

Section I: Sample Inventory Report

Date Received: 4/12/2005

Alta Lab. ID

Client Sample ID

26036-001

IOD0649-01

SECTION II



Method Blank		EPA Method 1613			
Matrix:	Aqueous	QC Batch No.:	6707	Lab Sample:	0-MB001
Sample Size:	1.000 L	Date Extracted:	16-Apr-05	Date Analyzed DB-5:	17-Apr-05
				Date Analyzed DB-225:	NA
Analyte	Conc. (Ug/L)	DL ^a	EMPC ^b	%R	LCL-UCL ^d Qualifiers
2,3,7,8-TCDD	ND	0.00000119		68.7	25 - 164
1,2,3,7,8-PeCDD	ND	0.000000985		77.0	25 - 181
1,2,3,4,7,8-HxCDD	ND	0.00000193		71.6	32 - 141
1,2,3,6,7,8-HxCDD	ND	0.00000188		77.9	28 - 130
1,2,3,7,8,9-HxCDD	ND	0.00000190		65.3	23 - 140
1,2,3,4,6,7,8-HpCDD	ND	0.00000164		42.9	17 - 157
OCDD	ND	0.00000457		72.5	24 - 169
2,3,7,8-TCDF	ND	0.00000111		69.4	24 - 185
1,2,3,7,8-PeCDF	ND	0.00000188		73.5	21 - 178
2,3,4,7,8-PeCDF	ND	0.00000164		70.4	26 - 152
1,2,3,4,7,8-HxCDF	ND	0.000000618		81.4	26 - 123
1,2,3,6,7,8-HxCDF	ND	0.000000620		75.6	28 - 136
2,3,4,6,7,8-HxCDF	ND	0.000000756		73.0	29 - 147
1,2,3,7,8,9-HxCDF	ND	0.00000127		70.1	28 - 143
1,2,3,4,6,7,8-HpCDF	ND	0.00000100		58.9	26 - 138
1,2,3,4,7,8,9-HpCDF	ND	0.00000151		49.3	17 - 157
OCDF	ND	0.00000490		83.2	35 - 197
Totals					
Total TCDD	ND	0.00000119			
Total PeCDD	ND	0.000000985			
Total HxCDD	ND	0.00000190			
Total HpCDD	ND	0.00000164			
Total TCDF	ND	0.00000111			
Total PeCDF	ND	0.00000176			
Total HxCDF	ND	0.000000785			
Total HpCDF	ND	0.00000121			
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 19-Apr-2005 13:04



EPA Method 1613

OPR Results		Lab Sample: 0-OPR001		Date Analyzed DB-5: 17-Apr-05		Date Analyzed DB-225: NA	
Matrix:	Aqueous	QC Batch No.:	6707				
Sample Size:	1,000 L	Date Extracted:	16-Apr-05				
Analyte	Spike Conc.	Conc. (ng/mL)	OPR Limits	Labeled Standard	%R	LCL-UCL	
2,3,7,8-TCDD	10.0	9.00	6.7 - 15.8	IS 13C-2,3,7,8-TCDD	67.4	25 - 164	
1,2,3,7,8-PeCDD	50.0	45.9	35 - 71	13C-1,2,3,7,8-PeCDD	70.6	25 - 181	
1,2,3,4,7,8-HxCDD	50.0	46.6	35 - 82	13C-1,2,3,4,7,8-HxCDD	73.8	32 - 141	
1,2,3,6,7,8-HxCDD	50.0	46.6	38 - 67	13C-1,2,3,6,7,8-HxCDD	84.1	28 - 130	
1,2,3,7,8,9-HxCDD	50.0	43.6	32 - 81	13C-1,2,3,4,6,7,8-HpCDD	63.6	23 - 140	
1,2,3,4,6,7,8-HpCDD	50.0	48.9	35 - 70	13C-OCDD	46.9	17 - 157	
OCDD	100	98.2	78 - 144	13C-2,3,7,8-TCDF	69.9	24 - 169	
2,3,7,8-TCDF	10.0	9.06	7.5 - 15.8	13C-1,2,3,7,8-PeCDF	68.9	24 - 185	
1,2,3,7,8-PeCDF	50.0	47.8	40 - 67	13C-2,3,4,7,8-PeCDF	71.3	21 - 178	
2,3,4,7,8-PeCDF	50.0	46.9	34 - 80	13C-1,2,3,4,7,8-HxCDF	77.5	26 - 152	
1,2,3,4,7,8-HxCDF	50.0	51.7	36 - 67	13C-1,2,3,6,7,8-HxCDF	89.9	26 - 123	
1,2,3,6,7,8-HxCDF	50.0	48.8	42 - 65	13C-2,3,4,6,7,8-HxCDF	78.6	28 - 136	
2,3,4,6,7,8-HxCDF	50.0	51.4	35 - 78	13C-1,2,3,7,8,9-HxCDF	68.7	29 - 147	
1,2,3,7,8,9-HxCDF	50.0	51.5	39 - 65	13C-1,2,3,4,6,7,8-HpCDF	63.2	28 - 143	
1,2,3,4,6,7,8-HpCDF	50.0	50.8	41 - 61	13C-1,2,3,4,7,8,9-HpCDF	66.0	26 - 138	
1,2,3,4,7,8,9-HpCDF	50.0	53.6	39 - 69	13C-OCDF	55.0	17 - 157	
OCDF	100	103	63 - 170	CRS 37Cl-2,3,7,8-TCDD	81.7	35 - 197	

Analyst: JMH

Approved By: Marthia M. Maier 18-Apr-2005 16:28



Sample ID: IOD0649-01		EPA Method 1613						
Client Data		Sample Data		Laboratory Data				
Name: Del Mar Analytical, Irvine	Matrix: Aqueous	Lab Sample: 26036-001	Date Received: 12-Apr-05					
Project: IOD0649	Sample Size: 1.008 L	QC Batch No.: 6707	Date Extracted: 16-Apr-05					
Date Collected: 9-Apr-05		Date Analyzed DB-5: 18-Apr-05	Date Analyzed DB-225: NA					
Time Collected: 0945								
Analyte	Conc. (Ug/L)	DL ^a	EMPC ^b	Qualifiers	Labeled Standard	%R	LCL-UCL ^d	Qualifiers
2,3,7,8-TCDD	ND	0.00000179			13C-2,3,7,8-TCDD	49.4	25 - 164	
1,2,3,7,8-PeCDD	ND	0.00000171			13C-1,2,3,7,8-PeCDD	46.0	25 - 181	
1,2,3,4,7,8-HxCDD	ND	0.00000326			13C-1,2,3,4,7,8-HxCDD	46.9	32 - 141	
1,2,3,6,7,8-HxCDD	ND	0.00000333			13C-1,2,3,6,7,8-HxCDD	52.3	28 - 130	
1,2,3,7,8,9-HxCDD	ND	0.00000328			13C-1,2,3,4,6,7,8-HpCDD	35.9	23 - 140	
1,2,3,4,6,7,8-HpCDD	ND	0.00000581			13C-OCDD	28.5	17 - 157	
OCDD	0.0000263			J	13C-2,3,7,8-TCDF	52.6	24 - 169	
2,3,7,8-TCDF	ND	0.00000134			13C-1,2,3,7,8-PeCDF	45.3	24 - 185	
1,2,3,7,8-PeCDF	ND	0.00000338			13C-2,3,4,7,8-PeCDF	46.4	21 - 178	
2,3,4,7,8-PeCDF	ND	0.00000303			13C-1,2,3,4,7,8-HxCDF	48.8	26 - 152	
1,2,3,4,7,8-HxCDF	ND	0.00000966			13C-1,2,3,6,7,8-HxCDF	54.2	26 - 123	
1,2,3,6,7,8-HxCDF	ND	0.00000932			13C-2,3,4,6,7,8-HxCDF	50.4	28 - 136	
2,3,4,6,7,8-HxCDF	ND	0.00000113			13C-1,2,3,7,8,9-HxCDF	39.4	29 - 147	
1,2,3,7,8,9-HxCDF	ND	0.00000234			13C-1,2,3,4,6,7,8-HpCDF	36.0	28 - 143	
1,2,3,4,6,7,8-HpCDF	ND	0.00000260			13C-1,2,3,4,7,8,9-HpCDF	37.8	26 - 138	
1,2,3,4,7,8,9-HpCDF	ND	0.00000309			13C-OCDF	32.7	17 - 157	
OCDF	ND	0.00000526			CRS 37Cl-2,3,7,8-TCDD	78.5	35 - 197	
Totals								
Total TCDD	ND	0.00000179						
Total PeCDD	ND	0.00000171						
Total HxCDD	ND	0.00000329						
Total HpCDD	ND	0.00000581						
Total TCDF	ND	0.00000134						
Total PeCDF	ND	0.00000320						
Total HxCDF	ND	0.00000123						
Total HpCDF	ND	0.00000282						
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 19-Apr-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.
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) 370-4667 Fax (909) 370-1046
 9484 Chesapeake Drive, Suite 805, San Diego, CA 92123 Ph (619) 505-9596 Fax (619) 505-9689
 9830 South 51st Street, Suite B-120, Phoenix, AZ 85044 Ph (480) 785-0043 Fax (480) 785-0851
 2520 E. Sunset Rd., Suite #3, Las Vegas, NV 89120 Ph (702) 796-3620 Fax (702) 796-3621

SUBCONTRACT ORDER - PROJECT # IOD0649

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) 673-0106 <div style="text-align: right; font-size: 1.2em; margin-top: 10px;"> 26036 OIC </div>

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

Analysis	Expiration	Comments
Sample ID: IOD0649-01 Water 1613-Dioxin-HR	Sampled: 04/09/05 09:45 04/16/05 09:45	Instant Notification J flags, 17 congeners, no TEQ, sub to Alta
Containers Supplied:		
1 L Amber (IOD0649-01G)		
1 L Amber (IOD0649-01H)		

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): _____

[Signature] 4-11-05 1700
[Signature] 4/11/05 0915

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

STANDARD OPERATING PROCEDURE

Attachment 10.B.1

SAMPLE LOG-IN CHECKLIST

ALTA Project No.: 26036

1. Date Samples Arrived: <u>04/12/05 0915</u> Initials: <u>BBB</u> Location: <u>WR-2</u>			
2. Time / Date logged in: <u>1640 4/12/05</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>0.1</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>79097741 9517</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 initial found on sample labels

ALTA Analytical Laboratory
El Dorado Hills, CA 95762



17451 Derian Ave. Suite 100, Irvine, CA 92614 Ph (949) 261-1022 Fax (949) 261-1228
 1014 E. Cooley Dr., Suite A, Cohon, CA 92824 Ph (909) 370-4087 Fax (909) 370-1048
 9484 Chocomaque Drive, Suite 805, San Diego, CA 92123 Ph (619) 500-8596 Fax (619) 505-0639
 9830 South 51st Street, Suite B-120, Phoenix, AZ 85044 Ph (480) 785-0043 Fax (480) 785-0851
 2320 E. Sunset Rd., Suite 42, Las Vegas, NV 89120 Ph (702) 798-3820 Fax (702) 798-3821

SUBCONTRACT ORDER - PROJECT # IOD0649

<p>SENDING LABORATORY: Del Mar Analytical, Irvine 17451 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) 673-0106</p> <p style="font-size: 2em; margin-left: 200px;">26036 0.1°C</p>
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Standard TAT is requested unless specific due date is requested => **Due Date:** _____ **Initials:** _____

Analysis	Expiration	Comments
Sample ID: IOD0649-01 Water 1613-Dioxin-HP EDD + Level 4 Containers Supplied: 1 L Amber (IOD0649-01G) 1 L Amber (IOD0649-01H)	Sampled: 04/09/05 09:45 04/16/05 09:45 05/07/05 09:45	Instant Notification J flags, 17 congeners, no TEQ, sub to Alta Excel EDD email to pm, include Std logs for Lvl IV

Sampler = P.P. → Revised

FAXED
4/12/05

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	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: <i>[Signature]</i>	Date: 4/12/05	Received By: _____	Date: _____
Released By: _____	Date: _____	Received By: _____	Date: _____

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: IOD0069, IOD0114, IOD0649

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: 3
No. of Reanalyses/Dilutions: 0
Reviewer: H. Chang
Date of Review: May 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	IOD0069-01	26003-001	water	1613
Outfall 001	IOD0114-01	26004-001	water	1613
Outfall 001	IOD0649-01	26036-001	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 of $4^{\circ}\text{C} \pm 2^{\circ}\text{C}$ at 0.1°C and 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. 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 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 (6707-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 (6707-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 results and reporting limits were reported in ug/L. No further qualifications were required.



