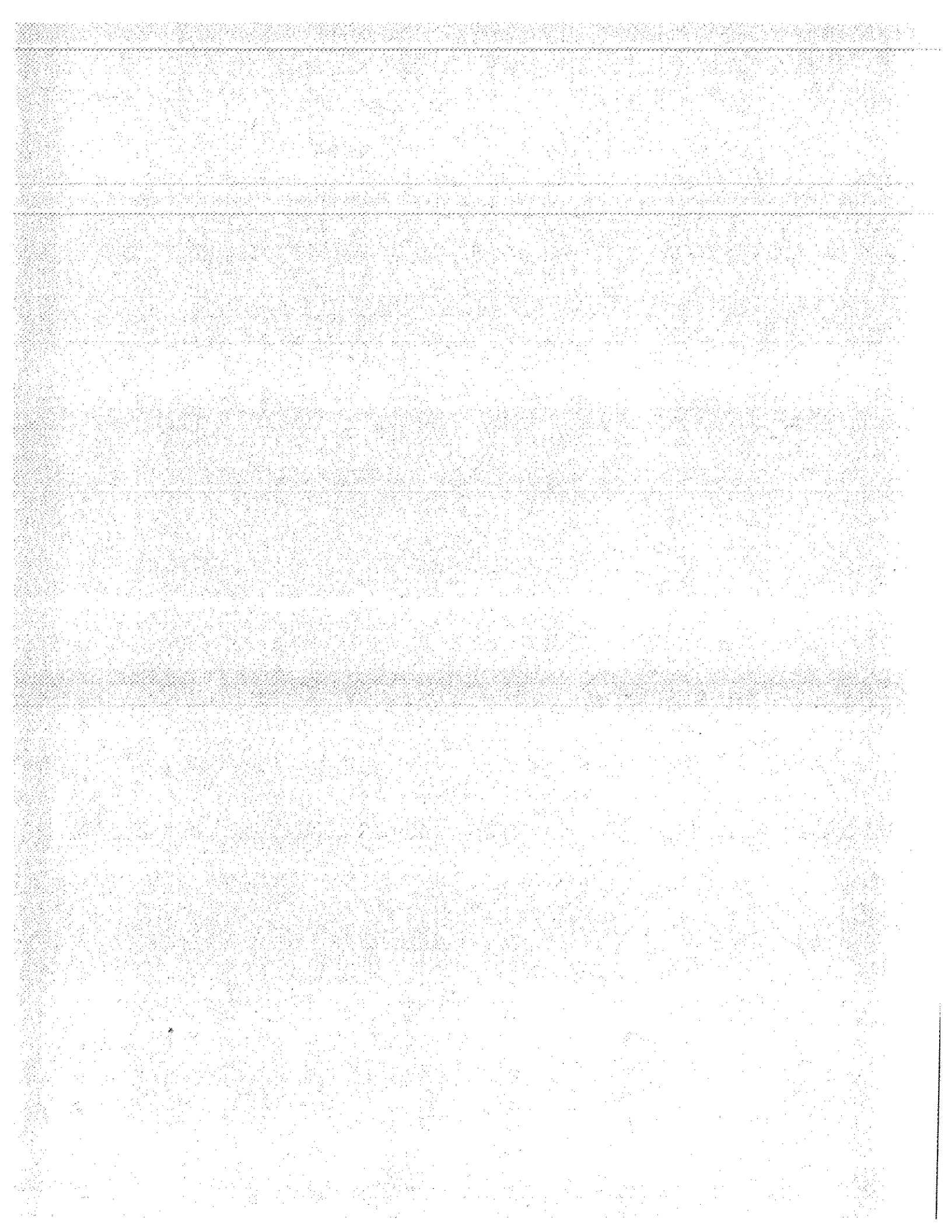
Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOC0447-01 (DRAFT: Outfall 002 - Water)					Sampled: 03/04/05				
Reporting Units: mg/l									
Ammonia-N (Distilled)	EPA 350.2	5C07070	0.30	0.50	ND	1	03/07/05	03/07/05	u
Sample ID: IOC0447-01 (DRAFT: Outfall 002 - Water)					Sampled: 03/04/05				
Reporting Units: NTU									
Turbidity	EPA 180.1	5C05047	0.040	1.0	4.6	1	03/05/05	03/05/05	
Sample ID: IOC0447-01 (DRAFT: Outfall 002 - Water)					Sampled: 03/04/05				
Reporting Units: umhos/cm									
Specific Conductance	EPA 120.1	5C09097	1.0	1.0	880	1	03/09/05	03/09/05	

AMEC VALIDATED

LEVEL IV

DRAFT REPORT
 DRAFT REPORT
 DATA SUBJECT TO CHANGE

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2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

LABORATORY REPORT

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

Project: Routine Outfall 002

Sampled: 03/04/05
Received: 03/04/05
Issued: 04/07/05 09:56

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

IOC0447-01

IOC0447-02

CLIENT ID

Outfall 002

Trip Blank

MATRIX

Water

Water

Reviewed By:

Del Mar Analytical, Irvine
Michele Harper
Project Manager



MWH-Pasadena/Boeing 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Attention: Bronwyn Kelly	Project ID: Routine Outfall 002 Report Number: IOC0447	Sampled: 03/04/05 Received: 03/04/05
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CORRECTIVE ACTION REPORT

Department: Extractions

Date: 03/17/2005

Method: EPA 625

Matrix: Water

QC Batch: 5C05021

Identification and Definition of Problem:

Dimethylphalate, 2,4-dinitrotoluene, 2,6-dinitrotoluene, and 1,2-diphenylhydrazine/azobenzene recoveries were below acceptance limits in the Blank Spike.

Determination of the Cause of the Problem:

Less than optimal extraction technique is the likely cause for the failures.

Corrective Action Taken:

Samples could not be reextracted due to expiration of hold times. Samples were 'ND' for affected analytes. All samples and Blank Spike were flagged with 'L2' qualifier.

Quality Assurance Approval:

Rima Angkasa

Date: 03/21/2005 02:45 PM

Del Mar Analytical, Irvine
Michele Harper
Project Manager

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

Project ID: Routine Outfall 002
Report Number: IOC0447
Sampled: 03/04/05
Received: 03/04/05
PURGEABLES BY GC/MS (EPA 624)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOC0447-01 (Outfall 002 - Water)					Sampled: 03/04/05				
Reporting Units: ug/l									
Benzene	EPA 624	5C07026	0.28	2.0	ND	1	03/07/05	03/08/05	
Carbon tetrachloride	EPA 624	5C07026	0.28	5.0	ND	1	03/07/05	03/08/05	
Chloroform	EPA 624	5C07026	0.33	2.0	ND	1	03/07/05	03/08/05	
1,1-Dichloroethane	EPA 624	5C07026	0.27	2.0	ND	1	03/07/05	03/08/05	
1,2-Dichloroethane	EPA 624	5C07026	0.28	2.0	ND	1	03/07/05	03/08/05	
1,1-Dichloroethene	EPA 624	5C07026	0.32	3.0	ND	1	03/07/05	03/08/05	
Ethylbenzene	EPA 624	5C07026	0.25	2.0	ND	1	03/07/05	03/08/05	
Tetrachloroethene	EPA 624	5C07026	0.32	2.0	ND	1	03/07/05	03/08/05	
Toluene	EPA 624	5C07026	0.36	2.0	ND	1	03/07/05	03/08/05	
1,1,1-Trichloroethane	EPA 624	5C07026	0.30	2.0	ND	1	03/07/05	03/08/05	
1,1,2-Trichloroethane	EPA 624	5C07026	0.30	2.0	ND	1	03/07/05	03/08/05	
Trichloroethene	EPA 624	5C07026	0.26	5.0	ND	1	03/07/05	03/08/05	
Trichlorofluoromethane	EPA 624	5C07026	0.34	5.0	ND	1	03/07/05	03/08/05	
Vinyl chloride	EPA 624	5C07026	0.26	5.0	ND	1	03/07/05	03/08/05	
Xylenes, Total	EPA 624	5C07026	0.52	4.0	ND	1	03/07/05	03/08/05	
<i>Surrogate: Dibromofluoromethane (80-120%)</i>					109 %				
<i>Surrogate: Toluene-d8 (80-120%)</i>					113 %				
<i>Surrogate: 4-Bromofluorobenzene (80-120%)</i>					109 %				
Sample ID: IOC0447-02 (Trip Blank - Water)					Sampled: 03/04/05				
Reporting Units: ug/l									
Benzene	EPA 624	5C07026	0.28	2.0	ND	1	03/07/05	03/07/05	
Carbon tetrachloride	EPA 624	5C07026	0.28	5.0	ND	1	03/07/05	03/07/05	
Chloroform	EPA 624	5C07026	0.33	2.0	ND	1	03/07/05	03/07/05	
1,1-Dichloroethane	EPA 624	5C07026	0.27	2.0	ND	1	03/07/05	03/07/05	
1,2-Dichloroethane	EPA 624	5C07026	0.28	2.0	ND	1	03/07/05	03/07/05	
1,1-Dichloroethene	EPA 624	5C07026	0.32	3.0	ND	1	03/07/05	03/07/05	
Ethylbenzene	EPA 624	5C07026	0.25	2.0	ND	1	03/07/05	03/07/05	
Tetrachloroethene	EPA 624	5C07026	0.32	2.0	ND	1	03/07/05	03/07/05	
Toluene	EPA 624	5C07026	0.36	2.0	ND	1	03/07/05	03/07/05	
1,1,1-Trichloroethane	EPA 624	5C07026	0.30	2.0	ND	1	03/07/05	03/07/05	
1,1,2-Trichloroethane	EPA 624	5C07026	0.30	2.0	ND	1	03/07/05	03/07/05	
Trichloroethene	EPA 624	5C07026	0.26	5.0	ND	1	03/07/05	03/07/05	
Trichlorofluoromethane	EPA 624	5C07026	0.34	5.0	ND	1	03/07/05	03/07/05	
Vinyl chloride	EPA 624	5C07026	0.26	5.0	ND	1	03/07/05	03/07/05	
Xylenes, Total	EPA 624	5C07026	0.52	4.0	ND	1	03/07/05	03/07/05	
<i>Surrogate: Dibromofluoromethane (80-120%)</i>					105 %				
<i>Surrogate: Toluene-d8 (80-120%)</i>					112 %				
<i>Surrogate: 4-Bromofluorobenzene (80-120%)</i>					104 %				

Del Mar Analytical, Irvine
 Michele Harper
 Project Manager



MWH-Pasadena/Boeing 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Attention: Bronwyn Kelly	Project ID: Routine Outfall 002 Report Number: IOC0447	Sampled: 03/04/05 Received: 03/04/05
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ACID & BASE/NEUTRALS BY GC/MS (EPA 625)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOC0447-01 (Outfall 002 - Water)					Sampled: 03/04/05				
Reporting Units: ug/l									
Bis(2-ethylhexyl)phthalate	EPA 625	5C05021	1.1	5.0	3.9	0.962	03/05/05	03/17/05	B, J
2,4-Dinitrotoluene	EPA 625	5C05021	0.23	9.0	ND	0.962	03/05/05	03/17/05	L2
N-Nitrosodimethylamine	EPA 625	5C05021	0.22	8.0	ND	0.962	03/05/05	03/17/05	
Pentachlorophenol	EPA 625	5C05021	0.78	8.0	ND	0.962	03/05/05	03/17/05	
2,4,6-Trichlorophenol	EPA 625	5C05021	0.10	6.0	ND	0.962	03/05/05	03/17/05	
Surrogate: 2-Fluorophenol (30-120%)					59 %				
Surrogate: Phenol-d6 (35-120%)					63 %				
Surrogate: 2,4,6-Tribromophenol (45-120%)					75 %				
Surrogate: Nitrobenzene-d5 (45-120%)					67 %				
Surrogate: 2-Fluorobiphenyl (45-120%)					89 %				
Surrogate: Terphenyl-d14 (45-120%)					76 %				

Del Mar Analytical, Irvine
Michele Harper
Project Manager



Del Mar Analytical

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MWH-Pasadena/Boeing 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Attention: Bronwyn Kelly	Project ID: Routine Outfall 002 Report Number: IOC0447	Sampled: 03/04/05 Received: 03/04/05
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ORGANOCHLORINE PESTICIDES (EPA 608)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOC0447-01 (Outfall 002 - Water) - cont.					Sampled: 03/04/05				
Reporting Units: ug/l									
alpha-BHC	EPA 608	5C07057	0.0010	0.010	ND	0.943	03/07/05	03/07/05	
Surrogate: Decachlorobiphenyl (45-120%)					68 %				
Surrogate: Tetrachloro-m-xylene (35-120%)					58 %				

Del Mar Analytical, Irvine
 Michele Harper
 Project Manager

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

Project ID: Routine Outfall 002

Report Number: IOC0447

Sampled: 03/04/05

Received: 03/04/05

METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOC0447-01 (Outfall 002 - Water) - cont.					Sampled: 03/04/05				
Reporting Units: ug/l									
Copper	EPA 200.8	5C04125	0.49	2.0	2.2	1	03/04/05	03/06/05	
Lead	EPA 200.8	5C04125	0.13	1.0	ND	1	03/04/05	03/06/05	
Mercury	EPA 245.1	5C07062	0.063	0.20	ND	1	03/07/05	03/07/05	

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 Michele Harper
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MWH-Pasadena/Boeing 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Attention: Bronwyn Kelly	Project ID: Routine Outfall 002 Report Number: IOC0447	Sampled: 03/04/05 Received: 03/04/05
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INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOC0447-01 (Outfall 002 - Water) - cont.					Sampled: 03/04/05				
Reporting Units: mg/l									
Ammonia-N (Distilled)	EPA 350.2	5C07070	0.30	0.50	ND	1	03/07/05	03/07/05	
Biochemical Oxygen Demand	EPA 405.1	5C04095	0.59	2.0	ND	1	03/04/05	03/09/05	
Chloride	EPA 300.0	5C04107	0.26	0.50	29	1	03/04/05	03/04/05	
Nitrate/Nitrite-N	EPA 300.0	5C04107	0.075	0.15	0.60	1	03/04/05	03/04/05	
Oil & Grease	EPA 413.1	5C07071	0.94	5.0	ND	1	03/07/05	03/07/05	
Sulfate	EPA 300.0	5C04107	1.8	5.0	230	10	03/04/05	03/04/05	
Surfactants (MBAS)	SM5540-C	5C04119	0.044	0.10	0.044	1	03/04/05	03/04/05	J
Total Dissolved Solids	SM2540C	5C09095	10	10	610	1	03/09/05	03/09/05	
Total Suspended Solids	EPA 160.2	5C07073	10	10	ND	1	03/07/05	03/07/05	
Sample ID: IOC0447-01 (Outfall 002 - Water)					Sampled: 03/04/05				
Reporting Units: ml/hr									
Total Settleable Solids	EPA 160.5	5C04096	0.10	0.10	ND	1	03/04/05	03/04/05	
Sample ID: IOC0447-01 (Outfall 002 - Water)					Sampled: 03/04/05				
Reporting Units: NTU									
Turbidity	EPA 180.1	5C05047	0.040	1.0	4.6	1	03/05/05	03/05/05	
Sample ID: IOC0447-01 (Outfall 002 - Water)					Sampled: 03/04/05				
Reporting Units: ug/l									
Total Cyanide	EPA 335.2	5C08092	2.2	5.0	ND	1	03/08/05	03/08/05	M2
Perchlorate	EPA 314.0	5C08052	0.80	4.0	ND	1	03/08/05	03/08/05	
Sample ID: IOC0447-01 (Outfall 002 - Water)					Sampled: 03/04/05				
Reporting Units: umhos/cm									
Specific Conductance	EPA 120.1	5C09097	1.0	1.0	880	1	03/09/05	03/09/05	

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Project ID: Routine Outfall 002

Report Number: IOC0447

Sampled: 03/04/05
Received: 03/04/05

SHORT HOLD TIME DETAIL REPORT

Sample ID: Outfall 002 (IOC0447-01) - Water	Hold Time (in days)	Date/Time Sampled	Date/Time Received	Date/Time Extracted	Date/Time Analyzed
EPA 160.5	2	03/04/2005 09:26	03/04/2005 17:50	03/04/2005 18:30	03/04/2005 19:30
EPA 180.1	2	03/04/2005 09:26	03/04/2005 17:50	03/05/2005 15:30	03/05/2005 15:30
EPA 300.0	2	03/04/2005 09:26	03/04/2005 17:50	03/04/2005 23:00	03/04/2005 23:33
EPA 405.1	2	03/04/2005 09:26	03/04/2005 17:50	03/04/2005 20:31	03/09/2005 18:40
SM5540-C	2	03/04/2005 09:26	03/04/2005 17:50	03/04/2005 19:18	03/04/2005 22:51

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 Attention: Bronwyn Kelly

Project ID: Routine Outfall 002

Report Number: IOC0447

Sampled: 03/04/05

Received: 03/04/05

METHOD BLANK/QC DATA

PURGEABLES BY GC/MS (EPA 624)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	RPD RPD	RPD Limit	Data Qualifiers
Batch: 5C07026 Extracted: 03/07/05										
Blank Analyzed: 03/07/2005 (5C07026-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	0.32	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	0.52	ug/l						
Surrogate: Dibromofluoromethane	27.2			ug/l	25.0		109		80-120	
Surrogate: Toluene-d8	27.7			ug/l	25.0		111		80-120	
Surrogate: 4-Bromofluorobenzene	27.0			ug/l	25.0		108		80-120	
LCS Analyzed: 03/07/2005 (5C07026-BS1)										
Benzene	27.0	2.0	0.28	ug/l	25.0		108		70-120	M-3
Carbon tetrachloride	28.7	5.0	0.28	ug/l	25.0		115		70-140	
Chloroform	28.2	2.0	0.33	ug/l	25.0		113		75-130	
1,1-Dichloroethane	28.3	2.0	0.27	ug/l	25.0		113		70-135	
1,2-Dichloroethane	26.6	2.0	0.28	ug/l	25.0		106		60-150	M-3
1,1-Dichloroethene	29.2	3.0	0.32	ug/l	25.0		117		75-135	
Ethylbenzene	28.2	2.0	0.25	ug/l	25.0		113		80-120	M-3
Tetrachloroethene	26.8	2.0	0.32	ug/l	25.0		107		75-125	
Toluene	27.4	2.0	0.36	ug/l	25.0		110		75-120	M-3
1,1,1-Trichloroethane	28.4	2.0	0.30	ug/l	25.0		114		75-140	
1,1,2-Trichloroethane	26.0	2.0	0.30	ug/l	25.0		104		70-125	
Trichloroethene	27.8	5.0	0.26	ug/l	25.0		111		80-120	
Trichlorofluoromethane	28.7	5.0	0.34	ug/l	25.0		115		65-145	
Vinyl chloride	31.8	5.0	0.26	ug/l	25.0		127		50-130	
Surrogate: Dibromofluoromethane	27.2			ug/l	25.0		109		80-120	
Surrogate: Toluene-d8	27.8			ug/l	25.0		111		80-120	

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

Project ID: Routine Outfall 002

Report Number: IOC0447

Sampled: 03/04/05
 Received: 03/04/05

METHOD BLANK/QC DATA

PURGEABLES BY GC/MS (EPA 624)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5C07026 Extracted: 03/07/05											
LCS Analyzed: 03/07/2005 (5C07026-BS1)											
Surrogate: 4-Bromofluorobenzene	27.2			ug/l	25.0		109	80-120			
Matrix Spike Analyzed: 03/07/2005 (5C07026-MS1)											
						Source: IOC0391-11					
Carbon tetrachloride	20.7	5.0	0.28	ug/l	25.0	ND	83	70-145			
Chloroform	26.2	2.0	0.33	ug/l	25.0	ND	105	70-135			
1,1-Dichloroethane	25.9	2.0	0.27	ug/l	25.0	ND	104	65-135			
1,1-Dichloroethene	27.6	3.0	0.32	ug/l	25.0	1.7	104	65-140			
Tetrachloroethene	30.9	2.0	0.32	ug/l	25.0	0.54	121	70-130			
1,1,1-Trichloroethane	25.0	2.0	0.30	ug/l	25.0	ND	100	75-140			
1,1,2-Trichloroethane	31.6	2.0	0.30	ug/l	25.0	2.1	118	60-135			
Trichloroethene	111	5.0	0.26	ug/l	25.0	94	68	70-125			M2
Trichlorofluoromethane	24.0	5.0	0.34	ug/l	25.0	ND	96	55-145			
Vinyl chloride	39.2	5.0	0.26	ug/l	25.0	14	101	40-135			
Surrogate: Dibromofluoromethane	26.5			ug/l	25.0		106	80-120			
Surrogate: Toluene-d8	27.1			ug/l	25.0		108	80-120			
Surrogate: 4-Bromofluorobenzene	32.1			ug/l	25.0		128	80-120			ZX
Matrix Spike Dup Analyzed: 03/07/2005 (5C07026-MSD1)						Source: IOC0391-11					
Carbon tetrachloride	19.4	5.0	0.28	ug/l	25.0	ND	78	70-145	6	25	
Chloroform	26.3	2.0	0.33	ug/l	25.0	ND	105	70-135	0	20	
1,1-Dichloroethane	25.3	2.0	0.27	ug/l	25.0	ND	101	65-135	2	20	
1,1-Dichloroethene	28.6	3.0	0.32	ug/l	25.0	1.7	108	65-140	4	20	
Tetrachloroethene	29.5	2.0	0.32	ug/l	25.0	0.54	116	70-130	5	20	
1,1,1-Trichloroethane	24.6	2.0	0.30	ug/l	25.0	ND	98	75-140	2	20	
1,1,2-Trichloroethane	30.3	2.0	0.30	ug/l	25.0	2.1	113	60-135	4	25	
Trichloroethene	113	5.0	0.26	ug/l	25.0	94	76	70-125	2	20	
Trichlorofluoromethane	23.5	5.0	0.34	ug/l	25.0	ND	94	55-145	2	25	
Vinyl chloride	41.2	5.0	0.26	ug/l	25.0	14	109	40-135	5	30	
Surrogate: Dibromofluoromethane	26.1			ug/l	25.0		104	80-120			
Surrogate: Toluene-d8	27.2			ug/l	25.0		109	80-120			
Surrogate: 4-Bromofluorobenzene	30.2			ug/l	25.0		121	80-120			ZX

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

Project ID: Routine Outfall 002

Report Number: IOC0447

Sampled: 03/04/05
 Received: 03/04/05

METHOD BLANK/QC DATA

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

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	RPD RPD	Limit Limits	RPD	Data Qualifiers
Batch: 5C05021 Extracted: 03/05/05											
Blank Analyzed: 03/16/2005 (5C05021-BLK1)											
Bis(2-ethylhexyl)phthalate	1.56	5.0	1.1	ug/l							J
2,4-Dinitrotoluene	ND	9.0	0.23	ug/l							
N-Nitrosodimethylamine	ND	8.0	0.22	ug/l							
Pentachlorophenol	ND	8.0	0.78	ug/l							
2,4,6-Trichlorophenol	ND	6.0	0.10	ug/l							
Surrogate: 2-Fluorophenol	11.2			ug/l	20.0		56		30-120		
Surrogate: Phenol-d6	12.2			ug/l	20.0		61		35-120		
Surrogate: 2,4,6-Tribromophenol	12.5			ug/l	20.0		62		45-120		
Surrogate: Nitrobenzene-d5	6.22			ug/l	10.0		62		45-120		
Surrogate: 2-Fluorobiphenyl	9.30			ug/l	10.0		93		45-120		
Surrogate: Terphenyl-d14	6.90			ug/l	10.0		69		45-120		
LCS Analyzed: 03/16/2005 (5C05021-BS1)											
Bis(2-ethylhexyl)phthalate	8.28	5.0	1.1	ug/l	10.0		83		60-130		
2,4-Dinitrotoluene	5.18	9.0	0.23	ug/l	10.0		52		60-120		L2, J
N-Nitrosodimethylamine	6.50	8.0	0.22	ug/l	10.0		65		40-120		J
Pentachlorophenol	7.04	8.0	0.78	ug/l	10.0		70		50-120		J
2,4,6-Trichlorophenol	7.68	6.0	0.10	ug/l	10.0		77		60-120		
Surrogate: 2-Fluorophenol	11.6			ug/l	20.0		58		30-120		
Surrogate: Phenol-d6	12.2			ug/l	20.0		61		35-120		
Surrogate: 2,4,6-Tribromophenol	12.9			ug/l	20.0		64		45-120		
Surrogate: Nitrobenzene-d5	6.24			ug/l	10.0		62		45-120		
Surrogate: 2-Fluorobiphenyl	7.60			ug/l	10.0		76		45-120		
Surrogate: Terphenyl-d14	6.86			ug/l	10.0		69		45-120		
Matrix Spike Analyzed: 03/16/2005 (5C05021-MS1)											
Source: IOC0241-05											
Bis(2-ethylhexyl)phthalate	7.63	5.0	1.1	ug/l	9.66	2.9	49		60-130		M2
2,4-Dinitrotoluene	5.70	9.0	0.23	ug/l	9.66	ND	59		60-120		M2, J
N-Nitrosodimethylamine	5.74	8.0	0.22	ug/l	9.66	ND	59		40-120		J
Pentachlorophenol	7.42	8.0	0.78	ug/l	9.66	ND	77		45-130		J
2,4,6-Trichlorophenol	7.40	6.0	0.10	ug/l	9.66	ND	77		60-120		
Surrogate: 2-Fluorophenol	10.5			ug/l	19.3		54		30-120		
Surrogate: Phenol-d6	10.7			ug/l	19.3		55		35-120		
Surrogate: 2,4,6-Tribromophenol	12.3			ug/l	19.3		64		45-120		
Surrogate: Nitrobenzene-d5	5.60			ug/l	9.66		58		45-120		
Surrogate: 2-Fluorobiphenyl	5.49			ug/l	9.66		57		45-120		

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Report Number: IOC0447

Sampled: 03/04/05

Received: 03/04/05

METHOD BLANK/QC DATA

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

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	RPD Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5C05021 Extracted: 03/05/05											
Matrix Spike Analyzed: 03/16/2005 (5C05021-MS1)						Source: IOC0241-05					
Surrogate: Terphenyl-d14	5.95			ug/l	9.66		62	45-120			
Matrix Spike Dup Analyzed: 03/16/2005 (5C05021-MSD1)						Source: IOC0241-05					
Bis(2-ethylhexyl)phthalate	8.04	5.0	1.1	ug/l	9.71	2.9	53	60-130	5	20	M2
2,4-Dinitrotoluene	6.49	9.0	0.23	ug/l	9.71	ND	67	60-120	13	25	J
N-Nitrosodimethylamine	5.94	8.0	0.22	ug/l	9.71	ND	61	40-120	3	20	J
Pentachlorophenol	8.19	8.0	0.78	ug/l	9.71	ND	84	45-130	10	25	
2,4,6-Trichlorophenol	8.21	6.0	0.10	ug/l	9.71	ND	85	60-120	10	20	
Surrogate: 2-Fluorophenol	10.6			ug/l	19.4		55	30-120			
Surrogate: Phenol-d6	11.4			ug/l	19.4		59	35-120			
Surrogate: 2,4,6-Tribromophenol	13.4			ug/l	19.4		69	45-120			
Surrogate: Nitrobenzene-d5	5.84			ug/l	9.71		60	45-120			
Surrogate: 2-Fluorobiphenyl	5.77			ug/l	9.71		59	45-120			
Surrogate: Terphenyl-d14	6.52			ug/l	9.71		67	45-120			

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Project ID: Routine Outfall 002

Report Number: IOC0447

Sampled: 03/04/05
Received: 03/04/05

METHOD BLANK/QC DATA

ORGANOCHLORINE PESTICIDES (EPA 608)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD RPD	RPD Limit	Data Qualifiers
Batch: 5C07057 Extracted: 03/07/05											
Blank Analyzed: 03/08/2005 (5C07057-BLK1)											
alpha-BHC	ND	0.010	0.0010	ug/l							
Surrogate: Decachlorobiphenyl	0.420			ug/l	0.500		84	45-120			
Surrogate: Tetrachloro-m-xylene	0.340			ug/l	0.500		68	35-120			
LCS Analyzed: 03/08/2005 (5C07057-BS1)											
alpha-BHC	0.392	0.010	0.0010	ug/l	0.500		78	45-115			M-NR1
Surrogate: Decachlorobiphenyl	0.415			ug/l	0.500		83	45-120			
Surrogate: Tetrachloro-m-xylene	0.334			ug/l	0.500		67	35-120			
LCS Dup Analyzed: 03/08/2005 (5C07057-BSD1)											
alpha-BHC	0.415	0.010	0.0010	ug/l	0.500		83	45-115	6	30	
Surrogate: Decachlorobiphenyl	0.418			ug/l	0.500		84	45-120			
Surrogate: Tetrachloro-m-xylene	0.351			ug/l	0.500		70	35-120			

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

Project ID: Routine Outfall 002

Report Number: IOC0447

Sampled: 03/04/05

Received: 03/04/05

METHOD BLANK/QC DATA

METALS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	Limit	RPD	RPD Limit	Data Qualifiers
Batch: 5C04125 Extracted: 03/04/05											
Blank Analyzed: 03/06/2005 (5C04125-BLK1)											
Copper	ND	2.0	0.49	ug/l							
Lead	ND	1.0	0.13	ug/l							
LCS Analyzed: 03/06/2005 (5C04125-BS1)											
Copper	78.9	2.0	0.49	ug/l	80.0		99	85-115			
Lead	87.4	1.0	0.13	ug/l	80.0		109	85-115			
Matrix Spike Analyzed: 03/06/2005 (5C04125-MS1) Source: IOC0447-01											
Copper	76.4	2.0	0.49	ug/l	80.0	2.2	93	70-130			
Lead	85.4	1.0	0.13	ug/l	80.0	ND	107	70-130			
Matrix Spike Dup Analyzed: 03/06/2005 (5C04125-MSD1) Source: IOC0447-01											
Copper	75.7	2.0	0.49	ug/l	80.0	2.2	92	70-130	1	20	
Lead	84.2	1.0	0.13	ug/l	80.0	ND	105	70-130	1	20	
Batch: 5C07062 Extracted: 03/07/05											
Blank Analyzed: 03/07/2005 (5C07062-BLK1)											
Mercury	ND	0.20	0.063	ug/l							
LCS Analyzed: 03/07/2005 (5C07062-BS1)											
Mercury	7.98	0.20	0.063	ug/l	8.00		100	85-115			
Matrix Spike Analyzed: 03/07/2005 (5C07062-MS1) Source: IOC0447-01											
Mercury	8.04	0.20	0.063	ug/l	8.00	ND	100	70-130			
Matrix Spike Dup Analyzed: 03/07/2005 (5C07062-MSD1) Source: IOC0447-01											
Mercury	8.09	0.20	0.063	ug/l	8.00	ND	101	70-130	1	20	

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 Michele Harper
 Project Manager

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MWH-Pasadena/Boeing 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Attention: Bronwyn Kelly	Project ID: Routine Outfall 002 Report Number: IOC0447	Sampled: 03/04/05 Received: 03/04/05
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METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5C04095 Extracted: 03/04/05										
Blank Analyzed: 03/09/2005 (5C04095-BLK1)										
Biochemical Oxygen Demand	ND	2.0	0.59	mg/l						
LCS Analyzed: 03/09/2005 (5C04095-BS1)										
Biochemical Oxygen Demand	210	100	30	mg/l	198		106 85-115			
LCS Dup Analyzed: 03/09/2005 (5C04095-BSD1)										
Biochemical Oxygen Demand	210	100	30	mg/l	198		106 85-115	0	20	
Batch: 5C04107 Extracted: 03/04/05										
Blank Analyzed: 03/04/2005 (5C04107-BLK1)										
Chloride	ND	0.50	0.26	mg/l						
Nitrate/Nitrite-N	ND	0.15	0.075	mg/l						
Sulfate	ND	0.50	0.18	mg/l						
LCS Analyzed: 03/04/2005 (5C04107-BS1)										
Chloride	5.16	0.50	0.26	mg/l	5.00		103 90-110			M-3
Sulfate	10.4	0.50	0.18	mg/l	10.0		104 90-110			M-3
Batch: 5C04119 Extracted: 03/04/05										
Blank Analyzed: 03/04/2005 (5C04119-BLK1)										
Surfactants (MBAS)	ND	0.10	0.044	mg/l						
LCS Analyzed: 03/04/2005 (5C04119-BS1)										
Surfactants (MBAS)	0.259	0.10	0.044	mg/l	0.250		104 90-110			

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Michele Harper
Project Manager



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MWH-Pasadena/Boeing 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Attention: Bronwyn Kelly	Project ID: Routine Outfall 002 Report Number: IOC0447	Sampled: 03/04/05 Received: 03/04/05
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METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5C04119 Extracted: 03/04/05											
Matrix Spike Analyzed: 03/04/2005 (5C04119-MS1)						Source: IOC0380-01					
Surfactants (MBAS)	0.293	0.10	0.044	mg/l	0.250	ND	117	50-125			
Matrix Spike Dup Analyzed: 03/04/2005 (5C04119-MSD1)						Source: IOC0380-01					
Surfactants (MBAS)	0.288	0.10	0.044	mg/l	0.250	ND	115	50-125	2	20	
Batch: 5C05047 Extracted: 03/05/05											
Blank Analyzed: 03/05/2005 (5C05047-BLK1)											
Turbidity	0.0500	1.0	0.040	NTU							J
Duplicate Analyzed: 03/05/2005 (5C05047-DUP1)						Source: IOC0468-01					
Turbidity	1.79	1.0	0.040	NTU		1.8			1	20	
Batch: 5C07070 Extracted: 03/07/05											
Blank Analyzed: 03/07/2005 (5C07070-BLK1)											
Ammonia-N (Distilled)	ND	0.50	0.30	mg/l							
LCS Analyzed: 03/07/2005 (5C07070-BS1)											
Ammonia-N (Distilled)	9.52	0.50	0.30	mg/l	10.0		95	80-115			
Matrix Spike Analyzed: 03/07/2005 (5C07070-MS1)						Source: IOB2063-01					
Ammonia-N (Distilled)	9.80	0.50	0.30	mg/l	10.0	ND	98	70-120			
Matrix Spike Dup Analyzed: 03/07/2005 (5C07070-MSD1)						Source: IOB2063-01					
Ammonia-N (Distilled)	9.52	0.50	0.30	mg/l	10.0	ND	95	70-120	3	15	

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

Project ID: Routine Outfall 002

Report Number: IOC0447

Sampled: 03/04/05

Received: 03/04/05

METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC Limits	RPD RPD	RPD Limit	Data Qualifiers
Batch: 5C07071 Extracted: 03/07/05										
Blank Analyzed: 03/07/2005 (5C07071-BLK1)										
Oil & Grease	ND	5.0	0.94	mg/l						
LCS Analyzed: 03/07/2005 (5C07071-BS1)										
Oil & Grease	19.1	5.0	0.94	mg/l	20.0		96 65-120			M-NR1
LCS Dup Analyzed: 03/07/2005 (5C07071-BSD1)										
Oil & Grease	18.8	5.0	0.94	mg/l	20.0		94 65-120	2	20	
Batch: 5C07073 Extracted: 03/07/05										
Blank Analyzed: 03/07/2005 (5C07073-BLK1)										
Total Suspended Solids	ND	10	10	mg/l						
LCS Analyzed: 03/07/2005 (5C07073-BS1)										
Total Suspended Solids	980	10	10	mg/l	1000		98 85-115			
Duplicate Analyzed: 03/07/2005 (5C07073-DUP1)										
Total Suspended Solids	ND	10	10	mg/l		Source: IOC0451-01			10	
Batch: 5C08052 Extracted: 03/08/05										
Blank Analyzed: 03/08/2005 (5C08052-BLK1)										
Perchlorate	ND	4.0	0.80	ug/l						
LCS Analyzed: 03/08/2005 (5C08052-BS1)										
Perchlorate	50.0	4.0	0.80	ug/l	50.0		100 85-115			

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MWH-Pasadena/Boeing 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Attention: Bronwyn Kelly	Project ID: Routine Outfall 002 Report Number: IOC0447	Sampled: 03/04/05 Received: 03/04/05
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METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5C08052 Extracted: 03/08/05											
Matrix Spike Analyzed: 03/08/2005 (5C08052-MS1)						Source: IOC0163-01					
Perchlorate	57.4	4.0	0.80	ug/l	50.0	ND	115	80-120			
Matrix Spike Dup Analyzed: 03/08/2005 (5C08052-MSD1)						Source: IOC0163-01					
Perchlorate	57.2	4.0	0.80	ug/l	50.0	ND	114	80-120	0	20	
Batch: 5C08092 Extracted: 03/08/05											
Blank Analyzed: 03/08/2005 (5C08092-BLK1)											
Total Cyanide	ND	5.0	2.2	ug/l							
LCS Analyzed: 03/08/2005 (5C08092-BS1)											
Total Cyanide	217	5.0	2.2	ug/l	200		108	90-110			
Matrix Spike Analyzed: 03/08/2005 (5C08092-MS1)						Source: IOC0447-01					
Total Cyanide	136	5.0	2.2	ug/l	200	ND	68	70-115			M2
Matrix Spike Dup Analyzed: 03/08/2005 (5C08092-MSD1)						Source: IOC0447-01					
Total Cyanide	190	5.0	2.2	ug/l	200	ND	95	70-115	33	15	R-3
Batch: 5C09095 Extracted: 03/09/05											
Blank Analyzed: 03/09/2005 (5C09095-BLK1)											
Total Dissolved Solids	ND	10	10	mg/l							
LCS Analyzed: 03/09/2005 (5C09095-BS1)											
Total Dissolved Solids	1000	10	10	mg/l	1000		100	90-110			

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 Michele Harper
 Project Manager

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MWH-Pasadena/Boeing 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Attention: Bronwyn Kelly	Project ID: Routine Outfall 002 Report Number: IOC0447	Sampled: 03/04/05 Received: 03/04/05
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METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5C09095 Extracted: 03/09/05											
Duplicate Analyzed: 03/09/2005 (5C09095-DUP1)						Source: IOC0687-01					
Total Dissolved Solids	626	10	10	mg/l		630			1	10	
Batch: 5C09097 Extracted: 03/09/05											
Duplicate Analyzed: 03/09/2005 (5C09097-DUP1)						Source: IOC0618-01					
Specific Conductance	636	1.0	1.0	umhos/cm		610			4	5	

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MWH-Pasadena/Boeing 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Attention: Bronwyn Kelly	Project ID: Routine Outfall 002 Report Number: IOC0447	Sampled: 03/04/05 Received: 03/04/05
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Compliance Check

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

LabNumber	Analysis	Analyte	Units	Result	MRL	Compliance Limit
IOC0447-01	413.1 Oil and Grease	Oil & Grease	mg/l	0.29	5.0	10.00
IOC0447-01	608-Pest Boeing 001/002 Q (LL)	alpha-BHC	ug/l	0.00058	0.010	0.0100
IOC0447-01	624-Boeing 001/002 Q (Fr113+X)	1,1-Dichloroethene	ug/l	0	3.0	3.20
IOC0447-01	624-Boeing 001/002 Q (Fr113+X)	Trichloroethene	ug/l	0.24	5.0	5.00
IOC0447-01	625-Boeing 001/002 Q-LL	2,4,6-Trichlorophenol	ug/l	0	6.0	6.50
IOC0447-01	625-Boeing 001/002 Q-LL	2,4-Dinitrotoluene	ug/l	0	9.0	9.10
IOC0447-01	625-Boeing 001/002 Q-LL	Bis(2-ethylhexyl)phthalate	ug/l	3.90	5.0	4.00
IOC0447-01	625-Boeing 001/002 Q-LL	N-Nitrosodimethylamine	ug/l	0	8.0	8.10
IOC0447-01	625-Boeing 001/002 Q-LL	Pentachlorophenol	ug/l	0	8.0	8.20
IOC0447-01	BOD	Biochemical Oxygen Demand	mg/l	0.56	2.0	20
IOC0447-01	Chloride - 300.0	Chloride	mg/l	29	0.50	150
IOC0447-01	Copper-200.8	Copper	ug/l	2.20	2.0	7.10
IOC0447-01	Cyanide-335.2 5ppb	Total Cyanide	ug/l	-6	5.0	4.30
IOC0447-01	Lead-200.8	Lead	ug/l	0.086	1.0	2.60
IOC0447-01	MBAS - SM5540-C	Surfactants (MBAS)	mg/l	0.044	0.10	0.50
IOC0447-01	Mercury - 245.1	Mercury	ug/l	0.019	0.20	0.20
IOC0447-01	Nitrogen, NO3+NO2 -N	Nitrate/Nitrite-N	mg/l	0.60	0.15	8.00
IOC0447-01	Perchlorate 314.0	Perchlorate	ug/l	0	4.0	6.00
IOC0447-01	Sulfate-300.0	Sulfate	mg/l	230	5.0	300
IOC0447-01	TDS - SM 2540C	Total Dissolved Solids	mg/l	610	10	950
IOC0447-02	624-Boeing 001/002 Q (Fr113+X)	1,1-Dichloroethene	ug/l	0	3.0	3.20
IOC0447-02	624-Boeing 001/002 Q (Fr113+X)	Trichloroethene	ug/l	0	5.0	5.00

Del Mar Analytical, Irvine
Michele Harper
Project Manager



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

Project ID: Routine Outfall 002

Report Number: IOC0447

Sampled: 03/04/05

Received: 03/04/05

DATA QUALIFIERS AND DEFINITIONS

- B** Analyte was detected in the associated Method Blank.
- J** Estimated value. Analyte detected at a level less than the Reporting Limit (RL) and greater than or equal to the Method Detection Limit (MDL). The user of this data should be aware that this data is of unknown quality.
- L2** Laboratory Control Sample recovery was below method control limits.
- 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.
- ZX** Due to sample matrix effects, the surrogate recovery was outside the acceptance limits.
- ND** Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified.
- RPD** Relative Percent Difference

Del Mar Analytical, Irvine
Michele Harper
Project Manager



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

Project ID: Routine Outfall 002

Report Number: IOC0447

Sampled: 03/04/05
 Received: 03/04/05

Certification Summary

Del Mar Analytical, Irvine

Method	Matrix	Nelac	California
EPA 120.1	Water	X	X
EPA 160.2	Water	X	X
EPA 160.5	Water	X	X
EPA 180.1	Water	X	X
EPA 200.8	Water	X	X
EPA 245.1	Water	X	X
EPA 300.0	Water	X	X
EPA 314.0	Water	X	X
EPA 335.2	Water	X	X
EPA 350.2	Water	X	X
EPA 405.1	Water	X	X
EPA 413.1	Water	X	X
EPA 608	Water	X	X
EPA 624	Water	X	X
EPA 625	Water	X	X
SM2540C	Water	X	X
SM5540-C	Water	X	X

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

Subcontracted Laboratories

Alta Analytical California Cert #1640

1104 Windfield Way - El Dorado Hills, CA 95762

Analysis Performed: 1613-Dioxin-HR
 Samples: IOC0447-01

Analysis Performed: EDD + Level 4
 Samples: IOC0447-01

Del Mar Analytical, Irvine
 Michele Harper
 Project Manager

1000447

CHAIN OF CUSTODY FORM

Version 02/17/05

Del Mar Analytical

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

Project:
Boeing-SSFL NPDES
Routine Outfall 002

Project Manager: Bronwyn Kelly

Phone Number:
 (626) 568-6691

Fax Number:
 (626) 568-6515

Sampler:

ANALYSIS REQUIRED				ANALYSIS REQUIRED														Field readings:		
Sample Description	Sample Matrix	Container Type	# of Cont.	Sampling Date/Time	Preservative	Bottle #	Total Recoverable Metals: Cu, Pb, Hg	Settleable Solids	VOCs 624 + xylenes	TCDD (and all congeners)	Oil & Grease (EPA 413.1)	Cyanide (total recoverable)	BOD5(20 degrees C)	Surfactants (MBAS)	Cl-, SO4, NO3+NO2-N, Perchlorate	Turbidity, TDS, TSS, Conductivity	Ammonia-N	2,4,6 Trichlorophenol, 2,4 Dinitrotoleune, Bis(2-ethylhexyl)phthalate, NDMA, pentachlorophenol (EPA 625)	Comments	
Outfall 002	W	Poly-1 liter	1	3-4-05 07:16	HNO3	1A	X													24 TAT
Outfall 002-Dup	W	Poly-1 liter	1		HNO3	1B	X													24 TAT
Outfall 002	W	Poly-1 liter	1		None	2		X												
Outfall 002	W	VOAs	3		HCl	3A, 3B, 3C			X											
Outfall 002	W	Glass-Amber	2		None	4A, 4B			X											
Outfall 002	W	1L Amber	2		HCl	5A, 5B				X										24 TAT
Outfall 002	W	Poly-500 ml	1		NaOH	6					X									24 TAT
Outfall 002	W	Poly-1 liter	1		None	7						X								
Outfall 002	W	Poly-500 ml	2		None	8A, 8B								X						
Outfall 002	W	Poly-500 ml	2		None	9A, 9B									X					
Outfall 002	W	Poly-500 ml	2		None	10A, 10B										X				
Outfall 002	W	Poly-500 ml	1		H2SO4	11											X			
Outfall 002	W	1L Amber	2		None	12A, 12B														
Outfall 002	W	1L Amber	2	3-4-05 07:22	None	13A, 13B														
Trip Blank	W	VOAs	3		HCl	14A, 14B, 14C														

(Handwritten signature/initials)

Turn around Time: (check)
 24 Hours _____ 5 Days _____
 48 Hours _____ 10 Days _____
 72 Hours _____ Normal _____
 Perchlorate Only 72 Hours _____
 Metals Only 72 Hours _____
 Sample Integrity: (Check) On Ice: 3°C

Relinquished By: *(Signature)* Date/Time: 3-4-05 15:40
Received By: *(Signature)* Date/Time: 3-4-05 17:50

Relinquished By: *(Signature)* Date/Time: 3-4-05 17:50
Received By: *(Signature)* Date/Time: 3-4-05 17:50

Relinquished By: *(Signature)* Date/Time: _____
Received By: *(Signature)* Date/Time: _____



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March 25, 2005

MWH-Pasadena/ Boeing
300 North Lake Avenue, Suite 1200
Pasadena, CA 91101

Attention: Bronwyn Kelly
Project: Routine Outfall 002
Sampled: 03/04/05
Del Mar Analytical Number: IOC0447

Dear Ms. Kelly:

Alta Analytical Laboratory performed the EPA Method 1613B Dioxin analysis for the project referenced above. Please use the following cross-reference table when reviewing your results.

MWH ID	DEL MAR ID	ALTA ID
Outfall 002	IOC0447-01	25853-001

Attached is the original report from the subcontract laboratory. If you have any questions or require further assistance, please do not hesitate to contact me at (949) 261-1022 at extension 215.

Sincerely yours,
DEL MAR ANALYTICAL

Michele Harper
Project Manager



March 16, 2005

Alta Project I.D.: 25853

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

Dear Ms. Harper,

Enclosed are the results for the one aqueous sample received at Alta Analytical Laboratory on March 08, 2005 under your Project Name "IOC0447". This sample was extracted and analyzed using EPA Method 1613 for tetra-through-octa chlorinated dioxins and furans. A rush 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,

Martha M. Maier
Director of HRMS Services



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: 3/8/2005

Alta Lab. ID

Client Sample ID

25853-001

IOC0447-01

SECTION II



Method Blank		EPA Method 1613			
Matrix:	Aqueous	QC Batch No.:	6593	Lab Sample:	0-MB001
Sample Size:	1.000 L	Date Extracted:	11-Mar-05	Date Analyzed DB-5:	14-Mar-05
				Date Analyzed DB-225:	NA
Analyte	Conc. (pg/L)	DL ^a	EMPC ^b	%R	LCL-UCL ^d Qualifiers
2,3,7,8-TCDD	ND	1.27		61.5	25 - 164
1,2,3,7,8-PeCDD	ND	1.50		57.2	25 - 181
1,2,3,4,7,8-HxCDD	ND	2.20		67.8	32 - 141
1,2,3,6,7,8-HxCDD	ND	2.32		76.7	28 - 130
1,2,3,7,8,9-HxCDD	ND	2.26		56.6	23 - 140
1,2,3,4,6,7,8-HpCDD	ND	3.00		26.9	17 - 157
OCDD	ND	11.1		63.1	24 - 169
2,3,7,8-TCDF	ND	1.37		54.3	24 - 185
1,2,3,7,8-PeCDF	ND	2.09		58.1	21 - 178
2,3,4,7,8-PeCDF	ND	1.73		60.3	26 - 152
1,2,3,4,7,8-HxCDF	ND	1.16		70.6	26 - 123
1,2,3,6,7,8-HxCDF	ND		0.905	67.0	28 - 136
2,3,4,6,7,8-HxCDF	ND	0.768		62.8	29 - 147
1,2,3,7,8,9-HxCDF	ND	1.22		53.2	28 - 143
1,2,3,4,6,7,8-HpCDF	ND	1.96		57.7	26 - 138
1,2,3,4,7,8,9-HpCDF	ND	1.38		32.9	17 - 157
OCDF	ND	7.76		71.7	35 - 197
Totals					
Total TCDD	ND	1.27			
Total PeCDD	ND	1.50			
Total HxCDD	ND	2.26			
Total HpCDD	ND	3.00			
Total TCDF	1.40		2.79		D
Total PeCDF	ND	3.06			
Total HxCDF	ND		0.905		
Total HpCDF	ND	2.12			

Footnotes

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

Analyst: MAS
 Approved By: Martha M. Maier
 16-Mar-2005 13:04



EPA Method 1613

OPR Results

Matrix:		Lab Sample:			
Aqueous	0-OPR001	QC Batch No.: 6593	Date Analyzed DB-225: NA		
Sample Size:		Date Analyzed DB-5:			
1,000 L	11-Mar-05	14-Mar-05	NA		
Analyte	Spike Conc. (ng/mL)	OPR Limits	Labeled Standard	%R	LCL-UCL
2,3,7,8-TCDD	10.0	6.7 - 15.8	IS 13C-2,3,7,8-TCDD	61.8	25 - 164
1,2,3,7,8-PeCDD	50.0	35 - 71	13C-1,2,3,7,8-PeCDD	62.9	25 - 181
1,2,3,4,7,8-HxCDD	50.0	35 - 82	13C-1,2,3,4,7,8-HxCDD	65.8	32 - 141
1,2,3,6,7,8-HxCDD	50.0	38 - 67	13C-1,2,3,6,7,8-HxCDD	77.0	28 - 130
1,2,3,7,8,9-HxCDD	50.0	32 - 81	13C-1,2,3,4,6,7,8-HpCDD	67.2	23 - 140
1,2,3,4,6,7,8-HpCDD	50.0	35 - 70	13C-OCDD	38.7	17 - 157
OCDD	100	78 - 144	13C-2,3,7,8-TCDF	63.1	24 - 169
2,3,7,8-TCDF	10.0	7.5 - 15.8	13C-1,2,3,7,8-PeCDF	59.0	24 - 185
1,2,3,7,8-PeCDF	50.0	40 - 67	13C-2,3,4,7,8-PeCDF	63.2	21 - 178
2,3,4,7,8-PeCDF	50.0	34 - 80	13C-1,2,3,4,7,8-HxCDF	57.9	26 - 152
1,2,3,4,7,8-HxCDF	50.0	36 - 67	13C-1,2,3,6,7,8-HxCDF	68.4	26 - 123
1,2,3,6,7,8-HxCDF	50.0	42 - 65	13C-2,3,4,6,7,8-HxCDF	67.7	28 - 136
2,3,4,6,7,8-HxCDF	50.0	35 - 78	13C-1,2,3,7,8,9-HxCDF	65.7	29 - 147
1,2,3,7,8,9-HxCDF	50.0	39 - 65	13C-1,2,3,4,6,7,8-HpCDF	63.1	28 - 143
1,2,3,4,6,7,8-HpCDF	50.0	41 - 61	13C-1,2,3,4,7,8,9-HpCDF	65.7	26 - 138
1,2,3,4,7,8,9-HpCDF	50.0	39 - 69	13C-OCDF	44.9	17 - 157
OCDF	100	63 - 170	CRS 37Cl-2,3,7,8-TCDD	72.7	35 - 197

Analyst: MAS

Approved By: Martha M. Maier 16-Mar-2005 13:04



Sample ID: IOC0447-01

EPA Method 1613

Client Data		Laboratory Data	
Name: Del Mar Analytical, Irvine	Lab Sample: 25853-001	Date Received: 8-Mar-05	
Project: IOC0447	QC Batch No.: 6593	Date Extracted: 11-Mar-05	
Date Collected: 4-Mar-05	Date Analyzed DB-5: 15-Mar-05	Date Analyzed DB-225: NA	
Time Collected: 0926			

Analyte	Conc. (pg/L)	DL ^a	EMPC ^b	Qualifiers	Labeled Standard	%R	LCL-UCL ^d	Qualifiers
2,3,7,8-TCDD	ND	0.877			13C-2,3,7,8-TCDD	74.1	25 - 164	
1,2,3,7,8-PeCDD	ND	0.530			13C-1,2,3,7,8-PeCDD	73.1	25 - 181	
1,2,3,4,7,8-HxCDD	ND	1.15			13C-1,2,3,4,7,8-HxCDD	86.2	32 - 141	
1,2,3,6,7,8-HxCDD	ND	1.19			13C-1,2,3,6,7,8-HxCDD	94.1	28 - 130	
1,2,3,7,8,9-HxCDD	ND	1.17			13C-1,2,3,4,6,7,8-HpCDD	82.0	23 - 140	
1,2,3,4,6,7,8-HpCDD	0.862				13C-OCDD	56.0	17 - 157	
OCDD	6.50			J	13C-2,3,7,8-TCDF	77.3	24 - 169	
2,3,7,8-TCDF	ND	0.676		J	13C-1,2,3,7,8-PeCDF	67.5	24 - 185	
1,2,3,7,8-PeCDF	ND	1.16			13C-2,3,4,7,8-PeCDF	71.0	21 - 178	
2,3,4,7,8-PeCDF	ND	1.03			13C-1,2,3,4,7,8-HxCDF	74.3	26 - 152	
1,2,3,4,7,8-HxCDF	ND	0.324			13C-1,2,3,6,7,8-HxCDF	82.0	26 - 123	
1,2,3,6,7,8-HxCDF	ND	0.311			13C-2,3,4,6,7,8-HxCDF	80.7	28 - 136	
2,3,4,6,7,8-HxCDF	ND	0.359			13C-1,2,3,7,8,9-HxCDF	78.6	29 - 147	
1,2,3,7,8,9-HxCDF	ND	0.557			13C-1,2,3,4,6,7,8-HpCDF	76.6	28 - 143	
1,2,3,4,6,7,8-HpCDF	ND	0.799			13C-1,2,3,4,7,8,9-HpCDF	82.9	26 - 138	
1,2,3,4,7,8,9-HpCDF	ND	0.907			13C-OCDF	65.9	17 - 157	
OCDF	ND	2.67			CRS 37Cl-2,3,7,8-TCDD	76.7	35 - 197	

Totals				Footnotes	
Total TCDD	ND	0.877			a. Sample specific estimated detection limit.
Total PeCDD	ND	0.530			b. Estimated maximum possible concentration.
Total HxCDD	ND	1.17			c. Method detection limit.
Total HpCDD	1.66				d. Lower control limit - upper control limit.
Total TCDF	ND	0.676			
Total PeCDF	ND	1.09			
Total HxCDF	ND	0.377			
Total HpCDF	ND	0.846			

Analyst: JMH

Approved By: Martha M. Maier 16-Mar-2005 13:04

APPENDIX

DATA QUALIFIERS & ABBREVIATIONS

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

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

The control limits are “interim limits only” until in-house limits are utilized.



