



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

Project ID: Alfa Outfall 012 - During Test

Report Number: IOF1253

Sampled: 06/16/05

Received: 06/16/05

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	RPD Limit	Data Qualifiers
Batch: 5F19005 Extracted: 06/19/05										
Blank Analyzed: 06/19/2005 (5F19005-BLK1)										
1,2-Dibromoethane (EDB)	ND	2.0	0.32	ug/l						
Methyl-tert-butyl Ether (MTBE)	ND	5.0	0.32	ug/l						
1,2,3-Trichloropropane	ND	10	0.85	ug/l						
Di-isopropyl Ether (DIPE)	ND	5.0	0.25	ug/l						
tert-Butanol (TBA)	ND	25	3.1	ug/l						
Surrogate: Dibromofluoromethane	26.0			ug/l	25.0		104	80-120		
Surrogate: Toluene-d8	24.7			ug/l	25.0		99	80-120		
Surrogate: 4-Bromofluorobenzene	22.9			ug/l	25.0		92	80-120		
LCS Analyzed: 06/19/2005 (5F19005-BS1)										
1,2-Dibromoethane (EDB)	23.8	2.0	0.32	ug/l	25.0		95	70-125		
Methyl-tert-butyl Ether (MTBE)	24.2	5.0	0.32	ug/l	25.0		97	55-140		
1,2,3-Trichloropropane	23.7	10	0.85	ug/l	25.0		95	55-130		
Di-isopropyl Ether (DIPE)	26.9	5.0	0.25	ug/l	25.0		108	60-135		
tert-Butanol (TBA)	130	25	3.1	ug/l	125		104	65-135		
Surrogate: Dibromofluoromethane	25.8			ug/l	25.0		103	80-120		
Surrogate: Toluene-d8	25.2			ug/l	25.0		101	80-120		
Surrogate: 4-Bromofluorobenzene	24.5			ug/l	25.0		98	80-120		
Matrix Spike Analyzed: 06/19/2005 (5F19005-MS1)					Source: IOF1253-01					
1,2-Dibromoethane (EDB)	17.4	2.0	0.32	ug/l	25.0	ND	70	65-130		
Methyl-tert-butyl Ether (MTBE)	16.6	5.0	0.32	ug/l	25.0	ND	66	50-150		
1,2,3-Trichloropropane	15.6	10	0.85	ug/l	25.0	ND	62	50-135		
Di-isopropyl Ether (DIPE)	21.9	5.0	0.25	ug/l	25.0	ND	88	60-140		
tert-Butanol (TBA)	121	25	3.1	ug/l	125	ND	97	60-145		
Surrogate: Dibromofluoromethane	24.8			ug/l	25.0		99	80-120		
Surrogate: Toluene-d8	24.8			ug/l	25.0		99	80-120		
Surrogate: 4-Bromofluorobenzene	23.8			ug/l	25.0		95	80-120		

Del Mar Analytical, Irvine
Michele Harper
Project Manager

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PURGEABLES BY GC/MS (EPA 624)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5F19005 Extracted: 06/19/05											
Matrix Spike Dup Analyzed: 06/19/2005 (5F19005-MSD1)						Source: IOF1253-01					
1,2-Dibromoethane (EDB)	14.3	2.0	0.32	ug/l	25.0	ND	57	65-130	20	25	M2
Methyl-tert-butyl Ether (MTBE)	13.6	5.0	0.32	ug/l	25.0	ND	54	50-150	20	25	
1,2,3-Trichloropropane	13.4	10	0.85	ug/l	25.0	ND	54	50-135	15	30	
Di-isopropyl Ether (DIPE)	20.3	5.0	0.25	ug/l	25.0	ND	81	60-140	8	25	
tert-Butanol (TBA)	137	25	3.1	ug/l	125	ND	110	60-145	12	25	
Surrogate: Dibromofluoromethane	21.1			ug/l	25.0		84	80-120			
Surrogate: Toluene-d8	24.8			ug/l	25.0		99	80-120			
Surrogate: 4-Bromofluorobenzene	23.5			ug/l	25.0		94	80-120			

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

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5F19018 Extracted: 06/19/05										
Blank Analyzed: 06/21/2005 (5F19018-BLK1)										
Naphthalene	ND	10	4.5	ug/l						
N-Nitrosodimethylamine	ND	20	3.7	ug/l						
Surrogate: 2-Fluorophenol	124			ug/l	200		62 30-120			
Surrogate: Phenol-d6	139			ug/l	200		70 35-120			
Surrogate: 2,4,6-Tribromophenol	163			ug/l	200		82 45-120			
Surrogate: Nitrobenzene-d5	74.5			ug/l	100		74 45-120			
Surrogate: 2-Fluorobiphenyl	73.6			ug/l	100		74 45-120			
Surrogate: Terphenyl-d14	75.4			ug/l	100		75 45-120			
LCS Analyzed: 06/21/2005 (5F19018-BS1)										
Naphthalene	76.6	10	4.5	ug/l	100		77 50-120			M-NRI
N-Nitrosodimethylamine	73.7	20	3.7	ug/l	100		74 40-120			
Surrogate: 2-Fluorophenol	126			ug/l	200		63 30-120			
Surrogate: Phenol-d6	141			ug/l	200		70 35-120			
Surrogate: 2,4,6-Tribromophenol	166			ug/l	200		83 45-120			
Surrogate: Nitrobenzene-d5	77.2			ug/l	100		77 45-120			
Surrogate: 2-Fluorobiphenyl	80.2			ug/l	100		80 45-120			
Surrogate: Terphenyl-d14	79.3			ug/l	100		79 45-120			
LCS Dup Analyzed: 06/21/2005 (5F19018-BSD1)										
Naphthalene	69.4	10	4.5	ug/l	100		69 50-120	10	20	
N-Nitrosodimethylamine	63.2	20	3.7	ug/l	100		63 40-120	15	20	
Surrogate: 2-Fluorophenol	116			ug/l	200		58 30-120			
Surrogate: Phenol-d6	128			ug/l	200		64 35-120			
Surrogate: 2,4,6-Tribromophenol	143			ug/l	200		72 45-120			
Surrogate: Nitrobenzene-d5	68.2			ug/l	100		68 45-120			
Surrogate: 2-Fluorobiphenyl	71.9			ug/l	100		72 45-120			
Surrogate: Terphenyl-d14	70.2			ug/l	100		70 45-120			



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METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5F16067 Extracted: 06/16/05											
Blank Analyzed: 06/16/2005 (5F16067-BLK1)											
Perchlorate	ND	4.0	0.80	ug/l							
LCS Analyzed: 06/16/2005 (5F16067-BS1)											
Perchlorate	52.0	4.0	0.80	ug/l	50.0		104	85-115			
Matrix Spike Analyzed: 06/16/2005 (5F16067-MS1)											
						Source: IOF1223-01					
Perchlorate	50.3	4.0	0.80	ug/l	50.0	ND	101	80-120			
Matrix Spike Dup Analyzed: 06/16/2005 (5F16067-MSD1)											
						Source: IOF1223-01					
Perchlorate	51.4	4.0	0.80	ug/l	50.0	ND	103	80-120	2	20	
Batch: 5F17083 Extracted: 06/17/05											
Blank Analyzed: 06/22/2005 (5F17083-BLK1)											
Biochemical Oxygen Demand	ND	2.0	0.59	mg/l							
LCS Analyzed: 06/22/2005 (5F17083-BS1)											
Biochemical Oxygen Demand	194	100	30	mg/l	198		98	85-115			
LCS Dup Analyzed: 06/22/2005 (5F17083-BSD1)											
Biochemical Oxygen Demand	194	100	30	mg/l	198		98	85-115	0	20	
Batch: 5F17094 Extracted: 06/17/05											
Blank Analyzed: 06/17/2005 (5F17094-BLK1)											
Turbidity	0.0500	1.0	0.040	NTU							J

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INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	Limit	RPD	RPD Limit	Data Qualifiers
Batch: 5F17094 Extracted: 06/17/05											
Duplicate Analyzed: 06/17/2005 (5F17094-DUP1)											
Turbidity	9.60	1.0	0.040	NTU		9.7			1	20	
Batch: 5F20071 Extracted: 06/20/05											
Blank Analyzed: 06/20/2005 (5F20071-BLK1)											
Oil & Grease	ND	5.0	0.94	mg/l							
LCS Analyzed: 06/20/2005 (5F20071-BS1)											
Oil & Grease	20.0	5.0	0.94	mg/l	20.0		100	65-120			
LCS Dup Analyzed: 06/20/2005 (5F20071-BSD1)											
Oil & Grease	18.4	5.0	0.94	mg/l	20.0		92	65-120	8	20	
Matrix Spike Analyzed: 06/20/2005 (5F20071-MS1)											
Oil & Grease	18.1	5.0	0.94	mg/l	21.3	1.3	79	65-120			
Matrix Spike Dup Analyzed: 06/20/2005 (5F20071-MSD1)											
Oil & Grease	16.2	5.0	0.94	mg/l	20.6	1.3	72	65-120	11	25	
Batch: 5F21081 Extracted: 06/22/05											
Blank Analyzed: 06/22/2005 (5F21081-BLK1)											
Total Dissolved Solids	ND	10	10	mg/l							
LCS Analyzed: 06/22/2005 (5F21081-BS1)											
Total Dissolved Solids	966	10	10	mg/l	1000		97	90-110			

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INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	RPD RPD	RPD Limit	Data Qualifiers
Batch: 5F21081 Extracted: 06/22/05										
Duplicate Analyzed: 06/22/2005 (5F21081-DUP1)										
Total Dissolved Solids	287	10	10	mg/l		300		4	10	
Batch: 5F22109 Extracted: 06/22/05										
Blank Analyzed: 06/22/2005 (5F22109-BLK1)										
Total Suspended Solids	ND	10	10	mg/l						
LCS Analyzed: 06/22/2005 (5F22109-BS1)										
Total Suspended Solids	971	10	10	mg/l	1000		97		85-115	
Duplicate Analyzed: 06/22/2005 (5F22109-DUP1)										
Total Suspended Solids	ND	10	10	mg/l		ND			10	
Batch: 5F23075 Extracted: 06/23/05										
Blank Analyzed: 06/23/2005 (5F23075-BLK1)										
Ammonia-N (Distilled)	ND	0.50	0.30	mg/l						
LCS Analyzed: 06/23/2005 (5F23075-BS1)										
Ammonia-N (Distilled)	11.5	0.50	0.30	mg/l	10.0		115		80-115	
Matrix Spike Analyzed: 06/23/2005 (5F23075-MS1)										
Ammonia-N (Distilled)	11.2	0.50	0.30	mg/l	10.0	0.56	106		70-120	
Matrix Spike Dup Analyzed: 06/23/2005 (5F23075-MSD1)										
Ammonia-N (Distilled)	11.8	0.50	0.30	mg/l	10.0	0.56	112	5	15	

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DATA QUALIFIERS AND DEFINITIONS

- B** Analyte was detected in the associated Method Blank.
- J** Estimated value. Analyte detected at a level less than the Reporting Limit (RL) and greater than or equal to the Method Detection Limit (MDL). The user of this data should be aware that this data is of limited reliability.
- 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.
- ND** Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified.
- RPD** Relative Percent Difference

ADDITIONAL COMMENTS

For GRO (C4-C12):

GRO (C4-C12) is quantitated against a gasoline standard. Quantitation begins immediately following the methanol peak.

For Extractable Fuel Hydrocarbons (EFH, DRO, ORO) :

Unless otherwise noted, Extractable Fuel Hydrocarbons (EFH, DRO, ORO) are quantitated against a Diesel Fuel Standard.

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Certification Summary

Del Mar Analytical, Irvine

Method	Matrix	Nelac	California
EPA 160.2	Water	X	X
EPA 160.5	Water	X	X
EPA 180.1	Water	X	X
EPA 314.0	Water	N/A	X
EPA 350.2	Water		X
EPA 405.1	Water	X	X
EPA 413.1	Water	X	X
EPA 418.1	Water	X	X
EPA 624	Water	X	X
EPA 625	Water	X	X
EPA 8015 Mod.	Water	X	X
EPA 8015B	Water	X	X
EPA 8260B	Water	X	X
SM2540C	Water	X	X

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.dmlabs.com.

Del Mar Analytical, Irvine
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032 CF1253

Client Name/Address:		Project:		ANALYSIS REQUIRED												Field readings:				
MWH-Pasadena 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101		Boeing-SSFL NPDES During Test -- Outfall 012 Alfa Test Stand		Oil & Grease (EPA 4131)	8015-gas	8015-dieseljet fuel	1,4-Dioxane-8260B	TRPH = Total Rec (EPA 418.1)	624 (EDB, 1,2,3-TCP MTBE, DPE, TBA)	BOD5(20 degrees C)	625 Naphthalene +NDMA analysis	Ammonia-N, Titr. (3502) w/ dist	Perchlorate	Turbidity, TDS, TSS	Settleable Solids	Temp = 71.4	pH = 7.2			
Sample Description	Sample Matrix	Container Type	# of Cont.	Sampling Date/Time	Preservative	Bottle #	Oil & Grease (EPA 4131)	8015-gas	8015-dieseljet fuel	1,4-Dioxane-8260B	TRPH = Total Rec (EPA 418.1)	624 (EDB, 1,2,3-TCP MTBE, DPE, TBA)	BOD5(20 degrees C)	625 Naphthalene +NDMA analysis	Ammonia-N, Titr. (3502) w/ dist	Perchlorate	Turbidity, TDS, TSS	Settleable Solids	Comments	
Outfall 012	W	1L Amber	1	6-16-05 12:10	HCl	1A	X													
Outfall 012 duplicate	W	1L Amber	1		HCl	1B	X													
Outfall 012	W	VOAs	1		HCl	2A		X												
Outfall 012 duplicate	W	VOAs	2		HCl	2B, 2C		X												
Outfall 012	W	1L Amber	1		None	3A		X												
Outfall 012 duplicate	W	1L Amber	1		None	3B		X												
Outfall 012	W	VOAs	1		HCl	4A			X											
Outfall 012 duplicate	W	VOAs	2		HCl	4B, 4C		X												
Outfall 012	W	1L Amber	1		HCl	5A			X											
Outfall 012 duplicate	W	1L Amber	1		HCl	5B			X											
Outfall 012	W	VOAs	1		HCl	6A				X										
Outfall 012 duplicate	W	VOAs	2		HCl	6B, 6C				X										
Outfall 012	W	1L Poly	1		None	7A					X									
Outfall 012	W	1L Amber	1		None	8A						X								
Outfall 012 duplicate	W	1L Amber	1		None	8B							X							
Outfall 012	W	500ml Poly	1		H2S04	9A								X						
Outfall 012	W	1L Poly	1		None	10A										X				
Outfall 012	W	1L Poly	1		None	11A											X			
Trip Blank	W	VOAs	6		HCl	12A, 12B, 12C, 12D, 12E, 12F			X			X								

Relinquished By: *[Signature]* Date/Time: 6-16-05 12:50
 Relinquished By: *[Signature]* Date/Time: 6-16-05 15:05
 Relinquished By: *[Signature]* Date/Time: 6-16-05 15:05

Received By: *[Signature]* Date/Time: 6/16/05 12:50
 Received By: *[Signature]* Date/Time: 6/16/05 15:05
 Received By: *[Signature]* Date/Time: 6/16/05 15:05

Turn around Time: (check)
 24 Hours _____ 5 Days _____
 48 Hours _____ 10 Days _____
 72 Hours _____ Normal _____
 Perchlorate Only 72 Hours _____
 Metals Only 72 Hours _____
 Sample Integrity: (Check) *[Signature]*



LABORATORY REPORT

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

Project: Alfa Outfall 012 - During Test

Sampled: 06/20/05
Received: 06/21/05
Issued: 07/20/05 14:35

NELAP #01108CA California ELAP#1197 CSDLAC #10117

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

This entire report was reviewed and approved for release.

SAMPLE CROSS REFERENCE

SUBCONTRACTED: No analyses were subcontracted to an outside laboratory.