Sample ID: IOD0069-01		Client Data		Sample Data		Laboratory Data		EPA Method 1613	
Del Mar Analytical, Irvine		Matrix: Aqueous		Lab Sample: 26003-001		Date Received: 5-Apr-05			
IOD0069		Sample Size: 1.016 L		QC Batch No.: 6707		Date Extracted: 16-Apr-05			
1-Apr-05				Date Analyzed DB-5: 18-Apr-05		Date Analyzed DB-225: NA			
0920									
Analyte	Conc. (Ug/L)	DL ^a	EMPC ^b	Qualifiers	Labeled Standard	%R	LCL-UCL ^d	Qualifiers	
2,3,7,8-TCDD	ND	0.00000205			IS 13C-2,3,7,8-TCDD	48.1	25 - 164		
1,2,3,7,8-PeCDD	ND	0.00000151			13C-1,2,3,7,8-PeCDD	46.6	25 - 181		
1,2,3,4,7,8-HxCDD	ND	0.00000293			13C-1,2,3,4,7,8-HxCDD	44.2	32 - 141		
1,2,3,6,7,8-HxCDD	ND	0.00000286			13C-1,2,3,6,7,8-HxCDD	48.6	28 - 130		
1,2,3,7,8,9-HxCDD	ND	0.00000288			13C-1,2,3,4,6,7,8-HpCDD	33.8	23 - 140		
1,2,3,4,6,7,8-HpCDD	ND	0.00000381			13C-OCDD	29.3	17 - 157		
OCDD	ND		0.0000130		13C-2,3,7,8-TCDF	48.6	24 - 169		
2,3,7,8-TCDF	ND	0.00000191			13C-1,2,3,7,8-PeCDF	43.5	24 - 185		
1,2,3,7,8-PeCDF	ND	0.00000305			13C-2,3,4,7,8-PeCDF	45.4	21 - 178		
2,3,4,7,8-PeCDF	ND	0.00000257			13C-1,2,3,4,7,8-HxCDF	46.5	26 - 152		
1,2,3,4,7,8-HxCDF	ND	0.00000884			13C-1,2,3,6,7,8-HxCDF	49.8	26 - 123		
1,2,3,6,7,8-HxCDF	ND	0.00000900			13C-2,3,4,6,7,8-HxCDF	47.8	28 - 136		
2,3,4,5,7,8-HxCDF	ND	0.00000108			13C-1,2,3,7,8,9-HxCDF	40.9	29 - 147		
1,2,3,7,8,9-HxCDF	ND	0.00000199			13C-1,2,3,4,6,7,8-HpCDF	33.1	28 - 143		
1,2,3,4,6,7,8-HpCDF	ND	0.00000229			13C-1,2,3,4,7,8,9-HpCDF	35.6	26 - 138		
1,2,3,4,7,8,9-HpCDF	ND	0.00000285			13C-OCDF	32.7	17 - 157		
OCDF	ND	0.00000608			CRS 37Cl-2,3,7,8-TCDD	78.8	35 - 197		
Totals									
Total TCDD	ND	0.00000205							
Total PeCDD	ND	0.00000151							
Total HxCDD	ND	0.00000288							
Total HpCDD	ND	0.00000381							
Total TCDF	ND	0.00000191							
Total PeCDF	ND	0.00000280							
Total HxCDF	ND	0.00000114							
Total HpCDF	ND	0.00000253							

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

Footnotes

Approved By: Martha M. Maier 18-Apr-2005 16:14

AMEC VALIDATED

LEVEL IV

Analysis: JMH

Project 26003



Sample ID: IOD0114-01 Outfall 001

EPA Method 1613

Client Data
 Name: Del Mar Analytical, Irvine
 Project: IOD0114
 Date Collected: 2-Apr-05
 Time Collected: 0846

Sample Data
 Matrix: Aqueous
 Sample Size: 1.018 L

Laboratory Data
 Lab Sample: 26004-001
 QC Batch No.: 6707
 Date Analyzed DB-5: 18-Apr-05
 Date Analyzed DB-225: NA

Date Received: 5-Apr-05
 Date Extracted: 16-Apr-05

Analyte	Conc. (Ug/L)	DL ^a	EMPC ^b	Qualifiers	Labeled Standard	%R	LCL-UCL ^d	Qualifiers
2,3,7,8-TCDD	ND	0.00000141			13C-2,3,7,8-TCDD	57.0	25 - 164	
1,2,3,7,8-PeCDD	ND	0.00000161			13C-1,2,3,7,8-PeCDD	57.6	25 - 181	
1,2,3,4,7,8-HxCDD	ND	0.00000284			13C-1,2,3,4,7,8-HxCDD	58.3	32 - 141	
1,2,3,6,7,8-HxCDD	ND	0.00000295			13C-1,2,3,6,7,8-HxCDD	64.7	28 - 130	
1,2,3,7,8,9-HxCDD	ND	0.00000289			13C-1,2,3,4,6,7,8-HpCDD	47.8	23 - 140	
1,2,3,4,6,7,8-HpCDD	ND	0.00000314			13C-OCDD	39.0	17 - 157	
OCDD	ND	0.0000144			13C-2,3,7,8-TCDF	58.1	24 - 169	
2,3,7,8-TCDF	ND	0.00000162			13C-1,2,3,7,8-PeCDF	54.0	24 - 185	
1,2,3,7,8-PeCDF	ND	0.00000244			13C-2,3,4,7,8-PeCDF	55.4	21 - 178	
2,3,4,7,8-PeCDF	ND	0.00000212			13C-1,2,3,4,7,8-HxCDF	61.6	26 - 152	
1,2,3,4,7,8-HxCDF	ND	0.00000598			13C-1,2,3,6,7,8-HxCDF	67.9	26 - 123	
1,2,3,6,7,8-HxCDF	ND	0.00000576			13C-2,3,4,6,7,8-HxCDF	62.5	28 - 136	
2,3,4,6,7,8-HxCDF	ND	0.00000712			13C-1,2,3,7,8,9-HxCDF	49.3	29 - 147	
1,2,3,7,8,9-HxCDF	ND	0.00000142			13C-1,2,3,4,6,7,8-HpCDF	47.7	28 - 143	
1,2,3,4,6,7,8-HpCDF	ND	0.00000212			13C-1,2,3,4,7,8,9-HpCDF	49.2	26 - 138	
1,2,3,4,7,8,9-HpCDF	ND	0.00000267			13C-OCDF	44.4	17 - 157	
OCDF	ND	0.00000576			CRS 37Cl-2,3,7,8-TCDD	83.1	35 - 197	

Totals

Total TCDD	ND	0.00000141		
Total PeCDD	ND	0.00000161		
Total HxCDD	ND	0.00000289		
Total HpCDD	ND	0.00000314		
Total TCDF	ND	0.00000162		
Total PeCDF	ND	0.00000227		
Total HxCDF	ND	0.00000760		
Total HpCDF	ND	0.00000236		

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 18-Apr-2005 16:20

AMEC VALIDATED

LEVEL IV



Sample ID: IOD0649-01 Outfall 001		EPA Method 1613			
Client Data		Sample Data		Laboratory Data	
Name:	Del Mar Analytical, Irvine	Matrix:	Aqueous	Lab Sample:	26036-001
Project:	IOD0649	Sample Size:	1.008 L	QC Batch No.:	6707
Date Collected:	9-Apr-05			Date Analyzed DB-5:	18-Apr-05
Time Collected:	0945			Date Analyzed DB-225:	NA
				Date Received:	12-Apr-05
				Date Extracted:	16-Apr-05
Analyte	Conc. (Ug/L)	DL ^a	EMPC ^b	Labeled Standard	%R LCL-UCL ^d Qualifiers
2,3,7,8-TCDD	ND	0.00000179		IS 13C-2,3,7,8-TCDD	49.4 25 - 164
1,2,3,7,8-PeCDD	ND	0.00000171		13C-1,2,3,7,8-PeCDD	46.0 25 - 181
1,2,3,4,7,8-HxCDD	ND	0.00000326		13C-1,2,3,4,7,8-HxCDD	46.9 32 - 141
1,2,3,6,7,8-HxCDD	ND	0.00000333		13C-1,2,3,6,7,8-HxCDD	52.3 28 - 130
1,2,3,7,8,9-HxCDD	ND	0.00000328		13C-1,2,3,4,6,7,8-HpCDD	35.9 23 - 140
1,2,3,4,6,7,8-HpCDD	ND	0.00000581		13C-OCDD	28.5 17 - 157
OCDD	0.0000263			13C-2,3,7,8-TCDF	52.6 24 - 169
2,3,7,8-TCDF	ND	0.00000134	J	13C-1,2,3,7,8-PeCDF	45.3 24 - 185
1,2,3,7,8-PeCDF	ND	0.00000338		13C-2,3,4,7,8-PeCDF	46.4 21 - 178
2,3,4,7,8-PeCDF	ND	0.00000303		13C-1,2,3,4,7,8-HxCDF	48.8 26 - 152
1,2,3,4,7,8-HxCDF	ND	0.00000966		13C-1,2,3,6,7,8-HxCDF	54.2 26 - 123
1,2,3,6,7,8-HxCDF	ND	0.00000932		13C-2,3,4,6,7,8-HxCDF	50.4 28 - 136
2,3,4,6,7,8-HxCDF	ND	0.00000113		13C-1,2,3,7,8,9-HxCDF	39.4 29 - 147
1,2,3,7,8,9-HxCDF	ND	0.00000234		13C-1,2,3,4,6,7,8-HpCDF	36.0 28 - 143
1,2,3,4,6,7,8-HpCDF	ND	0.00000260		13C-1,2,3,4,7,8,9-HpCDF	37.8 26 - 138
1,2,3,4,7,8,9-HpCDF	ND	0.00000309		13C-OCDF	32.7 17 - 157
OCDF	ND	0.00000526		CRS 37Cl-2,3,7,8-TCDD	78.5 35 - 197
Totals				Footnotes	
Total TCDD	ND	0.00000179		a. Sample specific estimated detection limit.	
Total PeCDD	ND	0.00000171		b. Estimated maximum possible concentration.	
Total HxCDD	ND	0.00000329		c. Method detection limit.	
Total HpCDD	ND	0.00000581		d. Lower control limit - upper control limit.	
Total TCDF	ND	0.00000134			
Total PeCDF	ND	0.00000320			
Total HxCDF	ND	0.00000123			
Total HpCDF	ND	0.00000282			