CURRENT CERTIFICATIONS

NELAP — (Primary AA: California, Certificate No. 02102CA)

Department of the Navy

U.S. Army Corps of Engineers

U.S. EPA Region 5

Bureau of Reclamation — Mid-Pacific Region — (MP-470, Res-1.10)

Commonwealth of Kentucky — (Certificate No. 90063)

Commonwealth of Virginia — (Certificate No. 00013)

State of Alaska, Department of Environmental Conservation — (Certificate No. OS-00197)

State of Arizona — (Certificate No. AZ0639)

State of Arkansas, Department of Health — (Approval granted through CA certification)

State of Arkansas, Department of Environmental Quality

State of California — (Certificate No. 1640)

State of Colorado

State of Connecticut — (Certificate No. PH-0182)

State of Florida — (Certificate No. 87456)

State of Louisiana, Department of Health and Hospitals — (Certificate No. LA000014)

State of Louisiana, Department of Environmental Quality

State of Maine

State of Michigan (Certificate No. 81178087)

State of Mississippi — (Approval granted through CA certification)

State of Nevada — (Certificate No. CA413)

State of New Jersey — (Certificate No. CA003)

State of New York, Department of Health — (Certificate No. 11411)

State of North Carolina — (Certification No. 06700)

State of North Dakota, Department of Health — (Certificate No. R-078)

State of New Mexico

State of Oklahoma — (D9919)

State of Oregon — (Certificate No. CA413)

State of Pennsylvania — (Certificate No. 68-490)

State of South Carolina — (Certificate No. 87002001)

State of Tennessee — (Certificate No. 02996)

State of Texas — (Certificate No. TX247-1000A)

State of Utah — (Certificate No. E-201)

State of Washington — (Certification No. C091)

State of Wisconsin — (Certificate No. 998036160)

State of Wyoming — (USEPA Region 8 Ref: 8TMS-Q)

09/28/04



17461 Derian Ave. Suite 100, Irvine, CA 92614 Ph (949) 261-1022 Fax (949) 261-1228
 1014 E. Cooley Dr., Suite A, Colton, CA 92324 Ph (909) 370-4857 Fax (909) 370-1048
 9484 Chesapeake Drive, Suite 805, San Diego, CA 92123 Ph (619) 605-9886 Fax (619) 605-9889
 9830 South 67th Street, Suite B-120, Phoenix, AZ 85044 Ph (480) 786-0043 Fax (480) 786-0851
 2829 E. Sunset Pk., Suite #3, Las Vegas, NV 89120 Ph (702) 796-3820 Fax (702) 796-3821

SUBCONTRACT ORDER - PROJECT # IOC0447

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 Harper	Alta Analytical 1104 Windfield Way El Dorado Hills, CA 95762 Phone: (916) 933-1640 Fax: (916) 933-0940 <div style="text-align: right; font-size: 2em; font-family: cursive;"> 25853 1.4°C </div>

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

Analysis	Expiration	Sampled:	Comments
Sample ID: IOC0447-01 Water		03/04/05 09:26	Instant Notification
1613-Dioxin-HR	03/11/05 09:26		J flags, 17 congeners, no TEQ, sub to Alta
EDD + Level 4	04/01/05 09:26		Excel EDD email to pm, Include Std logs for Lvl IV
Containers Supplied:			
1 L Amber (IOC0447-01G)			
1 L Amber (IOC0447-01H)			

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

[Signature] 3-7-05 1700 [Signature] 3/8/05 0939
 Released By _____ Date _____ Time _____ Received By _____ Date _____ Time _____

Released By _____ Date _____ Time _____ Received By _____ Date _____ Time _____

STANDARD OPERATING PROCEDURE

Attachment 10.B.1

SAMPLE LOG-IN CHECKLIST

ALTA Project No.: 25853

1. Date Samples Arrived: <u>3/8/05</u> <u>0939</u> Initials: <u>BSB</u> Location: <u>WL-2</u>			
2. Time / Date logged in: <u>1356</u> <u>3/8/05</u> Initials: <u>BSB</u> Location: <u>WR-2</u>			
3. Samples Arrived By: (circle) <u>FedEx</u> UPS World Courier Other:			
4. Shipping Preservation: (circle) <u>Ice</u> <u>Blue Ice</u> / Dry Ice / None Temp °C <u>1.4°C</u>			
5. Shipping Container(s) Intact? If not, describe condition in comment section.	YES	NO	NA
6. Shipping Container(s) Custody Seals Present? Intact? If not intact, describe condition in comment section.	✓		
7. Shipping Documentation Present? (circle) Shipping Label <u>Airbill</u> Tracking Number <u>7928 6415 1923</u>	✓		
8. Sample Custody Seal(s) Present? No. of Seals _____ or Seal No. Intact? If not intact, describe condition in comment section.		✓	✓
9. Sample Container Intact? If no, indicate sample condition in comment section.	✓		
10. Chain of Custody (COC) or other Sample Documentation Present?	✓		
11. COC/Documentation Acceptable? If no, complete COC Anomaly Form.	✓		
12. Shipping Container (circle): ALTA <u>Client</u> Retain or <u>Return</u> or Disposed			
13. Container(s) and/or Bottle(s) Requested?		✓	
14. Drinking Water Sample? (HRMS Only) If yes, Acceptable Preservation? Y or N Preservation Info From? (circle) COC or Sample Container or None Noted			✓

Comments:

ALTA Analytical Laboratory
El Dorado Hills, CA 95762



Del Mar Analytical

17461 Dorian Ave, Suite 100, Irvine, CA 92614 Ph (949) 261-1022 Fax (949) 261-1228
 1914 E. Copley Dr., Suite A, Corona, CA 92724 Ph (951) 270-4867 Fax (951) 270-1048
 9484 Chompton Drive, Suite 202, San Diego, CA 92123 Ph (619) 535-8898 Fax (619) 535-8898
 8530 South Star Street, Suite B-120, Phoenix, AZ 85044 Ph (480) 788-0045 Fax (480) 788-0091
 2820 E. Sunset Pk., Suite 88, Las Vegas, NV 89120 Ph (702) 798-0828 Fax (702) 798-3821

SUBCONTRACT ORDER - PROJECT # IOC0447

SENDING LABORATORY:	RECEIVING LABORATORY:
Del Mar Analytical, Irvine 17461 Dorian Avenue, Suite 100 Irvine, CA 92614 Phone: (949) 261-1022 Fax: (949) 261-1228 Project Manager: Michele Harper	Alta Analytical 1104 Windfield Way El Dorado Hills, CA 95762 Phone: (916) 933-1640 Fax: (916) 933-0940 25853 1.4°C

Standard TAT is requested unless specific due date is requested ⇒ Due Date: 2 week Initials: MH

Analyte	Expiration	Comments
Sample ID: IOC0447-01 Water 1613-Dioxin-ER EDD + Level 4	Sampled: 03/04/05 09:26 03/11/05 09:26 04/01/05 09:26	Instant Notification I flags, 17 congeners, no TEQ, sub to Alta Excel EDD email to pm, include Std logs for Lvl IV
Containers Supplied: 1 L Amber (IOC0447-01G) 1 L Amber (IOC0447-01H)		

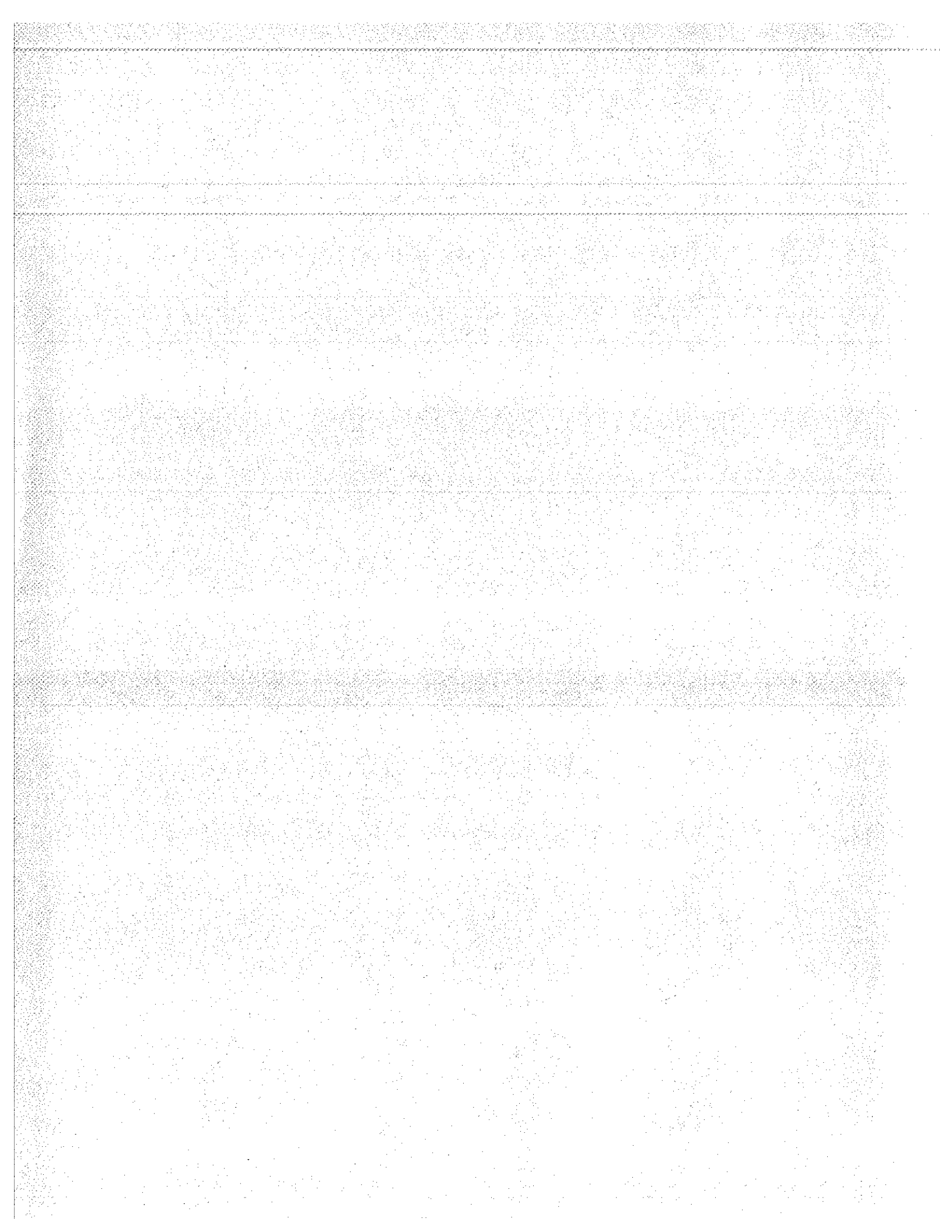
R.B.
 Sampler = ~~RAC B~~
 M# 34103

SAMPLE INTEGRITY:

All containers intact: <input type="checkbox"/> Yes <input type="checkbox"/> No	Sample labels/COC agree: <input type="checkbox"/> Yes <input type="checkbox"/> No	Samples Received On Ice: <input type="checkbox"/> Yes <input type="checkbox"/> No
Chain of Custody Present: <input type="checkbox"/> Yes <input type="checkbox"/> No	Samples Preserved Properly: <input type="checkbox"/> Yes <input type="checkbox"/> No	Samples Received at (temp): _____

Released By: [Signature] Date: _____ Time: _____ Received By: _____ Date: _____ Time: _____

Released By: _____ Date: _____ Time: _____ Received By: _____ Date: _____ Time: _____

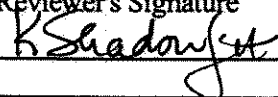


CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

AMEC Earth & Environmental
 550 South Wadsworth Boulevard
 Suite 500
 Lakewood, CO 80226

Package ID T711DF36
 Task Order 313150010
 SDG No. Multiple
 No. of Analyses 4

Laboratory Alta
 Reviewer K. Shadowlight
 Analysis/Method Dioxins

Date: March 25, 2005
 Reviewer's Signature


ACTION ITEMS ^a	
1. Case Narrative Deficiencies	
2. Out of Scope Analyses	
3. Analyses Not Conducted	
4. Missing Hardcopy Deliverables	
5. Incorrect Hardcopy Deliverables	
6. Deviations from Analysis Protocol, e.g.,	Qualifications were assigned for the following:
Holding Times	* EMPCs
GC/MS Tune/Inst. Performance	* Detects below the lower method calibration level
Calibration	
Method blanks	
Surrogates	
Matrix Spike/Dup LCS	
Field QC	
Internal Standard Performance	
Compound Identification and Quantitation	
System Performance	
COMMENTS ^b	
^a 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

ANALYSIS: DIOXINS/FURANS

SAMPLE DELIVERY GROUPS: Multiple SDGs

Prepared by

AMEC—Denver Operations
550 South Wadsworth Boulevard, Suite 500
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title: NPDES Monitoring
Contract Task Order #: 313150010
Sample Delivery Group #: Multiple
Project Manager: B. McIlvaine
Matrix: Water
Analysis: Dioxins/Furans
QC Level: Level IV
No. of Samples: 4
No. of Reanalyses/Dilutions: 0
Reviewer: K. Shadowlight
Date of Review: March 25 2005

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

Table 1. Sample Identification

Client ID	Laboratory ID (Del Mar)	Laboratory ID (Alta)	Matrix	COC Method
Outfall 001	IOC1042-01	25897-001	water	1613
Outfall 002	IOC0995-01	25899-001	water	1613
Outfall 004	IOC0450-01	25848-001	water	1613
Outfall 011	IOC0996-01	25898-001	water	1613

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

Following are findings associated with sample management:

2.1.1 Sample Preservation, Handling, and Transport

All of the samples in these SDGs were received at Del Mar Analytical within the temperature limits of $4^{\circ}\text{C} \pm 2^{\circ}\text{C}$. The samples were shipped to Alta for dioxin/furan analyses and were received below the temperature limits at 1.2°C and 1.3°C ; however, as the samples were not noted to have been frozen or damaged, no qualifications were required. According to the laboratory login sheets, all samples were received intact and in good condition at both laboratories. No qualifications were required.

2.1.2 Chain of Custody

The COCs and transfer COCs were legible and signed by the appropriate field and laboratory personnel, and accounted for the analyses presented in these SDGs. As the samples were couriered directly to Del Mar Analytical, custody seals were not required. The coolers received by Alta had custody seals present and intact; however, custody seals were not present on the sample containers. The EPA 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 a year of collection. No qualifications were required.

2.2 INSTRUMENT PERFORMANCE

Following are findings associated with instrument performance:

2.2.1 GC Column Performance

A Windows Defining Mix (WDM) containing the first and last eluting congeners of each descriptor and isomer specificity compounds was not analyzed prior to the initial calibration sequence or at the beginning of each analytical sequence; however, the first and last eluting congeners and isomer specificity compounds were added to the midpoint of the initial calibration and to the continuing calibration standards (see section 2.3.2). The GC column performance in the calibrations was acceptable, with the height of the valley between the closely eluting isomers and 2,3,7,8-TCDD reported as less than 25%. No qualifications were required.

2.2.2 Mass Spectrometer Performance

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

2.3 CALIBRATION

2.3.1 Initial Calibration

There was one initial calibration, analyzed 08/30/04. The calibration consisted of six concentration level standards (CS0 through CS5) analyzed to verify instrument linearity. The initial calibration was acceptable with %RSDs $\leq 20\%$ for the 15 native compounds (calibration by isotope dilution) and $\leq 35\%$ for the two 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 VERs were acceptable with the concentrations within the acceptance criteria listed in Table 6 of EPA Method 1613. The ion abundance ratios and relative retention times were within the method QC limits. 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 standards 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 (6613-MB001) was extracted and analyzed with the samples in these SDGs. There were no target compound detects reported 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 Ongoing Precision Recovery (OPR) sample (6613-OPR001) was extracted and analyzed with the samples in these SDGs. All recoveries were within the acceptance criteria listed in Table 6 of Method 1613. No qualifications were required.

2.6 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

MS/MSD analyses were not performed in these SDGs. 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 samples in these SDGs had no associated field QC samples. No qualifications were required.

2.7.2 Field Duplicates

No field duplicate samples were identified for these SDGs.

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. Any reported EMPC was qualified as an estimated nondetect, "UJ." Any detects below the lower method calibration level (MCL) were qualified as estimated, "J." No further qualifications were required.



Sample ID: **IOC0995** *Outfall 022* **EPA Method 1613**

Client Data		Laboratory Data	
Name: Del Mar Analytical, Irvine	Lab Sample: 25899-001	Date Received: 15-Mar-05	
Project: IOC0995	QC Batch No.: 6613	Date Extracted: 18-Mar-05	
Date Collected: 11-Mar-05	Date Analyzed DB-5: 21-Mar-05	Date Analyzed DB-225: NA	
Time Collected: 1044			

Analyte	Conc. (pg/L)	DL ^a	Sample Data		%R	LCL-UCI ^d Qualifiers
			Matrix:	Aqueous		
2,3,7,8-TCDD	ND	1.08			61.3	25 - 164
1,2,3,7,8-PeCDD	ND	1.14			55.5	25 - 181
1,2,3,4,7,8-HxCDD	ND	2.08			65.0	32 - 141
1,2,3,6,7,8-HxCDD	ND	1.98			67.7	28 - 130
1,2,3,7,8,9-HxCDD	ND	2.02			67.8	23 - 140
1,2,3,4,6,7,8-HpCDD	ND	1.15			52.8	17 - 157
OCDD	ND				66.2	24 - 169
2,3,7,8-TCDF	ND	1.33			54.4	24 - 185
1,2,3,7,8-PeCDF	ND	2.31			55.6	21 - 178
2,3,4,7,8-PeCDF	ND	1.96			54.9	26 - 152
1,2,3,4,7,8-HxCDF	ND	0.598			62.7	26 - 123
1,2,3,6,7,8-HxCDF	ND	0.589			63.4	28 - 136
2,3,4,6,7,8-HxCDF	ND	0.628			61.2	29 - 147
1,2,3,7,8,9-HxCDF	ND	0.930			60.6	28 - 143
1,2,3,4,6,7,8-HpCDF	ND	0.816			68.7	26 - 138
1,2,3,4,7,8,9-HpCDF	ND	0.876			59.9	17 - 157
OCDF	ND	2.09			79.6	35 - 197

Totals	DL ^a	EMPC ^b	Qualifiers	Footnotes
Total TCDD	ND			a. Sample specific estimated detection limit.
Total PeCDD	ND			b. Estimated maximum possible concentration.
Total HxCDD	ND			c. Method detection limit.
Total HpCDD	ND			d. Lower control limit - upper control limit.
Total TCDF	ND			
Total PeCDF	ND			
Total HxCDF	ND			
Total HpCDF	ND			

Analyst: JMH Approved By: Martha M. Maier 22-Mar-2005 09:45

PROJECT VALIDATED

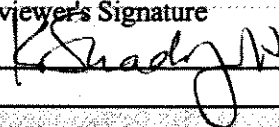
CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

AMEC Earth & Environmental
 550 South Wadsworth Boulevard
 Suite 500
 Lakewood, CO 80226

Package ID T711VO70
 Task Order 313150010
 SDG No. IOC0995, IOC1042

No. of Analyses 4

Laboratory Del Mar Analytical
 Reviewer K. Shadowlight
 Analysis/Method Volatiles by 624

Date April 8, 2005
 Reviewer's Signature


ACTION ITEMS ^a	
1. Case Narrative	
Deficiencies	
2. Out of Scope	
Analyses	
3. Analyses Not Conducted	
4. Missing Hardcopy	
Deliverables	
5. Incorrect Hardcopy	
Deliverables	
6. Deviations from Analysis	Qualifications were assigned for continuing calibration %D outliers
GC/MS Tune/Inst. Perform	
Calibrations	
Blanks	
Surrogates	
Matrix Spike/Dup LCS	
Field QC	
Internal Standard Performance	
Compound Identification and	
Quantitation	
System Performance	
COMMENTS ^b	
^a 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

ANALYSIS: VOLATILES

SAMPLE DELIVERY GROUP: IOC0995, IOC1042

Prepared by

AMEC Denver Operations
550 South Wadsworth Boulevard, Suite 500
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title: NPDES Monitoring
Contract Task Order #: 313150010
SDG#: IOC0995, IOC1042
Project Manager: B. McIlvaine
Matrix: Water
Analysis: Volatiles
QC Level: Level IV
No. of Samples: 4
No. of Reanalyses/Dilutions: 0
Reviewer: K. Shadowlight
Date of Review: April 8, 2005

The samples listed in Table 1 were validated based on the guidelines outlined in the *AMEC Data Validation Procedure for Levels C and D Volatile Organics (DVP-2, Rev. 2)*, *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 summary forms as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

Table 1. Sample identification

Client ID	EPA ID	Lab No.	Matrix	Method
Outfall 001	Outfall 001	IOC1042-01	water	624
Trip Blank	Trip Blank	IOC1042-02	water	624
Outfall 002	Outfall 002	IOC0995-01	water	624
Trip Blank	Trip Blank	IOC0995-02	water	624

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

The following are findings associated with sample management:

2.1.1 Sample Preservation, Handling, and Transport

Samples Outfall 002 and Trip Blank (IOC0995) were received above the temperature limits of $4^{\circ}\text{C} \pm 2^{\circ}\text{C}$, at 7°C ; however, the samples were transported directly to the laboratory from the field, and had not completely cooled in transit. The remaining samples in these SDGs were received at the laboratory within the temperature limits of $4^{\circ}\text{C} \pm 2^{\circ}\text{C}$. The samples were properly preserved. The COCs noted that the samples were received intact; however, information regarding absence of headspace was not provided. No qualifications were required.

2.1.2 Chain of Custody

The COCs were signed and dated by both field and laboratory personnel. The COCs accounted for the analyses presented in these SDGs. As the samples were couriered directly to the laboratory, custody seals were not required. No qualifications were required.

2.1.3 Holding Times

The samples were analyzed within 14 days of collection. No qualifications were required.

2.2 GC/MS TUNING

The ion abundance windows shown on the quantitation report were consistent with those specified in the EPA Method 624, and all ion abundances were within the established windows. The samples and associated QC were analyzed within 12 hours of the BFB injection times. The Form Vs were verified from the raw data and no discrepancies between the summary forms and the raw data were noted. No qualifications were required.

2.3 CALIBRATION

Two initial calibrations dated 11/16/04 and 02/01/05, were associated with these SDGs. The average RRFs were ≥ 0.05 and the %RSDs were $\leq 35\%$ for the applicable target compounds. Three continuing calibrations analyzed 03/13/05 and 03/14/05 (GCMS33 and GCMS45); were associated with the sample analyses. The %D for vinyl chloride exceeded 20% in the continuing calibration dated 03/14/05 (GCMS33); therefore, the nondetect result for vinyl chloride was qualified as estimated, "UJ," in sample Outfall 002. The %Ds for trichlorofluoromethane, 1,1,1-trichloroethane, and carbon tetrachloride exceeded 20% in the continuing calibration dated 03/14/05 (GCMS45); therefore, the nondetect results for the aforementioned target compounds were qualified as estimated "UJ," in sample Outfall 001. The Trip Blank was not qualified for %D outliers. The remaining %Ds were $\leq 20\%$ and the RRFs for all target compounds were ≥ 0.05 . A representative number of %RSDs and average RRFs from the initial calibration, and %Ds and RRFs from the

continuing calibration were recalculated from the raw data, and no calculation or transcription errors were found. No further qualifications were required.

2.4 BLANKS

Three water method blanks (5C13007-BLK1, 5C14017-BLK1, and 5C14027-BLK1) were associated with these SDGs. There were no detects above the MDLs for the target compounds listed on the sample result summaries. The method blank raw data showed no evidence of false negatives. No qualifications were required.

2.5 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

Three water blank spikes (5C13007-BS1, 5C14017-BS1, and 5C14027-BS1) were associated with these SDGs. All recoveries were within the laboratory-established QC limits. A representative number of recoveries were recalculated from the raw data and no calculation or transcription errors were found. No qualifications were required.

2.6 SURROGATE RECOVERY

The surrogates were recovered within the QC limits of 80-120% in the samples and associated QC. A representative number of surrogate recoveries were recalculated from the raw data and no calculation or transcription errors were found. No qualifications were required.

2.7 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

MS/MSD analyses were not performed for the site samples in these SDGs. Evaluation of method accuracy was based on 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 (IOC0995) and Trip blank (IOC1042) were the trip blanks associated with the site samples in these SDGs. There were no target compounds detected above the MDLs in the either of the trip blanks. No qualifications were required.

2.8.2 Field Blanks and Equipment Rinsates

There were no other field QC samples associated with these SDGs. No qualifications were required.

2.8.3 Field Duplicates

There were no field duplicate samples associated with these SDGs.

2.9 INTERNAL STANDARDS PERFORMANCE

Internal standard area counts and retention times for the samples in this SDG were within the control limits established by the continuing calibration standards: +100%/-50% for internal standard areas and ± 0.50 minutes for retention times. A representative number of internal standard areas and retention times were verified from the raw data, and no calculation or transcription errors were noted. No qualifications were required.

2.10 COMPOUND IDENTIFICATION

Target compound identification was verified at a Level IV data validation. The laboratory analyzed for volatile target compounds by EPA Method 624. Chromatograms, retention times, and spectra for the samples and QC were examined and no target compound identification problems were noted. No qualifications were required.

2.11 COMPOUND QUANTIFICATION AND REPORTED DETECTION LIMITS

Compound quantification is verified at a Level IV data validation. The reporting limits were supported by the lowest concentrations of the initial calibration standards and by the MDL study. Compound quantitation was verified by recalculating any sample detects and a representative number of blank spike and surrogate recoveries from the raw data. Results were reported in ug/L (ppm). No calculation or transcription errors were noted. No qualifications were required.

2.12 TENTATIVELY IDENTIFIED COMPOUNDS

The laboratory did not provide TICs for these SDGs. No qualifications were required.

2.13 SYSTEM PERFORMANCE

A review of the chromatograms and other raw data showed no identifiable problems with system performance. No qualifications were required.



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 9484 Chesapeake Dr., Suite 805, San Diego, CA 92123 (619) 505-8596 FAX (619) 505-8689
 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: IOC0995

Sampled: 03/11/05
 Received: 03/11/05

DRAFT: PURGEABLES BY GC/MS (EPA 624)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOC0995-01 (DRAFT: Outfall 002 - Water)									
Reporting Units: ug/l									
Benzene	EPA 624	5C14017	0.28	2.0	ND	1	03/14/05	03/14/05	u
Carbon tetrachloride	EPA 624	5C14017	0.28	5.0	ND	1	03/14/05	03/14/05	
Chloroform	EPA 624	5C14017	0.33	2.0	ND	1	03/14/05	03/14/05	
1,1-Dichloroethane	EPA 624	5C14017	0.27	2.0	ND	1	03/14/05	03/14/05	
1,2-Dichloroethane	EPA 624	5C14017	0.28	2.0	ND	1	03/14/05	03/14/05	
1,1-Dichloroethene	EPA 624	5C14017	0.32	3.0	ND	1	03/14/05	03/14/05	
Ethylbenzene	EPA 624	5C14017	0.25	2.0	ND	1	03/14/05	03/14/05	
Tetrachloroethene	EPA 624	5C14017	0.32	2.0	ND	1	03/14/05	03/14/05	
Toluene	EPA 624	5C14017	0.36	2.0	ND	1	03/14/05	03/14/05	
1,1,1-Trichloroethane	EPA 624	5C14017	0.30	2.0	ND	1	03/14/05	03/14/05	
1,1,2-Trichloroethane	EPA 624	5C14017	0.30	2.0	ND	1	03/14/05	03/14/05	
Trichloroethene	EPA 624	5C14017	0.26	5.0	ND	1	03/14/05	03/14/05	
Trichlorofluoromethane	EPA 624	5C14017	0.34	5.0	ND	1	03/14/05	03/14/05	
Vinyl chloride	EPA 624	5C14017	0.26	5.0	ND	1	03/14/05	03/14/05	
Xylenes, Total	EPA 624	5C14017	0.52	4.0	ND	1	03/14/05	03/14/05	
Surrogate: Dibromofluoromethane (80-120%)					118 %				
Surrogate: Toluene-d8 (80-120%)					100 %				
Surrogate: 4-Bromofluorobenzene (80-120%)					98 %				

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOC0995-02 (DRAFT: Trip Blank - Water)									
Reporting Units: ug/l									
Benzene	EPA 624	5C13007	0.28	2.0	ND	1	03/13/05	03/13/05	u
Carbon tetrachloride	EPA 624	5C13007	0.28	5.0	ND	1	03/13/05	03/13/05	
Chloroform	EPA 624	5C13007	0.33	2.0	ND	1	03/13/05	03/13/05	
1,1-Dichloroethane	EPA 624	5C13007	0.27	2.0	ND	1	03/13/05	03/13/05	
1,2-Dichloroethane	EPA 624	5C13007	0.28	2.0	ND	1	03/13/05	03/13/05	
1,1-Dichloroethene	EPA 624	5C13007	0.32	3.0	ND	1	03/13/05	03/13/05	
Ethylbenzene	EPA 624	5C13007	0.25	2.0	ND	1	03/13/05	03/13/05	
Tetrachloroethene	EPA 624	5C13007	0.32	2.0	ND	1	03/13/05	03/13/05	
Toluene	EPA 624	5C13007	0.36	2.0	ND	1	03/13/05	03/13/05	
1,1,1-Trichloroethane	EPA 624	5C13007	0.30	2.0	ND	1	03/13/05	03/13/05	
1,1,2-Trichloroethane	EPA 624	5C13007	0.30	2.0	ND	1	03/13/05	03/13/05	
Trichloroethene	EPA 624	5C13007	0.26	5.0	ND	1	03/13/05	03/13/05	
Trichlorofluoromethane	EPA 624	5C13007	0.34	5.0	ND	1	03/13/05	03/13/05	
Vinyl chloride	EPA 624	5C13007	0.26	5.0	ND	1	03/13/05	03/13/05	
Xylenes, Total	EPA 624	5C13007	0.52	4.0	ND	1	03/13/05	03/13/05	
Surrogate: Dibromofluoromethane (80-120%)					113 %				
Surrogate: Toluene-d8 (80-120%)					99 %				
Surrogate: 4-Bromofluorobenzene (80-120%)					98 %				

AMEC VALIDATED

DRAFT REPORT
 DRAFT REPORT
 DATA SUBJECT TO CHANGE

LEVEL IV

The results pertain only to the samples listed on this report and should not be reproduced, except in full, without written permission from Del Mar Analytical.

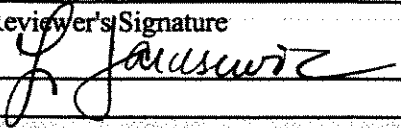
CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

AMEC Earth & Environmental
 550 South Wadsworth Boulevard
 Suite 500
 Lakewood, CO 80226

Package ID T711WC97
 Task Order 313150010
 SDG No. IOC0995, IOC1042

No. of Analyses 2

Laboratory Del Mar Analytical
 Reviewer L. Jarusewic
 Analysis/Method General Minerals

Date: 04/05/05
 Reviewer's Signature


ACTION ITEMS ^a	
1. Case Narrative Deficiencies	
2. Out of Scope Analyses	
3. Analyses Not Conducted	
4. Missing Hardcopy Deliverables	
5. Incorrect Hardcopy Deliverables	
6. Deviations from Analysis Protocol, e.g.,	Qualifications applied for:
	1) Detects below the reporting limit
Holding Times	_____
GC/MS Tune/Inst. Performance	_____
Calibrations	_____
Blanks	_____
Surrogates	_____
Matrix Spike/Dup LCS	_____
Field QC	_____
Internal Standard Performance	_____
Compound Identification and Quantitation	_____
System Performance	_____
_____	_____
_____	_____
_____	_____
COMMENTS ^b	

^a 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

ANALYSIS: GENERAL MINERALS

SAMPLE DELIVERY GROUPS: IOC0995 & IOC1042

Prepared by

AMEC—Denver Operations
550 South Wadsworth Boulevard, Suite 500
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title: NPDES Monitoring
Contract Task Order #: 313150010
Sample Delivery Group #: IOC0995, IOC1042
Project Manager: B. McIlvaine
Matrix: Water
Analysis: General Minerals
QC Level: Level IV
No. of Samples: 2
Reviewer: L. Jarusewic
Date of Review: April 5, 2005

The samples listed in Table 1 was validated based on the guidelines outlined in the AMEC *Data Validation Procedures SOP DVP-6, Rev. 2, USEPA Methods for Chemical Analysis of Water and Wastes Method 350.2, 120.1, and 180.1*, 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 I as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

Table 1. Sample identification

Client ID	EPA ID	Laboratory ID	Matrix	COC Method
Outfall 001	Outfall 001	IOC1042-01	Water	General Minerals
Outfall 002	Outfall 002	IOC0995-01	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

Sample Outfall 002 was received at the laboratory above the temperature limits of $4^{\circ}\text{C} \pm 2^{\circ}\text{C}$, at 7°C ; however, as the sample had insufficient time to cool in transit to the laboratory, no qualifications were required. Sample Outfall 001 was received at the laboratory within the temperature limits of $4^{\circ}\text{C} \pm 2^{\circ}\text{C}$. No preservation problems were noted by the laboratory. No qualifications were required.

2.1.2 Chain of Custody

The COCs were signed and dated by field and laboratory personnel. The COCs accounted for all analyses presented in this SDG. No sample qualifications were required.

2.1.3 Holding Times

The holding times were assessed by comparing the dates of collection with the dates of analyses. The 28-day analytical holding time for ammonia and conductivity and the 48-hour holding time for turbidity were met. No qualifications were required.

2.2 CALIBRATION

For the applicable analyses, the initial calibration correlation coefficients were ≥ 0.995 . The initial and continuing calibration information was acceptable with recoveries within the control limits of 90-110%. For ammonia, no information regarding the standardization of the titrant was provided; however, as the LCS recovery was within the CCV control limits, no qualifications were required.

2.3 BLANKS

The method blank and CCB results reported on the summary forms and in the raw data for blank analyses associated with the samples were nondetects at the reporting limit. No qualifications were required.

2.4 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

The ammonia laboratory control sample recovery was within the laboratory-established control limits. The LCS is not applicable to turbidity or conductivity. No qualifications were required.

2.5 SURROGATES RECOVERY

Surrogate recovery is not applicable to the analyses presented in these SDGs.

2.6 LABORATORY DUPLICATES

Laboratory duplicate analyses were performed on Outfall 001 for conductivity and Outfall 002 for turbidity. The RPDs were within laboratory-established control limits and no qualifications were required.

2.7 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

There were no MS/MSD analyses performed in association with the samples in these SDGs; therefore, no assessment was made with respect to this criterion. Ammonia method accuracy was assessed based on LCS results.

2.8 FURNACE ATOMIC ABSORPTION QC

Furnace atomic absorption was not utilized for the analyses of these samples; therefore, furnace atomic absorption QC is not applicable.

2.9 ICP SERIAL DILUTION

ICP serial dilution is not applicable to the analyses presented in this data validation report.

2.10 SAMPLE RESULT VERIFICATION

A Level IV review was performed for the samples in these data packages. Calculations were verified, and the sample results reported on the Form Is were verified against the raw data. No transcription errors or calculation errors were noted. Turbidity detected below the reporting limit in Outfall 002 was qualified as estimated, "J." No further qualifications were required.

2.11 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. The following are findings associated with field QC samples:

2.11.1 Field Blanks and Equipment Rinsates

The samples in these SDGs had no associated field QC samples. No qualifications were required.

2.11.2 Field Duplicates

There were no field duplicate pairs associated with these SDGs.



Del Mar Analytical

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 9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851
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MWH-Pasadena/Boeing
 300 North Lake Avenue, Suite 1200
 Pasadena, CA 91101
 Attention: Bronwyn Kelly

Project ID: Routine Outfall 002

Report Number: IOC0995

Sampled: 03/11/05
 Received: 03/11/05

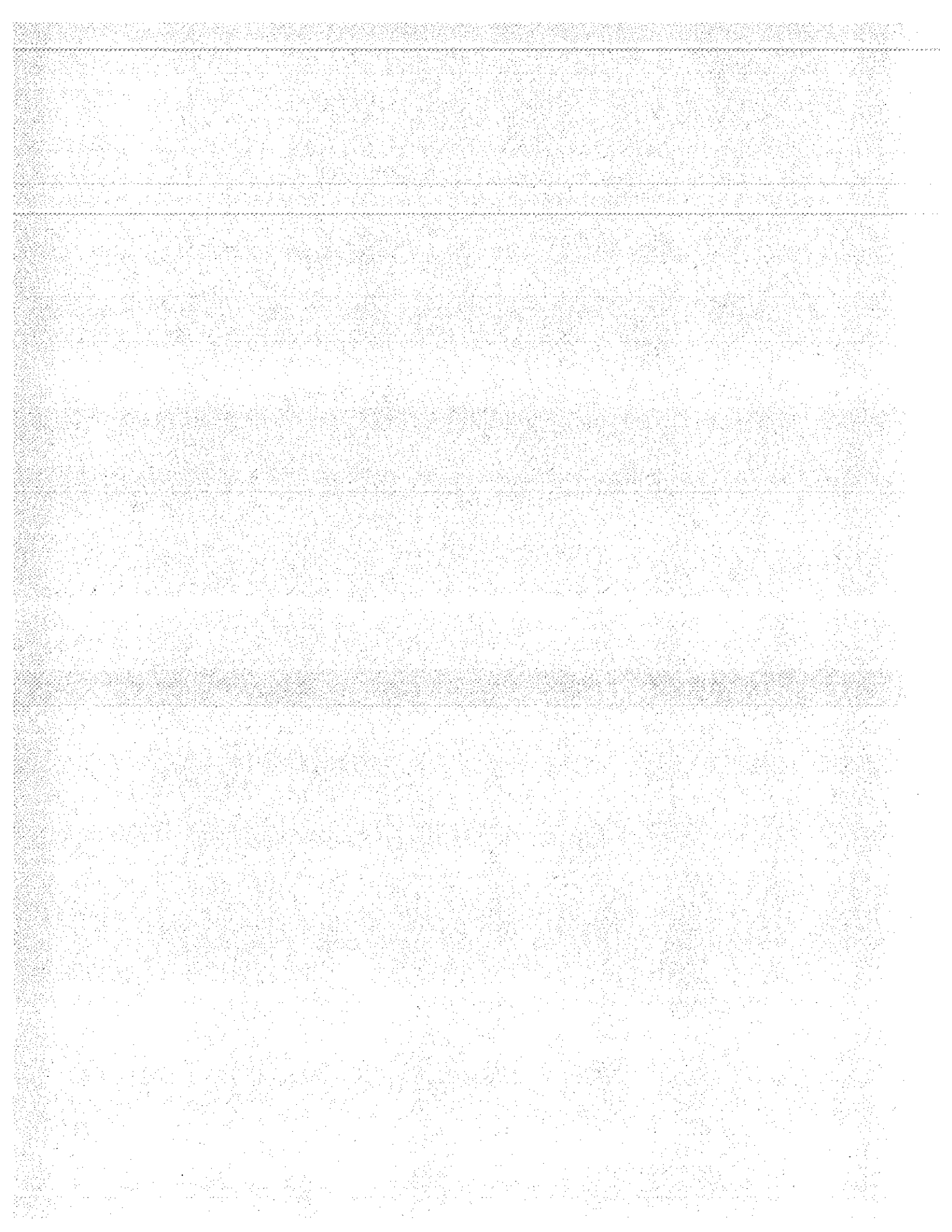
DRAFT: INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data	Qualifiers
Sample ID: IOC0995-01 (DRAFT: Outfall 002 - Water)										
Reporting Units: mg/l										
Ammonia-N (Distilled)	EPA 350.2	SC15088	0.30	0.50	ND	1	03/15/05	03/15/05	U	REV QUAL CODE
Sample ID: IOC0995-01 (DRAFT: Outfall 002 - Water)										
Reporting Units: NTU										
Turbidity	EPA 180.1	SC12043	0.040	1.0	0.59	1	03/12/05	03/12/05	J	J DNQ
Sample ID: IOC0995-01 (DRAFT: Outfall 002 - Water)										
Reporting Units: umhos/cm										
Specific Conductance	EPA 120.1	SC14070	1.0	1.0	960	1	03/14/05	03/14/05		

AMEC VALIDATED

LEVEL IV

DRAFT REPORT
 DRAFT REPORT
 DATA SUBJECT TO CHANGE





LABORATORY REPORT

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

Project: Routine Outfall 002

Sampled: 03/11/05
Received: 03/11/05
Issued: 04/04/05 09:25

NELAP #01108CA California ELAP#1197 CSDLAC #10117

The results listed within this Laboratory Report pertain only to the samples tested in the laboratory. The analyses contained in this report were performed in accordance with the applicable certifications as noted. All soil samples are reported on a wet weight basis unless otherwise noted in the report. This Laboratory Report is confidential and is intended for the sole use of Del Mar Analytical and its client. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical. The Chain of Custody, 1 page, is included and is an integral part of this report.

This entire report was reviewed and approved for release.

SAMPLE CROSS REFERENCE

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

LABORATORY ID	CLIENT ID	MATRIX
IOC0995-01	Outfall 002	Water
IOC0995-02	Trip Blank	Water

Reviewed By:

Del Mar Analytical, Irvine
Wendy Kirkeeng For Michele Harper
Project Manager



Del Mar Analytical

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

Project ID: Routine Outfall 002

Report Number: IOC0995

Sampled: 03/11/05

Received: 03/11/05

PURGEABLES BY GC/MS (EPA 624)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOC0995-01 (Outfall 002 - Water)									
Reporting Units: ug/l									
Benzene	EPA 624	5C14017	0.28	2.0	ND	1	03/14/05	03/14/05	
Carbon tetrachloride	EPA 624	5C14017	0.28	5.0	ND	1	03/14/05	03/14/05	
Chloroform	EPA 624	5C14017	0.33	2.0	ND	1	03/14/05	03/14/05	
1,1-Dichloroethane	EPA 624	5C14017	0.27	2.0	ND	1	03/14/05	03/14/05	
1,2-Dichloroethane	EPA 624	5C14017	0.28	2.0	ND	1	03/14/05	03/14/05	
1,1-Dichloroethene	EPA 624	5C14017	0.32	3.0	ND	1	03/14/05	03/14/05	
Ethylbenzene	EPA 624	5C14017	0.25	2.0	ND	1	03/14/05	03/14/05	
Tetrachloroethene	EPA 624	5C14017	0.32	2.0	ND	1	03/14/05	03/14/05	
Toluene	EPA 624	5C14017	0.36	2.0	ND	1	03/14/05	03/14/05	
1,1,1-Trichloroethane	EPA 624	5C14017	0.30	2.0	ND	1	03/14/05	03/14/05	
1,1,2-Trichloroethane	EPA 624	5C14017	0.30	2.0	ND	1	03/14/05	03/14/05	
Trichloroethene	EPA 624	5C14017	0.26	5.0	ND	1	03/14/05	03/14/05	
Trichlorofluoromethane	EPA 624	5C14017	0.34	5.0	ND	1	03/14/05	03/14/05	
Vinyl chloride	EPA 624	5C14017	0.26	5.0	ND	1	03/14/05	03/14/05	
Xylenes, Total	EPA 624	5C14017	0.52	4.0	ND	1	03/14/05	03/14/05	

Surrogate: Dibromofluoromethane (80-120%)

118 %

Surrogate: Toluene-d8 (80-120%)

100 %

Surrogate: 4-Bromofluorobenzene (80-120%)

98 %

Sample ID: IOC0995-02 (Trip Blank - Water)

Reporting Units: ug/l

Benzene	EPA 624	5C13007	0.28	2.0	ND	1	03/13/05	03/13/05	
Carbon tetrachloride	EPA 624	5C13007	0.28	5.0	ND	1	03/13/05	03/13/05	
Chloroform	EPA 624	5C13007	0.33	2.0	ND	1	03/13/05	03/13/05	
1,1-Dichloroethane	EPA 624	5C13007	0.27	2.0	ND	1	03/13/05	03/13/05	
1,2-Dichloroethane	EPA 624	5C13007	0.28	2.0	ND	1	03/13/05	03/13/05	
1,1-Dichloroethene	EPA 624	5C13007	0.32	3.0	ND	1	03/13/05	03/13/05	
Ethylbenzene	EPA 624	5C13007	0.25	2.0	ND	1	03/13/05	03/13/05	
Tetrachloroethene	EPA 624	5C13007	0.32	2.0	ND	1	03/13/05	03/13/05	
Toluene	EPA 624	5C13007	0.36	2.0	ND	1	03/13/05	03/13/05	
1,1,1-Trichloroethane	EPA 624	5C13007	0.30	2.0	ND	1	03/13/05	03/13/05	
1,1,2-Trichloroethane	EPA 624	5C13007	0.30	2.0	ND	1	03/13/05	03/13/05	
Trichloroethene	EPA 624	5C13007	0.26	5.0	ND	1	03/13/05	03/13/05	
Trichlorofluoromethane	EPA 624	5C13007	0.34	5.0	ND	1	03/13/05	03/13/05	
Vinyl chloride	EPA 624	5C13007	0.26	5.0	ND	1	03/13/05	03/13/05	
Xylenes, Total	EPA 624	5C13007	0.52	4.0	ND	1	03/13/05	03/13/05	

Surrogate: Dibromofluoromethane (80-120%)

113 %

Surrogate: Toluene-d8 (80-120%)

99 %

Surrogate: 4-Bromofluorobenzene (80-120%)

98 %

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 Wendy Kirkeeng For Michele Harper
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MWH-Pasadena/Boeing
 300 North Lake Avenue, Suite 1200
 Pasadena, CA 91101
 Attention: Bronwyn Kelly

Project ID: Routine Outfall 002

Report Number: IOC0995

Sampled: 03/11/05

Received: 03/11/05

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

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOC0995-01 (Outfall 002 - Water)									
Reporting Units: ug/l									
Bis(2-ethylhexyl)phthalate	EPA 625	5C13017	1.1	5.0	ND	0.952	03/13/05	03/18/05	
2,4-Dinitrotoluene	EPA 625	5C13017	0.23	9.0	ND	0.952	03/13/05	03/18/05	
N-Nitrosodimethylamine	EPA 625	5C13017	0.22	8.0	ND	0.952	03/13/05	03/18/05	
Pentachlorophenol	EPA 625	5C13017	0.78	8.0	ND	0.952	03/13/05	03/18/05	
2,4,6-Trichlorophenol	EPA 625	5C13017	0.10	6.0	ND	0.952	03/13/05	03/18/05	
Surrogate: 2-Fluorophenol (30-120%)					60 %				
Surrogate: Phenol-d6 (35-120%)					64 %				
Surrogate: 2,4,6-Tribromophenol (45-120%)					83 %				
Surrogate: Nitrobenzene-d5 (45-120%)					63 %				
Surrogate: 2-Fluorobiphenyl (45-120%)					69 %				
Surrogate: Terphenyl-d14 (45-120%)					80 %				

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Project ID: Routine Outfall 002

Report Number: IOC0995

Sampled: 03/11/05

Received: 03/11/05

ORGANOCHLORINE PESTICIDES (EPA 608)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOC0995-01 (Outfall 002 - Water) - cont.									
Reporting Units: ug/l									
alpha-BHC	EPA 608	5C14049	0.0010	0.010	ND	0.943	03/14/05	03/14/05	
Surrogate: Decachlorobiphenyl (45-120%)					75 %				
Surrogate: Tetrachloro-m-xylene (35-120%)					36 %				

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Project ID: Routine Outfall 002

Report Number: IOC0995

Sampled: 03/11/05

Received: 03/11/05

METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOC0995-01 (Outfall 002 - Water) - cont.									
Reporting Units: ug/l									
Copper	EPA 200.8	5C11129	0.49	2.0	2.0	1	03/11/05	03/12/05	
Lead	EPA 200.8	5C11129	0.13	1.0	ND	1	03/11/05	03/12/05	
Mercury	EPA 245.1	5C14050	0.063	0.20	ND	1	03/14/05	03/14/05	

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 Attention: Bronwyn Kelly

Project ID: Routine Outfall 002

Report Number: IOC0995

Sampled: 03/11/05

Received: 03/11/05

INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOC0995-01 (Outfall 002 - Water) - cont.									
Reporting Units: mg/l									
Ammonia-N (Distilled)	EPA 350.2	5C15088	0.30	0.50	ND	1	03/15/05	03/15/05	
Biochemical Oxygen Demand	EPA 405.1	5C11085	0.59	2.0	1.1	1	03/11/05	03/16/05	J
Chloride	EPA 300.0	5C11052	2.6	5.0	33	10	03/11/05	03/11/05	
Total Cyanide	EPA 335.2	5C11116	0.0022	0.0050	ND	1	03/11/05	03/11/05	
Nitrate/Nitrite-N	EPA 300.0	5C11052	0.072	0.11	0.21	1	03/11/05	03/11/05	
Oil & Grease	EPA 413.1	5C14065	0.94	5.0	1.4	1	03/14/05	03/14/05	B, J
Sulfate	EPA 300.0	5C11052	1.8	5.0	250	10	03/11/05	03/11/05	
Surfactants (MBAS)	SM5540-C	5C11105	0.044	0.10	ND	1	03/11/05	03/11/05	
Total Dissolved Solids	SM2540C	5C14069	10	10	680	1	03/14/05	03/14/05	
Total Suspended Solids	EPA 160.2	5C14073	10	10	ND	1	03/14/05	03/14/05	
Sample ID: IOC0995-01 (Outfall 002 - Water)									
Reporting Units: ml/hr									
Total Settleable Solids	EPA 160.5	5C11087	0.10	0.10	ND	1	03/11/05	03/11/05	
Sample ID: IOC0995-01 (Outfall 002 - Water)									
Reporting Units: NTU									
Turbidity	EPA 180.1	5C12043	0.040	1.0	0.59	1	03/12/05	03/12/05	J
Sample ID: IOC0995-01 (Outfall 002 - Water)									
Reporting Units: ug/l									
Perchlorate	EPA 314.0	5C14052	0.80	4.0	ND	1	03/14/05	03/14/05	
Sample ID: IOC0995-01 (Outfall 002 - Water)									
Reporting Units: umhos/cm									
Specific Conductance	EPA 120.1	5C14070	1.0	1.0	960	1	03/14/05	03/14/05	

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 Attention: Bronwyn Kelly

Project ID: Routine Outfall 002

Report Number: IOC0995

Sampled: 03/11/05

Received: 03/11/05

SHORT HOLD TIME DETAIL REPORT

Sample ID: Outfall 002 (IOC0995-01) - Water	Hold Time (in days)	Date/Time Sampled	Date/Time Received	Date/Time Extracted	Date/Time Analyzed
EPA 160.5	2	03/11/2005 10:44	03/11/2005 18:30	03/11/2005 20:00	03/11/2005 21:00
EPA 180.1	2	03/11/2005 10:44	03/11/2005 18:30	03/12/2005 13:30	03/12/2005 14:30
EPA 300.0	2	03/11/2005 10:44	03/11/2005 18:30	03/11/2005 19:30	03/11/2005 20:47
EPA 405.1	2	03/11/2005 10:44	03/11/2005 18:30	03/11/2005 20:00	03/16/2005 13:30
SM5540-C	2	03/11/2005 10:44	03/11/2005 18:30	03/11/2005 21:06	03/11/2005 21:20

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Project ID: Routine Outfall 002

Report Number: IOC0995

Sampled: 03/11/05
 Received: 03/11/05

METHOD BLANK/QC DATA

PURGEABLES BY GC/MS (EPA 624)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5C13007 Extracted: 03/13/05										
Blank Analyzed: 03/13/2005 (5C13007-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	0.32	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	0.52	ug/l						
Surrogate: Dibromofluoromethane	26.3			ug/l	25.0		105		80-120	
Surrogate: Toluene-d8	24.8			ug/l	25.0		99		80-120	
Surrogate: 4-Bromofluorobenzene	24.1			ug/l	25.0		96		80-120	
LCS Analyzed: 03/13/2005 (5C13007-BS1)										
Benzene	25.4	2.0	0.28	ug/l	25.0		102		70-120	
Carbon tetrachloride	26.9	5.0	0.28	ug/l	25.0		108		70-140	
Chloroform	26.4	2.0	0.33	ug/l	25.0		106		75-130	
1,1-Dichloroethane	26.3	2.0	0.27	ug/l	25.0		105		70-135	
1,2-Dichloroethane	27.1	2.0	0.28	ug/l	25.0		108		60-150	
1,1-Dichloroethene	25.5	3.0	0.32	ug/l	25.0		102		75-135	
Ethylbenzene	26.1	2.0	0.25	ug/l	25.0		104		80-120	
Tetrachloroethene	23.3	2.0	0.32	ug/l	25.0		93		75-125	
Toluene	25.0	2.0	0.36	ug/l	25.0		100		75-120	
1,1,1-Trichloroethane	27.7	2.0	0.30	ug/l	25.0		111		75-140	
1,1,2-Trichloroethane	26.4	2.0	0.30	ug/l	25.0		106		70-125	
Trichloroethene	23.8	5.0	0.26	ug/l	25.0		95		80-120	
Trichlorofluoromethane	28.6	5.0	0.34	ug/l	25.0		114		65-145	
Vinyl chloride	29.5	5.0	0.26	ug/l	25.0		118		50-130	
Surrogate: Dibromofluoromethane	26.6			ug/l	25.0		106		80-120	
Surrogate: Toluene-d8	25.2			ug/l	25.0		101		80-120	

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Project ID: Routine Outfall 002

Report Number: IOC0995

Sampled: 03/11/05

Received: 03/11/05

METHOD BLANK/QC DATA

PURGEABLES BY GC/MS (EPA 624)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5C13007 Extracted: 03/13/05											
LCS Analyzed: 03/13/2005 (5C13007-BS1)											
Surrogate: 4-Bromofluorobenzene	25.9			ug/l	25.0		104	80-120			
Matrix Spike Analyzed: 03/13/2005 (5C13007-MS1)											
Source: IOC0855-01											
Benzene	28.2	2.0	0.28	ug/l	25.0	ND	113	70-120			
Carbon tetrachloride	28.4	5.0	0.28	ug/l	25.0	ND	114	70-145			
Chloroform	29.8	2.0	0.33	ug/l	25.0	ND	119	70-135			
1,1-Dichloroethane	29.8	2.0	0.27	ug/l	25.0	ND	119	65-135			
1,2-Dichloroethane	29.0	2.0	0.28	ug/l	25.0	ND	116	60-150			
1,1-Dichloroethene	28.8	3.0	0.32	ug/l	25.0	ND	115	65-140			
Ethylbenzene	28.2	2.0	0.25	ug/l	25.0	ND	113	70-130			
Tetrachloroethene	24.3	2.0	0.32	ug/l	25.0	ND	97	70-130			
Toluene	27.4	2.0	0.36	ug/l	25.0	ND	110	70-120			
1,1,1-Trichloroethane	30.5	2.0	0.30	ug/l	25.0	ND	122	75-140			
1,1,2-Trichloroethane	28.8	2.0	0.30	ug/l	25.0	ND	115	60-135			
Trichloroethene	25.4	5.0	0.26	ug/l	25.0	ND	102	70-125			
Trichlorofluoromethane	31.8	5.0	0.34	ug/l	25.0	ND	127	55-145			
Vinyl chloride	30.6	5.0	0.26	ug/l	25.0	ND	122	40-135			
Surrogate: Dibromofluoromethane	27.8			ug/l	25.0		111	80-120			
Surrogate: Toluene-d8	25.1			ug/l	25.0		100	80-120			
Surrogate: 4-Bromofluorobenzene	26.6			ug/l	25.0		106	80-120			
Matrix Spike Dup Analyzed: 03/13/2005 (5C13007-MSD1)											
Source: IOC0855-01											
Benzene	27.2	2.0	0.28	ug/l	25.0	ND	109	70-120	4	20	
Carbon tetrachloride	27.2	5.0	0.28	ug/l	25.0	ND	109	70-145	4	25	
Chloroform	28.3	2.0	0.33	ug/l	25.0	ND	113	70-135	5	20	
1,1-Dichloroethane	28.4	2.0	0.27	ug/l	25.0	ND	114	65-135	5	20	
1,2-Dichloroethane	28.5	2.0	0.28	ug/l	25.0	ND	114	60-150	2	20	
1,1-Dichloroethene	28.4	3.0	0.32	ug/l	25.0	ND	114	65-140	1	20	
Ethylbenzene	27.1	2.0	0.25	ug/l	25.0	ND	108	70-130	4	20	
Tetrachloroethene	24.3	2.0	0.32	ug/l	25.0	ND	97	70-130	0	20	
Toluene	26.4	2.0	0.36	ug/l	25.0	ND	106	70-120	4	20	
1,1,1-Trichloroethane	29.0	2.0	0.30	ug/l	25.0	ND	116	75-140	5	20	
1,1,2-Trichloroethane	28.0	2.0	0.30	ug/l	25.0	ND	112	60-135	3	25	
Trichloroethene	24.5	5.0	0.26	ug/l	25.0	ND	98	70-125	4	20	
Trichlorofluoromethane	30.5	5.0	0.34	ug/l	25.0	ND	122	55-145	4	25	
Vinyl chloride	31.1	5.0	0.26	ug/l	25.0	ND	124	40-135	2	30	

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

Project ID: Routine Outfall 002

Report Number: IOC0995

Sampled: 03/11/05
 Received: 03/11/05

METHOD BLANK/QC DATA

PURGEABLES BY GC/MS (EPA 624)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Data Qualifiers
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Batch: 5C13007 Extracted: 03/13/05

Matrix Spike Dup Analyzed: 03/13/2005 (5C13007-MSD1)

Source: IOC0855-01

Surrogate: Dibromofluoromethane	27.4			ug/l	25.0	110	80-120			
Surrogate: Toluene-d8	24.8			ug/l	25.0	99	80-120			
Surrogate: 4-Bromofluorobenzene	26.1			ug/l	25.0	104	80-120			

Batch: 5C14017 Extracted: 03/14/05

Blank Analyzed: 03/14/2005 (5C14017-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	0.32	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	0.52	ug/l						
Surrogate: Dibromofluoromethane	26.5			ug/l	25.0	106	80-120			
Surrogate: Toluene-d8	24.9			ug/l	25.0	100	80-120			
Surrogate: 4-Bromofluorobenzene	23.6			ug/l	25.0	94	80-120			

LCS Analyzed: 03/14/2005 (5C14017-BS1)

Benzene	24.3	2.0	0.28	ug/l	25.0	97	70-120			
Carbon tetrachloride	24.9	5.0	0.28	ug/l	25.0	100	70-140			
Chloroform	25.7	2.0	0.33	ug/l	25.0	103	75-130			
1,1-Dichloroethane	26.0	2.0	0.27	ug/l	25.0	104	70-135			
1,2-Dichloroethane	27.5	2.0	0.28	ug/l	25.0	110	60-150			
1,1-Dichloroethene	25.4	3.0	0.32	ug/l	25.0	102	75-135			
Ethylbenzene	25.0	2.0	0.25	ug/l	25.0	100	80-120			
Tetrachloroethene	21.6	2.0	0.32	ug/l	25.0	86	75-125			
Toluene	23.9	2.0	0.36	ug/l	25.0	96	75-120			