LABORATORY ID	CLIENT ID	MATRIX
IOF1490-01	Outfall 012	Water
IOF1490-02	Trip Blank	Water

Reviewed By:

Del Mar Analytical, Irvine
Michele Harper
Project Manager



MWH-Pasadena/Boeing
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Project ID: Alfa Outfall 012 - During Test

Report Number: IOF1490

Sampled: 06/20/05

Received: 06/21/05

TOTAL RECOVERABLE PETROLEUM HYDROCARBONS (EPA 418.1)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOF1490-01 (Outfall 012 - Water)									
Reporting Units: mg/l									
Total Recoverable Hydrocarbons	EPA 418.1	5F22081	0.31	1.0	4.1	1	06/22/05	06/22/05	

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Sampled: 06/20/05
Received: 06/21/05

EXTRACTABLE FUEL HYDROCARBONS (CADHS/8015 Modified)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOF1490-01 (Outfall 012 - Water) - cont.									
Reporting Units: mg/l									
EFH (C13 - C22)	EPA 8015B	5F22089	0.082	0.50	0.81	0.971	06/22/05	06/23/05	
Surrogate: n-Octacosane (40-125%)					86 %				

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Sampled: 06/20/05
 Received: 06/21/05

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

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOF1490-01 (Outfall 012 - Water) - cont.									
Reporting Units: mg/l									
GRO (C4 - C12)	EPA 8015 Mod.	5F22034	0.050	0.10	0.93	1	06/22/05	06/22/05	
Surrogate: 4-BFB (FID) (65-140%)					82 %				
Sample ID: IOF1490-02 (Trip Blank - Water)									
Reporting Units: mg/l									
GRO (C4 - C12)	EPA 8015 Mod.	5F22034	0.050	0.10	ND	1	06/22/05	06/22/05	
Surrogate: 4-BFB (FID) (65-140%)					80 %				

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VOLATILE ORGANICS by GCMS SIM

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOF1490-01 (Outfall 012 - Water)									
Reporting Units: ug/l									
1,4-Dioxane	EPA 8260B	5F27015	0.33	2.0	0.42	1	06/27/05	06/27/05	B, J
<i>Surrogate: Dibromofluoromethane (80-120%)</i>					108 %				

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Project ID: Alfa Outfall 012 - During Test

Report Number: IOF1490

Sampled: 06/20/05

Received: 06/21/05

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: IOF1490-01 (Outfall 012 - Water) - cont.									
Reporting Units: ug/l									
1,2-Dibromoethane (EDB)	EPA 624	5F25006	0.32	2.0	ND	1	06/25/05	06/25/05	
Methyl-tert-butyl Ether (MTBE)	EPA 624	5F25006	0.32	5.0	ND	1	06/25/05	06/25/05	
1,2,3-Trichloropropane	EPA 624	5F25006	0.85	10	ND	1	06/25/05	06/25/05	
Di-isopropyl Ether (DIPE)	EPA 624	5F25006	0.25	5.0	ND	1	06/25/05	06/25/05	
tert-Butanol (TBA)	EPA 624	5F25006	3.1	25	ND	1	06/25/05	06/25/05	
Surrogate: Dibromofluoromethane (80-120%)									109 %
Surrogate: Toluene-d8 (80-120%)									102 %
Surrogate: 4-Bromofluorobenzene (80-120%)									95 %
Sample ID: IOF1490-02 (Trip Blank - Water)									
Reporting Units: ug/l									
1,2-Dibromoethane (EDB)	EPA 624	5F25006	0.32	2.0	ND	1	06/25/05	06/25/05	
Methyl-tert-butyl Ether (MTBE)	EPA 624	5F25006	0.32	5.0	ND	1	06/25/05	06/25/05	
1,2,3-Trichloropropane	EPA 624	5F25006	0.85	10	ND	1	06/25/05	06/25/05	
Di-isopropyl Ether (DIPE)	EPA 624	5F25006	0.25	5.0	ND	1	06/25/05	06/25/05	
tert-Butanol (TBA)	EPA 624	5F25006	3.1	25	ND	1	06/25/05	06/25/05	
Surrogate: Dibromofluoromethane (80-120%)									104 %
Surrogate: Toluene-d8 (80-120%)									101 %
Surrogate: 4-Bromofluorobenzene (80-120%)									90 %

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

Project ID: Alfa Outfall 012 - During Test

Report Number: IOF1490

Sampled: 06/20/05

Received: 06/21/05

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: IOF1490-01 (Outfall 012 - Water)									
Reporting Units: ug/l									
Naphthalene	EPA 625	5F22041	4.5	10	15	0.962	06/22/05	06/28/05	
N-Nitrosodimethylamine	EPA 625	5F22041	3.7	20	ND	0.962	06/22/05	06/28/05	
Surrogate: 2-Fluorophenol (30-120%)					59 %				
Surrogate: Phenol-d6 (35-120%)					62 %				
Surrogate: 2,4,6-Tribromophenol (45-120%)					39 %				Z
Surrogate: Nitrobenzene-d5 (45-120%)					45 %				
Surrogate: 2-Fluorobiphenyl (45-120%)					80 %				
Surrogate: Terphenyl-d14 (45-120%)					101 %				

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Report Number: IOF1490

Sampled: 06/20/05
 Received: 06/21/05

INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOF1490-01 (Outfall 012 - Water) - cont.									
Reporting Units: mg/l									
Ammonia-N (Distilled)	EPA 350.2	5F27069	0.30	0.50	ND	1	06/27/05	06/27/05	
Biochemical Oxygen Demand	EPA 405.1	5F21066	0.59	2.0	2.2	1	06/22/05	06/27/05	
Oil & Grease	EPA 413.1	5F22082	0.94	5.0	1.7	1	06/22/05	06/22/05	J
Total Dissolved Solids	SM2540C	5F23098	10	10	300	1	06/23/05	06/23/05	
Total Suspended Solids	EPA 160.2	5F24077	10	10	ND	1	06/24/05	06/24/05	
Sample ID: IOF1490-01 (Outfall 012 - Water)									
Reporting Units: ml/hr									
Total Settleable Solids	EPA 160.5	5F22099	0.10	0.10	ND	1	06/22/05	06/22/05	
Sample ID: IOF1490-01 (Outfall 012 - Water)									
Reporting Units: NTU									
Turbidity	EPA 180.1	5F21089	0.040	1.0	19	1	06/21/05	06/21/05	
Sample ID: IOF1490-01 (Outfall 012 - Water)									
Reporting Units: ug/l									
Perchlorate	EPA 314.0	5F22056	0.80	4.0	ND	1	06/22/05	06/22/05	

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Sampled: 06/20/05

Received: 06/21/05

SHORT HOLD TIME DETAIL REPORT

Sample ID: Outfall 012 (IOF1490-01) - Water	Hold Time (in days)	Date/Time Sampled	Date/Time Received	Date/Time Extracted	Date/Time Analyzed
EPA 160.5	2	06/20/2005 16:26	06/21/2005 13:15	06/22/2005 13:00	06/22/2005 14:00
EPA 180.1	2	06/20/2005 16:26	06/21/2005 13:15	06/21/2005 15:30	06/21/2005 16:30
EPA 405.1	2	06/20/2005 16:26	06/21/2005 13:15	06/22/2005 07:30	06/27/2005 10:00

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Sampled: 06/20/05
Received: 06/21/05

METHOD BLANK/QC DATA

TOTAL RECOVERABLE PETROLEUM HYDROCARBONS (EPA 418.1)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	Limits RPD	RPD Limit	Data Qualifiers
Batch: 5F22081 Extracted: 06/22/05										
Blank Analyzed: 06/22/2005 (5F22081-BLK1)										
Total Recoverable Hydrocarbons	ND	1.0	0.31	mg/l						
LCS Analyzed: 06/22/2005 (5F22081-BS1)										
Total Recoverable Hydrocarbons	4.72	1.0	0.31	mg/l	5.00		94	65-120		M-NR1
LCS Dup Analyzed: 06/22/2005 (5F22081-BSD1)										
Total Recoverable Hydrocarbons	5.01	1.0	0.31	mg/l	5.00		100	65-120	6	20

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Received: 06/21/05

METHOD BLANK/QC DATA

EXTRACTABLE FUEL HYDROCARBONS (CADHS/8015 Modified)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5F22089 Extracted: 06/22/05										
Blank Analyzed: 06/23/2005 (5F22089-BLK1)										
EFH (C13 - C22)	ND	0.50	0.082	mg/l						
EFH (C13 - C40)	ND	0.50	0.082	mg/l						
Surrogate: n-Octacosane	0.155			mg/l	0.200		78 40-125			
LCS Analyzed: 06/23/2005 (5F22089-BS1)										
EFH (C13 - C40)	0.386	0.50	0.082	mg/l	0.775		50 40-120			M-NR1
Surrogate: n-Octacosane	0.156			mg/l	0.200		78 40-125			J
LCS Dup Analyzed: 06/23/2005 (5F22089-BSD1)										
EFH (C13 - C40)	0.395	0.50	0.082	mg/l	0.775		51 40-120	2	25	J
Surrogate: n-Octacosane	0.169			mg/l	0.200		84 40-125			

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METHOD BLANK/QC DATA

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

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5F22034 Extracted: 06/22/05											
Blank Analyzed: 06/22/2005 (5F22034-BLK1)											
GRO (C4 - C12)	ND	0.10	0.050	mg/l							
Surrogate: 4-BFB (FID)	0.00794			mg/l	0.0100		79	65-140			
LCS Analyzed: 06/22/2005 (5F22034-BS1)											
GRO (C4 - C12)	0.640	0.10	0.050	mg/l	0.800		80	65-140			
Surrogate: 4-BFB (FID)	0.0194			mg/l	0.0300		65	65-140			
Matrix Spike Analyzed: 06/22/2005 (5F22034-MS1) Source: IOF1390-01											
GRO (C4 - C12)	0.223	0.10	0.050	mg/l	0.220	ND	101	60-145			
Surrogate: 4-BFB (FID)	0.00947			mg/l	0.0100		95	65-140			
Matrix Spike Dup Analyzed: 06/22/2005 (5F22034-MSD1) Source: IOF1390-01											
GRO (C4 - C12)	0.208	0.10	0.050	mg/l	0.220	ND	95	60-145	7	20	
Surrogate: 4-BFB (FID)	0.00862			mg/l	0.0100		86	65-140			

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METHOD BLANK/QC DATA

VOLATILE ORGANICS by GCMS SIM

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5F27015 Extracted: 06/27/05											
Blank Analyzed: 06/27/2005 (5F27015-BLK1)											
1,4-Dioxane	ND	2.0	1.0	ug/l							
Surrogate: Dibromofluoromethane	1.05			ug/l	1.00		105	80-120			
LCS Analyzed: 06/27/2005 (5F27015-BS1)											
1,4-Dioxane	8.87	2.0	1.0	ug/l	10.0		89	70-130			
Surrogate: Dibromofluoromethane	1.05			ug/l	1.00		105	80-120			
Matrix Spike Analyzed: 06/27/2005 (5F27015-MS1) Source: IOF1490-01											
1,4-Dioxane	8.61	2.0	1.0	ug/l	10.0	0.42	82	70-130			
Surrogate: Dibromofluoromethane	1.03			ug/l	1.00		103	80-120			
Matrix Spike Dup Analyzed: 06/27/2005 (5F27015-MSD1) Source: IOF1490-01											
1,4-Dioxane	8.57	2.0	1.0	ug/l	10.0	0.42	82	70-130	1	30	
Surrogate: Dibromofluoromethane	1.02			ug/l	1.00		102	80-120			

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METHOD BLANK/QC DATA

PURGEABLES BY GC/MS (EPA 624)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5F25006 Extracted: 06/25/05										
Blank Analyzed: 06/25/2005 (5F25006-BLK1)										
1,2-Dibromoethane (EDB)	ND	2.0	0.32	ug/l						
Methyl-tert-butyl Ether (MTBE)	ND	5.0	0.32	ug/l						
1,2,3-Trichloropropane	ND	10	0.85	ug/l						
Di-isopropyl Ether (DIPE)	ND	5.0	0.25	ug/l						
tert-Butanol (TBA)	ND	25	3.1	ug/l						
Surrogate: Dibromofluoromethane	25.3			ug/l	25.0		101 80-120			
Surrogate: Toluene-d8	25.5			ug/l	25.0		102 80-120			
Surrogate: 4-Bromofluorobenzene	22.8			ug/l	25.0		91 80-120			
LCS Analyzed: 06/25/2005 (5F25006-BS1)										
1,2-Dibromoethane (EDB)	27.7	2.0	0.32	ug/l	25.0		111 70-125			
Methyl-tert-butyl Ether (MTBE)	26.6	5.0	0.32	ug/l	25.0		106 55-140			
1,2,3-Trichloropropane	26.0	10	0.85	ug/l	25.0		104 55-130			
Di-isopropyl Ether (DIPE)	27.6	5.0	0.25	ug/l	25.0		110 60-135			
tert-Butanol (TBA)	125	25	3.1	ug/l	125		100 65-135			
Surrogate: Dibromofluoromethane	26.4			ug/l	25.0		106 80-120			
Surrogate: Toluene-d8	25.5			ug/l	25.0		102 80-120			
Surrogate: 4-Bromofluorobenzene	25.2			ug/l	25.0		101 80-120			
Matrix Spike Analyzed: 06/25/2005 (5F25006-MS1)										
Source: IOF1535-04										
1,2-Dibromoethane (EDB)	26.2	2.0	0.32	ug/l	25.0	ND	105 65-130			
Methyl-tert-butyl Ether (MTBE)	25.9	5.0	0.32	ug/l	25.0	ND	104 50-150			
1,2,3-Trichloropropane	24.5	10	0.85	ug/l	25.0	ND	98 50-135			
Di-isopropyl Ether (DIPE)	98.9	5.0	0.25	ug/l	25.0	73	104 60-140			
tert-Butanol (TBA)	173	25	3.1	ug/l	125	40	106 60-145			
Surrogate: Dibromofluoromethane	26.1			ug/l	25.0		104 80-120			
Surrogate: Toluene-d8	26.0			ug/l	25.0		104 80-120			
Surrogate: 4-Bromofluorobenzene	25.9			ug/l	25.0		104 80-120			

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METHOD BLANK/QC DATA

PURGEABLES BY GC/MS (EPA 624)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5F25006 Extracted: 06/25/05											
Matrix Spike Dup Analyzed: 06/25/2005 (5F25006-MSD1)						Source: IOF1535-04					
1,2-Dibromoethane (EDB)	27.0	2.0	0.32	ug/l	25.0	ND	108	65-130	3	25	
Methyl-tert-butyl Ether (MTBE)	27.7	5.0	0.32	ug/l	25.0	ND	111	50-150	7	25	
1,2,3-Trichloropropane	25.0	10	0.85	ug/l	25.0	ND	100	50-135	2	30	
Di-isopropyl Ether (DIPE)	101	5.0	0.25	ug/l	25.0	73	112	60-140	2	25	
tert-Butanol (TBA)	180	25	3.1	ug/l	125	40	112	60-145	4	25	
Surrogate: Dibromofluoromethane	26.9			ug/l	25.0		108	80-120			
Surrogate: Toluene-d8	26.2			ug/l	25.0		105	80-120			
Surrogate: 4-Bromofluorobenzene	25.4			ug/l	25.0		102	80-120			

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METHOD BLANK/QC DATA

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

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5F22041 Extracted: 06/22/05										
Blank Analyzed: 06/24/2005 (5F22041-BLK1)										
Naphthalene	ND	10	4.5	ug/l						
N-Nitrosodimethylamine	ND	20	3.7	ug/l						
Surrogate: 2-Fluorophenol	93.0			ug/l	200		46 30-120			
Surrogate: Phenol-d6	99.9			ug/l	200		50 35-120			
Surrogate: 2,4,6-Tribromophenol	101			ug/l	200		50 45-120			
Surrogate: Nitrobenzene-d5	56.0			ug/l	100		56 45-120			
Surrogate: 2-Fluorobiphenyl	57.6			ug/l	100		58 45-120			
Surrogate: Terphenyl-d14	63.4			ug/l	100		63 45-120			
LCS Analyzed: 06/24/2005 (5F22041-BS1)										
Naphthalene	78.2	10	4.5	ug/l	100		78 50-120			M-NRI
N-Nitrosodimethylamine	65.5	20	3.7	ug/l	100		66 40-120			
Surrogate: 2-Fluorophenol	126			ug/l	200		63 30-120			
Surrogate: Phenol-d6	135			ug/l	200		68 35-120			
Surrogate: 2,4,6-Tribromophenol	145			ug/l	200		72 45-120			
Surrogate: Nitrobenzene-d5	73.4			ug/l	100		73 45-120			
Surrogate: 2-Fluorobiphenyl	78.6			ug/l	100		79 45-120			
Surrogate: Terphenyl-d14	80.9			ug/l	100		81 45-120			
LCS Dup Analyzed: 06/24/2005 (5F22041-BSD1)										
Naphthalene	78.4	10	4.5	ug/l	100		78 50-120	0	20	
N-Nitrosodimethylamine	63.0	20	3.7	ug/l	100		63 40-120	4	20	
Surrogate: 2-Fluorophenol	124			ug/l	200		62 30-120			
Surrogate: Phenol-d6	134			ug/l	200		67 35-120			
Surrogate: 2,4,6-Tribromophenol	154			ug/l	200		77 45-120			
Surrogate: Nitrobenzene-d5	72.6			ug/l	100		73 45-120			
Surrogate: 2-Fluorobiphenyl	78.3			ug/l	100		78 45-120			
Surrogate: Terphenyl-d14	82.1			ug/l	100		82 45-120			