Analysis: JMH

Approved By: Martha M. Maier 19-Apr-2005 13:04

AMEC VALIDATED
LEVEL IV

CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

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

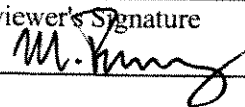
Package ID T711VO99
 Task Order 313150010
 SDG No. IOD0609

No. of Analyses 2

Laboratory Del Mar

Reviewer M. Pokorny

Analysis/Method Volatiles

Date: May 11, 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* 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: VOLATILES

SAMPLE DELIVERY GROUP: IOD0609

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#: IOD0609
Project Manager: B. Mellvaine
Matrix: Water
Analysis: Volatiles
QC Level: Level IV
No. of Samples: 2
No. of Reanalyses/Dilutions: 0
Reviewer: M. Pokorny
Date of Review: May 11, 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	IOD0609-01	water	624
Trip Blank	Trip Blank	IOD0609-02	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, as the samples were transported directly from the field to the laboratory, insufficient time had elapsed to allow the samples to cool below 6°C , and the sample receipt temperature was considered acceptable. 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 COC was 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 $\leq 35\%$ for the target compounds. One continuing calibrations associated with the sample analyses was analyzed 04/11/05. The RRFs were ≥ 0.05 in the continuing calibration. The %Ds for the continuing calibrations associated with the site sample 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 (5D11027-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 (5D11027-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 002 was the MS/MSD analyzed with this SDG. All percent recoveries and RPDs were within the 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.

2.8 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 (IOD0609-02) 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 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 $\mu\text{g/L}$ (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.



Del Mar Analytical

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

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

Project ID: Routine Outfall 002

Report Number: IOD0609

Sampled: 04/08/05
 Received: 04/08/05

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
Sample ID: IOD0609-01 (DRAFT: Outfall 002 - Water)										
Reporting Units: ug/l										
Benzene	EPA 624	5D11027	0.28	2.0	ND	1	04/11/05	04/11/05	U	
Carbon tetrachloride	EPA 624	5D11027	0.28	5.0	ND	1	04/11/05	04/11/05		
Chloroform	EPA 624	5D11027	0.33	2.0	ND	1	04/11/05	04/11/05		
1,1-Dichloroethane	EPA 624	5D11027	0.27	2.0	ND	1	04/11/05	04/11/05		
1,2-Dichloroethane	EPA 624	5D11027	0.28	2.0	ND	1	04/11/05	04/11/05		
1,1-Dichloroethene	EPA 624	5D11027	0.32	3.0	ND	1	04/11/05	04/11/05		
Ethylbenzene	EPA 624	5D11027	0.25	2.0	ND	1	04/11/05	04/11/05		
Tetrachloroethene	EPA 624	5D11027	0.32	2.0	ND	1	04/11/05	04/11/05		
Toluene	EPA 624	5D11027	0.36	2.0	ND	1	04/11/05	04/11/05		
1,1,1-Trichloroethane	EPA 624	5D11027	0.30	2.0	ND	1	04/11/05	04/11/05		
1,1,2-Trichloroethane	EPA 624	5D11027	0.30	2.0	ND	1	04/11/05	04/11/05		
Trichloroethene	EPA 624	5D11027	0.26	5.0	ND	1	04/11/05	04/11/05		
Trichlorofluoromethane	EPA 624	5D11027	0.34	5.0	ND	1	04/11/05	04/11/05		
Vinyl chloride	EPA 624	5D11027	0.26	5.0	ND	1	04/11/05	04/11/05		
Xylenes, Total	EPA 624	5D11027	0.52	4.0	ND	1	04/11/05	04/11/05		
Surrogate: Dibromofluoromethane (80-120%)					105 %					
Surrogate: Toluene-d8 (80-120%)					100 %					
Surrogate: 4-Bromofluorobenzene (80-120%)					97 %					
Sample ID: IOD0609-02 (DRAFT: Trip Blank - Water)										
Reporting Units: ug/l										
Benzene	EPA 624	5D11027	0.28	2.0	ND	1	04/11/05	04/11/05	U	
Carbon tetrachloride	EPA 624	5D11027	0.28	5.0	ND	1	04/11/05	04/11/05		
Chloroform	EPA 624	5D11027	0.33	2.0	ND	1	04/11/05	04/11/05		
1,1-Dichloroethane	EPA 624	5D11027	0.27	2.0	ND	1	04/11/05	04/11/05		
1,2-Dichloroethane	EPA 624	5D11027	0.28	2.0	ND	1	04/11/05	04/11/05		
1,1-Dichloroethene	EPA 624	5D11027	0.32	3.0	ND	1	04/11/05	04/11/05		
Ethylbenzene	EPA 624	5D11027	0.25	2.0	ND	1	04/11/05	04/11/05		
Tetrachloroethene	EPA 624	5D11027	0.32	2.0	ND	1	04/11/05	04/11/05		
Toluene	EPA 624	5D11027	0.36	2.0	ND	1	04/11/05	04/11/05		
1,1,1-Trichloroethane	EPA 624	5D11027	0.30	2.0	ND	1	04/11/05	04/11/05		
1,1,2-Trichloroethane	EPA 624	5D11027	0.30	2.0	ND	1	04/11/05	04/11/05		
Trichloroethene	EPA 624	5D11027	0.26	5.0	ND	1	04/11/05	04/11/05		
Trichlorofluoromethane	EPA 624	5D11027	0.34	5.0	ND	1	04/11/05	04/11/05		
Vinyl chloride	EPA 624	5D11027	0.26	5.0	ND	1	04/11/05	04/11/05		
Xylenes, Total	EPA 624	5D11027	0.52	4.0	ND	1	04/11/05	04/11/05		
Surrogate: Dibromofluoromethane (80-120%)					103 %					
Surrogate: Toluene-d8 (80-120%)					100 %					
Surrogate: 4-Bromofluorobenzene (80-120%)					98 %					

DRAFT REPORT
 DRAFT REPORT
 DATA SUBJECT TO CHANGE

AMEC VALIDATED

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LEVEL IV

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: GENERAL MINERALS

SAMPLE DELIVERY GROUP: IOD0649

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 #: IOD0649
Project Manager: B. McIlvaine
Matrix: Water
Analysis: General Minerals
QC Level: Level IV
No. of Samples: 1
Reviewer: L. Jarusewic
Date of Review: May 13, 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, 180.1, 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 001	Outfall 001	IOD0649-01	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. No qualifications were required.

2.3 BLANKS

Turbidity was detected in a bracketing CCB at 0.040 NTU; however, the turbidity CCB result was insufficient to qualify Outfall 001. The remaining method blank and CCB results reported on the summary forms and in the raw data for the 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

MS/MSD analyses were performed on Outfall 001 for ammonia. The RPD was within the laboratory-established control limits and no qualifications were required.

2.7 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

MS/MSD analyses were performed on Outfall 001 for ammonia. 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. 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 001

Report Number: IOD0649

Sampled: 04/09/05
 Received: 04/09/05

DRAFT: INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOD0649-01 (DRAFT: Outfall 001 - Water)					Sampled: 04/09/05				REV QUAL
Reporting Units: mg/l									QUAL COD
Ammonia-N (Distilled)	EPA 350.2	5D12076	0.30	0.50	0.84	1	04/12/05	04/12/05	
Sample ID: IOD0649-01 (DRAFT: Outfall 001 - Water)					Sampled: 04/09/05				
Reporting Units: NTU									
Turbidity	EPA 180.1	5D09037	0.040	1.0	2.8	1	04/09/05	04/09/05	
Sample ID: IOD0649-01 (DRAFT: Outfall 001 - Water)					Sampled: 04/09/05				
Reporting Units: umhos/cm									
Specific Conductance	EPA 120.1	5D14115	1.0	1.0	660	1	04/14/05	04/14/05	

AMEC VALIDATED

LEVEL IV

DRAFT REPORT
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 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: 04/16/05
Received: 04/16/05
Issued: 06/06/05 15:11

NELAP #01108CA California ELAP#1197 CSDLAC #10117

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

SAMPLE CROSS REFERENCE

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

LABORATORY ID	CLIENT ID	MATRIX
IOD1251-01	Outfall 001	Water
IOD1251-02	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: IOD1251

Sampled: 04/16/05
Received: 04/16/05

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: IOD1251-01 (Outfall 001 - Water)									
Reporting Units: ug/l									
Benzene	EPA 624	5D29021	0.28	2.0	ND	1	04/29/05	04/30/05	
Carbon tetrachloride	EPA 624	5D29021	0.28	5.0	ND	1	04/29/05	04/30/05	
Chloroform	EPA 624	5D29021	0.33	2.0	ND	1	04/29/05	04/30/05	
1,1-Dichloroethane	EPA 624	5D29021	0.27	2.0	ND	1	04/29/05	04/30/05	
1,2-Dichloroethane	EPA 624	5D29021	0.28	2.0	ND	1	04/29/05	04/30/05	
1,1-Dichloroethene	EPA 624	5D29021	0.32	3.0	ND	1	04/29/05	04/30/05	
Ethylbenzene	EPA 624	5D29021	0.25	2.0	ND	1	04/29/05	04/30/05	
Tetrachloroethene	EPA 624	5D29021	0.32	2.0	ND	1	04/29/05	04/30/05	
Toluene	EPA 624	5D29021	0.36	2.0	ND	1	04/29/05	04/30/05	
1,1,1-Trichloroethane	EPA 624	5D29021	0.30	2.0	ND	1	04/29/05	04/30/05	
1,1,2-Trichloroethane	EPA 624	5D29021	0.30	2.0	ND	1	04/29/05	04/30/05	
Trichloroethene	EPA 624	5D29021	0.26	5.0	ND	1	04/29/05	04/30/05	
Trichlorofluoromethane	EPA 624	5D29021	0.34	5.0	ND	1	04/29/05	04/30/05	
Vinyl chloride	EPA 624	5D29021	0.26	5.0	ND	1	04/29/05	04/30/05	
Xylenes, Total	EPA 624	5D29021	0.52	4.0	ND	1	04/29/05	04/30/05	
Surrogate: Dibromofluoromethane (80-120%)					119 %				
Surrogate: Toluene-d8 (80-120%)					106 %				
Surrogate: 4-Bromofluorobenzene (80-120%)					110 %				