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

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Report Number: IOC0995

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METHOD BLANK/QC DATA

PURGEABLES BY GC/MS (EPA 624)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5C14017 Extracted: 03/14/05										
LCS Analyzed: 03/14/2005 (5C14017-BS1)										
1,1,1-Trichloroethane	26.4	2.0	0.30	ug/l	25.0		106 75-140			
1,1,2-Trichloroethane	27.6	2.0	0.30	ug/l	25.0		110 70-125			
Trichloroethene	22.6	5.0	0.26	ug/l	25.0		90 80-120			
Trichlorofluoromethane	27.2	5.0	0.34	ug/l	25.0		109 65-145			
Vinyl chloride	26.2	5.0	0.26	ug/l	25.0		105 50-130			
Surrogate: Dibromofluoromethane	27.6			ug/l	25.0		110 80-120			
Surrogate: Toluene-d8	25.1			ug/l	25.0		100 80-120			
Surrogate: 4-Bromofluorobenzene	26.4			ug/l	25.0		106 80-120			
Matrix Spike Analyzed: 03/14/2005 (5C14017-MS1)					Source: IOC0940-16					
Benzene	25.0	2.0	0.28	ug/l	25.0	ND	100 70-120			
Carbon tetrachloride	25.6	5.0	0.28	ug/l	25.0	ND	102 70-145			
Chloroform	26.0	2.0	0.33	ug/l	25.0	0.57	102 70-135			
1,1-Dichloroethane	25.7	2.0	0.27	ug/l	25.0	ND	103 65-135			
1,2-Dichloroethane	25.5	2.0	0.28	ug/l	25.0	ND	102 60-150			
1,1-Dichloroethene	25.8	3.0	0.32	ug/l	25.0	ND	103 65-140			
Ethylbenzene	25.7	2.0	0.25	ug/l	25.0	ND	103 70-130			
Tetrachloroethene	23.1	2.0	0.32	ug/l	25.0	ND	92 70-130			
Toluene	24.2	2.0	0.36	ug/l	25.0	ND	97 70-120			
1,1,1-Trichloroethane	26.7	2.0	0.30	ug/l	25.0	ND	107 75-140			
1,1,2-Trichloroethane	24.7	2.0	0.30	ug/l	25.0	ND	99 60-135			
Trichloroethene	22.7	5.0	0.26	ug/l	25.0	ND	91 70-125			
Trichlorofluoromethane	27.6	5.0	0.34	ug/l	25.0	ND	110 55-145			
Vinyl chloride	27.2	5.0	0.26	ug/l	25.0	ND	109 40-135			
Surrogate: Dibromofluoromethane	26.8			ug/l	25.0		107 80-120			
Surrogate: Toluene-d8	25.2			ug/l	25.0		101 80-120			
Surrogate: 4-Bromofluorobenzene	26.6			ug/l	25.0		106 80-120			

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

Project ID: Routine Outfall 002

Report Number: IOC0995

Sampled: 03/11/05

Received: 03/11/05

METHOD BLANK/QC DATA

PURGEABLES BY GC/MS (EPA 624)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5C14017 Extracted: 03/14/05											
Matrix Spike Dup Analyzed: 03/14/2005 (5C14017-MSD1)						Source: IOC0940-16					
Benzene	24.8	2.0	0.28	ug/l	25.0	ND	99	70-120	1	20	
Carbon tetrachloride	25.0	5.0	0.28	ug/l	25.0	ND	100	70-145	2	25	
Chloroform	25.8	2.0	0.33	ug/l	25.0	0.57	101	70-135	1	20	
1,1-Dichloroethane	25.4	2.0	0.27	ug/l	25.0	ND	102	65-135	1	20	
1,2-Dichloroethane	25.8	2.0	0.28	ug/l	25.0	ND	103	60-150	1	20	
1,1-Dichloroethene	24.9	3.0	0.32	ug/l	25.0	ND	100	65-140	4	20	
Ethylbenzene	25.4	2.0	0.25	ug/l	25.0	ND	102	70-130	1	20	
Tetrachloroethene	22.7	2.0	0.32	ug/l	25.0	ND	91	70-130	2	20	
Toluene	23.8	2.0	0.36	ug/l	25.0	ND	95	70-120	2	20	
1,1,1-Trichloroethane	26.0	2.0	0.30	ug/l	25.0	ND	104	75-140	3	20	
1,1,2-Trichloroethane	25.3	2.0	0.30	ug/l	25.0	ND	101	60-135	2	25	
Trichloroethene	22.6	5.0	0.26	ug/l	25.0	ND	90	70-125	0	20	
Trichlorofluoromethane	26.8	5.0	0.34	ug/l	25.0	ND	107	55-145	3	25	
Vinyl chloride	27.1	5.0	0.26	ug/l	25.0	ND	108	40-135	0	30	
Surrogate: Dibromofluoromethane	26.8			ug/l	25.0		107	80-120			
Surrogate: Toluene-d8	25.1			ug/l	25.0		100	80-120			
Surrogate: 4-Bromofluorobenzene	26.4			ug/l	25.0		106	80-120			

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 Pasadena, CA 91101
 Attention: Bronwyn Kelly

Project ID: Routine Outfall 002

Report Number: IOC0995

Sampled: 03/11/05
 Received: 03/11/05

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	RPD Limit	Data Qualifiers
Batch: 5C13017 Extracted: 03/13/05										
Blank Analyzed: 03/18/2005 (5C13017-BLK1)										
Bis(2-ethylhexyl)phthalate	ND	5.0	1.1	ug/l						
2,4-Dinitrotoluene	ND	9.0	0.23	ug/l						
N-Nitrosodimethylamine	ND	8.0	0.22	ug/l						
Pentachlorophenol	ND	8.0	0.78	ug/l						
2,4,6-Trichlorophenol	ND	6.0	0.10	ug/l						
Surrogate: 2-Fluorophenol	11.4			ug/l	20.0		57		30-120	
Surrogate: Phenol-d6	11.9			ug/l	20.0		60		35-120	
Surrogate: 2,4,6-Tribromophenol	13.8			ug/l	20.0		69		45-120	
Surrogate: Nitrobenzene-d5	6.08			ug/l	10.0		61		45-120	
Surrogate: 2-Fluorobiphenyl	6.92			ug/l	10.0		69		45-120	
Surrogate: Terphenyl-d14	6.62			ug/l	10.0		66		45-120	
LCS Analyzed: 03/18/2005 (5C13017-BS1)										
Bis(2-ethylhexyl)phthalate	8.90	5.0	1.1	ug/l	10.0		89		60-130	M-NR1
2,4-Dinitrotoluene	8.00	9.0	0.23	ug/l	10.0		80		60-120	J
N-Nitrosodimethylamine	7.98	8.0	0.22	ug/l	10.0		80		40-120	J
Pentachlorophenol	8.64	8.0	0.78	ug/l	10.0		86		50-120	
2,4,6-Trichlorophenol	9.16	6.0	0.10	ug/l	10.0		92		60-120	
Surrogate: 2-Fluorophenol	14.4			ug/l	20.0		72		30-120	
Surrogate: Phenol-d6	14.7			ug/l	20.0		74		35-120	
Surrogate: 2,4,6-Tribromophenol	16.6			ug/l	20.0		83		45-120	
Surrogate: Nitrobenzene-d5	7.48			ug/l	10.0		75		45-120	
Surrogate: 2-Fluorobiphenyl	8.08			ug/l	10.0		81		45-120	
Surrogate: Terphenyl-d14	7.90			ug/l	10.0		79		45-120	
LCS Dup Analyzed: 03/18/2005 (5C13017-BSD1)										
Bis(2-ethylhexyl)phthalate	8.62	5.0	1.1	ug/l	10.0		86	60-130	3	20
2,4-Dinitrotoluene	7.92	9.0	0.23	ug/l	10.0		79	60-120	1	20
N-Nitrosodimethylamine	7.66	8.0	0.22	ug/l	10.0		77	40-120	4	20
Pentachlorophenol	8.66	8.0	0.78	ug/l	10.0		87	50-120	0	25
2,4,6-Trichlorophenol	8.76	6.0	0.10	ug/l	10.0		88	60-120	4	20
Surrogate: 2-Fluorophenol	14.2			ug/l	20.0		71	30-120		
Surrogate: Phenol-d6	14.2			ug/l	20.0		71	35-120		
Surrogate: 2,4,6-Tribromophenol	16.6			ug/l	20.0		83	45-120		
Surrogate: Nitrobenzene-d5	7.52			ug/l	10.0		75	45-120		
Surrogate: 2-Fluorobiphenyl	7.60			ug/l	10.0		76	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 002 Report Number: IOC0995	Sampled: 03/11/05 Received: 03/11/05
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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: 5C13017 Extracted: 03/13/05											
LCS Dup Analyzed: 03/18/2005 (5C13017-BSD1)											
Surrogate: Terphenyl-d14	8.16			ug/l	10.0		82	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 002 Report Number: IOC995	Sampled: 03/11/05 Received: 03/11/05
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METHOD BLANK/QC DATA

ORGANOCHLORINE PESTICIDES (EPA 608)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	Limit	RPD	RPD Limit	Data Qualifiers
Batch: 5C14049 Extracted: 03/14/05											
Blank Analyzed: 03/14/2005 (5C14049-BLK1)											
alpha-BHC	ND	0.010	0.0010	ug/l							
Surrogate: Decachlorobiphenyl	0.381			ug/l	0.500		76	45-120			
Surrogate: Tetrachloro-m-xylene	0.267			ug/l	0.500		53	35-120			
LCS Analyzed: 03/14/2005 (5C14049-BS1)											
alpha-BHC	0.335	0.010	0.0010	ug/l	0.500		67	45-115			M-NR1
Surrogate: Decachlorobiphenyl	0.367			ug/l	0.500		73	45-120			
Surrogate: Tetrachloro-m-xylene	0.278			ug/l	0.500		56	35-120			
LCS Dup Analyzed: 03/14/2005 (5C14049-BSD1)											
alpha-BHC	0.353	0.010	0.0010	ug/l	0.500		71	45-115	5	30	
Surrogate: Decachlorobiphenyl	0.405			ug/l	0.500		81	45-120			
Surrogate: Tetrachloro-m-xylene	0.267			ug/l	0.500		53	35-120			

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METHOD BLANK/QC DATA

METALS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	RPD RPD	RPD Limit	Data Qualifiers
Batch: 5C11129 Extracted: 03/11/05										
Blank Analyzed: 03/12/2005 (5C11129-BLK1)										
Copper	ND	2.0	0.49	ug/l						
Lead	ND	1.0	0.13	ug/l						
LCS Analyzed: 03/12/2005 (5C11129-BS1)										
Copper	79.6	2.0	0.49	ug/l	80.0		100		85-115	
Lead	87.3	1.0	0.13	ug/l	80.0		109		85-115	
Matrix Spike Analyzed: 03/12/2005 (5C11129-MS1) Source: IOC0995-01										
Copper	77.6	2.0	0.49	ug/l	80.0	2.0	94		70-130	
Lead	82.9	1.0	0.13	ug/l	80.0	ND	104		70-130	
Matrix Spike Dup Analyzed: 03/12/2005 (5C11129-MSD1) Source: IOC0995-01										
Copper	78.2	2.0	0.49	ug/l	80.0	2.0	95	1	70-130	20
Lead	81.3	1.0	0.13	ug/l	80.0	ND	102	2	70-130	20
Batch: 5C14050 Extracted: 03/14/05										
Blank Analyzed: 03/14/2005 (5C14050-BLK1)										
Mercury	ND	0.20	0.063	ug/l						
LCS Analyzed: 03/14/2005 (5C14050-BS1)										
Mercury	8.04	0.20	0.063	ug/l	8.00		100		85-115	
Matrix Spike Analyzed: 03/14/2005 (5C14050-MS1) Source: IOC0736-01										
Mercury	8.23	0.20	0.063	ug/l	8.00	ND	103		70-130	
Matrix Spike Dup Analyzed: 03/14/2005 (5C14050-MSD1) Source: IOC0736-01										
Mercury	8.19	0.20	0.063	ug/l	8.00	ND	102	1	70-130	20

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MWH-Pasadena/Boeing 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Attention: Bronwyn Kelly	Project ID: Routine Outfall 002 Report Number: IOC0995	Sampled: 03/11/05 Received: 03/11/05
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METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	Limit	RPD	RPD Limit	Data Qualifiers
Batch: 5C11052 Extracted: 03/11/05											
Blank Analyzed: 03/11/2005 (5C11052-BLK1)											
Chloride	ND	0.50	0.26	mg/l							
Nitrate/Nitrite-N	ND	0.11	0.072	mg/l							
Sulfate	ND	0.50	0.18	mg/l							
LCS Analyzed: 03/11/2005 (5C11052-BS1)											
Chloride	4.68	0.50	0.26	mg/l	5.00		94	90-110			
Sulfate	9.86	0.50	0.18	mg/l	10.0		99	90-110			
Matrix Spike Analyzed: 03/11/2005 (5C11052-MS1)											
						Source: IOC0810-01					
Chloride	78.2	2.5	1.3	mg/l	5.00	71	144	80-120			MI
Sulfate	222	2.5	0.90	mg/l	10.0	210	120	80-120			
Matrix Spike Dup Analyzed: 03/11/2005 (5C11052-MSD1)											
						Source: IOC0810-01					
Chloride	76.1	2.5	1.3	mg/l	5.00	71	102	80-120	3	20	
Sulfate	220	2.5	0.90	mg/l	10.0	210	100	80-120	1	20	
Batch: 5C11085 Extracted: 03/11/05											
Blank Analyzed: 03/16/2005 (5C11085-BLK1)											
Biochemical Oxygen Demand	ND	2.0	0.59	mg/l							
LCS Analyzed: 03/16/2005 (5C11085-BS1)											
Biochemical Oxygen Demand	218	100	30	mg/l	198		110	85-115			
LCS Dup Analyzed: 03/16/2005 (5C11085-BSD1)											
Biochemical Oxygen Demand	212	100	30	mg/l	198		107	85-115	3	20	

Del Mar Analytical, Irvine
 Wendy Kirkeeng For Michele Harper
 Project Manager

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

Project ID: Routine Outfall 002

Report Number: IOC0995

Sampled: 03/11/05

Received: 03/11/05

METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5C11105 Extracted: 03/11/05											
Blank Analyzed: 03/11/2005 (5C11105-BLK1)											
Surfactants (MBAS)	ND	0.10	0.044	mg/l							
LCS Analyzed: 03/11/2005 (5C11105-BS1)											
Surfactants (MBAS)	0.248	0.10	0.044	mg/l	0.250		99	90-110			
Matrix Spike Analyzed: 03/11/2005 (5C11105-MS1)											
						Source: IOC0939-01					
Surfactants (MBAS)	0.272	0.10	0.044	mg/l	0.250	ND	109	50-125			
Matrix Spike Dup Analyzed: 03/11/2005 (5C11105-MSD1)											
						Source: IOC0939-01					
Surfactants (MBAS)	0.271	0.10	0.044	mg/l	0.250	ND	108	50-125	0	20	
Batch: 5C11116 Extracted: 03/11/05											
Blank Analyzed: 03/11/2005 (5C11116-BLK1)											
Total Cyanide	ND	0.0050	0.0022	mg/l							
LCS Analyzed: 03/11/2005 (5C11116-BS1)											
Total Cyanide	0.185	0.0050	0.0022	mg/l	0.200		92	90-110			
Matrix Spike Analyzed: 03/11/2005 (5C11116-MS1)											
						Source: IOC0241-05					
Total Cyanide	0.186	0.0050	0.0022	mg/l	0.200	ND	93	70-115			
Matrix Spike Dup Analyzed: 03/11/2005 (5C11116-MSD1)											
						Source: IOC0241-05					
Total Cyanide	0.190	0.0050	0.0022	mg/l	0.200	ND	95	70-115	2	15	
Batch: 5C12043 Extracted: 03/12/05											
Blank Analyzed: 03/12/2005 (5C12043-BLK1)											
Turbidity	ND	1.0	0.040	NTU							

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 Wendy Kirkeeng For Michele Harper
 Project Manager

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 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: IOC995	Sampled: 03/11/05 Received: 03/11/05
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METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5C12043 Extracted: 03/12/05											
Duplicate Analyzed: 03/12/2005 (5C12043-DUP1)						Source: IOC995-01					
Turbidity	0.590	1.0	0.040	NTU		0.59			0	20	J
Batch: 5C14052 Extracted: 03/14/05											
Blank Analyzed: 03/14/2005 (5C14052-BLK1)											
Perchlorate	ND	4.0	0.80	ug/l							
LCS Analyzed: 03/14/2005 (5C14052-BS1)											
Perchlorate	45.1	4.0	0.80	ug/l	50.0		90	85-115			
Matrix Spike Analyzed: 03/14/2005 (5C14052-MS1)						Source: IOC0873-02					
Perchlorate	49.1	4.0	0.80	ug/l	50.0	ND	98	80-120			
Matrix Spike Dup Analyzed: 03/14/2005 (5C14052-MSD1)						Source: IOC0873-02					
Perchlorate	47.5	4.0	0.80	ug/l	50.0	ND	95	80-120	3	20	
Batch: 5C14065 Extracted: 03/14/05											
Blank Analyzed: 03/14/2005 (5C14065-BLK1)											
Oil & Grease	1.60	5.0	0.94	mg/l							J
LCS Analyzed: 03/14/2005 (5C14065-BS1)											
Oil & Grease	23.4	5.0	0.94	mg/l	20.0		117	65-120			M-NR1
LCS Dup Analyzed: 03/14/2005 (5C14065-BSD1)											
Oil & Grease	23.9	5.0	0.94	mg/l	20.0		120	65-120	2	20	

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 Project Manager

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

Project ID: Routine Outfall 002

Report Number: IOC0995

Sampled: 03/11/05

Received: 03/11/05

METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC Limits	RPD RPD	RPD Limit	Data Qualifiers
Batch: 5C14069 Extracted: 03/14/05										
Blank Analyzed: 03/14/2005 (5C14069-BLK1)										
Total Dissolved Solids	ND	10	10	mg/l						
LCS Analyzed: 03/14/2005 (5C14069-BS1)										
Total Dissolved Solids	970	10	10	mg/l	1000		97 90-110			
Duplicate Analyzed: 03/14/2005 (5C14069-DUP1)										
Total Dissolved Solids	271	10	10	mg/l		Source: IOC1042-01 280		3	10	
Batch: 5C14070 Extracted: 03/14/05										
Duplicate Analyzed: 03/14/2005 (5C14070-DUP1)										
Specific Conductance	432	1.0	1.0	umhos/cm		Source: IOC1042-01 420		3	5	
Batch: 5C14073 Extracted: 03/14/05										
Blank Analyzed: 03/14/2005 (5C14073-BLK1)										
Total Suspended Solids	ND	10	10	mg/l						
LCS Analyzed: 03/14/2005 (5C14073-BS1)										
Total Suspended Solids	941	10	10	mg/l	1000		94 85-115			
Duplicate Analyzed: 03/14/2005 (5C14073-DUP1)										
Total Suspended Solids	ND	10	10	mg/l		Source: IOC0941-01 ND			10	
Batch: 5C15088 Extracted: 03/15/05										
Blank Analyzed: 03/15/2005 (5C15088-BLK1)										
Ammonia-N (Distilled)	ND	0.50	0.30	mg/l						

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 Project Manager

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MWH-Pasadena/Boeing 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Attention: Bronwyn Kelly	Project ID: Routine Outfall 002 Report Number: IOC0995	Sampled: 03/11/05 Received: 03/11/05
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METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5C15088 Extracted: 03/15/05											
LCS Analyzed: 03/15/2005 (5C15088-BS1)											
Ammonia-N (Distilled)	9.52	0.50	0.30	mg/l	10.0		95	80-115			
Matrix Spike Analyzed: 03/15/2005 (5C15088-MS1)											
						Source: IOC1063-01					
Ammonia-N (Distilled)	8.12	0.50	0.30	mg/l	10.0	ND	81	70-120			
Matrix Spike Dup Analyzed: 03/15/2005 (5C15088-MSD1)											
						Source: IOC1063-01					
Ammonia-N (Distilled)	9.52	0.50	0.30	mg/l	10.0	ND	95	70-120	16	15	R

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 Wendy Kirkeeng For Michele Harper
 Project Manager

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MWH-Pasadena/Boeing 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Attention: Bronwyn Kelly	Project ID: Routine Outfall 002 Report Number: IOC0995	Sampled: 03/11/05 Received: 03/11/05
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Compliance Check

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

LabNumber	Analysis	Analyte	Units	Result	MRL	Compliance Limit
IOC0995-01	413.1 Oil and Grease	Oil & Grease	mg/l	1.40	5.0	10.00
IOC0995-01	608-Pest Boeing 001/002 Q (LL)	alpha-BHC	ug/l	0	0.010	0.0100
IOC0995-01	624-Boeing 001/002 Q (Fr113+X)	1,1-Dichloroethene	ug/l	0	3.0	3.20
IOC0995-01	624-Boeing 001/002 Q (Fr113+X)	Trichloroethene	ug/l	0	5.0	5.00
IOC0995-01	625-Boeing 001/002 Q-LL	2,4,6-Trichlorophenol	ug/l	0	6.0	6.50
IOC0995-01	625-Boeing 001/002 Q-LL	2,4-Dinitrotoluene	ug/l	0	9.0	9.10
IOC0995-01	625-Boeing 001/002 Q-LL	Bis(2-ethylhexyl)phthalate	ug/l	0.69	5.0	4.00
IOC0995-01	625-Boeing 001/002 Q-LL	N-Nitrosodimethylamine	ug/l	0	8.0	8.10
IOC0995-01	625-Boeing 001/002 Q-LL	Pentachlorophenol	ug/l	0	8.0	8.20
IOC0995-01	BOD	Biochemical Oxygen Demand	mg/l	1.10	2.0	20
IOC0995-01	Chloride - 300.0	Chloride	mg/l	33	5.0	150
IOC0995-01	Copper-200.8	Copper	ug/l	2.00	2.0	7.10
IOC0995-01	Cyanide-335.2 5ppb	Total Cyanide	mg/l	0	0.0050	0.0043
IOC0995-01	Lead-200.8	Lead	ug/l	0.025	1.0	2.60
IOC0995-01	MBAS - SM5540-C	Surfactants (MBAS)	mg/l	0.041	0.10	0.50
IOC0995-01	Mercury - 245.1	Mercury	ug/l	0.0097	0.20	0.20
IOC0995-01	Nitrogen, NO3+NO2 -N	Nitrate/Nitrite-N	mg/l	0.21	0.11	8.00
IOC0995-01	Perchlorate 314.0	Perchlorate	ug/l	0	4.0	6.00
IOC0995-01	Sulfate-300.0	Sulfate	mg/l	250	5.0	300
IOC0995-01	TDS - SM 2540C	Total Dissolved Solids	mg/l	680	10	950
IOC0995-02	624-Boeing 001/002 Q (Fr113+X)	1,1-Dichloroethene	ug/l	0	3.0	3.20
IOC0995-02	624-Boeing 001/002 Q (Fr113+X)	Trichloroethene	ug/l	0	5.0	5.00

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 Wendy Kirkeeng For Michele Harper
 Project Manager

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

Project ID: Routine Outfall 002

Report Number: IOC0995

Sampled: 03/11/05

Received: 03/11/05

DATA QUALIFIERS AND DEFINITIONS

- B** Analyte was detected in the associated Method Blank.
- J** Estimated value. Analyte detected at a level less than the Reporting Limit (RL) and greater than or equal to the Method Detection Limit (MDL). The user of this data should be aware that this data is of unknown quality.
- M1** The MS and/or MSD were above the acceptance limits due to sample matrix interference. 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.
- R** The RPD exceeded the method control limit due to sample matrix effects. The individual analyte QA/QC recoveries, however, were within acceptance limits.
- ND** Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified.
- RPD** Relative Percent Difference

Del Mar Analytical, Irvine
Wendy Kirkeeng For Michele Harper
Project Manager

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IOC0995 <Page 23 of 24>



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

Project ID: Routine Outfall 002

Report Number: IOC0995

Sampled: 03/11/05

Received: 03/11/05

Certification Summary

Del Mar Analytical, Irvine

Method	Matrix	Nelac	California
EPA 120.1	Water	X	X
EPA 160.2	Water	X	X
EPA 160.5	Water	X	X
EPA 180.1	Water	X	X
EPA 200.8	Water	X	X
EPA 245.1	Water	X	X
EPA 300.0	Water	X	X
EPA 314.0	Water	X	X
EPA 335.2	Water	X	X
EPA 350.2	Water	X	X
EPA 405.1	Water	X	X
EPA 413.1	Water	X	X
EPA 608	Water	X	X
EPA 624	Water	X	X
EPA 625	Water	X	X
SM2540C	Water	X	X
SM5540-C	Water	X	X

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

Subcontracted Laboratories

Alta Analytical California Cert #1640

1104 Windfield Way - El Dorado Hills, CA 95762

Analysis Performed: 1613-Dioxin-HR

Samples: IOC0995-01

Analysis Performed: EDD + Level 4

Samples: IOC0995-01

Del Mar Analytical, Irvine
 Wendy Kirkeeng For Michele Harper
 Project Manager

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* 325 IOCO995

CHAIN OF CUSTODY FORM

Del Mar Analytical Version 02/17/05

Client Name/Address:		Project:		ANALYSIS REQUIRED												Field readings:									
MWH-Pasadena 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101		Boeing-SSFL NPDES Routine Outfall 002		Sample Description	Sample Matrix	Container Type	# of Cont.	Sampling Date/Time	Preservative	Bottle #	Total Recoverable Metals: Cu, Pb, Hg	Settleable Solids	VOCS 624 + xylenes	TCDD (and all congeners)	Oil & Grease (EPA 413.1)	Cyanide (total recoverable)	BOD5(20 degrees C)	Surfactants (MBAS)	Cl, SO4, NO3+NO2-N, Perchlorate	Turbidity, TDS, TSS, Conductivity	Ammonia-N	2,4,6 Trichlorophenol, 2,4 Dinitrotoene, Bag2-strylhexylphthalate, NDMA, perchlorophenol (EPA 625)	Comments		
Outfall 002	W	Poly-1 liter	1	3-7-05 10:44	HNO3	1A	X																	Temp = 72.0 pH = 7.72	24 TAT
Outfall 002-Dup	W	Poly-1 liter	1		HNO3	1B	X																		24 TAT
Outfall 002	W	Poly-1 liter	1		None	2						X													
Outfall 002	W	VOAs	3		HCl	3A, 3B, 3C						X													
Outfall 002	W	Glass-Amber	2		None	4A, 4B							X												
Outfall 002	W	1L Amber	2		HCl	5A, 5B							X												24 TAT
Outfall 002	W	Poly-500 ml	1		NaOH	6								X											24 TAT
Outfall 002	W	Poly-1 liter	1		None	7											X								
Outfall 002	W	Poly-500 ml	2		None	8A, 8B												X							
Outfall 002	W	Poly-500 ml	2		None	9A, 9B													X						
Outfall 002	W	Poly-500 ml	2		None	10A, 10B														X					
Outfall 002	W	Poly-500 ml	1		H2SO4	11															X				
Outfall 002	W	1L Amber	2		None	12A, 12B																X			
Outfall 002	W	1L Amber	2		None	13A, 13B																	X		
Trip Blank	W	VOAs	3		HCl	14A, 14B, 14C																			

Relinquished By: <i>[Signature]</i>	Date/Time: 3-11-05 1400	Received By: <i>[Signature]</i>	Date/Time: 3/11/05 1400
Relinquished By: <i>[Signature]</i>	Date/Time: 3-11-05 1830	Received By: <i>[Signature]</i>	Date/Time: 3/11/05 1830
Relinquished By: <i>[Signature]</i>	Date/Time: 3-11-05 1830	Received By: <i>[Signature]</i>	Date/Time: 3/11/05 1830

Turn around Time: (check)	24 Hours	5 Days	48 Hours	10 Days	72 Hours	Normal	Perchlorate Only 72 Hours	Metals Only 72 Hours

Sample Integrity: (Check)	Intact	On Ice
	X	X



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March 31, 2005

MWH-Pasadena/ Boeing
300 North Lake Avenue, Suite 1200
Pasadena, CA 91101

Attention: Bronwyn Kelly
Project: Routine Outfall 002
Sampled: 03/11/05
Del Mar Analytical Number: IOC0995

Dear Ms. Kelly:

Alta Analytical Laboratory performed EPA Method 1613 for tetra-through -octa chlorinated dioxins and furans analysis for the project referenced above. Please use the following cross-reference table when reviewing your results.

MWH ID	DEL MAR ID	ATLA ID
Outfall 002	IOC0995-01	25899-001

Attached are the original reports from the subcontract laboratories. If you have any questions or require further assistance, please do not hesitate to contact me at (949) 261-1022 at extension 215.

Sincerely yours,
DEL MAR ANALYTICAL

Michele Harper
Project Manager



March 22, 2005

Alta Project I.D.: 25899

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

Dear Ms. Harper,

Enclosed are the results for the one aqueous sample received at Alta Analytical Laboratory on March 15, 2005 under your Project Name "IOC0995". This sample was extracted and analyzed using EPA Method 1613 for tetra-through-octa chlorinated dioxins and furans. A rush 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,

Martha M. Maier
Director of HRMS Services



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: 3/15/2005

Alta Lab. ID

Client Sample ID

25899-001

IOC0995

SECTION II



Method Blank		EPA Method 1613			
Matrix:	Aqueous	QC Batch No.:	6613	Lab Sample:	0-MB001
Sample Size:	1.000 L	Date Extracted:	18-Mar-05	Date Analyzed DB-5:	21-Mar-05
				Date Analyzed DB-225:	NA
Analyte	Conc. (pg/L)	DL ^a	EMPC ^b	%R	LCL-UCL ^d Qualifiers
2,3,7,8-TCDD	ND	1.09		74.6	25 - 164
1,2,3,7,8-PeCDD	ND	0.717		72.8	25 - 181
1,2,3,4,7,8-HxCDD	ND	1.85		76.8	32 - 141
1,2,3,6,7,8-HxCDD	ND	1.81		82.6	28 - 130
1,2,3,7,8,9-HxCDD	ND	1.82		74.6	23 - 140
1,2,3,4,6,7,8-HpCDD	ND	1.44		50.4	17 - 157
OCDD	ND	3.04		78.4	24 - 169
2,3,7,8-TCDF	ND	1.01		69.0	24 - 185
1,2,3,7,8-PeCDF	ND	2.09		72.3	21 - 178
2,3,4,7,8-PeCDF	ND	1.80		65.8	26 - 152
1,2,3,4,7,8-HxCDF	ND	0.708		73.8	26 - 123
1,2,3,6,7,8-HxCDF	ND	0.669		75.2	28 - 136
2,3,4,6,7,8-HxCDF	ND	0.730		74.9	29 - 147
1,2,3,7,8,9-HxCDF	ND	1.14		70.1	28 - 143
1,2,3,4,6,7,8-HpCDF	ND	1.12		76.4	26 - 138
1,2,3,4,7,8,9-HpCDF	ND	1.23		59.4	17 - 157
OCDF	ND	2.41		74.7	35 - 197
Totals					
Total TCDD	ND	1.09			
Total PeCDD	ND	0.717			
Total HxCDD	ND	1.83			
Total HpCDD	ND	1.44			
Total TCDF	ND	1.01			
Total PeCDF	ND	1.94			
Total HxCDF	ND	0.794			
Total HpCDF	ND	1.17			
Footnotes					
a. Sample specific estimated detection limit.					
b. Estimated maximum possible concentration.					
c. Method detection limit.					
d. Lower control limit - upper control limit.					

Analyst: JMH

Approved By: Martha M. Maier 22-Mar-2005 09:45



EPA Method 1613

OPR Results		Lab Sample: 0-OPR001		Date Analyzed DB-5: 21-Mar-05		Date Analyzed DB-225: NA	
Matrix:	Aqueous <th>QC Batch No.:</th> <td>6613 <th>Date Analyzed DB-5:</th> <td>21-Mar-05 <th>Date Analyzed DB-225:</th> <td>NA </td></td></td>	QC Batch No.:	6613 <th>Date Analyzed DB-5:</th> <td>21-Mar-05 <th>Date Analyzed DB-225:</th> <td>NA </td></td>	Date Analyzed DB-5:	21-Mar-05 <th>Date Analyzed DB-225:</th> <td>NA </td>	Date Analyzed DB-225:	NA
Sample Size:	1.000 L <th>Date Extracted:</th> <td>18-Mar-05 <th colspan="4"></th> </td>	Date Extracted:	18-Mar-05 <th colspan="4"></th>				
Analyte	Spike Conc.	Conc. (ng/mL)	OPR Limits	Labeled Standard	%R	LCL-UCL	
2,3,7,8-TCDD	10.0	8.66	6.7 - 15.8	<u>IS</u> 13C-2,3,7,8-TCDD	63.0	25 - 164	
1,2,3,7,8-PeCDD	50.0	45.3	35 - 71	13C-1,2,3,7,8-PeCDD	54.1	25 - 181	
1,2,3,4,7,8-HxCDD	50.0	46.2	35 - 82	13C-1,2,3,4,7,8-HxCDD	56.2	32 - 141	
1,2,3,6,7,8-HxCDD	50.0	47.9	38 - 67	13C-1,2,3,6,7,8-HxCDD	60.8	28 - 130	
1,2,3,7,8,9-HxCDD	50.0	46.2	32 - 81	13C-1,2,3,4,6,7,8-HpCDD	54.6	23 - 140	
1,2,3,4,6,7,8-HpCDD	50.0	50.6	35 - 70	13C-OCDD	38.2	17 - 157	
OCDD	100	97.1	78 - 144	13C-2,3,7,8-TCDF	63.7	24 - 169	
2,3,7,8-TCDF	10.0	9.33	7.5 - 15.8	13C-1,2,3,7,8-PeCDF	51.3	24 - 185	
1,2,3,7,8-PeCDF	50.0	50.5	40 - 67	13C-2,3,4,7,8-PeCDF	52.6	21 - 178	
2,3,4,7,8-PeCDF	50.0	50.7	34 - 80	13C-1,2,3,4,7,8-HxCDF	49.8	26 - 152	
1,2,3,4,7,8-HxCDF	50.0	51.8	36 - 67	13C-1,2,3,6,7,8-HxCDF	56.3	26 - 123	
1,2,3,6,7,8-HxCDF	50.0	51.5	42 - 65	13C-2,3,4,6,7,8-HxCDF	56.1	28 - 136	
2,3,4,6,7,8-HxCDF	50.0	51.4	35 - 78	13C-1,2,3,7,8,9-HxCDF	54.3	29 - 147	
1,2,3,7,8,9-HxCDF	50.0	51.0	39 - 65	13C-1,2,3,4,6,7,8-HpCDF	52.5	28 - 143	
1,2,3,4,6,7,8-HpCDF	50.0	53.2	41 - 61	13C-1,2,3,4,7,8,9-HpCDF	56.3	26 - 138	
1,2,3,4,7,8,9-HpCDF	50.0	53.2	39 - 69	13C-OCDF	46.1	17 - 157	
OCDF	100	102	63 - 170	<u>CRS</u> 37Cl-2,3,7,8-TCDD	82.8	35 - 197	

Analyst: JMH Approved By: Martha M. Maier 22-Mar-2005 09:45



Sample ID: **IOC0995**

EPA Method 1613

Client Data

Name: Del Mar Analytical, Irvine
 Project: IOC0995
 Date Collected: 11-Mar-05
 Time Collected: 1044

Sample Data

Matrix: Aqueous
 Sample Size: 1.045 L

Laboratory Data

Lab Sample: 25899-001 Date Received: 15-Mar-05
 QC Batch No.: 6613 Date Extracted: 18-Mar-05
 Date Analyzed DB-5: 21-Mar-05 Date Analyzed DB-225: NA

Analyte	Conc. (pg/L)	DL ^a	EMPC ^b	Qualifiers	Labeled Standard	%R	LCL-UCL ^d	Qualifiers
2,3,7,8-TCDD	ND	1.08			13C-2,3,7,8-TCDD	61.3	25 - 164	
1,2,3,7,8-PeCDD	ND	1.14			13C-1,2,3,7,8-PeCDD	55.5	25 - 181	
1,2,3,4,7,8-HxCDD	ND	2.08			13C-1,2,3,4,7,8-HxCDD	65.0	32 - 141	
1,2,3,6,7,8-HxCDD	ND	1.98			13C-1,2,3,6,7,8-HxCDD	67.7	28 - 130	
1,2,3,7,8,9-HxCDD	ND	2.02			13C-1,2,3,4,6,7,8-HpCDD	67.8	23 - 140	
1,2,3,4,6,7,8-HpCDD	ND	1.15			13C-OCDD	52.8	17 - 157	
OCDD			3.59		13C-2,3,7,8-TCDF	66.2	24 - 169	
2,3,7,8-TCDF	ND	1.33			13C-1,2,3,7,8-PeCDF	54.4	24 - 185	
1,2,3,7,8-PeCDF	ND	2.31			13C-2,3,4,7,8-PeCDF	55.6	21 - 178	
2,3,4,7,8-PeCDF	ND	1.96			13C-1,2,3,4,7,8-HxCDF	54.9	26 - 152	
1,2,3,4,7,8-HxCDF	ND	0.598			13C-1,2,3,6,7,8-HxCDF	62.7	26 - 123	
1,2,3,6,7,8-HxCDF	ND	0.589			13C-2,3,4,6,7,8-HxCDF	63.4	28 - 136	
2,3,4,6,7,8-HxCDF	ND	0.628			13C-1,2,3,7,8,9-HxCDF	61.2	29 - 147	
1,2,3,7,8,9-HxCDF	ND	0.930			13C-1,2,3,4,6,7,8-HpCDF	60.6	28 - 143	
1,2,3,4,6,7,8-HpCDF	ND	0.816			13C-1,2,3,4,7,8,9-HpCDF	68.7	26 - 138	
1,2,3,4,7,8,9-HpCDF	ND	0.876			13C-OCDF	59.9	17 - 157	
OCDF	ND	2.09			37Cl-2,3,7,8-TCDD	79.6	35 - 197	

Totals

Total TCDD	ND	1.08						
Total PeCDD	ND	1.14						
Total HxCDD	ND	2.02						
Total HpCDD	ND	1.15						
Total TCDF	ND	1.33						
Total PeCDF	ND	2.13						
Total HxCDF	ND	0.673						
Total HpCDF	ND	0.841						

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

Analyst: JMH

Approved By: Martha M. Maier 22-Mar-2005 09:45

APPENDIX

DATA QUALIFIERS & ABBREVIATIONS

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

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

The control limits are “interim limits only” until in-house limits are utilized.



CURRENT CERTIFICATIONS

NELAP — (Primary AA: California, Certificate No. 02102CA)

Department of the Navy

U.S. Army Corps of Engineers

U.S. EPA Region 5

Bureau of Reclamation — Mid-Pacific Region — (MP-470, Res-1.10)

Commonwealth of Kentucky — (Certificate No. 90063)

Commonwealth of Virginia — (Certificate No. 00013)

State of Alaska, Department of Environmental Conservation — (Certificate No. OS-00197)

State of Arizona — (Certificate No. AZ0639)

State of Arkansas, Department of Health — (Approval granted through CA certification)

State of Arkansas, Department of Environmental Quality

State of California — (Certificate No. 1640)

State of Colorado

State of Connecticut — (Certificate No. PH-0182)

State of Florida — (Certificate No. 87456)

State of Louisiana, Department of Health and Hospitals — (Certificate No. LA000014)

State of Louisiana, Department of Environmental Quality

State of Maine

State of Michigan (Certificate No. 81178087)

State of Mississippi — (Approval granted through CA certification)

State of Nevada — (Certificate No. CA413)

State of New Jersey — (Certificate No. CA003)

State of New York, Department of Health — (Certificate No. 11411)

State of North Carolina — (Certification No. 06700)

State of North Dakota, Department of Health — (Certificate No. R-078)

State of New Mexico

State of Oklahoma — (D9919)

State of Oregon — (Certificate No. CA413)

State of Pennsylvania — (Certificate No. 68-490)

State of South Carolina — (Certificate No. 87002001)

State of Tennessee — (Certificate No. 02996)

State of Texas — (Certificate No. TX247-1000A)

State of Utah — (Certificate No. E-201)

State of Washington — (Certification No. C091)

State of Wisconsin — (Certificate No. 998036160)

State of Wyoming — (USEPA Region 8 Ref: 8TMS-Q)



17461 Derian Ave. Suite 100, Irvine, CA 92614 Ph (949) 261-1022 Fax (949) 261-1228
 1014 E. Cooley Dr., Suite A, Cotton, CA 92324 Ph (909) 370-4667 Fax (909) 370-1046
 9494 Chasapeake Drive, Suite 805, San Diego, CA 92123 Ph (619) 806-9596 Fax (619) 505-9599
 5830 South 51st Street, Suite B-120, Phoenix, AZ 85044 Ph (480) 785-0843 Fax (480) 785-0851
 2520 E. Sunset Rd., Suite #3, Las Vegas, NV 89120 Ph (702) 798-3820 Fax (702) 798-3821

SUBCONTRACT ORDER - PROJECT # IOC0995

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 Harper	Alta Analytical 1104 Windfield Way <i>25899 1.2°C</i> El Dorado Hills, CA 95762 Phone: (916) 933-1640 Fax: (916) 933-0940

Standard TAT is requested unless specific due date is requested => Due Date: 2 weeks Initials: _____

Analysis	Expiration	Comments
Sample ID: IOC0995-01 Water 1613-Dioxin-HR EDD + Level 4	Sampled: 03/11/05 10:44 03/18/05 10:44 04/08/05 10:44	Instant Notification J flags, 17 congeners, no TEQ, sub to Alta Excel EDD email to pm, include Std logs for Lvl IV
Containers Supplied: 1 L Amber (IOC0995-01G) 1 L Amber (IOC0995-01H)		

SAMPLE INTEGRITY:

All containers intact: Yes No
 Sample labels/COC agree: Yes No
 Samples Received On Ice: Yes No
 Custody Seals Present: Yes No
 Samples Preserved Properly: Yes No
 Samples Received at (temp): _____

Released By: *Harry Harper* Date: *3-14-05* Time: *1700* Received By: *Bettina Benedict* Date: *3/15/05* Time: *0925*
 Released By: _____ Date: _____ Time: _____ Received By: _____ Date: _____ Time: _____

STANDARD OPERATING PROCEDURE

Attachment 10.B.1

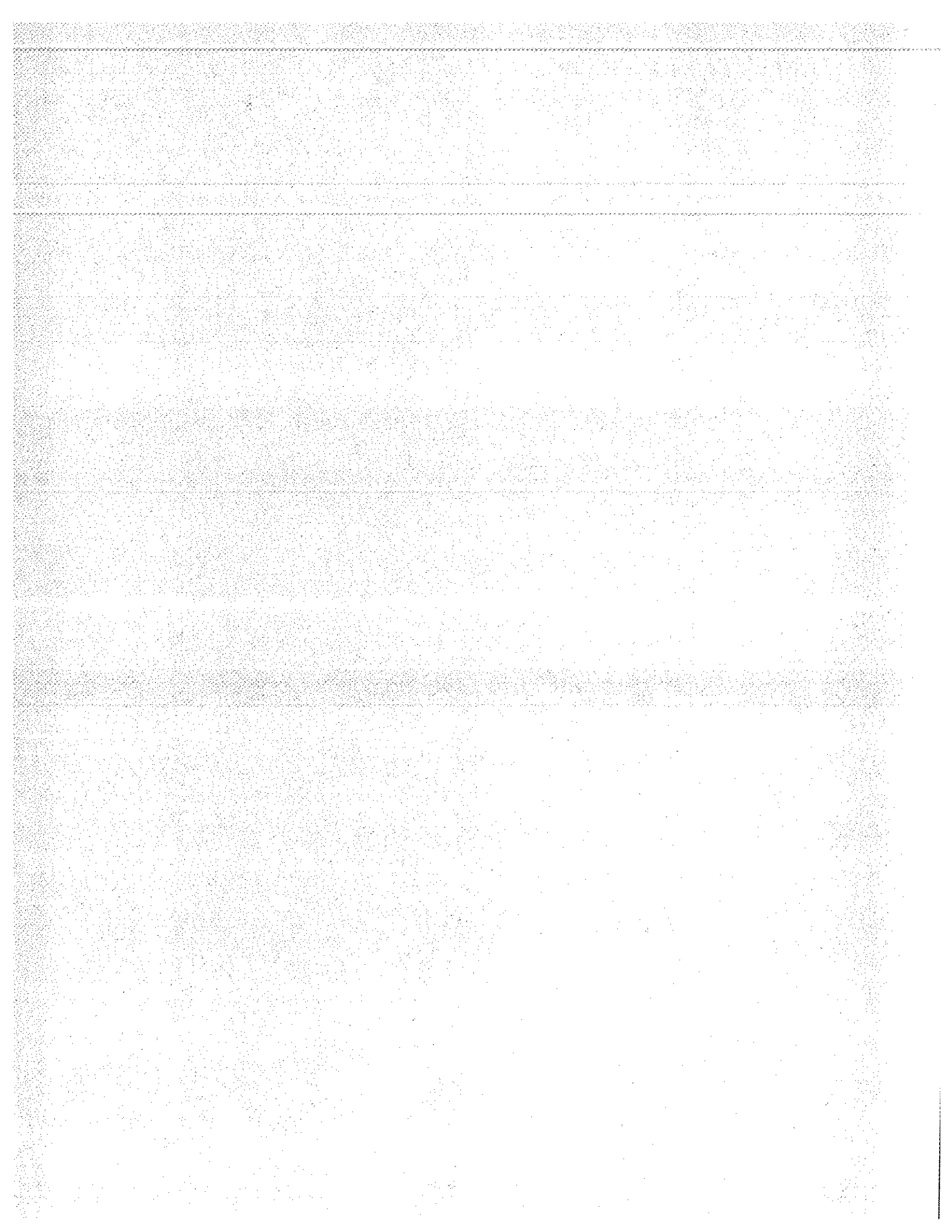
SAMPLE LOG-IN CHECKLIST

ALTA Project No.: 25899

1. Date Samples Arrived: <u>3/15/05</u> <u>0925</u> Initials: <u>AB</u> Location: <u>WR-2</u>			
2. Time / Date logged in: <u>1040</u> <u>3/15/05</u> Initials: <u>AB</u> Location: <u>WR-2</u>			
3. Samples Arrived By: (circle) <u>FedEx</u> UPS World Courier Other:			
4. Shipping Preservation: (circle) <u>Ice</u> <u>Blue Ice</u> Dry Ice / None Temp °C <u>1.2</u>			
5. Shipping Container(s) Intact? If not, describe condition in comment section.	<input checked="" type="checkbox"/>		
6. Shipping Container(s) Custody Seals Present? Intact? If not intact, describe condition in comment section.	<input checked="" type="checkbox"/>		
7. Shipping Documentation Present? (circle) Shipping Label <u>Airbill</u> Tracking Number <u>7910 0653 3660</u>	<input checked="" type="checkbox"/>		
8. Sample Custody Seal(s) Present? No. of Seals _____ or Seal No. _____ Intact? If not intact, describe condition in comment section.		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
9. Sample Container Intact? If no, indicate sample condition in comment section.	<input checked="" type="checkbox"/>		
10. Chain of Custody (COC) or other Sample Documentation Present?	<input checked="" type="checkbox"/>		
11. COC/Documentation Acceptable? If no, complete COC Anomaly Form.	<input checked="" type="checkbox"/>		
12. Shipping Container (circle): ALTA <u>Client</u> Retain or <u>Return</u> or Disposed			
13. Container(s) and/or Bottle(s) Requested?		<input checked="" type="checkbox"/>	
14. Drinking Water Sample? (HRMS Only) If yes, Acceptable Preservation? Y or N Preservation Info From? (circle) COC or Sample Container or None Noted			<input checked="" type="checkbox"/>

Comments: sampler's initials found on sample label

ALTA Analytical Laboratory
El Dorado Hills, CA 95762




CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

AMEC Earth & Environmental
 550 South Wadsworth Boulevard
 Suite 500
 Lakewood, CO 80226

Package ID T711DF37
 Task Order 313150010
 SDG No. Multiple
 No. of Analyses 10

Laboratory Alta
 Reviewer H. Chang
 Analysis/Method Dioxin&Furans/1613

Date: April 4, 2005
 Reviewer's Signature


ACTION ITEMS ^a	
1. Case Narrative Deficiencies	
2. Out of Scope Analyses	
3. Analyses Not Conducted	
4. Missing Hardcopy Deliverables	
5. Incorrect Hardcopy Deliverables	
6. Deviations from Analysis Protocol, e.g., Holding Times GC/MS Tune/Inst. Perform Calibrations Blanks Surrogates Matrix Spike/Dup LCS Field QC Internal Standard Performance Compound Identification and Quantitation System Performance	Detects below the calibration range were qualified "J."
COMMENTS ^b	
^a 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

ANALYSIS: DIOXINS/FURANS

SAMPLE DELIVERY GROUPS: Multiple SDGs

Prepared by

AMEC—Denver Operations
550 South Wadsworth Boulevard, Suite 500
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title: NPDES Monitoring
Contract Task Order #: 313150010
Sample Delivery Group #: Multiple
Project Manager: B. McIlvaine
Matrix: Water
Analysis: Dioxins/Furans
QC Level: Level IV
No. of Samples: 10
No. of Reanalyses/Dilutions: 0
Reviewer: H. Chang
Date of Review: April 4, 2005

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

Table 1. Sample Identification

Client ID	Laboratory ID (Del Mar)	Laboratory ID (Alta)	Matrix	COC Method
Outfall 002	IOC1521-01	25935-001	water	1613
Outfall 011	IOC1523-01	25936-001	water	1613
Outfall 005	IOC1524-01	25940-001	water	1613
Outfall 006	IOC1525-01	25937-001	water	1613
Outfall 011 Composite	IOC1526-01	25938-001	water	1613
Outfall 001	IOC1561-01	25941-001	water	1613
Outfall 004	IOC1563-01	25939-001	water	1613
Outfall 008	IOC1564-01	25942-001	water	1613
Outfall 003	IOC1565-01	25943-001	water	1613
Outfall 009	IOC1566-01	25944-001	water	1613

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

Following are findings associated with sample management:

2.1.1 Sample Preservation, Handling, and Transport

Samples Outfall 001, Outfall 004, and Outfall 008 were received at Del Mar Analytical outside the temperature limits of $4^{\circ}\text{C} \pm 2^{\circ}\text{C}$. Due to non-volatile nature of the target compounds, no qualifications were required. The other samples were received with cooler temperatures within the limits. According to the laboratory login sheets, all samples were received intact and in good condition at both laboratories. No qualifications were required.

2.1.2 Chain of Custody

The COCs and transfer COCs were legible and signed by the appropriate field and laboratory personnel, and accounted for the analyses presented in these SDGs. As the samples were couriered directly to Del Mar Analytical, custody seals were not required. The coolers received by Alta had custody seals present and intact. The EPA 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 a year of collection. No qualifications were required.

2.2 INSTRUMENT PERFORMANCE

Following are findings associated with instrument performance:

2.2.1 GC Column Performance

A Windows Defining Mix (WDM) containing the first and last eluting congeners of each descriptor and isomer specificity compounds was not analyzed prior to the initial calibration sequence or at the beginning of each analytical sequence; however, the first and last eluting congeners and isomer specificity compounds were added to the midpoint of the initial calibration and to the continuing calibration standards (see section 2.3.2). The GC column performance in the calibrations was acceptable, with the height of the valley between the closely eluting isomers and 2,3,7,8-TCDD reported as less than 25%. No qualifications were required.

2.2.2 Mass Spectrometer Performance

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

2.3 CALIBRATION

2.3.1 Initial Calibration

There was one initial calibration, analyzed 08/30/04. The calibration consisted of six concentration level standards (CS0 through CS5) analyzed to verify instrument linearity. The initial calibration was acceptable with %RSDs $\leq 20\%$ for the 16 native compounds (calibration by isotope dilution) and $\leq 35\%$ for the one native and all labeled compounds (calibration by internal standard). The relative retention times and ion abundance ratios were within the 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 VERs were acceptable with the concentrations within the acceptance criteria listed in Table 6 of EPA Method 1613. The ion abundance ratios and relative retention times were within the method QC limits. 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 standards 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_6624_MB001) was extracted and analyzed with the samples in these SDGs. There were no target compound detects reported 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 Ongoing Precision Recovery (OPR) sample (0_6624_OPR001) was extracted and analyzed with the samples in these SDGs. All recoveries were within the acceptance criteria listed in Table 6 of Method 1613. No qualifications were required.

2.6 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

MS/MSD analyses were not performed in these SDGs. 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 samples in these SDGs had no associated field QC samples. No qualifications were required.

2.7.2 Field Duplicates

No field duplicate samples were identified for these SDGs.

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. Any reported EMPC was qualified as an estimated nondetect, "UJ." Any detects below the lower method calibration level (MCL) were qualified as estimated, "J." No further qualifications were required.

Sample ID: **IOC1521-01** *Default 00Z* **EPA Method 1613**

Client Data
 Name: Del Mar Analytical, Irvine
 Project: IOC1521
 Date Collected: 18-Mar-05
 Time Collected: 1136

Sample Data
 Matrix: Aqueous
 Sample Size: 0.948 L

Laboratory Data
 Lab Sample: 25935-001
 QC Batch No.: 6624
 Date Analyzed DB-5: 23-Mar-05
 Date Analyzed DB-225: NA
 Date Received: 22-Mar-05
 Date Extracted: 22-Mar-05

Analyte	Conc. (pg/L)	DL ^a	EMPC ^b	Qualifiers	Labeled Standard	%R	LCL-UCL ^d	Qualifiers
2,3,7,8-TCDD	ND	0.685			13C-2,3,7,8-TCDD	87.7	25 - 164	
1,2,3,7,8-PeCDD	ND	0.745			13C-1,2,3,7,8-PeCDD	82.8	25 - 181	
1,2,3,4,7,8-HxCDD	ND	1.21			13C-1,2,3,4,7,8-HxCDD	81.5	32 - 141	
1,2,3,6,7,8-HxCDD	ND	1.23			13C-1,2,3,6,7,8-HxCDD	89.0	28 - 130	
1,2,3,7,8,9-HxCDD	ND	1.22			13C-1,2,3,4,6,7,8-HpCDD	81.4	23 - 140	
1,2,3,4,6,7,8-HpCDD	ND	1.04			13C-OCDD	63.4	17 - 157	
OCDD	5.96			J	13C-2,3,7,8-TCDF	90.8	24 - 169	
2,3,7,8-TCDF	ND	0.993			13C-1,2,3,7,8-PeCDF	83.8	24 - 185	
1,2,3,7,8-PeCDF	ND	1.64			13C-2,3,4,7,8-PeCDF	86.5	21 - 178	
2,3,4,7,8-PeCDF	ND	1.39			13C-1,2,3,4,7,8-HxCDF	68.7	26 - 152	
1,2,3,4,7,8-HxCDF	ND	0.451			13C-1,2,3,6,7,8-HxCDF	77.9	26 - 123	
1,2,3,6,7,8-HxCDF	ND	0.441			13C-2,3,4,6,7,8-HxCDF	76.8	28 - 136	
2,3,4,6,7,8-HxCDF	ND	0.495			13C-1,2,3,7,8,9-HxCDF	75.1	29 - 147	
1,2,3,7,8,9-HxCDF	ND	0.768			13C-1,2,3,4,6,7,8-HpCDF	76.4	28 - 143	
1,2,3,4,6,7,8-HpCDF	ND	0.697			13C-1,2,3,4,7,8,9-HpCDF	80.7	26 - 138	
1,2,3,4,7,8,9-HpCDF	ND	0.818			13C-OCDF	67.4	17 - 157	
OCDF	ND	3.04			CRS 37Cl-2,3,7,8-TCDD	86.8	35 - 197	

Totals

Total TCDD	ND	0.685		
Total PeCDD	ND	0.745		
Total HxCDD	ND	1.22		
Total HpCDD	ND	1.04		
Total TCDF	ND	0.993		
Total PeCDF	ND	1.51		
Total HxCDF	ND	0.526		
Total HpCDF	ND	0.750		

Footnotes

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

Analyst: JMH

Approved By: Martha M. Maier 24-Mar-2005 08:47

QC VALIDATED

Project 25935

LABORATORY

CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

AMEC Earth & Environmental
 550 South Wadsworth Boulevard
 Suite 500
 Lakewood, CO 80226

Package ID T711MT69
 Task Order 313150010
 SDG No. IOC1521

No. of Analyses 1

Laboratory Del Mar

Date: 04/01/05

Reviewer P. Meeks

Reviewer's Signature

Analysis/Method Metals

P. Meeks

ACTION ITEMS*

1. **Case Narrative Deficiencies**
2. **Out of Scope Analyses**
3. **Analyses Not Conducted**
4. **Missing Hardcopy Deliverables**
5. **Incorrect Hardcopy Deliverables**
6. **Deviations from Analysis Protocol, e.g.,**
 - Holding Times
 - GC/MS Tune/Inst. Performance
 - Calibrations
 - Blanks
 - Surrogates
 - Matrix Spike/Dup LCS
 - Field QC
 - Internal Standard Performance
 - Compound Identification and Quantitation
 - System Performance

COMMENTS^b Acceptable as reviewed.