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METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5F21066 Extracted: 06/22/05											
Blank Analyzed: 06/27/2005 (5F21066-BLK1)											
Biochemical Oxygen Demand	ND	2.0	0.59	mg/l							
LCS Analyzed: 06/27/2005 (5F21066-BS1)											
Biochemical Oxygen Demand	203	100	30	mg/l	198		103	85-115			
LCS Dup Analyzed: 06/27/2005 (5F21066-BSD1)											
Biochemical Oxygen Demand	206	100	30	mg/l	198		104	85-115	1	20	
Batch: 5F21089 Extracted: 06/21/05											
Blank Analyzed: 06/21/2005 (5F21089-BLK1)											
Turbidity	0.0500	1.0	0.040	NTU							J
Duplicate Analyzed: 06/21/2005 (5F21089-DUP1)											
Turbidity	38.6	1.0	0.040	NTU		Source: IOF1458-01	39		1	20	
Batch: 5F22056 Extracted: 06/22/05											
Blank Analyzed: 06/22/2005 (5F22056-BLK1)											
Perchlorate	ND	4.0	0.80	ug/l							
LCS Analyzed: 06/22/2005 (5F22056-BS1)											
Perchlorate	50.8	4.0	0.80	ug/l	50.0		102	85-115			
Matrix Spike Analyzed: 06/22/2005 (5F22056-MS1)											
Perchlorate	53.0	4.0	0.80	ug/l	50.0	Source: IOF1450-01	7.0	92	80-120		

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Report Number: IOF1490

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Received: 06/21/05

METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5F22056 Extracted: 06/22/05											
Matrix Spike Dup Analyzed: 06/22/2005 (5F22056-MSD1)						Source: IOF1450-01					
Perchlorate	56.8	4.0	0.80	ug/l	50.0	7.0	100	80-120	7	20	
Batch: 5F22082 Extracted: 06/22/05											
Blank Analyzed: 06/22/2005 (5F22082-BLK1)											
Oil & Grease	ND	5.0	0.94	mg/l							
LCS Analyzed: 06/22/2005 (5F22082-BS1)											
Oil & Grease	16.0	5.0	0.94	mg/l	20.0		80	65-120			M-NRI
LCS Dup Analyzed: 06/22/2005 (5F22082-BSD1)											
Oil & Grease	16.5	5.0	0.94	mg/l	20.0		82	65-120	3	20	
Batch: 5F23098 Extracted: 06/23/05											
Blank Analyzed: 06/23/2005 (5F23098-BLK1)											
Total Dissolved Solids	ND	10	10	mg/l							
LCS Analyzed: 06/23/2005 (5F23098-BS1)											
Total Dissolved Solids	1010	10	10	mg/l	1000		101	90-110			
Duplicate Analyzed: 06/23/2005 (5F23098-DUP1)						Source: IOF1355-01					
Total Dissolved Solids	893	10	10	mg/l		880			1	10	
Batch: 5F24077 Extracted: 06/24/05											
Blank Analyzed: 06/24/2005 (5F24077-BLK1)											
Total Suspended Solids	ND	10	10	mg/l							

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INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5F24077 Extracted: 06/24/05											
LCS Analyzed: 06/24/2005 (5F24077-BS1)											
Total Suspended Solids	960	10	10	mg/l	1000		96	85-115			
Duplicate Analyzed: 06/24/2005 (5F24077-DUP1)											
Total Suspended Solids	ND	10	10	mg/l		Source: IOF1627-01 ND				10	
Batch: 5F27069 Extracted: 06/27/05											
Blank Analyzed: 06/27/2005 (5F27069-BLK1)											
Ammonia-N (Distilled)	ND	0.50	0.30	mg/l							
LCS Analyzed: 06/27/2005 (5F27069-BS1)											
Ammonia-N (Distilled)	11.2	0.50	0.30	mg/l	10.0		112	80-115			
Matrix Spike Analyzed: 06/27/2005 (5F27069-MS1)											
Ammonia-N (Distilled)	57.4	0.50	0.30	mg/l	10.0	Source: IOF1423-02 47	104	70-120			
Matrix Spike Analyzed: 06/27/2005 (5F27069-MS2)											
Ammonia-N (Distilled)	11.8	0.50	0.30	mg/l	10.0	Source: IOF1438-02 0.56	112	70-120			
Matrix Spike Dup Analyzed: 06/27/2005 (5F27069-MSD1)											
Ammonia-N (Distilled)	56.8	0.50	0.30	mg/l	10.0	Source: IOF1423-02 47	98	70-120	1	15	
Matrix Spike Dup Analyzed: 06/27/2005 (5F27069-MSD2)											
Ammonia-N (Distilled)	12.6	0.50	0.30	mg/l	10.0	Source: IOF1438-02 0.56	120	70-120	7	15	

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: Alfa Outfall 012 - During Test

Report Number: IOF1490

Sampled: 06/20/05

Received: 06/21/05

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 limited reliability.
- M-NRI** There was no MS/MSD analyzed with this batch due to insufficient sample volume. See Blank Spike/Blank Spike Duplicate.
- Z** Due to sample matrix effects, the surrogate recovery was below the acceptance limits.
- ND** Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified.
- RPD** Relative Percent Difference

ADDITIONAL COMMENTS

For GRO (C4-C12):

GRO (C4-C12) is quantitated against a gasoline standard. Quantitation begins immediately following the methanol peak.

For Extractable Fuel Hydrocarbons (EFH, DRO, ORO) :

Unless otherwise noted, Extractable Fuel Hydrocarbons (EFH, DRO, ORO) are quantitated against a Diesel Fuel Standard.

Del Mar Analytical, Irvine
Michele Harper
Project Manager



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

Project ID: Alfa Outfall 012 - During Test

Report Number: IOF1490

Sampled: 06/20/05

Received: 06/21/05

Certification Summary

Del Mar Analytical, Irvine

Method	Matrix	Nelac	California
EPA 160.2	Water	X	X
EPA 160.5	Water	X	X
EPA 180.1	Water	X	X
EPA 314.0	Water	N/A	X
EPA 350.2	Water		X
EPA 405.1	Water	X	X
EPA 413.1	Water	X	X
EPA 418.1	Water	X	X
EPA 624	Water	X	X
EPA 625	Water	X	X
EPA 8015 Mod.	Water	X	X
EPA 8015B	Water	X	X
EPA 8260B	Water	X	X
SM2540C	Water	X	X

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.dmlabs.com.

Del Mar Analytical, Irvine
Michele Harper
Project Manager

CHAIN OF CUSTODY FORM

Del Mar Analytical Version 02/17/05

Client Name/Address:				Project:				ANALYSIS REQUIRED												Field readings:								
MWH-Pasadena 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Project Manager: Bronwyn Kelly Sampler: Rick B...				Boeing-SSFL NPDES During Test -- Outfall 012 Alfa Test Stand Phone Number: (626) 568-6691 Fax Number: (626) 568-6515				Sample Description	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	Oil & Grease (EPA 413.1)	8015-gas	8015-diesel/jet fuel	1,4-Dioxane-8260B	TRPH, Total Rec. (EPA 418.1)	624 (EDB, 1,2,3-TCF, MTBE, DPE, TBA)	BOD5(20 degrees C)	625 Naphthalene +NDMA analysis	Ammonia-N, Titr. (350.2) w/ dist	Perchlorate	Turbidity, TDS, TSS	Settleable Solids	Temp = 72.0	pH = 7.4	Comments
Outfall 012	W	1L Amber	1	HCl	1A	X																						
Outfall 012 duplicate	W	1L Amber	1	HCl	1B	X																						
Outfall 012	W	VOAs	1	HCl	2A		X																					
Outfall 012 duplicate	W	VOAs	2	HCl	2B, 2C		X																					
Outfall 012	W	1L Amber	1	None	3A			X																				
Outfall 012 duplicate	W	1L Amber	1	None	3B			X																				
Outfall 012	W	VOAs	1	HCl	4A				X																			
Outfall 012 duplicate	W	VOAs	2	HCl	4B, 4C				X																			
Outfall 012	W	1L Amber	1	HCl	5A										X													
Outfall 012 duplicate	W	1L Amber	1	HCl	5B										X													
Outfall 012	W	VOAs	1	HCl	6A											X												
Outfall 012 duplicate	W	VOAs	2	HCl	6B, 6C											X												
Outfall 012	W	1L Poly	1	None	7A												X											
Outfall 012	W	1L Amber	1	None	8A													X										
Outfall 012 duplicate	W	1L Amber	1	None	8B														X									
Outfall 012	W	500ml Poly	1	H2SO4	9A															X								
Outfall 012	W	1L Poly	1	None	10A																X							
Outfall 012	W	1L Poly	1	None	11A																	X						
Trip Blank	W	VOAs	6	HCl	12A, 12B, 12C, 12D, 12E, 12F																							

Turn around Time: (check)
 24 Hours _____ 5 Days _____
 48 Hours _____ 10 Days _____
 72 Hours _____ Normal _____
 Perchlorate Only 72 Hours _____
 Metals Only 72 Hours _____
 Sample integrity: (Check) On ice: 6°C

Received By: *[Signature]* Date/Time: 6/21/05 10:07
 Received By: *[Signature]* Date/Time: 6/21/05 13:15

Received By: *[Signature]* Date/Time: 6/21/05 13:15

Relinquished By: *[Signature]* Date/Time: 6/21/05 13:15

Relinquished By: *[Signature]* Date/Time: 6/21/05 13:15

APPENDIX G

Section 10

Outfall 018

Del Mar Analytical Laboratory Reports

AMEC Data Validation Reports



LABORATORY REPORT

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

Project: Quarterly Outfall 018

Sampled: 04/28/05
Received: 04/28/05
Issued: 06/22/05 10:04

NELAP #01108CA California ELAP#1197 CSDLAC #10117

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

SAMPLE CROSS REFERENCE

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

LABORATORY ID	CLIENT ID	MATRIX
IOD2049-01	Outfall 018	Water
IOD2049-02	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: Quarterly Outfall 018

Report Number: IOD2049

Sampled: 04/28/05

Received: 04/28/05

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: IOD2049-01 (Outfall 018 - Water)									
Reporting Units: ug/l									
Benzene	EPA 624	5E10003	0.28	2.0	ND	1	05/10/05	05/10/05	
Trichlorotrifluoroethane (Freon 113)	EPA 624	5E10003	1.2	5.0	ND	1	05/10/05	05/10/05	
Carbon tetrachloride	EPA 624	5E10003	0.28	5.0	ND	1	05/10/05	05/10/05	
Chloroform	EPA 624	5E10003	0.33	2.0	ND	1	05/10/05	05/10/05	
1,1-Dichloroethane	EPA 624	5E10003	0.27	2.0	ND	1	05/10/05	05/10/05	
1,2-Dichloroethane	EPA 624	5E10003	0.28	2.0	ND	1	05/10/05	05/10/05	
1,1-Dichloroethene	EPA 624	5E10003	0.42	3.0	ND	1	05/10/05	05/10/05	
Ethylbenzene	EPA 624	5E10003	0.25	2.0	ND	1	05/10/05	05/10/05	
Tetrachloroethene	EPA 624	5E10003	0.32	2.0	ND	1	05/10/05	05/10/05	
Toluene	EPA 624	5E10003	0.36	2.0	ND	1	05/10/05	05/10/05	
1,1,1-Trichloroethane	EPA 624	5E10003	0.30	2.0	ND	1	05/10/05	05/10/05	
1,1,2-Trichloroethane	EPA 624	5E10003	0.30	2.0	ND	1	05/10/05	05/10/05	
Trichloroethene	EPA 624	5E10003	0.26	5.0	1.0	1	05/10/05	05/10/05	J
Trichlorofluoromethane	EPA 624	5E10003	0.34	5.0	ND	1	05/10/05	05/10/05	
Vinyl chloride	EPA 624	5E10003	0.26	5.0	ND	1	05/10/05	05/10/05	
Xylenes, Total	EPA 624	5E10003	0.52	4.0	ND	1	05/10/05	05/10/05	
<i>Surrogate: Dibromofluoromethane (80-120%)</i>					108 %				
<i>Surrogate: Toluene-d8 (80-120%)</i>					104 %				
<i>Surrogate: 4-Bromofluorobenzene (80-120%)</i>					104 %				

Sample ID: IOD2049-02 (Trip Blank - Water)

Reporting Units: ug/l

Benzene	EPA 624	5E10003	0.28	2.0	ND	1	05/10/05	05/10/05	
Trichlorotrifluoroethane (Freon 113)	EPA 624	5E10003	1.2	5.0	ND	1	05/10/05	05/10/05	
Carbon tetrachloride	EPA 624	5E10003	0.28	5.0	ND	1	05/10/05	05/10/05	
Chloroform	EPA 624	5E10003	0.33	2.0	ND	1	05/10/05	05/10/05	
1,1-Dichloroethane	EPA 624	5E10003	0.27	2.0	ND	1	05/10/05	05/10/05	
1,2-Dichloroethane	EPA 624	5E10003	0.28	2.0	ND	1	05/10/05	05/10/05	
1,1-Dichloroethene	EPA 624	5E10003	0.42	3.0	ND	1	05/10/05	05/10/05	
Ethylbenzene	EPA 624	5E10003	0.25	2.0	ND	1	05/10/05	05/10/05	
Tetrachloroethene	EPA 624	5E10003	0.32	2.0	ND	1	05/10/05	05/10/05	
Toluene	EPA 624	5E10003	0.36	2.0	ND	1	05/10/05	05/10/05	
1,1,1-Trichloroethane	EPA 624	5E10003	0.30	2.0	ND	1	05/10/05	05/10/05	
1,1,2-Trichloroethane	EPA 624	5E10003	0.30	2.0	ND	1	05/10/05	05/10/05	
Trichloroethene	EPA 624	5E10003	0.26	5.0	ND	1	05/10/05	05/10/05	
Trichlorofluoromethane	EPA 624	5E10003	0.34	5.0	ND	1	05/10/05	05/10/05	
Vinyl chloride	EPA 624	5E10003	0.26	5.0	ND	1	05/10/05	05/10/05	
Xylenes, Total	EPA 624	5E10003	0.52	4.0	ND	1	05/10/05	05/10/05	
<i>Surrogate: Dibromofluoromethane (80-120%)</i>					105 %				
<i>Surrogate: Toluene-d8 (80-120%)</i>					102 %				
<i>Surrogate: 4-Bromofluorobenzene (80-120%)</i>					103 %				

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: Quarterly Outfall 018

Report Number: IOD2049

Sampled: 04/28/05
 Received: 04/28/05

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: IOD2049-01 (Outfall 018 - Water)									
Reporting Units: ug/l									
Bis(2-ethylhexyl)phthalate	EPA 625	5E01024	1.1	5.0	ND	0.962	05/01/05	05/04/05	
2,4-Dinitrotoluene	EPA 625	5E01024	0.23	9.0	ND	0.962	05/01/05	05/04/05	
N-Nitrosodimethylamine	EPA 625	5E01024	0.22	8.0	ND	0.962	05/01/05	05/04/05	
Pentachlorophenol	EPA 625	5E01024	0.78	8.0	ND	0.962	05/01/05	05/04/05	
2,4,6-Trichlorophenol	EPA 625	5E01024	0.10	6.0	ND	0.962	05/01/05	05/04/05	
Surrogate: 2-Fluorophenol (30-120%)					65 %				
Surrogate: Phenol-d6 (35-120%)					66 %				
Surrogate: 2,4,6-Tribromophenol (45-120%)					84 %				
Surrogate: Nitrobenzene-d5 (45-120%)					68 %				
Surrogate: 2-Fluorobiphenyl (45-120%)					73 %				
Surrogate: Terphenyl-d14 (45-120%)					77 %				

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: Quarterly Outfall 018

Report Number: IOD2049

Sampled: 04/28/05
Received: 04/28/05

ORGANOCHLORINE PESTICIDES (EPA 608)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOD2049-01 (Outfall 018 - Water) - cont.									
Reporting Units: ug/l									
alpha-BHC	EPA 608	5E03078	0.0010	0.010	ND	0.98	05/03/05	05/04/05	
<i>Surrogate: Decachlorobiphenyl (45-120%)</i>					77 %				
<i>Surrogate: Tetrachloro-m-xylene (35-115%)</i>					60 %				

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: Quarterly Outfall 018 Report Number: IOD2049	Sampled: 04/28/05 Received: 04/28/05
--	---	---

METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOD2049-01 (Outfall 018 - Water) - cont.									
Reporting Units: ug/l									
Copper	EPA 200.8	5D29095	0.49	2.0	3.7	1	04/29/05	05/03/05	
Lead	EPA 200.8	5D29095	0.13	1.0	1.9	1	04/29/05	05/03/05	
Mercury	EPA 245.1	5D29061	0.063	0.20	ND	1	04/29/05	04/29/05	