Sample ID: IOD1251-02 (Trip Blank - Water)
Reporting Units: ug/l

Benzene	EPA 624	5D29021	0.28	2.0	ND	1	04/29/05	04/29/05	
Carbon tetrachloride	EPA 624	5D29021	0.28	5.0	ND	1	04/29/05	04/29/05	
Chloroform	EPA 624	5D29021	0.33	2.0	ND	1	04/29/05	04/29/05	
1,1-Dichloroethane	EPA 624	5D29021	0.27	2.0	ND	1	04/29/05	04/29/05	
1,2-Dichloroethane	EPA 624	5D29021	0.28	2.0	ND	1	04/29/05	04/29/05	
1,1-Dichloroethene	EPA 624	5D29021	0.32	3.0	ND	1	04/29/05	04/29/05	
Ethylbenzene	EPA 624	5D29021	0.25	2.0	ND	1	04/29/05	04/29/05	
Tetrachloroethene	EPA 624	5D29021	0.32	2.0	ND	1	04/29/05	04/29/05	
Toluene	EPA 624	5D29021	0.36	2.0	ND	1	04/29/05	04/29/05	
1,1,1-Trichloroethane	EPA 624	5D29021	0.30	2.0	ND	1	04/29/05	04/29/05	
1,1,2-Trichloroethane	EPA 624	5D29021	0.30	2.0	ND	1	04/29/05	04/29/05	
Trichloroethene	EPA 624	5D29021	0.26	5.0	ND	1	04/29/05	04/29/05	
Trichlorofluoromethane	EPA 624	5D29021	0.34	5.0	ND	1	04/29/05	04/29/05	
Vinyl chloride	EPA 624	5D29021	0.26	5.0	ND	1	04/29/05	04/29/05	
Xylenes, Total	EPA 624	5D29021	0.52	4.0	ND	1	04/29/05	04/29/05	
Surrogate: Dibromofluoromethane (80-120%)					112 %				
Surrogate: Toluene-d8 (80-120%)					104 %				
Surrogate: 4-Bromofluorobenzene (80-120%)					108 %				

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: IOD1251

Sampled: 04/16/05
Received: 04/16/05

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: IOD1251-01 (Outfall 001 - Water)									
Reporting Units: ug/l									
Bis(2-ethylhexyl)phthalate	EPA 625	5D17002	1.1	5.0	1.2	0.962	04/17/05	04/21/05	B, J
2,4-Dinitrotoluene	EPA 625	5D17002	0.23	9.0	ND	0.962	04/17/05	04/21/05	
N-Nitrosodimethylamine	EPA 625	5D17002	0.22	8.0	ND	0.962	04/17/05	04/21/05	
Pentachlorophenol	EPA 625	5D17002	0.78	8.0	ND	0.962	04/17/05	04/21/05	
2,4,6-Trichlorophenol	EPA 625	5D17002	0.10	6.0	ND	0.962	04/17/05	04/21/05	
Surrogate: 2-Fluorophenol (30-120%)					66 %				
Surrogate: Phenol-d6 (35-120%)					70 %				
Surrogate: 2,4,6-Tribromophenol (45-120%)					86 %				
Surrogate: Nitrobenzene-d5 (45-120%)					71 %				
Surrogate: 2-Fluorobiphenyl (45-120%)					72 %				
Surrogate: Terphenyl-d14 (45-120%)					76 %				

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Project ID: Routine Outfall 001
Report Number: IOD1251

Sampled: 04/16/05
Received: 04/16/05

ORGANOCHLORINE PESTICIDES (EPA 608)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOD1251-01 (Outfall 001 - Water) - cont.									
Reporting Units: ug/l									
alpha-BHC	EPA 608	5D20037	0.0010	0.010	ND	0.952	04/20/05	04/21/05	
Surrogate: Decachlorobiphenyl (45-120%)					83 %				
Surrogate: Tetrachloro-m-xylene (35-115%)					64 %				

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Project ID: Routine Outfall 001

Report Number: IOD1251

Sampled: 04/16/05
Received: 04/16/05

METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOD1251-01 (Outfall 001 - Water) - cont.									
Reporting Units: mg/l									
Iron	EPA 200.7	5D16042	0.0088	0.040	0.012	1	04/16/05	04/16/05	J
Sample ID: IOD1251-01 (Outfall 001 - Water)									
Reporting Units: ug/l									
Chromium	EPA 200.7	5D16042	0.68	5.0	1.5	1	04/16/05	04/16/05	J
Copper	EPA 200.8	5D18081	0.49	2.0	1.4	1	04/18/05	04/19/05	J
Lead	EPA 200.8	5D18081	0.13	1.0	ND	1	04/18/05	04/19/05	
Manganese	EPA 200.7	5D16042	3.2	20	15	1	04/16/05	04/16/05	J
Mercury	EPA 245.1	5D18059	0.063	0.20	ND	1	04/18/05	04/18/05	

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Project ID: Routine Outfall 001
Report Number: IOD1251

Sampled: 04/16/05
Received: 04/16/05

INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOD1251-01 (Outfall 001 - Water) - cont.									
Reporting Units: mg/l									
Ammonia-N (Distilled)	EPA 350.2	5D19082	0.30	0.50	ND	1	04/19/05	04/19/05	
Biochemical Oxygen Demand	EPA 405.1	5D16055	0.59	2.0	ND	1	04/16/05	04/21/05	
Chloride	EPA 300.0	5D16031	1.3	2.5	32	5	04/16/05	04/16/05	
Nitrate/Nitrite-N	EPA 300.0	5D16031	0.072	0.26	ND	1	04/16/05	04/16/05	
Oil & Grease	EPA 413.1	5D18083	0.94	5.0	1.7	1	04/18/05	04/18/05	J
Sulfate	EPA 300.0	5D16031	0.90	2.5	120	5	04/16/05	04/16/05	
Surfactants (MBAS)	SM5540-C	5D16050	0.044	0.10	ND	1	04/16/05	04/16/05	
Total Dissolved Solids	SM2540C	5D18095	10	10	600	1	04/18/05	04/18/05	
Total Suspended Solids	EPA 160.2	5D19080	10	10	ND	1	04/19/05	04/19/05	
Sample ID: IOD1251-01 (Outfall 001 - Water)									
Reporting Units: ml/l/hr									
Total Settleable Solids	EPA 160.5	5D16052	0.10	0.10	ND	1	04/16/05	04/16/05	
Sample ID: IOD1251-01 (Outfall 001 - Water)									
Reporting Units: NTU									
Turbidity	EPA 180.1	5D16054	0.040	1.0	0.74	1	04/16/05	04/16/05	J
Sample ID: IOD1251-01 (Outfall 001 - Water)									
Reporting Units: ug/l									
Chromium VI	EPA 218.6	5D16046	0.10	1.0	ND	1	04/16/05	04/16/05	
Total Cyanide	EPA 335.2	5D18072	2.2	5.0	ND	1	04/18/05	04/18/05	
Perchlorate	EPA 314.0	5D20061	0.80	4.0	ND	1	04/20/05	04/20/05	
Sample ID: IOD1251-01 (Outfall 001 - Water)									
Reporting Units: umhos/cm									
Specific Conductance	EPA 120.1	5D18087	1.0	1.0	660	1	04/18/05	04/18/05	

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: IOD1251

Sampled: 04/16/05
Received: 04/16/05

SHORT HOLD TIME DETAIL REPORT

Sample ID: Outfall 001 (IOD1251-01) - Water	Hold Time (in days)	Date/Time Sampled	Date/Time Received	Date/Time Extracted	Date/Time Analyzed
EPA 160.5	2	04/16/2005 08:55	04/16/2005 12:00	04/16/2005 12:45	04/16/2005 13:45
EPA 180.1	2	04/16/2005 08:55	04/16/2005 12:00	04/16/2005 14:30	04/16/2005 15:30
EPA 218.6	1	04/16/2005 08:55	04/16/2005 12:00	04/16/2005 13:01	04/16/2005 14:43
EPA 300.0	2	04/16/2005 08:55	04/16/2005 12:00	04/16/2005 14:00	04/16/2005 14:46
EPA 405.1	2	04/16/2005 08:55	04/16/2005 12:00	04/16/2005 17:59	04/21/2005 11:00
SM5540-C	2	04/16/2005 08:55	04/16/2005 12:00	04/16/2005 14:00	04/16/2005 14:59

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 Attention: Bronwyn Kelly

Project ID: Routine Outfall 001

Report Number: IOD1251

Sampled: 04/16/05
 Received: 04/16/05

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 Limit	Qualifiers
---------	--------	-----------------	-----	-------	-------------	---------------	-----------	------------	---------	------------	------------

Batch: 5D29021 Extracted: 04/29/05

Blank Analyzed: 04/29/2005 (5D29021-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	28.2			ug/l	25.0		113	80-120			
Surrogate: Toluene-d8	25.9			ug/l	25.0		104	80-120			
Surrogate: 4-Bromofluorobenzene	27.0			ug/l	25.0		108	80-120			

LCS Analyzed: 04/29/2005 (5D29021-BS1)

Benzene	25.5	2.0	0.28	ug/l	25.0		102	70-120			
Carbon tetrachloride	34.2	5.0	0.28	ug/l	25.0		137	70-140			
Chloroform	29.3	2.0	0.33	ug/l	25.0		117	75-130			
1,1-Dichloroethane	28.1	2.0	0.27	ug/l	25.0		112	70-135			
1,2-Dichloroethane	33.5	2.0	0.28	ug/l	25.0		134	60-150			
1,1-Dichloroethene	25.5	3.0	0.32	ug/l	25.0		102	75-135			
Ethylbenzene	28.4	2.0	0.25	ug/l	25.0		114	80-120			
Tetrachloroethene	27.7	2.0	0.32	ug/l	25.0		111	75-125			
Toluene	26.7	2.0	0.36	ug/l	25.0		107	75-120			
1,1,1-Trichloroethane	32.6	2.0	0.30	ug/l	25.0		130	75-140			
1,1,2-Trichloroethane	26.3	2.0	0.30	ug/l	25.0		105	70-125			
Trichloroethene	26.1	5.0	0.26	ug/l	25.0		104	80-120			
Trichlorofluoromethane	30.7	5.0	0.34	ug/l	25.0		123	65-145			
Vinyl chloride	28.2	5.0	0.26	ug/l	25.0		113	50-130			
Surrogate: Dibromofluoromethane	27.7			ug/l	25.0		111	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 001

Report Number: IOD1251

Sampled: 04/16/05
Received: 04/16/05

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: 5D29021 Extracted: 04/29/05

LCS Analyzed: 04/29/2005 (5D29021-BS1)

Surrogate: Toluene-d8	26.6			ug/l	25.0		106	80-120			
Surrogate: 4-Bromofluorobenzene	28.7			ug/l	25.0		115	80-120			

Matrix Spike Analyzed: 04/29/2005 (5D29021-MS1)

Source: IOD1326-07

Benzene	25.9	2.0	0.28	ug/l	25.0	ND	104	70-120			
Carbon tetrachloride	34.8	5.0	0.28	ug/l	25.0	ND	139	70-145			
Chloroform	33.8	2.0	0.33	ug/l	25.0	3.3	122	70-135			
1,1-Dichloroethane	185	2.0	0.27	ug/l	25.0	150	140	65-135			MI
1,2-Dichloroethane	39.2	2.0	0.28	ug/l	25.0	4.3	140	60-150			
1,1-Dichloroethene	29.6	3.0	0.32	ug/l	25.0	4.2	102	65-140			
Ethylbenzene	28.7	2.0	0.25	ug/l	25.0	ND	115	70-130			
Tetrachloroethene	35.9	2.0	0.32	ug/l	25.0	7.9	112	70-130			
Toluene	27.1	2.0	0.36	ug/l	25.0	ND	108	70-120			
1,1,1-Trichloroethane	34.0	2.0	0.30	ug/l	25.0	ND	136	75-140			
1,1,2-Trichloroethane	93.7	2.0	0.30	ug/l	25.0	57	147	60-135			MI
Trichloroethene	35.7	5.0	0.26	ug/l	25.0	8.8	108	70-125			
Trichlorofluoromethane	30.4	5.0	0.34	ug/l	25.0	ND	122	55-145			
Vinyl chloride	27.2	5.0	0.26	ug/l	25.0	ND	109	40-135			
Surrogate: Dibromofluoromethane	28.2			ug/l	25.0		113	80-120			
Surrogate: Toluene-d8	26.2			ug/l	25.0		105	80-120			
Surrogate: 4-Bromofluorobenzene	28.7			ug/l	25.0		115	80-120			