* 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

ANALYSIS: METALS

SAMPLE DELIVERY GROUP: IOC1521

Prepared by

AMEC—Denver Operations
550 South Wadsworth Boulevard, Suite 500
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title: NPDES Monitoring
Contract Task Order #: 313150010
SDG#: IOC1521
Project Manager: B. McIlvaine
Matrix: Water
Analysis: Metals
QC Level: Level IV
No. of Samples: 1
No. of Reanalyses/Dilutions: 0
Reviewer: P. Meeks
Date of Review: April 01, 2005

The samples listed in Table 1 were validated based on the guidelines outlined in the *AMEC Data Validation Procedure for Levels III and IV ICP-MS Metals, (DVP-5-A, Rev.0)*, *AMEC Data Validation Procedure for Levels III and IV ICP Metals (DVP-5, Rev. 0)*, *SW-846 Method 6020B for Inductively Coupled Plasma - Mass Spectrometry*, *SW-846 Method 7471A for Mercury (Manual Cold-Vapor Technique)*, and validation guidelines outlined in the *USEPA CLP National Functional Guidelines for Inorganic Data Review (2/94)*. Any deviations from these procedures and guidelines are documented herein. Qualifiers were applied in cases where the data did not meet the required QC criteria or where special consideration by the data user is required. Data qualifiers were placed on Form Is with the associated qualification codes. Analytes that were rejected for any reason are denoted on the Form I as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

Table 1. Sample identification

Client ID	EPA ID	Laboratory ID	Matrix	COC Method
Outfall 011	Outfall 011	IOC1521-01	water	ILM04

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 above the temperature limits of $4^{\circ}\text{C} \pm 2^{\circ}\text{C}$, at 7°C ; however, as the sample had insufficient time to cool prior to receipt at the laboratory, no qualifications were required. 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. A duplicate was submitted for Outfall 011; however, duplicate analyses were not required. 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

A precalibration routine must be completed prior to calibrating the instrument, which consists of analyzing a tuning solution to verify resolution, mass calibration, and thermal stability. The solution must be analyzed a minimum of five times and must contain isotopes representing all mass regions of interest. All %RSDs were less than 5%. The mass calibrations were within 0.1 amu of the true mass and the instrument resolutions were less than 0.75 amu at 5 percent peak height for all analytes in the tune solution. No site sample qualifications were required.

2.3 CALIBRATION

The ICV and CCV results showed acceptable recoveries, 90-110% for the ICP/MS metals and 80-120% for mercury. The reporting limit check standards were recovered within the AMEC control limits of 70-130%. No sample qualifications were required.

2.4 BLANKS

There were no reported detects in the CCBs or method blanks associated with the site sample. No qualifications were required due to the method and calibration blank results.

2.5 ICP INTERFERENCE CHECK SAMPLE (ICS A/AB)

Results were not provided for spiked interferences sulfur, phosphorus, carbon, and chloride, and lead was not spiked into the ICSAB solution. Copper was detected above the reporting limit in the ICSA. The validator reviewed the raw data for the site sample ICP/MS analyses for the level of reported interferences, Al, Ca, Fe, and Mg, and determined that the levels of reported interferences were not high enough to cause matrix effects. No assessment could be made with respect to possible interference from sulfur, phosphorus, carbon, and chloride. No qualifications were required.

2.6 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

The ICP/MS LCS sample was identified as 5C16088-BS1 and the mercury LCS sample was identified as 5C14050-BS1. The LCS results on the summary forms and in the raw data were within the laboratory-established ICP/MS and mercury control limits of 85-115%. No qualifications were required.

2.7 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.

2.8 MATRIX SPIKE

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

2.9 FURNACE ATOMIC ABSORPTION QC

Furnace atomic absorption was not utilized for the analysis of this sample; therefore, furnace atomic absorption QC is not applicable.

2.10 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.

2.11 INTERNAL STANDARDS PERFORMANCE

The ICP-MS internal standard recoveries for the site samples and associated QC sample analyses were within the 60-125% control limits and no qualifications were required.

2.12 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 transcription errors or calculation errors were noted. Lead detected below the reporting limit was qualified as estimated, "J." No further qualifications were required.

2.13 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.

2.13.1 Field Blanks and Equipment Rinsates

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

2.13.2 Field Duplicates

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



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

Project ID: Routine Outfall 002

Report Number: IOC1521

Sampled: 03/18/05
 Received: 03/18/05

DRAFT: METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOC1521-01 (DRAFT: Outfall 002 - Water) - cont.									
Reporting Units: ug/l									
Copper	EPA 200.8	5C18119	0.49	2.0	2.0	1	03/18/05	03/21/05	Raw Qual
Lead	EPA 200.8	5C18119	0.13	1.0	ND	1	03/18/05	03/21/05	Qual Code
Mercury	EPA 245.1	5C19029	0.063	0.20	ND	1	03/19/05	03/19/05	U

AMEC VALIDATED

LEVEL IV

DRAFT REPORT
 DRAFT REPORT
 DATA SUBJECT TO CHANGE

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CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

AMEC Earth & Environmental
 550 South Wadsworth Boulevard
 Suite 500
 Lakewood, CO 80226

Package ID T711PP30
 Task Order 313150010
 SDG No. IOC1521

No. of Analyses 1

Laboratory Del Mar Analytical

Date: April 8, 2005

Reviewer L. Calvin

Reviewer's Signature


Analysis/Method Pesticides (a-BHC) by Method 608

ACTION ITEMS ^a	
1. Case Narrative Deficiencies	
2. Out of Scope Analyses	
3. Analyses Not Conducted	
4. Missing Hardcopy Deliverables	
5. Incorrect Hardcopy Deliverables	
6. Deviations from Analysis Protocol, e.g., Holding Times GC/MS Tune/Inst. Performance Calibration Method blanks Surrogates Matrix Spike/Dup LCS Field QC Internal Standard Performance Compound Identification Quantitation System Performance	Qualification assigned for a continuing calibration %D outlier.
COMMENTS ^b	

^a 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

ANALYSIS: PESTICIDES

SAMPLE DELIVERY GROUPS: IOC1521

Prepared by

AMEC Denver Operations
550 South Wadsworth Boulevard, Suite 500
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title: NPDES Monitoring
Contract Task Order #: 313150010
SDG#: IOC1521
Project Manager: B. McIlvaine
Matrix: Water
Analysis: PCBs
QC Level: Level IV
No. of Samples: 1
No. of Reanalyses/Dilutions: 0
Reviewer: L. Calvin
Date of Review: April 8, 2005

The samples listed in Table 1 were validated based on the general guidelines outlined in the *AMEC Data Validation Procedures (DVP-4, Rev.2)*, *EPA Method 608*, 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 summary form as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

Table 1. Sample identification

Client ID	EPA ID	Laboratory ID	Matrix	Method
Outfall 002	Outfall 002	IOC1521-01	water	608

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

The following are findings associated with sample management:

2.1.1 Sample Preservation, Handling, and Transport

The sample in this SDG was received at the laboratory within the temperature limits of 4°C ±2°C. The analysis did not require preservation, and no preservation was noted in the field. The COC noted that the sample containers were received intact. No qualifications were required.

2.1.2 Chain of Custody

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

2.1.3 Holding Times

The water sample was extracted within seven days of sample collection and analyzed within 40 days of extraction. No qualifications were required.

2.2 PESTICIDES INSTRUMENT PERFORMANCE

No resolution check standards or breakdown check standards are required by Method 608 for pesticides, and according to the raw data provided, a resolution check standard was not analyzed by the laboratory. The laboratory did analyze a breakdown check standard; however, as alpha-BHC was the only compound of interest, the breakdown check standard was not necessary. A review of the raw data indicated that the analytical run time was of sufficient length to provide adequate standard separation. The two analytical columns used in the analyses were within the guidelines specified in the methods.

According to the laboratory SOP and the initial calibration raw data, the retention time windows are ±0.10 minutes for both surrogates and alpha-BHC calibration standards. A review of the raw data indicated that the laboratory retention time criteria were met for the surrogates and pesticide calibration standards. No qualifications were required.

2.3 CALIBRATION

2.3.1 Analytical Sequence

Based on the data provided, the analytical sequences were in accordance with the requirements of Method 608. No qualifications were required.

2.3.2 Initial Calibration

There was one initial calibration dated 03/02/05 associated with this SDG, which consisted of six-point calibrations for alpha-BHC on two analytical columns. The laboratory provided an overlay of the sample chromatogram and the pesticide standard for identification purposes. The %RSD was within the EPA Method 608 QC limit of $\leq 10\%$ on channel B, and the r^2 was ≥ 0.995 on channel A. An ICV was analyzed immediately following the initial calibration. The %D for alpha-BHC was within the QC limit of $\leq 15\%$ on both analytical columns. The %RSD, r^2 , and ICV %D for alpha-BHC were recalculated from the raw data and no transcription or calculation errors were noted. No qualifications were required.

2.3.3 Continuing Calibration

The sample analysis of this SDG was bracketed by the daily ICV and two closing continuing calibration standards. The %D exceeded 15% on channel A in one of the closing calibrations; therefore, the nondetect for alpha-BHC was qualified as estimated, "UJ," in sample Outfall 002. The remaining %Ds were within the Method QC limit of $\pm 15\%$. A representative number of %Ds were recalculated from the raw data and no transcription or calculation errors were noted. No further qualifications were required.

2.4 BLANKS

2.4.1 Instrument Blanks

An instrument blank was analyzed at the beginning of the analytical sequence. Cross-contamination was not evident in the sample. No qualifications were necessary.

2.4.2 Method Blanks

One water method blank (5C21069-BLK1) was extracted and analyzed with this SDG. Target compound alpha-BHC was not detected in the method blank. Review of the chromatograms showed no false negative. No qualifications were required.

2.5 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

One blank spike/blank spike duplicate pair (5C21069-BS1/BSD1) was extracted and analyzed with this SDG. The recoveries for alpha-BHC were within the laboratory-established QC limits of 45-115% and the RPD was $\leq 30\%$. The recoveries were checked from the raw data, and no calculation or transcription errors were noted. No qualifications were required.

2.6 SURROGATE RECOVERY

The sample and all QC samples were fortified with the surrogate compounds decachlorobiphenyl (DCB) and tetrachloro-m-xylene (TCX). TCX was recovered within the laboratory-established QC limits; however, DCB was recovered above the QC limits in sample Outfall 002. As target compound alpha-BHC was not detected in the sample, no qualification was necessary. The recoveries were calculated from the raw data and no transcription or calculation errors were noted. No qualifications were required.

2.7 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

There were no MS/MSD analyses associated with this SDG. Accuracy and precision were assessed based on the blank spike/blank spike duplicate results. No qualifications were required.

2.8 SAMPLE CLEANUP PERFORMANCE

According to the laboratory extraction benchsheet, no cleanups were performed on the water sample. No qualifications were required.

2.9 FIELD QC SAMPLES

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

2.9.1 Field Blanks and Equipment Rinsates

There were no field QC samples associated with the sample in this SDG. No qualifications were required.

2.9.2 Field Duplicates

There were no field duplicate samples associated with the samples in this SDG.

2.10 COMPOUND IDENTIFICATION

The laboratory analyzed for alpha-BHC by EPA Method 608. Compound identification is verified at a Level IV validation. Review of chromatograms and retention times indicated no problems with compound identification for the sample in this SDG. No qualifications were required.

2.11 COMPOUND QUANTIFICATION AND REPORTED DETECTION LIMITS

Compound quantification was verified for this SDG; however, as there was no reported detect, quantitation was verified by recalculating blank spike and surrogate recoveries. Reporting limits were supported by the low-level standard of the initial calibration and the laboratory MDL study. The reporting limit for alpha-BHC was not adjusted for sample amount on the result summary; however, the dilution factor listed on the summary reflected the sample volume extracted. Results were reported in ug/L (ppb). No qualifications were required.



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

Project ID: Routine Outfall 002

Report Number: IOC1521

Sampled: 03/18/05
Received: 03/18/05

ORGANOCHLORINE PESTICIDES (EPA 608)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOC1521-01 (Outfall 002 - Water) - cont. Reporting Units: ug/l									
alpha-BHC	EPA 608	5C21069	0.0010	0.010	ND	0.952	03/21/05	03/21/05	UJ C
Surrogate: Decachlorobiphenyl (45-120%)					123 %				
Surrogate: Tetrachloro-m-xylene (35-115%)					104 %				

see qual code
UJ C
22

AMEC VALIDATED
LEVEL IV

Del Mar Analytical, Irvine
Michele Harper
Project Manager

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CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

AMEC Earth & Environmental
 550 South Wadsworth Boulevard
 Suite 500
 Lakewood, CO 80226


Package ID T711SV48
 Task Order 313150010
 SDG No. IOC1521

No. of Analyses 1

Laboratory Del Mar

Reviewer M. Pokorny

Analysis/Method Semivolatiles

Date: April 7, 2005
 Reviewer's Signature 

ACTION ITEMS ^a	
1. Case Narrative Deficiencies	
2. Out of Scope Analyses	
3. Analyses Not Conducted	
4. Missing Hardcopy Deliverables	
5. Incorrect Hardcopy Deliverables	
6. Deviations from Analysis	
Protocol, e.g.,	
Holding Times	
GC/MS Tune/Inst. Perform	
Calibrations	
Blanks	
Surrogates	
Matrix Spike/Dup LCS	
Field QC	
Internal Standard Performance	
Compound Identification and Quantitation	
System Performance	
COMMENTS ^b	Acceptable as reviewed.

^a 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

ANALYSIS: SEMIVOLATILES

SAMPLE DELIVERY GROUP: IOC1521

Prepared by

AMEC Denver Operations
550 South Wadsworth Boulevard, Suite 500
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title: NPDES Monitoring
Contract Task Order #: 313150010
SDG#: IOC1521
Project Manager: B. McIlvaine
Matrix: Water
Analysis: Semivolatiles
QC Level: Level IV
No. of Samples: 1
No. of Reanalyses/Dilutions: 0
Reviewer: M. Pokorny
Date of Review: April 8, 2005

The samples listed in Table 1 were validated based on the guidelines outlined in the *AMEC Data Validation Procedure for Levels C and D Semivolatile Organics (DVP-3, Rev. 2)*, *EPA Method 625*, and the *National Functional Guidelines For Organic Data Review (2/94)*. Any deviations from these procedures are documented herein. Qualifiers were applied in cases where the data did not meet the required QC criteria or where special consideration by the data user is required. Data qualifiers were placed on Form Is with the associated qualification codes. Analytes that were rejected for any reason are denoted on the Form I as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

Table 1. Sample identification

Client ID	EPA ID	Lab No.	Matrix	Method
Outfall 002	Outfall 002	IOC1521-01	water	625

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

The sample in this SDG was received at the laboratory within the temperature limits of 4°C ±2°C. The analysis did not require preservation, and no preservation was noted in the field. The COC noted that the sample was received intact. No qualifications were required.

2.1.2 Chain of Custody

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

2.1.3 Holding Times

The water sample was extracted within seven days of collection and analyzed within 40 days of collection. No qualifications were required.

2.2 GC/MS TUNING

The DFTPP tunes met the criteria specified in Method 625, and the sample was analyzed within 12 hours of the DFTPP injection time. No qualifications were required.

2.3 CALIBRATION

The initial calibration associated with this SDG was dated 03/17/05. The average RRFs for were ≥ 0.05 and the %RSDs were $\leq 35\%$ or $r^2 \geq 0.995$ for all target compounds listed on the sample summary form. A representative number of average RRFs and %RSDs were checked from the raw data, and no calculation or transcription errors were noted. The continuing calibration associated with the sample analysis was analyzed 03/22/05. The RRFs for all target compounds were ≥ 0.05 , and the %Ds were $\leq 20\%$. A representative number of RRFs, r^2 values, and %Ds were checked from the raw data, and no calculation or transcription errors were noted. No qualifications were required.

2.4 BLANKS

One method blank (5C20022-BLK1) was extracted and analyzed with this SDG. No target compounds were reported in the method blank. Review of the raw data indicated no reportable false negatives. No qualifications were required.

2.5 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

One blank spike/blank spike duplicate pair (5C20022-BS1/5C20022-BSD1) was extracted and analyzed with this SDG. All percent recoveries and RPDs were within the laboratory QC limits. A

representative number of recoveries and RPDs were calculated from the raw data and no calculation or transcription errors were found. No qualifications were required.

2.6 SURROGATE RECOVERY

The sample surrogate recoveries were within the laboratory QC limits. A representative number of recoveries were calculated from the raw data, and no transcription or calculation errors were noted. No qualifications were required.

2.7 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

No MS/MSD analyses were associated with this SDG. Evaluation of method accuracy and precision was based on blank spike/blank spike duplicate 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 sample. Following are findings associated with field QC samples:

2.8.1 Field Blanks and Equipment Rinsates

There were no field QC samples associated with this SDG. No qualifications were required.

2.8.2 Field Duplicates

There were no field duplicate samples associated with this SDG. No qualifications were required.

2.9 INTERNAL STANDARDS PERFORMANCE

The internal standard area counts and retention times were within the control limits established by the continuing calibration standards: -50%/+100% for internal standard areas and ± 30 seconds for retention times. A representative number of recoveries 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 five semivolatile target compounds by EPA Method 625. Review of the sample chromatogram, 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 level of the initial and the method detection limit study. 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.



Del Mar Analytical

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

Project ID: Routine Outfall 002

Report Number: IOC1521

Sampled: 03/18/05
 Received: 03/18/05

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

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers	
									REV QUAL	QUAL CODE
Sample ID: IOC1521-01 (DRAFT: Outfall 002 - Water)										
Reporting Units: ug/l										
Bis(2-ethylhexyl)phthalate	EPA 625	5C20022	1.1	5.0	ND	0.943	03/20/05	03/22/05	U	
2,4-Dinitrotoluene	EPA 625	5C20022	0.23	9.0	ND	0.943	03/20/05	03/22/05	↓	
N-Nitrosodimethylamine	EPA 625	5C20022	0.22	8.0	ND	0.943	03/20/05	03/22/05		
Pentachlorophenol	EPA 625	5C20022	0.78	8.0	ND	0.943	03/20/05	03/22/05		
2,4,6-Trichlorophenol	EPA 625	5C20022	0.10	6.0	ND	0.943	03/20/05	03/22/05		
Surrogate: 2-Fluorophenol (30-120%)					67 %					
Surrogate: Phenol-d6 (35-120%)					66 %					
Surrogate: 2,4,6-Tribromophenol (45-120%)					81 %					
Surrogate: Nitrobenzene-d5 (45-120%)					68 %					
Surrogate: 2-Fluorobiphenyl (45-120%)					72 %					
Surrogate: Terphenyl-d14 (45-120%)					77 %					

AMEC VALIDATED

LEVEL IV

DRAFT REPORT
 DRAFT REPORT
 DATA SUBJECT TO CHANGE

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CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

AMEC Earth & Environmental
 550 South Wadsworth Boulevard
 Suite 500
 Lakewood, CO 80226


Package ID T711VO80
 Task Order 313150010
 SDG No. IOC1521

No. of Analyses 2

Laboratory Del Mar

Reviewer M. Pokorny

Analysis/Method Volatiles

Date: April 7, 2005
 Reviewer's Signature


ACTION ITEMS ^a	
1. Case Narrative Deficiencies	
2. Out of Scope Analyses	
3. Analyses Not Conducted	
4. Missing Hardcopy Deliverables	
5. Incorrect Hardcopy Deliverables	
6. Deviations from Analysis Protocol, e.g., Holding Times GC/MS Tune/Inst. Perform Calibrations Blanks Surrogates Matrix Spike/Dup LCS Field QC Internal Standard Performance Compound Identification and Quantitation System Performance	Qualifications required for calibration outliers.
COMMENTS ^b	

^a 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

ANALYSIS: VOLATILES

SAMPLE DELIVERY GROUP: IOC1521

Prepared by

AMEC Denver Operations
550 South Wadsworth Boulevard, Suite 500
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title: NPDES Monitoring
Contract Task Order #: 313150010
SDG#: IOC1521
Project Manager: B. McIlvaine
Matrix: Water
Analysis: Volatiles
QC Level: Level IV
No. of Samples: 2
No. of Reanalyses/Dilutions: 0
Reviewer: M. Pokorny
Date of Review: April 8, 2005

The samples listed in Table 1 were validated based on the guidelines outlined in the *AMEC Data Validation Procedure for Levels C and D Volatile Organics (DVP-2, Rev. 2)*, *EPA Method 624*, *EPA SW-846 Method 8260B*, 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 summary forms as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

Table 1. Sample identification

Client ID	EPA ID	Lab No.	Matrix	Method
Outfall 002	Outfall 002	IOC1521-01	water	624
Trip Blank	Trip Blank	IOC1521-02	water	624

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

The following are findings associated with sample management:

2.1.1 Sample Preservation, Handling, and Transport

The samples in this SDG were received at the laboratory within the temperature limits of 4°C ±2°C. The COCs noted that the samples were received intact; however, information regarding absence of headspace was not provided. No qualifications were required.

2.1.2 Chain of Custody

The COCs were signed and dated by both field and laboratory personnel. The COCs accounted for the analyses presented in this SDG. As the samples were couriered directly to the laboratory, custody seals were not required. No qualifications were required.

2.1.3 Holding Times

The samples were analyzed within 14 days of collection. No qualifications were required.

2.2 GC/MS TUNING

The ion abundance windows shown on the quantitation reports were consistent with those specified in Method 8260B, and all ion abundances were within the established windows. The samples and associated QC were analyzed within 12 hours of the BFB injection times. The Form Vs were verified from the raw data and no discrepancies between the summary forms and the raw data were noted. No qualifications were required.

2.3 CALIBRATION

One initial calibration dated 03/04/05 was associated with this SDG. The average RRFs were ≥0.05 for all compounds listed on the sample result summaries. The %RSDs were ≤35% for the target compounds analyzed by EPA Method 624. One continuing calibration associated with the sample analyses was analyzed 03/19/05. The RRFs were ≥0.05 in the continuing calibration. The %Ds for the continuing calibrations associated with the site samples were all ≤20% except for the %Ds for trichlorofluoromethane, chloroform, and 1,2-dichloroethane. The aforementioned compounds were qualified as estimated nondetects, "UJ," in the site sample. Qualifications were not required for the trip blank. A representative number of %RSDs and average RRFs from the initial calibrations, and %Ds and RRFs from the continuing calibrations were recalculated from the raw data, and no calculation or transcription errors were found. No further qualifications were required.

2.4 BLANKS

One water method blank (5C19004-BLK1) were associated with the sample analyses. There were no detects above the MDLs for the target compounds listed on the sample result summaries. The method blank raw data showed no evidence of false negatives. No qualifications were required.

2.5 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

One water blank spike (5C19004-BS1) was associated with the sample analyses. All recoveries were within the laboratory-established QC limits. A representative number of recoveries were recalculated from the raw data and no calculation or transcription errors were found. No qualifications were required.

2.6 SURROGATE RECOVERY

The surrogates were recovered within the QC limits of 80-120% in the samples and associated QC. A representative number of surrogate recoveries were recalculated from the raw data and no calculation or transcription errors were found. No qualifications were required.

2.7 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

An MS/MSD analyses was not performed with this SDG. Evaluation of method accuracy was based on the LCS 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 sample. Following are findings associated with field QC samples:

2.8.1 Trip Blanks

Sample Trip Blank (IOC1521-02) was the trip blank associated with this SDG. No target compounds were reported in the Trip Blank. No qualifications were required.

2.8.2 Field Blanks and Equipment Rinsates

There were no field QC samples associated with this SDG. No qualifications were required.

2.8.3 Field Duplicates

There were no field duplicate samples associated with this SDG. No qualifications were required.

2.9 INTERNAL STANDARDS PERFORMANCE

Internal standard area counts and retention times for the samples in this SDG were within the control limits established by the continuing calibration standards: +100%/-50% for internal standard areas and ± 0.50 minutes for retention times. A representative number of internal standard areas and retention times were verified from the raw data, and no calculation or transcription errors were noted. No qualifications were required.

2.10 COMPOUND IDENTIFICATION

Target compound identification was verified at a Level IV data validation. The laboratory analyzed the volatile target compounds by EPA Method 624. Chromatograms, retention times, and spectra for the samples and QC were examined and no target compound identification problems were noted. No qualifications were required.

2.11 COMPOUND QUANTIFICATION AND REPORTED DETECTION LIMITS

Compound quantification is verified at a Level IV data validation. The reporting limits were supported by the lowest concentrations of the initial calibration standards and by the MDL study. Compound quantitation was verified by recalculating any sample detects and a representative number of blank spike and surrogate recoveries from the raw data. Results were reported in $\mu\text{g/L}$ (ppb). No calculation or transcription errors were noted. No qualifications were required.

2.12 TENTATIVELY IDENTIFIED COMPOUNDS

The laboratory did not provide TICs for this SDG. No qualifications were required.

2.13 SYSTEM PERFORMANCE

A review of the chromatograms and other raw data showed no identifiable problems with system performance. No qualifications were required.



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

Project ID: Routine Outfall 002

Report Number: IOC1521

Sampled: 03/18/05
 Received: 03/18/05

DRAFT: PURGEABLES BY GC/MS (EPA 624)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers	REV QUAL	QUAL CODE
Sample ID: IOC1521-01 (DRAFT: Outfall 002 - Water)											
Reporting Units: ug/l											
Benzene	EPA 624	5C19004	0.28	2.0	ND	1	03/19/05	03/19/05	U		
Carbon tetrachloride	EPA 624	5C19004	0.28	5.0	ND	1	03/19/05	03/19/05	U		
Chloroform	EPA 624	5C19004	0.33	2.0	ND	1	03/19/05	03/19/05	U		
1,1-Dichloroethane	EPA 624	5C19004	0.27	2.0	ND	1	03/19/05	03/19/05	U		
1,2-Dichloroethane	EPA 624	5C19004	0.28	2.0	ND	1	03/19/05	03/19/05	U		
1,1-Dichloroethene	EPA 624	5C19004	0.32	3.0	ND	1	03/19/05	03/19/05	U		
Ethylbenzene	EPA 624	5C19004	0.25	2.0	ND	1	03/19/05	03/19/05	U		
Tetrachloroethene	EPA 624	5C19004	0.32	2.0	ND	1	03/19/05	03/19/05	U		
Toluene	EPA 624	5C19004	0.36	2.0	ND	1	03/19/05	03/19/05	U		
1,1,1-Trichloroethane	EPA 624	5C19004	0.30	2.0	ND	1	03/19/05	03/19/05	U		
1,1,2-Trichloroethane	EPA 624	5C19004	0.30	2.0	ND	1	03/19/05	03/19/05	U		
Trichloroethene	EPA 624	5C19004	0.26	5.0	ND	1	03/19/05	03/19/05	U		
Trichlorofluoromethane	EPA 624	5C19004	0.34	5.0	ND	1	03/19/05	03/19/05	U		
Vinyl chloride	EPA 624	5C19004	0.26	5.0	ND	1	03/19/05	03/19/05	U		
Xylenes, Total	EPA 624	5C19004	0.52	4.0	ND	1	03/19/05	03/19/05	U		
Surrogate: Dibromofluoromethane (80-120%)					112 %						
Surrogate: Toluene-d8 (80-120%)					102 %						
Surrogate: 4-Bromofluorobenzene (80-120%)					93 %						
Sample ID: IOC1521-02 (DRAFT: Trip Blank - Water)											
Reporting Units: ug/l											
Benzene	EPA 624	5C19004	0.28	2.0	ND	1	03/19/05	03/19/05	U		
Carbon tetrachloride	EPA 624	5C19004	0.28	5.0	ND	1	03/19/05	03/19/05	U		
Chloroform	EPA 624	5C19004	0.33	2.0	ND	1	03/19/05	03/19/05	U		
1,1-Dichloroethane	EPA 624	5C19004	0.27	2.0	ND	1	03/19/05	03/19/05	U		
1,2-Dichloroethane	EPA 624	5C19004	0.28	2.0	ND	1	03/19/05	03/19/05	U		
1,1-Dichloroethene	EPA 624	5C19004	0.32	3.0	ND	1	03/19/05	03/19/05	U		
Ethylbenzene	EPA 624	5C19004	0.25	2.0	ND	1	03/19/05	03/19/05	U		
Tetrachloroethene	EPA 624	5C19004	0.32	2.0	ND	1	03/19/05	03/19/05	U		
Toluene	EPA 624	5C19004	0.36	2.0	ND	1	03/19/05	03/19/05	U		
1,1,1-Trichloroethane	EPA 624	5C19004	0.30	2.0	ND	1	03/19/05	03/19/05	U		
1,1,2-Trichloroethane	EPA 624	5C19004	0.30	2.0	ND	1	03/19/05	03/19/05	U		
Trichloroethene	EPA 624	5C19004	0.26	5.0	ND	1	03/19/05	03/19/05	U		
Trichlorofluoromethane	EPA 624	5C19004	0.34	5.0	ND	1	03/19/05	03/19/05	U		
Vinyl chloride	EPA 624	5C19004	0.26	5.0	ND	1	03/19/05	03/19/05	U		
Xylenes, Total	EPA 624	5C19004	0.52	4.0	ND	1	03/19/05	03/19/05	U		
Surrogate: Dibromofluoromethane (80-120%)					116 %						
Surrogate: Toluene-d8 (80-120%)					102 %						
Surrogate: 4-Bromofluorobenzene (80-120%)					95 %						

DRAFT REPORT
 DRAFT REPORT
 DATA SUBJECT TO CHANGE

LEVEL IV

AMEC VALIDATED

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CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

AMEC Earth & Environmental
 550 South Wadsworth Boulevard
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 Lakewood, CO 80226

Package ID T711WC113

Task Order 313150010

SDG No. IOC1521

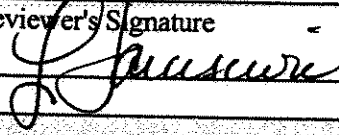
No. of Analyses 1

Laboratory Del Mar Analytical

Reviewer L. Jarusewic

Analysis/Method Perchlorate

Date: 04/05/05

Reviewer's Signature


ACTION ITEMS*

1. Case Narrative Deficiencies
2. Out of Scope Analyses
3. Analyses Not Conducted
4. Missing Hardcopy Deliverables
5. Incorrect Hardcopy Deliverables
6. Deviations from Analysis Protocol, e.g.,
 - Holding Times
 - GC/MS Tune/Inst. Performance
 - Calibrations
 - Blanks
 - Surrogates
 - Matrix Spike/Dup LCS
 - Field QC
 - Internal Standard Performance
 - Compound Identification and Quantitation
 - System Performance

COMMENTS^b Acceptable as reviewed.

^a 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

ANALYSIS: PERCHLORATE

SAMPLE DELIVERY GROUP: IOC1521

Prepared by

AMEC—Denver Operations
550 South Wadsworth Boulevard, Suite 500
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title:	NPDES Monitoring
Contract Task Order #:	313150010
Sample Delivery Group #:	IOC1521
Project Manager:	B. Mellvaine
Matrix:	Water
Analysis:	Perchlorate
QC Level:	Level IV
No. of Samples:	1
Reviewer:	L. Jarusewic
Date of Review:	April 5, 2005

The samples listed in Table 1 was validated based on the guidelines outlined in the AMEC *Data Validation Procedures SOP DVP-6, Rev. 2, USEPA Methods for Chemical Analysis of Water and Wastes Method 314.0, and 120.1*, 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 I as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

Table 1. Sample identification

Client ID	EPA ID	Laboratory ID	Matrix	COC Method
Outfall 002	Outfall 002	IOC1521-01	Water	Perchlorate

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

Following are findings associated with sample management:

2.1.1 Sample Preservation, Handling, and Transport

The sample in this SDG was received at the laboratory within the temperature limits of $4^{\circ}\text{C} \pm 2^{\circ}\text{C}$. The analysis did not require preservation and no preservation was noted in the field. 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 analysis presented in this SDG. No qualifications were required.

2.1.3 Holding Times

The holding time was assessed by comparing the date of collection with the date of analysis. The 28-day analytical holding time for perchlorate was met, and no qualifications were required.

2.2 CALIBRATION

The initial calibration correlation coefficient was ≥ 0.995 . The IPC-MA recovery was within the control limits of 80-120%. The ICV, CCV, and IPC recoveries were within the control limits of 90-110%. The ICCS was recovered above the control limits at 120%; however, as perchlorate was not detected in Outfall 002, no qualifications were required.

2.3 BLANKS

The method blank and CCB results reported on the summary forms and in the raw data for blank analyses associated with the sample were nondetects at the reporting limit. No qualifications were required.

2.4 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

The laboratory control sample recovery was within the method control limits of 85-115%. No qualifications were required.

2.5 SURROGATES RECOVERY

Surrogate recovery is not applicable to the analysis presented in this SDG.

2.6 LABORATORY DUPLICATES

MS/MSD analyses were performed in association with the sample in this SDG. The RPD was within the control limits of $\leq 20\%$ and no qualifications were required.

2.7 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

MS/MSD analyses were performed in association with the sample in this SDG. Recoveries were within the control limits of 80-120% and no qualifications were required.

2.8 FURNACE ATOMIC ABSORPTION QC

Furnace atomic absorption was not utilized for the analysis of this sample; therefore, furnace atomic absorption QC is not applicable.

2.9 ICP SERIAL DILUTION

ICP serial dilution is not applicable to the analysis presented in this data validation report.

2.10 SAMPLE RESULT VERIFICATION

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

2.11 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:

2.11.1 Field Blanks and Equipment Rinsates

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

2.11.2 Field Duplicates

There were no field duplicate pairs associated with this SDG.



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

Project ID: Routine Outfall 002

Report Number: IOC1521

Sampled: 03/18/05
 Received: 03/18/05

DRAFT: INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOC1521-01 (DRAFT: Outfall 002 - Water) - cont. Reporting Units: mg/l									
Ammonia-N (Distilled)	EPA 350.2	5C22089	0.30	0.50	ND	1	03/22/05	03/22/05	*
Biochemical Oxygen Demand	EPA 405.1	5C18070	0.59	2.0	ND	1	03/18/05	03/23/05	
Chloride	EPA 300.0	5C18104	2.6	5.0	32	10	03/18/05	03/18/05	
Nitrate/Nitrite-N	EPA 300.0	5C18104	0.072	0.11	0.10	1	03/18/05	03/18/05	J
Oil & Grease	EPA 413.1	5C21062	0.94	5.0	ND	1	03/21/05	03/21/05	
Sulfate	EPA 300.0	5C18104	1.8	5.0	230	10	03/18/05	03/18/05	
Surfactants (MBAS)	SM5540-C	5C18107	0.044	0.10	0.049	1	03/18/05	03/18/05	J
Total Dissolved Solids	SM2540C	5C21073	10	10	630	1	03/21/05	03/21/05	
Total Suspended Solids	EPA 160.2	5C21068	10	10	ND	1	03/21/05	03/21/05	
Sample ID: IOC1521-01 (DRAFT: Outfall 002 - Water) Reporting Units: ml/hr									
Total Settleable Solids	EPA 160.5	5C19045	0.10	0.10	ND	1	03/19/05	03/19/05	
Sample ID: IOC1521-01 (DRAFT: Outfall 002 - Water) Reporting Units: NTU									
Turbidity	EPA 180.1	5C19032	0.040	1.0	0.58	1	03/19/05	03/19/05	B, J
Sample ID: IOC1521-01 (DRAFT: Outfall 002 - Water) Reporting Units: ug/l									
Total Cyanide	EPA 335.2	5C18118	2.2	5.0	ND	1	03/18/05	03/21/05	
Perchlorate	EPA 314.0	5C18121	0.80	4.0	ND	1	03/18/05	03/19/05	u
Sample ID: IOC1521-01 (DRAFT: Outfall 002 - Water) Reporting Units: umhos/cm									
Specific Conductance	EPA 120.1	5C21077	1.0	1.0	930	1	03/21/05	03/21/05	*

AMEC VALIDATED

LEVEL IV

*Analysis Not Validated

DRAFT REPORT
 DRAFT REPORT
 DATA SUBJECT TO CHANGE

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.



DATA VALIDATION REPORT

NPDES Monitoring

ANALYSIS: GENERAL MINERALS

SAMPLE DELIVERY GROUP: IOC1521

Prepared by

AMEC—Denver Operations
550 South Wadsworth Boulevard, Suite 500
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title: NPDES Monitoring
Contract Task Order #: 313150010
Sample Delivery Group #: IOC1521
Project Manager: B. McIlvaine
Matrix: Water
Analysis: General Minerals
QC Level: Level IV
No. of Samples: 1
Reviewer: L. Jarusewic
Date of Review: April 6, 2005

The sample listed in Table 1 was validated based on the guidelines outlined in the AMEC *Data Validation Procedures SOP DVP-6, Rev. 2, USEPA Methods for Chemical Analysis of Water and Wastes Method 350.2, 405.1, 335.2, 413.1, 160.2, 160.5, 300.0, 120.1, and 180.1, Standard Methods for the Examination of Water and Wastewater Method SM5540-C and SM2540C*, 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 I as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

Table 1. Sample identification

Client ID	EPA ID	Laboratory ID	Matrix	COC Method
Outfall 002	Outfall 002	IOC1521-01	Water	General Minerals

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

Following are findings associated with sample management:

2.1.1 Sample Preservation, Handling, and Transport

The sample in this SDG was received at the laboratory within the temperature limits of $4^{\circ}\text{C} \pm 2^{\circ}\text{C}$. 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. The COC accounted for all analyses present in this SDG. No sample qualifications were required.

2.1.3 Holding Times

The holding times were assessed by comparing the date of collection with the dates of analyses. The 28-day analytical holding time for ammonia, chloride, sulfate, conductivity, and oil and grease, the 14-day holding time for cyanide, the seven-day holding time for total suspended solids and total dissolved solids, and the 48-hour holding time for turbidity, nitrate/nitrite, surfactants, biological oxygen demand, and total settleable solids were met. No qualifications were required.

2.2 CALIBRATION

For the applicable analyses, the initial calibration correlation coefficients were ≥ 0.995 . Initial and continuing calibration information was acceptable with recoveries within the control limits of 90-110%. For ammonia, no information regarding the standardization of the titrant was provided; however, as the LCS recovery was within the CCV control limits, no qualifications were required. For BOD, no information regarding the calibration of the oxygen meter was provided; however, as the LCS recovery was within the CCV control limits, no qualifications were required. The total cyanide reporting limit check standard was recovered within the control limits of 70-130%. Calibration is not applicable to oil and grease, total dissolved solids, total suspended solids, or total settleable solids. No qualifications were required.

2.3 BLANKS

Turbidity was detected in method blank 5C19032-BLK1 at 0.060 NTU; however, the method blank result was insufficient to qualify the Outfall 002 result. Cyanide was reported in method blank 5C18118-BLK1 at -0.0078 mg/L; therefore, nondetected cyanide in Outfall 002 was qualified as estimated, "UJ." The remaining method blank and CCB results reported on the summary forms and in the raw data for blank analyses associated with the sample were nondetects at the reporting limit. No further qualifications were required.

2.4 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

The laboratory control sample and laboratory control sample duplicate (BOD and oil and grease only) recoveries and RPDs were within the laboratory-established control limits. The LCS is not applicable to turbidity or settleable solids. No qualifications were required.

2.5 SURROGATES RECOVERY

Surrogate recovery is not applicable to the analyses presented in this SDG.

2.6 LABORATORY DUPLICATES

MS/MSD analyses were performed on the sample in this SDG for cyanide. The RPD was within the control limits of $\leq 15\%$ and no qualifications were required.

2.7 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

MS/MSD analyses were performed on the sample in this SDG for cyanide. The recoveries were within the laboratory-established control limits and no qualifications were required.

2.8 FURNACE ATOMIC ABSORPTION QC

Furnace atomic absorption was not utilized for the analyses of this sample; therefore, furnace atomic absorption QC is not applicable.

2.9 ICP SERIAL DILUTION

ICP serial dilution is not applicable to the analyses presented in this data validation report.

2.10 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 transcription errors or calculation errors were noted. Cyanide in Outfall 002 was reported in the raw data at $-7.11 \mu\text{g/L}$ and the method blank associated with Outfall 002 was reported at $-7.8 \mu\text{g/L}$. Due to these negative results, the reviewer raised the MDL and the reporting limit on the Form I to the level of interference. Nitrate/nitrite, surfactant, and turbidity detected below the reporting limit were qualified as estimated, "J." No further qualifications were required.

2.11 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:

2.11.1 Field Blanks and Equipment Rinsates

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

2.11.2 Field Duplicates

There were no field duplicate pairs associated with this SDG.



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

Project ID: Routine Outfall 002

Report Number: IOC1521

Sampled: 03/18/05
 Received: 03/18/05

DRAFT: INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOC1521-01 (DRAFT: Outfall 002 - Water) - cont.									
Reporting Units: mg/l									
Ammonia-N (Distilled)	EPA 350.2	5C22089	0.30	0.50	ND	1	03/22/05	03/22/05	U
Biochemical Oxygen Demand	EPA 405.1	5C18070	0.59	2.0	ND	1	03/18/05	03/23/05	↓
Chloride	EPA 300.0	5C18104	2.6	5.0	32	10	03/18/05	03/18/05	
Nitrate/Nitrite-N	EPA 300.0	5C18104	0.072	0.11	0.10	1	03/18/05	03/18/05	J
Oil & Grease	EPA 413.1	5C21062	0.94	5.0	ND	1	03/21/05	03/21/05	U
Sulfate	EPA 300.0	5C18104	1.8	5.0	230	10	03/18/05	03/18/05	
Surfactants (MBAS)	SM5540-C	5C18107	0.044	0.10	0.049	1	03/18/05	03/18/05	J
Total Dissolved Solids	SM2540C	5C21073	10	10	630	1	03/21/05	03/21/05	
Total Suspended Solids	EPA 160.2	5C21068	10	10	ND	1	03/21/05	03/21/05	U
Sample ID: IOC1521-01 (DRAFT: Outfall 002 - Water)									
Reporting Units: ml/hr									
Total Settleable Solids	EPA 160.5	5C19045	0.10	0.10	ND	1	03/19/05	03/19/05	U
Sample ID: IOC1521-01 (DRAFT: Outfall 002 - Water)									
Reporting Units: NTU									
Turbidity	EPA 180.1	5C19032	0.040	1.0	0.58	1	03/19/05	03/19/05	J B J INQ
Sample ID: IOC1521-01 (DRAFT: Outfall 002 - Water)									
Reporting Units: ug/l									
Total Cyanide	EPA 335.2	5C18118	2.2 7.8	5.0 7.8	ND	1	03/18/05	03/21/05	UJ
Perchlorate	EPA 314.0	5C18121	0.80	4.0	ND	1	03/18/05	03/19/05	* B1\$
Sample ID: IOC1521-01 (DRAFT: Outfall 002 - Water)									
Reporting Units: umhos/cm									
Specific Conductance	EPA 120.1	5C21077	1.0	1.0	930	1	03/21/05	03/21/05	

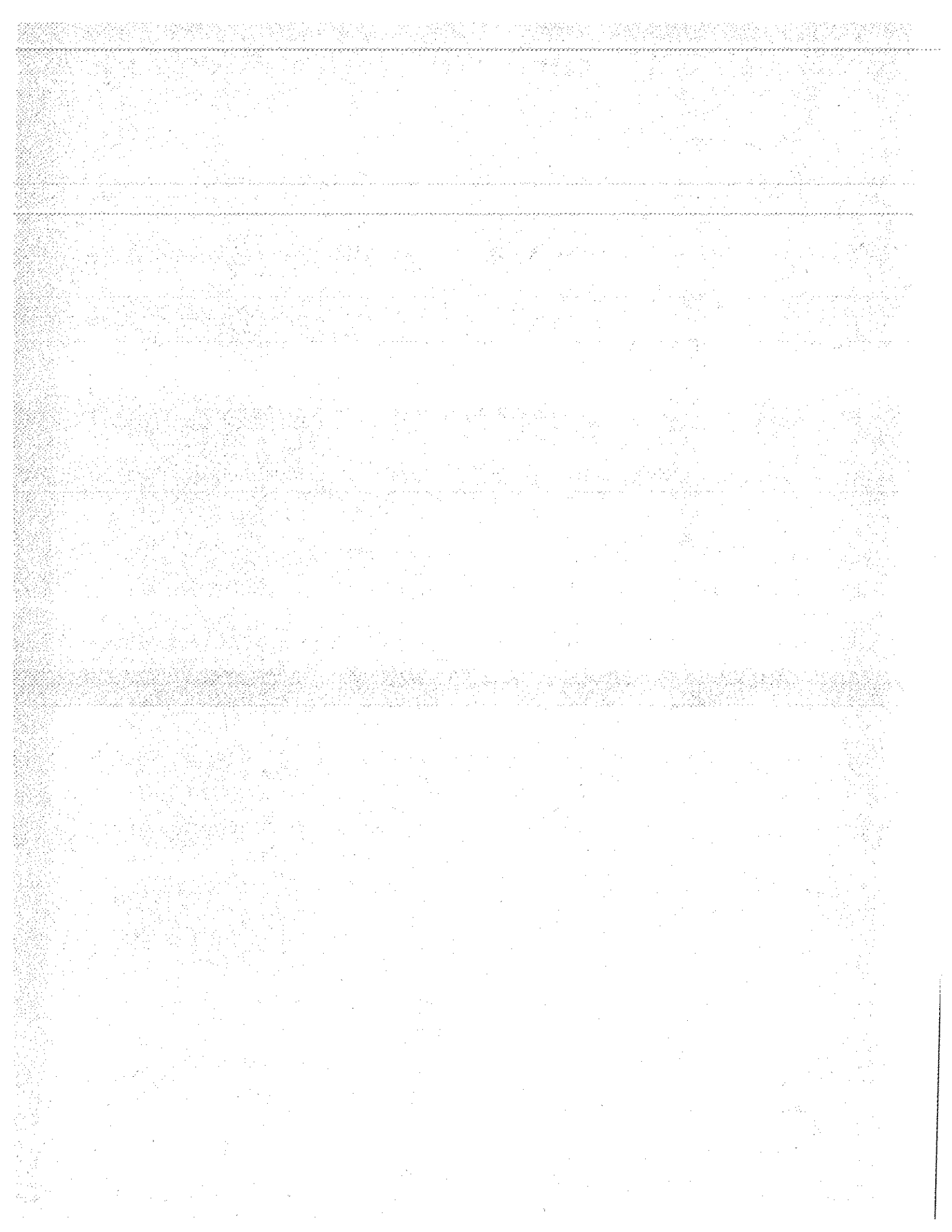
AMEC VALIDATED

LEVEL IV

HJ 4/6/05

DRAFT REPORT
 DRAFT REPORT
 DATA SUBJECT TO CHANGE

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LABORATORY REPORT

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

Project: Routine Outfall 002

Sampled: 03/18/05
Received: 03/18/05
Issued: 04/04/05 09:56

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

IOC1521-01
IOC1521-02

CLIENT ID

Outfall 002
Trip Blank

MATRIX

Water
Water

Reviewed By:

Del Mar Analytical, Irvine
Michele Harper
Project Manager



Del Mar Analytical

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

Project ID: Routine Outfall 002

Report Number: IOC1521

Sampled: 03/18/05
 Received: 03/18/05

PURGEABLES BY GC/MS (EPA 624)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOC1521-01 (Outfall 002 - Water)									
Reporting Units: ug/l									
Benzene	EPA 624	5C19004	0.28	2.0	ND	1	03/19/05	03/19/05	
Carbon tetrachloride	EPA 624	5C19004	0.28	5.0	ND	1	03/19/05	03/19/05	
Chloroform	EPA 624	5C19004	0.33	2.0	ND	1	03/19/05	03/19/05	
1,1-Dichloroethane	EPA 624	5C19004	0.27	2.0	ND	1	03/19/05	03/19/05	
1,2-Dichloroethane	EPA 624	5C19004	0.28	2.0	ND	1	03/19/05	03/19/05	
1,1-Dichloroethene	EPA 624	5C19004	0.32	3.0	ND	1	03/19/05	03/19/05	
Ethylbenzene	EPA 624	5C19004	0.25	2.0	ND	1	03/19/05	03/19/05	
Tetrachloroethene	EPA 624	5C19004	0.32	2.0	ND	1	03/19/05	03/19/05	
Toluene	EPA 624	5C19004	0.36	2.0	ND	1	03/19/05	03/19/05	
1,1,1-Trichloroethane	EPA 624	5C19004	0.30	2.0	ND	1	03/19/05	03/19/05	
1,1,2-Trichloroethane	EPA 624	5C19004	0.30	2.0	ND	1	03/19/05	03/19/05	
Trichloroethene	EPA 624	5C19004	0.26	5.0	ND	1	03/19/05	03/19/05	
Trichlorofluoromethane	EPA 624	5C19004	0.34	5.0	ND	1	03/19/05	03/19/05	
Vinyl chloride	EPA 624	5C19004	0.26	5.0	ND	1	03/19/05	03/19/05	
Xylenes, Total	EPA 624	5C19004	0.52	4.0	ND	1	03/19/05	03/19/05	
<i>Surrogate: Dibromofluoromethane (80-120%)</i>					112 %				
<i>Surrogate: Toluene-d8 (80-120%)</i>					102 %				
<i>Surrogate: 4-Bromofluorobenzene (80-120%)</i>					93 %				

Sample ID: IOC1521-02 (Trip Blank - Water)

Reporting Units: ug/l

Benzene	EPA 624	5C19004	0.28	2.0	ND	1	03/19/05	03/19/05	
Carbon tetrachloride	EPA 624	5C19004	0.28	5.0	ND	1	03/19/05	03/19/05	
Chloroform	EPA 624	5C19004	0.33	2.0	ND	1	03/19/05	03/19/05	
1,1-Dichloroethane	EPA 624	5C19004	0.27	2.0	ND	1	03/19/05	03/19/05	
1,2-Dichloroethane	EPA 624	5C19004	0.28	2.0	ND	1	03/19/05	03/19/05	
1,1-Dichloroethene	EPA 624	5C19004	0.32	3.0	ND	1	03/19/05	03/19/05	
Ethylbenzene	EPA 624	5C19004	0.25	2.0	ND	1	03/19/05	03/19/05	
Tetrachloroethene	EPA 624	5C19004	0.32	2.0	ND	1	03/19/05	03/19/05	
Toluene	EPA 624	5C19004	0.36	2.0	ND	1	03/19/05	03/19/05	
1,1,1-Trichloroethane	EPA 624	5C19004	0.30	2.0	ND	1	03/19/05	03/19/05	
1,1,2-Trichloroethane	EPA 624	5C19004	0.30	2.0	ND	1	03/19/05	03/19/05	
Trichloroethene	EPA 624	5C19004	0.26	5.0	ND	1	03/19/05	03/19/05	
Trichlorofluoromethane	EPA 624	5C19004	0.34	5.0	ND	1	03/19/05	03/19/05	
Vinyl chloride	EPA 624	5C19004	0.26	5.0	ND	1	03/19/05	03/19/05	
Xylenes, Total	EPA 624	5C19004	0.52	4.0	ND	1	03/19/05	03/19/05	
<i>Surrogate: Dibromofluoromethane (80-120%)</i>					116 %				
<i>Surrogate: Toluene-d8 (80-120%)</i>					102 %				
<i>Surrogate: 4-Bromofluorobenzene (80-120%)</i>					95 %				

Del Mar Analytical, Irvine
 Michele Harper
 Project Manager

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

Project ID: Routine Outfall 002

Report Number: IOC1521

Sampled: 03/18/05
Received: 03/18/05

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

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOC1521-01 (Outfall 002 - Water)									
Reporting Units: ug/l									
Bis(2-ethylhexyl)phthalate	EPA 625	5C20022	1.1	5.0	ND	0.943	03/20/05	03/22/05	
2,4-Dinitrotoluene	EPA 625	5C20022	0.23	9.0	ND	0.943	03/20/05	03/22/05	
N-Nitrosodimethylamine	EPA 625	5C20022	0.22	8.0	ND	0.943	03/20/05	03/22/05	
Pentachlorophenol	EPA 625	5C20022	0.78	8.0	ND	0.943	03/20/05	03/22/05	
2,4,6-Trichlorophenol	EPA 625	5C20022	0.10	6.0	ND	0.943	03/20/05	03/22/05	
Surrogate: 2-Fluorophenol (30-120%)					67 %				
Surrogate: Phenol-d6 (35-120%)					66 %				
Surrogate: 2,4,6-Tribromophenol (45-120%)					81 %				
Surrogate: Nitrobenzene-d5 (45-120%)					68 %				
Surrogate: 2-Fluorobiphenyl (45-120%)					72 %				
Surrogate: Terphenyl-d14 (45-120%)					77 %				

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

Project ID: Routine Outfall 002

Report Number: IOC1521

Sampled: 03/18/05

Received: 03/18/05

ORGANOCHLORINE PESTICIDES (EPA 608)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOC1521-01 (Outfall 002 - Water) - cont.									
Reporting Units: ug/l									
alpha-BHC	EPA 608	5C21069	0.0010	0.010	ND	0.952	03/21/05	03/21/05	
Surrogate: Decachlorobiphenyl (45-120%)					123 %				Z2
Surrogate: Tetrachloro-m-xylene (35-115%)					104 %				

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

Project ID: Routine Outfall 002

Report Number: IOC1521

Sampled: 03/18/05
 Received: 03/18/05

METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOC1521-01 (Outfall 002 - Water) - cont.									
Reporting Units: ug/l									
Copper	EPA 200.8	5C18119	0.49	2.0	2.0	1	03/18/05	03/21/05	
Lead	EPA 200.8	5C18119	0.13	1.0	ND	1	03/18/05	03/21/05	
Mercury	EPA 245.1	5C19029	0.063	0.20	ND	1	03/19/05	03/19/05	

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

Project ID: Routine Outfall 002

Report Number: IOC1521

Sampled: 03/18/05

Received: 03/18/05

INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOC1521-01 (Outfall 002 - Water) - cont.									
Reporting Units: mg/l									
Ammonia-N (Distilled)	EPA 350.2	5C22089	0.30	0.50	ND	1	03/22/05	03/22/05	
Biochemical Oxygen Demand	EPA 405.1	5C18070	0.59	2.0	ND	1	03/18/05	03/23/05	
Chloride	EPA 300.0	5C18104	2.6	5.0	32	10	03/18/05	03/18/05	
Nitrate/Nitrite-N	EPA 300.0	5C18104	0.072	0.11	0.10	1	03/18/05	03/18/05	J
Oil & Grease	EPA 413.1	5C21062	0.94	5.0	ND	1	03/21/05	03/21/05	
Sulfate	EPA 300.0	5C18104	1.8	5.0	230	10	03/18/05	03/18/05	
Surfactants (MBAS)	SM5540-C	5C18107	0.044	0.10	0.049	1	03/18/05	03/18/05	J
Total Dissolved Solids	SM2540C	5C21073	10	10	630	1	03/21/05	03/21/05	
Total Suspended Solids	EPA 160.2	5C21068	10	10	ND	1	03/21/05	03/21/05	
Sample ID: IOC1521-01 (Outfall 002 - Water)									
Reporting Units: ml/l/hr									
Total Settleable Solids	EPA 160.5	5C19045	0.10	0.10	ND	1	03/19/05	03/19/05	
Sample ID: IOC1521-01 (Outfall 002 - Water)									
Reporting Units: NTU									
Turbidity	EPA 180.1	5C19032	0.040	1.0	0.58	1	03/19/05	03/19/05	B, J
Sample ID: IOC1521-01 (Outfall 002 - Water)									
Reporting Units: ug/l									
Total Cyanide	EPA 335.2	5C18118	2.2	5.0	ND	1	03/18/05	03/21/05	
Perchlorate	EPA 314.0	5C18121	0.80	4.0	ND	1	03/18/05	03/19/05	
Sample ID: IOC1521-01 (Outfall 002 - Water)									
Reporting Units: umhos/cm									
Specific Conductance	EPA 120.1	5C21077	1.0	1.0	930	1	03/21/05	03/21/05	

Del Mar Analytical, Irvine
 Michele Harper
 Project Manager

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

Project ID: Routine Outfall 002

Report Number: IOC1521

Sampled: 03/18/05

Received: 03/18/05

SHORT HOLD TIME DETAIL REPORT

	Hold Time (in days)	Date/Time Sampled	Date/Time Received	Date/Time Extracted	Date/Time Analyzed
Sample ID: Outfall 002 (IOC1521-01) - Water					
EPA 160.5	2	03/18/2005 11:36	03/18/2005 20:10	03/19/2005 09:00	03/19/2005 10:00
EPA 180.1	2	03/18/2005 11:36	03/18/2005 20:10	03/19/2005 09:30	03/19/2005 10:30
EPA 300.0	2	03/18/2005 11:36	03/18/2005 20:10	03/18/2005 23:00	03/18/2005 23:22
EPA 405.1	2	03/18/2005 11:36	03/18/2005 20:10	03/18/2005 22:35	03/23/2005 10:30
SM5540-C	2	03/18/2005 11:36	03/18/2005 20:10	03/18/2005 22:01	03/18/2005 22:20

Del Mar Analytical, Irvine
Michele Harper
Project Manager



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

Project ID: Routine Outfall 002

Report Number: IOC1521

Sampled: 03/18/05
Received: 03/18/05

METHOD BLANK/QC DATA

PURGEABLES BY GC/MS (EPA 624)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC Limits	RPD RPD	RPD Limit	Data Qualifiers
Batch: 5C19004 Extracted: 03/19/05										
Blank Analyzed: 03/19/2005 (5C19004-BLK1)										
Benzene	ND	2.0	0.28	ug/l						
Trichlorotrifluoroethane (Freon 113)	ND	5.0	1.2	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	0.32	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	0.52	ug/l						
Surrogate: Dibromofluoromethane	27.9			ug/l	25.0		112	80-120		
Surrogate: Toluene-d8	25.6			ug/l	25.0		102	80-120		
Surrogate: 4-Bromofluorobenzene	23.7			ug/l	25.0		95	80-120		
LCS Analyzed: 03/19/2005 (5C19004-BS1)										
Benzene	23.6	2.0	0.28	ug/l	25.0		94	70-120		
Carbon tetrachloride	23.1	5.0	0.28	ug/l	25.0		92	70-140		
Chloroform	26.0	2.0	0.33	ug/l	25.0		104	75-130		
1,1-Dichloroethane	25.8	2.0	0.27	ug/l	25.0		103	70-135		
1,2-Dichloroethane	27.7	2.0	0.28	ug/l	25.0		111	60-150		
1,1-Dichloroethene	23.5	3.0	0.32	ug/l	25.0		94	75-135		
Ethylbenzene	23.7	2.0	0.25	ug/l	25.0		95	80-120		
Tetrachloroethene	21.5	2.0	0.32	ug/l	25.0		86	75-125		
Toluene	23.3	2.0	0.36	ug/l	25.0		93	75-120		
1,1,1-Trichloroethane	25.0	2.0	0.30	ug/l	25.0		100	75-140		
1,1,2-Trichloroethane	24.7	2.0	0.30	ug/l	25.0		99	70-125		
Trichloroethene	22.4	5.0	0.26	ug/l	25.0		90	80-120		
Trichlorofluoromethane	25.2	5.0	0.34	ug/l	25.0		101	65-145		
Vinyl chloride	21.3	5.0	0.26	ug/l	25.0		85	50-130		
Surrogate: Dibromofluoromethane	28.0			ug/l	25.0		112	80-120		

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METHOD BLANK/QC DATA

PURGEABLES BY GC/MS (EPA 624)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5C19004 Extracted: 03/19/05											
LCS Analyzed: 03/19/2005 (5C19004-BS1)											
Surrogate: Toluene-d8	25.6			ug/l	25.0		102	80-120			
Surrogate: 4-Bromofluorobenzene	25.0			ug/l	25.0		100	80-120			
Matrix Spike Analyzed: 03/19/2005 (5C19004-MS1)											
Source: IOC1509-02											
Benzene	22.4	2.0	0.28	ug/l	25.0	ND	90	70-120			A-01
Carbon tetrachloride	37.5	5.0	0.28	ug/l	25.0	16	86	70-145			
Chloroform	45.8	2.0	0.33	ug/l	25.0	22	95	70-135			
1,1-Dichloroethane	24.3	2.0	0.27	ug/l	25.0	ND	97	65-135			
1,2-Dichloroethane	26.0	2.0	0.28	ug/l	25.0	ND	104	60-150			
1,1-Dichloroethene	21.3	3.0	0.32	ug/l	25.0	ND	85	65-140			
Ethylbenzene	22.4	2.0	0.25	ug/l	25.0	ND	90	70-130			
Tetrachloroethene	21.1	2.0	0.32	ug/l	25.0	0.79	81	70-130			
Toluene	22.0	2.0	0.36	ug/l	25.0	ND	88	70-120			
1,1,1-Trichloroethane	23.7	2.0	0.30	ug/l	25.0	ND	95	75-140			
1,1,2-Trichloroethane	22.9	2.0	0.30	ug/l	25.0	ND	92	60-135			
Trichloroethene	32.6	5.0	0.26	ug/l	25.0	12	82	70-125			
Trichlorofluoromethane	60.8	5.0	0.34	ug/l	25.0	39	87	55-145			
Vinyl chloride	19.8	5.0	0.26	ug/l	25.0	ND	79	40-135			
Surrogate: Dibromofluoromethane	28.0			ug/l	25.0		112	80-120			
Surrogate: Toluene-d8	25.4			ug/l	25.0		102	80-120			
Surrogate: 4-Bromofluorobenzene	24.9			ug/l	25.0		100	80-120			

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METHOD BLANK/QC DATA

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

Analyte Result Reporting Limit MDL Units Spike Level Source Result %REC %REC Limits RPD RPD Limit Data Qualifiers

Batch: 5C20022 Extracted: 03/20/05

Blank Analyzed: 03/22/2005 (5C20022-BLK1)

Table with 12 columns: Analyte, Result, Reporting Limit, MDL, Units, Spike Level, Source Result, %REC, %REC Limits, RPD, RPD Limit, Data Qualifiers. Rows include Bis(2-ethylhexyl)phthalate, 2,4-Dinitrotoluene, N-Nitrosodimethylamine, Pentachlorophenol, 2,4,6-Trichlorophenol, and various Surrogate compounds.