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: Quarterly Outfall 018

Report Number: IOD2049

Sampled: 04/28/05
Received: 04/28/05

INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOD2049-01 (Outfall 018 - Water) - cont.									
Reporting Units: mg/l									
Ammonia-N (Distilled)	EPA 350.2	5E02067	0.30	0.50	ND	1	05/02/05	05/02/05	
Biochemical Oxygen Demand	EPA 405.1	5D29091	0.59	2.0	9.7	1	04/29/05	05/04/05	
Chloride	EPA 300.0	5D28116	0.26	0.50	30	1	04/28/05	04/29/05	
Nitrate/Nitrite-N	EPA 300.0	5D28116	0.075	0.15	0.17	1	04/28/05	04/29/05	
Oil & Grease	EPA 413.1	5E04036	0.94	5.0	ND	1	05/04/05	05/04/05	
Sulfate	EPA 300.0	5D28116	0.90	2.5	85	5	04/28/05	04/29/05	
Surfactants (MBAS)	EPA 425.1	5D28122	0.044	0.10	0.059	1	04/28/05	04/28/05	J
Total Dissolved Solids	EPA 160.1	5D29129	10	10	320	1	04/29/05	04/29/05	
Total Suspended Solids	EPA 160.2	5E04071	10	10	48	1	05/04/05	05/04/05	
Sample ID: IOD2049-01 (Outfall 018 - Water)									
Reporting Units: ml/l/hr									
Total Settleable Solids	EPA 160.5	5D29094	0.10	0.10	ND	1	04/29/05	04/29/05	
Sample ID: IOD2049-01 (Outfall 018 - Water)									
Reporting Units: NTU									
Turbidity	EPA 180.1	5D29110	0.080	2.0	42	2	04/29/05	04/29/05	
Sample ID: IOD2049-01 (Outfall 018 - Water)									
Reporting Units: ug/l									
Total Cyanide	EPA 335.2	5D29078	2.2	5.0	ND	1	04/29/05	04/29/05	
Perchlorate	EPA 314.0	5D29065	0.80	4.0	ND	1	04/29/05	04/30/05	
Sample ID: IOD2049-01 (Outfall 018 - Water)									
Reporting Units: umhos/cm									
Specific Conductance	EPA 120.1	5D29130	1.0	1.0	450	1	04/29/05	04/29/05	

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: Quarterly Outfall 018

Report Number: IOD2049

Sampled: 04/28/05
Received: 04/28/05

SHORT HOLD TIME DETAIL REPORT

Sample ID: Outfall 018 (IOD2049-01) - Water	Hold Time (in days)	Date/Time Sampled	Date/Time Received	Date/Time Extracted	Date/Time Analyzed
EPA 160.5	2	04/28/2005 15:16	04/28/2005 18:15	04/29/2005 13:29	04/29/2005 15:00
EPA 180.1	2	04/28/2005 15:16	04/28/2005 18:15	04/29/2005 15:00	04/29/2005 16:00
EPA 300.0	2	04/28/2005 15:16	04/28/2005 18:15	04/28/2005 21:30	04/29/2005 00:39
EPA 405.1	2	04/28/2005 15:16	04/28/2005 18:15	04/29/2005 13:10	05/04/2005 13:00
EPA 425.1	2	04/28/2005 15:16	04/28/2005 18:15	04/28/2005 21:00	04/28/2005 21:40

Del Mar Analytical, Irvine
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Project Manager



Del Mar Analytical

17461 DeRian Ave., Suite 100, Irvine, CA 92614 (949) 261-1022 FAX (949) 260-3297
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 9484 Chesapeake Dr., Suite 805, San Diego, CA 92123 (858) 505-8596 FAX (858) 505-9689
 9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851
 2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

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

Project ID: Quarterly Outfall 018

Report Number: IOD2049

Sampled: 04/28/05
 Received: 04/28/05

METHOD BLANK/QC DATA

PURGEABLES BY GC/MS (EPA 624)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC Limits	RPD RPD	RPD Limit	Data Qualifiers
Batch: 5E10003 Extracted: 05/10/05										
Blank Analyzed: 05/10/2005 (5E10003-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	0.42	ug/l						
Ethylbenzene	ND	2.0	0.25	ug/l						
Tetrachloroethene	ND	2.0	0.32	ug/l						
Toluene	ND	2.0	0.36	ug/l						
1,1,1-Trichloroethane	ND	2.0	0.30	ug/l						
1,1,2-Trichloroethane	ND	2.0	0.30	ug/l						
Trichloroethene	ND	5.0	0.26	ug/l						
Trichlorofluoromethane	ND	5.0	0.34	ug/l						
Vinyl chloride	ND	5.0	0.26	ug/l						
Xylenes, Total	ND	4.0	0.52	ug/l						
Surrogate: Dibromofluoromethane	26.4			ug/l	25.0		106	80-120		
Surrogate: Toluene-d8	26.2			ug/l	25.0		105	80-120		
Surrogate: 4-Bromofluorobenzene	26.0			ug/l	25.0		104	80-120		
LCS Analyzed: 05/10/2005 (5E10003-BS1)										
Benzene	23.8	2.0	0.28	ug/l	25.0		95	65-120		
Carbon tetrachloride	28.7	5.0	0.28	ug/l	25.0		115	65-140		
Chloroform	22.8	2.0	0.33	ug/l	25.0		91	65-130		
1,1-Dichloroethane	22.4	2.0	0.27	ug/l	25.0		90	65-130		
1,2-Dichloroethane	22.7	2.0	0.28	ug/l	25.0		91	60-140		
1,1-Dichloroethene	24.0	3.0	0.42	ug/l	25.0		96	70-130		
Ethylbenzene	22.4	2.0	0.25	ug/l	25.0		90	70-125		
Tetrachloroethene	23.3	2.0	0.32	ug/l	25.0		93	65-125		
Toluene	23.3	2.0	0.36	ug/l	25.0		93	70-125		
1,1,1-Trichloroethane	24.2	2.0	0.30	ug/l	25.0		97	65-135		
1,1,2-Trichloroethane	22.6	2.0	0.30	ug/l	25.0		90	65-125		
Trichloroethene	24.5	5.0	0.26	ug/l	25.0		98	70-125		
Trichlorofluoromethane	23.2	5.0	0.34	ug/l	25.0		93	60-140		
Vinyl chloride	20.4	5.0	0.26	ug/l	25.0		82	50-130		
Surrogate: Dibromofluoromethane	25.3			ug/l	25.0		101	80-120		

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

Project ID: Quarterly Outfall 018
Report Number: IOD2049

Sampled: 04/28/05
Received: 04/28/05

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: 5E10003 Extracted: 05/10/05											
LCS Analyzed: 05/10/2005 (5E10003-BS1)											
Surrogate: Toluene-d8	26.0			ug/l	25.0		104	80-120			
Surrogate: 4-Bromofluorobenzene	25.5			ug/l	25.0		102	80-120			
Matrix Spike Analyzed: 05/10/2005 (5E10003-MS1)											
						Source: IOE0194-01					
Benzene	25.8	2.0	0.28	ug/l	25.0	ND	103	60-125			
Carbon tetrachloride	31.0	5.0	0.28	ug/l	25.0	ND	124	65-140			
Chloroform	25.5	2.0	0.33	ug/l	25.0	ND	102	65-135			
1,1-Dichloroethane	34.2	2.0	0.27	ug/l	25.0	10	97	60-130			
1,2-Dichloroethane	25.9	2.0	0.28	ug/l	25.0	0.60	101	60-140			
1,1-Dichloroethene	30.9	3.0	0.42	ug/l	25.0	6.1	99	60-135			
Ethylbenzene	24.0	2.0	0.25	ug/l	25.0	ND	96	65-130			
Tetrachloroethene	26.0	2.0	0.32	ug/l	25.0	1.9	96	60-130			
Toluene	25.4	2.0	0.36	ug/l	25.0	ND	102	65-125			
1,1,1-Trichloroethane	80.6	2.0	0.30	ug/l	25.0	60	82	65-140			
1,1,2-Trichloroethane	26.2	2.0	0.30	ug/l	25.0	ND	105	60-130			
Trichloroethene	55.2	5.0	0.26	ug/l	25.0	33	89	60-125			
Trichlorofluoromethane	25.7	5.0	0.34	ug/l	25.0	ND	103	55-145			
Vinyl chloride	22.6	5.0	0.26	ug/l	25.0	ND	90	40-135			
Surrogate: Dibromofluoromethane	26.9			ug/l	25.0		108	80-120			
Surrogate: Toluene-d8	26.1			ug/l	25.0		104	80-120			
Surrogate: 4-Bromofluorobenzene	26.0			ug/l	25.0		104	80-120			
Matrix Spike Dup Analyzed: 05/10/2005 (5E10003-MSD1)											
						Source: IOE0194-01					
Benzene	26.9	2.0	0.28	ug/l	25.0	ND	108	60-125	4	20	
Carbon tetrachloride	32.7	5.0	0.28	ug/l	25.0	ND	131	65-140	5	25	
Chloroform	27.2	2.0	0.33	ug/l	25.0	ND	109	65-135	6	20	
1,1-Dichloroethane	36.0	2.0	0.27	ug/l	25.0	10	104	60-130	5	20	
1,2-Dichloroethane	27.9	2.0	0.28	ug/l	25.0	0.60	109	60-140	7	20	
1,1-Dichloroethene	32.8	3.0	0.42	ug/l	25.0	6.1	107	60-135	6	20	
Ethylbenzene	24.8	2.0	0.25	ug/l	25.0	ND	99	65-130	3	20	
Tetrachloroethene	26.8	2.0	0.32	ug/l	25.0	1.9	100	60-130	3	20	
Toluene	26.4	2.0	0.36	ug/l	25.0	ND	106	65-125	4	20	
1,1,1-Trichloroethane	85.0	2.0	0.30	ug/l	25.0	60	100	65-140	5	20	
1,1,2-Trichloroethane	28.1	2.0	0.30	ug/l	25.0	ND	112	60-130	7	25	
Trichloroethene	57.6	5.0	0.26	ug/l	25.0	33	98	60-125	4	20	
Trichlorofluoromethane	26.9	5.0	0.34	ug/l	25.0	ND	108	55-145	5	25	

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

Project ID: Quarterly Outfall 018

Report Number: IOD2049

Sampled: 04/28/05
 Received: 04/28/05

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: 5E10003 Extracted: 05/10/05											
Matrix Spike Dup Analyzed: 05/10/2005 (5E10003-MSD1)						Source: IOE0194-01					
Vinyl chloride	23.7	5.0	0.26	ug/l	25.0	ND	95	40-135	5	30	
Surrogate: Dibromofluoromethane	27.3			ug/l	25.0		109	80-120			
Surrogate: Toluene-d8	25.7			ug/l	25.0		103	80-120			
Surrogate: 4-Bromofluorobenzene	26.0			ug/l	25.0		104	80-120			

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Received: 04/28/05

METHOD BLANK/QC DATA

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

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
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Batch: 5E01024 Extracted: 05/01/05

Blank Analyzed: 05/04/2005 (5E01024-BLK1)

Bis(2-ethylhexyl)phthalate	ND	5.0	1.1	ug/l							
2,4-Dinitrotoluene	ND	9.0	0.23	ug/l							
N-Nitrosodimethylamine	ND	8.0	0.22	ug/l							
Pentachlorophenol	ND	8.0	0.78	ug/l							
2,4,6-Trichlorophenol	ND	6.0	0.10	ug/l							
Surrogate: 2-Fluorophenol	12.2			ug/l	20.0		61	30-120			
Surrogate: Phenol-d6	12.4			ug/l	20.0		62	35-120			
Surrogate: 2,4,6-Tribromophenol	14.9			ug/l	20.0		74	45-120			
Surrogate: Nitrobenzene-d5	6.02			ug/l	10.0		60	45-120			
Surrogate: 2-Fluorobiphenyl	6.54			ug/l	10.0		65	45-120			
Surrogate: Terphenyl-d14	7.54			ug/l	10.0		75	45-120			

LCS Analyzed: 05/04/2005 (5E01024-BS1)

Bis(2-ethylhexyl)phthalate	7.94	5.0	1.1	ug/l	10.0		79	60-130			M-NRI
2,4-Dinitrotoluene	6.92	9.0	0.23	ug/l	10.0		69	60-120			J
N-Nitrosodimethylamine	6.10	8.0	0.22	ug/l	10.0		61	40-120			J
Pentachlorophenol	7.58	8.0	0.78	ug/l	10.0		76	50-120			J
2,4,6-Trichlorophenol	7.66	6.0	0.10	ug/l	10.0		77	60-120			J
Surrogate: 2-Fluorophenol	11.4			ug/l	20.0		57	30-120			
Surrogate: Phenol-d6	12.1			ug/l	20.0		60	35-120			
Surrogate: 2,4,6-Tribromophenol	15.6			ug/l	20.0		78	45-120			
Surrogate: Nitrobenzene-d5	6.30			ug/l	10.0		63	45-120			
Surrogate: 2-Fluorobiphenyl	7.26			ug/l	10.0		73	45-120			
Surrogate: Terphenyl-d14	7.76			ug/l	10.0		78	45-120			

LCS Dup Analyzed: 05/04/2005 (5E01024-BSD1)

Bis(2-ethylhexyl)phthalate	8.48	5.0	1.1	ug/l	10.0		85	60-130	7	20	
2,4-Dinitrotoluene	7.22	9.0	0.23	ug/l	10.0		72	60-120	4	20	J
N-Nitrosodimethylamine	6.54	8.0	0.22	ug/l	10.0		65	40-120	7	20	J
Pentachlorophenol	8.02	8.0	0.78	ug/l	10.0		80	50-120	6	25	
2,4,6-Trichlorophenol	8.36	6.0	0.10	ug/l	10.0		84	60-120	9	20	
Surrogate: 2-Fluorophenol	12.9			ug/l	20.0		64	30-120			
Surrogate: Phenol-d6	13.5			ug/l	20.0		68	35-120			
Surrogate: 2,4,6-Tribromophenol	16.4			ug/l	20.0		82	45-120			
Surrogate: Nitrobenzene-d5	6.78			ug/l	10.0		68	45-120			
Surrogate: 2-Fluorobiphenyl	7.78			ug/l	10.0		78	45-120			

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Michele Harper
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METHOD BLANK/QC DATA

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

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5E01024 Extracted: 05/01/05											
LCS Dup Analyzed: 05/04/2005 (5E01024-BSD1)											
Surrogate: Terphenyl-d14	8.06			ug/l	10.0		81	45-120			

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METHOD BLANK/QC DATA

ORGANOCHLORINE PESTICIDES (EPA 608)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	Limit	RPD	RPD Limit	Data Qualifiers
Batch: 5E03078 Extracted: 05/03/05											
Blank Analyzed: 05/04/2005 (5E03078-BLK1)											
alpha-BHC	ND	0.010	0.0010	ug/l							
Surrogate: Decachlorobiphenyl	0.451			ug/l	0.500		90	45-120			
Surrogate: Tetrachloro-m-xylene	0.350			ug/l	0.500		70	35-115			
LCS Analyzed: 05/04/2005 (5E03078-BS1)											
alpha-BHC	0.336	0.010	0.0010	ug/l	0.500		67	45-115			M-NRI
Surrogate: Decachlorobiphenyl	0.425			ug/l	0.500		85	45-120			
Surrogate: Tetrachloro-m-xylene	0.322			ug/l	0.500		64	35-115			
LCS Dup Analyzed: 05/04/2005 (5E03078-BSD1)											
alpha-BHC	0.364	0.010	0.0010	ug/l	0.500		73	45-115	8	30	
Surrogate: Decachlorobiphenyl	0.415			ug/l	0.500		83	45-120			
Surrogate: Tetrachloro-m-xylene	0.340			ug/l	0.500		68	35-115			

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METHOD BLANK/QC DATA

METALS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5D29061 Extracted: 04/29/05										
Blank Analyzed: 04/29/2005 (5D29061-BLK1)										
Mercury	ND	0.20	0.063	ug/l						
LCS Analyzed: 04/29/2005 (5D29061-BS1)										
Mercury	8.06	0.20	0.063	ug/l	8.00		101 85-115			
Matrix Spike Analyzed: 04/29/2005 (5D29061-MS1)										
Mercury	7.76	0.20	0.063	ug/l	8.00	ND	97 70-130			
Matrix Spike Dup Analyzed: 04/29/2005 (5D29061-MSD1)										
Mercury	7.82	0.20	0.063	ug/l	8.00	ND	98 70-130	1	20	
Batch: 5D29095 Extracted: 04/29/05										
Blank Analyzed: 05/03/2005 (5D29095-BLK1)										
Copper	ND	2.0	0.49	ug/l						
Lead	ND	1.0	0.13	ug/l						
LCS Analyzed: 05/03/2005 (5D29095-BS1)										
Copper	78.5	2.0	0.49	ug/l	80.0		98 85-115			
Lead	81.9	1.0	0.13	ug/l	80.0		102 85-115			
Matrix Spike Analyzed: 05/03/2005 (5D29095-MS1)										
Copper	79.4	2.0	0.49	ug/l	80.0	2.0	97 70-130			
Lead	80.9	1.0	0.13	ug/l	80.0	0.24	101 70-130			
Matrix Spike Analyzed: 05/03/2005 (5D29095-MS2)										
Copper	90.1	10	2.4	ug/l	80.0	17	91 70-130			
Lead	73.5	5.0	0.65	ug/l	80.0	1.1	90 70-130			