Matrix Spike Dup Analyzed: 04/29/2005 (5D29021-MSD1)

Source: IOD1326-07

Benzene	25.8	2.0	0.28	ug/l	25.0	ND	103	70-120	0	20	
Carbon tetrachloride	32.8	5.0	0.28	ug/l	25.0	ND	131	70-145	6	25	
Chloroform	32.4	2.0	0.33	ug/l	25.0	3.3	116	70-135	4	20	
1,1-Dichloroethane	178	2.0	0.27	ug/l	25.0	150	112	65-135	4	20	
1,2-Dichloroethane	38.6	2.0	0.28	ug/l	25.0	4.3	137	60-150	2	20	
1,1-Dichloroethene	28.9	3.0	0.32	ug/l	25.0	4.2	99	65-140	2	20	
Ethylbenzene	28.3	2.0	0.25	ug/l	25.0	ND	113	70-130	1	20	
Tetrachloroethene	35.4	2.0	0.32	ug/l	25.0	7.9	110	70-130	1	20	
Toluene	26.5	2.0	0.36	ug/l	25.0	ND	106	70-120	2	20	
1,1,1-Trichloroethane	32.4	2.0	0.30	ug/l	25.0	ND	130	75-140	5	20	
1,1,2-Trichloroethane	99.2	2.0	0.30	ug/l	25.0	57	169	60-135	6	25	MI
Trichloroethene	34.9	5.0	0.26	ug/l	25.0	8.8	104	70-125	2	20	
Trichlorofluoromethane	29.5	5.0	0.34	ug/l	25.0	ND	118	55-145	3	25	

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Received: 04/16/05

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: 5D29021 Extracted: 04/29/05											
Matrix Spike Dup Analyzed: 04/29/2005 (5D29021-MSD1)						Source: IOD1326-07					
Vinyl chloride	26.3	5.0	0.26	ug/l	25.0	ND	105	40-135	3	30	
Surrogate: Dibromofluoromethane	28.0			ug/l	25.0		112	80-120			
Surrogate: Toluene-d8	26.2			ug/l	25.0		105	80-120			
Surrogate: 4-Bromofluorobenzene	28.1			ug/l	25.0		112	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 Limit Data Qualifiers
Batch: 5D17002 Extracted: 04/17/05

Blank Analyzed: 04/21/2005 (5D17002-BLK1)

Table with 12 columns: Analyte, Result, Reporting Limit, MDL, Units, Spike Level, Source Result, %REC, %REC Limits, 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: 04/21/2005 (5D17002-BS1)

Table with 12 columns: Analyte, Result, Reporting Limit, MDL, Units, Spike Level, Source Result, %REC, %REC Limits, RPD, Limit, Data Qualifiers. Rows include Bis(2-ethylhexyl)phthalate, 2,4-Dinitrotoluene, N-Nitrosodimethylamine, Pentachlorophenol, 2,4,6-Trichlorophenol, and various Surrogate compounds. Includes M-NRI column.

LCS Dup Analyzed: 04/21/2005 (5D17002-BSD1)

Table with 12 columns: Analyte, Result, Reporting Limit, MDL, Units, Spike Level, Source Result, %REC, %REC Limits, 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	MDL	Units	Spike Level	Source	%REC		RPD		Data Qualifiers
		Limit				Result	%REC	Limits	RPD	Limit	
Batch: 5D17002 Extracted: 04/17/05											
LCS Dup Analyzed: 04/21/2005 (5D17002-BSD1)											
Surrogate: Terphenyl-d14	6.76			ug/l	10.0		68	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: 5D20037 Extracted: 04/20/05											
Blank Analyzed: 04/21/2005 (5D20037-BLK1)											
alpha-BHC	ND	0.010	0.0010	ug/l							
Surrogate: Decachlorobiphenyl	0.425			ug/l	0.500		85	45-120			
Surrogate: Tetrachloro-m-xylene	0.219			ug/l	0.500		44	35-115			
LCS Analyzed: 04/21/2005 (5D20037-BS1)											
alpha-BHC	0.356	0.010	0.0010	ug/l	0.500		71	45-115			M-NR1
Surrogate: Decachlorobiphenyl	0.425			ug/l	0.500		85	45-120			
Surrogate: Tetrachloro-m-xylene	0.336			ug/l	0.500		67	35-115			
LCS Dup Analyzed: 04/21/2005 (5D20037-BSD1)											
alpha-BHC	0.245	0.010	0.0010	ug/l	0.500		49	45-115	37	30	R-7
Surrogate: Decachlorobiphenyl	0.433			ug/l	0.500		87	45-120			
Surrogate: Tetrachloro-m-xylene	0.245			ug/l	0.500		49	35-115			

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METHOD BLANK/QC DATA

METALS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	Limit	RPD	RPD Limit	Data Qualifiers
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Batch: 5D16042 Extracted: 04/16/05

Blank Analyzed: 04/16/2005 (5D16042-BLK1)

Chromium	ND	5.0	0.68	ug/l							
Iron	ND	0.040	0.0088	mg/l							
Manganese	ND	20	3.2	ug/l							

LCS Analyzed: 04/16/2005 (5D16042-BS1)

Chromium	932	5.0	0.68	ug/l	1000		93	85-115			
Iron	0.939	0.040	0.0088	mg/l	1.00		94	85-115			
Manganese	948	20	3.2	ug/l	1000		95	85-115			

Matrix Spike Analyzed: 04/16/2005 (5D16042-MS1)

					Source: IOD0663-01						
Chromium	960	5.0	0.68	ug/l	1000	1.0	96	70-130			
Iron	0.990	0.040	0.0088	mg/l	1.00	0.010	98	70-130			
Manganese	987	20	3.2	ug/l	1000	4.8	98	70-130			

Matrix Spike Dup Analyzed: 04/16/2005 (5D16042-MSD1)

					Source: IOD0663-01						
Chromium	942	5.0	0.68	ug/l	1000	1.0	94	70-130	2	20	
Iron	0.969	0.040	0.0088	mg/l	1.00	0.010	96	70-130	2	20	
Manganese	970	20	3.2	ug/l	1000	4.8	97	70-130	2	20	

Batch: 5D18059 Extracted: 04/18/05

Blank Analyzed: 04/18/2005 (5D18059-BLK1)

Mercury	ND	0.20	0.063	ug/l							
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LCS Analyzed: 04/18/2005 (5D18059-BS1)

Mercury	7.76	0.20	0.063	ug/l	8.00		97	85-115			
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Report Number: IOD1251

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Received: 04/16/05

METHOD BLANK/QC DATA

METALS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5D18059 Extracted: 04/18/05											
Matrix Spike Analyzed: 04/18/2005 (5D18059-MS1)						Source: IOD1267-01					
Mercury	5.54	0.20	0.063	ug/l	8.00	0.078	68	70-130			M2
Matrix Spike Dup Analyzed: 04/18/2005 (5D18059-MSD1)						Source: IOD1267-01					
Mercury	5.56	0.20	0.063	ug/l	8.00	0.078	69	70-130	0	20	M2
Batch: 5D18081 Extracted: 04/18/05											
Blank Analyzed: 04/19/2005 (5D18081-BLK1)											
Copper	ND	2.0	0.49	ug/l							
Lead	ND	1.0	0.13	ug/l							
LCS Analyzed: 04/19/2005 (5D18081-BS1)											
Copper	84.1	2.0	0.49	ug/l	80.0		105	85-115			
Lead	82.1	1.0	0.13	ug/l	80.0		103	85-115			
Matrix Spike Analyzed: 04/19/2005 (5D18081-MS1)						Source: IOD1251-01					
Copper	79.4	2.0	0.49	ug/l	80.0	1.4	98	70-130			
Lead	80.6	1.0	0.13	ug/l	80.0	ND	101	70-130			
Matrix Spike Dup Analyzed: 04/19/2005 (5D18081-MSD1)						Source: IOD1251-01					
Copper	73.4	2.0	0.49	ug/l	80.0	1.4	90	70-130	8	20	
Lead	85.5	1.0	0.13	ug/l	80.0	ND	107	70-130	6	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
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Batch: 5D16031 Extracted: 04/16/05

Blank Analyzed: 04/16/2005 (5D16031-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: 04/16/2005 (5D16031-BS1)

Chloride	4.87	0.50	0.26	mg/l	5.00		97	90-110		
Sulfate	9.85	0.50	0.18	mg/l	10.0		98	90-110		

Matrix Spike Analyzed: 04/16/2005 (5D16031-MS1)

					Source: IOD1092-09					
Chloride	4.78	0.50	0.26	mg/l	5.00	0.15	93	80-120		
Sulfate	9.64	0.50	0.18	mg/l	10.0	ND	96	80-120		

Matrix Spike Dup Analyzed: 04/16/2005 (5D16031-MSD1)

					Source: IOD1092-09					
Chloride	5.07	0.50	0.26	mg/l	5.00	0.15	98	80-120	6	20
Sulfate	9.80	0.50	0.18	mg/l	10.0	ND	98	80-120	2	20

Batch: 5D16046 Extracted: 04/16/05

Blank Analyzed: 04/16/2005 (5D16046-BLK1)

Chromium VI	ND	1.0	0.10	ug/l						
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LCS Analyzed: 04/16/2005 (5D16046-BS1)

Chromium VI	52.6	1.0	0.10	ug/l	50.0		105	90-110		
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Matrix Spike Analyzed: 04/16/2005 (5D16046-MS1)