LCS Analyzed: 03/22/2005 (5C20022-BS1)

Table with 12 columns: Analyte, Result, Reporting Limit, MDL, Units, Spike Level, Source Result, %REC, %REC Limits, RPD, RPD Limit, Data Qualifiers. Rows include Bis(2-ethylhexyl)phthalate, 2,4-Dinitrotoluene, N-Nitrosodimethylamine, Pentachlorophenol, 2,4,6-Trichlorophenol, and various Surrogate compounds.

M-NR1

LCS Dup Analyzed: 03/22/2005 (5C20022-BSD1)

Table with 12 columns: Analyte, Result, Reporting Limit, MDL, Units, Spike Level, Source Result, %REC, %REC Limits, RPD, RPD Limit, Data Qualifiers. Rows include Bis(2-ethylhexyl)phthalate, 2,4-Dinitrotoluene, N-Nitrosodimethylamine, Pentachlorophenol, 2,4,6-Trichlorophenol, and various Surrogate compounds.

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METHOD BLANK/QC DATA

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

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	RPD Limits	RPD RPD	RPD Limit	Data Qualifiers
Batch: 5C20022 Extracted: 03/20/05											
LCS Dup Analyzed: 03/22/2005 (5C20022-BSD1)											
Surrogate: Terphenyl-d14	7.48			ug/l	10.0		75	45-120			

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ORGANOCHLORINE PESTICIDES (EPA 608)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5C21069 Extracted: 03/21/05											
Blank Analyzed: 03/21/2005 (5C21069-BLK1)											
alpha-BHC	ND	0.010	0.0010	ug/l							
Surrogate: Decachlorobiphenyl	0.572			ug/l	0.500		114	45-120			
Surrogate: Tetrachloro-m-xylene	0.468			ug/l	0.500		94	35-115			
LCS Analyzed: 03/21/2005 (5C21069-BS1)											
alpha-BHC	0.493	0.010	0.0010	ug/l	0.500		99	45-115			M-NR1
Surrogate: Decachlorobiphenyl	0.647			ug/l	0.500		129	45-120			Z1
Surrogate: Tetrachloro-m-xylene	0.462			ug/l	0.500		92	35-115			
LCS Dup Analyzed: 03/21/2005 (5C21069-BSD1)											
alpha-BHC	0.473	0.010	0.0010	ug/l	0.500		95	45-115	4	30	
Surrogate: Decachlorobiphenyl	0.518			ug/l	0.500		104	45-120			
Surrogate: Tetrachloro-m-xylene	0.437			ug/l	0.500		87	35-115			

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METHOD BLANK/QC DATA

METALS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	Limit	RPD	RPD	Limit	Data Qualifiers
Batch: 5C18119 Extracted: 03/18/05												
Blank Analyzed: 03/21/2005 (5C18119-BLK1)												
Copper	ND	2.0	0.49	ug/l								
Lead	ND	1.0	0.13	ug/l								
LCS Analyzed: 03/21/2005 (5C18119-BS1)												
Copper	82.0	2.0	0.49	ug/l	80.0		102	85-115				
Lead	80.6	1.0	0.13	ug/l	80.0		101	85-115				
Matrix Spike Analyzed: 03/21/2005 (5C18119-MS1) Source: IOC1521-01												
Copper	78.3	2.0	0.49	ug/l	80.0	2.0	95	70-130				
Lead	78.3	1.0	0.13	ug/l	80.0	ND	98	70-130				
Matrix Spike Dup Analyzed: 03/21/2005 (5C18119-MSD1) Source: IOC1521-01												
Copper	77.0	2.0	0.49	ug/l	80.0	2.0	94	70-130	2		20	
Lead	78.3	1.0	0.13	ug/l	80.0	ND	98	70-130	0		20	
Batch: 5C19029 Extracted: 03/19/05												
Blank Analyzed: 03/19/2005 (5C19029-BLK1)												
Mercury	ND	0.20	0.063	ug/l								
LCS Analyzed: 03/19/2005 (5C19029-BS1)												
Mercury	8.50	0.20	0.063	ug/l	8.00		106	85-115				
Matrix Spike Analyzed: 03/19/2005 (5C19029-MS1) Source: IOC1454-01												
Mercury	8.46	0.20	0.063	ug/l	8.00	ND	106	70-130				
Matrix Spike Dup Analyzed: 03/19/2005 (5C19029-MSD1) Source: IOC1454-01												
Mercury	8.44	0.20	0.063	ug/l	8.00	ND	106	70-130	0		20	

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 Attention: Bronwyn Kelly

Project ID: Routine Outfall 002

Report Number: IOC1521

Sampled: 03/18/05

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INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD RPD	RPD Limit	Data Qualifiers
Batch: 5C18070 Extracted: 03/18/05											
Blank Analyzed: 03/23/2005 (5C18070-BLK1)											
Biochemical Oxygen Demand	ND	2.0	0.59	mg/l							
LCS Analyzed: 03/23/2005 (5C18070-BS1)											
Biochemical Oxygen Demand	202	100	30	mg/l	198		102	85-115			
LCS Dup Analyzed: 03/23/2005 (5C18070-BSD1)											
Biochemical Oxygen Demand	200	100	30	mg/l	198		101	85-115	1	20	
Batch: 5C18104 Extracted: 03/18/05											
Blank Analyzed: 03/18/2005 (5C18104-BLK1)											
Chloride	ND	0.50	0.26	mg/l							
Nitrate/Nitrite-N	ND	0.11	0.072	mg/l							
Sulfate	ND	0.50	0.18	mg/l							
LCS Analyzed: 03/18/2005 (5C18104-BS1)											
Chloride	4.80	0.50	0.26	mg/l	5.00		96	90-110			
Sulfate	10.0	0.50	0.18	mg/l	10.0		100	90-110			
Matrix Spike Analyzed: 03/18/2005 (5C18104-MS1)											
						Source: IOC1500-06					
Chloride	10.3	0.50	0.26	mg/l	5.00	6.1	84	80-120			
Sulfate	12.8	0.50	0.18	mg/l	10.0	3.8	90	80-120			
Matrix Spike Dup Analyzed: 03/18/2005 (5C18104-MSD1)											
						Source: IOC1500-06					
Chloride	10.3	0.50	0.26	mg/l	5.00	6.1	84	80-120	0	20	
Sulfate	12.8	0.50	0.18	mg/l	10.0	3.8	90	80-120	0	20	

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 Attention: Bronwyn Kelly

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INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	Limit	RPD	RPD Limit	Data Qualifiers
Batch: 5C18107 Extracted: 03/18/05											
Blank Analyzed: 03/18/2005 (5C18107-BLK1)											
Surfactants (MBAS)	ND	0.10	0.044	mg/l							
LCS Analyzed: 03/18/2005 (5C18107-BS1)											
Surfactants (MBAS)	0.237	0.10	0.044	mg/l	0.250		95	90-110			
Matrix Spike Analyzed: 03/18/2005 (5C18107-MS1)											
						Source: IOC1443-01					
Surfactants (MBAS)	0.263	0.10	0.044	mg/l	0.250	ND	105	50-125			
Matrix Spike Dup Analyzed: 03/18/2005 (5C18107-MSD1)											
						Source: IOC1443-01					
Surfactants (MBAS)	0.263	0.10	0.044	mg/l	0.250	ND	105	50-125	0	20	
Batch: 5C18118 Extracted: 03/18/05											
Blank Analyzed: 03/21/2005 (5C18118-BLK1)											
Total Cyanide	ND	5.0	2.2	ug/l							
LCS Analyzed: 03/21/2005 (5C18118-BS1)											
Total Cyanide	190	5.0	2.2	ug/l	200		95	90-110			
Matrix Spike Analyzed: 03/21/2005 (5C18118-MS1)											
						Source: IOC1521-01					
Total Cyanide	209	5.0	2.2	ug/l	200	ND	104	70-115			
Matrix Spike Dup Analyzed: 03/21/2005 (5C18118-MSD1)											
						Source: IOC1521-01					
Total Cyanide	210	5.0	2.2	ug/l	200	ND	105	70-115	1	15	
Batch: 5C18121 Extracted: 03/18/05											
Blank Analyzed: 03/19/2005 (5C18121-BLK1)											
Perchlorate	ND	4.0	0.80	ug/l							

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Project ID: Routine Outfall 002
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INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5C18121 Extracted: 03/18/05											
LCS Analyzed: 03/19/2005 (5C18121-BS1)											
Perchlorate	52.7	4.0	0.80	ug/l	50.0		105	85-115			
Matrix Spike Analyzed: 03/19/2005 (5C18121-MS1)											
Perchlorate	53.9	4.0	0.80	ug/l	50.0	ND	108	80-120			
Matrix Spike Dup Analyzed: 03/19/2005 (5C18121-MSD1)											
Perchlorate	54.1	4.0	0.80	ug/l	50.0	ND	108	80-120	0	20	
Batch: 5C19032 Extracted: 03/19/05											
Blank Analyzed: 03/19/2005 (5C19032-BLK1)											
Turbidity	0.0600	1.0	0.040	NTU							J
Duplicate Analyzed: 03/19/2005 (5C19032-DUP1)											
Turbidity	0.110	1.0	0.040	NTU		0.12			9	20	J
Batch: 5C21062 Extracted: 03/21/05											
Blank Analyzed: 03/21/2005 (5C21062-BLK1)											
Oil & Grease	ND	5.0	0.94	mg/l							
LCS Analyzed: 03/21/2005 (5C21062-BS1)											
Oil & Grease	17.1	5.0	0.94	mg/l	20.0		86	65-120			M-NR1
LCS Dup Analyzed: 03/21/2005 (5C21062-BSD1)											
Oil & Grease	16.0	5.0	0.94	mg/l	20.0		80	65-120	7	20	

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INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	Limit	RPD	RPD Limit	Data Qualifiers
Batch: 5C21068 Extracted: 03/21/05											
Blank Analyzed: 03/21/2005 (5C21068-BLK1)											
Total Suspended Solids	ND	10	10	mg/l							
LCS Analyzed: 03/21/2005 (5C21068-BS1)											
Total Suspended Solids	942	10	10	mg/l	1000		94	85-115			
Duplicate Analyzed: 03/21/2005 (5C21068-DUP1)											
Total Suspended Solids	ND	10	10	mg/l		Source: IOC1566-01 ND				10	
Batch: 5C21073 Extracted: 03/21/05											
Blank Analyzed: 03/21/2005 (5C21073-BLK1)											
Total Dissolved Solids	ND	10	10	mg/l							
LCS Analyzed: 03/21/2005 (5C21073-BS1)											
Total Dissolved Solids	968	10	10	mg/l	1000		97	90-110			
Duplicate Analyzed: 03/21/2005 (5C21073-DUP1)											
Total Dissolved Solids	320	10	10	mg/l		Source: IOC1566-01 300			6	10	
Batch: 5C21077 Extracted: 03/21/05											
Duplicate Analyzed: 03/21/2005 (5C21077-DUP1)											
Specific Conductance	244	1.0	1.0	umhos/cm		Source: IOC1480-01 240			2	5	
Batch: 5C22089 Extracted: 03/22/05											
Blank Analyzed: 03/22/2005 (5C22089-BLK1)											
Ammonia-N (Distilled)	ND	0.50	0.30	mg/l							

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INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5C22089 Extracted: 03/22/05											
LCS Analyzed: 03/22/2005 (5C22089-BS1)											
Ammonia-N (Distilled)	9.24	0.50	0.30	mg/l	10.0		92	80-115			
Matrix Spike Analyzed: 03/22/2005 (5C22089-MS1)											
						Source: IOC1175-01					
Ammonia-N (Distilled)	9.52	0.50	0.30	mg/l	10.0	1.1	84	70-120			
Matrix Spike Dup Analyzed: 03/22/2005 (5C22089-MSD1)											
						Source: IOC1175-01					
Ammonia-N (Distilled)	10.1	0.50	0.30	mg/l	10.0	1.1	90	70-120	6	15	

Del Mar Analytical, Irvine
 Michele Harper
 Project Manager

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

Project ID: Routine Outfall 002

Report Number: IOC1521

Sampled: 03/18/05

Received: 03/18/05

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
IOC1521-01	413.1 Oil and Grease	Oil & Grease	mg/l	0.38	5.0	10.00
IOC1521-01	608-Pest Boeing 001/002 Q (LL)	alpha-BHC	ug/l	0	0.010	0.0100
IOC1521-01	624-Boeing 001/002 Q (Fr113+X)	1,1-Dichloroethene	ug/l	0	3.0	3.20
IOC1521-01	624-Boeing 001/002 Q (Fr113+X)	Trichloroethene	ug/l	0	5.0	5.00
IOC1521-01	625-Boeing 001/002 Q-LL	2,4,6-Trichlorophenol	ug/l	0	6.0	6.50
IOC1521-01	625-Boeing 001/002 Q-LL	2,4-Dinitrotoluene	ug/l	0	9.0	9.10
IOC1521-01	625-Boeing 001/002 Q-LL	Bis(2-ethylhexyl)phthalate	ug/l	0.79	5.0	4.00
IOC1521-01	625-Boeing 001/002 Q-LL	N-Nitrosodimethylamine	ug/l	0	8.0	8.10
IOC1521-01	625-Boeing 001/002 Q-LL	Pentachlorophenol	ug/l	0	8.0	8.20
IOC1521-01	BOD	Biochemical Oxygen Demand	mg/l	0.43	2.0	20
IOC1521-01	Chloride - 300.0	Chloride	mg/l	32	5.0	150
IOC1521-01	Copper-200.8	Copper	ug/l	2.00	2.0	7.10
IOC1521-01	Cyanide-335.2 5ppb	Total Cyanide	ug/l	-7	5.0	4.30
IOC1521-01	Lead-200.8	Lead	ug/l	0.049	1.0	2.60
IOC1521-01	MBAS - SM5540-C	Surfactants (MBAS)	mg/l	0.049	0.10	0.50
IOC1521-01	Mercury - 245.1	Mercury	ug/l	0.032	0.20	0.20
IOC1521-01	Nitrogen, NO3+NO2 -N	Nitrate/Nitrite-N	mg/l	0.100	0.11	8.00
IOC1521-01	Perchlorate 314.0	Perchlorate	ug/l	0	4.0	6.00
IOC1521-01	Sulfate-300.0	Sulfate	mg/l	230	5.0	300
IOC1521-01	TDS - SM 2540C	Total Dissolved Solids	mg/l	630	10	950
IOC1521-02	624-Boeing 001/002 Q (Fr113+X)	1,1-Dichloroethene	ug/l	0	3.0	3.20
IOC1521-02	624-Boeing 001/002 Q (Fr113+X)	Trichloroethene	ug/l	0	5.0	5.00

Del Mar Analytical, Irvine
 Michele Harper
 Project Manager

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

Project ID: Routine Outfall 002

Report Number: IOC1521

Sampled: 03/18/05
Received: 03/18/05

DATA QUALIFIERS AND DEFINITIONS

- A-01** No results were reported for MSD due to the port leaking. Samples accepted based on BS1 recoveries.
- B** Analyte was detected in the associated Method Blank.
- J** Estimated value. Analyte detected at a level less than the Reporting Limit (RL) and greater than or equal to the Method Detection Limit (MDL). The user of this data should be aware that this data is of unknown quality.
- M-NR1** There was no MS/MSD analyzed with this batch due to insufficient sample volume. See Blank Spike/Blank Spike Duplicate.
- Z1** Surrogate recovery was above acceptance limits.
- Z2** Surrogate recovery was above the acceptance limits. Data not impacted.
- ND** Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified.
- RPD** Relative Percent Difference

Del Mar Analytical, Irvine
Michele Harper
Project Manager



Del Mar Analytical

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MWH-Pasadena/Boeing 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Attention: Bronwyn Kelly	Project ID: Routine Outfall 002 Report Number: IOC1521	Sampled: 03/18/05 Received: 03/18/05
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Certification Summary

Del Mar Analytical, Irvine

Method	Matrix	Nelac	California
EPA 120.1	Water	X	X
EPA 160.2	Water	X	X
EPA 160.5	Water	X	X
EPA 180.1	Water	X	X
EPA 200.8	Water	X	X
EPA 245.1	Water	X	X
EPA 300.0	Water	X	X
EPA 314.0	Water	X	X
EPA 335.2	Water	X	X
EPA 350.2	Water	X	X
EPA 405.1	Water	X	X
EPA 413.1	Water	X	X
EPA 608	Water	X	X
EPA 624	Water	X	X
EPA 625	Water	X	X
SM2540C	Water	X	X
SM5540-C	Water	X	X

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

Subcontracted Laboratories

Alta Analytical California Cert #1640

1104 Windfield Way - El Dorado Hills, CA 95762

Analysis Performed: 1613-Dioxin-HR
 Samples: IOC1521-01

Analysis Performed: EDD + Level 4
 Samples: IOC1521-01

Del Mar Analytical, Irvine
 Michele Harper
 Project Manager

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IOCI524

CHAIN OF CUSTODY FORM

Del Mar Analytical Version 02/17/05

Client Name/Address:		Project:		Phone Number:		ANALYSIS REQUIRED												Field readings:	
MWH-Pasadena 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101		Boeing-SSFL NPDES Routine Outfall 002		(626) 568-6691		Total Recoverable Metals: Cu, Pb, Hg	Settleable Solids	VOCS 624 + xylenes	TCDD (and all congeners)	Oil & Grease (EPA 413.1)	Cyanide (total recoverable)	BOD5(20 degrees C)	Surfactants (MBAS)	Cl, SO4, NO3+NO2-N, Perchlorate	Turbidity, TDS, TSS, Conductivity	Ammonia-N	2,4,6 Trichlorophenol, 2,4-Dinitrotoluene, Bis(2-ethylhexyl)phthalate, NDMA, perchlorophenol (EPA 625)	Temp	
Sample Description	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	Sampling Date/Time													Comments
Outfall 002	W	Poly-1 liter	1	HNO3	1A	3-18-05 11:36	X												24 TAT
Outfall 002-Dup	W	Poly-1 liter	1	HNO3	1B		X												24 TAT
Outfall 002	W	Poly-1 liter	1	None	2			X											
Outfall 002	W	VOAs	3	HCl	3A, 3B, 3C														
Outfall 002	W	Glass-Amber	2	None	4A, 4B			X											
Outfall 002	W	1L Amber	2	HCl	5A, 5B				X										24 TAT
Outfall 002	W	Poly-500 ml	1	NaOH	6				X										24 TAT
Outfall 002	W	Poly-1 liter	1	None	7					X									
Outfall 002	W	Poly-500 ml	2	None	8A, 8B						X								
Outfall 002	W	Poly-500 ml	2	None	9A, 9B							X							
Outfall 002	W	Poly-500 ml	2	None	10A, 10B								X						
Outfall 002	W	Poly-500 ml	1	H2SO4	11									X					
Outfall 002	W	1L Amber	2	None	12A, 12B										X				
Outfall 002	W	1L Amber	2	None	13A, 13B												X		
Trip Blank	W	VOAs	3	HCl	14A, 14B, 14C												X		

Relinquished By: *[Signature]* Date/Time: 3-18-05 16:20
 Relinquished By: *[Signature]* Date/Time: 3/18/05 16:20
 Relinquished By: *[Signature]* Date/Time: 3/18/05 16:20

Turn around Time: (check)
 24 Hours 5 Days
 48 Hours 10 Days
 72 Hours Normal
 Perchlorate Only 72 Hours
 Metals Only 72 Hours
 Sample Integrity: (Check) On Ice:

Received By: *[Signature]* Date/Time: 3/18/05 16:20
 Received By: *[Signature]* Date/Time: 3/18/05 16:20
 Received By: *[Signature]* Date/Time: 3/18/05 16:20



1852 Alton Ave., Irvine CA 92606 (949) 261-1022 FAX (949) 261-1228
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2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

March 28, 2005

MWH-Pasadena/ Boeing
300 North Lake Avenue, Suite 1200
Pasadena, CA 91101

Attention: Bronwyn Kelly
Project: Routine Outfall 002
Sampled: 03/18/05
Del Mar Analytical Number: IOC1521

Dear Ms. Kelly:

Alta Analytical Laboratory performed the EPA Method 1613 for tetra-through-octa chlorinated dioxins and furans analysis for the project referenced above. Please use the following cross-reference table when reviewing your results.

MWH ID	DEL MAR ID	ALTA ID
Routine Outfall 002	IOC1521-01	25935-001

Attached is the original report from the subcontract laboratory. If you have any questions or require further assistance, please do not hesitate to contact me at (949) 261-1022 at extension 215.

Sincerely yours,
DEL MAR ANALYTICAL

Michele Harper
Project Manager



March 24, 2005

Alta Project I.D.: 25935

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

Dear Ms. Harper,

Enclosed are the results for the one aqueous sample received at Alta Analytical Laboratory on March 22, 2005 under your Project Name "IOC1521". This sample was extracted and analyzed using EPA Method 1613 for tetra-through-octa chlorinated dioxins and furans. A rush 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,

Martha M. Maier
Director of HRMS Services



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: 3/22/2005****Alta Lab. ID****Client Sample ID**

25935-001

IOC1521-01

SECTION II



Method Blank		EPA Method 1613						
Matrix:	Aqueous	QC Batch No.:	6624	Lab Sample:	0-MB001			
Sample Size:	1.000 L	Date Extracted:	22-Mar-05	Date Analyzed DB-S:	23-Mar-05			
Date Analyzed DB-225:	NA							
Analyte	Conc. (pg/L)	DL ^a	EMPC ^b	Qualifiers	Labeled Standard	%R	LCL-UCL ^d	Qualifiers
2,3,7,8-TCDD	ND	0.841			IS 13C-2,3,7,8-TCDD	79.3	25 - 164	
1,2,3,7,8-PeCDD	ND	0.749			13C-1,2,3,7,8-PeCDD	75.2	25 - 181	
1,2,3,4,7,8-HxCDD	ND	1.49			13C-1,2,3,4,7,8-HxCDD	74.0	32 - 141	
1,2,3,6,7,8-HxCDD	ND	1.52			13C-1,2,3,6,7,8-HxCDD	80.9	28 - 130	
1,2,3,7,8,9-HxCDD	ND	1.50			13C-1,2,3,4,6,7,8-HpCDD	72.5	23 - 140	
1,2,3,4,6,7,8-HpCDD	ND	1.17			13C-OCDD	55.5	17 - 157	
OCDD	ND	3.33			13C-2,3,7,8-TCDF	82.1	24 - 169	
2,3,7,8-TCDF	ND	0.795			13C-1,2,3,7,8-PeCDF	74.6	24 - 185	
1,2,3,7,8-PeCDF	ND	1.67			13C-2,3,4,7,8-PeCDF	77.9	21 - 178	
2,3,4,7,8-PeCDF	ND	1.39			13C-1,2,3,4,7,8-HxCDF	62.7	26 - 152	
1,2,3,4,7,8-HxCDF	ND	0.474			13C-1,2,3,6,7,8-HxCDF	73.0	26 - 123	
1,2,3,6,7,8-HxCDF	ND	0.442			13C-2,3,4,6,7,8-HxCDF	71.1	28 - 136	
2,3,4,6,7,8-HxCDF	ND	0.510			13C-1,2,3,7,8,9-HxCDF	67.2	29 - 147	
1,2,3,7,8,9-HxCDF	ND	0.820			13C-1,2,3,4,6,7,8-HpCDF	67.8	28 - 143	
1,2,3,4,6,7,8-HpCDF	ND	0.929			13C-1,2,3,4,7,8,9-HpCDF	71.3	26 - 138	
1,2,3,4,7,8,9-HpCDF	ND	1.13			13C-OCDF	58.9	17 - 157	
OCDF	ND	2.74			CRS 37Cl-2,3,7,8-TCDD	83.9	35 - 197	
Totals					Footnotes			
Total TCDD	ND	0.841			a. Sample specific estimated detection limit.			
Total PeCDD	ND	0.749			b. Estimated maximum possible concentration.			
Total HxCDD	ND	1.51			c. Method detection limit.			
Total HpCDD	ND	1.17			d. Lower control limit - upper control limit.			
Total TCDF	ND	0.795						
Total PeCDF	ND	1.52						
Total HxCDF	ND	0.545						
Total HpCDF	ND	1.02						

Analyst: JMH

Approved By: Martha M. Maier 24-Mar-2005 08:47



EPA Method 1613

OPR Results

Matrix: Aqueous QC Batch No.: 6624 Lab Sample: 0-OPR001
 Sample Size: 1.000 L Date Extracted: 22-Mar-05 Date Analyzed DB-5: 23-Mar-05 Date Analyzed DB-225: NA

Analyte	Spike Conc.	Conc. (ug/mL)	OPR Limits	Labeled Standard	%R	LCL-UCL
2,3,7,8-TCDD	10.0	9.02	6.7 - 15.8	IS 13C-2,3,7,8-TCDD	86.2	25 - 164
1,2,3,7,8-PeCDD	50.0	44.9	35 - 71	13C-1,2,3,7,8-PeCDD	83.6	25 - 181
1,2,3,4,7,8-HxCDD	50.0	45.7	35 - 82	13C-1,2,3,4,7,8-HxCDD	83.1	32 - 141
1,2,3,6,7,8-HxCDD	50.0	47.1	38 - 67	13C-1,2,3,6,7,8-HxCDD	90.5	28 - 130
1,2,3,7,8,9-HxCDD	50.0	47.2	32 - 81	13C-1,2,3,4,6,7,8-HpCDD	80.1	23 - 140
1,2,3,4,6,7,8-HpCDD	50.0	49.7	35 - 70	13C-OCDD	60.0	17 - 157
OCDD	100	102	78 - 144	13C-2,3,7,8-TCDF	89.6	24 - 169
2,3,7,8-TCDF	10.0	9.28	7.5 - 15.8	13C-1,2,3,7,8-PeCDF	82.2	24 - 185
1,2,3,7,8-PeCDF	50.0	49.7	40 - 67	13C-2,3,4,7,8-PeCDF	86.0	21 - 178
2,3,4,7,8-PeCDF	50.0	48.9	34 - 80	13C-1,2,3,4,7,8-HxCDF	69.1	26 - 152
1,2,3,4,7,8-HxCDF	50.0	52.4	36 - 67	13C-1,2,3,6,7,8-HxCDF	83.1	26 - 123
1,2,3,6,7,8-HxCDF	50.0	51.4	42 - 65	13C-2,3,4,6,7,8-HxCDF	80.9	28 - 136
2,3,4,6,7,8-HxCDF	50.0	51.3	35 - 78	13C-1,2,3,7,8,9-HxCDF	77.1	29 - 147
1,2,3,7,8,9-HxCDF	50.0	51.3	39 - 65	13C-1,2,3,4,6,7,8-HpCDF	77.1	28 - 143
1,2,3,4,6,7,8-HpCDF	50.0	54.0	41 - 61	13C-1,2,3,4,7,8,9-HpCDF	78.6	26 - 138
1,2,3,4,7,8,9-HpCDF	50.0	53.2	39 - 69	13C-OCDF	65.1	17 - 157
OCDF	100	103	63 - 170	CRS 37Cl-2,3,7,8-TCDD	89.8	35 - 197

Analyst: JMH

Approved By: Martha M. Maier 24-Mar-2005 08:47



Sample ID: IOC1521-01 **EPA Method 1613**

Client Data		Laboratory Data	
Name: Del Mar Analytical, Irvine	Lab Sample: 25935-001	Date Received: 22-Mar-05	
Project: IOC1521	QC Batch No.: 6624	Date Extracted: 22-Mar-05	
Date Collected: 18-Mar-05	Date Analyzed DB-5: 23-Mar-05	Date Analyzed DB-225: NA	
Time Collected: 1136			

Analyte	Conc. (pg/L)	DL ^a	EMPC ^b	Qualifiers	Labeled Standard	%R	LCL-UCL ^d	Qualifiers
2,3,7,8-TCDD	ND	0.685			13C-2,3,7,8-TCDD	87.7	25 - 164	
1,2,3,7,8-PeCDD	ND	0.745			13C-1,2,3,7,8-PeCDD	82.8	25 - 181	
1,2,3,4,7,8-HxCDD	ND	1.21			13C-1,2,3,4,7,8-HxCDD	81.5	32 - 141	
1,2,3,6,7,8-HxCDD	ND	1.23			13C-1,2,3,6,7,8-HxCDD	89.0	28 - 130	
1,2,3,7,8,9-HxCDD	ND	1.22			13C-1,2,3,4,6,7,8-HpCDD	81.4	23 - 140	
1,2,3,4,6,7,8-HpCDD	ND	1.04			13C-OCDD	63.4	17 - 157	
OCDD	5.96			J				
2,3,7,8-TCDF	ND	0.993			13C-2,3,7,8-TCDF	90.8	24 - 169	
1,2,3,7,8-PeCDF	ND	1.64			13C-1,2,3,7,8-PeCDF	83.8	24 - 185	
2,3,4,7,8-PeCDF	ND	1.39			13C-2,3,4,7,8-PeCDF	86.5	21 - 178	
1,2,3,4,7,8-HxCDF	ND	0.451			13C-1,2,3,4,7,8-HxCDF	68.7	26 - 152	
1,2,3,6,7,8-HxCDF	ND	0.441			13C-1,2,3,6,7,8-HxCDF	77.9	26 - 123	
2,3,4,6,7,8-HxCDF	ND	0.495			13C-2,3,4,6,7,8-HxCDF	76.8	28 - 136	
1,2,3,7,8,9-HxCDF	ND	0.768			13C-1,2,3,7,8,9-HxCDF	75.1	29 - 147	
1,2,3,4,6,7,8-HpCDF	ND	0.697			13C-1,2,3,4,6,7,8-HpCDF	76.4	28 - 143	
1,2,3,4,7,8,9-HpCDF	ND	0.818			13C-1,2,3,4,7,8,9-HpCDF	80.7	26 - 138	
OCDF	ND	3.04			13C-OCDF	67.4	17 - 157	
Totals					CRS 37Cl-2,3,7,8-TCDD	86.8	35 - 197	

Footnotes

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

Analyst: JMH
 Approved By: Martha M. Maier 24-Mar-2005 08:47

APPENDIX

DATA QUALIFIERS & ABBREVIATIONS

B	This compound was also detected in the method blank.
D	The amount reported is the maximum possible concentration due to possible chlorinated diphenylether interference.
H	The signal-to-noise ratio is greater than 10:1.
I	Chemical Interference
J	The amount detected is below the Lower Calibration Limit of the instrument.
P	Homologue totals include any coplanar PCBs detected at concentrations less than the reporting limit.
*	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 correspond 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.

The control limits are “interim limits only” until in-house limits are utilized.

CURRENT CERTIFICATIONS



NELAP — (Primary AA: California, Certificate No. 02102CA)
Department of the Navy
U.S. Army Corps of Engineers
U.S. EPA Region 5
Bureau of Reclamation — Mid-Pacific Region — (MP-470, Res-1.10)
Commonwealth of Kentucky — (Certificate No. 90063)
Commonwealth of Virginia — (Certificate No. 00013)
State of Alaska, Department of Environmental Conservation — (Certificate No. OS-00197)
State of Arizona — (Certificate No. AZ0639)
State of Arkansas, Department of Health — (Approval granted through CA certification)
State of Arkansas, Department of Environmental Quality
State of California — (Certificate No. 1640)
State of Colorado
State of Connecticut — (Certificate No. PH-0182)
State of Florida — (Certificate No. 87456)
State of Louisiana, Department of Health and Hospitals — (Certificate No. LA000014)
State of Louisiana, Department of Environmental Quality
State of Maine
State of Michigan (Certificate No. 81178087)
State of Mississippi — (Approval granted through CA certification)
State of Nevada — (Certificate No. CA413)
State of New Jersey — (Certificate No. CA003)
State of New York, Department of Health — (Certificate No. 11411)
State of North Carolina — (Certification No. 06700)
State of North Dakota, Department of Health — (Certificate No. R-078)
State of New Mexico
State of Oklahoma — (D9919)
State of Oregon — (Certificate No. CA413)
State of Pennsylvania — (Certificate No. 68-490)
State of South Carolina — (Certificate No. 87002001)
State of Tennessee — (Certificate No. 02996)
State of Texas — (Certificate No. TX247-1000A)
State of Utah — (Certificate No. E-201)
State of Washington — (Certification No. C091)
State of Wisconsin — (Certificate No. 998036160)
State of Wyoming — (USEPA Region 8 Ref: 8TMS-Q)

STANDARD OPERATING PROCEDURE

Attachment 10.B.1

SAMPLE LOG-IN CHECKLIST

ALTA Project No.: 25935

1. Date Samples Arrived: <u>3/22/05 0945</u> Initials: <u>W</u> Location: <u>WR-2</u>			
2. Time / Date logged In: <u>3/22/05 1115</u> Initials: <u>W</u> Location: <u>WR-2</u>			
3. Samples Arrived By: (circle) <u>FedEx</u> UPS World Courier Other:			
4. Shipping Preservation: (circle) <u>Ice</u> / Blue Ice / Dry Ice / None Temp °C <u>3.2</u>			
5. Shipping Container(s) Intact? If not, describe condition in comment section.	YES	NO	NA
6. Shipping Container(s) Custody Seals Present? Intact? If not intact, describe condition in comment section.	✓		
7. Shipping Documentation Present? (circle) Shipping Label <u>Airbill</u> Tracking Number <u>7915 786A 570L</u>	✓		
8. Sample Custody Seal(s) Present? No. of Seals _____ or Seal No. _____ Intact? If not intact, describe condition in comment section.		✓	✓
9. Sample Container Intact? If no, indicate sample condition in comment section.	✓		
10. Chain of Custody (COC) or other Sample Documentation Present?	✓		
11. COC/Documentation Acceptable? If no, complete COC Anomaly Form.	✓		
12. Shipping Container (circle): ALTA <u>Client</u> Retain or <u>Return</u> or Disposed			
13. Container(s) and/or Bottle(s) Requested?		✓	
14. Drinking Water Sample? (HRMS Only) If yes, Acceptable Preservation? Y or N Preservation Info From? (circle) COC or Sample Container or None Noted			✓ ✓

Comments:

IOC1521-01
 IOC1523-01
 IOC1525-01
 IOC1526-01
 IOC1563-01

ALTA Analytical Laboratory
 El Dorado Hills, CA 95762



17461 Derian Ave. Suite 100, Irvine, CA 92614 Ph (949) 261-1022 Fax (949) 261-1228
 1014 E. Cooley Dr., Suite A, Colton, CA 92324 Ph (909) 370-4887 Fax (909) 370-1046
 9484 Chesapeake Drive, Suite 805, San Diego, CA 92123 Ph (619) 505-8898 Fax (619) 505-9888
 9630 South 51st Street, Suite B-120, Phoenix, AZ 85044 Ph (480) 785-0043 Fax (480) 785-0891
 2620 E. Sunset Rd., Suite #2, Las Vegas, NV 89120 Ph (702) 798-3620 Fax (702) 798-3621

SUBCONTRACT ORDER - PROJECT # IOC1521

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 Harper	Alta Analytical 1104 Windfield Way El Dorado Hills, CA 95762 Phone: (916) 933-1640 Fax: (916) 933-0940

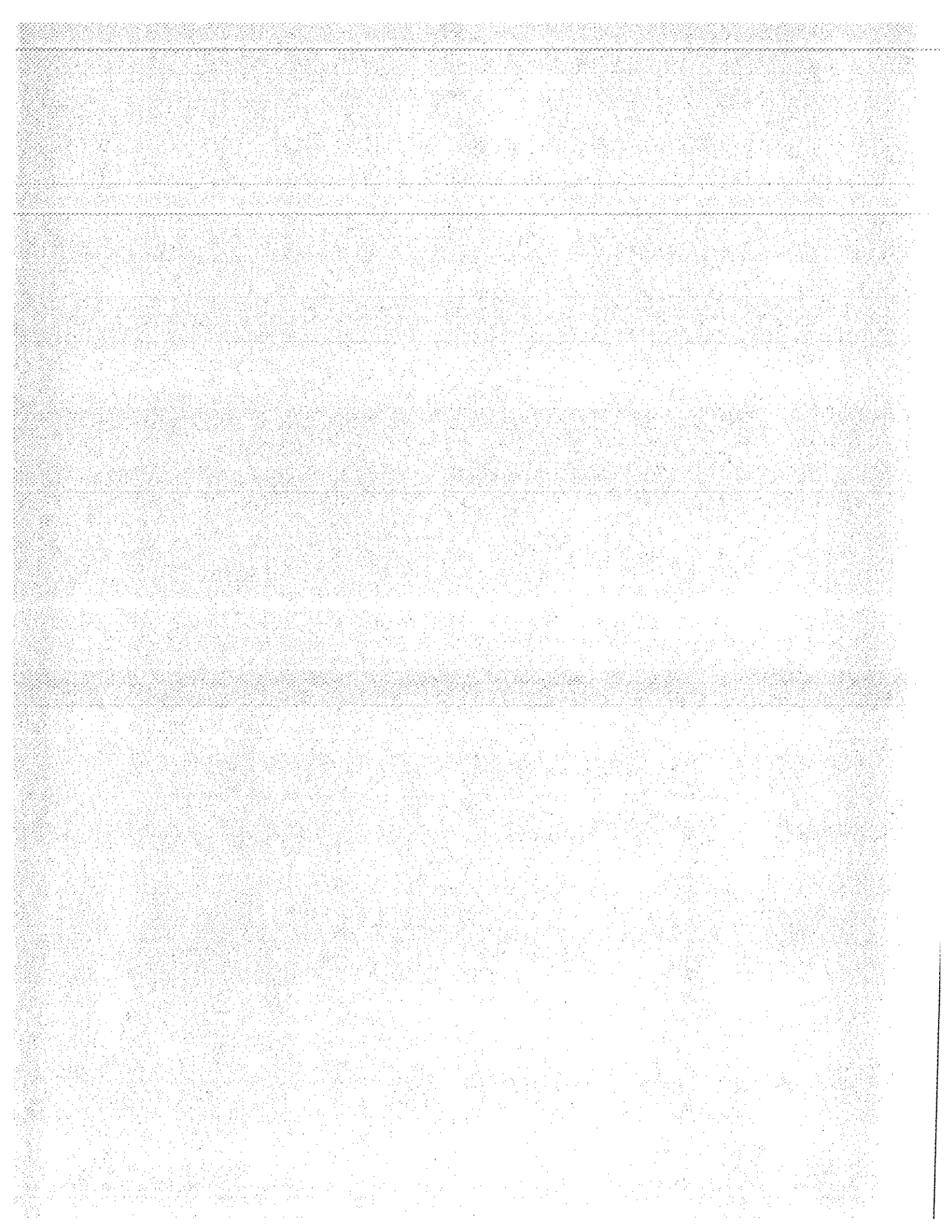
Standard TAT is requested unless specific due date is requested => Due Date: 5-day TAT Initials: _____

Analysis	Expiration	Sampled:	Comments
Sample ID: IOC1521-01 Water		03/18/05 11:36	Instant Notification
1613-Dioxin-HR	03/25/05 11:36		J flags, 17 congeners, no TEQ, sub to Alta
EDD + Level 4	04/15/05 11:36		Excel EDD email to pm, include Std logs for Lvl IV
Containers Supplied:			
1 L Amber (IOC1521-01G)			
1 L Amber (IOC1521-01H)			

25935 3.2°

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

	3-21-05	1700		3/22/05	0945
Released By	Date	Time	Received By	Date	Time
Released By	Date	Time	Received By	Date	Time

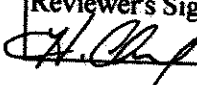


CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

AMEC Earth & Environmental
 550 South Wadsworth Boulevard
 Suite 500
 Lakewood, CO 80226

Package ID T711DF40
 Task Order 313150010
 SDG No. Multiple
 No. of Analyses 5

Laboratory Alta

Date: April 7, 2005
 Reviewer's Signature 

Reviewer H. Chang

Analysis/Method Dioxins & Furans /1613

ACTION ITEMS^a	
1. Case Narrative Deficiencies	
2. Out of Scope Analyses	
3. Analyses Not Conducted	
4. Missing Hardcopy Deliverables	
5. Incorrect Hardcopy Deliverables	
6. Deviations from Analysis Protocol, e.g., Holding Times GC/MS Tune/Inst. Perform Calibrations Blanks Surrogates Matrix Spike/Dup LCS Field QC Internal Standard Performance Compound Identification and Quantitation System Performance	Detects below the method calibration level were qualified "J." EMPCs were qualified "UJ." Ether interference was qualified "UJ."

COMMENTS^b

^a 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

ANALYSIS: DIOXINS/FURANS

SAMPLE DELIVERY GROUPS: IOC0871, IOC2062, IOC2063,
IOC2064, IOC2093

Prepared by

AMEC—Denver Operations
550 South Wadsworth Boulevard, Suite 500
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title: NPDES Monitoring
Contract Task Order #: 313150010
Sample Delivery Group #: IOC0871, IOC2062, IOC2063, IOC2064, IOC2093
Project Manager: B. McIlvaine
Matrix: Water
Analysis: Dioxins/Furans
QC Level: Level IV
No. of Samples: 5
No. of Reanalyses/Dilutions: 0
Reviewer: H. Chang
Date of Review: April 7, 2005

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

Table 1. Sample Identification

Client ID	Laboratory ID (Del Mar)	Laboratory ID (Alta)	Matrix	COC Method
Outfall 018	IOC0871-01	25975-001	water	1613
Outfall 002	IOC2062-01	25969-001	water	1613
Outfall 011	IOC2063-01	25967-001	water	1613
Outfall 011 Composite	IOC2064-01	25968-001	water	1613
Outfall 001	IOC2093-01	25970-001	water	1613

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

Following are findings associated with sample management:

2.1.1 Sample Preservation, Handling, and Transport

All samples in these SDGs were received at Del Mar with cooler temperatures within the QC limits of $4^{\circ}\text{C} \pm 2^{\circ}\text{C}$ with the exception of sample Outfall 002 which was received at 8°C . The samples were received at 0.4°C at Alta. According to the laboratory login sheets, all samples were received intact and in good condition at both laboratories. Due to non-volatile nature of the target compounds and since all samples were received intact, no qualifications were required.

2.1.2 Chain of Custody

The COCs and transfer COCs were legible and signed by the appropriate field and laboratory personnel, and accounted for the analyses presented in these SDGs. As the samples were couriered directly to Del Mar Analytical, custody seals were not required. The coolers received by Alta had custody seals present and intact. The EPA 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 a year of collection. No qualifications were required.

2.2 INSTRUMENT PERFORMANCE

Following are findings associated with instrument performance:

2.2.1 GC Column Performance

A Windows Defining Mix (WDM) containing the first and last eluting congeners of each descriptor and isomer specificity compounds was not analyzed prior to the initial calibration sequence or at the beginning of each analytical sequence; however, the first and last eluting congeners and isomer specificity compounds were added to the midpoint of the initial calibration and to the continuing calibration standards (see section 2.3.2). The GC column performance in the calibrations was acceptable, with the height of the valley between the closely eluting isomers and 2,3,7,8-TCDD reported as less than 25%. No qualifications were required.

2.2.2 Mass Spectrometer Performance

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

2.3 CALIBRATION

2.3.1 Initial Calibration

There was one initial calibration, analyzed 01/21/05. The calibration consisted of six concentration level standards (CS0 through CS5) analyzed to verify instrument linearity. The initial calibration was acceptable with %RSDs $\leq 20\%$ for the 16 native compounds (calibration by isotope dilution) and $\leq 35\%$ for the one native and all labeled compounds (calibration by internal standard). The relative retention times and ion abundance ratios were within the 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 and end of each analytical sequence. The VERs were acceptable with the concentrations within the acceptance criteria listed in Table 6 of EPA Method 1613. The ion abundance ratios and relative retention times were within the method QC limits. 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 standards 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_6653_MB001) was extracted and analyzed with the samples in these SDGs. There were no target compound detects reported 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 Ongoing Precision Recovery (OPR) sample (0_6653_OPR001) was extracted and analyzed with the samples in these SDGs. All recoveries were within the acceptance criteria listed in Table 6 of Method 1613. No qualifications were required.

2.6 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

MS/MSD analyses were not performed in these SDGs. 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 samples in these SDGs had no associated field QC samples. No qualifications were required.

2.7.2 Field Duplicates

No field duplicate samples were identified for these SDGs.

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. Any results reported as Estimated Maximum Possible Concentration (EMPC) were qualified as estimated nondetects, "UJ." Any detects below the lower method calibration level (MCL) were qualified as estimated, "J;" however, as Alta analyzed an additional calibration standard, the results below the lower MCL but above the lower calibration level were flagged with "A" laboratory qualifier. These results were qualified as estimated, "J," by the reviewer.

2,3,7,8-TCDF was detected in sample Outfall 018; however, no confirmation was performed since the level of the detect was below the calibration range. This compound was qualified as estimated, "J."

The Total TCDF result in sample Outfall 011 was reported with "D" laboratory qualifier due to the presence of ether. Total TCDF was qualified as "J" in this sample. No further qualifications were required.



Sample ID: IOC2062-01 *Outfall 002*

EPA Method 1613

Client Data		Sample Data		Laboratory Data	
Name:	Del Mar Analytical, Irvine	Matrix:	Aqueous	Lab Sample:	25969-001
Project:	IOC2062	Sample Size:	1.010 L	QC Batch No.:	6653
Date Collected:	25-Mar-05			Date Analyzed DB-5:	31-Mar-05
Time Collected:	1231			Date Analyzed DB-225:	NA
Analyte	Conc. (ug/L)	DL ^a	EMPC ^b	Labeled Standard	%R LCL-UCL ^d Qualifiers
2,3,7,8-TCDD	ND	0.000000400		13C-2,3,7,8-TCDD	81.8 25 - 164
1,2,3,7,8-PeCDD	0.000000888			13C-1,2,3,7,8-PeCDD	85.0 25 - 181
1,2,3,4,7,8-HxCDD	ND	0.000000856		13C-1,2,3,4,7,8-HxCDD	73.6 32 - 141
1,2,3,6,7,8-HxCDD	0.00000134			13C-1,2,3,6,7,8-HxCDD	82.4 28 - 130
1,2,3,7,8,9-HxCDD	ND	0.000000841		13C-1,2,3,4,6,7,8-HpCDD	69.2 23 - 140
1,2,3,4,6,7,8-HpCDD	0.0000165			13C-OCDD	47.9 17 - 157
OCDD	0.000184			13C-2,3,7,8-TCDF	85.0 24 - 169
2,3,7,8-TCDF	ND	0.000000488		13C-1,2,3,7,8-PeCDF	84.6 24 - 185
1,2,3,7,8-PeCDF	0.000000684			13C-2,3,4,7,8-PeCDF	89.9 21 - 178
2,3,4,7,8-PeCDF	0.000000768			13C-1,2,3,4,7,8-HxCDF	76.3 26 - 152
1,2,3,4,7,8-HxCDF	ND		0.000000461	13C-1,2,3,6,7,8-HxCDF	82.9 26 - 123
1,2,3,6,7,8-HxCDF	ND		0.000000649	13C-2,3,4,6,7,8-HxCDF	81.1 28 - 136
2,3,4,6,7,8-HxCDF	0.000000571			13C-1,2,3,7,8,9-HxCDF	79.4 29 - 147
1,2,3,7,8,9-HxCDF	ND	0.000000307		13C-1,2,3,4,6,7,8-HpCDF	65.6 28 - 143
1,2,3,4,6,7,8-HpCDF	0.00000266			13C-1,2,3,4,7,8,9-HpCDF	69.5 26 - 138
1,2,3,4,7,8,9-HpCDF	ND	0.000000480		13C-OCDF	54.6 17 - 157
OCDF	0.00000539			CRS 37Cl-2,3,7,8-TCDD	89.4 35 - 197
Totals					
Total TCDD	ND	0.000000400			
Total PeCDD	0.000000888				
Total HxCDD	0.00000515				
Total HpCDD	0.0000340				
Total TCDF	0.00000299				
Total PeCDF	0.00000207				
Total HxCDF	0.00000102		0.000000424		
Total HpCDF	0.00000266		0.00000569		

Footnotes

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

Approved By: William J. Luksemburg 01-Apr-2005 14:54

AMEC VALIDATED

LEVEL IV

Analyst: RAS

Project 25969

CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

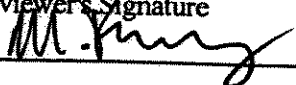
AMEC Earth & Environmental
 550 South Wadsworth Boulevard
 Suite 500
 Lakewood, CO 80226

Package ID T711VO82
 Task Order 313150010
 SDG No. IOC2062
 No. of Analyses 2

Laboratory Del Mar

Reviewer M. Pokorny

Analysis/Method Volatiles

Date: April 8, 2005
 Reviewer's Signature


ACTION ITEMS^a

1. **Case Narrative**
Deficiencies _____
2. **Out of Scope**
Analyses _____
3. **Analyses Not Conducted** _____
4. **Missing Hardcopy**
Deliverables _____
5. **Incorrect Hardcopy**
Deliverables _____
6. **Deviations from Analysis** Qualification required for a detect below the reporting limit.
Protocol, e.g.,
 Holding Times _____
 GC/MS Tune/Inst. Perform _____
 Calibrations _____
 Blanks _____
 Surrogates _____
 Matrix Spike/Dup LCS _____
 Field QC _____
 Internal Standard Performance _____
 Compound Identification and _____
 Quantitation _____
 System Performance _____

COMMENTS^b _____

^a 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

ANALYSIS: VOLATILES

SAMPLE DELIVERY GROUP: IOC2062

Prepared by

AMEC Denver Operations
550 South Wadsworth Boulevard, Suite 500
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title: NPDES Monitoring
Contract Task Order #: 313150010
SDG#: IOC2062
Project Manager: B. McIlvaine
Matrix: Water
Analysis: Volatiles
QC Level: Level IV
No. of Samples: 2
No. of Reanalyses/Dilutions: 0
Reviewer: M. Pokorny
Date of Review: April 8, 2005

The samples listed in Table 1 were validated based on the guidelines outlined in the *AMEC Data Validation Procedure for Levels C and D Volatile Organics (DVP-2, Rev. 2)*, *EPA Method 624*, *EPA SW-846 Method 8260B*, 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 summary forms as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

Table 1. Sample identification

Client ID	EPA ID	Lab No.	Matrix	Method
Outfall 002	Outfall 002	IOC2062-01	water	624
Trip Blank	Trip Blank	IOC2062-02	water	624

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

The following are findings associated with sample management:

2.1.1 Sample Preservation, Handling, and Transport

The samples in this SDG were received at the laboratory within the temperature limits of $4^{\circ}\text{C} \pm 2^{\circ}\text{C}$. The samples were properly preserved. The COCs noted that the samples were received intact; however, information regarding absence of headspace was not provided. No qualifications were required.

2.1.2 Chain of Custody

The COCs were signed and dated by both field and laboratory personnel. The COCs accounted for the analyses presented in these SDGs. As the samples were couriered directly to the laboratory, custody seals were not required. No qualifications were required.

2.1.3 Holding Times

The samples were analyzed within 14 days of collection. No qualifications were required.

2.2 GC/MS TUNING

The ion abundance windows shown on the quantitation reports were consistent with those specified in the EPA Method 624, and all ion abundances were within the established windows. The samples and associated QC were analyzed within 12 hours of the BFB injection times. The Form Vs were verified from the raw data and no discrepancies between the summary forms and the raw data were noted. No qualifications were required.

2.3 CALIBRATION

Two initial calibrations dated 02/18/05 (Freon 113 only) and 03/21/05 were associated with this SDG. The average RRFs were ≥ 0.05 for all applicable compounds listed on the sample result summaries. The %RSDs were $\leq 35\%$ for the target compounds analyzed by EPA Method 624. Two continuing calibrations associated with the sample analyses were analyzed 03/27/05 (11:05 and 11:36). The RRFs were ≥ 0.05 in both of the continuing calibrations. The %Ds for the continuing calibrations associated with the site samples were all $\leq 20\%$. A representative number of %RSDs and average RRFs from the initial calibrations, and %Ds and RRFs from the continuing calibrations were recalculated from the raw data, and no calculation or transcription errors were found. No qualifications were required.

2.4 BLANKS

One water method blank (5B27002-BLK1) was associated with the sample analyses. There were no detects above the MDLs for the target compounds listed on the sample result summaries. The method blank raw data showed no evidence of false negatives. No qualifications were required.

2.5 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

One water blank spike (5B27002-BS1) was associated with the sample analyses. All recoveries were within the laboratory-established QC limits. A representative number of recoveries were recalculated from the raw data and no calculation or transcription errors were found. No qualifications were required.

2.6 SURROGATE RECOVERY

The surrogates were recovered within the QC limits of 80-120% in the samples and associated QC. A representative number of surrogate recoveries were recalculated from the raw data and no calculation or transcription errors were found. No qualifications were required.