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 Attention: Bronwyn Kelly

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METHOD BLANK/QC DATA

METALS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5D29095 Extracted: 04/29/05											
Matrix Spike Dup Analyzed: 05/03/2005 (5D29095-MSD1)											
Copper	81.3	2.0	0.49	ug/l	80.0	2.0	99	70-130	2	20	
Lead	81.0	1.0	0.13	ug/l	80.0	0.24	101	70-130	0	20	

Source: IOD2054-01

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Report Number: IOD2049

Sampled: 04/28/05
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METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD RPD	RPD Limit	Data Qualifiers
Batch: 5D28116 Extracted: 04/28/05											
Blank Analyzed: 04/28/2005 (5D28116-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: 04/28/2005 (5D28116-BS1)											
Chloride	4.82	0.50	0.26	mg/l	5.00		96	90-110			M-3
Sulfate	9.63	0.50	0.18	mg/l	10.0		96	90-110			M-3
Batch: 5D28122 Extracted: 04/28/05											
Blank Analyzed: 04/28/2005 (5D28122-BLK1)											
Surfactants (MBAS)	ND	0.10	0.044	mg/l							
LCS Analyzed: 04/28/2005 (5D28122-BS1)											
Surfactants (MBAS)	0.252	0.10	0.044	mg/l	0.250		101	90-110			
Matrix Spike Analyzed: 04/28/2005 (5D28122-MS1)											
Surfactants (MBAS)	0.276	0.10	0.044	mg/l	0.250	ND	110	50-125			
Matrix Spike Dup Analyzed: 04/28/2005 (5D28122-MSD1)											
Surfactants (MBAS)	0.277	0.10	0.044	mg/l	0.250	ND	111	50-125	0	20	
Batch: 5D29065 Extracted: 04/29/05											
Blank Analyzed: 04/29/2005 (5D29065-BLK1)											
Perchlorate	ND	4.0	0.80	ug/l							

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METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD RPD	RPD Limit	Data Qualifiers
Batch: 5D29065 Extracted: 04/29/05											
LCS Analyzed: 04/29/2005 (5D29065-BS1)											
Perchlorate	51.0	4.0	0.80	ug/l	50.0		102	85-115			
Matrix Spike Analyzed: 04/29/2005 (5D29065-MS1)											
Perchlorate	53.1	4.0	0.80	ug/l	50.0	ND	106	80-120			
Matrix Spike Dup Analyzed: 04/29/2005 (5D29065-MSD1)											
Perchlorate	52.9	4.0	0.80	ug/l	50.0	ND	106	80-120	0	20	
Batch: 5D29078 Extracted: 04/29/05											
Blank Analyzed: 04/29/2005 (5D29078-BLK1)											
Total Cyanide	ND	5.0	2.2	ug/l							
LCS Analyzed: 04/29/2005 (5D29078-BS1)											
Total Cyanide	181	5.0	2.2	ug/l	200		90	90-110			
Matrix Spike Analyzed: 04/29/2005 (5D29078-MS1)											
Total Cyanide	162	5.0	2.2	ug/l	200	ND	81	70-115			
Matrix Spike Dup Analyzed: 04/29/2005 (5D29078-MSD1)											
Total Cyanide	156	5.0	2.2	ug/l	200	ND	78	70-115	4	15	
Batch: 5D29091 Extracted: 04/29/05											
Blank Analyzed: 05/04/2005 (5D29091-BLK1)											
Biochemical Oxygen Demand	ND	2.0	0.59	mg/l							

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METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5D29091 Extracted: 04/29/05										
LCS Analyzed: 05/04/2005 (5D29091-BS1)										
Biochemical Oxygen Demand	209	100	30	mg/l	198		106 85-115			
LCS Dup Analyzed: 05/04/2005 (5D29091-BSD1)										
Biochemical Oxygen Demand	208	100	30	mg/l	198		105 85-115	1	20	
Batch: 5D29110 Extracted: 04/29/05										
Blank Analyzed: 04/29/2005 (5D29110-BLK1)										
Turbidity	ND	1.0	0.040	NTU						
Duplicate Analyzed: 04/29/2005 (5D29110-DUP1)										
Turbidity	135	5.0	0.20	NTU		Source: IOD2066-01 130		4	20	
Batch: 5D29129 Extracted: 04/29/05										
Blank Analyzed: 04/29/2005 (5D29129-BLK1)										
Total Dissolved Solids	ND	10	10	mg/l						
LCS Analyzed: 04/29/2005 (5D29129-BS1)										
Total Dissolved Solids	930	10	10	mg/l	1000		93 90-110			
Duplicate Analyzed: 04/29/2005 (5D29129-DUP1)										
Total Dissolved Solids	334	10	10	mg/l		Source: IOD2033-01 360		7	10	
Batch: 5D29130 Extracted: 04/29/05										
Duplicate Analyzed: 04/29/2005 (5D29130-DUP1)										
Specific Conductance	625	1.0	1.0	umhos/cm		Source: IOD2023-01 640		2	5	

Del Mar Analytical, Irvine
 Michele Harper
 Project Manager

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



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

Project ID: Quarterly Outfall 018

Report Number: IOD2049

Sampled: 04/28/05

Received: 04/28/05

METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5E02067 Extracted: 05/02/05											
Blank Analyzed: 05/02/2005 (5E02067-BLK1)											
Ammonia-N (Distilled)	ND	0.50	0.30	mg/l							
LCS Analyzed: 05/02/2005 (5E02067-BS1)											
Ammonia-N (Distilled)	10.4	0.50	0.30	mg/l	10.0		104	80-115			
Matrix Spike Analyzed: 05/02/2005 (5E02067-MS1)											
Ammonia-N (Distilled)	10.9	0.50	0.30	mg/l	10.0	1.1	98	70-120			
Matrix Spike Dup Analyzed: 05/02/2005 (5E02067-MSD1)											
Ammonia-N (Distilled)	11.2	0.50	0.30	mg/l	10.0	1.1	101	70-120	3	15	
Batch: 5E04036 Extracted: 05/04/05											
Blank Analyzed: 05/04/2005 (5E04036-BLK1)											
Oil & Grease	ND	5.0	0.94	mg/l							
LCS Analyzed: 05/04/2005 (5E04036-BS1)											
Oil & Grease	18.5	5.0	0.94	mg/l	20.0		92	65-120			M-NR1
LCS Dup Analyzed: 05/04/2005 (5E04036-BSD1)											
Oil & Grease	18.9	5.0	0.94	mg/l	20.0		94	65-120	2	20	
Batch: 5E04071 Extracted: 05/04/05											
Blank Analyzed: 05/04/2005 (5E04071-BLK1)											
Total Suspended Solids	ND	10	10	mg/l							

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: Quarterly Outfall 018

Report Number: IOD2049

Sampled: 04/28/05
Received: 04/28/05

METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: SE04071 Extracted: 05/04/05											
LCS Analyzed: 05/04/2005 (SE04071-BS1)											
Total Suspended Solids	1000	10	10	mg/l	1000		100	85-115			
Duplicate Analyzed: 05/04/2005 (SE04071-DUP1)											
Total Suspended Solids	ND	10	10	mg/l		Source: IOD2054-01 ND				10	

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: Quarterly Outfall 018
Report Number: IOD2049

Sampled: 04/28/05
Received: 04/28/05

DATA QUALIFIERS AND DEFINITIONS

- J** Estimated value. Analyte detected at a level less than the Reporting Limit (RL) and greater than or equal to the Method Detection Limit (MDL). The user of this data should be aware that this data is of limited reliability.
- M-3** Results exceeded the linear range in the MS/MSD and therefore are not available for reporting. The batch was accepted based on acceptable recovery in the Blank Spike (LCS).
- M-NR1** There was no MS/MSD analyzed with this batch due to insufficient sample volume. See Blank Spike/Blank Spike Duplicate.
- 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: Quarterly Outfall 018

Report Number: IOD2049

Sampled: 04/28/05
Received: 04/28/05

Certification Summary

Del Mar Analytical, Irvine

Method	Matrix	Nelac	California
EPA 120.1	Water	X	X
EPA 160.1	Water	X	X
EPA 160.2	Water	X	X
EPA 160.5	Water	X	X
EPA 180.1	Water	X	X
EPA 200.8	Water	X	X
EPA 245.1	Water	X	X
EPA 300.0	Water	X	X
EPA 314.0	Water	N/A	X
EPA 335.2	Water	X	X
EPA 350.2	Water		X
EPA 405.1	Water	X	X
EPA 413.1	Water	X	X
EPA 425.1	Water	X	X
EPA 608	Water	X	X
EPA 624	Water	X	X
EPA 625	Water	X	X

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.dmlabs.com.

Subcontracted Laboratories

Alta Analytical California Cert #1640, Nevada Cert #CA-413
1104 Windfield Way - El Dorado Hills, CA 95762

Analysis Performed: 1613-Dioxin-HR
Samples: IOD2049-01

Analysis Performed: EDD + Level 4
Samples: IOD2049-01

Del Mar Analytical, Irvine
Michele Harper
Project Manager

CHAIN OF CUSTODY FORM

Del Mar Analytical Version 02/17/05

314 1002049

Client Name/Address:
 MWH-Pasadena
 300 North Lake Avenue, Suite 1200
 Pasadena, CA 91101
Project Manager: Bronwyn Kelly
Project: Boeing-SSFL NPDES
Quarterly Outfall 018
 R-2 Spillway
Phone Number: (626) 568-6691
Fax Number: (626) 568-6515

Sample Description	Sample Matrix	Container Type	# of Cont.	Sampling Date/Time	Preservative	Bottle #
Outfall 018	W	Poly-1L	1	4-28-05 15:16	HNO3	1A
Outfall 018-Dup	W	Poly-1L	1		HNO3	1B
Outfall 018	W	Poly-1L	1		None	2
Outfall 018	W	VOAs	3		HCl	3A,3B,3C
Outfall 018	W	1L Amber	2		None	4A,4B
Outfall 018	W	1L Amber	2		HCl	5A, 5B
Outfall 018	W	Poly-500 ml	1		NaOH	6
Outfall 018	W	Poly-1 L	1		None	7
Outfall 018	W	Poly-500 ml	2		None	8A,8B
Outfall 018	W	Poly-500 ml	2		None	9A,9B
Outfall 018	W	Poly-500 ml	2		None	10A, 10B
Outfall 018	W	Poly-500 ml	1		H2SO4	11
Outfall 018	W	1L Amber	2		None	12A,12B
Outfall 018	W	1L Amber	2		None	13A,13B
Outfall 018	W	1L Amber	2	4-28-05 15:16	None	14A,14B, 15A,15B, 15C
Trip Blank	W	VOAs	3		HCl	

Relinquished By: *Chris Pan* Date/Time: 4-28-05 15:30
Relinquished By: *Bronwyn Kelly* Date/Time: 4/28/05 15:30
Relinquished By: *Bronwyn Kelly* Date/Time: 4/28/05 18:15
Relinquished By: *Bronwyn Kelly* Date/Time: 4/28/05 18:15

ANALYSIS REQUIRED										Comments			
Total Recoverable Metals: Cu, Pb, Hg,	Settleable Solids	VOCs 624 + xylenes + Freon 113	TCDD (and all congeners)	Oil & Grease (EPA 413.1)	Cyanide (total recoverable)	BOD5(20 degrees C)	Surfactants (MBAS)	Cl-, SO4, NO3+NO2-N, Perchlorate	Turbidity, TDS, TSS, Conductivity		Ammonia-N	Alpha BHC (8081A)	2,4,6 Trichlorophenol, 2,4-Dinitrotoluene, Bis(2-ethylhexyl)phthalate, NDMA, pentachlorophenol (EPA 625)
X	X	X	X	X	X	X	X	X	X	X	X	X	X

Field readings:
 Temp = 60.3
 pH = 7.36

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: *4C*

F A X



300 N. Lake Ave., Suite 1200
 Pasadena, California 91101
 Tel: 626-568-6691
 Fax: 626-568-6515

Date: 03/01/05

To: Michele Harper / Del Mar Analytical Fax No: 949-260-3297
 Krissi McIlvenna / MWH 925-975-3412

From: Bronwyn K. Kelly
 sign:

Subject: Chain-of-Custody Form Analytical Request Change No. of Pages: 1
(including cover)

Per Request:
 Please make the changes listed below to the chain-of-custody analytical request form. Include this form with the final deliverables for these samples.

Del Mar Work Order #	Sample ID	Date Collected	Change(s) Requested, Not Completed	Change(s) and Method (s) Now Requested
IOD2049	Outfall 018 - Quarterly	04/28/2005	Monomethylhydrazine	none

The reason for these changes:

- Incorrectly marked on COC form* X
- Lack of sample volume* _____
- MWH office personnel require this change* X
- Other: Containers mislabeled* _____

This Change Order supersedes all previous change orders submitted.

Thank you



17461 Denian Ave., Irvine CA 92606 (949) 261-1022 FAX (949) 261-1228
 1014 E. Cooley Dr., Suite A, Colton, CA 92324 (909) 370-4667 FAX (949) 370-1046
 9484 Chesapeake Dr., Suite 805, San Diego, CA 92123 (619) 505-8596 FAX (619) 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

June 22, 2005

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

Attention: Bronwyn Kelly

Project: Quarterly Outfall 018
 Sampled: 04/28/05
 Del Mar Analytical Number: IOD2049

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 018	IOD2049-01	26118-001

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 20, 2005

Alta Project I.D.: 26118

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 30, 2005 under your Project Name "IOD2049". 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.

An "A" qualifier indicates that the result is greater than the low point in the calibration curve, but lower than the EPA Method 1613 Minimum Level.

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 reflects all the requirements set forth by NELAP for this application as methods. The report should not be reproduced except in full without the written approval of ALTA.



Alta Analytical Laboratory Inc.