					Source: IOD1251-01					
Chromium VI	50.6	1.0	0.10	ug/l	50.0	ND	101	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: 5D16046 Extracted: 04/16/05											
Matrix Spike Dup Analyzed: 04/16/2005 (5D16046-MSD1)						Source: IOD1251-01					
Chromium VI	49.9	1.0	0.10	ug/l	50.0	ND	100	90-110	1	10	
Batch: 5D16050 Extracted: 04/16/05											
Blank Analyzed: 04/16/2005 (5D16050-BLK1)											
Surfactants (MBAS)	ND	0.10	0.044	mg/l							
LCS Analyzed: 04/16/2005 (5D16050-BS1)											
Surfactants (MBAS)	0.248	0.10	0.044	mg/l	0.250		99	90-110			
Matrix Spike Analyzed: 04/16/2005 (5D16050-MS1)						Source: IOD1211-01					
Surfactants (MBAS)	0.201	0.10	0.044	mg/l	0.250	ND	80	50-125			
Matrix Spike Dup Analyzed: 04/16/2005 (5D16050-MSD1)						Source: IOD1211-01					
Surfactants (MBAS)	0.203	0.10	0.044	mg/l	0.250	ND	81	50-125	1	20	
Batch: 5D16054 Extracted: 04/16/05											
Blank Analyzed: 04/16/2005 (5D16054-BLK1)											
Turbidity	ND	1.0	0.040	NTU							
Duplicate Analyzed: 04/16/2005 (5D16054-DUP1)						Source: IOD1211-01					
Turbidity	0.640	1.0	0.040	NTU		0.60			6	20	J
Batch: 5D16055 Extracted: 04/16/05											
Blank Analyzed: 04/21/2005 (5D16055-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
<u>Batch: 5D16055 Extracted: 04/16/05</u>											
LCS Analyzed: 04/21/2005 (5D16055-BS1)											
Biochemical Oxygen Demand	198	100	30	mg/l	198		100	85-115			
LCS Dup Analyzed: 04/21/2005 (5D16055-BSD1)											
Biochemical Oxygen Demand	196	100	30	mg/l	198		99	85-115	1	20	
<u>Batch: 5D18072 Extracted: 04/18/05</u>											
Blank Analyzed: 04/18/2005 (5D18072-BLK1)											
Total Cyanide	ND	5.0	2.2	ug/l							
LCS Analyzed: 04/18/2005 (5D18072-BS1)											
Total Cyanide	180	5.0	2.2	ug/l	200		90	90-110			
Matrix Spike Analyzed: 04/18/2005 (5D18072-MS1)											
Total Cyanide	185	5.0	2.2	ug/l	200	Source: IOD0852-01 ND	92	70-115			
Matrix Spike Dup Analyzed: 04/18/2005 (5D18072-MSD1)											
Total Cyanide	184	5.0	2.2	ug/l	200	Source: IOD0852-01 ND	92	70-115	1	15	
<u>Batch: 5D18083 Extracted: 04/18/05</u>											
Blank Analyzed: 04/18/2005 (5D18083-BLK1)											
Oil & Grease	ND	5.0	0.94	mg/l							
LCS Analyzed: 04/18/2005 (5D18083-BS1)											
Oil & Grease	20.5	5.0	0.94	mg/l	20.0		102	65-120			M-NR1



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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
<u>Batch: 5D18083 Extracted: 04/18/05</u>											
LCS Dup Analyzed: 04/18/2005 (5D18083-BSD1)											
Oil & Grease	19.5	5.0	0.94	mg/l	20.0		98	65-120	5	20	
<u>Batch: 5D18087 Extracted: 04/18/05</u>											
Duplicate Analyzed: 04/18/2005 (5D18087-DUP1)											
Specific Conductance	230	1.0	1.0	umhos/cm		Source: IOD1082-01 240			4	5	
<u>Batch: 5D18095 Extracted: 04/18/05</u>											
Blank Analyzed: 04/18/2005 (5D18095-BLK1)											
Total Dissolved Solids	ND	10	10	mg/l							
LCS Analyzed: 04/18/2005 (5D18095-BS1)											
Total Dissolved Solids	988	10	10	mg/l	1000		99	90-110			
Duplicate Analyzed: 04/18/2005 (5D18095-DUP1)											
Total Dissolved Solids	345	10	10	mg/l		Source: IOD0830-01 350			1	10	
<u>Batch: 5D19080 Extracted: 04/19/05</u>											
Blank Analyzed: 04/19/2005 (5D19080-BLK1)											
Total Suspended Solids	ND	10	10	mg/l							
LCS Analyzed: 04/19/2005 (5D19080-BS1)											
Total Suspended Solids	974	10	10	mg/l	1000		97	85-115			

Del Mar Analytical, Irvine
 Michele Harper
 Project Manager

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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: IOD1251

Sampled: 04/16/05
 Received: 04/16/05

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: 5D19080 Extracted: 04/19/05											
Duplicate Analyzed: 04/19/2005 (5D19080-DUP1)											
Total Suspended Solids	ND	10	10	mg/l		Source: IOD1168-06 ND				10	
Batch: 5D19082 Extracted: 04/19/05											
Blank Analyzed: 04/19/2005 (5D19082-BLK1)											
Ammonia-N (Distilled)	ND	0.50	0.30	mg/l							
LCS Analyzed: 04/19/2005 (5D19082-BS1)											
Ammonia-N (Distilled)	10.4	0.50	0.30	mg/l	10.0		104	80-115			
Matrix Spike Analyzed: 04/19/2005 (5D19082-MS1)											
Ammonia-N (Distilled)	10.9	0.50	0.30	mg/l	10.0	1.1	98	70-120			
Matrix Spike Dup Analyzed: 04/19/2005 (5D19082-MSD1)											
Ammonia-N (Distilled)	10.6	0.50	0.30	mg/l	10.0	1.1	95	70-120	3	15	
Batch: 5D20061 Extracted: 04/20/05											
Blank Analyzed: 04/20/2005 (5D20061-BLK1)											
Perchlorate	ND	4.0	0.80	ug/l							
LCS Analyzed: 04/20/2005 (5D20061-BS1)											
Perchlorate	44.9	4.0	0.80	ug/l	50.0		90	85-115			
Matrix Spike Analyzed: 04/20/2005 (5D20061-MS1)											
Perchlorate	43.9	4.0	0.80	ug/l	50.0	ND	88	80-120			

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 Michele Harper
 Project Manager

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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: IOD1251

Sampled: 04/16/05
Received: 04/16/05

METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5D20061 Extracted: 04/20/05											
Matrix Spike Dup Analyzed: 04/20/2005 (5D20061-MSD1)						Source: IOD1378-02					
Perchlorate	45.7	4.0	0.80	ug/l	50.0	ND	91	80-120	4	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 001
 Report Number: IOD1251

Sampled: 04/16/05
 Received: 04/16/05

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
IOD1251-01	413.1 Oil and Grease	Oil & Grease	mg/l	1.70	5.0	10.00
IOD1251-01	608-Pest Boeing 001/002 Q (LL)	alpha-BHC	ug/l	0	0.010	0.0100
IOD1251-01	624-Boeing 001/002 Q (Fr113+X)	1,1-Dichloroethene	ug/l	0	3.0	3.20
IOD1251-01	624-Boeing 001/002 Q (Fr113+X)	Trichloroethene	ug/l	0	5.0	5.00
IOD1251-01	625-Boeing 001/002 Q-LL	2,4,6-Trichlorophenol	ug/l	0	6.0	6.50
IOD1251-01	625-Boeing 001/002 Q-LL	2,4-Dinitrotoluene	ug/l	0	9.0	9.10
IOD1251-01	625-Boeing 001/002 Q-LL	Bis(2-ethylhexyl)phthalate	ug/l	1.20	5.0	4.00
IOD1251-01	625-Boeing 001/002 Q-LL	N-Nitrosodimethylamine	ug/l	0	8.0	8.10
IOD1251-01	625-Boeing 001/002 Q-LL	Pentachlorophenol	ug/l	0	8.0	8.20
IOD1251-01	BOD	Biochemical Oxygen Demand	mg/l	0.39	2.0	20
IOD1251-01	Chloride - 300.0	Chloride	mg/l	32	2.5	150
IOD1251-01	Chromium VI-218.6	Chromium VI	ug/l	0	1.0	8.10
IOD1251-01	Chromium-200.7	Chromium	ug/l	1.50	5.0	8.10
IOD1251-01	Copper-200.8	Copper	ug/l	1.40	2.0	7.10
IOD1251-01	Cyanide-335.2 5ppb	Total Cyanide	ug/l	-7	5.0	4.30
IOD1251-01	Iron-200.7	Iron	mg/l	0.012	0.040	0.30
IOD1251-01	Lead-200.8	Lead	ug/l	0	1.0	2.60
IOD1251-01	Manganese-200.7	Manganese	ug/l	15	20	50
IOD1251-01	MBAS - SM5540-C	Surfactants (MBAS)	mg/l	0.043	0.10	0.50
IOD1251-01	Mercury - 245.1	Mercury	ug/l	0	0.20	0.20
IOD1251-01	Nitrogen, NO3+NO2 -N	Nitrate/Nitrite-N	mg/l	0.0056	0.26	8.00
IOD1251-01	Perchlorate 314.0	Perchlorate	ug/l	0	4.0	6.00
IOD1251-01	Sulfate-300.0	Sulfate	mg/l	120	2.5	300
IOD1251-01	TDS - SM 2540C	Total Dissolved Solids	mg/l	600	10	950
IOD1251-02	624-Boeing 001/002 Q (Fr113+X)	1,1-Dichloroethene	ug/l	0	3.0	3.20
IOD1251-02	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
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Attention: Bronwyn Kelly

Project ID: Routine Outfall 001

Report Number: IOD1251

Sampled: 04/16/05

Received: 04/16/05

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).
- 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.
- 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: IOD1251

Sampled: 04/16/05
Received: 04/16/05

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	N/A	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: IOD1251-01

Analysis Performed: EDD + Level 4

Samples: IOD1251-01

Del Mar Analytical, Irvine

Michele Harper

Project Manager

CHAIN OF CUSTODY FORM

Del Mar Analytical Version 04/13/05

Client Name/Address: MWH-Pasadena 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Project Manager: Bronwyn Kelly		Project: Boeing-SSFL NPDES Routine Outfall 001		Phone Number: (626) 568-6691 Fax Number: (626) 568-6515		ANALYSIS REQUIRED Total Recoverable Metals: Cu, Pb, Hg, Mn, Fe, Total Cr Setttable 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 = 57 ° pH = 7.71 Comments				
Sample Description	Sample Matrix	Container Type	# of Cont.	Sampling Date/Time	Preservative	Bottle #	Cu, Pb, Hg, Mn, Fe, Total Cr	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 = 57 ° pH = 7.71 Comments	
Outfall 001	W	Poly-1L	1	4-28-05 08:55	HNO3	1A	X													
Outfall 001-Dup	W	Poly-1L	1	4-28-05 08:55	HNO3	1B	X													
Outfall 001	W	Poly-1L	1	4-28-05 08:55	None	2		X												
Outfall 001	W	VOAs	3	4-28-05 08:55	HCl	3A, 3B, 3C		X												
Outfall 001	W	1L Amber	2	4-28-05 08:55	None	4A, 4B			X											
Outfall 001	W	1L Amber	2	4-28-05 08:55	HCl	5A, 5B			X											
Outfall 001	W	Poly-500 ml	1	4-28-05 08:55	NaOH	6				X										
Outfall 001	W	Poly-1L	1	4-28-05 08:55	None	7					X									
Outfall 001	W	Poly-500 ml	2	4-28-05 08:55	None	8A, 8B						X								
Outfall 001	W	Poly-500 ml	2	4-28-05 08:55	None	9A, 9B								X						
Outfall 001	W	Poly-500 ml	2	4-28-05 08:55	None	10A, 10B									X					
Outfall 001	W	Poly-500 ml	1	4-28-05 08:55	H2SO4	11										X				
Outfall 001	W	1L Amber	2	4-28-05 08:55	None	12A, 12B														
Outfall 001	W	1L Amber	2	4-28-05 08:55	None	13A, 13B														
Trip Blank	W	VOAs	3	4-28-05 08:55	HCl	14A, 14B, 14C			X											
Relinquished By	[Signature]			Date/Time: 4-28-05 08:55	Received By	[Signature]			Date/Time: 4/16/05 09:55											
Relinquished By	[Signature]			Date/Time: 4/16/05 12:00	Received By	[Signature]			Date/Time: 4/16/05 9:55											
Relinquished By	[Signature]			Date/Time: 4/16/05 12:00	Received By	[Signature]			Date/Time: 4/16/05 9:55											

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: 2°C
 Intact _____



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2777 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

May 16, 2005

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

Attention: Bronwyn Kelly
Project: Routine Outfall 001
Sampled: 04/16/05
Del Mar Analytical Number: IOD1251

Dear Ms. Kelly:

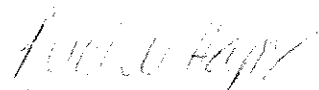
Alta Analytical Laboratories performed the EPA Method 1613 for tetra-through-octa chlorinated dioxins and furans for the project referenced above. Please use the following cross-reference table when reviewing your results.