2.7 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

An MS/MSD analyses were not performed with this SDG. Evaluation of method accuracy was based on the LCS 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 (IOC2062-02) was the trip blank associated with this SDG. No target compounds were reported in the Trip Blank. No qualifications were required.

2.8.2 Field Blanks and Equipment Rinsates

There were no field QC samples associated with this SDG. No qualifications were required.

2.8.3 Field Duplicates

There were no field duplicate samples associated with this SDG. No qualifications were required.

2.9 INTERNAL STANDARDS PERFORMANCE

Internal standard area counts and retention times for the samples in this SDG were within the control limits established by the continuing calibration standards: +100%/-50% for internal standard areas and ± 0.50 minutes for retention times. A representative number of internal standard areas and retention times were verified from the raw data, and no calculation or transcription errors were noted. No qualifications were required.

2.10 COMPOUND IDENTIFICATION

Target compound identification was verified at a Level IV data validation. The laboratory analyzed the volatile target compounds by EPA Method 624. Chromatograms, retention times, and spectra for the samples and QC were examined and no target compound identification problems were noted. No qualifications were required.

2.11 COMPOUND QUANTIFICATION AND REPORTED DETECTION LIMITS

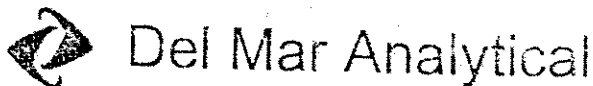
Compound quantification is verified at a Level IV data validation. The reporting limits were supported by the lowest concentrations of the initial calibration standards and by the MDL study. Compound quantitation was verified by recalculating any sample detects and a representative number of blank spike and surrogate recoveries from the raw data. Results were reported in $\mu\text{g/L}$ (ppb). No calculation or transcription errors were noted. Detects below the reporting limits were qualified as estimated, "J," by the laboratory. No further qualifications were required.

2.12 TENTATIVELY IDENTIFIED COMPOUNDS

The laboratory did not provide TICs for this SDG. No qualifications were required.

2.13 SYSTEM PERFORMANCE

A review of the chromatograms and other raw data showed no identifiable 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) 370-4867 FAX (949) 370-1046
 8484 Chesapeake Dr., Suite 805, San Diego, CA 92123 (619) 505-5596 FAX (619) 505-9089
 8430 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 765-0043 FAX (480) 765-0851
 2520 E. Sunset Rd., #3, Las Vegas, NV 89120 (702) 796-3620 FAX (702) 796-3621

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

Project ID: Routine Outfall 002

Report Number: IOC2062

Sampled: 03/25/05
 Received: 03/25/05

DRAFT: PURGEABLES BY GC/MS (EPA 624)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOC2062-01 (DRAFT: Outfall 002 - Water)									
Reporting Units: ug/l									
Benzene	EPA 624	5C27002	0.28	2.0	ND	1	03/27/05	03/27/05	U
Trichlorotrifluoroethane (Freon 113)	EPA 624	5C27002	1.2	5.0	ND	1	03/27/05	03/27/05	↓ J J DNQ ↓ ↓
Carbon tetrachloride	EPA 624	5C27002	0.28	5.0	ND	1	03/27/05	03/27/05	
Chloroform	EPA 624	5C27002	0.33	2.0	ND	1	03/27/05	03/27/05	
1,1-Dichloroethane	EPA 624	5C27002	0.27	2.0	ND	1	03/27/05	03/27/05	
1,2-Dichloroethane	EPA 624	5C27002	0.28	2.0	ND	1	03/27/05	03/27/05	
1,1-Dichloroethene	EPA 624	5C27002	0.32	3.0	ND	1	03/27/05	03/27/05	
Ethylbenzene	EPA 624	5C27002	0.25	2.0	ND	1	03/27/05	03/27/05	
Tetrachloroethene	EPA 624	5C27002	0.32	2.0	ND	1	03/27/05	03/27/05	
Toluene	EPA 624	5C27002	0.36	2.0	ND	1	03/27/05	03/27/05	
1,1,1-Trichloroethane	EPA 624	5C27002	0.30	2.0	ND	1	03/27/05	03/27/05	
1,1,2-Trichloroethane	EPA 624	5C27002	0.30	2.0	ND	1	03/27/05	03/27/05	
Trichloroethene	EPA 624	5C27002	0.26	5.0	1.1	1	03/27/05	03/27/05	
Trichlorofluoromethane	EPA 624	5C27002	0.34	5.0	ND	1	03/27/05	03/27/05	
Vinyl chloride	EPA 624	5C27002	0.26	5.0	ND	1	03/27/05	03/27/05	
Xylenes, Total	EPA 624	5C27002	0.52	4.0	ND	1	03/27/05	03/27/05	
Surrogate: Dibromofluoromethane (80-120%)					102 %				
Surrogate: Toluene-d8 (80-120%)					106 %				
Surrogate: 4-Bromofluorobenzene (80-120%)					97 %				

Sample ID: IOC2062-02 (DRAFT: Trip Blank - Water)
 Reporting Units: ug/l

Benzene	EPA 624	5C27002	0.28	2.0	ND	1	03/27/05	03/27/05	↓ ↓ ↓
Trichlorotrifluoroethane (Freon 113)	EPA 624	5C27002	1.2	5.0	ND	1	03/27/05	03/27/05	
Carbon tetrachloride	EPA 624	5C27002	0.28	5.0	ND	1	03/27/05	03/27/05	
Chloroform	EPA 624	5C27002	0.33	2.0	ND	1	03/27/05	03/27/05	
1,1-Dichloroethane	EPA 624	5C27002	0.27	2.0	ND	1	03/27/05	03/27/05	
1,2-Dichloroethane	EPA 624	5C27002	0.28	2.0	ND	1	03/27/05	03/27/05	
1,1-Dichloroethene	EPA 624	5C27002	0.32	3.0	ND	1	03/27/05	03/27/05	
Ethylbenzene	EPA 624	5C27002	0.25	2.0	ND	1	03/27/05	03/27/05	
Tetrachloroethene	EPA 624	5C27002	0.32	2.0	ND	1	03/27/05	03/27/05	
Toluene	EPA 624	5C27002	0.36	2.0	ND	1	03/27/05	03/27/05	
1,1,1-Trichloroethane	EPA 624	5C27002	0.30	2.0	ND	1	03/27/05	03/27/05	
1,1,2-Trichloroethane	EPA 624	5C27002	0.30	2.0	ND	1	03/27/05	03/27/05	
Trichloroethene	EPA 624	5C27002	0.26	5.0	ND	1	03/27/05	03/27/05	
Trichlorofluoromethane	EPA 624	5C27002	0.34	5.0	ND	1	03/27/05	03/27/05	
Vinyl chloride	EPA 624	5C27002	0.26	5.0	ND	1	03/27/05	03/27/05	
Xylenes, Total	EPA 624	5C27002	0.52	4.0	ND	1	03/27/05	03/27/05	
Surrogate: Dibromofluoromethane (80-120%)					100 %				
Surrogate: Toluene-d8 (80-120%)					108 %				
Surrogate: 4-Bromofluorobenzene (80-120%)					95 %				

DRAFT REPORT

DRAFT REPORT

DATA SUBJECT TO CHANGE

LEVEL IV

AMEC VALIDATED

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DATA VALIDATION REPORT

NPDES Monitoring

ANALYSIS: GENERAL MINERALS

SAMPLE DELIVERY GROUP: IOC2062

Prepared by

AMEC—Denver Operations
550 South Wadsworth Boulevard, Suite 500
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title: NPDES Monitoring
Contract Task Order #: 313150010
Sample Delivery Group #: IOC2062
Project Manager: B. McIlvaine
Matrix: Water
Analysis: General Minerals
QC Level: Level IV
No. of Samples: 1
Reviewer: L. Jarusewic
Date of Review: April 7, 2005

The sample listed in Table 1 was validated based on the guidelines outlined in the AMEC *Data Validation Procedures* SOP DVP-6, Rev. 2, *USEPA Methods for Chemical Analysis of Water and Wastes Method 350.2, 120.1, and 180.1*, 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 I as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

Table 1. Sample identification

Client ID	EPA ID	Laboratory ID	Matrix	COC Method
Outfall 002	Outfall 002	IOC2062-01	Water	General Minerals

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

Following are findings associated with sample management:

2.1.1 Sample Preservation, Handling, and Transport

The sample in this SDG was received at the laboratory within the temperature limits of $4^{\circ}\text{C} \pm 2^{\circ}\text{C}$. 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. The COC accounted for all analyses presented in this SDG. No sample qualifications were required.

2.1.3 Holding Times

The holding times were assessed by comparing the date of collection with the dates of analyses. The 28-day analytical holding time for ammonia and conductivity and the 48-hour holding time for turbidity were met. No qualifications were required.

2.2 CALIBRATION

For the applicable analyses, the initial calibration correlation coefficients were ≥ 0.995 . Initial and continuing calibration information was acceptable with recoveries within the control limits of 90-110%. For ammonia, no information regarding the standardization of the titrant was provided; however, as the LCS recovery was within the CCV control limits, no qualifications were required.

2.3 BLANKS

Turbidity was detected in method blank 5C26056-BLK1 at 0.050 NTU; however, the turbidity method blank result was insufficient to qualify the Outfall 002 result. The remaining method blank and CCB results reported on the summary forms and in the raw data for blank analyses associated with the sample were nondetects at the reporting limit. No qualifications were required.

2.4 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

The ammonia laboratory control sample recovery was within the laboratory-established control limits. The LCS is not applicable to turbidity or conductivity. No qualifications were required.

2.5 SURROGATES RECOVERY

Surrogate recovery is not applicable to the analyses presented in this SDG.

2.6 LABORATORY DUPLICATES

A laboratory duplicate analysis was performed on sample Outfall 002 for turbidity. The RPD was within the control limit of $\leq 20\%$ and no qualifications were required.

2.7 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

There were no MS/MSD analyses performed in association with the sample in this SDG; therefore, no assessment was made with respect to this criterion. Ammonia method accuracy was assessed based on LCS results.

2.8 FURNACE ATOMIC ABSORPTION QC

Furnace atomic absorption was not utilized for the analyses of this sample; therefore, furnace atomic absorption QC is not applicable.

2.9 ICP SERIAL DILUTION

ICP serial dilution is not applicable to the analyses presented in this data validation report.

2.10 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 transcription errors or calculation errors were noted. No qualifications were required.

2.11 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:

2.11.1 Field Blanks and Equipment Rinsates

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

DATA VALIDATION REPORT

Project: NPDES
SDG No.: IOC2062
Analysis: General Minerals

2.11.2 Field Duplicates

There were no field duplicate pairs associated with this SDG.



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

Project ID: Routine Outfall 002

Report Number: IOC2062

Sampled: 03/25/05
 Received: 03/25/05

DRAFT: INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOC2062-01 (DRAFT: Outfall 002 - Water) Reporting Units: mg/l									
Ammonia-N (Distilled)	EPA 350.2	5C28067	0.30	0.50	ND	1	03/28/05	03/28/05	U
Sample ID: IOC2062-01 (DRAFT: Outfall 002 - Water) Reporting Units: NTU									
Turbidity	EPA 180.1	5C26056	0.040	1.0	12	1	03/26/05	03/26/05	
Sample ID: IOC2062-01 (DRAFT: Outfall 002 - Water) Reporting Units: umhos/cm									
Specific Conductance	EPA 120.1	5C28081	1.0	1.0	440	1	03/28/05	03/28/05	

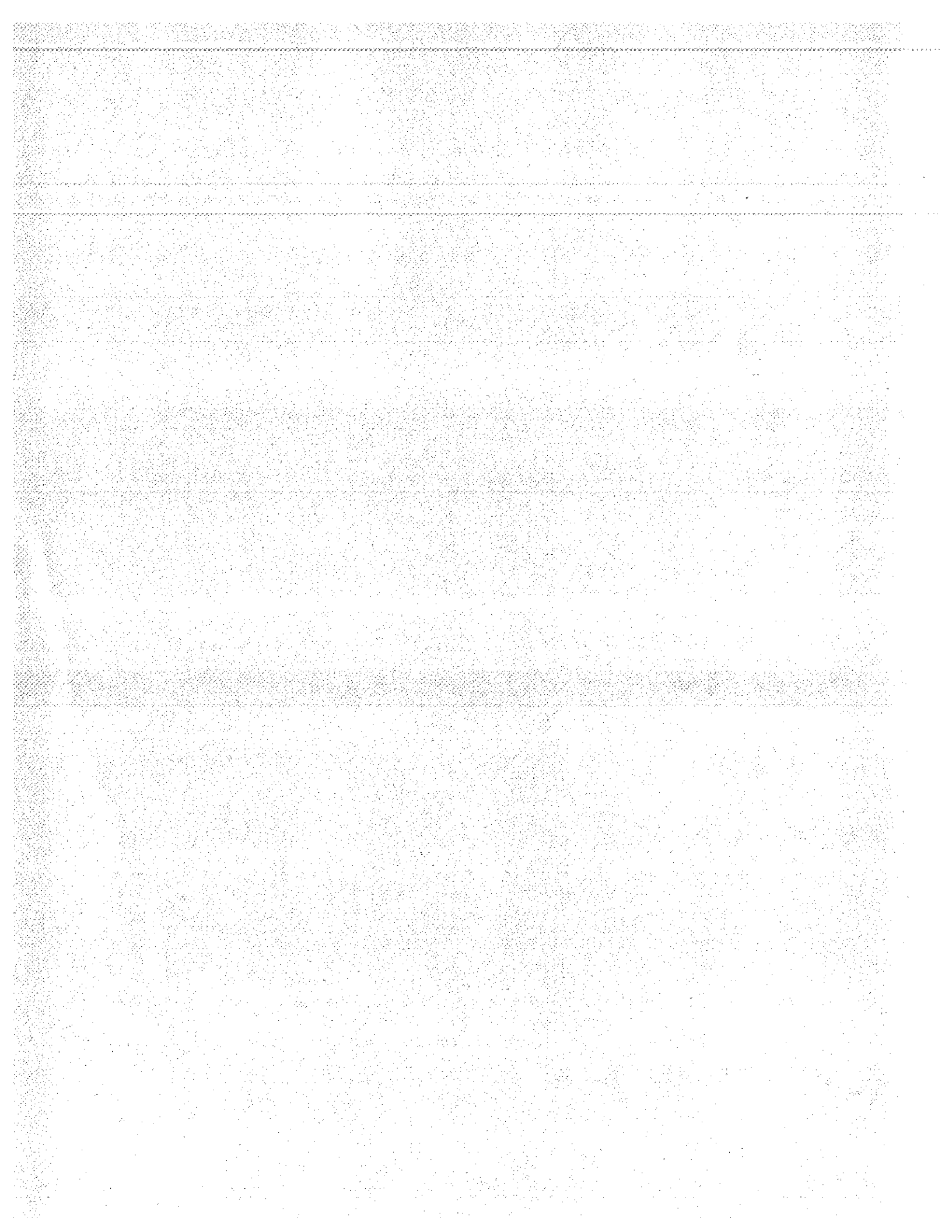
REV
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CODE

AMEC VALIDATED

LEVEL IV

DRAFT REPORT
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LABORATORY REPORT

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

Project: Routine Outfall 002

Sampled: 03/25/05
Received: 03/25/05
Issued: 04/08/05 17:15

NELAP #01108CA California ELAP#1197 CSDLAC #10117

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This entire report was reviewed and approved for release.*

SAMPLE CROSS REFERENCE

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

LABORATORY ID	CLIENT ID	MATRIX
IOC2062-01	Outfall 002	Water
IOC2062-02	Trip Blank	Water

Reviewed By:

Del Mar Analytical, Irvine
Michele Harper
Project Manager



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MWH-Pasadena/Boeing 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Attention: Bronwyn Kelly	Project ID: Routine Outfall 002 Report Number: IOC2062	Sampled: 03/25/05 Received: 03/25/05
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PURGEABLES BY GC/MS (EPA 624)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOC2062-01 (Outfall 002 - Water)									
Reporting Units: ug/l									
Benzene	EPA 624	5C27002	0.28	2.0	ND	1	03/27/05	03/27/05	
Carbon tetrachloride	EPA 624	5C27002	0.28	5.0	ND	1	03/27/05	03/27/05	
Chloroform	EPA 624	5C27002	0.33	2.0	ND	1	03/27/05	03/27/05	
1,1-Dichloroethane	EPA 624	5C27002	0.27	2.0	ND	1	03/27/05	03/27/05	
1,2-Dichloroethane	EPA 624	5C27002	0.28	2.0	ND	1	03/27/05	03/27/05	
1,1-Dichloroethene	EPA 624	5C27002	0.32	3.0	ND	1	03/27/05	03/27/05	
Ethylbenzene	EPA 624	5C27002	0.25	2.0	ND	1	03/27/05	03/27/05	
Tetrachloroethene	EPA 624	5C27002	0.32	2.0	ND	1	03/27/05	03/27/05	
Toluene	EPA 624	5C27002	0.36	2.0	ND	1	03/27/05	03/27/05	
1,1,1-Trichloroethane	EPA 624	5C27002	0.30	2.0	ND	1	03/27/05	03/27/05	
1,1,2-Trichloroethane	EPA 624	5C27002	0.30	2.0	ND	1	03/27/05	03/27/05	
Trichloroethene	EPA 624	5C27002	0.26	5.0	1.1	1	03/27/05	03/27/05	J
Trichlorofluoromethane	EPA 624	5C27002	0.34	5.0	ND	1	03/27/05	03/27/05	
Vinyl chloride	EPA 624	5C27002	0.26	5.0	ND	1	03/27/05	03/27/05	
Xylenes, Total	EPA 624	5C27002	0.52	4.0	ND	1	03/27/05	03/27/05	
Surrogate: Dibromofluoromethane (80-120%)					102 %				
Surrogate: Toluene-d8 (80-120%)					106 %				
Surrogate: 4-Bromofluorobenzene (80-120%)					97 %				
Sample ID: IOC2062-02 (Trip Blank - Water)									
Reporting Units: ug/l									
Benzene	EPA 624	5C27002	0.28	2.0	ND	1	03/27/05	03/27/05	
Carbon tetrachloride	EPA 624	5C27002	0.28	5.0	ND	1	03/27/05	03/27/05	
Chloroform	EPA 624	5C27002	0.33	2.0	ND	1	03/27/05	03/27/05	
1,1-Dichloroethane	EPA 624	5C27002	0.27	2.0	ND	1	03/27/05	03/27/05	
1,2-Dichloroethane	EPA 624	5C27002	0.28	2.0	ND	1	03/27/05	03/27/05	
1,1-Dichloroethene	EPA 624	5C27002	0.32	3.0	ND	1	03/27/05	03/27/05	
Ethylbenzene	EPA 624	5C27002	0.25	2.0	ND	1	03/27/05	03/27/05	
Tetrachloroethene	EPA 624	5C27002	0.32	2.0	ND	1	03/27/05	03/27/05	
Toluene	EPA 624	5C27002	0.36	2.0	ND	1	03/27/05	03/27/05	
1,1,1-Trichloroethane	EPA 624	5C27002	0.30	2.0	ND	1	03/27/05	03/27/05	
1,1,2-Trichloroethane	EPA 624	5C27002	0.30	2.0	ND	1	03/27/05	03/27/05	
Trichloroethene	EPA 624	5C27002	0.26	5.0	ND	1	03/27/05	03/27/05	
Trichlorofluoromethane	EPA 624	5C27002	0.34	5.0	ND	1	03/27/05	03/27/05	
Vinyl chloride	EPA 624	5C27002	0.26	5.0	ND	1	03/27/05	03/27/05	
Xylenes, Total	EPA 624	5C27002	0.52	4.0	ND	1	03/27/05	03/27/05	
Surrogate: Dibromofluoromethane (80-120%)					100 %				
Surrogate: Toluene-d8 (80-120%)					108 %				
Surrogate: 4-Bromofluorobenzene (80-120%)					95 %				

Del Mar Analytical, Irvine
 Michele Harper
 Project Manager

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MWH-Pasadena/Boeing 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Attention: Bronwyn Kelly	Project ID: Routine Outfall 002 Report Number: IOC2062	Sampled: 03/25/05 Received: 03/25/05
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ACID & BASE/NEUTRALS BY GC/MS (EPA 625)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOC2062-01 (Outfall 002 - Water)									
Reporting Units: ug/l									
Bis(2-ethylhexyl)phthalate	EPA 625	5C28041	1.1	5.0	ND	0.957	03/28/05	03/31/05	
2,4-Dinitrotoluene	EPA 625	5C28041	0.23	9.0	ND	0.957	03/28/05	03/31/05	
N-Nitrosodimethylamine	EPA 625	5C28041	0.22	8.0	ND	0.957	03/28/05	03/31/05	
Pentachlorophenol	EPA 625	5C28041	0.78	8.0	ND	0.957	03/28/05	03/31/05	
2,4,6-Trichlorophenol	EPA 625	5C28041	0.10	6.0	ND	0.957	03/28/05	03/31/05	
Surrogate: 2-Fluorophenol (30-120%)					68 %				
Surrogate: Phenol-d6 (35-120%)					68 %				
Surrogate: 2,4,6-Tribromophenol (45-120%)					83 %				
Surrogate: Nitrobenzene-d5 (45-120%)					68 %				
Surrogate: 2-Fluorobiphenyl (45-120%)					73 %				
Surrogate: Terphenyl-d14 (45-120%)					82 %				

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MWH-Pasadena/Boeing 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Attention: Bronwyn Kelly	Project ID: Routine Outfall 002 Report Number: IOC2062	Sampled: 03/25/05 Received: 03/25/05
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ORGANOCHLORINE PESTICIDES (EPA 608)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOC2062-01 (Outfall 002 - Water) - cont.									
Reporting Units: ug/l									
alpha-BHC	EPA 608	5C28048	0.0010	0.010	ND	0.943	03/28/05	03/29/05	
Surrogate: Decachlorobiphenyl (45-120%)					55 %				
Surrogate: Tetrachloro-m-xylene (35-115%)					52 %				

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 Project Manager

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 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: IOC2062	Sampled: 03/25/05 Received: 03/25/05
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METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOC2062-01 (Outfall 002 - Water) - cont.									
Reporting Units: ug/l									
Copper	EPA 200.8	5C25116	0.49	2.0	3.0	1	03/25/05	03/28/05	
Lead	EPA 200.8	5C25116	0.13	1.0	0.55	1	03/25/05	03/28/05	J
Mercury	EPA 245.1	5C26033	0.063	0.20	ND	1	03/26/05	03/26/05	

Del Mar Analytical, Irvine
 Michele Harper
 Project Manager

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 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: IOC2062	Sampled: 03/25/05 Received: 03/25/05
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INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOC2062-01 (Outfall 002 - Water) - cont.									
Reporting Units: mg/l									
Ammonia-N (Distilled)	EPA 350.2	5C28067	0.30	0.50	ND	1	03/28/05	03/28/05	
Biochemical Oxygen Demand	EPA 405.1	5C25093	0.59	2.0	1.9	1	03/25/05	03/30/05	J
Chloride	EPA 300.0	5C25048	0.26	0.50	22	1	03/25/05	03/25/05	
Nitrate/Nitrite-N	EPA 300.0	5C25048	0.072	0.11	0.14	1	03/25/05	03/25/05	
Sulfate	EPA 300.0	5C25048	0.36	1.0	73	2	03/25/05	03/25/05	
Surfactants (MBAS)	SM5540-C	5C25096	0.044	0.10	ND	1	03/25/05	03/25/05	
Total Dissolved Solids	SM2540C	5C28078	10	10	270	1	03/28/05	03/28/05	
Total Suspended Solids	EPA 160.2	5C25117	10	10	11	1	03/25/05	03/25/05	
Sample ID: IOC2062-01RE1 (Outfall 002 - Water)									
Reporting Units: mg/l									
Oil & Grease	EPA 413.1	5C28069	0.94	5.0	ND	1	03/28/05	03/28/05	
Sample ID: IOC2062-01 (Outfall 002 - Water)									
Reporting Units: ml/l/hr									
Total Settleable Solids	EPA 160.5	5C25105	0.10	0.10	ND	1	03/25/05	03/25/05	
Sample ID: IOC2062-01 (Outfall 002 - Water)									
Reporting Units: NTU									
Turbidity	EPA 180.1	5C26056	0.040	1.0	12	1	03/26/05	03/26/05	
Sample ID: IOC2062-01 (Outfall 002 - Water)									
Reporting Units: ug/l									
Total Cyanide	EPA 335.2	5C25119	2.2	5.0	ND	1	03/25/05	03/25/05	
Perchlorate	EPA 314.0	5C25061	0.80	4.0	ND	1	03/25/05	03/26/05	
Sample ID: IOC2062-01 (Outfall 002 - Water)									
Reporting Units: umhos/cm									
Specific Conductance	EPA 120.1	5C28081	1.0	1.0	440	1	03/28/05	03/28/05	

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MWH-Pasadena/Boeing 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Attention: Bronwyn Kelly	Project ID: Routine Outfall 002 Report Number: IOC2062	Sampled: 03/25/05 Received: 03/25/05
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SHORT HOLD TIME DETAIL REPORT

Sample ID: Outfall 002 (IOC2062-01) - Water	Hold Time (in days)	Date/Time Sampled	Date/Time Received	Date/Time Extracted	Date/Time Analyzed
EPA 160.5	2	03/25/2005 12:31	03/25/2005 18:30	03/25/2005 21:10	03/25/2005 22:10
EPA 180.1	2	03/25/2005 12:31	03/25/2005 18:30	03/26/2005 13:00	03/26/2005 14:00
EPA 300.0	2	03/25/2005 12:31	03/25/2005 18:30	03/25/2005 20:00	03/25/2005 20:52
EPA 405.1	2	03/25/2005 12:31	03/25/2005 18:30	03/25/2005 21:30	03/30/2005 11:30
SM5540-C	2	03/25/2005 12:31	03/25/2005 18:30	03/25/2005 21:24	03/25/2005 22:05

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MWH-Pasadena/Boeing 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Attention: Bronwyn Kelly	Project ID: Routine Outfall 002 Report Number: IOC2062	Sampled: 03/25/05 Received: 03/25/05
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METHOD BLANK/QC DATA

PURGEABLES BY GC/MS (EPA 624)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	RPD RPD	RPD RPD	Data Qualifiers
Batch: 5C27002 Extracted: 03/27/05										
Blank Analyzed: 03/27/2005 (5C27002-BLK1)										
Benzene	ND	2.0	0.28	ug/l						
Trichlorotrifluoroethane (Freon 113)	ND	5.0	1.2	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	0.32	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	0.52	ug/l						
Surrogate: Dibromofluoromethane	24.8			ug/l	25.0		99		80-120	
Surrogate: Toluene-d8	27.1			ug/l	25.0		108		80-120	
Surrogate: 4-Bromofluorobenzene	23.3			ug/l	25.0		93		80-120	
LCS Analyzed: 03/27/2005 (5C27002-BS1)										
Benzene	24.9	2.0	0.28	ug/l	25.0		100		70-120	
Carbon tetrachloride	26.1	5.0	0.28	ug/l	25.0		104		70-140	
Chloroform	23.9	2.0	0.33	ug/l	25.0		96		75-130	
1,1-Dichloroethane	22.6	2.0	0.27	ug/l	25.0		90		70-135	
1,2-Dichloroethane	26.3	2.0	0.28	ug/l	25.0		105		60-150	
1,1-Dichloroethene	22.5	3.0	0.32	ug/l	25.0		90		75-135	
Ethylbenzene	26.4	2.0	0.25	ug/l	25.0		106		80-120	
Tetrachloroethene	25.0	2.0	0.32	ug/l	25.0		100		75-125	
Toluene	25.4	2.0	0.36	ug/l	25.0		102		75-120	
1,1,1-Trichloroethane	24.2	2.0	0.30	ug/l	25.0		97		75-140	
1,1,2-Trichloroethane	25.0	2.0	0.30	ug/l	25.0		100		70-125	
Trichloroethene	26.6	5.0	0.26	ug/l	25.0		106		80-120	
Trichlorofluoromethane	23.0	5.0	0.34	ug/l	25.0		92		65-145	
Vinyl chloride	22.8	5.0	0.26	ug/l	25.0		91		50-130	
Surrogate: Dibromofluoromethane	24.9			ug/l	25.0		100		80-120	

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MWH-Pasadena/Boeing 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Attention: Bronwyn Kelly	Project ID: Routine Outfall 002 Report Number: IOC2062	Sampled: 03/25/05 Received: 03/25/05
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METHOD BLANK/QC DATA

PURGEABLES BY GC/MS (EPA 624)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
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Batch: 5C27002 Extracted: 03/27/05

LCS Analyzed: 03/27/2005 (5C27002-BS1)

Surrogate: Toluene-d8	27.4			ug/l	25.0		110	80-120			
Surrogate: 4-Bromofluorobenzene	24.7			ug/l	25.0		99	80-120			

Matrix Spike Analyzed: 03/27/2005 (5C27002-MS1)

Source: IOC1925-01

Benzene	55.8	4.0	0.56	ug/l	50.0	ND	112	70-120			
Carbon tetrachloride	57.6	10	0.56	ug/l	50.0	ND	115	70-145			
Chloroform	211	4.0	0.66	ug/l	50.0	160	102	70-135			
1,1-Dichloroethane	52.7	4.0	0.54	ug/l	50.0	ND	105	65-135			
1,2-Dichloroethane	61.5	4.0	0.56	ug/l	50.0	ND	123	60-150			
1,1-Dichloroethene	50.4	6.0	0.64	ug/l	50.0	ND	101	65-140			
Ethylbenzene	58.1	4.0	0.50	ug/l	50.0	ND	116	70-130			
Tetrachloroethene	55.2	4.0	0.64	ug/l	50.0	ND	110	70-130			
Toluene	57.5	4.0	0.72	ug/l	50.0	ND	115	70-120			
1,1,1-Trichloroethane	55.3	4.0	0.60	ug/l	50.0	ND	111	75-140			
1,1,2-Trichloroethane	59.7	4.0	0.60	ug/l	50.0	ND	119	60-135			
Trichloroethene	56.6	10	0.52	ug/l	50.0	ND	113	70-125			
Trichlorofluoromethane	51.0	10	0.68	ug/l	50.0	ND	102	55-145			
Vinyl chloride	48.1	10	0.52	ug/l	50.0	ND	96	40-135			
Surrogate: Dibromofluoromethane	52.3			ug/l	50.0		105	80-120			
Surrogate: Toluene-d8	55.1			ug/l	50.0		110	80-120			
Surrogate: 4-Bromofluorobenzene	50.5			ug/l	50.0		101	80-120			

Matrix Spike Dup Analyzed: 03/27/2005 (5C27002-MSD1)

Source: IOC1925-01

Benzene	57.3	4.0	0.56	ug/l	50.0	ND	115	70-120	3	20	
Carbon tetrachloride	56.6	10	0.56	ug/l	50.0	ND	113	70-145	2	25	
Chloroform	208	4.0	0.66	ug/l	50.0	160	96	70-135	1	20	
1,1-Dichloroethane	52.2	4.0	0.54	ug/l	50.0	ND	104	65-135	1	20	
1,2-Dichloroethane	58.0	4.0	0.56	ug/l	50.0	ND	116	60-150	6	20	
1,1-Dichloroethene	51.1	6.0	0.64	ug/l	50.0	ND	102	65-140	1	20	
Ethylbenzene	58.3	4.0	0.50	ug/l	50.0	ND	117	70-130	0	20	
Tetrachloroethene	55.6	4.0	0.64	ug/l	50.0	ND	111	70-130	1	20	
Toluene	57.1	4.0	0.72	ug/l	50.0	ND	114	70-120	1	20	
1,1,1-Trichloroethane	54.8	4.0	0.60	ug/l	50.0	ND	110	75-140	1	20	
1,1,2-Trichloroethane	57.8	4.0	0.60	ug/l	50.0	ND	116	60-135	3	25	
Trichloroethene	56.7	10	0.52	ug/l	50.0	ND	113	70-125	0	20	
Trichlorofluoromethane	49.8	10	0.68	ug/l	50.0	ND	100	55-145	2	25	

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METHOD BLANK/QC DATA

PURGEABLES BY GC/MS (EPA 624)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5C27002 Extracted: 03/27/05											
Matrix Spike Dup Analyzed: 03/27/2005 (5C27002-MSD1)						Source: IOC1925-01					
Vinyl chloride	50.6	10	0.52	ug/l	50.0	ND	101	40-135	5	30	
Surrogate: Dibromofluoromethane	51.2			ug/l	50.0		102	80-120			
Surrogate: Toluene-d8	54.5			ug/l	50.0		109	80-120			
Surrogate: 4-Bromofluorobenzene	49.1			ug/l	50.0		98	80-120			

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MWH-Pasadena/Boeing 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Attention: Bronwyn Kelly	Project ID: Routine Outfall 002 Report Number: IOC2062	Sampled: 03/25/05 Received: 03/25/05
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METHOD BLANK/QC DATA

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

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	RPD RPD	RPD Limit	Data Qualifiers
Batch: 5C28041 Extracted: 03/28/05										
Blank Analyzed: 03/31/2005 (5C28041-BLK1)										
Bis(2-ethylhexyl)phthalate	ND	5.0	1.1	ug/l						
2,4-Dinitrotoluene	ND	9.0	0.23	ug/l						
N-Nitrosodimethylamine	ND	8.0	0.22	ug/l						
Pentachlorophenol	ND	8.0	0.78	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	13.7			ug/l	20.0		68		35-120	
Surrogate: 2,4,6-Tribromophenol	16.5			ug/l	20.0		82		45-120	
Surrogate: Nitrobenzene-d5	6.94			ug/l	10.0		69		45-120	
Surrogate: 2-Fluorobiphenyl	7.28			ug/l	10.0		73		45-120	
Surrogate: Terphenyl-d14	8.40			ug/l	10.0		84		45-120	
LCS Analyzed: 03/31/2005 (5C28041-BS1)										
Bis(2-ethylhexyl)phthalate	9.16	5.0	1.1	ug/l	10.0		92		60-130	M-NRI
2,4-Dinitrotoluene	8.00	9.0	0.23	ug/l	10.0		80		60-120	J
N-Nitrosodimethylamine	7.40	8.0	0.22	ug/l	10.0		74		40-120	J
Pentachlorophenol	8.86	8.0	0.78	ug/l	10.0		89		50-120	
2,4,6-Trichlorophenol	8.76	6.0	0.10	ug/l	10.0		88		60-120	
Surrogate: 2-Fluorophenol	13.3			ug/l	20.0		66		30-120	
Surrogate: Phenol-d6	13.1			ug/l	20.0		66		35-120	
Surrogate: 2,4,6-Tribromophenol	16.0			ug/l	20.0		80		45-120	
Surrogate: Nitrobenzene-d5	6.70			ug/l	10.0		67		45-120	
Surrogate: 2-Fluorobiphenyl	7.58			ug/l	10.0		76		45-120	
Surrogate: Terphenyl-d14	8.10			ug/l	10.0		81		45-120	
LCS Dup Analyzed: 03/31/2005 (5C28041-BSD1)										
Bis(2-ethylhexyl)phthalate	9.30	5.0	1.1	ug/l	10.0		93	2	60-130	20
2,4-Dinitrotoluene	8.46	9.0	0.23	ug/l	10.0		85	6	60-120	20 J
N-Nitrosodimethylamine	7.56	8.0	0.22	ug/l	10.0		76	2	40-120	20 J
Pentachlorophenol	9.04	8.0	0.78	ug/l	10.0		90	2	50-120	25
2,4,6-Trichlorophenol	9.06	6.0	0.10	ug/l	10.0		91	3	60-120	20
Surrogate: 2-Fluorophenol	13.5			ug/l	20.0		68		30-120	
Surrogate: Phenol-d6	13.7			ug/l	20.0		68		35-120	
Surrogate: 2,4,6-Tribromophenol	16.7			ug/l	20.0		84		45-120	
Surrogate: Nitrobenzene-d5	7.00			ug/l	10.0		70		45-120	
Surrogate: 2-Fluorobiphenyl	7.96			ug/l	10.0		80		45-120	

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METHOD BLANK/QC DATA

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

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5C28041 Extracted: 03/28/05											
LCS Dup Analyzed: 03/31/2005 (5C28041-BSD1)											
Surrogate: Terphenyl-d14	8.22			ug/l	10.0		82	45-120			

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METHOD BLANK/QC DATA

ORGANOCHLORINE PESTICIDES (EPA 608)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5C28048 Extracted: 03/28/05										
Blank Analyzed: 03/29/2005 (5C28048-BLK1)										
alpha-BHC	ND	0.010	0.0010	ug/l						
Surrogate: Decachlorobiphenyl	0.383			ug/l	0.500		77 45-120			
Surrogate: Tetrachloro-m-xylene	0.350			ug/l	0.500		70 35-115			
LCS Analyzed: 03/29/2005 (5C28048-BS1)										
alpha-BHC	0.372	0.010	0.0010	ug/l	0.500		74 45-115			M-NR1
Surrogate: Decachlorobiphenyl	0.372			ug/l	0.500		74 45-120			
Surrogate: Tetrachloro-m-xylene	0.337			ug/l	0.500		67 35-115			
LCS Dup Analyzed: 03/29/2005 (5C28048-BSD1)										
alpha-BHC	0.322	0.010	0.0010	ug/l	0.500		64 45-115	14	30	
Surrogate: Decachlorobiphenyl	0.344			ug/l	0.500		69 45-120			
Surrogate: Tetrachloro-m-xylene	0.289			ug/l	0.500		58 35-115			

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

Project ID: Routine Outfall 002

Report Number: IOC2062

Sampled: 03/25/05

Received: 03/25/05

METHOD BLANK/QC DATA

METALS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	RPD Limits	RPD RPD	Limit	Data Qualifiers
Batch: 5C25116 Extracted: 03/25/05											
Blank Analyzed: 03/28/2005 (5C25116-BLK1)											
Copper	ND	2.0	0.49	ug/l							
Lead	ND	1.0	0.13	ug/l							
LCS Analyzed: 03/28/2005 (5C25116-BS1)											
Copper	75.2	2.0	0.49	ug/l	80.0		94	85-115			
Lead	88.6	1.0	0.13	ug/l	80.0		111	85-115			
Matrix Spike Analyzed: 03/28/2005 (5C25116-MS1)											
						Source: IOC2062-01					
Copper	77.2	2.0	0.49	ug/l	80.0	3.0	93	70-130			
Lead	86.8	1.0	0.13	ug/l	80.0	0.55	108	70-130			
Matrix Spike Dup Analyzed: 03/28/2005 (5C25116-MSD1)											
						Source: IOC2062-01					
Copper	75.6	2.0	0.49	ug/l	80.0	3.0	91	70-130	2	20	
Lead	87.0	1.0	0.13	ug/l	80.0	0.55	108	70-130	0	20	
Batch: 5C26033 Extracted: 03/26/05											
Blank Analyzed: 03/26/2005 (5C26033-BLK1)											
Mercury	ND	0.20	0.063	ug/l							
LCS Analyzed: 03/26/2005 (5C26033-BS1)											
Mercury	8.12	0.20	0.063	ug/l	8.00		102	85-115			
Matrix Spike Analyzed: 03/26/2005 (5C26033-MS1)											
						Source: IOC2062-01					
Mercury	7.56	0.20	0.063	ug/l	8.00	ND	94	70-130			
Matrix Spike Dup Analyzed: 03/26/2005 (5C26033-MSD1)											
						Source: IOC2062-01					
Mercury	7.61	0.20	0.063	ug/l	8.00	ND	95	70-130	1	20	

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METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	RPD Limits	RPD RPD	Data Qualifiers
Batch: 5C25048 Extracted: 03/25/05										
Blank Analyzed: 03/25/2005 (5C25048-BLK1)										
Chloride	ND	0.50	0.26	mg/l						
Nitrate/Nitrite-N	ND	0.11	0.072	mg/l						
Sulfate	ND	0.50	0.18	mg/l						
LCS Analyzed: 03/25/2005 (5C25048-BS1)										
Chloride	4.97	0.50	0.26	mg/l	5.00		99	90-110		M-3
Sulfate	10.3	0.50	0.18	mg/l	10.0		103	90-110		M-3
Batch: 5C25061 Extracted: 03/25/05										
Blank Analyzed: 03/25/2005 (5C25061-BLK1)										
Perchlorate	ND	4.0	0.80	ug/l						
LCS Analyzed: 03/25/2005 (5C25061-BS1)										
Perchlorate	48.8	4.0	0.80	ug/l	50.0		98	85-115		
Matrix Spike Analyzed: 03/25/2005 (5C25061-MS1)										
Perchlorate	49.6	4.0	0.80	ug/l	50.0	1.2	97	80-120		
Matrix Spike Dup Analyzed: 03/25/2005 (5C25061-MSD1)										
Perchlorate	49.9	4.0	0.80	ug/l	50.0	1.2	97	80-120	1	20
Batch: 5C25093 Extracted: 03/25/05										
Blank Analyzed: 03/30/2005 (5C25093-BLK1)										
Biochemical Oxygen Demand	ND	2.0	0.59	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 002 Report Number: IOC2062	Sampled: 03/25/05 Received: 03/25/05
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METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5C25093 Extracted: 03/25/05											
LCS Analyzed: 03/30/2005 (5C25093-BS1)											
Biochemical Oxygen Demand	208	100	30	mg/l	198		105	85-115			
LCS Dup Analyzed: 03/30/2005 (5C25093-BSD1)											
Biochemical Oxygen Demand	208	100	30	mg/l	198		105	85-115	0	20	
Batch: 5C25096 Extracted: 03/25/05											
Blank Analyzed: 03/25/2005 (5C25096-BLK1)											
Surfactants (MBAS)	ND	0.10	0.044	mg/l							
LCS Analyzed: 03/25/2005 (5C25096-BS1)											
Surfactants (MBAS)	0.266	0.10	0.044	mg/l	0.250		106	90-110			
Matrix Spike Analyzed: 03/25/2005 (5C25096-MS1)											
Surfactants (MBAS)	0.245	0.10	0.044	mg/l	0.250	ND	98	50-125			
Matrix Spike Dup Analyzed: 03/25/2005 (5C25096-MSD1)											
Surfactants (MBAS)	0.260	0.10	0.044	mg/l	0.250	ND	104	50-125	6	20	
Batch: 5C25117 Extracted: 03/25/05											
Blank Analyzed: 03/25/2005 (5C25117-BLK1)											
Total Suspended Solids	ND	10	10	mg/l							
LCS Analyzed: 03/25/2005 (5C25117-BS1)											
Total Suspended Solids	949	10	10	mg/l	1000		95	85-115			

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

Project ID: Routine Outfall 002

Report Number: IOC2062

Sampled: 03/25/05

Received: 03/25/05

METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	RPD Limits	RPD RPD	RPD Limit	Data Qualifiers
Batch: 5C25117 Extracted: 03/25/05											
Duplicate Analyzed: 03/25/2005 (5C25117-DUP1)											
Total Suspended Solids	ND	10	10	mg/l		Source: IOC2063-01 ND				10	
Batch: 5C25119 Extracted: 03/25/05											
Blank Analyzed: 03/25/2005 (5C25119-BLK1)											
Total Cyanide	ND	5.0	2.2	ug/l							
LCS Analyzed: 03/25/2005 (5C25119-BS1)											
Total Cyanide	194	5.0	2.2	ug/l	200		97	90-110			
Matrix Spike Analyzed: 03/25/2005 (5C25119-MS1)											
Total Cyanide	191	5.0	2.2	ug/l	200	ND	96	70-115			
Matrix Spike Dup Analyzed: 03/25/2005 (5C25119-MSD1)											
Total Cyanide	195	5.0	2.2	ug/l	200	ND	98	70-115	2	15	
Batch: 5C26056 Extracted: 03/26/05											
Blank Analyzed: 03/26/2005 (5C26056-BLK1)											
Turbidity	0.0500	1.0	0.040	NTU							J
Duplicate Analyzed: 03/26/2005 (5C26056-DUP1)											
Turbidity	11.9	1.0	0.040	NTU		Source: IOC2062-01 12			1	20	
Batch: 5C28067 Extracted: 03/28/05											
Blank Analyzed: 03/28/2005 (5C28067-BLK1)											
Ammonia-N (Distilled)	ND	0.50	0.30	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 002 Report Number: IOC2062	Sampled: 03/25/05 Received: 03/25/05
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METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5C28067 Extracted: 03/28/05											
LCS Analyzed: 03/28/2005 (5C28067-BS1)											
Ammonia-N (Distilled)	9.80	0.50	0.30	mg/l	10.0		98	80-115			
Matrix Spike Analyzed: 03/28/2005 (5C28067-MS1)											
Ammonia-N (Distilled)	9.80	0.50	0.30	mg/l	10.0	ND	98	70-120			
Matrix Spike Dup Analyzed: 03/28/2005 (5C28067-MSD1)											
Ammonia-N (Distilled)	8.96	0.50	0.30	mg/l	10.0	ND	90	70-120	9	15	
Batch: 5C28069 Extracted: 03/28/05											
Blank Analyzed: 03/28/2005 (5C28069-BLK1)											
Oil & Grease	ND	5.0	0.94	mg/l							
LCS Analyzed: 03/28/2005 (5C28069-BS1)											
Oil & Grease	19.7	5.0	0.94	mg/l	20.0		98	65-120			M-NRI
LCS Dup Analyzed: 03/28/2005 (5C28069-BSD1)											
Oil & Grease	19.1	5.0	0.94	mg/l	20.0		96	65-120	3	20	
Batch: 5C28078 Extracted: 03/28/05											
Blank Analyzed: 03/28/2005 (5C28078-BLK1)											
Total Dissolved Solids	ND	10	10	mg/l							
LCS Analyzed: 03/28/2005 (5C28078-BS1)											
Total Dissolved Solids	956	10	10	mg/l	1000		96	90-110			

Del Mar Analytical, Irvine
 Michele Harper
 Project Manager



MWH-Pasadena/Boeing 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Attention: Bronwyn Kelly	Project ID: Routine Outfall 002 Report Number: IOC2062	Sampled: 03/25/05 Received: 03/25/05
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METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	RPD RPD	RPD Limit	Data Qualifiers
Batch: 5C28078 Extracted: 03/28/05										
Duplicate Analyzed: 03/28/2005 (5C28078-DUP1)										
Total Dissolved Solids	288	10	10	mg/l		Source: IOC1740-01 280		3	10	
Batch: 5C28081 Extracted: 03/28/05										
Duplicate Analyzed: 03/28/2005 (5C28081-DUP1)										
Specific Conductance	507	1.0	1.0	umhos/cm		Source: IOC1740-01 500		1	5	

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MWH-Pasadena/Boeing 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Attention: Bronwyn Kelly	Project ID: Routine Outfall 002 Report Number: IOC2062	Sampled: 03/25/05 Received: 03/25/05
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Compliance Check

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

LabNumber	Analysis	Analyte	Units	Result	MRL	Compliance Limit
IOC2062-01	608-Pest Boeing 001/002 Q (LL)	alpha-BHC	ug/l	0	0.010	0.0100
IOC2062-01	624-Boeing 001/002 Q (Fr113+X)	1,1-Dichloroethene	ug/l	0	3.0	3.20
IOC2062-01	624-Boeing 001/002 Q (Fr113+X)	Trichloroethene	ug/l	1.10	5.0	5.00
IOC2062-01	625-Boeing 001/002 Q-LL	2,4,6-Trichlorophenol	ug/l	0	6.0	6.50
IOC2062-01	625-Boeing 001/002 Q-LL	2,4-Dinitrotoluene	ug/l	0	9.0	9.10
IOC2062-01	625-Boeing 001/002 Q-LL	Bis(2-ethylhexyl)phthalate	ug/l	0.88	5.0	4.00
IOC2062-01	625-Boeing 001/002 Q-LL	N-Nitrosodimethylamine	ug/l	0	8.0	8.10
IOC2062-01	625-Boeing 001/002 Q-LL	Pentachlorophenol	ug/l	0	8.0	8.20
IOC2062-01	BOD	Biochemical Oxygen Demand	mg/l	1.90	2.0	20
IOC2062-01	Chloride - 300.0	Chloride	mg/l	22	0.50	150
IOC2062-01	Copper-200.8	Copper	ug/l	3.00	2.0	7.10
IOC2062-01	Cyanide-335.2 5ppb	Total Cyanide	ug/l	-6	5.0	4.30
IOC2062-01	Lead-200.8	Lead	ug/l	0.55	1.0	2.60
IOC2062-01	MBAS - SM5540-C	Surfactants (MBAS)	mg/l	0.021	0.10	0.50
IOC2062-01	Mercury - 245.1	Mercury	ug/l	0.013	0.20	0.20
IOC2062-01	Nitrogen, NO3+NO2 -N	Nitrate/Nitrite-N	mg/l	0.14	0.11	8.00
IOC2062-01	Perchlorate 314.0	Perchlorate	ug/l	0	4.0	6.00
IOC2062-01	Sulfate-300.0	Sulfate	mg/l	73	1.0	300
IOC2062-01	TDS - SM 2540C	Total Dissolved Solids	mg/l	270	10	950
IOC2062-01RE1	413.1 Oil and Grease	Oil & Grease	mg/l	0	5.0	10.00
IOC2062-02	624-Boeing 001/002 Q (Fr113+X)	1,1-Dichloroethene	ug/l	0	3.0	3.20
IOC2062-02	624-Boeing 001/002 Q (Fr113+X)	Trichloroethene	ug/l	0	5.0	5.00

Del Mar Analytical, Irvine
 Michele Harper
 Project Manager



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

Project ID: Routine Outfall 002

Report Number: IOC2062

Sampled: 03/25/05
Received: 03/25/05

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 unknown quality.
- 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



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MWH-Pasadena/Boeing 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Attention: Bronwyn Kelly	Project ID: Routine Outfall 002 Report Number: IOC2062	Sampled: 03/25/05 Received: 03/25/05
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Certification Summary

Del Mar Analytical, Irvine

Method	Matrix	Nelac	California
EPA 120.1	Water	X	X
EPA 160.2	Water	X	X
EPA 160.5	Water	X	X
EPA 180.1	Water	X	X
EPA 200.8	Water	X	X
EPA 245.1	Water	X	X
EPA 300.0	Water	X	X
EPA 314.0	Water	X	X
EPA 335.2	Water	X	X
EPA 350.2	Water	X	X
EPA 405.1	Water	X	X
EPA 413.1	Water	X	X
EPA 608	Water	X	X
EPA 624	Water	X	X
EPA 625	Water	X	X
SM2540C	Water	X	X
SM5540-C	Water	X	X

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

Subcontracted Laboratories

Alta Analytical California Cert #1640

1104 Windfield Way - El Dorado Hills, CA 95762

Analysis Performed: 1613-Dioxin-HR
 Samples: IOC2062-01

Analysis Performed: EDD + Level 4
 Samples: IOC2062-01

Del Mar Analytical, Irvine
 Michele Harper
 Project Manager

I002062

CHAIN OF CUSTODY FORM

Del Mar Analytical Version 02/17/05

Client Name/Address:		Project:		ANALYSIS REQUIRED												Field readings:					
MVH-Pasadena 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101		Boeing-SSFL NPDES Routine Outfall 002														Temp = 57.7 pH = 7.1					
Project Manager: Bronwyn Kelly		Phone Number: (626) 568-6691														Comments					
Sampler: <i>Folbeck</i>		Fax Number: (626) 568-6515														24 TAT 24 TAT					
Sample Description	Sample Matrix	Container Type	# of Cont.	Sampling Date/Time	Preservative	Bottle #	Total Recoverable Metals: Cu, Pb, Hg	Settleable Solids	VOCs 624 + xylenes	TCDD (and all congeners)	Oil & Grease (EPA 413.1)	Cyanide (total recoverable)	BOD5(20 degrees C)	Surfactants (MBAS)	Cl, SO4, NO3+NO2-N, Perchlorate	Turbidity, TDS, TSS, Conductivity	Ammonia-N	Alpha BHC (606)	2,4,6 Trichlorophenol, 2,4 Dinitrofluorene, Bis(2- ethylhexoxy)phthalate, NDMA, perchlorophenol (EPA 635)		
Outfall 002	W	Poly-1 liter	1	3-25-05 15:15	HNO3	1A	X														
Outfall 002-Dup	W	Poly-1 liter	1		HNO3	1B	X														
Outfall 002	W	Poly-1 liter	1		None	2		X													
Outfall 002	W	VOAs	3		HCl	3A, 3B, 3C			X												
Outfall 002	W	Glass- Amber	2		None	4A, 4B				X											
Outfall 002	W	1L Amber	2		HCl	5A, 5B					X										
Outfall 002	W	Poly-500 ml	1		NaOH	6						X									
Outfall 002	W	Poly-1 liter	1		None	7							X								
Outfall 002	W	Poly-500 ml	2		None	8A, 8B								X							
Outfall 002	W	Poly-500 ml	2		None	9A, 9B									X						
Outfall 002	W	Poly-500 ml	2		None	10A, 10B										X					
Outfall 002	W	Poly-500 ml	1		H2SO4	11											X				
Outfall 002	W	1L Amber	2		None	12A, 12B															
Outfall 002	W	1L Amber	2		None	13A, 13B															
Trip Blank	W	VOAs	3		HCl	14A, 14B, 14C															
Relinquished By:	<i>[Signature]</i>	Date/Time:	3-25-05 15:15	Received By:	<i>[Signature]</i>	Date/Time:	3-25-05 15:15													Turn around Time: (check) 24 Hours _____ 5 Days _____ 48 Hours _____ 10 Days _____ 72 Hours _____ Normal _____ Perchlorate Only 72 Hours _____ Metals Only 72 Hours _____	
Relinquished By:	<i>[Signature]</i>	Date/Time:	3-25-05 (13:30)	Received By:	<i>[Signature]</i>	Date/Time:	3/25/05 18:30													Sample Integrity: (Check) Intact _____ On Ice: _____	
Relinquished By:	<i>[Signature]</i>	Date/Time:		Received By:	<i>[Signature]</i>	Date/Time:															



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April 1, 2005

MWH-Pasadena/Boeing
300 North Lake Avenue, Suite 1200
Pasadena, CA 91101

Attention: Bronwyn Kelly

Projects: Routine Outfall 002
Sampled: 03/25/05
Del Mar Analytical Number: IOC2062

Dear Ms. Kelly:

Alta Analytical Laboratory performed EPA Method 1613 by Dioxin analyses for the projects referenced above. Please use the following cross-reference table when reviewing your results.

MWH ID	DEL MAR ID	ALTA ID
Outfall 002	IOC2062-01	25969-001

Attached is the original report from the subcontract laboratory. If you have any questions or require further assistance, please do not hesitate to contact me.

Sincerely yours,
DEL MAR ANALYTICAL

Michele Harper
Project Manager



April 01, 2005

Alta Project I.D.: 25969

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

Dear Ms. Harper,

Enclosed are the results for the one aqueous sample received at Alta Analytical Laboratory on March 29, 2005 under your Project Name "IOC2062". This sample was extracted and analyzed using EPA Method 1613 for tetra-through-octa chlorinated dioxins and furans. A rush 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,

Martha M. Maier
Director of HRMS Services



Alta Analytical Laboratory certifies that the reports herein are a true and accurate representation of the data received by ALTA. ALTA does not assume any liability for the use of the data for purposes not intended by ALTA. The accuracy of the data is not guaranteed 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: 3/29/2005

Alta Lab. ID

Client Sample ID

25969-001

IOC2062-01

SECTION II



Method Blank		EPA Method 1613						
Matrix:	Aqueous	QC Batch No.:	6653	Lab Sample:	0-MB001			
Sample Size:	1.000 L	Date Extracted:	30-Mar-05	Date Analyzed DB-5:	31-Mar-05			
Date Analyzed DB-225:	NA			Date Analyzed DB-225:	NA			
Analyte	Conc. (ug/L)	DL ^a	EMPC ^b	Qualifiers	Labeled Standard	%R	LCL-UCL ^d	Qualifiers
2,3,7,8-TCDD	ND	0.000000554			IS 13C-2,3,7,8-TCDD	85.8	25 - 164	
1,2,3,7,8-PeCDD	ND	0.000000438			13C-1,2,3,7,8-PeCDD	89.3	25 - 181	
1,2,3,4,7,8-HxCDD	ND	0.000000693			13C-1,2,3,4,7,8-HxCDD	78.7	32 - 141	
1,2,3,6,7,8-HxCDD	ND	0.000000669			13C-1,2,3,6,7,8-HxCDD	92.3	28 - 130	
1,2,3,7,8,9-HxCDD	ND	0.000000673			13C-1,2,3,4,6,7,8-HpCDD	77.2	23 - 140	
1,2,3,4,6,7,8-HpCDD	ND	0.000000795			13C-OCDD	50.0	17 - 157	
OCDD	ND	0.00000232			13C-2,3,7,8-TCDF	91.1	24 - 169	
2,3,7,8-TCDF	ND	0.000000436			13C-1,2,3,7,8-PeCDF	89.9	24 - 185	
1,2,3,7,8-PeCDF	ND	0.000000695			13C-2,3,4,7,8-PeCDF	96.8	21 - 178	
2,3,4,7,8-PeCDF	ND	0.000000592			13C-1,2,3,4,7,8-HxCDF	77.8	26 - 152	
1,2,3,4,7,8-HxCDF	ND	0.000000264			13C-1,2,3,6,7,8-HxCDF	87.0	26 - 123	
1,2,3,6,7,8-HxCDF	ND	0.000000253			13C-2,3,4,6,7,8-HxCDF	84.8	28 - 136	
2,3,4,6,7,8-HxCDF	ND	0.000000263			13C-1,2,3,7,8,9-HxCDF	80.9	29 - 147	
1,2,3,7,8,9-HxCDF	ND	0.000000408			13C-1,2,3,4,6,7,8-HpCDF	72.1	28 - 143	
1,2,3,4,6,7,8-HpCDF	ND	0.000000381			13C-1,2,3,4,7,8,9-HpCDF	76.9	26 - 138	
1,2,3,4,7,8,9-HpCDF	ND	0.000000359			13C-OCDF	57.9	17 - 157	
OCDF	ND	0.00000147			CRS 37Cl-2,3,7,8-TCDD	90.5	35 - 197	
Totals								
Total TCDD	ND	0.000000554						
Total PeCDD	ND	0.000000438						
Total HxCDD	ND	0.000000677						
Total HpCDD	ND	0.000000795						
Total TCDF	ND	0.000000436						
Total PeCDF	ND	0.000000642						
Total HxCDF	ND	0.000000291						
Total HpCDF	ND	0.000000450						
Footnotes								
a. Sample specific estimated detection limit.								
b. Estimated maximum possible concentration.								
c. Method detection limit.								
d. Lower control limit - upper control limit.								