1104 Windfield Way
El Dorado Hills, CA 95762

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

Section I: Sample Inventory Report

Date Received: 4/30/2005

Alta Lab. ID

Client Sample ID

26118-001

IOD2049

SECTION II



Method Blank		EPA Method 1613					
Matrix:	Aqueous	QC Batch No.:	6789	Lab Sample:	0-MB001		
Sample Size:	1.000 L	Date Extracted:	17-May-05	Date Analyzed DB-5:	19-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	0.00000124		IS 13C-2,3,7,8-TCDD	69.9	25 - 164	
1,2,3,7,8-PeCDD	ND	0.00000166		13C-1,2,3,7,8-PeCDD	84.1	25 - 181	
1,2,3,4,7,8-HxCDD	ND	0.00000186		13C-1,2,3,4,7,8-HxCDD	72.5	32 - 141	
1,2,3,6,7,8-HxCDD	ND	0.00000179		13C-1,2,3,6,7,8-HxCDD	75.3	28 - 130	
1,2,3,7,8,9-HxCDD	ND	0.00000186		13C-1,2,3,4,6,7,8-HpCDD	65.8	23 - 140	
1,2,3,4,6,7,8-HpCDD	ND	0.00000303		13C-OCDD	58.4	17 - 157	
OCDD	ND	0.00000677		13C-2,3,7,8-TCDF	81.1	24 - 169	
2,3,7,8-TCDF	ND	0.00000924		13C-1,2,3,7,8-PeCDF	79.5	24 - 185	
1,2,3,7,8-PeCDF	ND	0.00000226		13C-2,3,4,7,8-PeCDF	82.4	21 - 178	
2,3,4,7,8-PeCDF	ND	0.00000193		13C-1,2,3,4,7,8-HxCDF	72.6	26 - 152	
1,2,3,4,7,8-HxCDF	ND	0.00000785		13C-1,2,3,6,7,8-HxCDF	75.4	26 - 123	
1,2,3,6,7,8-HxCDF	ND	0.00000731		13C-2,3,4,6,7,8-HxCDF	92.3	28 - 136	
2,3,4,6,7,8-HxCDF	ND	0.000000672		13C-1,2,3,7,8,9-HxCDF	68.4	29 - 147	
1,2,3,7,8,9-HxCDF	ND	0.00000158		13C-1,2,3,4,6,7,8-HpCDF	63.5	28 - 143	
1,2,3,4,6,7,8-HpCDF	ND	0.00000969		13C-1,2,3,4,7,8,9-HpCDF	52.9	26 - 138	
1,2,3,4,7,8,9-HpCDF	ND	0.00000192		13C-OCDF	49.2	17 - 157	
OCDF	ND	0.00000476		CRS 37Cl-2,3,7,8-TCDD	89.9	35 - 197	
Totals							
Total TCDD	ND	0.00000124		Footnotes			
Total PeCDD	ND	0.00000166		a. Sample specific estimated detection limit.			
Total HxCDD	ND	0.00000183		b. Estimated maximum possible concentration.			
Total HpCDD	ND	0.00000303		c. Method detection limit.			
Total TCDF	ND	0.00000924		d. Lower control limit - upper control limit.			
Total PeCDF	ND	0.00000209					
Total HxCDF	ND	0.000000872					
Total HpCDF	ND	0.00000132					

Analyst: RAS

Approved By: William J. Luksemburg 20-May-2005 11:10



EPA Method 1613

OPR Results		Lab Sample: 0-OPR001		Date Analyzed DB-5: 19-May-05		Date Analyzed DB-225: NA	
Matrix:	Aqueous	QC Batch No.:	6789 <th>Sample Size:</th> <td>1.000 L <th>Date Analyzed DB-5:</th> <td>19-May-05 </td></td>	Sample Size:	1.000 L <th>Date Analyzed DB-5:</th> <td>19-May-05 </td>	Date Analyzed DB-5:	19-May-05
Analyte	Spike Conc. (ng/mL)	Conc. (ng/mL)	OPR Limits	Labeled Standard	%R	LCL-UCL	
2,3,7,8-TCDD	10.0	10.3	6.7 - 15.8	IS 13C-2,3,7,8-TCDD	66.3	25 - 164	
1,2,3,7,8-PeCDD	50.0	51.8	35 - 71	13C-1,2,3,7,8-PeCDD	82.1	25 - 181	
1,2,3,4,7,8-HxCDD	50.0	50.1	35 - 82	13C-1,2,3,4,7,8-HxCDD	69.4	32 - 141	
1,2,3,6,7,8-HxCDD	50.0	52.2	38 - 67	13C-1,2,3,6,7,8-HxCDD	74.5	28 - 130	
1,2,3,7,8,9-HxCDD	50.0	54.3	32 - 81	13C-1,2,3,4,6,7,8-HpCDD	64.6	23 - 140	
1,2,3,4,6,7,8-HpCDD	50.0	49.7	35 - 70	13C-OCDD	40.2	17 - 157	
OCDD	100	99.1	78 - 144	13C-2,3,7,8-TCDF	71.3	24 - 169	
2,3,7,8-TCDF	10.0	10.1	7.5 - 15.8	13C-1,2,3,7,8-PeCDF	78.8	24 - 185	
1,2,3,7,8-PeCDF	50.0	49.0	40 - 67	13C-2,3,4,7,8-PeCDF	85.0	21 - 178	
2,3,4,7,8-PeCDF	50.0	49.2	34 - 80	13C-1,2,3,4,7,8-HxCDF	72.8	26 - 152	
1,2,3,4,7,8-HxCDF	50.0	48.2	36 - 67	13C-1,2,3,6,7,8-HxCDF	78.4	26 - 123	
1,2,3,6,7,8-HxCDF	50.0	48.8	42 - 65	13C-2,3,4,6,7,8-HxCDF	82.5	28 - 136	
2,3,4,6,7,8-HxCDF	50.0	48.4	35 - 78	13C-1,2,3,7,8,9-HxCDF	69.8	29 - 147	
1,2,3,7,8,9-HxCDF	50.0	49.7	39 - 65	13C-1,2,3,4,6,7,8-HpCDF	58.1	28 - 143	
1,2,3,4,6,7,8-HpCDF	50.0	49.7	41 - 61	13C-1,2,3,4,7,8,9-HpCDF	45.9	26 - 138	
1,2,3,4,7,8,9-HpCDF	50.0	50.6	39 - 69	13C-OCDF	36.3	17 - 157	
OCDF	100	93.6	63 - 170	CRS 37Cl-2,3,7,8-TCDD	85.6	35 - 197	

Analyst: RAS
 Approved By: William J. Luksemburg 20-May-2005 11:10



Sample ID: IOD2049		EPA Method 1613			
Client Data		Sample Data		Laboratory Data	
Name:	Del Mar Analytical, Irvine	Matrix:	Aqueous	Lab Sample:	26118-001
Project:	IOD2049	Sample Size:	0.910 L	QC Batch No.:	6789
Date Collected:	28-Apr-05			Date Analyzed DB-5:	19-May-05
Time Collected:	1516			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	0.00000162		13C-2,3,7,8-TCDD	65.5 25 - 164
1,2,3,7,8-PeCDD	ND	0.00000180		13C-1,2,3,7,8-PeCDD	66.7 25 - 181
1,2,3,4,7,8-HxCDD	ND	0.00000269		13C-1,2,3,4,7,8-HxCDD	64.4 32 - 141
1,2,3,6,7,8-HxCDD	ND	0.00000265		13C-1,2,3,6,7,8-HxCDD	63.7 28 - 130
1,2,3,7,8,9-HxCDD	ND	0.00000273		13C-1,2,3,4,6,7,8-HpCDD	60.1 23 - 140
1,2,3,4,6,7,8-HpCDD	0.0000445		J	13C-OCDD	44.7 17 - 157
OCDD	0.000477			13C-2,3,7,8-TCDF	70.2 24 - 169
2,3,7,8-TCDF	ND	0.00000164		13C-1,2,3,7,8-PeCDF	66.1 24 - 185
1,2,3,7,8-PeCDF	ND	0.00000218		13C-2,3,4,7,8-PeCDF	67.0 21 - 178
2,3,4,7,8-PeCDF	ND	0.00000195		13C-1,2,3,4,7,8-HxCDF	65.1 26 - 152
1,2,3,4,7,8-HxCDF	ND	0.00000105		13C-1,2,3,6,7,8-HxCDF	64.8 26 - 123
1,2,3,6,7,8-HxCDF	ND	0.000000992		13C-2,3,4,6,7,8-HxCDF	69.4 28 - 136
2,3,4,6,7,8-HxCDF	ND	0.00000107		13C-1,2,3,7,8,9-HxCDF	59.2 29 - 147
1,2,3,7,8,9-HxCDF	ND	0.00000207		13C-1,2,3,4,6,7,8-HpCDF	55.7 28 - 143
1,2,3,4,6,7,8-HpCDF	0.00000505		A	13C-1,2,3,4,7,8,9-HpCDF	49.5 26 - 138
1,2,3,4,7,8,9-HpCDF	ND	0.00000211		13C-OCDF	44.8 17 - 157
OCDF	ND	0.0000145		CRS 37Cl-2,3,7,8-TCDD	87.0 35 - 197
Totals				Footnotes	
Total TCDD	ND	0.00000162		a. Sample specific estimated detection limit.	
Total PeCDD	ND	0.00000180		b. Estimated maximum possible concentration.	
Total HxCDD	0.00000896			c. Method detection limit.	
Total HpCDD	0.0000879			d. Lower control limit - upper control limit.	
Total TCDF	0.00000379				
Total PeCDF	ND	0.00000206			
Total HxCDF	0.00000262		0.00000434		
Total HpCDF	0.0000122				

Analyst: RAS

Approved By: William J. Luksemburg 20-May-2005 11:10

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) 505-9586 Fax (619) 505-9689
 9830 South 51st Street, Suite B-120, Phoenix, AZ 85044 Ph (480) 785-0043 Fax (480) 785-0851
 2520 E. Sunset Rd., Suite #3, Las Vegas, NV 89120 Ph (702) 798-3620 Fax (702) 798-3621

SUBCONTRACT ORDER - PROJECT # IOD2049

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;"> 26118 0.0°C </div>

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

Analysis	Expiration	Comments
Sample ID: IOD2049-01 Water Sampled: 04/28/05 15:16		
1613-Dioxin-HR	05/05/05 15:16	J flags, 17 congeners, no TEQ, sub=Alta, DP to AMEC
EDD + Level 4	05/26/05 15:16	Excel EDD email to pm, include Std logs for Lvl IV
Containers Supplied:		
1 L Amber (IOD2049-01G)		
1 L Amber (IOD2049-01H)		

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

<i>Hayy Amara</i>	4/29/05	17:00	<i>M. Jellert</i>	4/30/05	0915
Released By	Date	Time	Received By	Date	Time
Released By	Date	Time	Received By	Date	Time

STANDARD OPERATING PROCEDURE

Attachment 10.B.1

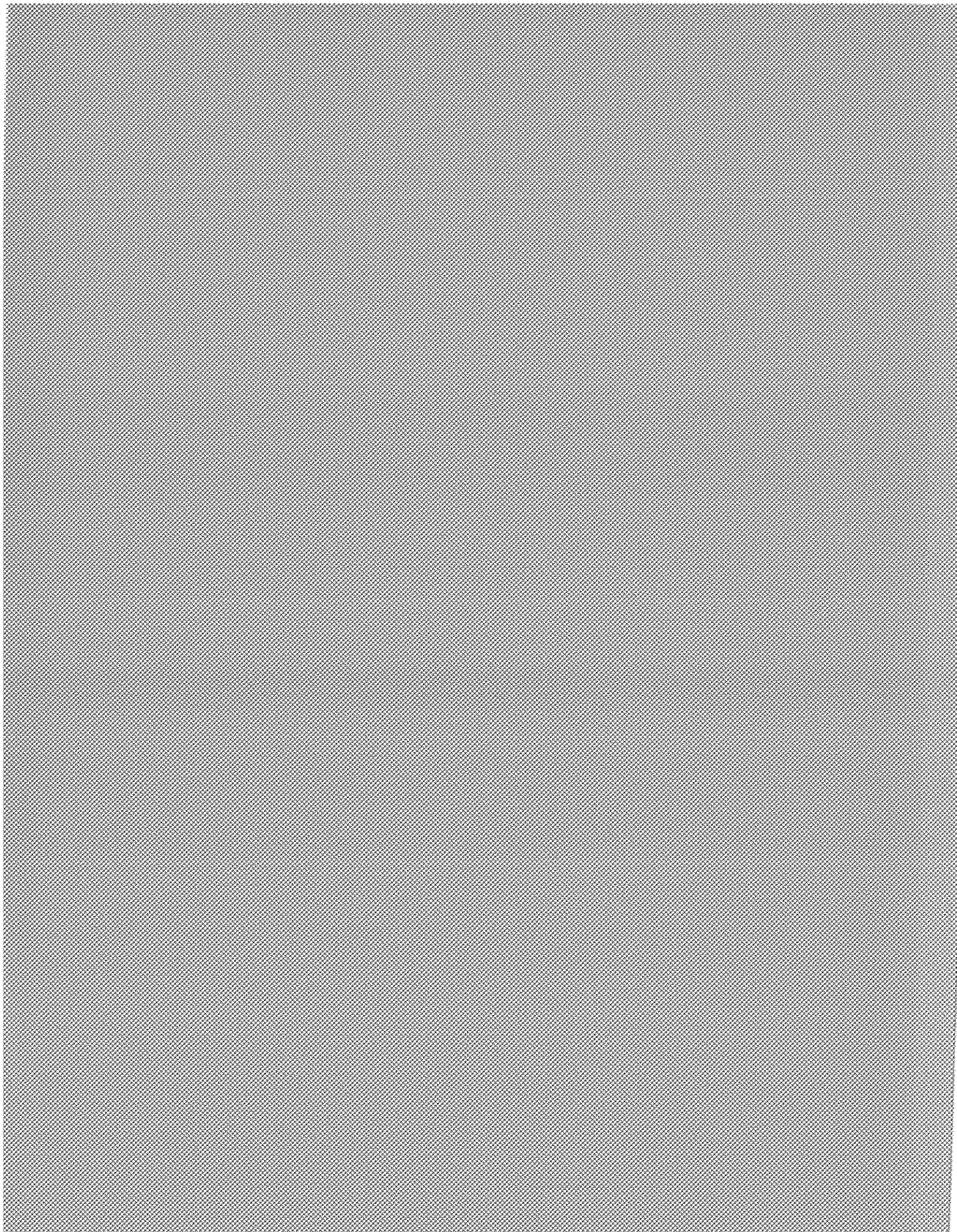
SAMPLE LOG-IN CHECKLIST

ALTA Project No.: 26118

1. Date Samples Arrived: <u>4/30/05</u>	Initials: <u>MT</u>	Location: <u>WR-2</u>	
2. Time / Date logged in: <u>1100 5/2/05</u>	Initials: <u>BB</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>0.0</u>			
5. Shipping Container(s) Intact? If not, describe condition in comment section.	YES	NO	NA
6. Shipping Container(s) Custody Seals Present? Intact? If not intact, describe condition in comment section.	✓		
7. Shipping Documentation Present? (circle) Shipping Label <u>Airbill</u> Tracking Number <u>7922 6999 9579</u>	✓		
8. Sample Custody Seal(s) Present? No. of Seals _____ or Seal No. Intact? If not intact, describe condition in comment section.		✓	✓
9. Sample Container Intact? If no, indicate sample condition in comment section.	✓		
10. Chain of Custody (COC) or other Sample Documentation Present?	✓		
11. COC/Documentation Acceptable? If no, complete COC Anomaly Form.	✓		
12. Shipping Container (circle): ALTA <u>Client</u> Retain or <u>Return</u> or Disposed			
13. Container(s) and/or Bottle(s) Requested?		✓	✓
14. Drinking Water Sample? (HRMS Only) If yes, Acceptable Preservation? Y or N Preservation Info From? (circle) COC or Sample Container or None Noted			✓

Comments: Sampler's initials found on sample label

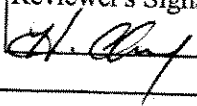
ALTA Analytical Laboratory
El Dorado Hills, CA 95762



CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

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

Package ID T711DF48
 Task Order 313150010
 SDG No. Multiple

No. of Analyses 6
 Date: June 1, 2005
 Reviewer's Signature


Laboratory Alta
 Reviewer H. Chang
 Analysis/Method Dioxin&Furans/1613

ACTION ITEMS^a	
1. Case Narrative Deficiencies	
2. Out of Scope Analyses	
3. Analyses Not Conducted	
4. Missing Hardcopy Deliverables	
5. Incorrect Hardcopy Deliverables	
6. Deviations from Analysis Protocol, e.g.,	Detects below the calibration range were qualified "J." EMPCs were qualified "UJ."
Holding Times	
GC/MS Tune/Inst. Perform	
Calibrations	
Blanks	
Surrogates	
Matrix Spike/Dup LCS	
Field QC	
Internal Standard Performance	
Compound Identification and Quantitation	
System Performance	
COMMENTS^b	
^a Subcontracted analytical laboratory is not meeting contract and/or method requirements. ^b Differences in protocol have been adopted by the laboratory but no action against the laboratory is required.	



DATA VALIDATION REPORT

NPDES Monitoring

ANALYSIS: DIOXINS/FURANS

SAMPLE DELIVERY GROUPS: IOD2043, IOD2044, IOD2049,
IOD2053, IOD2056 & IOD2058

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 #: IOD2043, IOD2044, IOD2049, IOD2053, IOD2056 & IOD2058
Project Manager: B. McIlvaine
Matrix: Water
Analysis: Dioxins/Furans
QC Level: Level IV
No. of Samples: 6
No. of Reanalyses/Dilutions: 0
Reviewer: H. Chang
Date of Review: June 1, 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	IOD2043-01	26117-001	water	1613
Outfall 002	IOD2044-01	26112-001	water	1613
Outfall 018	IOD2049-01	26118-001	water	1613
Outfall 004	IOD2053-01	26120-001	water	1613
Outfall 010	IOD2056-01	26116-001	water	1613
Outfall 009	IOD2058-01	26115-001	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°C and 1.1°C; however, as the samples were not noted to have been frozen or damaged, no qualifications were required. According to the laboratory login sheets, the samples were received intact and in good condition at both laboratories. No qualifications were required.

2.1.2 Chain of Custody

The COC and transfer COC were legible and signed by the appropriate field and laboratory personnel, and accounted for the analysis presented in 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 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

The initial calibration was analyzed 05/09/05. The calibration consisted of six concentration level standards (CS0 through CS5) analyzed to verify instrument linearity. The initial calibration was acceptable with %RSDs $\leq 20\%$ for the 16 native compounds (calibration by isotope dilution) and $\leq 35\%$ for the one native and all labeled compounds (calibration by internal standard). The relative retention times and ion abundance ratios were within the QC limits listed in Method 1613 for all standards. A representative number of %RSDs were verified from the raw data, and no calculation or transcription errors were noted. No qualifications were required.