MWH ID	Del Mar ID	Alta ID
Outfall 001	IOD1251-01	26064-001

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, extension 215.

Sincerely yours,

DEL MAR ANALYTICAL


Michele Harper
Project Manager

Enclosure



May 07, 2005

Alta Project I.D.: 26064

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 April 19, 2005 under your Project Name "IOD1251". 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 certifies that the report herein meets all the requirements set forth by NELAP for those applicable test methods. This report should not be reproduced or copied in full without the written approval of ALTA.



Alta Analytical Laboratory Inc.

1104 Windfield Way
El Dorado Hills, CA 95762

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

Section I: Sample Inventory Report

Date Received: 4/19/2005

Alta Lab. ID

Client Sample ID

26064-001

IOD1251-01

SECTION II



Method Blank		EPA Method 1613					
Matrix:	Aqueous	QC Batch No.:	6763	Lab Sample:	0-MB001		
Sample Size:	1.000 L	Date Extracted:	4-May-05	Date Analyzed DB-5:	6-May-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	0.00000197		IS 13C-2,3,7,8-TCDD	53.3	25 - 164	
1,2,3,7,8-PeCDD	ND	0.00000151		13C-1,2,3,7,8-PeCDD	51.0	25 - 181	
1,2,3,4,7,8-HxCDD	ND	0.00000262		13C-1,2,3,4,7,8-HxCDD	70.4	32 - 141	
1,2,3,6,7,8-HxCDD	ND	0.00000234		13C-1,2,3,6,7,8-HxCDD	82.1	28 - 130	
1,2,3,7,8,9-HxCDD	ND	0.00000231		13C-1,2,3,4,6,7,8-HpCDD	68.0	23 - 140	
1,2,3,4,6,7,8-HpCDD	ND	0.00000194		13C-OCDD	42.8	17 - 157	
OCDD	ND	0.00000718		13C-2,3,7,8-TCDF	54.1	24 - 169	
2,3,7,8-TCDF	ND	0.00000152		13C-1,2,3,7,8-PeCDF	50.1	24 - 185	
1,2,3,7,8-PeCDF	ND	0.00000249		13C-2,3,4,7,8-PeCDF	50.1	21 - 178	
2,3,4,7,8-PeCDF	ND	0.00000222		13C-1,2,3,4,7,8-HxCDF	73.2	26 - 152	
1,2,3,4,7,8-HxCDF	ND	0.00000832		13C-1,2,3,4,7,8-HxCDF	78.1	26 - 123	
1,2,3,6,7,8-HxCDF	ND	0.00000842		13C-1,2,3,6,7,8-HxCDF	74.1	28 - 136	
2,3,4,6,7,8-HxCDF	ND	0.00000113		13C-2,3,4,6,7,8-HxCDF	69.9	29 - 147	
1,2,3,7,8,9-HxCDF	ND	0.00000212		13C-1,2,3,7,8,9-HxCDF	62.7	28 - 143	
1,2,3,4,6,7,8-HpCDF	ND	0.00000183		13C-1,2,3,4,6,7,8-HpCDF	75.4	26 - 138	
1,2,3,4,7,8,9-HpCDF	ND	0.00000201		13C-1,2,3,4,7,8,9-HpCDF	48.7	17 - 157	
OCDF	ND	0.00000436		13C-OCDF	60.2	35 - 197	
Totals				CRS 37Cl-2,3,7,8-TCDD			
Total TCDD	ND	0.00000197		Footnotes			
Total PeCDD	ND	0.00000151		a. Sample specific estimated detection limit.			
Total HxCDD	ND	0.00000240		b. Estimated maximum possible concentration.			
Total HpCDD	ND	0.00000194		c. Method detection limit.			
Total TCDF	ND	0.00000152		d. Lower control limit - upper control limit.			
Total PeCDF	ND	0.00000235					
Total HxCDF	ND	0.00000117					
Total HpCDF	ND	0.00000191					

Analyst: JMH

Approved By: Martha M. Maier 07-May-2005 09:58



EPA Method 1613

OPR Results		Lab Sample: 0-OPR001		Date Analyzed DB-225: NA		
Matrix:	Aqueous <th>QC Batch No.:</th> <td>6763 <th>Date Analyzed DB-5:</th> <td>6-May-05 </td></td>	QC Batch No.:	6763 <th>Date Analyzed DB-5:</th> <td>6-May-05 </td>	Date Analyzed DB-5:	6-May-05	
Sample Size:	1.000 L <th>Date Extracted:</th> <td>4-May-05 <th>Date Analyzed DB-225:</th> <td>NA </td></td>	Date Extracted:	4-May-05 <th>Date Analyzed DB-225:</th> <td>NA </td>	Date Analyzed DB-225:	NA	
Analyte	Spike Conc.	Conc. (ng/mL)	OPR Limits	Labeled Standard	%R	LCL-UCL
2,3,7,8-TCDD	10.0	10.7	6.7 - 15.8	IS 13C-2,3,7,8-TCDD	56.3	25 - 164
1,2,3,7,8-PeCDD	50.0	54.8	35 - 71	13C-1,2,3,7,8-PeCDD	56.2	25 - 181
1,2,3,4,7,8-HxCDD	50.0	50.6	35 - 82	13C-1,2,3,4,7,8-HxCDD	71.4	32 - 141
1,2,3,6,7,8-HxCDD	50.0	52.5	38 - 67	13C-1,2,3,6,7,8-HxCDD	81.0	28 - 130
1,2,3,7,8,9-HxCDD	50.0	47.5	32 - 81	13C-1,2,3,4,6,7,8-HpCDD	70.7	23 - 140
1,2,3,4,6,7,8-HpCDD	50.0	51.0	35 - 70	13C-OCDD	43.9	17 - 157
OCDD	100	106	78 - 144	13C-2,3,7,8-TCDF	54.4	24 - 169
2,3,7,8-TCDF	10.0	10.7	7.5 - 15.8	13C-1,2,3,7,8-PeCDF	55.2	24 - 185
1,2,3,7,8-PeCDF	50.0	52.1	40 - 67	13C-2,3,4,7,8-PeCDF	54.9	21 - 178
2,3,4,7,8-PeCDF	50.0	52.6	34 - 80	13C-1,2,3,4,7,8-HxCDF	74.9	26 - 152
1,2,3,4,7,8-HxCDF	50.0	50.6	36 - 67	13C-1,2,3,6,7,8-HxCDF	78.5	26 - 123
1,2,3,6,7,8-HxCDF	50.0	52.7	42 - 65	13C-2,3,4,6,7,8-HxCDF	77.1	28 - 136
2,3,4,6,7,8-HxCDF	50.0	51.9	35 - 78	13C-1,2,3,7,8,9-HxCDF	73.0	29 - 147
1,2,3,7,8,9-HxCDF	50.0	52.3	39 - 65	13C-1,2,3,4,6,7,8-HpCDF	68.3	28 - 143
1,2,3,4,6,7,8-HpCDF	50.0	49.6	41 - 61	13C-1,2,3,4,7,8,9-HpCDF	77.5	26 - 138
1,2,3,4,7,8,9-HpCDF	50.0	51.9	39 - 69	13C-OCDF	55.3	17 - 157
OCDF	100	101	63 - 170	CRS 37Cl-2,3,7,8-TCDD	67.8	35 - 197

Analyst: JMH

Approved By: Martha M. Maier 07-May-2005 09:58



Sample ID: IOD1251-01		EPA Method 1613			
Client Data		Sample Data		Laboratory Data	
Name:	Del Mar Analytical, Irvine	Matrix:	Aqueous	Lab Sample:	26064-001
Project:	IOD1251	Sample Size:	0.949 L	QC Batch No.:	6763
Date Collected:	16-Apr-05			Date Analyzed DB-5:	6-May-05
Time Collected:	0855			Date Analyzed DB-225:	NA
		DL ^a	EMPC ^b	%R	LCL-UCL ^d Qualifiers
2,3,7,8-TCDD	ND	0.000000882		63.1	25 - 164
1,2,3,7,8-PeCDD	ND	0.00000161		64.0	25 - 181
1,2,3,4,7,8-HxCDD	ND	0.00000315		74.9	32 - 141
1,2,3,6,7,8-HxCDD	ND	0.00000303		86.9	28 - 130
1,2,3,7,8,9-HxCDD	ND	0.00000291		73.9	23 - 140
1,2,3,4,6,7,8-HpCDD	ND	0.00000286		44.7	17 - 157
OCDD	ND	0.0000101		63.2	24 - 169
2,3,7,8-TCDF	ND	0.00000144		60.9	24 - 185
1,2,3,7,8-PeCDF	ND	0.00000233		60.0	21 - 178
2,3,4,7,8-PeCDF	ND	0.00000213		81.8	26 - 152
1,2,3,4,7,8-HxCDF	ND	0.00000879		86.3	26 - 123
1,2,3,6,7,8-HxCDF	ND	0.00000896		82.1	28 - 136
2,3,4,6,7,8-HxCDF	ND	0.0000118		78.3	29 - 147
1,2,3,7,8,9-HxCDF	ND	0.00000232		71.9	28 - 143
1,2,3,4,6,7,8-HpCDF	ND	0.00000164		82.4	26 - 138
1,2,3,4,7,8,9-HpCDF	ND	0.00000195		54.7	17 - 157
OCDF	ND	0.00000736		72.6	35 - 197
Totals					
Total TCDD	ND	0.000000882			
Total PeCDD	ND	0.00000161			
Total HxCDD	ND	0.00000302			
Total HpCDD	ND	0.00000286			
Total TCDF	ND	0.00000144			
Total PeCDF	ND	0.00000223			
Total HxCDF	ND	0.00000125			
Total HpCDF	ND	0.00000178			
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 07-May-2005 09:58

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, Cotton, CA 92324 Ph (909) 370-4667 Fax (909) 370-1046
 9484 Chesapeake Drive, Suite 805, San Diego, CA 92123 Ph (619) 505-9596 Fax (619) 505-9689
 9830 South 51st Street, Suite B-120, Phoenix, AZ 85044 Ph (480) 785-0043 Fax (480) 785-0651
 2520 E. Sunset Rd., Suite #3, Las Vegas, NV 89120 Ph (702) 798-3820 Fax (702) 798-3821

SUBCONTRACT ORDER - PROJECT # IOD1251

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) 673-0106 <div style="font-size: 2em; margin-left: 20px;">26064</div> <div style="font-size: 2em; margin-left: 20px;">0.7°C</div>