Analyst: RAS

Approved By: William J. Luksemburg 01-Apr-2005 14:54



EPA Method 1613

OPR Results		Lab Sample: 0-OPR001		Date Analyzed DB-5: 31-Mar-05		Date Analyzed DB-225: NA	
Matrix:	Aqueous	QC Batch No.:	6653	Date Analyzed DB-5:	31-Mar-05 <th>Date Analyzed DB-225:</th> <td>NA </td>	Date Analyzed DB-225:	NA
Sample Size:	1.000 L	Date Extracted:	30-Mar-05				
Analyte	Spike Conc.	Conc. (ng/mL)	OPR Limits	Labeled Standard	%R	LCL-UCL	
2,3,7,8-TCDD	10.0	10.9	6.7 - 15.8	<u>IS</u> 13C-2,3,7,8-TCDD	68.5	25 - 164	
1,2,3,7,8-PeCDD	50.0	53.3	35 - 71	13C-1,2,3,7,8-PeCDD	68.2	25 - 181	
1,2,3,4,7,8-HxCDD	50.0	52.0	35 - 82	13C-1,2,3,4,7,8-HxCDD	88.5	32 - 141	
1,2,3,6,7,8-HxCDD	50.0	53.5	38 - 67	13C-1,2,3,6,7,8-HxCDD	101	28 - 130	
1,2,3,7,8,9-HxCDD	50.0	41.0	32 - 81	13C-1,2,3,4,6,7,8-HpCDD	70.5	23 - 140	
1,2,3,4,6,7,8-HpCDD	50.0	52.7	35 - 70	13C-OCDD	38.0	17 - 157	
OCDD	100	111	78 - 144	13C-2,3,7,8-TCDF	75.2	24 - 169	
2,3,7,8-TCDF	10.0	10.4	7.5 - 15.8	13C-1,2,3,7,8-PeCDF	66.3	24 - 185	
1,2,3,7,8-PeCDF	50.0	50.2	40 - 67	13C-2,3,4,7,8-PeCDF	72.3	21 - 178	
2,3,4,7,8-PeCDF	50.0	50.4	34 - 80	13C-1,2,3,4,7,8-HxCDF	88.8	26 - 152	
1,2,3,4,7,8-HxCDF	50.0	49.9	36 - 67	13C-1,2,3,6,7,8-HxCDF	97.3	26 - 123	
1,2,3,6,7,8-HxCDF	50.0	50.1	42 - 65	13C-2,3,4,6,7,8-HxCDF	86.3	28 - 136	
2,3,4,6,7,8-HxCDF	50.0	50.5	35 - 78	13C-1,2,3,7,8,9-HxCDF	84.2	29 - 147	
1,2,3,7,8,9-HxCDF	50.0	49.3	39 - 65	13C-1,2,3,4,6,7,8-HpCDF	69.1	28 - 143	
1,2,3,4,6,7,8-HpCDF	50.0	50.3	41 - 61	13C-1,2,3,4,7,8,9-HpCDF	76.9	26 - 138	
1,2,3,4,7,8,9-HpCDF	50.0	48.9	39 - 69	13C-OCDF	49.3	17 - 157	
OCDF	100	99.5	63 - 170	<u>CRS</u> 37Cl-2,3,7,8-TCDD	74.7	35 - 197	

Analyst: RAS

Approved By:

William J. Luksemburg 01-Apr-2005 13:47



Sample ID: **IOC2062-01**

EPA Method 1613

Client Data

Name: Del Mar Analytical, Irvine
 Project: IOC2062
 Date Collected: 25-Mar-05
 Time Collected: 1231

Sample Data

Matrix: Aqueous
 Sample Size: 1.010 L

Laboratory Data

Lab Sample: 25969-001
 QC Batch No.: 6653
 Date Analyzed DB-5: 31-Mar-05
 Date Analyzed DB-225: NA
 Date Received: 29-Mar-05
 Date Extracted: 30-Mar-05

Analyte	Conc. (ug/L)	DL ^a	EMPC ^b	Qualifiers	Labeled Standard	%R	LCL-UCL ^d	Qualifiers
2,3,7,8-TCDD	ND	0.000000400			IS 13C-2,3,7,8-TCDD	81.8	25 - 164	
1,2,3,7,8-PeCDD	0.000000888			J	13C-1,2,3,7,8-PeCDD	85.0	25 - 181	
1,2,3,4,7,8-HxCDD	ND	0.000000856			13C-1,2,3,4,7,8-HxCDD	73.6	32 - 141	
1,2,3,6,7,8-HxCDD	0.00000134			J	13C-1,2,3,6,7,8-HxCDD	82.4	28 - 130	
1,2,3,7,8,9-HxCDD	ND	0.000000841			13C-1,2,3,4,6,7,8-HpCDD	69.2	23 - 140	
1,2,3,4,6,7,8-HpCDD	0.0000165			J	13C-OCDD	47.9	17 - 157	
OCDD	0.000184				13C-2,3,7,8-TCDF	85.0	24 - 169	
2,3,7,8-TCDF	ND	0.000000488			13C-1,2,3,7,8-PeCDF	84.6	24 - 185	
1,2,3,7,8-PeCDF	0.000000684			J	13C-2,3,4,7,8-PeCDF	89.9	21 - 178	
2,3,4,7,8-PeCDF	0.00000768			J	13C-1,2,3,4,7,8-HxCDF	76.3	26 - 152	
1,2,3,4,7,8-HxCDF	ND	0.000000461			13C-1,2,3,6,7,8-HxCDF	82.9	26 - 123	
1,2,3,6,7,8-HxCDF	ND	0.000000649			13C-2,3,4,6,7,8-HxCDF	81.1	28 - 136	
2,3,4,6,7,8-HxCDF	0.000000571			J	13C-1,2,3,7,8,9-HxCDF	79.4	29 - 147	
1,2,3,7,8,9-HxCDF	ND	0.000000307			13C-1,2,3,4,6,7,8-HpCDF	65.6	28 - 143	
1,2,3,4,6,7,8-HpCDF	0.00000266			J	13C-1,2,3,4,7,8,9-HpCDF	69.5	26 - 138	
1,2,3,4,7,8,9-HpCDF	ND	0.000000480			13C-OCDF	54.6	17 - 157	
OCDF	0.00000539			J	CRS 37Cl-2,3,7,8-TCDD	89.4	35 - 197	

Footnotes

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

Totals	Conc. (ug/L)	DL ^a	EMPC ^b	Qualifiers
Total TCDD	ND	0.000000400		
Total PeCDD	0.000000888			
Total HxCDD	0.00000515			
Total HpCDD	0.0000340			
Total TCDF	0.00000299			
Total PeCDF	0.00000207			
Total HxCDF	0.00000102		0.00000424	
Total HpCDF	0.00000266		0.00000569	

Analyst: RAS

Approved By: William J. Luksemburg 01-Apr-2005 14:54

APPENDIX

DATA QUALIFIERS & ABBREVIATIONS

B	This compound was also detected in the method blank.
D	The amount reported is the maximum possible concentration due to possible chlorinated diphenylether interference.
H	The signal-to-noise ratio is greater than 10:1.
I	Chemical Interference
J	The amount detected is below the Lower Calibration Limit of the instrument.
P	Homologue totals include any coplanar PCBs detected at concentrations less than the reporting limit.
*	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 correspond 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.

The control limits are “interim limits only” until in-house limits are utilized.



CURRENT CERTIFICATIONS

NELAP — (Primary AA: California, Certificate No. 02102CA)

Department of the Navy

U.S. Army Corps of Engineers

U.S. EPA Region 5

Bureau of Reclamation — Mid-Pacific Region — (MP-470, Res-1.10)

Commonwealth of Kentucky — (Certificate No. 90063)

Commonwealth of Virginia — (Certificate No. 00013)

State of Alaska, Department of Environmental Conservation — (Certificate No. OS-00197)

State of Arizona — (Certificate No. AZ0639)

State of Arkansas, Department of Health — (Approval granted through CA certification)

State of Arkansas, Department of Environmental Quality

State of California — (Certificate No. 1640)

State of Colorado

State of Connecticut — (Certificate No. PH-0182)

State of Florida — (Certificate No. 87456)

State of Louisiana, Department of Health and Hospitals — (Certificate No. LA000014)

State of Louisiana, Department of Environmental Quality

State of Maine

State of Michigan (Certificate No. 81178087)

State of Mississippi — (Approval granted through CA certification)

State of Nevada — (Certificate No. CA413)

State of New Jersey — (Certificate No. CA003)

State of New York, Department of Health — (Certificate No. 11411)

State of North Carolina — (Certification No. 06700)

State of North Dakota, Department of Health — (Certificate No. R-078)

State of New Mexico

State of Oklahoma — (D9919)

State of Oregon — (Certificate No. CA413)

State of Pennsylvania — (Certificate No. 68-490)

State of South Carolina — (Certificate No. 87002001)

State of Tennessee — (Certificate No. 02996)

State of Texas — (Certificate No. TX247-1000A)

State of Utah — (Certificate No. E-201)

State of Washington — (Certification No. C091)

State of Wisconsin — (Certificate No. 998036160)

State of Wyoming — (USEPA Region 8 Ref: 8TMS-Q)



17461 Derian Ave. Suite 100, Irvine, CA 92614 Ph (949) 261-1022 Fax (949) 261-1228
 1014 E. Cooley Dr., Suite A, Colton, CA 92324 Ph (909) 370-4867 Fax (909) 370-1046
 9484 Chesapeake Drive, Suite 805, San Diego, CA 92123 Ph (619) 505-9596 Fax (619) 505-9689
 9630 South 51st Street, Suite B-120, Phoenix, AZ 85044 Ph (480) 785-0043 Fax (480) 785-0851
 2520 E. Sunset Rd., Suite 83, Las Vegas, NV 89129 Ph (702) 798-3620 Fax (702) 798-3621

SUBCONTRACT ORDER - PROJECT # IOC2062

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 Harper	Alta Analytical 1104 Windfield Way El Dorado Hills, CA 95762 Phone: (916) 933-1640 Fax: (916) 933-0940 <div style="text-align: right; font-size: 1.2em; margin-top: 10px;"> 25969 0.4°C </div>

Standard TAT is requested unless specific due date is requested => Due Date: 5 DAY TAT Initials: _____

Analysis	Expiration	Comments
Sample ID: IOC2062-01 Water	Sampled: 03/25/05 12:31	Instant Notification
1613-Dioxin-HR	04/01/05 12:31	J flags, 17 congeners, no TEQ, sub to Alta
EDD + Level 4	04/22/05 12:31	Excel EDD email to pm, Include Std logs for Lvl IV
Containers Supplied:		
1 L Amber (IOC2062-01G)		
1 L Amber (IOC2062-01H)		

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

	3-28-05	1700		3/29/05	0915
Released By	Date	Time	Received By	Date	Time
Released By	Date	Time	Received By	Date	Time

STANDARD OPERATING PROCEDURE

Attachment 10.B.1

SAMPLE LOG-IN CHECKLIST

ALTA Project No.: 25969

1. Date Samples Arrived: <u>03/29/05 0915</u> Initials: <u>BSB</u> Location: <u>WR-2</u>			
2. Time / Date logged in: <u>1045 3/29/05</u> Initials: <u>BSB</u> Location: <u>WR-2</u>			
3. Samples Arrived By: (circle) <u>FedEx</u> UPS World Courier Other:			
4. Shipping Preservation: (circle) <u>Ice</u> Blue Ice / Dry Ice / None Temp °C <u>0.4°C</u>			
5. Shipping Container(s) Intact? If not, describe condition in comment section.	YES	NO	NA
6. Shipping Container(s) Custody Seals Present? Intact? If not intact, describe condition in comment section.	✓		
7. Shipping Documentation Present? (circle) Shipping Label <u>Airbill</u> Tracking Number <u>7904 7641 3782</u>	✓		
8. Sample Custody Seal(s) Present? No. of Seals _____ or Seal No. Intact? If not intact, describe condition in comment section.		✓	✓
9. Sample Container Intact? If no, indicate sample condition in comment section.	✓		
10. Chain of Custody (COC) or other Sample Documentation Present?	✓		
11. COC/Documentation Acceptable? If no, complete COC Anomaly Form.	✓		
12. Shipping Container (circle): ALTA <u>Client</u> Retain or <u>Return</u> or Disposed			
13. Container(s) and/or Bottle(s) Requested?		✓	
14. Drinking Water Sample? (HRMS Only) If yes, Acceptable Preservation? Y or N Preservation Info From? (circle) COC or Sample Container or None Noted			✓

Comments:

Sampler's initials found on sample label

ALTA Analytical Laboratory
El Dorado Hills, CA 95762

APPENDIX G

Section 29

March Outfall 003

AMEC Data Validation Reports

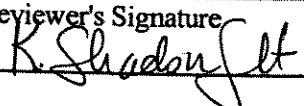
Del Mar Analytical Laboratory Reports

CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

AMEC Earth & Environmental
 550 South Wadsworth Boulevard
 Suite 500
 Lakewood, CO 80226

Package ID T711DF35
 Task Order 313150010
 SDG No. Multiple
 No. of Analyses 6

Laboratory Alta
 Reviewer K. Shadowlight
 Analysis/Method Dioxins

Date: March 23, 2005
 Reviewer's Signature


ACTION ITEMS*	
1. Case Narrative Deficiencies	
2. Out of Scope Analyses	
3. Analyses Not Conducted	
4. Missing Hardcopy Deliverables	
5. Incorrect Hardcopy Deliverables	
6. Deviations from Analysis Protocol, e.g., Holding Times GC/MS Tune/Inst. Performance Calibration Method blanks Surrogates Matrix Spike/Dup LCS Field QC Internal Standard Performance Compound Identification and Quantitation System Performance	Qualifications were assigned for the following: * EMPCs * Detects below the lower method calibration level
COMMENTS ^b	
* 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

ANALYSIS: DIOXINS/FURANS

SAMPLE DELIVERY GROUPS: Multiple SDGs

Prepared by

AMEC—Denver Operations
550 South Wadsworth Boulevard, Suite 500
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title: NPDES Monitoring
Contract Task Order #: 313150010
Sample Delivery Group #: Multiple
Project Manager: B. McIlvaine
Matrix: Water
Analysis: Dioxins/Furans
QC Level: Level IV
No. of Samples: 6
No. of Reanalyses/Dilutions: 0
Reviewer: K. Shadowlight
Date of Review: March 21, 2005

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

Table 1. Sample Identification

Client ID	Laboratory ID (Del Mar)	Laboratory ID (Alta)	Matrix	COC Method
Outfall 002	IOC0447-01	25853-001	water	1613
Outfall 003	IOC0449-01	25854-001	water	1613
Outfall 004	IOC0455-01	25855-001	water	1613
Outfall 005	IOC0451-01	25855-001	water	1613
Outfall 007	IOC0453-01	25856-001	water	1613
Outfall 011	IOC0448-01	25852-001	water	1613

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

Following are findings associated with sample management:

2.1.1 Sample Preservation, Handling, and Transport

All of the samples in these SDGs were received at Del Mar Analytical within the temperature limits of $4^{\circ}\text{C} \pm 2^{\circ}\text{C}$. The samples were shipped to Alta for dioxin/furan analyses and were received below the temperature limits at 1.3°C and 1.4°C ; however, as the samples were not noted to have been frozen or damaged, no qualifications were required. According to the laboratory login sheets, all samples were received intact and in good condition at both laboratories. No qualifications were required.

2.1.2 Chain of Custody

The COCs and transfer COCs were legible and signed by the appropriate field and laboratory personnel, and accounted for the analyses presented in these SDGs. As the samples were couriered directly to Del Mar Analytical, custody seals were not required. The coolers received by Alta had custody seals present and intact; however, custody seals were not present on the sample containers. The EPA 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 a year of collection. No qualifications were required.

2.2 INSTRUMENT PERFORMANCE

Following are findings associated with instrument performance:

2.2.1 GC Column Performance

A Windows Defining Mix (WDM) containing the first and last eluting congeners of each descriptor and isomer specificity compounds was not analyzed prior to the initial calibration sequence or at the beginning of each analytical sequence; however, the first and last eluting congeners and isomer specificity compounds were added to the midpoint of the initial calibration and to the continuing calibration standards (see section 2.3.2). The GC column performance in the calibrations was acceptable, with the height of the valley between the closely eluting isomers and 2,3,7,8-TCDD reported as less than 25%. No qualifications were required.

2.2.2 Mass Spectrometer Performance

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

2.3 CALIBRATION

2.3.1 Initial Calibration

There was one initial calibration, analyzed 08/30/04. The calibration consisted of six concentration level standards (CS0 through CS5) analyzed to verify instrument linearity. The initial calibration was acceptable with %RSDs $\leq 20\%$ for the 15 native compounds (calibration by isotope dilution) and $\leq 35\%$ for the two 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 VERs were acceptable with the concentrations within the acceptance criteria listed in Table 6 of EPA Method 1613. The ion abundance ratios and relative retention times were within the method QC limits. 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 standards 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 (6593-MB001) was extracted and analyzed with the samples in these SDGs. Total TCDF was reported at 1.4 pg/L and target compound 1,2,3,6,7,8-HxCDF was reported as an EMPC. The results for total TCDF in samples Outfall 003 and Outfall 011 were qualified as estimated nondetects "UJ," at the levels of interference. A review of the method blank raw data and chromatograms indicated no false negatives or false positives. No further qualifications were required.

2.5 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

One Ongoing Precision Recovery (OPR) sample (6593-OPR001) was extracted and analyzed with the samples in these SDGs. All recoveries were within the acceptance criteria listed in Table 6 of Method 1613. No qualifications were required.

2.6 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

MS/MSD analyses were not performed in these SDGs. 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 samples in these SDGs had no associated field QC samples. No qualifications were required.

2.7.2 Field Duplicates

No field duplicate samples were identified for these SDGs.

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. Any reported EMPC was qualified as an estimated nondetect, "UJ." Any detects below the lower method calibration level (MCL) were qualified as estimated, "J." The result for total TCDF in sample Outfall 003 was flagged by the laboratory with a "D" qualifier which indicated possible diphenylether interference; however, the result was qualified as a nondetect due to method blank contamination and no qualifications were required. No further qualifications were required.

Sample ID: **IOC0449-01** *21H fell 003* **EPA Method 1613**

Client Data
 Name: Del Mar Analytical, Irvine
 Project: IOC0449
 Date Collected: 4-Mar-05
 Time Collected: 0925

Sample Data
 Matrix: Aqueous
 Sample Size: 0.934 L

Laboratory Data
 Lab Sample: 25854-001
 QC Batch No.: 6593
 Date Analyzed DB-5: 15-Mar-05
 Date Analyzed DB-225: NA
 Date Received: 8-Mar-05
 Date Extracted: 11-Mar-05

Analyte	Conc. (pg/L)	DL ^a	EMPC ^b	Qualifiers	Labeled Standard	%R	LCL-UC ^d	Qualifiers
2,3,7,8-TCDD	ND	1.03			13C-2,3,7,8-TCDD	63.6	25 - 164	
1,2,3,7,8-PeCDD	ND	0.747			13C-1,2,3,7,8-PeCDD	59.5	25 - 181	
1,2,3,4,7,8-HxCDD	ND	1.62			13C-1,2,3,4,7,8-HxCDD	60.9	32 - 141	
1,2,3,6,7,8-HxCDD	ND	1.73			13C-1,2,3,6,7,8-HxCDD	66.0	28 - 130	
1,2,3,7,8,9-HxCDD	ND	1.67			13C-1,2,3,4,6,7,8-HpCDD	58.9	23 - 140	
1,2,3,4,6,7,8-HpCDD	ND		1.22		13C-OCDD	34.8	17 - 157	
OCDD	13.7			J	13C-2,3,7,8-TCDF	66.7	24 - 169	
2,3,7,8-TCDF	ND	0.833			13C-1,2,3,7,8-PeCDF	54.3	24 - 185	
1,2,3,7,8-PeCDF	ND	1.41			13C-2,3,4,7,8-PeCDF	56.1	21 - 178	
2,3,4,7,8-PeCDF	ND	1.27			13C-1,2,3,4,7,8-HxCDF	53.4	26 - 152	
1,2,3,4,7,8-HxCDF	ND	0.459			13C-1,2,3,6,7,8-HxCDF	57.9	26 - 123	
1,2,3,6,7,8-HxCDF	ND	0.470			13C-2,3,4,6,7,8-HxCDF	59.5	28 - 136	
2,3,4,6,7,8-HxCDF	ND	0.501			13C-1,2,3,7,8,9-HxCDF	60.4	29 - 147	
1,2,3,7,8,9-HxCDF	ND	0.743			13C-1,2,3,4,6,7,8-HpCDF	52.9	28 - 143	
1,2,3,4,6,7,8-HpCDF	ND	0.856			13C-1,2,3,4,7,8,9-HpCDF	58.4	26 - 138	
1,2,3,4,7,8,9-HpCDF	ND	0.953			13C-OCDF	41.7	17 - 157	
OCDF	ND	3.40			CRS 37Cl-2,3,7,8-TCDD	77.0	35 - 197	

Totals

Total TCDD	ND	1.03						
Total PeCDD	ND	0.747						
Total HxCDD	ND	1.67						
Total HpCDD	2.22		3.44					
Total TCDF	3.05							
Total PeCDF	ND	1.34		B,D				
Total HxCDF	ND	0.534						
Total HpCDF	ND	0.898						

Footnotes

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

Analyst: **JMH**
pm 4/14/05
sw 1

Approved By: **Martha M. Maier**
 16-Mar-2005 13:17

REVISED

Project 25854



DATA VALIDATION REPORT

NPDES Monitoring

ANALYSIS: METALS

SAMPLE DELIVERY GROUPS: IOC0449, IOC0450, IOC0451,
IOC0452 & IOC0453

Prepared by

AMEC—Denver Operations
550 South Wadsworth Boulevard, Suite 500
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title: NPDES Monitoring
Contract Task Order #: 313150010
SDG#: IOC0449, IOC0450, IOC0451, IOC0452 & IOC0453
Project Manager: B. McIlvaine
Matrix: Water
Analysis: Metals
QC Level: Level IV
No. of Samples: 5
No. of Reanalyses/Dilutions: 0
Reviewer: P. Meeks
Date of Review: March 29, 2005

The samples listed in Table 1 were validated based on the guidelines outlined in the *AMEC Data Validation Procedure for Levels III and IV ICP-MS Metals, (DVP-5-A, Rev.0)*, *AMEC Data Validation Procedure for Levels III and IV ICP Metals (DVP-5, Rev. 0)*, *SW-846 Method 6020B for Inductively Coupled Plasma – Mass Spectrometry*, and validation guidelines outlined in the *USEPA CLP National Functional Guidelines for Inorganic Data Review (2/94)*. Any deviations from these procedures and guidelines are documented herein. Qualifiers were applied in cases where the data did not meet the required QC criteria or where special consideration by the data user is required. Data qualifiers were placed on Form Is with the associated qualification codes. Analytes that were rejected for any reason are denoted on the Form I as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

Table 1. Sample identification

Client ID	EPA ID	Laboratory ID	Matrix	COC Method
Outfall 003	Outfall 003	IOC0449-01	water	ILM04
Outfall 004	Outfall 004	IOC0450-01	water	ILM04
Outfall 005	Outfall 005	IOC0451-01	water	ILM04
Outfall 006	Outfall 006	IOC0452-01	water	ILM04
Outfall 007	Outfall 007	IOC0453-01	water	ILM04

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

Following are findings associated with sample management:

2.1.1 Sample Preservation, Handling, and Transport

The samples in these SDGs were received at the laboratory within the temperature limits of $4^{\circ}\text{C} \pm 2^{\circ}\text{C}$. No sample preservation, handling, or transport problems were noted, and no qualifications were necessary.

2.1.2 Chain of Custody

The COCs were signed and dated by field and laboratory personnel. The COCs accounted for the samples and analyses presented in these SDGs. Duplicate samples were submitted for all the samples in these SDGs; however, duplicate analyses were not required. No sample qualifications were required.

2.1.3 Holding Times

The dates of collection recorded on the COCs 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. No qualifications were required.

2.2 ICP-MS TUNING

A precalibration routine must be completed prior to calibrating the instrument, which consists of analyzing a tuning solution to verify resolution, mass calibration, and thermal stability. The solution must be analyzed a minimum of five times and must contain isotopes representing all mass regions of interest. All %RSDs were less than 5%. The mass calibrations were within 0.1 amu of the true mass and the instrument resolutions were less than 0.75 amu at 5 percent peak height for all analytes in the tune solution. No site sample qualifications were required.

2.3 CALIBRATION

The ICV and CCV results showed acceptable recoveries, 90-110% for ICP/MS metals. The reporting limit check standards were recovered within the AMEC control limits of 70-130%. No sample qualifications were required.

2.4 BLANKS

Lead was not detected in any of the blanks associated with these SDGs. No qualifications were required due to the method and calibration blank results.

2.5 ICP INTERFERENCE CHECK SAMPLE (ICS A/AB)

ICSA and ICSAB standards were not analyzed in association with the samples in this SDG; therefore, no assessment can be made with respect to this criterion.

2.6 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

The ICP/MS LCS sample was identified as 5C08106-BS1 and the LCS result on the summary forms and in the raw data was within the laboratory-established ICP/MS control limits of 85-115%. No qualifications were required.

2.7 LABORATORY DUPLICATES

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

2.8 MATRIX SPIKE

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

2.9 FURNACE ATOMIC ABSORPTION QC

Furnace atomic absorption was not utilized for the analysis of these samples; therefore, furnace atomic absorption QC is not applicable.

2.10 ICP/MS AND ICP SERIAL DILUTION

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

2.11 INTERNAL STANDARDS PERFORMANCE

The ICP-MS internal standard recoveries for the site samples and associated QC sample analyses were within the 60-125% control limits and no qualifications were required.

2.12 SAMPLE RESULT VERIFICATION

A Level IV review was performed for the samples in these data packages. Calculations were verified, and the sample results reported on the Form Is were verified against the raw data. No transcription errors or calculation errors were noted. Lead detected below the reporting limit was qualified as estimated, "J." No further qualifications were required.

2.13 FIELD QC SAMPLES

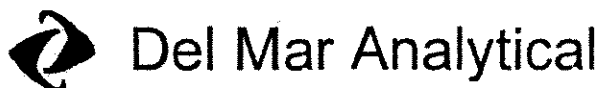
Field QC samples are evaluated, and if necessary, qualified based only on laboratory blanks. Any remaining detects are used to evaluate the associated samples.

2.13.1 Field Blanks and Equipment Rinsates

The samples in these SDGs had no associated field QC samples. No qualifications were required.

2.13.2 Field Duplicates

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



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MWH-Pasadena/Boeing 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Attention: Bronwyn Kelly	Project ID: Routine Outfall 003 Routine Outfall 003 Report Number: IOC0449	Sampled: 03/04/05 Received: 03/04/05
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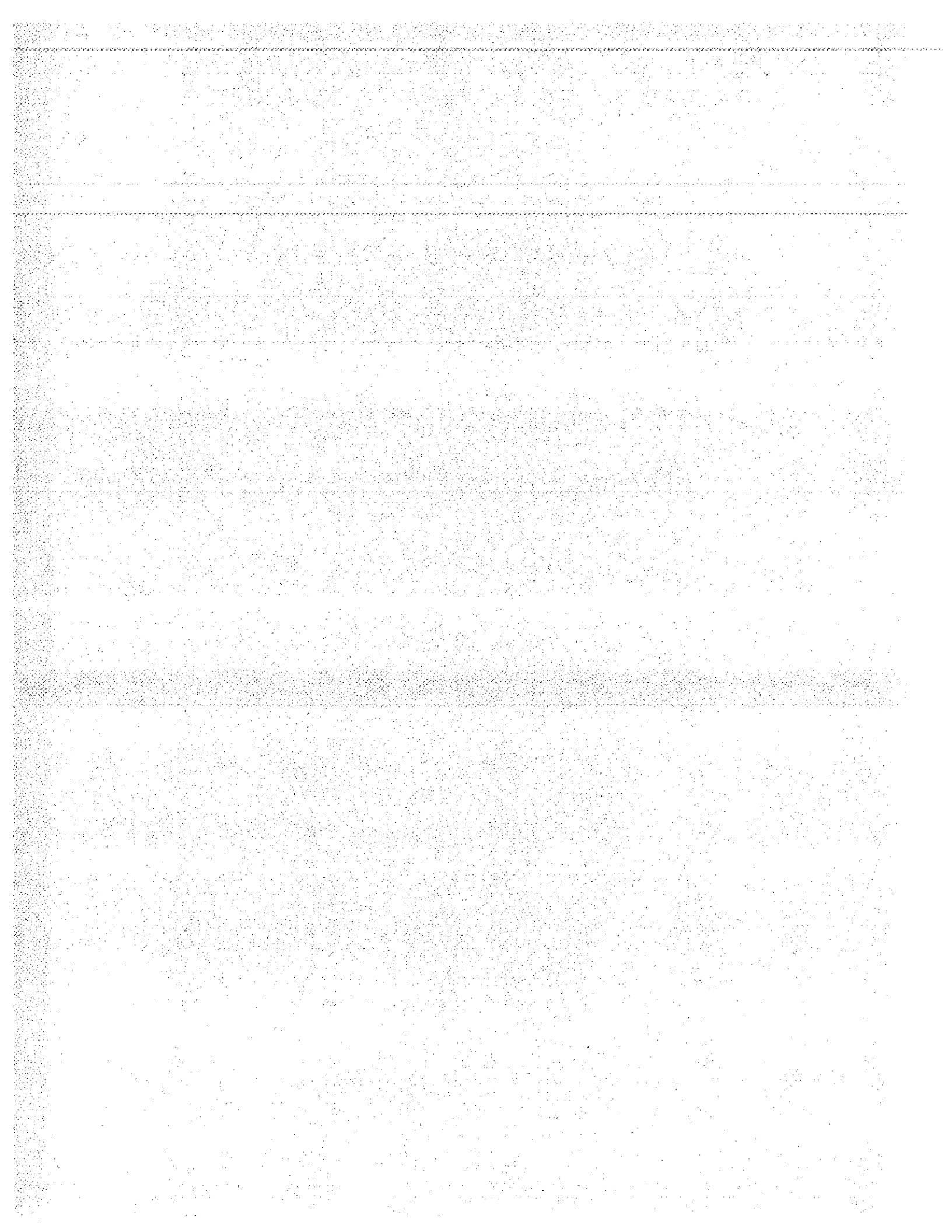
DRAFT: METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers				
Sample ID: IOC0449-01 (DRAFT: Outfall 003 - Water)													
Reporting Units: ug/l													
Lead	EPA 200.8	5C08106	0.13	1.0	0.13	1	03/08/05	03/09/05	<table border="1"> <tr> <td>Riv Qual</td> <td>Qual Code</td> </tr> <tr> <td>J 1</td> <td>DNQ</td> </tr> </table>	Riv Qual	Qual Code	J 1	DNQ
Riv Qual	Qual Code												
J 1	DNQ												

AMEC VALIDATED

[Faint, illegible text]

**DRAFT REPORT
 DRAFT REPORT
 DATA SUBJECT TO CHANGE**





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LABORATORY REPORT

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

Project: Routine Outfall 003

Sampled: 03/04/05
 Received: 03/04/05
 Issued: 03/25/05 11:12

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
 IOC0449-01

CLIENT ID
 Outfall 003

MATRIX
 Water

Reviewed By:

Del Mar Analytical, Irvine
 Wendy Kirkeeng For Michele Harper
 Project Manager



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

Project ID: Routine Outfall 003

Report Number: IOC0449

Sampled: 03/04/05

Received: 03/04/05

METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOC0449-01 (Outfall 003 - Water)									
Reporting Units: ug/l									
Antimony	EPA 200.8	5C08106	0.18	2.0	ND	1	03/08/05	03/09/05	
Cadmium	EPA 200.8	5C08106	0.015	1.0	0.067	1	03/08/05	03/09/05	J
Copper	EPA 200.8	5C08106	0.49	2.0	3.0	1	03/08/05	03/09/05	
Lead	EPA 200.8	5C08106	0.13	1.0	0.13	1	03/08/05	03/09/05	J
Mercury	EPA 245.1	5C09049	0.063	0.20	ND	1	03/09/05	03/09/05	

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 Project Manager

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 Pasadena, CA 91101
 Attention: Bronwyn Kelly

Project ID: Routine Outfall 003

Report Number: IOC0449

Sampled: 03/04/05

Received: 03/04/05

INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOC0449-01 (Outfall 003 - Water) - cont.									
Reporting Units: mg/l									
Chloride	EPA 300.0	5C04107	0.26	0.50	15	1	03/04/05	03/05/05	
Nitrate/Nitrite-N	EPA 300.0	5C04107	0.11	0.11	0.70	1	03/04/05	03/05/05	
Oil & Grease	EPA 413.1	5C09091	0.94	5.0	1.2	1	03/09/05	03/09/05	B, J
Sulfate	EPA 300.0	5C04107	0.90	2.5	130	5	03/04/05	03/05/05	
Total Dissolved Solids	SM2540C	5C08110	10	10	480	1	03/08/05	03/08/05	
Total Suspended Solids	EPA 160.2	5C07073	10	10	ND	1	03/07/05	03/07/05	

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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: IOC0449	Sampled: 03/04/05 Received: 03/04/05
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SHORT HOLD TIME DETAIL REPORT

Sample ID: Outfall 003 (IOC0449-01) - Water EPA 300.0	Hold Time (in days)	Date/Time Sampled	Date/Time Received	Date/Time Extracted	Date/Time Analyzed
	2	03/04/2005 09:25	03/04/2005 17:50	03/04/2005 23:00	03/05/2005 00:50

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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: IOC0449

Sampled: 03/04/05
 Received: 03/04/05

METHOD BLANK/QC DATA

METALS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	Limits	RPD	RPD Limit	Data Qualifiers
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Batch: 5C08106 Extracted: 03/08/05

Blank Analyzed: 03/09/2005 (5C08106-BLK1)

Antimony	ND	2.0	0.18	ug/l							
Cadmium	ND	1.0	0.015	ug/l							
Copper	ND	2.0	0.49	ug/l							
Lead	ND	1.0	0.13	ug/l							

LCS Analyzed: 03/09/2005 (5C08106-BS1)

Antimony	90.7	2.0	0.18	ug/l	80.0		113	85-115			
Cadmium	86.3	1.0	0.015	ug/l	80.0		108	85-115			
Copper	78.1	2.0	0.49	ug/l	80.0		98	85-115			
Lead	84.0	1.0	0.13	ug/l	80.0		105	85-115			

Matrix Spike Analyzed: 03/09/2005 (5C08106-MS1)

Source: IOC0448-01

Antimony	92.4	2.0	0.18	ug/l	80.0	0.37	115	70-130			
Cadmium	81.1	1.0	0.015	ug/l	80.0	0.086	101	70-130			
Copper	79.4	2.0	0.49	ug/l	80.0	3.0	96	70-130			
Lead	79.6	1.0	0.13	ug/l	80.0	0.19	99	70-130			

Matrix Spike Dup Analyzed: 03/09/2005 (5C08106-MSD1)

Source: IOC0448-01

Antimony	91.3	2.0	0.18	ug/l	80.0	0.37	114	70-130	1	20	
Cadmium	80.9	1.0	0.015	ug/l	80.0	0.086	101	70-130	0	20	
Copper	78.7	2.0	0.49	ug/l	80.0	3.0	95	70-130	1	20	
Lead	78.6	1.0	0.13	ug/l	80.0	0.19	98	70-130	1	20	

Batch: 5C09049 Extracted: 03/09/05

Blank Analyzed: 03/09/2005 (5C09049-BLK1)

Mercury	ND	0.20	0.063	ug/l							
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 Attention: Bronwyn Kelly

Project ID: Routine Outfall 003

Report Number: IOC0449

Sampled: 03/04/05

Received: 03/04/05

METHOD BLANK/QC DATA

METALS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5C09049 Extracted: 03/09/05											
LCS Analyzed: 03/09/2005 (5C09049-BS1)											
Mercury	7.82	0.20	0.063	ug/l	8.00		98	85-115			
Matrix Spike Analyzed: 03/09/2005 (5C09049-MS1) Source: IOC0451-01											
Mercury	8.31	0.20	0.063	ug/l	8.00	ND	104	70-130			
Matrix Spike Dup Analyzed: 03/09/2005 (5C09049-MSD1) Source: IOC0451-01											
Mercury	8.23	0.20	0.063	ug/l	8.00	ND	103	70-130	1	20	

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 Attention: Bronwyn Kelly

Project ID: Routine Outfall 003

Report Number: IOC0449

Sampled: 03/04/05

Received: 03/04/05

METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5C04107 Extracted: 03/04/05											
Blank Analyzed: 03/04/2005 (5C04107-BLK1)											
Chloride	ND	0.50	0.26	mg/l							
Nitrate/Nitrite-N	ND	0.11	0.11	mg/l							
Sulfate	ND	0.50	0.18	mg/l							
LCS Analyzed: 03/04/2005 (5C04107-BS1)											
Chloride	5.16	0.50	0.26	mg/l	5.00		103	90-110			M-3
Sulfate	10.4	0.50	0.18	mg/l	10.0		104	90-110			M-3
Batch: 5C07073 Extracted: 03/07/05											
Blank Analyzed: 03/07/2005 (5C07073-BLK1)											
Total Suspended Solids	ND	10	10	mg/l							
LCS Analyzed: 03/07/2005 (5C07073-BS1)											
Total Suspended Solids	980	10	10	mg/l	1000		98	85-115			
Duplicate Analyzed: 03/07/2005 (5C07073-DUP1)											
Total Suspended Solids	ND	10	10	mg/l		Source: IOC0451-01				10	
Batch: 5C08110 Extracted: 03/08/05											
Blank Analyzed: 03/08/2005 (5C08110-BLK1)											
Total Dissolved Solids	ND	10	10	mg/l							
LCS Analyzed: 03/08/2005 (5C08110-BS1)											
Total Dissolved Solids	976	10	10	mg/l	1000		98	90-110			

Del Mar Analytical, Irvine
 Wendy Kirkeeng For Michele Harper
 Project Manager

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MWH-Pasadena/Boeing 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Attention: Bronwyn Kelly	Project ID: Routine Outfall 003 Report Number: IOC0449	Sampled: 03/04/05 Received: 03/04/05
--	---	---

METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5C08110 Extracted: 03/08/05											
Duplicate Analyzed: 03/08/2005 (5C08110-DUP1)						Source: IOC0454-01					
Total Dissolved Solids	187	10	10	mg/l		180			4	10	
Batch: 5C09091 Extracted: 03/09/05											
Blank Analyzed: 03/09/2005 (5C09091-BLK1)											
Oil & Grease	1.70	5.0	0.94	mg/l							J
LCS Analyzed: 03/09/2005 (5C09091-BS1)											
Oil & Grease	22.4	5.0	0.94	mg/l	20.0		112	65-120			M-NR1
LCS Dup Analyzed: 03/09/2005 (5C09091-BSD1)											
Oil & Grease	18.8	5.0	0.94	mg/l	20.0		94	65-120	17	20	

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 Wendy Kirkeeng For Michele Harper
 Project Manager

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 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 003 Report Number: IOC0449	Sampled: 03/04/05 Received: 03/04/05
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Compliance Check

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

LabNumber	Analysis	Analyte	Units	Result	MRL	Compliance Limit
IOC0449-01	413.1 Oil and Grease	Oil & Grease	mg/l	1.20	5.0	15
IOC0449-01	Antimony-200.8	Antimony	ug/l	0	2.0	6.00
IOC0449-01	Cadmium-200.8	Cadmium	ug/l	0.067	1.0	4.00
IOC0449-01	Chloride - 300.0	Chloride	mg/l	15	0.50	150
IOC0449-01	Copper-200.8	Copper	ug/l	3.00	2.0	14
IOC0449-01	Mercury - 245.1	Mercury	ug/l	0.025	0.20	0.20
IOC0449-01	Nitrogen, NO3+NO2 -N	Nitrate/Nitrite-N	mg/l	0.70	0.11	10.00
IOC0449-01	Sulfate-300.0	Sulfate	mg/l	130	2.5	250
IOC0449-01	TDS - SM 2540C	Total Dissolved Solids	mg/l	480	10	850

Del Mar Analytical, Irvine
 Wendy Kirkeeng For Michele Harper
 Project Manager

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



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

Project ID: Routine Outfall 003

Report Number: IOC0449

Sampled: 03/04/05
Received: 03/04/05

DATA QUALIFIERS AND DEFINITIONS

- B** Analyte was detected in the associated Method Blank.
- J** Estimated value. Analyte detected at a level less than the Reporting Limit (RL) and greater than or equal to the Method Detection Limit (MDL). The user of this data should be aware that this data is of unknown quality.
- M-3** Results exceeded the linear range in the MS/MSD and therefore are not available for reporting. The batch was accepted based on acceptable recovery in the Blank Spike (LCS).
- M-NR1** There was no MS/MSD analyzed with this batch due to insufficient sample volume. See Blank Spike/Blank Spike Duplicate.
- ND** Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified.
- RPD** Relative Percent Difference

Del Mar Analytical, Irvine
Wendy Kirkeeng For Michele Harper
Project Manager



Del Mar Analytical

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 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 003 Report Number: IOC0449	Sampled: 03/04/05 Received: 03/04/05
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Certification Summary

Del Mar Analytical, Irvine

Method	Matrix	Nelac	California
EPA 160.2	Water	X	X
EPA 200.8	Water	X	X
EPA 245.1	Water	X	X
EPA 300.0	Water	X	X
EPA 413.1	Water	X	X
SM2540C	Water	X	X

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

Subcontracted Laboratories

Alta Analytical California Cert #1640

1104 Windfield Way - El Dorado Hills, CA 95762

Analysis Performed: 1613-Dioxin-HR

Samples: IOC0449-01

Analysis Performed: EDD + Level 4

Samples: IOC0449-01

Del Mar Analytical, Irvine
 Wendy Kirkeeng For Michele Harper
 Project Manager

ID(0449

CHAIN OF CUSTODY FORM

Del Mar Analytical Version 02/17/05

Client Name/Address:		Project:		ANALYSIS REQUIRED		Field readings:					
MWH-Pasadena 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101		Boeing-SSFL NPDES Routine Outfall 003 Stormwater at RMHF		TDS, TSS		Temp = 56.3 pH = 6.9					
Project Manager: Bronwyn Kelly Sampler: <i>Pollock</i>		Phone Number: (626) 568-6691 Fax Number: (626) 568-6515		Oil & Grease (EPA 413.1)		Comments					
Sample Description	Sample Matrix	Container Type	# of Cont.	Sampling Date/Time	Preservative	Bottle #	Total Recoverable Metals: Sb, Cd, Cu, Pb, Hg	TCDD (and all congeners)	CF, SO4, NO3+NO2-N	Gross Alpha, Gross Beta, Tritium (906.0), Sr-90 Radium 226 & Radium 228	Turn around Time: (check)
Outfall 003	W	1L Poly	1	3-4-05 09:25	HNO3	1A	X				24 Hours _____ 48 Hours _____ 72 Hours _____
Outfall 003-Dup	W	1L Poly	1		HNO3	1B	X				5 Days _____ 10 Days _____ Normal _____
Outfall 003	W	1L Amber	2		None	2A, 2B		X			Perchlorate Only 72 Hours _____ Metals Only 72 Hours _____
Outfall 003	W	1L Amber	2		HCl	3A, 3B		X			Sample integrity: (Check) _____ Intact _____ On Ice: _____
Outfall 003	W	Poly-500 ml	2		None	4A, 4B			X		Analyze for Total Combined RA-226&228 only if Gross Alpha > 15pCi/L
Outfall 003	W	Poly-500 ml	2		None	5A, 5B					
Outfall 003	W	Poly-1 gal	2		None						
Relinquished By: <i>[Signature]</i>	Date/Time: 3-4-05 1500	Received By: <i>[Signature]</i>	Date/Time: 3-4-05 1500								
Relinquished By: <i>[Signature]</i>	Date/Time: 3-4-05 1750	Received By: <i>[Signature]</i>	Date/Time: 3-4-05 1750								
Relinquished By: <i>[Signature]</i>	Date/Time: 3-4-05 1750	Received By: <i>[Signature]</i>	Date/Time: 3-4-05 1750								

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2852 Alton Ave., Irvine CA 92606 (949) 261-1022 FAX (949) 261-1228
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2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

March 23, 2005

MWH-Pasadena/ Boeing
300 North Lake Avenue, Suite 1200
Pasadena, CA 91101

Attention: Bronwyn Kelly

Project: Routine Outfall 003
Sampled: 03/04/05
Del Mar Analytical Number: IOC0449

Dear Ms. Kelly:

Alta Analytical Laboratory performed the EPA Method 1613 Dioxin analysis for the project referenced above. Please use the following cross-reference table when reviewing your results.

MWH ID	DEL MAR ID	Alta ID
Outfall 003	IOC0449-01	25854-001

Attached is the original report from the subcontract laboratory. If you have any questions or require further assistance, please do not hesitate to contact me at (949) 261-1022 at extension 215.

Sincerely yours,
DEL MAR ANALYTICAL


Michele Harper
Project Manager



March 16, 2005

Alta Project I.D.: 25854

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

Dear Ms. Harper,

Enclosed are the results for the one aqueous sample received at Alta Analytical Laboratory on March 08, 2005 under your Project Name "IOC0449". This sample was extracted and analyzed using EPA Method 1613 for tetra-through-octa chlorinated dioxins and furans. A rush 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,

Martha M. Maier
Director of HRMS Services



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: 3/8/2005

Alta Lab. ID

Client Sample ID

25854-001

IOC0449-01

SECTION II



Method Blank				EPA Method 1613			
Matrix:	Aqueous	QC Batch No.:	6593	Lab Sample:	0-MB001	Date Analyzed DB-5:	14-Mar-05
Sample Size:	1.000 L	Date Extracted:	11-Mar-05	Date Analyzed DB-225:	NA		
Analyte	Conc. (pg/L)	DL ^a	EMPC ^b	Qualifiers	Labeled Standard	%R	LCL-UCL ^d Qualifiers
2,3,7,8-TCDD	ND	1.27			IS 13C-2,3,7,8-TCDD	61.5	25 - 164
1,2,3,7,8-PeCDD	ND	1.50			13C-1,2,3,7,8-PeCDD	57.2	25 - 181
1,2,3,4,7,8-HxCDD	ND	2.20			13C-1,2,3,4,7,8-HxCDD	67.8	32 - 141
1,2,3,6,7,8-HxCDD	ND	2.32			13C-1,2,3,6,7,8-HxCDD	76.7	28 - 130
1,2,3,7,8,9-HxCDD	ND	2.26			13C-1,2,3,4,6,7,8-HpCDD	56.6	23 - 140
1,2,3,4,6,7,8-HpCDD	ND	3.00			13C-OCDD	26.9	17 - 157
OCDD	ND	11.1			13C-2,3,7,8-TCDF	63.1	24 - 169
2,3,7,8-TCDF	ND	1.37			13C-1,2,3,7,8-PeCDF	54.3	24 - 185
1,2,3,7,8-PeCDF	ND	2.09			13C-2,3,4,7,8-PeCDF	58.1	21 - 178
2,3,4,7,8-PeCDF	ND	1.73			13C-1,2,3,4,7,8-HxCDF	60.3	26 - 152
1,2,3,4,7,8-HxCDF	ND	1.16	0.905		13C-1,2,3,6,7,8-HxCDF	70.6	26 - 123
1,2,3,6,7,8-HxCDF	ND	0.768			13C-2,3,4,6,7,8-HxCDF	67.0	28 - 136
2,3,4,6,7,8-HxCDF	ND	0.768			13C-1,2,3,7,8,9-HxCDF	62.8	29 - 147
1,2,3,7,8,9-HxCDF	ND	1.22			13C-1,2,3,4,6,7,8-HpCDF	53.2	28 - 143
1,2,3,4,6,7,8-HpCDF	ND	1.96			13C-1,2,3,4,7,8,9-HpCDF	57.7	26 - 138
1,2,3,4,7,8,9-HpCDF	ND	1.38			13C-OCDF	32.9	17 - 157
OCDF	ND	7.76			CRS 37Cl-2,3,7,8-TCDD	71.7	35 - 197
Totals							
Total TCDD	ND	1.27					
Total PeCDD	ND	1.50					
Total HxCDD	ND	2.26					
Total HpCDD	ND	3.00					
Total TCDF	1.40		2.79	D			
Total PeCDF	ND	3.06					
Total HxCDF	ND		0.905				
Total HpCDF	ND	2.12					

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

Analyst: MAS
Approved By: Martha M. Maier 16-Mar-2005 13:17



OPR Results

EPA Method 1613

Matrix: Aqueous	QC Batch No.: 6593	Lab Sample: 0-OPR001			
Sample Size: 1.000 L	Date Extracted: 11-Mar-05	Date Analyzed DB-5: 14-Mar-05			
		Date Analyzed DB-225: NA			
Analyte	Spike Conc. (ng/mL)	OPR Limits	Labeled Standard	%R	LCL-UCL
2,3,7,8-TCDD	10.0	6.7 - 15.8	IS 13C-2,3,7,8-TCDD	61.8	25 - 164
1,2,3,7,8-PeCDD	50.0	35 - 71	13C-1,2,3,7,8-PeCDD	62.9	25 - 181
1,2,3,4,7,8-HxCDD	50.0	35 - 82	13C-1,2,3,4,7,8-HxCDD	65.8	32 - 141
1,2,3,6,7,8-HxCDD	50.0	38 - 67	13C-1,2,3,6,7,8-HxCDD	77.0	28 - 130
1,2,3,7,8,9-HxCDD	50.0	32 - 81	13C-1,2,3,4,6,7,8-HpCDD	67.2	23 - 140
1,2,3,4,6,7,8-HpCDD	50.0	35 - 70	13C-OCDD	38.7	17 - 157
OCDD	100	78 - 144	13C-2,3,7,8-TCDF	63.1	24 - 169
2,3,7,8-TCDF	10.0	7.5 - 15.8	13C-1,2,3,7,8-PeCDF	59.0	24 - 185
1,2,3,7,8-PeCDF	50.0	40 - 67	13C-2,3,4,7,8-PeCDF	63.2	21 - 178
2,3,4,7,8-PeCDF	50.0	34 - 80	13C-1,2,3,4,7,8-HxCDF	57.9	26 - 152
1,2,3,4,7,8-HxCDF	50.0	36 - 67	13C-1,2,3,6,7,8-HxCDF	68.4	26 - 123
1,2,3,6,7,8-HxCDF	50.0	42 - 65	13C-2,3,4,6,7,8-HxCDF	67.7	28 - 136
2,3,4,6,7,8-HxCDF	50.0	35 - 78	13C-1,2,3,7,8,9-HxCDF	65.7	29 - 147
1,2,3,7,8,9-HxCDF	50.0	39 - 65	13C-1,2,3,4,6,7,8-HpCDF	63.1	28 - 143
1,2,3,4,6,7,8-HpCDF	50.0	41 - 61	13C-1,2,3,4,7,8,9-HpCDF	65.7	26 - 138
1,2,3,4,7,8,9-HpCDF	50.0	39 - 69	13C-OCDF	44.9	17 - 157
OCDF	100	63 - 170	CRS 37Cl-2,3,7,8-TCDD	72.7	35 - 197

Analyst: MAS

Approved By: Martha M. Maier 16-Mar-2005 13:17



Sample ID: IOC0449-01

EPA Method 1613

Client Data		Sample Data		Laboratory Data	
Name:	Del Mar Analytical, Irvine	Matrix:	Aqueous	Lab Sample:	25854-001
Project:	IOC0449	Sample Size:	0.934 L	QC Batch No.:	6593
Date Collected:	4-Mar-05			Date Analyzed DB-5:	15-Mar-05
Time Collected:	0925			Date Analyzed DB-225:	NA
				Date Received:	8-Mar-05
				Date Extracted:	11-Mar-05

Analyte	Conc. (pg/L)	DL ^a	EMPC ^b	Qualifiers	Labeled Standard	%R	LCL-UCL ^d	Qualifiers
2,3,7,8-TCDD	ND	1.03			13C-2,3,7,8-TCDD	63.6	25 - 164	
1,2,3,7,8-PeCDD	ND	0.747			13C-1,2,3,7,8-PeCDD	59.5	25 - 181	
1,2,3,4,7,8-HxCDD	ND	1.62			13C-1,2,3,4,7,8-HxCDD	60.9	32 - 141	
1,2,3,6,7,8-HxCDD	ND	1.73			13C-1,2,3,6,7,8-HxCDD	66.0	28 - 130	
1,2,3,7,8,9-HxCDD	ND	1.67			13C-1,2,3,4,6,7,8-HpCDD	58.9	23 - 140	
1,2,3,4,6,7,8-HpCDD	ND		1.22		13C-OCDD	34.8	17 - 157	
OCDD	13.7			J	13C-2,3,7,8-TCDF	66.7	24 - 169	
2,3,7,8-TCDF	ND	0.833			13C-1,2,3,7,8-PeCDF	54.3	24 - 185	
1,2,3,7,8-PeCDF	ND	1.41			13C-2,3,4,7,8-PeCDF	56.1	21 - 178	
2,3,4,7,8-PeCDF	ND	1.27			13C-1,2,3,4,7,8-HxCDF	53.4	26 - 152	
1,2,3,4,7,8-HxCDF	ND	0.459			13C-1,2,3,6,7,8-HxCDF	57.9	26 - 123	
1,2,3,6,7,8-HxCDF	ND	0.470			13C-2,3,4,6,7,8-HxCDF	59.5	28 - 136	
2,3,4,6,7,8-HxCDF	ND	0.501			13C-1,2,3,7,8,9-HxCDF	60.4	29 - 147	
1,2,3,7,8,9-HxCDF	ND	0.743			13C-1,2,3,4,6,7,8-HpCDF	52.9	28 - 143	
1,2,3,4,6,7,8-HpCDF	ND	0.856			13C-1,2,3,4,7,8,9-HpCDF	58.4	26 - 138	
1,2,3,4,7,8,9-HpCDF	ND	0.953			13C-OCDF	41.7	17 - 157	
OCDF	ND	3.40			CRS 37Cl-2,3,7,8-TCDD	77.0	35 - 197	

Totals		Footnotes	
Total TCDD	ND	1.03	a. Sample specific estimated detection limit.
Total PeCDD	ND	0.747	b. Estimated maximum possible concentration.
Total HxCDD	ND	1.67	c. Method detection limit.
Total HpCDD	2.22	3.44	d. Lower control limit - upper control limit.
Total TCDF	3.05		
Total PeCDF	ND	1.34	
Total HxCDF	ND	0.534	
Total HpCDF	ND	0.898	

Analyst: JMH

Approved By: Martha M. Maier 16-Mar-2005 13:17

APPENDIX

DATA QUALIFIERS & ABBREVIATIONS

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

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

The control limits are "interim limits only" until in-house limits are utilized.