2.3.2 Continuing Calibration

Calibration verification (VER) consisted of a mid-level standard (CS3) analyzed at the beginning and end of each analytical sequence. The VERs were acceptable with the concentrations within the acceptance criteria listed in Table 6 of EPA Method 1613. The ion abundance ratios and relative retention times were within the method QC limits. A representative number of %Ds were verified from the raw data, and no calculation or transcription errors were noted. No qualifications were required.

WDM and isomer specificity compounds were added to the VER 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 (6789-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 (6789-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. In five of the six SDGs, the laboratory noted that detects above the low point of the calibration curve but below the EPA Method 1613 minimum level were denoted by an "A" laboratory qualifier. However, all results with "A" qualifier were actually below the low point of the calibration curve and should have been flagged as "J." Also, one of the detects which should have been flagged as "A" was incorrectly flagged as "J" by the laboratory. Any detects below the method minimum level were qualified as estimated, "J." If the concentration of any component of the total was below the lower method calibration level (MCL), the total detect was qualified as estimated, "J." Any reported EMPC was qualified as an estimated nondetect, "UJ." The results and reporting limits were reported in $\mu\text{g/L}$ except for the results in sample Outfall 010 which were reported in ng/L . No further qualifications were required.



Sample ID: **IOD2043-01** *Duffell 001*

Client Data		Sample Data		Laboratory Data		EPA Method 1613	
Name:	Del Mar Analytical, Irvine	Matrix:	Aqueous	Lab Sample:	26117-001	Date Received:	30-Apr-05
Project:	IOD2043	Sample Size:	0.957 L	QC Batch No.:	6789	Date Extracted:	17-May-05
Date Collected:	28-Apr-05			Date Analyzed DB-5:	19-May-05	Date Analyzed DB-225:	NA
Time Collected:	1116						
Analyte	Conc. (ug/L)	DL ^a	EMPC ^b	Qualifiers	Labeled Standard	%R	LCL-UCL ^d Qualifiers
2,3,7,8-TCDD	ND	0.00000132			IS 13C-2,3,7,8-TCDD	60.8	25 - 164
1,2,3,7,8-PeCDD	ND	0.00000179			13C-1,2,3,7,8-PeCDD	63.1	25 - 181
1,2,3,4,7,8-HxCDD	ND	0.00000375			13C-1,2,3,4,7,8-HxCDD	61.3	32 - 141
1,2,3,6,7,8-HxCDD	ND	0.00000354			13C-1,2,3,6,7,8-HxCDD	60.9	28 - 130
1,2,3,7,8,9-HxCDD	ND	0.00000372			13C-1,2,3,4,6,7,8-HpCDD	53.8	23 - 140
1,2,3,4,6,7,8-HpCDD	0.0000517			J	13C-OCDD	34.9	17 - 157
OCDD	0.000373				13C-2,3,7,8-TCDF	65.0	24 - 169
2,3,7,8-TCDF	ND	0.00000133			13C-1,2,3,7,8-PeCDF	66.4	24 - 185
1,2,3,7,8-PeCDF	ND	0.00000165			13C-2,3,4,7,8-PeCDF	66.3	21 - 178
2,3,4,7,8-PeCDF	ND	0.00000139			13C-1,2,3,4,7,8-HxCDF	57.6	26 - 152
1,2,3,4,7,8-HxCDF	ND	0.00000862			13C-1,2,3,6,7,8-HxCDF	60.4	26 - 123
1,2,3,6,7,8-HxCDF	ND	0.00000782			13C-2,3,4,6,7,8-HxCDF	63.2	28 - 136
2,3,4,6,7,8-HxCDF	ND	0.00000881			13C-1,2,3,7,8,9-HxCDF	55.9	29 - 147
1,2,3,7,8,9-HxCDF	ND	0.00000157			13C-1,2,3,4,6,7,8-HpCDF	44.4	28 - 143
1,2,3,4,6,7,8-HpCDF	0.00000903			A	13C-1,2,3,4,7,8,9-HpCDF	43.0	26 - 138
1,2,3,4,7,8,9-HpCDF	ND				13C-OCDF	33.6	17 - 157
OCDF	0.0000390			A	CRS 37Cl-2,3,7,8-TCDD	81.7	35 - 197
Totals							
Total TCDD	ND	0.00000132					
Total PeCDD	ND	0.00000179					
Total HxCDD	0.0000114						
Total HpCDD	0.000124						
Total TCDF	ND						
Total PeCDF	ND	0.00000133					
Total HxCDF	ND	0.00000151					
Total HpCDF	0.00000540						
Total HpCDF	0.0000268						

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

AMEC VALIDATED
 LEVEL IV

Analyst: RAS

Approved By: William J. Luksemburg 20-May-2005 11:09

Project 26117



Sample ID: IOD2044-01		Outfall 002		EPA Method 1613			
Client Data		Sample Data		Laboratory Data			
Name:	Del Mar Analytical, Irvine	Matrix:	Aqueous	Lab Sample:	26112-001		
Project:	IOD2044	Sample Size:	0.950 L	QC Batch No.:	6789		
Date Collected:	28-Apr-05			Date Analyzed DB-5:	19-May-05		
Time Collected:	1406			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	0.00000199		13C-2,3,7,8-TCDD	61.2	25 - 164	
1,2,3,7,8-PeCDD	ND	0.00000294		13C-1,2,3,7,8-PeCDD	65.5	25 - 181	
1,2,3,4,7,8-HxCDD	ND	0.00000400		13C-1,2,3,4,7,8-HxCDD	63.8	32 - 141	
1,2,3,6,7,8-HxCDD	ND	0.00000399		13C-1,2,3,6,7,8-HxCDD	65.8	28 - 130	
1,2,3,7,8,9-HxCDD	ND	0.00000409		13C-1,2,3,4,6,7,8-HpCDD	61.5	23 - 140	
1,2,3,4,6,7,8-HpCDD	0.0000557			13C-OCDD	45.0	17 - 157	
OCDD	0.000706			13C-2,3,7,8-TCDF	66.5	24 - 169	
2,3,7,8-TCDF	ND	0.00000200		13C-1,2,3,7,8-PeCDF	63.6	24 - 185	
1,2,3,7,8-PeCDF	ND	0.00000362		13C-2,3,4,7,8-PeCDF	66.3	21 - 178	
2,3,4,7,8-PeCDF	ND	0.00000288		13C-1,2,3,4,7,8-HxCDF	65.2	26 - 152	
1,2,3,4,7,8-HxCDF	ND	0.00000117		13C-1,2,3,6,7,8-HxCDF	69.0	26 - 123	
1,2,3,6,7,8-HxCDF	ND	0.00000165		13C-2,3,4,6,7,8-HxCDF	70.5	28 - 136	
2,3,4,6,7,8-HxCDF	ND	0.00000118		13C-1,2,3,7,8,9-HxCDF	62.6	29 - 147	
1,2,3,7,8,9-HxCDF	ND	0.00000214		13C-1,2,3,4,6,7,8-HpCDF	58.0	28 - 143	
1,2,3,4,6,7,8-HpCDF	0.00000968			13C-1,2,3,4,7,8,9-HpCDF	49.7	26 - 138	
1,2,3,4,7,8,9-HpCDF	ND	0.00000252		13C-OCDF	43.8	17 - 157	
OCDF	0.00000306			CRS 37Cl-2,3,7,8-TCDD	78.7	35 - 197	
Totals							
Total TCDD	ND	0.00000199					
Total PeCDD	ND	0.00000294					
Total HxCDD	0.00000660		0.0000135				
Total HpCDD	0.000114						
Total TCDF	0.00000366						
Total PeCDF	ND	0.00000322					
Total HxCDF	0.00000666						
Total HpCDF	0.0000253		0.00000980				

AMEC VALIDATED
LEVEL IV

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

Analyst: RAS

Approved By: William J. Luksemburg 20-May-2005 10:57

Project 26112



Sample ID: IOD2049		Outfall 018		EPA Method 1613			
Client Data		Sample Data		Laboratory Data			
Name:	Del Mar Analytical, Irvine	Matrix:	Aqueous	Lab Sample:	26118-001		
Project:	IOD2049	Sample Size:	0.910 L	QC Batch No.:	6789		
Date Collected:	28-Apr-05			Date Analyzed DB-5:	19-May-05		
Time Collected:	1516			Date Analyzed DB-225:	NA		
				Date Received:	30-Apr-05		
				Date Extracted:	17-May-05		
Analyte	Conc. (ug/L)	DL ^a	EMPC ^b	Labeled Standard	%R	LCL-UCL ^d	Qualifiers
2,3,7,8-TCDD	ND	0.00000162		IS 13C-2,3,7,8-TCDD	65.5	25 - 164	
1,2,3,7,8-PeCDD	ND	0.00000180		13C-1,2,3,7,8-PeCDD	66.7	25 - 181	
1,2,3,4,7,8-HxCDD	ND	0.00000269		13C-1,2,3,4,7,8-HxCDD	64.4	32 - 141	
1,2,3,6,7,8-HxCDD	ND	0.00000265		13C-1,2,3,6,7,8-HxCDD	63.7	28 - 130	
1,2,3,7,8,9-HxCDD	ND	0.00000273		13C-1,2,3,4,6,7,8-HpCDD	60.1	23 - 140	
1,2,3,4,6,7,8-HpCDD	0.0000445			13C-OCDD	44.7	17 - 157	
OCDD	0.000477			13C-2,3,7,8-TCDF	70.2	24 - 169	
2,3,7,8-TCDF	ND	0.00000164		13C-1,2,3,7,8-PeCDF	66.1	24 - 185	
1,2,3,7,8-PeCDF	ND	0.00000218		13C-2,3,4,7,8-PeCDF	67.0	21 - 178	
2,3,4,7,8-PeCDF	ND	0.00000195		13C-1,2,3,4,7,8-HxCDF	65.1	26 - 152	
1,2,3,4,7,8-HxCDF	ND	0.00000105		13C-1,2,3,6,7,8-HxCDF	64.8	26 - 123	
1,2,3,6,7,8-HxCDF	ND	0.000000992		13C-2,3,4,6,7,8-HxCDF	69.4	28 - 136	
2,3,4,6,7,8-HxCDF	ND	0.00000107		13C-1,2,3,7,8,9-HxCDF	59.2	29 - 147	
1,2,3,7,8,9-HxCDF	ND	0.00000207		13C-1,2,3,4,6,7,8-HpCDF	55.7	28 - 143	
1,2,3,4,6,7,8-HpCDF	0.00000505			13C-1,2,3,4,7,8,9-HpCDF	49.5	26 - 138	
1,2,3,4,7,8,9-HpCDF	ND	0.00000211		13C-OCDF	44.8	17 - 157	
OCDF	ND	0.0000145		CRS 37Cl-2,3,7,8-TCDD	87.0	35 - 197	
Totals							
Total TCDD	ND	0.00000162					
Total PeCDD	ND	0.00000180					
Total HxCDD	0.00000896						
Total HpCDD	0.0000879						
Total TCDF	0.00000379						
Total PeCDF	ND	0.00000206					
Total HxCDF	0.00000262						
Total HpCDF	0.0000122		0.00000434				

Analyst: RAS

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

AMEC VALIDATED
 LEVEL IV

Approved By: William J. Luksemburg 20-May-2005 11:10



Sample ID: IOD2053-01 <i>Outfall 004</i>		EPA Method 1613			
Client Data		Laboratory Data			
Name: Del Mar Analytical, Irvine	Project: IOD2053	Lab Sample: 26120-001	Date Received: 30-Apr-05		
Date Collected: 28-Apr-05	Time Collected: 1140	QC Batch No.: 6789	Date Extracted: 17-May-05		
Analyte	Conc. (ug/L)	Date Analyzed DB-5:	Date Analyzed DB-225: NA		
DL	a	EMPC ^b	Qualifiers		
%R	LCL	UCL ^d	Qualifiers		
2,3,7,8-TCDD	ND	0.00000131	IS 13C-2,3,7,8-TCDD	70.3	25 - 164
1,2,3,7,8-PeCDD	ND	0.00000171	13C-1,2,3,7,8-PeCDD	71.3	25 - 181
1,2,3,4,7,8-HxCDD	ND	0.00000161	13C-1,2,3,4,7,8-HxCDD	69.9	32 - 141
1,2,3,6,7,8-HxCDD	ND	0.00000164	13C-1,2,3,6,7,8-HxCDD	75.4	28 - 130
1,2,3,7,8,9-HxCDD	ND	0.00000166	13C-1,2,3,4,6,7,8-HpCDD	66.2	23 - 140
1,2,3,4,6,7,8-HpCDD	ND	0.00000163	13C-OCDD	45.9	17 - 157
OCDD	0.000234		13C-2,3,7,8-TCDF	72.7	24 - 169
2,3,7,8-TCDF	ND	0.00000135	13C-1,2,3,7,8-PeCDF	70.7	24 - 185
1,2,3,7,8-PeCDF	ND	0.00000133	13C-2,3,4,7,8-PeCDF	71.8	21 - 178
2,3,4,7,8-PeCDF	ND	0.00000119	13C-1,2,3,4,7,8-HxCDF	73.2	26 - 152
1,2,3,4,7,8-HxCDF	ND	0.000000591	13C-1,2,3,6,7,8-HxCDF	74.6	26 - 123
1,2,3,6,7,8-HxCDF	ND	0.000000518	13C-2,3,4,6,7,8-HxCDF	75.6	28 - 136
2,3,4,6,7,8-HxCDF	ND	0.000000586	13C-1,2,3,7,8,9-HxCDF	70.0	29 - 147
1,2,3,7,8,9-HxCDF	ND	0.00000105	13C-1,2,3,4,6,7,8-HpCDF	62.5	28 - 143
1,2,3,4,6,7,8-HpCDF	0.00000258		13C-1,2,3,4,7,8,9-HpCDF	53.9	26 - 138
1,2,3,4,7,8,9-HpCDF	ND	0.00000180	13C-OCDF	47.5	17 - 157
OCDF	ND	0.00000877	CRS 37Cl-2,3,7,8-TCDD	87.8	35 - 197
Totals			Footnotes		
Total TCDD	ND	0.00000131	a. Sample specific estimated detection limit.		
Total PeCDD	ND	0.00000171	b. Estimated maximum possible concentration.		
Total HxCDD	0.00000183		c. Method detection limit.		
Total HpCDD	0.00000189		d. Lower control limit - upper control limit.		
Total TCDF	ND	0.00000135			
Total PeCDF	ND	0.00000126			
Total HxCDF	0.00000229				
Total HpCDF	0.00000723				

AMEC VALIDATED
LEVEL IV

Analyst: RAS

Approved By: William J. Luksemburg 20-May-2005 11:13

Project 26120



Sample ID: IOD2056-01		Outfall 609		EPA Method 1613			
Client Data		Sample Data		Laboratory Data			
Name: Del Mar Analytical, Irvine	Matrix: Aqueous	Lab Sample: 26115-001	Date Received: 30-Apr-05	QC Batch No.: 6789	Date Extracted: 17-May-05		
Project: IOD2056	Sample Size: 0.950 L	Date Analyzed DB-5: 19-May-05	Date Analyzed DB-225: NA				
Date Collected: 28-Apr-05							
Time Collected: 1213							
Analyte	Conc. (ug/L)	DL ^a	EMPC ^b	Labeled Standard	%R	LCL-UCL ^d	Qualifiers
2,3,7,8-TCDD	ND	0.00000140		13C-2,3,7,8-TCDD	66.6	25 - 164	
1,2,3,7,8-PeCDD	ND	0.00000144		13C-1,2,3,7,8-PeCDD	70.0	25 - 181	
1,2,3,4,7,8-HxCDD	ND	0.00000241		13C-1,2,3,4,7,8-HxCDD	71.1	32 - 141	
1,2,3,6,7,8-HxCDD	ND	0.00000237		13C-1,2,3,6,7,8-HxCDD	71.9	28 - 130	
1,2,3,7,8,9-HxCDD	ND	0.00000244		13C-1,2,3,4,6,7,8-HpCDD	63.5	23 - 140	
1,2,3,4,6,7,8-HpCDD	0.0000129			13C-OCDD	36.0	17 - 157	
OCDD	0.000119			13C-2,3,7,8-TCDF	70.2	24 - 169	
2,3,7,8-TCDF	ND	0.000000942		13C-1,2,3,7,8-PeCDF	71.7	24 - 185	
1,2,3,7,8-PeCDF	ND	0.00000149		13C-2,3,4,7,8-PeCDF	72.7	21 - 178	
2,3,4,7,8-PeCDF	ND	0.00000125		13C-1,2,3,4,7,8-HxCDF	76.1	26 - 152	
1,2,3,4,7,8-HxCDF	ND	0.00000643		13C-1,2,3,6,7,8-HxCDF	75.9	26 - 123	
1,2,3,6,7,8-HxCDF	ND	0.00000572		13C-2,3,4,6,7,8-HxCDF	78.8	28 - 136	
2,3,4,6,7,8-HxCDF	ND	0.00000654		13C-1,2,3,7,8,9-HxCDF	74.7	29 - 147	
1,2,3,7,8,9-HxCDF	ND	0.00000115		13C-1,2,3,4,6,7,8-HpCDF	63.6	28 - 143	
1,2,3,4,6,7,8-HpCDF	ND	0.00000154		13C-1,2,3,4,7,8,9-HpCDF	66.9	26 - 138	
1,2,3,4,7,8,9-HpCDF	ND	0.00000136		13C-OCDF	45.5	17 - 157	
OCDF	ND	0.00000672		CRS 37Cl-2,3,7,8-TCDD	80.5	35 - 197	
Totals							
Total TCDD	ND	0.00000140					
Total PeCDD	ND	0.00000144					
Total HxCDD	ND	0.00000240					
Total HpCDD	0.0000303						
Total TCDF	ND						
Total PeCDF	ND	0.000000942					
Total HxCDF	ND	0.00000136					
Total HpCDF	0.00000890						
Total HpCDF	ND	0.00000194					