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

Analysis	Expiration	Comments
Sample ID: IOD1251-01 Water	Sampled: 04/16/05 08:55	Instant Notification
1613-Dioxin-HR	04/23/05 08:55	J flags, 17 congeners, no TEQ, sub to Alta
EDD + Level 4	05/14/05 08:55	Excel EDD email to pm, Include Std logs for Lvl IV
Containers Supplied:		
1 L Amber (IOD1251-01G)		
1 L Amber (IOD1251-01H)		

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: Date: 4-18-05 Time: 1700 Received By: Date: 4/19/05 Time: 0852

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

STANDARD OPERATING PROCEDURE

Attachment 10.B.1

SAMPLE LOG-IN CHECKLIST

ALTA Project No.: 26064

1. Date Samples Arrived:	<u>4/19/05</u>	<u>0852</u>	Initials:	<u>CB</u>	Location:	<u>WR-2</u>
2. Time / Date logged in:	<u>1110</u>	<u>4/19/05</u>	Initials:	<u>CB</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>0.7</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>Airbill</u>	<u>7929 0047 2266</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: 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 T711DF45
 Task Order 313150010
 SDG No. IOD1172, IOD1251
 No. of Analyses 2

Laboratory Alta
 Reviewer K. Shadowlight
 Analysis/Method Dioxins

Date: May 11, 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.,	Qualifications were assigned for the following:
Holding Times	* Detect below the EPA 1613 Minimum 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	
^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: DIOXINS/FURANS

SAMPLE DELIVERY GROUPS: IOD1172, IOD1251

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 #: IOD1172, IOD1251
Project Manager: B. McIlvaine
Matrix: Water
Analysis: Dioxins/Furans
QC Level: Level IV
No. of Samples: 2
No. of Reanalyses/Dilutions: 0
Reviewer: K. Shadowlight
Date of Review: May 11, 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	IOD1251-01	26064-001	water	1613
Outfall 002	IOD1172-01	26065-001	water	1613

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

Following are findings associated with sample management:

2.1.1 Sample Preservation, Handling, and Transport

The samples in these SDGs were received at Del Mar Analytical within the temperature limits of 4°C ±2°C. The samples were shipped to Alta for dioxin/furan analysis and were received below the temperature limits of 4°C ±2°C at 0.7°C; however, as the samples were not noted to have been frozen or damaged, no qualifications were required. According to the laboratory login sheet, the 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 analysis presented in these SDGs. As the samples were couriered directly to Del Mar Analytical, custody seals were not required. The cooler 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 one year of collection. No qualifications were required.

2.2 INSTRUMENT PERFORMANCE

Following are findings associated with instrument performance:

2.2.1 GC Column Performance

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

2.2.2 Mass Spectrometer Performance

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

2.3 CALIBRATION

2.3.1 Initial Calibration

The initial calibration was analyzed 04/23/05. 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 of each analytical sequence. The VER was acceptable with the concentrations within the acceptance criteria listed in Table 6 of EPA Method 1613. The ion abundance ratios and relative retention times were within the method QC limits. A representative number of %Ds were verified from the raw data, and no calculation or transcription errors were noted. No qualifications were required.

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

2.4 BLANKS

One method blank (6763-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 (6763-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 detect above the low point of the calibration curve but below the EPA Method 1613 minimum level was denoted by the laboratory with an "A," flag and was qualified as estimated, "J." The results and reporting limits were reported in ug/L. No further qualifications were required.



Client Data		Sample Data		Laboratory Data			
Sample ID: IOD1251-01	Del Mar Analytical, Irvine	Matrix: Aqueous	Lab Sample: 26064-001	Date Received: 19-Apr-05	EPA Method 1613		
Project: IOD1251	IOD1251	Sample Size: 0.949 L	QC Batch No.: 6763	Date Extracted: 4-May-05			
Date Collected: 16-Apr-05	16-Apr-05		Date Analyzed DB-5: 6-May-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	0.000000882		13C-2,3,7,8-TCDD	63.1	25 - 164	
1,2,3,7,8-PeCDD	ND	0.00000161		13C-1,2,3,7,8-PeCDD	64.0	25 - 181	
1,2,3,4,7,8-HxCDD	ND	0.00000315		13C-1,2,3,4,7,8-HxCDD	74.9	32 - 141	
1,2,3,6,7,8-HxCDD	ND	0.00000303		13C-1,2,3,6,7,8-HxCDD	86.9	28 - 130	
1,2,3,7,8,9-HxCDD	ND	0.00000291		13C-1,2,3,4,6,7,8-HpCDD	73.9	23 - 140	
1,2,3,4,6,7,8-HpCDD	ND	0.00000286		13C-OCDD	44.7	17 - 157	
OCDD	ND	0.0000101		13C-2,3,7,8-TCDF	63.2	24 - 169	
2,3,7,8-TCDF	ND	0.00000144		13C-1,2,3,7,8-PeCDF	60.9	24 - 185	
1,2,3,7,8-PeCDF	ND	0.00000233		13C-2,3,4,7,8-PeCDF	60.0	21 - 178	
2,3,4,7,8-PeCDF	ND	0.00000213		13C-1,2,3,4,7,8-HxCDF	81.8	26 - 152	
1,2,3,4,7,8-HxCDF	ND	0.00000879		13C-1,2,3,6,7,8-HxCDF	86.3	26 - 123	
1,2,3,6,7,8-HxCDF	ND	0.00000896		13C-2,3,4,6,7,8-HxCDF	82.1	28 - 136	
2,3,4,6,7,8-HxCDF	ND	0.00000118		13C-1,2,3,7,8,9-HxCDF	78.3	29 - 147	
1,2,3,7,8,9-HxCDF	ND	0.00000232		13C-1,2,3,4,6,7,8-HpCDF	71.9	28 - 143	
1,2,3,4,6,7,8-HpCDF	ND	0.00000164		13C-1,2,3,4,7,8,9-HpCDF	82.4	26 - 138	
1,2,3,4,7,8,9-HpCDF	ND	0.00000195		13C-OCDF	54.7	17 - 157	
OCDF	ND	0.00000736		CRS 37Cl-2,3,7,8-TCDD	72.6	35 - 197	
Totals							
Total TCDD	ND	0.000000882					
Total PeCDD	ND	0.00000161					
Total HxCDD	ND	0.00000302					
Total HpCDD	ND	0.00000286					
Total TCDF	ND	0.00000144					
Total PeCDF	ND	0.00000223					
Total HxCDF	ND	0.00000125					
Total HpCDF	ND	0.00000178					

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

Outfall 001

Analyst: JMH
 Approved By: Martha M. Maier 07-May-2005 09:58

ALTA VALIDATED
TRVRI, IV



Sample ID: IOD1172-01 Out fall 2002

EPA Method 1613

Client Data		Sample Data		Laboratory Data			
Name:	Del Mar Analytical, Irvine	Matrix:	Aqueous	Lab Sample:	26065-001		
Project:	IOD1172	Sample Size:	0.948 L	QC Batch No.:	6763		
Date Collected:	15-Apr-05			Date Analyzed DB-5:	6-May-05		
Time Collected:	1415			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	0.00000142		IS 13C-2,3,7,8-TCDD	61.6	25 - 164	
1,2,3,7,8-PeCDD	ND	0.00000133		13C-1,2,3,7,8-PeCDD	63.8	25 - 181	
1,2,3,4,7,8-HxCDD	ND	0.00000328		13C-1,2,3,4,7,8-HxCDD	68.5	32 - 141	
1,2,3,6,7,8-HxCDD	ND	0.00000299		13C-1,2,3,6,7,8-HxCDD	75.9	28 - 130	
1,2,3,7,8,9-HxCDD	ND	0.00000294		13C-1,2,3,4,6,7,8-HpCDD	75.3	23 - 140	
1,2,3,4,6,7,8-HpCDD	ND	0.00000531		13C-OCDD	62.9	17 - 157	
OCDD	0.0000262			13C-2,3,7,8-TCDF	61.8	24 - 169	
2,3,7,8-TCDF	ND	0.00000178	A	13C-1,2,3,7,8-PeCDF	60.6	24 - 185	
1,2,3,7,8-PeCDF	ND	0.00000205		13C-2,3,4,7,8-PeCDF	58.8	21 - 178	
2,3,4,7,8-PeCDF	ND	0.00000196		13C-1,2,3,4,7,8-HxCDF	73.8	26 - 152	
1,2,3,4,7,8-HxCDF	ND	0.000000728		13C-1,2,3,6,7,8-HxCDF	76.0	26 - 123	
1,2,3,6,7,8-HxCDF	ND	0.000000713		13C-2,3,4,6,7,8-HxCDF	77.8	28 - 136	
2,3,4,6,7,8-HxCDF	ND	0.000000852		13C-1,2,3,7,8,9-HxCDF	73.4	29 - 147	
1,2,3,7,8,9-HxCDF	ND	0.00000162		13C-1,2,3,4,6,7,8-HpCDF	75.7	28 - 143	
1,2,3,4,6,7,8-HpCDF	ND	0.00000161		13C-1,2,3,4,7,8,9-HpCDF	80.2	26 - 138	
1,2,3,4,7,8,9-HpCDF	ND	0.00000196		13C-OCDF	69.2	17 - 157	
OCDF	ND	0.00000311		CRS 37Cl-2,3,7,8-TCDD	73.5	35 - 197	
Totals							
Total TCDD	ND	0.00000142					
Total PeCDD	ND	0.00000133					
Total HxCDD	ND	0.00000306					
Total HpCDD	ND	0.00000531					
Total TCDF	ND	0.00000178					
Total PeCDF	ND	0.00000200					
Total HxCDF	ND	0.000000939					
Total HpCDF	ND	0.00000176					

Footnotes

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

Rev [initials] [initials]
 [initials] [initials]
 [initials] [initials]
 [initials] [initials]

Analyst: JMH

Approved By: Martha M. Maier 07-May-2005 10:07

AMEC VALIDATED LEVEL IV

CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

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

Package ID T711VO103
Task Order 313150010
SDG No. IOD1251
No. of Analyses 2


Laboratory Del Mar

Reviewer M. Pokorny

Analysis/Method Volatiles

Date: May 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.,

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

Qualification 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: IOD1251

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#: IOD1251
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: May 23, 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 001	Outfall 001	IOD1251-01	water	624
Trip Blank	Trip Blank	IOD1251-02	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 \pm 2°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 COC was signed and dated by both field and laboratory personnel. The COC 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 time. The BFB summary report was verified from the raw data and no discrepancies between the summary report and the raw data were noted. No qualifications were required.

2.3 CALIBRATION

One initial calibration dated 04/22/05 was associated with this SDG. The average RRFs were \geq 0.05 for the target compounds listed on the sample result summaries. The %RSDs were \leq 35% for all applicable target compounds. One continuing calibration dated 04/29/05 was associated with the sample analyses in this SDG. The %D for trichlorofluoromethane exceeded 20% in the continuing calibration; therefore, the nondetect result for trichlorofluoromethane was qualified as estimated, "UJ," in sample Outfall 001. No qualifications were required for the Trip Blank. The RRFs were \geq 0.05 for the target compounds listed on the sample result summaries. 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

One water method blank (5D29021-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 (5D29021-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

MS/MSD analyses were not performed for this SDG. 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 was the trip blank associated with this SDG. There were no target compounds detected above the MDLs 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 for 15 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 standard and by the MDL study. As there were no sample detects in this SDG, compound quantitation was verified by recalculating 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.