CURRENT CERTIFICATIONS



NELAP — (Primary AA: California, Certificate No. 02102CA)

Department of the Navy

U.S. Army Corps of Engineers

U.S. EPA Region 5

Bureau of Reclamation — Mid-Pacific Region — (MP-470, Res-1.10)

Commonwealth of Kentucky — (Certificate No. 90063)

Commonwealth of Virginia — (Certificate No. 00013)

State of Alaska, Department of Environmental Conservation — (Certificate No. OS-00197)

State of Arizona — (Certificate No. AZ0639)

State of Arkansas, Department of Health — (Approval granted through CA certification)

State of Arkansas, Department of Environmental Quality

State of California — (Certificate No. 1640)

State of Colorado

State of Connecticut — (Certificate No. PH-0182)

State of Florida — (Certificate No. 87456)

State of Louisiana, Department of Health and Hospitals — (Certificate No. LA000014)

State of Louisiana, Department of Environmental Quality

State of Maine

State of Michigan (Certificate No. 81178087)

State of Mississippi — (Approval granted through CA certification)

State of Nevada — (Certificate No. CA413)

State of New Jersey — (Certificate No. CA003)

State of New York, Department of Health — (Certificate No. 11411)

State of North Carolina — (Certification No. 06700)

State of North Dakota, Department of Health — (Certificate No. R-078)

State of New Mexico

State of Oklahoma — (D9919)

State of Oregon — (Certificate No. CA413)

State of Pennsylvania — (Certificate No. 68-490)

State of South Carolina — (Certificate No. 87002001)

State of Tennessee — (Certificate No. 02996)

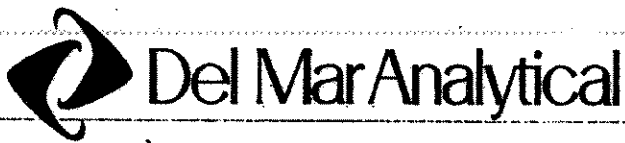
State of Texas — (Certificate No. TX247-1000A)

State of Utah — (Certificate No. E-201)

State of Washington — (Certification No. C091)

State of Wisconsin — (Certificate No. 998036160)

State of Wyoming — (USEPA Region 8 Ref: 8TMS-Q)



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

SUBCONTRACT ORDER - PROJECT # IOC0449

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 Harper	Alta Analytical 1104 Windfield Way El Dorado Hills, CA 95762 Phone: (916) 933-1640 Fax: (916) 933-0940 <div style="text-align: right; font-size: 1.5em; font-family: cursive;"> 25854 1.4°C </div>

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

Analysis	Expiration	Comments
Sample ID: IOC0449-01 Water	Sampled: 03/04/05 09:25	Instant Notification
1613-Dioxin-HR	03/11/05 09:25	J-flags, 17 congeners, no TEQ, sub to Alta
EDD + Level 4	04/01/05 09:25	Excel EDD email to pm, Include Std logs for Lvl IV
Containers Supplied:		
1 L Amber (IOC0449-01C)		
1 L Amber (IOC0449-01D)		

SAMPLE INTEGRITY:

All containers intact: <input type="checkbox"/> Yes <input type="checkbox"/> No	Sample labels/COC agree: <input type="checkbox"/> Yes <input type="checkbox"/> No	Samples Received On Ice: <input type="checkbox"/> Yes <input type="checkbox"/> No
Custody Seals Present: <input type="checkbox"/> Yes <input type="checkbox"/> No	Samples Preserved Properly: <input type="checkbox"/> Yes <input type="checkbox"/> No	Samples Received at (temp): _____

Released By: Henry Fran Date: 3-7-05 Time: 1700 Received By: Bottoming G. Benedict Date: 3/15/05 Time: 0929

Released By: _____ Date: _____ Time: _____ Received By: _____ Date: _____ Time: _____



17461 Duran Ave. Suite 100, Irvine, CA 92614 Ph (949) 261-1022 Fax (949) 261-1228
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 8830 South 51st Street, Suite B-101, Phoenix, AZ 85044 Ph (480) 785-6043 Fax (480) 785-0867
 2520 E. Street, Suite 45, Las Vegas, NV 89120 Ph (702) 798-8838 Fax (702) 798-9821

SUBCONTRACT ORDER - PROJECT #IOC0449

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

RECEIVING LABORATORY:
 Alta Analytical
 1104 Windfield Way
 El Dorado Hills, CA 95762
 Phone: (916) 933-1640
 Fax: (916) 933-0940

254-25854
1.4°C

Standard TAT is requested unless specific due date is requested => Due Date: 2 weeks Initials: MH

Analysis	Expiration	Comments
Sample ID: IOC0449-01 Water	Sampled: 03/04/05 09:25	Instant Notification
1613-Dioxin-HR	03/11/05 09:25	J flags, 17 congeners, no TEQ, sub to Alta
EDD + Level 4	04/01/05 09:25	Excl EDD email to pm, include Std logs for Lvl IV

Containers Supplied:
 1 L Amber (IOC0449-01C)
 1 L Amber (IOC0449-01D)

Sampler = P.P.

MH 3/8/05

SAMPLE INTEGRITY:

All containers intact: Yes No Sample labels/COC agree: Yes No Samples Received On Ice: Yes No
 Custody Seals Present: Yes No Samples Preserved Properly: Yes No Samples Received at (temp): _____

Released By: *Henry J. ...* Date: _____ Time: _____ Received By: _____ Date: _____ Time: _____

STANDARD OPERATING PROCEDURE

Attachment 10.B.1

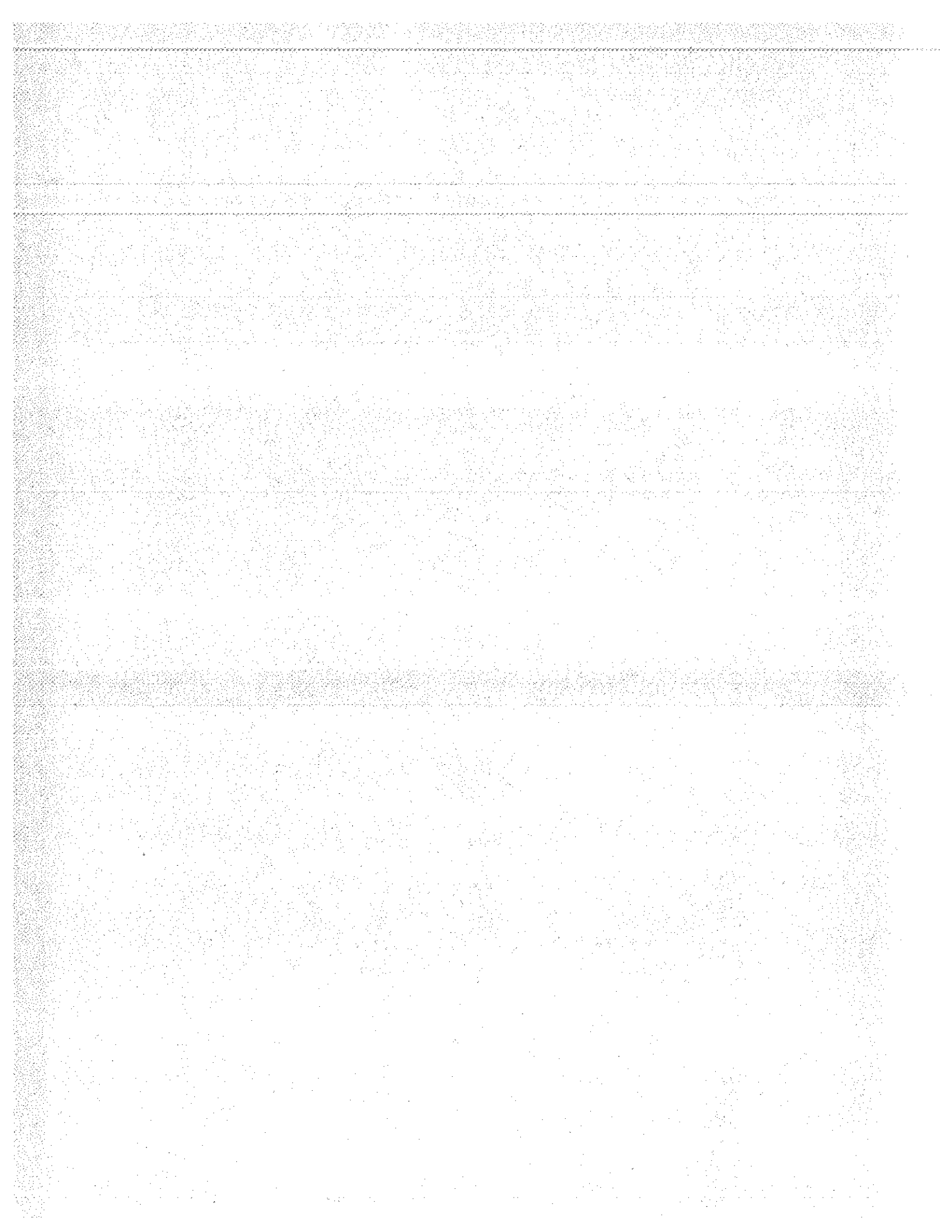
SAMPLE LOG-IN CHECKLIST

ALTA Project No.: 25854

1. Date Samples Arrived:	<u>3/8/05</u>	<u>0839</u>	Initials: <u>CSB</u>	Location: <u>WL-2</u>
2. Time / Date logged in:	<u>1405</u>	<u>3/8/05</u>	Initials: <u>CSB</u>	Location: <u>WR-2</u>
3. Samples Arrived By: (circle)	<u>FedEx</u>	UPS	World Courier	Other:
4. Shipping Preservation: (circle)	<u>Ice</u>	<u>Blue Ice</u>	Dry Ice	None Temp °C <u>1.4°C</u>
5. Shipping Container(s) Intact? If not, describe condition in comment section.		YES	NO	NA
6. Shipping Container(s) Custody Seals Present? Intact? If not intact, describe condition in comment section.		✓		
7. Shipping Documentation Present? (circle) Shipping Label Tracking Number <u>7928 6415 1923</u>		✓		
8. Sample Custody Seal(s) Present? No. of Seals _____ or Seal No. _____ Intact? If not intact, describe condition in comment section.			✓	✓
9. Sample Container Intact? If no, Indicate sample condition in comment section.		✓		
10. Chain of Custody (COC) or other Sample Documentation Present?		✓		
11. COC/Documentation Acceptable? If no, complete COC Anomaly Form.		✓		
12. Shipping Container (circle): ALTA <u>Client</u> Retain or <u>Return</u> or Disposed				
13. Container(s) and/or Bottle(s) Requested?			✓	
14. Drinking Water Sample? (HRMS Only) If yes, Acceptable Preservation? Y or N Preservation Info From? (circle) COC or Sample Container or None Noted				✓

Comments:

ALTA Analytical Laboratory
 El Dorado Hills, CA 95762



CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

AMEC Earth & Environmental
 550 South Wadsworth Boulevard
 Suite 500
 Lakewood, CO 80226

Package ID T711DF37

Task Order 313150010

SDG No. Multiple

No. of Analyses 10

Laboratory Alta

Date: April 4, 2005

Reviewer H. Chang

Reviewer's Signature

Analysis/Method Dioxin&Furans/1613



ACTION ITEMS^a	
1. Case Narrative Deficiencies	
2. Out of Scope Analyses	
3. Analyses Not Conducted	
4. Missing Hardcopy Deliverables	
5. Incorrect Hardcopy Deliverables	
6. Deviations from Analysis Protocol, e.g.,	Detects below the calibration range were qualified "J."
Holding Times	
GC/MS Tune/Inst. Perform	
Calibrations	
Blanks	
Surrogates	
Matrix Spike/Dup LCS	
Field QC	
Internal Standard Performance	
Compound Identification and Quantitation	
System Performance	
COMMENTS^b	
<p>^a Subcontracted analytical laboratory is not meeting contract and/or method requirements.</p> <p>^b Differences in protocol have been adopted by the laboratory but no action against the laboratory is required.</p>	



DATA VALIDATION REPORT

NPDES Monitoring

ANALYSIS: DIOXINS/FURANS

SAMPLE DELIVERY GROUPS: Multiple SDGs

Prepared by

AMEC—Denver Operations
550 South Wadsworth Boulevard, Suite 500
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title: NPDES Monitoring
Contract Task Order #: 313150010
Sample Delivery Group #: Multiple
Project Manager: B. McIlvaine
Matrix: Water
Analysis: Dioxins/Furans
QC Level: Level IV
No. of Samples: 10
No. of Reanalyses/Dilutions: 0
Reviewer: H. Chang
Date of Review: April 4, 2005

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

Table 1. Sample Identification

Client ID	Laboratory ID (Del Mar)	Laboratory ID (Alta)	Matrix	COC Method
Outfall 002	IOC1521-01	25935-001	water	1613
Outfall 011	IOC1523-01	25936-001	water	1613
Outfall 005	IOC1524-01	25940-001	water	1613
Outfall 006	IOC1525-01	25937-001	water	1613
Outfall 011 Composite	IOC1526-01	25938-001	water	1613
Outfall 001	IOC1561-01	25941-001	water	1613
Outfall 004	IOC1563-01	25939-001	water	1613
Outfall 008	IOC1564-01	25942-001	water	1613
Outfall 003	IOC1565-01	25943-001	water	1613
Outfall 009	IOC1566-01	25944-001	water	1613

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

Following are findings associated with sample management:

2.1.1 Sample Preservation, Handling, and Transport

Samples Outfall 001, Outfall 004, and Outfall 008 were received at Del Mar Analytical outside the temperature limits of $4^{\circ}\text{C} \pm 2^{\circ}\text{C}$. Due to non-volatile nature of the target compounds, no qualifications were required. The other samples were received with cooler temperatures within the limits. According to the laboratory login sheets, all samples were received intact and in good condition at both laboratories. No qualifications were required.

2.1.2 Chain of Custody

The COCs and transfer COCs were legible and signed by the appropriate field and laboratory personnel, and accounted for the analyses presented in these SDGs. As the samples were couriered directly to Del Mar Analytical, custody seals were not required. The coolers received by Alta had custody seals present and intact. The EPA 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 a year of collection. No qualifications were required.

2.2 INSTRUMENT PERFORMANCE

Following are findings associated with instrument performance:

2.2.1 GC Column Performance

A Windows Defining Mix (WDM) containing the first and last eluting congeners of each descriptor and isomer specificity compounds was not analyzed prior to the initial calibration sequence or at the beginning of each analytical sequence; however, the first and last eluting congeners and isomer specificity compounds were added to the midpoint of the initial calibration and to the continuing calibration standards (see section 2.3.2). The GC column performance in the calibrations was acceptable, with the height of the valley between the closely eluting isomers and 2,3,7,8-TCDD reported as less than 25%. No qualifications were required.

2.2.2 Mass Spectrometer Performance

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

2.3 CALIBRATION

2.3.1 Initial Calibration

There was one initial calibration, analyzed 08/30/04. The calibration consisted of six concentration level standards (CS0 through CS5) analyzed to verify instrument linearity. The initial calibration was acceptable with %RSDs $\leq 20\%$ for the 16 native compounds (calibration by isotope dilution) and $\leq 35\%$ for the one native and all labeled compounds (calibration by internal standard). The relative retention times and ion abundance ratios were within the 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 VERs were acceptable with the concentrations within the acceptance criteria listed in Table 6 of EPA Method 1613. The ion abundance ratios and relative retention times were within the method QC limits. 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 standards 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_6624_MB001) was extracted and analyzed with the samples in these SDGs. There were no target compound detects reported 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 Ongoing Precision Recovery (OPR) sample (0_6624_OPR001) was extracted and analyzed with the samples in these SDGs. All recoveries were within the acceptance criteria listed in Table 6 of Method 1613. No qualifications were required.

2.6 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

MS/MSD analyses were not performed in these SDGs. 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 samples in these SDGs had no associated field QC samples. No qualifications were required.

2.7.2 Field Duplicates

No field duplicate samples were identified for these SDGs.

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. Any reported EMPC was qualified as an estimated nondetect, "UJ." Any detects below the lower method calibration level (MCL) were qualified as estimated, "J." No further qualifications were required.

Sample ID: IOC1565-01 Cuffall 003

EPA Method 1613

Client Data		Sample Data		Laboratory Data	
Name:	Del Mar Analytical, Irvine	Matrix:	Aqueous	Lab Sample:	25943-001
Project:	IOC1565	Sample Size:	0.957 L	QC Batch No.:	6624
Date Collected:	19-Mar-05			Date Analyzed DB-5:	24-Mar-05
Time Collected:	0955			Date Analyzed DB-225:	NA

Analyte	Conc. (pg/L)	DL ^a	EMPC ^b	Qualifiers	Labeled Standard	%R	LCL-UCLD	Qualifiers
2,3,7,8-TCDD	ND	0.850			IS 13C-2,3,7,8-TCDD	91.0	25 - 164	
1,2,3,7,8-PeCDD	ND	0.716			13C-1,2,3,7,8-PeCDD	81.6	25 - 181	
1,2,3,4,7,8-HxCDD	ND	1.01			13C-1,2,3,4,7,8-HxCDD	87.1	32 - 141	
1,2,3,6,7,8-HxCDD	ND	1.04			13C-1,2,3,6,7,8-HxCDD	92.0	28 - 130	
1,2,3,7,8,9-HxCDD	ND	1.02			13C-1,2,3,4,6,7,8-HpCDD	89.3	23 - 140	
1,2,3,4,6,7,8-HpCDD	ND	1.76			13C-OCDD	72.6	17 - 157	
OCDD	ND		5.58		13C-2,3,7,8-TCDF	93.7	24 - 169	
2,3,7,8-TCDF	ND	0.830			13C-1,2,3,7,8-PeCDF	83.3	24 - 185	
1,2,3,7,8-PeCDF	ND	1.45			13C-2,3,4,7,8-PeCDF	83.9	21 - 178	
2,3,4,7,8-PeCDF	ND	1.37			13C-1,2,3,4,7,8-HxCDF	70.1	26 - 152	
1,2,3,4,7,8-HxCDF	ND	0.532			13C-1,2,3,6,7,8-HxCDF	79.0	26 - 123	
1,2,3,6,7,8-HxCDF	ND	0.502			13C-2,3,4,6,7,8-HxCDF	78.1	28 - 136	
2,3,4,6,7,8-HxCDF	ND	0.587			13C-1,2,3,7,8,9-HxCDF	80.0	29 - 147	
1,2,3,7,8,9-HxCDF	ND	0.859			13C-1,2,3,4,6,7,8-HpCDF	82.5	28 - 143	
1,2,3,4,6,7,8-HpCDF	ND	0.862			13C-1,2,3,4,7,8,9-HpCDF	89.2	26 - 138	
1,2,3,4,7,8,9-HpCDF	ND	1.03			13C-OCDF	79.3	17 - 157	
OCDF	ND	2.68			CRS 37Cl-2,3,7,8-TCDD	88.2	35 - 197	

Totals

Total TCDD	ND	0.850						
Total PeCDD	ND	0.716						
Total HxCDD	ND	1.02						
Total HpCDD	ND	1.76						
Total TCDF	ND	0.830						
Total PeCDF	ND	1.41						
Total HxCDF	ND	0.609						
Total HpCDF	ND	0.934						

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

Analyst: JMH

Approved By: Martha M. Maier 24-Mar-2005 09:59

AMEC VALIDATED

LEVEL IV



DATA VALIDATION REPORT

NPDES
Monitoring

ANALYSIS: METALS

SAMPLE DELIVERY GROUPS: IOC1524, IOC1525, IOC1564,
IOC1565, & IOC1566

Prepared by

AMEC—Denver Operations
550 South Wadsworth Boulevard, Suite 500
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title: NPDES Monitoring
Contract Task Order #: 313150010
SDG#: IOC1524, IOC1525, IOC1564, IOC1565, & IOC1566
Project Manager: B. McIlvaine
Matrix: Water
Analysis: Metals
QC Level: Level IV
No. of Samples: 5
No. of Reanalyses/Dilutions: 0
Reviewer: P. Meeks
Date of Review: March 30, 2005

The samples listed in Table 1 were validated based on the guidelines outlined in the *AMEC Data Validation Procedure for Levels III and IV ICP-MS Metals, (DVP-5-A, Rev.0)*, *AMEC Data Validation Procedure for Levels III and IV ICP Metals (DVP-5, Rev. 0)*, *SW-846 Method 6020B for Inductively Coupled Plasma – Mass Spectrometry*, *SW-846 Method 7471A for Mercury (Manual Cold-Vapor Technique)*, 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.

DATA VALIDATION REPORT

Project: NPDES
SDG No.: Multiple
Analysis: MET

Table 1. Sample identification

Client ID	EPA ID	Laboratory ID	Matrix	COC Method
Outfall 005	Outfall 005	IOC1524-01	water	ILM04
Outfall 006	Outfall 006	IOC1525-01	water	ILM04
Outfall 008	Outfall 008	IOC1564-01	water	ILM04
Outfall 003	Outfall 003	IOC1565-01	water	ILM04
Outfall 009	Outfall 009	IOC1566-01	water	ILM04

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

Following are findings associated with sample management:

2.1.1 Sample Preservation, Handling, and Transport

Outfall 008 was received above the temperature limit at 8°C ; however, as the sample had insufficient time to cool prior to receipt at the laboratory, no qualifications were required. The remaining samples in these SDGs were received at the laboratory within the temperature limits of 4°C ±2°C. No sample preservation, handling, or transport problems were noted, and no qualifications were necessary.

2.1.2 Chain of Custody

The COCs were signed and dated by field and laboratory personnel. The COCs accounted for the samples and analyses presented in these SDGs. Duplicate samples were submitted for the samples in these SDGs; however, duplicate analyses were not required. No sample qualifications were required.

2.1.3 Holding Times

The dates of collection recorded on the COCs 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

A precalibration routine must be completed prior to calibrating the instrument, which consists of analyzing a tuning solution to verify resolution, mass calibration, and thermal stability. The solution must be analyzed a minimum of five times and must contain isotopes representing all mass regions of interest. All %RSDs were less than 5%. The mass calibrations were within 0.1 amu of the true mass and the instrument resolutions were less than 0.75 amu at 5 percent peak height for all analytes in the tune solution. No site sample qualifications were required.

2.3 CALIBRATION

The ICV and CCV results showed acceptable recoveries, 90-110% for ICP/MS metals and 80-120% for mercury. The reporting limit check standards were recovered within the AMEC control limits of 70-130%. No sample qualifications were required.

2.4 BLANKS

Antimony was detected in every CCB in the analytical sequence in which Outfall 008 and Outfall 009 were analyzed. The detects ranged from 0.484 to 0.551 $\mu\text{g/L}$ and antimony was detected in Outfall 008 and Outfall 009 at concentrations below these values. The CCB detects indicated the laboratory could not detect antimony at the reported MDL. The reviewer raised the antimony MDL for Outfall 008 and Outfall 009 to the highest level of interference reported, 0.55 $\mu\text{g/L}$ and qualified the result as estimated, "UJ." No further qualifications were required due to the method and calibration blank results.

2.5 ICP INTERFERENCE CHECK SAMPLE (ICS A/AB)

ICSA and ICSAB analyses were included in the raw data for the ICP-MS analyses. Results were not provided for spiked interferents sulfur, phosphorus, carbon, and chloride, and antimony and lead were not spiked into the ICSAB solution. Copper and cadmium were detected above the applicable reporting limit in the ICSA. Aluminum was recovered below the control limit in the all the ICSA and ICSAB analyses; however, as aluminum was not reported in the site samples, no qualifications were required. The validator reviewed the raw data for the site sample ICP/MS analyses for the level of reported interferents, Al, Ca, Fe, and Mg, and determined that the levels of reported interferents were not high enough to cause matrix affects. No assessment could be made with respect to possible interference from sulfur, phosphorus, carbon, and chloride. No qualifications were required.

2.6 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

The ICP/MS LCS samples were identified as 5C21088-BS1 and 5C19038-BS1. The mercury LCS sample was identified as 5C21082-BS1. The LCS results on the summary forms and in the raw data were within the laboratory-established ICP/MS and mercury control limits of 85-115%. No qualifications were required.

2.7 LABORATORY DUPLICATES

MS/MSD analyses were performed on Outfall 005 for lead only. The RPD was within the control limit of 20% and no qualifications were required.

2.8 MATRIX SPIKE

MS/MSD analyses were performed on Outfall 005 for lead only. Both recoveries were within the AMEC control limits of 75-125% and no qualifications were required. For the remaining analytes, method accuracy was evaluated based on LCS results.

2.9 FURNACE ATOMIC ABSORPTION QC

Furnace atomic absorption was not utilized for the analysis of these samples; therefore, furnace atomic absorption QC is not applicable.

2.10 ICP/MS AND ICP SERIAL DILUTION

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

2.11 INTERNAL STANDARDS PERFORMANCE

The ICP-MS internal standard recoveries for the site samples and associated QC sample analyses were within the 60-125% control limits and no qualifications were required.

2.12 SAMPLE RESULT VERIFICATION

A Level IV review was performed for the samples in these data packages. Calculations were verified, and the sample results reported on the Form Is were verified against the raw data. No transcription errors or calculation errors were noted. Analytes detected below the reporting limit were qualified as estimated, "J." No further qualifications were required.

2.13 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.

2.13.1 Field Blanks and Equipment Rinsates

The samples in these SDGs had no associated field QC samples. No qualifications were required.

2.13.2 Field Duplicates

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



Del Mar Analytical

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 9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 795-3043 FAX (480) 785-0851
 2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 796-3620 FAX (702) 798-3621

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

Project ID: Routine Outfall 003

Report Number: IOC1565

Sampled: 03/19/05
 Received: 03/19/05

DRAFT: METALS

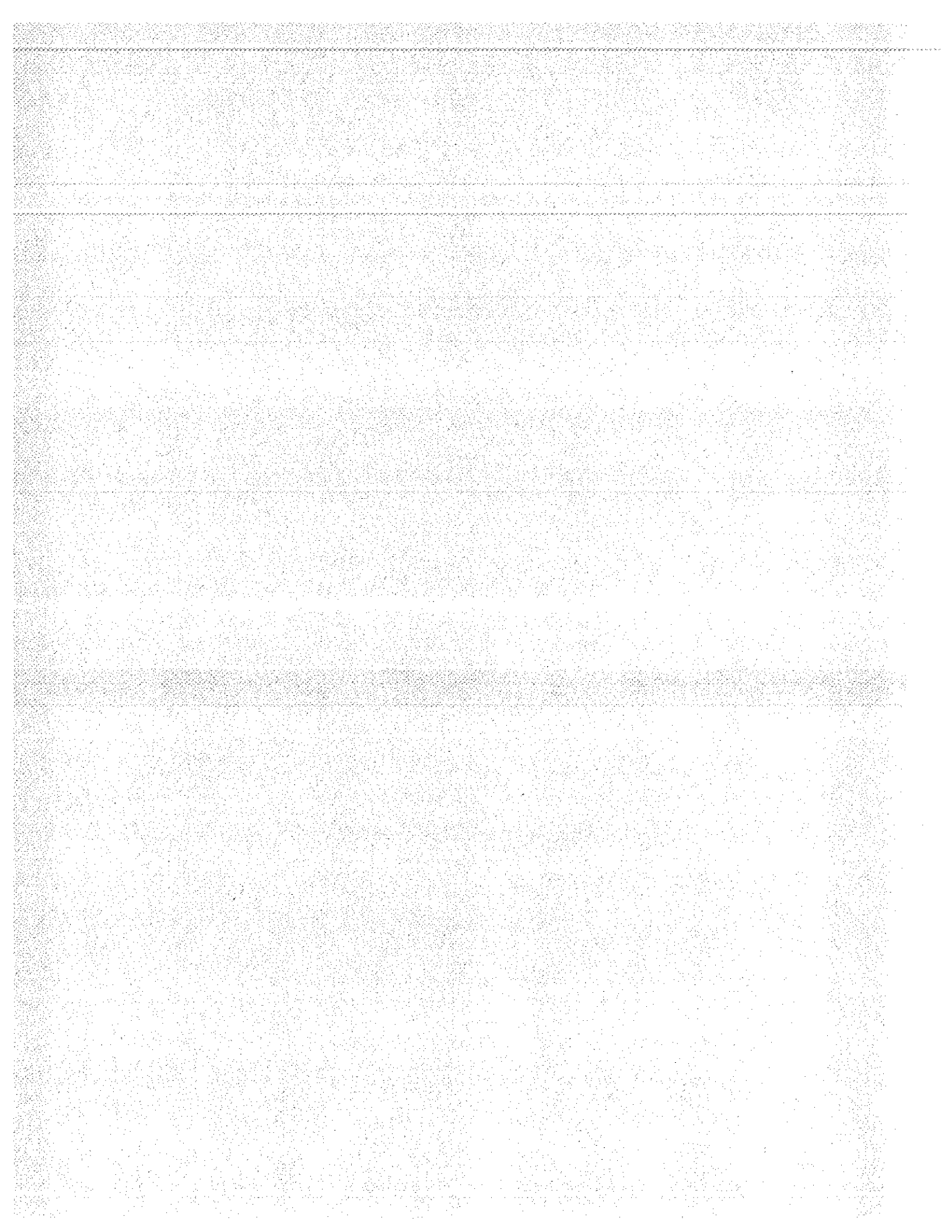
Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOC1565-01 (DRAFT: Outfall 003 - Water)									
Reporting Units: ug/l									
Lead	EPA 200.8	5C21088	0.13	1.0	ND	1	03/21/05	03/21/05	U

Rev	Qual	Code

AMEC VALIDATED

DRAFT REPORT
 DRAFT REPORT
 DATA SUBJECT TO CHANGE

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





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LABORATORY REPORT

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

Project: Routine Outfall 003

Sampled: 03/19/05
 Received: 03/19/05
 Issued: 03/31/05 09:20

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
 IOC1565-01

CLIENT ID
 Outfall 003

MATRIX
 Water

Reviewed By:

Del Mar Analytical, Irvine
 Wendy Kirkeeng For Michele Harper
 Project Manager



Del Mar Analytical

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

Project ID: Routine Outfall 003

Report Number: IOC1565

Sampled: 03/19/05

Received: 03/19/05

METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOC1565-01 (Outfall 003 - Water)									
Reporting Units: ug/l									
Antimony	EPA 200.8	5C21088	0.18	2.0	0.26	1	03/21/05	03/21/05	J
Cadmium	EPA 200.8	5C21088	0.015	1.0	0.029	1	03/21/05	03/21/05	J
Copper	EPA 200.8	5C21088	0.49	2.0	1.8	1	03/21/05	03/21/05	J
Lead	EPA 200.8	5C21088	0.13	1.0	ND	1	03/21/05	03/21/05	
Mercury	EPA 245.1	5C21082	0.063	0.20	ND	1	03/21/05	03/21/05	

Del Mar Analytical, Irvine
 Wendy Kirkeeng For Michele Harper
 Project Manager

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

Project ID: Routine Outfall 003

Report Number: IOC1565

Sampled: 03/19/05

Received: 03/19/05

INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOC1565-01 (Outfall 003 - Water) - cont.									
Reporting Units: mg/l									
Chloride	EPA 300.0	5C20029	0.26	0.50	24	1	03/20/05	03/20/05	
Nitrate/Nitrite-N	EPA 300.0	5C20029	0.072	0.11	0.29	1	03/20/05	03/20/05	
Oil & Grease	EPA 413.1	5C21062	0.94	5.0	ND	1	03/21/05	03/21/05	
Sulfate	EPA 300.0	5C20029	0.90	2.5	160	5	03/20/05	03/20/05	
Total Dissolved Solids	SM2540C	5C21073	10	10	610	1	03/21/05	03/21/05	
Total Suspended Solids	EPA 160.2	5C21068	10	10	ND	1	03/21/05	03/21/05	

Del Mar Analytical, Irvine
 Wendy Kirkeeng For Michele Harper
 Project Manager

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

Project ID: Routine Outfall 003

Report Number: IOC1565

Sampled: 03/19/05

Received: 03/19/05

SHORT HOLD TIME DETAIL REPORT

Sample ID: Outfall 003 (IOC1565-01) - Water EPA 300.0	Hold Time (in days)	Date/Time Sampled	Date/Time Received	Date/Time Extracted	Date/Time Analyzed
	2	03/19/2005 09:55	03/19/2005 17:30	03/20/2005 13:30	03/20/2005 15:10

Del Mar Analytical, Irvine
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 Project Manager

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

Project ID: Routine Outfall 003

Report Number: IOC1565

Sampled: 03/19/05
 Received: 03/19/05

METHOD BLANK/QC DATA

METALS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5C21082 Extracted: 03/21/05											
Blank Analyzed: 03/21/2005 (5C21082-BLK1)											
Mercury	ND	0.20	0.063	ug/l							
LCS Analyzed: 03/21/2005 (5C21082-BS1)											
Mercury	7.98	0.20	0.063	ug/l	8.00		100	85-115			
Matrix Spike Analyzed: 03/21/2005 (5C21082-MS1)											
						Source: IOC1561-01					
Mercury	7.93	0.20	0.063	ug/l	8.00	ND	99	70-130			
Matrix Spike Dup Analyzed: 03/21/2005 (5C21082-MSD1)											
						Source: IOC1561-01					
Mercury	8.07	0.20	0.063	ug/l	8.00	ND	101	70-130	2	20	
Batch: 5C21088 Extracted: 03/21/05											
Blank Analyzed: 03/21/2005 (5C21088-BLK1)											
Antimony	ND	2.0	0.18	ug/l							
Cadmium	ND	1.0	0.015	ug/l							
Copper	ND	2.0	0.49	ug/l							
Lead	ND	1.0	0.13	ug/l							
LCS Analyzed: 03/21/2005 (5C21088-BS1)											
Antimony	86.5	2.0	0.18	ug/l	80.0		108	85-115			
Cadmium	84.6	1.0	0.015	ug/l	80.0		106	85-115			
Copper	81.1	2.0	0.49	ug/l	80.0		101	85-115			
Lead	84.0	1.0	0.13	ug/l	80.0		105	85-115			
Matrix Spike Analyzed: 03/21/2005 (5C21088-MS1)											
						Source: IOC1561-01					
Antimony	94.5	2.0	0.18	ug/l	80.0	0.45	118	70-130			
Cadmium	86.9	1.0	0.015	ug/l	80.0	0.025	109	70-130			
Copper	78.5	2.0	0.49	ug/l	80.0	1.9	96	70-130			
Lead	83.6	1.0	0.13	ug/l	80.0	ND	104	70-130			

Del Mar Analytical, Irvine
 Wendy Kirkeeng For Michele Harper
 Project Manager

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

Project ID: Routine Outfall 003

Report Number: IOC1565

Sampled: 03/19/05

Received: 03/19/05

METHOD BLANK/QC DATA

METALS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	Limit	RPD	RPD Limit	Data Qualifiers
Batch: 5C21088 Extracted: 03/21/05											
Matrix Spike Analyzed: 03/21/2005 (5C21088-MS2)						Source: IOC1563-01					
Antimony	87.6	2.0	0.18	ug/l	80.0	0.68	109	70-130			
Cadmium	82.1	1.0	0.015	ug/l	80.0	0.094	103	70-130			
Copper	85.2	2.0	0.49	ug/l	80.0	7.7	97	70-130			
Lead	82.6	1.0	0.13	ug/l	80.0	0.83	102	70-130			
Matrix Spike Dup Analyzed: 03/21/2005 (5C21088-MSD1)						Source: IOC1561-01					
Antimony	88.8	2.0	0.18	ug/l	80.0	0.45	110	70-130	6	20	
Cadmium	83.0	1.0	0.015	ug/l	80.0	0.025	104	70-130	5	20	
Copper	77.9	2.0	0.49	ug/l	80.0	1.9	95	70-130	1	20	
Lead	81.3	1.0	0.13	ug/l	80.0	ND	102	70-130	3	20	

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 Project Manager

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

Project ID: Routine Outfall 003

Report Number: IOC1565

Sampled: 03/19/05
 Received: 03/19/05

METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	RPD RPD	RPD Limit	Data Qualifiers
Batch: 5C20029 Extracted: 03/20/05										
Blank Analyzed: 03/20/2005 (5C20029-BLK1)										
Chloride	ND	0.50	0.26	mg/l						
Nitrate/Nitrite-N	ND	0.11	0.072	mg/l						
Sulfate	ND	0.50	0.18	mg/l						
LCS Analyzed: 03/20/2005 (5C20029-BS1)										
Chloride	4.65	0.50	0.26	mg/l	5.00		93		90-110	M-3
Sulfate	9.69	0.50	0.18	mg/l	10.0		97		90-110	M-3
Batch: 5C21062 Extracted: 03/21/05										
Blank Analyzed: 03/21/2005 (5C21062-BLK1)										
Oil & Grease	ND	5.0	0.94	mg/l						
LCS Analyzed: 03/21/2005 (5C21062-BS1)										
Oil & Grease	17.1	5.0	0.94	mg/l	20.0		86		65-120	M-NR1
LCS Dup Analyzed: 03/21/2005 (5C21062-BSD1)										
Oil & Grease	16.0	5.0	0.94	mg/l	20.0		80		65-120	7 20
Batch: 5C21068 Extracted: 03/21/05										
Blank Analyzed: 03/21/2005 (5C21068-BLK1)										
Total Suspended Solids	ND	10	10	mg/l						
LCS Analyzed: 03/21/2005 (5C21068-BS1)										
Total Suspended Solids	942	10	10	mg/l	1000		94		85-115	

Del Mar Analytical, Irvine
 Wendy Kirkeeng For Michele Harper
 Project Manager

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MWH-Pasadena/Boeing 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Attention: Bronwyn Kelly	Project ID: Routine Outfall 003 Report Number: IOC1565	Sampled: 03/19/05 Received: 03/19/05
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METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	RPD Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5C21068 Extracted: 03/21/05											
Duplicate Analyzed: 03/21/2005 (5C21068-DUP1)						Source: IOC1566-01					
Total Suspended Solids	ND	10	10	mg/l		ND				10	
Batch: 5C21073 Extracted: 03/21/05											
Blank Analyzed: 03/21/2005 (5C21073-BLK1)											
Total Dissolved Solids	ND	10	10	mg/l							
LCS Analyzed: 03/21/2005 (5C21073-BS1)											
Total Dissolved Solids	968	10	10	mg/l	1000		97	90-110			
Duplicate Analyzed: 03/21/2005 (5C21073-DUP1)						Source: IOC1566-01					
Total Dissolved Solids	320	10	10	mg/l		300			6	10	

Del Mar Analytical, Irvine
 Wendy Kirkeeng For Michele Harper
 Project Manager

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

Project ID: Routine Outfall 003

Report Number: IOC1565

Sampled: 03/19/05

Received: 03/19/05

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
IOC1565-01	413.1 Oil and Grease	Oil & Grease	mg/l	0	5.0	15
IOC1565-01	Antimony-200.8	Antimony	ug/l	0.26	2.0	6.00
IOC1565-01	Cadmium-200.8	Cadmium	ug/l	0.029	1.0	4.00
IOC1565-01	Chloride - 300.0	Chloride	mg/l	24	0.50	150
IOC1565-01	Copper-200.8	Copper	ug/l	1.80	2.0	14
IOC1565-01	Mercury - 245.1	Mercury	ug/l	0.00038	0.20	0.20
IOC1565-01	Nitrogen, NO3+NO2 -N	Nitrate/Nitrite-N	mg/l	0.29	0.11	10.00
IOC1565-01	Sulfate-300.0	Sulfate	mg/l	160	2.5	250
IOC1565-01	TDS - SM 2540C	Total Dissolved Solids	mg/l	610	10	850

Del Mar Analytical, Irvine
 Wendy Kirkeeng For Michele Harper
 Project Manager

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

Project ID: Routine Outfall 003

Report Number: IOC1565

Sampled: 03/19/05
Received: 03/19/05

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

Del Mar Analytical, Irvine
Wendy Kirkeeng For Michele Harper
Project Manager

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IOC1565 <Page 10 of 11>



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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: IOC1565	Sampled: 03/19/05 Received: 03/19/05
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Certification Summary

Del Mar Analytical, Irvine

Method	Matrix	Nelac	California
EPA 160.2	Water	X	X
EPA 200.8	Water	X	X
EPA 245.1	Water	X	X
EPA 300.0	Water	X	X
EPA 413.1	Water	X	X
SM2540C	Water	X	X

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

Subcontracted Laboratories

Alta Analytical California Cert #1640

1104 Windfield Way - El Dorado Hills, CA 95762

Analysis Performed: 1613-Dioxin-HR

Samples: IOC1565-01

Analysis Performed: EDD + Level 4

Samples: IOC1565-01

Del Mar Analytical, Irvine
 Wendy Kirkeeng For Michele Harper
 Project Manager

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DOC 1565

CHAIN OF CUSTODY FORM

Del Mar Analytical Version 02/17/05

Client Name/Address:		Project:		ANALYSIS REQUIRED							Field readings:	
MWH-Pasadena 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101		Boeing-SSFL NPDES Routine Outfall 003 Stormwater at RMHF		Total Recoverable Metals: Sb, Cd, Cu, Pb, Hg	TCDD (and all congeners)	Oil & Grease (EPA 413.1)	CF, SO4, NO3+NO2-N	TDS, TSS	Gross Alpha, Gross Beta, Tritium (906.0), Sr-90 (905.0), Total Combined Radium 226 & Radium 228	Temp = 54.3 pH = 6.9	Comments	
Sample Description	Sample Matrix	Container Type	# of Cont.	Sampling Date/Time	Preservative	Bottle #						
Outfall 003	W	1L Poly	1	3-19-05 09:55	HNO3	1A	X					
Outfall 003-Dup	W	1L Poly	1		HNO3	1B	X					
Outfall 003	W	1L Amber	2		None	2A, 2B	X					
Outfall 003	W	1L Amber	2		HCl	3A, 3B	X					
Outfall 003	W	Poly-500 ml	2		None	4A, 4B	X					
Outfall 003	W	Poly-500 ml	2		None	5A, 5B	X					
Outfall 003	W	Poly-1 gal	2		None							Analyze for Total Combined RA-226&228 only if Gross Alpha > 15pCi/L
OK 3/15/05												
DRP												
Relinquished By	Date/Time:		Received By	Date/Time:		Turn around Time: (check)						
<i>[Signature]</i>	3-05 6:00		<i>[Signature]</i>	3/19/05 12:45		24 Hours	48 Hours	72 Hours	Perchlorate Only 72 Hours	Metals Only 72 Hours	Sample Integrity: (Check)	On Ice:
Relinquished By	Date/Time:		Received By	Date/Time:		Turn around Time: (check)						
<i>[Signature]</i>	3-05 6:00		<i>[Signature]</i>	3/19/05 15:20		24 Hours	48 Hours	72 Hours	Perchlorate Only 72 Hours	Metals Only 72 Hours	Sample Integrity: (Check)	On Ice:
Relinquished By	Date/Time:		Received By	Date/Time:		Turn around Time: (check)						
<i>[Signature]</i>	3/19/05 17:30		<i>[Signature]</i>	3/19/05 17:30		24 Hours	48 Hours	72 Hours	Perchlorate Only 72 Hours	Metals Only 72 Hours	Sample Integrity: (Check)	On Ice: X 6°C



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March 28, 2005

MWH-Pasadena/ Boeing
300 North Lake Avenue, Suite 1200
Pasadena, CA 91101

Attention: Bronwyn Kelly
Project: Routine Outfall 003
Sampled: 03/19/05
Del Mar Analytical Number: IOC1565

Dear Ms. Kelly:

Alta Analytical Laboratory performed the EPA Method 1613 for tetra-through-octa chlorinated dioxins and furans analysis for the project referenced above. Please use the following cross-reference table when reviewing your results.

MWH ID	DEL MAR ID	ALTA ID
Routine Outfall 003	IOC1565-01	25943-001

Attached is the original report from the subcontract laboratory. If you have any questions or require further assistance, please do not hesitate to contact me at (949) 261-1022 at extension 215.

Sincerely yours,
DEL MAR ANALYTICAL

Michele Harper
Project Manager



March 24, 2005

Alta Project I.D.: 25943

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

Dear Ms. Harper,

Enclosed are the results for the one aqueous sample received at Alta Analytical Laboratory on March 22, 2005 under your Project Name "IOC1565". This sample was extracted and analyzed using EPA Method 1613 for tetra-through-octa chlorinated dioxins and furans. A rush 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,

Martha M. Maier
Director of HRMS Services



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: 3/22/2005

Alta Lab. ID

Client Sample ID

25943-001

IOC1565-01

SECTION II



EPA Method 1613

Method Blank		Lab Sample: 0-MB001			
Matrix:	Aqueous	QC Batch No.:	6624 <th>Date Analyzed DB-5:</th> <td>23-Mar-05 </td>	Date Analyzed DB-5:	23-Mar-05
Sample Size:	1.000 L	Date Extracted:	22-Mar-05 <th>Date Analyzed DB-225:</th> <td>NA </td>	Date Analyzed DB-225:	NA
Analyte	Conc. (pg/L)	DL ^a	EMPC ^b	%R	LCL-UCL ^d Qualifiers
2,3,7,8-TCDD	ND	0.841		79.3	25 - 164
1,2,3,7,8-PeCDD	ND	0.749		75.2	25 - 181
1,2,3,4,7,8-HxCDD	ND	1.49		74.0	32 - 141
1,2,3,6,7,8-HxCDD	ND	1.52		80.9	28 - 130
1,2,3,7,8,9-HxCDD	ND	1.50		72.5	23 - 140
1,2,3,4,6,7,8-HpCDD	ND	1.17		55.5	17 - 157
OCDD	ND	3.33		82.1	24 - 169
2,3,7,8-TCDF	ND	0.795		74.6	24 - 185
1,2,3,7,8-PeCDF	ND	1.67		77.9	21 - 178
2,3,4,7,8-PeCDF	ND	1.39		62.7	26 - 152
1,2,3,4,7,8-HxCDF	ND	0.474		73.0	26 - 123
1,2,3,6,7,8-HxCDF	ND	0.442		71.1	28 - 136
2,3,4,6,7,8-HxCDF	ND	0.510		67.2	29 - 147
1,2,3,7,8,9-HxCDF	ND	0.820		67.8	28 - 143
1,2,3,4,6,7,8-HpCDF	ND	0.929		71.3	26 - 138
1,2,3,4,7,8,9-HpCDF	ND	1.13		58.9	17 - 157
OCDF	ND	2.74		83.9	35 - 197
Totals					
Total TCDD	ND	0.841			
Total PeCDD	ND	0.749			
Total HxCDD	ND	1.51			
Total HpCDD	ND	1.17			
Total TCDF	ND	0.795			
Total PeCDF	ND	1.52			
Total HxCDF	ND	0.545			
Total HpCDF	ND	1.02			

Footnotes

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

Analyst: JMH

Approved By: Martha M. Maier 24-Mar-2005 09:59



EPA Method 1613

OPR Results		Lab Sample: 0-OPR001		Date Analyzed DB-5: 23-Mar-05		Date Analyzed DB-225: NA	
Matrix:	Aqueous	QC Batch No.:	6624	Lab Sample:	0-OPR001	Date Analyzed DB-5:	23-Mar-05
Sample Size:	1,000 L	Date Extracted:	22-Mar-05	Date Analyzed DB-225:	NA	Lab Sample:	0-OPR001
Analyte	Spike Conc. (ng/mL)	OPR Limits	Labeled Standard	%R	LCL-UCL		
2,3,7,8-TCDD	10.0	6.7 - 15.8	<u>IS</u> 13C-2,3,7,8-TCDD	86.2	25 - 164		
1,2,3,7,8-PeCDD	50.0	35 - 71	13C-1,2,3,7,8-PeCDD	83.6	25 - 181		
1,2,3,4,7,8-HxCDD	50.0	35 - 82	13C-1,2,3,4,7,8-HxCDD	83.1	32 - 141		
1,2,3,6,7,8-HxCDD	50.0	38 - 67	13C-1,2,3,6,7,8-HxCDD	90.5	28 - 130		
1,2,3,7,8,9-HxCDD	50.0	32 - 81	13C-1,2,3,4,6,7,8-HpCDD	80.1	23 - 140		
1,2,3,4,6,7,8-HpCDD	50.0	35 - 70	13C-OCDD	60.0	17 - 157		
OCDD	100	78 - 144	13C-2,3,7,8-TCDF	89.6	24 - 169		
2,3,7,8-TCDF	10.0	7.5 - 15.8	13C-1,2,3,7,8-PeCDF	82.2	24 - 185		
1,2,3,7,8-PeCDF	50.0	40 - 67	13C-2,3,4,7,8-PeCDF	86.0	21 - 178		
2,3,4,7,8-PeCDF	50.0	34 - 80	13C-1,2,3,4,7,8-HxCDF	69.1	26 - 152		
1,2,3,4,7,8-HxCDF	50.0	36 - 67	13C-1,2,3,6,7,8-HxCDF	83.1	26 - 123		
1,2,3,6,7,8-HxCDF	50.0	42 - 65	13C-2,3,4,6,7,8-HxCDF	80.9	28 - 136		
2,3,4,6,7,8-HxCDF	50.0	35 - 78	13C-1,2,3,7,8,9-HxCDF	77.1	29 - 147		
1,2,3,7,8,9-HxCDF	50.0	39 - 65	13C-1,2,3,4,6,7,8-HpCDF	77.1	28 - 143		
1,2,3,4,6,7,8-HpCDF	50.0	41 - 61	13C-1,2,3,4,7,8,9-HpCDF	78.6	26 - 138		
1,2,3,4,7,8,9-HpCDF	50.0	39 - 69	13C-OCDF	65.1	17 - 157		
OCDF	100	63 - 170	<u>CRS</u> 37Cl-2,3,7,8-TCDD	89.8	35 - 197		

Analyst: JMH

Approved By: Martha M. Maier 24-Mar-2005 09:59



Sample ID: IOC1565-01

EPA Method 1613

Client Data		Sample Data		Laboratory Data			
Name: Project: Date Collected: Time Collected:	Del Mar Analytical, Irvine IOC1565 19-Mar-05 0955	Matrix: Sample Size:	Aqueous 0.957 L	Lab Sample: QC Batch No.: Date Analyzed DB-5:	25943-001 6624 24-Mar-05	Date Received: Date Extracted: Date Analyzed DB-225: NA	22-Mar-05 22-Mar-05 NA
Analyte	Conc. (pg/L)	DL ^a	EMPC ^b	Labeled Standard	%R	LCL-UCL ^d	Qualifiers
2,3,7,8-TCDD	ND	0.850		IS 13C-2,3,7,8-TCDD	91.0	25 - 164	
1,2,3,7,8-PeCDD	ND	0.716		13C-1,2,3,7,8-PeCDD	81.6	25 - 181	
1,2,3,4,7,8-HxCDD	ND	1.01		13C-1,2,3,4,7,8-HxCDD	87.1	32 - 141	
1,2,3,6,7,8-HxCDD	ND	1.04		13C-1,2,3,6,7,8-HxCDD	92.0	28 - 130	
1,2,3,7,8,9-HxCDD	ND	1.02		13C-1,2,3,4,6,7,8-HpCDD	89.3	23 - 140	
1,2,3,4,6,7,8-HpCDD	ND	1.76		13C-OCDD	72.6	17 - 157	
OCDD	ND		5.58	13C-2,3,7,8-TCDF	93.7	24 - 169	
2,3,7,8-TCDF	ND	0.830		13C-1,2,3,7,8-PeCDF	83.3	24 - 185	
1,2,3,7,8-PeCDF	ND	1.45		13C-2,3,4,7,8-PeCDF	83.9	21 - 178	
2,3,4,7,8-PeCDF	ND	1.37		13C-1,2,3,4,7,8-HxCDF	70.1	26 - 152	
1,2,3,4,7,8-HxCDF	ND	0.532		13C-1,2,3,6,7,8-HxCDF	79.0	26 - 123	
1,2,3,6,7,8-HxCDF	ND	0.502		13C-2,3,4,6,7,8-HxCDF	78.1	28 - 136	
2,3,4,6,7,8-HxCDF	ND	0.587		13C-1,2,3,7,8,9-HxCDF	80.0	29 - 147	
1,2,3,7,8,9-HxCDF	ND	0.859		13C-1,2,3,4,6,7,8-HpCDF	82.5	28 - 143	
1,2,3,4,6,7,8-HpCDF	ND	0.862		13C-1,2,3,4,7,8,9-HpCDF	89.2	26 - 138	
1,2,3,4,7,8,9-HpCDF	ND	1.03		13C-OCDF	79.3	17 - 157	
OCDF	ND	2.68		CRS 37Cl-2,3,7,8-TCDD	88.2	35 - 197	
Totals							
Total TCDD	ND	0.850					
Total PeCDD	ND	0.716					
Total HxCDD	ND	1.02					
Total HpCDD	ND	1.76					
Total TCDF	ND	0.830					
Total PeCDF	ND	1.41					
Total HxCDF	ND	0.609					
Total HpCDF	ND	0.934					
Footnotes							
a. Sample specific estimated detection limit.							
b. Estimated maximum possible concentration.							
c. Method detection limit.							
d. Lower control limit - upper control limit.							

Analyst: JMH

Approved By: Martha M. Maier 24-Mar-2005 09:59

APPENDIX

DATA QUALIFIERS & ABBREVIATIONS

B	This compound was also detected in the method blank.
D	The amount reported is the maximum possible concentration due to possible chlorinated diphenylether interference.
H	The signal-to-noise ratio is greater than 10:1.
I	Chemical Interference
J	The amount detected is below the Lower Calibration Limit of the instrument.
P	Homologue totals include any coplanar PCBs detected at concentrations less than the reporting limit.
*	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 correspond 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.

The control limits are “interim limits only” until in-house limits are utilized.

CURRENT CERTIFICATIONS



NELAP — (Primary AA: California, Certificate No. 02102CA)

Department of the Navy

U.S. Army Corps of Engineers

U.S. EPA Region 5

Bureau of Reclamation — Mid-Pacific Region — (MP-470, Res-1.10)

Commonwealth of Kentucky — (Certificate No. 90063)

Commonwealth of Virginia — (Certificate No. 00013)

State of Alaska, Department of Environmental Conservation — (Certificate No. OS-00197)

State of Arizona — (Certificate No. AZ0639)

State of Arkansas, Department of Health — (Approval granted through CA certification)

State of Arkansas, Department of Environmental Quality

State of California — (Certificate No. 1640)

State of Colorado

State of Connecticut — (Certificate No. PH-0182)

State of Florida — (Certificate No. 87456)

State of Louisiana, Department of Health and Hospitals — (Certificate No. LA000014)

State of Louisiana, Department of Environmental Quality

State of Maine

State of Michigan (Certificate No. 81178087)

State of Mississippi — (Approval granted through CA certification)

State of Nevada — (Certificate No. CA413)

State of New Jersey — (Certificate No. CA003)

State of New York, Department of Health — (Certificate No. 11411)

State of North Carolina — (Certification No. 06700)

State of North Dakota, Department of Health — (Certificate No. R-078)

State of New Mexico

State of Oklahoma — (D9919)

State of Oregon — (Certificate No. CA413)

State of Pennsylvania — (Certificate No. 68-490)

State of South Carolina — (Certificate No. 87002001)

State of Tennessee — (Certificate No. 02996)

State of Texas — (Certificate No. TX247-1000A)

State of Utah — (Certificate No. E-201)

State of Washington — (Certification No. C091)

State of Wisconsin — (Certificate No. 998036160)

State of Wyoming — (USEPA Region 8 Ref: 8TMS-Q)

STANDARD OPERATING PROCEDURE

Attachment 10.B.1

SAMPLE LOG-IN CHECKLIST

ALTA Project No.: 25943

1. Date Samples Arrived: <u>3/22/05 0945</u> Initials: <u>CW</u> Location: <u>WR-2</u>			
2. Time / Date logged in: <u>3/22/05 1115</u> Initials: <u>CW</u> Location: <u>WR-2</u>			
3. Samples Arrived By: (circle) <u>FedEx</u> UPS World Courier Other:			
4. Shipping Preservation: (circle) <u>Ice</u> Blue Ice / Dry Ice / None Temp °C <u>2.9°</u>			
5. Shipping Container(s) intact? If not, describe condition in comment section.	YES	NO	NA
6. Shipping Container(s) Custody Seals Present? Intact? If not intact, describe condition in comment section.	✓		
7. Shipping Documentation Present? (circle) Shipping Label <u>Airbill</u> Tracking Number <u>7915 7864 5670</u>	✓		
8. Sample Custody Seal(s) Present? No. of Seals _____ or Seal No. Intact? If not intact, describe condition in comment section.		✓	✓
9. Sample Container Intact? If no, indicate sample condition in comment section.	✓		
10. Chain of Custody (COC) or other Sample Documentation Present?	✓		
11. COC/Documentation Acceptable? If no, complete COC Anomaly Form.	✓		
12. Shipping Container (circle): ALTA <u>Client</u> Retain or <u>Return</u> or Disposed			
13. Container(s) and/or Bottle(s) Requested?		✓	
14. Drinking Water Sample? (HRMS Only) If yes, Acceptable Preservation? Y or N Preservation Info From? (circle) COC or Sample Container or None Noted			✓ ✓

Comments:

IOC1524-01
 IOC1561-01
 IOC1564-01
 IOC1565-01
 IOC1566-01

ALTA Analytical Laboratory
 El Dorado Hills, CA 95762



17461 Derian Ave., Suite 100, Irvine, CA 92614 Ph (949) 261-1022 Fax (949) 261-1228
 1014 E. Cooley Dr., Suite A, Colton, CA 92324 Ph (909) 370-6667 Fax (909) 370-1046
 9484 Chatsworth Drive, Suite 805, San Diego, CA 92123 Ph (619) 505-9396 Fax (619) 505-9688
 9830 South 51st Street, Suite B-120, Phoenix, AZ 85044 Ph (480) 785-0043 Fax (480) 785-0891
 2620 E. Sunset Rd., Suite 85, Las Vegas, NV 89129 Ph (702) 798-3820 Fax (702) 798-3821

SUBCONTRACT ORDER - PROJECT # IOC1565

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 Harper	Alta Analytical 1104 Windfield Way El Dorado Hills, CA 95762 Phone: (916) 933-1640 Fax: (916) 933-0940

Standard TAT is requested unless specific due date is requested => Due Date: 5 day TAT Initials: _____

Analysis	Expiration	Comments
Sample ID: IOC1565-01 Water	Sampled: 03/19/05 09:55	Instant Notification
1613-Dioxin-HR	03/26/05 09:55	J flags, 17 congeners, no TEQ, sub to Alta
EDD + Level 4	04/16/05 09:55	Excel EDD email to pm, Include Std logs for Lvl IV
Containers Supplied:		
1 L Amber (IOC1565-01C)		
1 L Amber (IOC1565-01D)		

25943 2.9°

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

	3-21-05	1700		3/22/05	OAS
Released By	Date	Time	Received By	Date	Time