AMEC VALIDATED
LEVEL IV

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

Analyse: RAS

Approved By: William J. Luksemburg 20-May-2005 11:05



Sample ID: IOD2058-01		Outfall 010		EPA Method 1613			
Client Data		Sample Data		Laboratory Data			
Name:	Del Mar Analytical, Irvine	Matrix:	Aqueous	Lab Sample:	26116-001		
Project:	IOD2058	Sample Size:	0.957 L	QC Batch No.:	6789		
Date Collected:	28-Apr-05			Date Analyzed DB-5:	19-May-05		
Time Collected:	1205			Date Analyzed DB-225: NA			
Analyte	Conc. (ng/L)	DL ^a	EMPC ^b	Labeled Standard	%R	LCL-UCL ^d	Qualifiers
2,3,7,8-TCDD	ND	0.00139		13C-2,3,7,8-TCDD	53.3	25 - 164	
1,2,3,7,8-PeCDD	ND	0.00165		13C-1,2,3,7,8-PeCDD	53.1	25 - 181	
1,2,3,4,7,8-HxCDD	ND	0.00301		13C-1,2,3,4,7,8-HxCDD	62.6	32 - 141	
1,2,3,6,7,8-HxCDD	ND	0.00283		13C-1,2,3,6,7,8-HxCDD	63.9	28 - 130	
1,2,3,7,8,9-HxCDD	ND	0.00298		13C-1,2,3,4,6,7,8-HpCDD	52.7	23 - 140	
1,2,3,4,6,7,8-HpCDD	ND	0.00774		13C-OCDD	29.8	17 - 157	
OCDD	0.0584			13C-2,3,7,8-TCDF	57.5	24 - 169	
2,3,7,8-TCDF	ND	0.00166		13C-1,2,3,7,8-PeCDF	53.6	24 - 185	
1,2,3,7,8-PeCDF	ND	0.00262		13C-2,3,4,7,8-PeCDF	55.9	21 - 178	
2,3,4,7,8-PeCDF	ND	0.00218		13C-1,2,3,4,7,8-HxCDF	66.9	26 - 152	
1,2,3,4,7,8-HxCDF	ND	0.000772		13C-1,2,3,6,7,8-HxCDF	67.2	26 - 123	
1,2,3,6,7,8-HxCDF	ND	0.000738		13C-1,2,3,4,6,7,8-HxCDF	67.3	28 - 136	
2,3,4,6,7,8-HxCDF	ND	0.000842		13C-1,2,3,7,8,9-HxCDF	59.7	29 - 147	
1,2,3,7,8,9-HxCDF	ND	0.00149		13C-1,2,3,4,6,7,8-HpCDF	51.2	28 - 143	
1,2,3,4,6,7,8-HpCDF	ND	0.00231		13C-1,2,3,4,7,8,9-HpCDF	52.1	26 - 138	
1,2,3,4,7,8,9-HpCDF	ND	0.00224		13C-OCDF	36.1	17 - 157	
OCDF	ND	0.00980		CRS 37Cl-2,3,7,8-TCDD	76.1	35 - 197	
Totals							
Total TCDD	ND	0.00139					
Total PeCDD	ND	0.00165					
Total HxCDD	ND	0.00293					
Total HpCDD	ND	0.0137					
Total TCDF	ND	0.00166					
Total PeCDF	ND	0.00239					
Total HxCDF	ND	0.000911					
Total HpCDF	ND	0.00309					

Footnotes

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

AMEC VALIDATED
LEVEL IV

Analyst: RAS

Approved By: William J. Luksemburg 20-May-2005 11:07

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.
S	Reported result or other information was incorrect.	Reported result or other information was incorrect.
?	TIC identity or reported retention time has been changed.	Not applicable.
D	The analysis with this flag should not be used because another more technically sound analysis is available.	The analysis with this flag should not be used because another more technically sound analysis is available.
P	Instrument performance for pesticides was poor.	Post Digestion Spike recovery was not within control limits.
DNQ	The compound was detected between the MDL and the RL and, by definition, is considered an estimated value.	The compound was detected between the MDL and the RL and, by definition, is considered an estimated value.
**	Unusual problems found with the data that have been described in Section 2.#, "Data Validation Findings." The number following the asterisk (*) will indicate the subsection where a description of the problem can be found (eg. *1 would indicate a sample was not within temperature limits).	Unusual problems found with the data that have been described in Section 2.#, "Data Validation Findings." The number following the asterisk (*) will indicate the subsection where a description of the problem can be found (eg. *1 would indicate a sample was not within temperature limits).



DATA VALIDATION REPORT

NPDES Monitoring

ANALYSIS: METALS

SAMPLE DELIVERY GROUPS: IOD2043, IOD2049, IOD2054,
IOD2056, IOD2058

Prepared by

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

I. INTRODUCTION

Task Order Title: NPDES Monitoring
Contract Task Order #: 313150010
SDG#: IOD2043, IOD2049, IOD2054, IOD2056, IOD2058
Project Manager: B. McIlvaine
Matrix: Water
Analysis: Metals
QC Level: Level IV
No. of Samples: 5
No. of Reanalyses/Dilutions: 2
Reviewer: L. Jarusewic
Date of Review: June 6, 2005

The samples listed in Table 1 were validated based on the guidelines outlined in the *AMEC Data Validation Procedure for Levels III and IV ICP-MS Metals, (DVP-5-A, Rev.0)*, *AMEC Data Validation Procedure for Levels III and IV ICP Metals (DVP-5, Rev. 0)*, *SW-846 Method 6020B for Inductively Coupled Plasma – Mass Spectrometry*, *SW-846 Method 7471A for Mercury (Manual Cold-Vapor Technique)*, and validation guidelines outlined in the *USEPA CLP National Functional Guidelines for Inorganic Data Review (2/94)*. Any deviations from these procedures and guidelines are documented herein. Qualifiers were applied in cases where the data did not meet the required QC criteria or where special consideration by the data user is required. Data qualifiers were placed on Form Is with the associated qualification codes. Analytes that were rejected for any reason are denoted on the Form I as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

Table 1. Sample identification

Client ID	EPA ID	Laboratory ID	Matrix	COC Method
Outfall 001	Outfall 001	IOD2043-01	water	ILM04
Outfall 001RE1	Outfall 001RE1	IOD2043-01RE1	water	ILM04
Outfall 001RE2	Outfall 001RE2	IOD2043-01RE2	water	ILM04
Outfall 005	Outfall 005	IOD2054-01	water	ILM04
Outfall 009	Outfall 009	IOD2056-01	water	ILM04
Outfall 010	Outfall 010	IOD2058-01	water	ILM04
Outfall 018	Outfall 018	IOD2049-01	water	ILM04

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

Following are findings associated with sample management:

2.1.1 Sample Preservation, Handling, and Transport

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

2.1.2 Chain of Custody

The COCs were signed and dated by field and laboratory personnel. The COCs accounted for the samples and analyses presented in these SDGs. The laboratory did not include the "RE1" and "RE2" client ID suffixes for the iron reanalyses on the Form I for sample Outfall 001. The reviewer appended the Form I with the correct suffixes to reflect this information. No sample qualifications were required.

2.1.3 Holding Times

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

2.2 ICP-MS TUNING

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

2.3 CALIBRATION

The ICV and CCV results showed acceptable recoveries, 90-110% for ICP and ICP-MS metals and 80-120% for mercury. The 0.2 µg/L ICP-MS reporting limit check standard was not recovered for antimony; however, as the antimony MDL was raised to 0.61 µg/L, no qualifications were required (see section 2.4). The remaining reporting limit check standards were recovered within the AMEC control limits of 70-130%. No sample qualifications were required.

2.4 BLANKS

Cadmium was reported in a bracketing ICP-MS CCB at $-0.028 \mu\text{g/L}$; therefore, cadmium detected in samples Outfall 009 and Outfall 010 was qualified as estimated, "J." Antimony was detected in a bracketing ICP-MS CCB at $0.61 \mu\text{g/L}$; however, as antimony was not detected in Outfall 009 or Outfall 010, no qualifications were required. The remaining method blank and CCB results were nondetects at the reporting limit.

There were antimony detects in both the bracketing ICP-MS CCBs at concentrations $\geq 3 \times \text{MDL}$. The antimony CCB detects indicated the laboratory could not detect antimony at the reported MDL. The reviewer, therefore, raised the MDLs for antimony to the highest level reported in the CCBs, $0.61 \mu\text{g/L}$. No further qualifications were required due to the method and calibration blank results.

2.5 ICP INTERFERENCE CHECK SAMPLE (ICS A/AB)

ICSA and ICSAB analyses were included in the raw data for the ICP-MS analyses. Results were not provided for spiked interferents sulfur, phosphorus, carbon, and chloride, and titanium. Antimony and lead were not spiked into the ICSAB solution. Potassium exceeded the calibration range of the instrument in both the ICSA/AB solutions associated with the Outfall 005, Outfall 009 and Outfall 010 analyses. Sodium exceeded the calibration range of the instrument in the ICSA solution for all associated analyses, and was recovered within the control limits in the ICSAB solution associated with the Outfall 005 analysis. Copper and cadmium were detected above the reporting limit in the ICSA. The validator reviewed the raw data for the site sample ICP-MS analyses for the level of reported interferents, Al, Ca, Fe, and Mg, and determined that the levels of reported interferents were not high enough to cause matrix affects. No assessment could be made with respect to possible interference from sulfur, phosphorus, carbon, titanium, and chloride.

ICSA and ICSAB analyses were included in the raw data for the ICP analyses and were analyzed the same day the samples. The recoveries were within the control limits of 80-120% and no qualifications were required.

2.6 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

The ICP LCS sample was identified as 5D29098-BS1 and the ICP-MS LCS sample was identified as 5D29095-BS1. The mercury LCS sample was identified as 5D29061-BS1. The LCS results on the summary forms and in the raw data were within the laboratory-established control limits of 85-115% for the ICP, ICP-MS, and mercury analyses. No qualifications were required.

2.7 LABORATORY DUPLICATES

MS/MSD analyses were performed in association with the ICP-MS analyses on sample Outfall 005 for lead. The RPD was within the control limits of $\leq 20\%$ and no qualifications were required.

2.8 MATRIX SPIKE

MS/MSD analyses were performed in association with the ICP/MS analyses on sample Outfall 005 for lead. The recoveries were within the control limits of 70-130% and no qualifications were required.

2.9 FURNACE ATOMIC ABSORPTION QC

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

2.10 ICP/MS AND ICP SERIAL DILUTION

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

2.11 INTERNAL STANDARDS PERFORMANCE

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

2.12 SAMPLE RESULT VERIFICATION

A Level IV review was performed for the samples in these data packages. Calculations were verified, and the sample results reported on the Form Is were verified against the raw data. No transcription errors or calculation errors were noted. The laboratory reanalyzed sample Outfall 001 for iron. As the Outfall 001RE1 and Outfall 002RE2 results were similar to the original result, the Outfall 001RE1 and Outfall 002RE2 iron results were rejected, "R," in favor of the original iron analysis. Lead in Outfall 005, cadmium in Outfall 009 and Outfall 010, and mercury in Outfall 010 detected below the reporting limit were qualified as estimated, "J." No further qualifications were required.

2.13 FIELD QC SAMPLES

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

2.13.1 Field Blanks and Equipment Rinsates

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

2.13.2 Field Duplicates

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



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

Project ID: Routine Outfall 001

Report Number: IOD2043

Sampled: 04/28/05
 Received: 04/28/05

DRAFT: METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data	Qualifiers
										REV QUAL QUAZ CODE
Sample ID: IOD2043-01 (DRAFT: Outfall 001 - Water)										
Reporting Units: mg/l										
Iron	EPA 200.7	5D29098	0.0088	0.040	0.36	1	04/29/05	05/02/05		
Sample ID: IOD2043-01RE1 (DRAFT: Outfall 001 Outfall 001RE1 - Water)										
Reporting Units: mg/l										
Iron	EPA 200.7	5E17078	0.0088	0.040	0.34	1	04/29/05	05/17/05	R	D
Sample ID: IOD2043-01RE2 (DRAFT: Outfall 001 Outfall 001RE2 - Water)										
Reporting Units: mg/l										
Iron	EPA 200.7	5D29098	0.0088	0.040	0.36	1	04/29/05	05/17/05	R	D

J 06/06/05

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LEVEL IV

DRAFT REPORT
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Del Mar Analytical

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 9410 South 51st St., Suite 6-120, Phoenix, AZ 85044 (480) 785-6343 FAX: (480) 785-6344
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MWH-Pasadena/Boeing
 300 North Lake Avenue, Suite 1200
 Pasadena, CA 91101
 Attention: Bronwyn Kelly

Project ID: Quarterly Outfall 018

Report Number: IOD2049

Sampled: 04/28/05
 Received: 04/28/05

DRAFT: METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOD2049-01 (DRAFT: Outfall 018 - Water) - cont.									
Reporting Units: ug/l									
Copper	EPA 200.8	5D29095	0.49	2.0	3.7	1	04/29/05	05/03/05	REV QUAL
Lead	EPA 200.8	5D29095	0.13	1.0	1.9	1	04/29/05	05/03/05	QUAL CODE
Mercury	EPA 245.1	5D29061	0.063	0.20	ND	1	04/29/05	04/29/05	u

AMEC VALIDATED

LEVEL IV

DRAFT REPORT
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 DATA SUBJECT TO CHANGE

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Del Mar Analytical

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 9404 Chesapeake Dr., Suite 805, San Diego, CA 92123 (619) 505-8596 FAX (619) 503-9699
 9630 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0837
 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 005

Report Number: IOD2054

Sampled: 04/28/05
 Received: 04/28/05

DRAFT: METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOD2054-01 (DRAFT: Outfall 005 - Water)									
Reporting Units: ug/l									
Lead	EPA 200.8	5D29095	0.13	1.0	0.24	1	04/29/05	05/03/05	J J

REV
QUAL
OUT
CODE
DNQ

AMEC VALIDATED

LEVEL IV

DRAFT REPORT
 DRAFT REPORT
 DATA SUBJECT TO CHANGE

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Del Mar Analytical

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

Project ID: Routine Outfall 009

Report Number: IOD2056

Sampled: 04/28/05
 Received: 04/28/05

DRAFT: METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers	Data Code
Sample ID: IOD2056-01 (DRAFT: Outfall 009 - Water)										
Reporting Units: ug/l										
Antimony	EPA 200.8	5D29095	0.61	2.0	ND	1	04/29/05	05/03/05	UJ	*S, \$
Cadmium	EPA 200.8	5D29095	0.015	1.0	0.024	1	04/29/05	05/03/05	J	B, DNG
Copper	EPA 200.8	5D29095	0.49	2.0	3.2	1	04/29/05	05/03/05		
Lead	EPA 200.8	5D29095	0.13	1.0	1.1	1	04/29/05	05/03/05		
Mercury	EPA 245.1	5D29061	0.063	0.20	ND	1	04/29/05	04/29/05	U	

Job 106/06/05

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

Project ID: Routine Outfall 010

Report Number: IOD2058

Sampled: 04/28/05
 Received: 04/28/05

DRAFT: METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOD2058-01 (DRAFT: Outfall 010 - Water)									
Reporting Units: ug/l									
Antimony	EPA 200.8	5D29095	0.18	2.0	ND	1	04/29/05	05/03/05	UJ
Cadmium	EPA 200.8	5D29095	0.015	1.0	0.084	1	04/29/05	05/03/05	J
Copper	EPA 200.8	5D29095	0.49	2.0	6.0	1	04/29/05	05/03/05	J
Lead	EPA 200.8	5D29095	0.13	1.0	3.0	1	04/29/05	05/03/05	J
Mercury	EPA 245.1	5D29061	0.063	0.20	0.18	1	04/29/05	04/29/05	J

REV QUAL
 QUAL CODE

*S, \$
 B, DNG
 DNQ

Jow/06/05

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